

August 17, 2012 Update (under construction)

Le Jardin de Mère Nature dans une Petite Planète

(Mother Nature's Garden on a Small Planet)

a SPECIES DISTRIBUTION LISTING for
TOWNSHIP 13 SOUTH, RANGE 16 EAST PIMA COUNTY, ARIZONA
Gila and Salt River Baseline and Meridian

Record Created and Maintained by William T. Kendall

“An increasing need for careful husbandry of the earth's natural resources has renewed interest in the classification and mapping of ecosystems. The inventory of our remaining biotic entities is particularly urgent because the increased aspirations of a constantly growing world population are placing ever greater stress on these generous, but finite, living resources.”

United States Department of Agriculture, Forest Service, General Technical Report RM-73



This photograph was taken looking north toward Aqua Caliente Hill.
William T. Kendall August 4, 2005

“To know the desert involves an acquaintance with all its aspects, and all its physical features, as well as all of the animals and plants that have learned how to find in it a congenial place to live. The most significant lesson that the desert dweller can learn from a familiarity with its plant and animal life is to regard himself not as an exile from some better place, but as a man at home in an environment to which his life can be adjusted without physical or intellectual loss.”

Forest Shreve, *The Cactus and Its Home*, located in *Discovering the Desert*, by William G. McGinnies

MAJOR CONTRIBUTORS AND SOURCES OF INFORMATION

Matthew B. Johnson, Program Manager and Curator of the Desert Legume Program - Boyce Thompson Southwestern Arboretum
MBJ (date of observation)

William T. Kendall *WTK (date of observation)*

Arizona Daily Star *ADS (date of article)*

Arizona Game and Fish Department, Heritage Data Management System - Special Status Species Reports *8*

Roy P. Drachman, Agua Caliente Park, Bird List, Pima County Natural Resources, Parks and Recreation *146*

Southwest Environmental Information Network (SEINet) *85 (a date of a search for information on the species)*

E. Lendell Cockrum. 1960. *The Recent Mammals of Arizona: Their Taxonomy and Distribution*, The University of Arizona Press, Tucson, Arizona. This inclusion is based on the general distribution maps and statements. *118 (distribution note, map - Figure Number and Page Number)*

Charles H. Lowe. 1964. *The Vertebrates of Arizona with Major Section on Arizona Habitats*, The University of Arizona Press, Tucson, Arizona. *55*

SPECIES DISTRIBUTION LISTINGS

Species Distribution Listings are being developed to encourage and promote the conservation of local native animals and plants. The listings are developed for legally defined geographic areas, and larger bodies of water. The listings include species reported as having been observed in or reported from the described area. Exotic and non-local landscaped plants are not included in the listings unless they have become naturalized into the surrounding native environment. Neither “Man” nor our domesticated animals, except for feral animals, have been included in the listings of species; however, they have had an impact on all natural areas, the future degree of this impact must be managed in order to restore and provide for the continuation of the natural interrelationships between all species.

Due to the continuing addition of species, the listings should be considered works in progress. In the listings, and most often in the listing of animals, species may have been included based on general distribution mapping and/or statements and not on an observation made in a specific location. It is recommended that we consider a species “confirmed” as occurring in a township or general listing area only after we have at least three recorded sightings cited in the footnotes with no more than one of those records being based on general distribution mapping for the species. Note that the Southwest Environmental Information Network (SEINet) *85* may have several collections recorded for a species within any given township or listing area, and that the date shown in parentheses is a date of the search of their records and not a date of recorded sighting. Note also that many of the individual species collection records found in SEINet include additional associated species. For assistance with the identification of a plant, contact the University of Arizona Herbarium (520-621-7243; FAX: 520-621-7186; P.O. Box 210036 Herring Hall, 1130 East South Campus Drive, Tucson, Arizona 85721).

The species are presented alphabetically by division, class, family and genus within their kingdoms. Unlike the usage by most authors, all common names have been capitalized, to normalize simply return uppercase letters, except for those used in proper names, to lowercase letters. Common names presented in languages other than English may lack the inclusion of certain characters/phonetic symbols because of an inability to reproduce them. The vernacular names included by Daniel F. Austin in his book *Baboquivari Mountain Plants: Identification, Ecology, and Ethnobotany* are noted ^{“140”} with synonyms (dialectic variants or alternate transcriptions) printed in angle brackets < > or variations printed in brackets []. An attempt has been made to identify the range in mature heights reported for the plants. Whenever possible the flowering period is reported to early month

(1st-10th), mid-month (11th-20th) and late month (21st-end of the month). The individual species records include a general description of the habitat which is provided to help visualize the types of natural habitats the species may be found in. These descriptions have been developed, in part, from herbarium records and general descriptions of habitat found in literature, and should not be considered limiting as to the type of habitat that a plant might occupy. The terms “streambed”, “creekbed”, “riverbed” or “lakebed” refer to their dry aspects. Plants reported as occurring in recently burned areas were observed in that area within one year following a fire. The range in elevation has been rounded off to the nearest 100 feet up for the higher elevation, or down for the lower elevation. Species reported as being within 0 to 100 feet are recorded as occurring “from sea level”. The reporting of the ecological formations generally follows the mapping presented in the “Biotic Communities of the Southwest” by David E. Brown and Charles H. Lowe, August 1980, with the exception of the “wetlands” which are being reported as an ecological formation in the listings; footnotes: Species not considered to be native to Arizona are shown as being **EXOTIC**, printed in red. Exotic plants are not recommended for use in landscaping or restoration projects. Plants that may be an attractive component of a restored native habitat are so noted. Plants reported as having been used by native peoples of North America and which might be investigated to determine their value as a home garden or commercial crop may be so noted, much of this information is based on the records of the Native American Ethnobotany website [University of Michigan - Dearborn], footnote *127*. When describing the “native range” of plants in North America northwestern refers to Alaska, northern refers to northern Canada (the Yukon Territory, Northwest Territories and Nunavut), northeastern refers to Greenland, central refers to southern Canada (north-central: British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, Newfoundland and Labrador, New Brunswick, Nova Scotia and Prince Edward Island) and the United States (south-central), and southern refers to Mexico, below which is Central America and South America. In the footnotes, the source(s) used for the inclusion of the species in the listing is printed in either green *00* (indicating that the entry is based on an actual sighting) or blue *00* (indicating that the entry is based on a general distribution description and/or mapping). Plants listed in the book “Livestock-Poisoning Plants of Arizona” by Ervin M. Schmutz, Barry M. Freeman and Raymond E. Reed and published in 1968 (80) as being either “Major Poisonous Range Plants” or “Secondary Poisonous Range Plants” are further identified by their listing heading being printed in red in the footnotes; plants considered to be “Rarely Poisonous and Suspected Poisonous Range Plants” and “Poisonous Cropland and Garden Plants” have also been noted.

Local native plants are recommended for use in landscape and restoration projects. Once established many native species require little, if any, irrigation. The inclusion of a plant in the township listing does not necessarily mean that the plant is suitable for the site in which you want to plant it. Ideally restoration should include those species of plants that were native to the property. The source material, of plants and seed, used in the project should be as local as possible. In order to determine what plants were native try to locate photographs of the area prior to clearing or look for natural areas and remnant populations and plants adjacent to where the restoration is to take place. Plants should be planted in their approximate original habitat and density and taking into consideration the original local native site and elevation of occurrence.

The use of local native plants in landscape and restoration projects encourages native animals to remain in the area and helps us to retain the area’s natural beauty and unique identity and heritage.

A NOTE TO RANCHERS: The development of the Species Distribution Listings has been made, in part, with the hope that they will enhance the body of information you are using to assist you in your efforts to improve on the management of native rangelands, bringing about a more productive rangeland, enhanced wildlife management, and an economically and ecologically stable environment.

The Species Distribution Listings have been created and maintained by William T. Kendall. Any questions, concerns, corrections and/or comments, including the reporting of unrecorded species and information relating to historical distributions, may be sent to the following address: Kendall Environmental Surveys, P.O. Box 86091, Tucson, Arizona 85754-6091

DISCLAIMER: The information presented under “Township Notes” has been obtained from large scale mapping and should be used only as a general guide. The listings are not meant to take the place of on-site surveys for species. Information used in the listings is accepted from biologists and individuals interested in helping to promote the conservation of our natural resources. Mistakes are made in the identification of species, the interpretation of data and in the recording of information, and changes in nomenclature occur. For these reasons I can not and do not warrant the accuracy of these listings. Attempts are made to keep the information contained in the Species Distribution Listings as accurate as possible; however, I disclaim any implied warranty or representation about its accuracy, completeness, or appropriateness for any particular purposes. Users of the information found in the listings assume full responsibility for their use of the information and understand that Kendall Environmental Surveys is not responsible or liable for any claim, loss, or damage resulting from its use.

CAUTION: Many native desert plants have sharp thorns and spines. Care should be given when handling these plants and consideration should be given to public safety at sites where they are to be planted. Range plants having a known toxic or poisonous property may be so noted. Footnotes for plants whose sources may have cautionary statements, comments and information on rarely poisonous or suspected poisonous properties may be shown in red *00*. Many poisonous plants are similar in appearance to edible ones. No field collected plant should be eaten unless you know for a fact that it is safe for you to do so.

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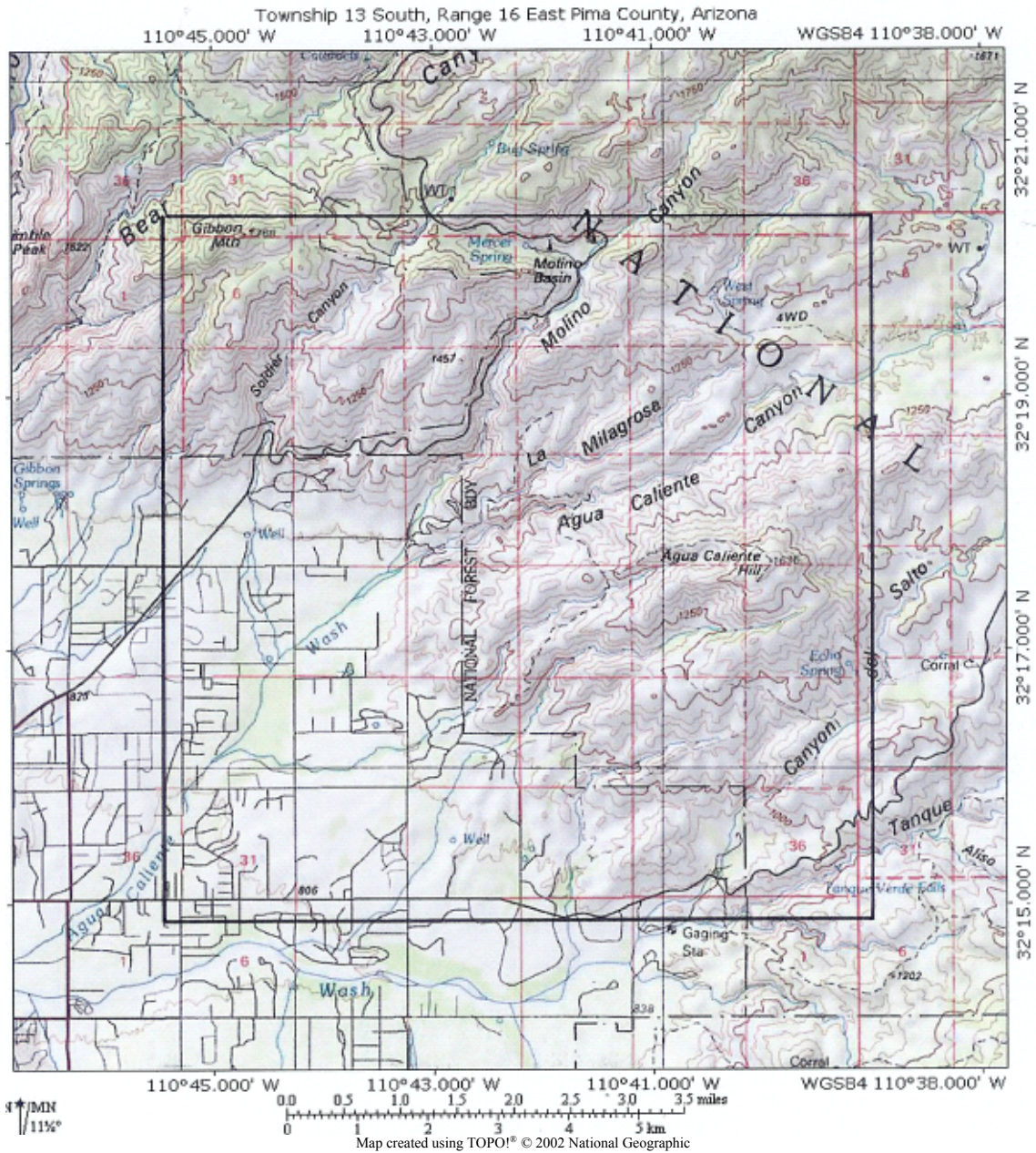
- Kingdom Plantae: The Plant Kingdom
 - Subkingdom Tracheobionta: The Vascular Plants
 - Division Lycopodiophyta: The Lycopods
 - Class Lycopodiopsida: The Clubmosses, Firmosses and Spikemosses
 - Division Pteridophyta: The Ferns
 - Class Filicopsida: The Ferns
 - Superdivision Spermatophyta: The Seed Plants
 - Division Coniferophyta: The Conifers
 - Class Pinopsida: The Conifers
 - Division Gnetophyta: The Gnetophytes
 - Class Gnetopsida: The Gnetops
 - Division Magnoliophyta: The Flowering Plants
 - Class Liliopsida: The Monocots
 - Class Magnoliopsida: The Dicots

Listing of Animals

- Kingdom Animalia: The Animal Kingdom
 - Subkingdom Metazoa: The Multicellular Animals
 - Section Protostomia: The Protosomes
 - Phylum Arthropoda: The Arthropods
 - Subphylum Mandibulata: The Mandibulates
 - Class Insecta: The Insects
 - Section Deuterostomia: The Deuterostomes
 - Phylum Chordata: The Chordates
 - Subphylum Vertebrata: The Vertebrates
 - Class Amphibia: The Amphibians
 - Class Aves: The Birds
 - Class Mammalia: The Mammals
 - Class Osteichthyes: The Bony Fishes
 - Class Reptilia: The Reptiles

Acknowledgements

Footnotes and References for the Species Distribution Listings



Map of Township, shown with adjacent sections

TOWNSHIP NOTES

LOCATION: This township is located in northeastern Pima County in south-central Arizona. The township is bounded on the south by the alignment for Tanque Verde Road and on the west by Melpomene Way. A large portion of this township is located within Coronado National Forest including the eastern part of the Pusch Ridge Wilderness Area.

Historic Ranching Activities: General ranching activities included the placement of corrals, stock tanks and windmills. Named ranches include: the Agua Caliente Ranch, Deep Well Ranch and M R Ranch. Named stock tanks include: the Buckhorn Tank, Cat Track Tank, Cerro Tank, Cummings Dam, Gnat Tank, Jack Daniels Tank, Old Grandad Tank, Reserve Tank, Tequila Tank, Tuffet Tank and Whitetail Tank.

LANDMARKS: A southern portion of the Santa Catalina Mountains is located in the northeastern portion of this township. Named basins, canyons and peaks include Agua Caliente Canyon, Agua Caliente Hill (5,369 feet), Canyon del Salto, La Milagrosa, Molino Basin, Molino Canyon, Soldier Canyon and Tanque Verde Canyon (crosses the township above the southeast corner). Named springs, creeks, washes and waterfalls include the Agua Caliente Spring, Agua Caliente Wash, Echo Spring, Mercer Spring, Tanque Verde Creek, Tanque Verde Falls and West Spring.

ELEVATION: Elevations range from approximately 2,620 feet on the west township line north of the southwest corner to approximately 5,801 feet at Gibbon Mountain (1).

PHYSIOGRAPHIC PROVINCE: Portions of this township are located within the Sonoran Desert and Mexican Highland Sections of the Basin and Range Physiographic Province (2).

SOILS: Soils have been described as being Thermic (hot) Arid Soils (soils with mean annual temperatures of 59 degrees to 72 degrees Fahrenheit (15 degrees to 22 degrees Centigrade) and 5 to 10 inches (13 to 25 cm) mean annual precipitation) and/or Thermic (hot) Semiarid Soils (soils with mean annual temperatures of 59 degrees to 72 degrees Fahrenheit (15 degrees to 22 degrees Centigrade) and 10 to 16 inches (25 to 41 cm) mean annual precipitation) of the Pinaleno-Nickel-Palos Verdes Association (deep, arid, gravelly soils on deeply dissected uplands), Rock Outcrop-Lampshire-Cellar Association (rock outcrop and very shallow and shallow semiarid soils of the mountains and foothills) and Mesic (cool) Subhumid Soils (soils with mean annual soil temperatures of 47 degrees to 59 degrees Fahrenheit (8 degrees to 15 degrees Centigrade) and more than 16 inches (41 cm) mean annual precipitation) of the Rock Outcrop-Barkerville-Faraway Association (rock outcrop and very shallow and shallow subhumid soils of the mountains) (3).

BIOTIC COMMUNITY: Portions of this township are located within the Arizona Upland Subdivision of the Sonoran Desertscrub Regional Formation of the Desertscrub Formation; Scrub-Grassland (Semidesert Grassland) Regional Formation of the Grassland Formation; Interior Chaparral of the Scrub Formation; Madrean Evergreen Woodland Regional Formation of the Woodland Formation, and the Rocky Mountain (Petran) Montane Conifer Forest Regional Formation of the Forest Formation and associated Wetlands (4).

LISTED BELOW ARE A FEW OF THE NATIVE PLANTS REPORTED
AS OCCURRING IN THIS TOWNSHIP THAT MIGHT BE CONSIDERED
FOR USE IN LANDSCAPE AND RESTORATION PROJECTS

Common Name (Family Name: Scientific Name - range in reported mature heights)

Trees and Large Shrubs (over 7 feet maximum height)

Fremont Cottonwood (Salicaceae: *Populus fremontii* subsp. *fremontii* - 10' to 112' in height, see NOTES)
Fremont Cottonwood (Salicaceae: *Populus fremontii* subsp. *mesetae* - 10' to 112' in height, see NOTES)
Alligator Bark Juniper (Cupressaceae: *Juniperus deppeana* - 6' to 99' in height)
Western Black Willow (Salicaceae: *Salix gooddingii* - 4' to 98' in height, see NOTES)
Arizona Sycamore (Platanaceae: *Platanus wrightii* - 13' to 83' in height, see NOTES)
Netleaf Oak (Fagaceae: *Quercus rugosa* - 5' to 83' in height)
Arizona White Oak (Fagaceae: *Quercus arizonica* - 10' to 66' in height)
Arizona Black Walnut (Juglandaceae: *Juglans major* - 5' to 66' in height, see NOTES)
Emory Oak (Fagaceae: *Quercus emoryi* - 5' to 66' in height)
Velvet Ash (Oleaceae: *Fraxinus velutina* - 40" to 65' in height, see NOTES)
Gray Oak (Fagaceae: *Quercus grisea* - 40" to 65' in height)
Saguaro (Cactaceae: *Carnegiea gigantea* - 5' to 60' in height)
Netleaf Hackberry (Ulmaceae: *Celtis laevigata* var. *reticulata* - 40" to 60' in height)
Velvet Mesquite (Fabaceae: *Prosopis velutina* - 2' to 56' in height)
Western Soapberry (Sapindaceae: *Sapindus saponaria* var. *drummondii* - 7' to 50' in height, see NOTES)
Western Mulberry (Moraceae: *Morus microphylla* - 6½' to 50' in height, see NOTES)
Blue Paloverde (Fabaceae: *Parkinsonia florida* - 40" to 40' in height)
Border Pinyon (Pinaceae: *Pinus discolor* - 12' to 33' in height)
Mexican Blue Oak (Fagaceae: *Quercus oblongifolia* - 6' to 33' in height)
Desert Willow (Bignoniaceae: *Chilopsis linearis* subsp. *arcuata* - 5' to 33' in height)
Ocotillo (Fouquieriaceae: *Fouquieria splendens* - 5' to 33' in height)
Common Buttonbush (Rubiaceae: *Cephalanthus occidentalis* - 3' to 33' in height)
Yellow Trumpetbush (Bignoniaceae: *Tecoma stans* - 3' to 33' in height)

Coyote Willow (Salicaceae: *Salix exigua* - 20" to 33' in height)
 Western Coral-bean (Fabaceae: *Erythrina flabelliformis* - 2' to 30' in height)
 Soaptree Yucca (Agavaceae: *Yucca elata* - acaulescent to 30' in height)
 Foothill Paloverde (Fabaceae: *Parkinsonia microphylla* - 40" to 26' in height)
 Hop Bush (Sapindaceae: *Dodonaea viscosa* - 2' to 26' in height)
 Prairie Acacia (Fabaceae: *Acacia angustissima* var. *filicioides* - 20" to 26' in height)
 Catclaw Acacia (Fabaceae: *Acacia greggii* var. *greggii* - 40" to 25' in height)
 Arizona Rosewood (Rosaceae: *Vauquelinia californica* subsp. *californica* - 6' to 20' in height)
 Desert Hackberry (Ulmaceae: *Celtis ehrenbergiana* - 3' to 20' in height)
 Rosary Babybonnets (Fabaceae: *Coursetia glandulosa* - 3' to 20' in height)
 Whitethorn Acacia (Fabaceae: *Acacia constricta* - 1' to 20' in height)
 Mountain Yucca (Agavaceae: *Yucca madrensis* - 3' to 18' in height)
 Longleaf Joint-fir (Ephedraceae: *Ephedra trifurca* - 20" to 16½' in height)
 Pointleaf Manzanita (Ericaceae: *Arctostaphylos pungens* - 8" to 16½' in height)
 Chain-fruit Cholla (Cactaceae: *Cylindropuntia fulgida* var. *fulgida* - 3' to 15' in height)
 Staghorn Cholla (Cactaceae: *Cylindropuntia versicolor* - 3' to 15' in height)
 Wright Silktassel (Garryaceae: *Garrya wrightii* - 3' to 15' in height)
 Buckhorn Cholla (Cactaceae: *Cylindropuntia acanthocarpa* - 16" to 15' in height)
 Seep Willow (Asteraceae: *Baccharis salicifolia* - 1' to 15' in height)
 Desert Lavender (Lamiaceae: *Hyptis emoryi* - 8" to 15' in height)
 Desert Cotton (Malvaceae: *Gossypium thurberi* - 3' to 14' in height)
 Prairie Acacia (Fabaceae: *Acacia angustissima* var. *suffrutescens* - 8" to 14' in height)
 Desert Broom (Asteraceae: *Baccharis sarothroides* - 3' to 13' in height, see NOTES)
 Southern Cattail (Typhaceae: *Typha domingensis* - 3' to 13' in height)
 Greythorn (Rhamnaceae: *Ziziphus obtusifolia* var. *canescens* - 3' to 13' in height)
 Kearney Snakewood (Rhamnaceae: *Condalia warnockii* var. *kearneyana* - 20" to 13' in height)
 Creosote Bush (Zygophyllaceae: *Larrea tridentata* var. *tridentata* - 20" to 13' in height)
 Burrobrush (Asteraceae: *Hymenoclea monogyra* - 1' to 13' in height)
 Jojoba (Simmondsiaceae: *Simmondsia chinensis* - 8" to 13' in height)
 Pencil Cholla (Cactaceae: *Cylindropuntia arbuscula* - 20" to 12' in height)
 Fishhook Barrel Cactus (Cactaceae: *Ferocactus wislizeni* - 8" to 11' in height)
 Pancake Pricklypear Cactus (Cactaceae: *Opuntia chlorotica* - 2' to 10' in height)
 Skunkbush Sumac (Anacardiaceae: *Rhus trilobata* var. *trilobata* - 2' to 10' in height)
 Teddybear Cholla (Cactaceae: *Cylindropuntia bigelovii* - 20" to 10' in height)
 Berlandier Lycium (Solanaceae: *Lycium berlandieri* - 20" to 10' in height)
 Cane Cholla (Cactaceae: *Cylindropuntia spinosior* - 16" to 10' in height)
 Fourwing Saltbush (Chenopodiaceae: *Atriplex canescens* - 1' to 10' in height)
 Anderson Lycium (Solanaceae: *Lycium andersonii* - 1' to 10' in height)
 Catclaw Mimosa (Fabaceae: *Mimosa aculeaticarpa* var. *biuncifera* - 1' to 10' in height)
 Arizona Yucca (Agavaceae: *Yucca x schottii* (pro sp.) [*baccata x elata*] - trunkless to 10' in height) Do not confuse this species with the Schott or Mountain Yucca (*Yucca schottii* now considered to be *Yucca madrensis*)
 Smooth Chain-fruit Cholla (Cactaceae: *Cylindropuntia fulgida* var. *mamillata* - 2' to 9' in height)
 Resinleaf Brickellbush (Asteraceae: *Brickellia baccharidea* - 18" to 8¼' in height)
 Desert Honeysuckle (Acanthaceae: *Anisacanthus thurberi* - 3' to 8' in height)
 Engelmann Pricklypear Cactus (Cactaceae: *Opuntia engelmannii* var. *engelmannii* - 20" to 8' in height)
 Desert Spoon (Liliaceae: *Dasyllirion wheeleri* - 16" to 8' in height)

Shrubs (2 to 7 feet maximum height)

Canyon Ragweed (Asteraceae: *Ambrosia ambrosioides* - 1' to 7' in height)
 California Brickellbush (Asteraceae: *Brickellia californica* var. *californica* - 1' to 7' in height)
 Limberbush (Euphorbiaceae: *Jatropha cardiophylla* - 1' to 7' in height)
 Tulip Pricklypear Cactus (Cactaceae: *Opuntia phaeacantha* - 10" to 7' in height)
 Desert Rosemallow (Malvaceae: *Hibiscus coulteri* - 3" to 7' in height)
 Beargrass (Liliaceae: *Nolina microcarpa* - 24" to 78" in height)
 Pubescent Skunkbush Sumac (Anacardiaceae: *Rhus trilobata* var. *pilosissima* - 12" to 78" in height)
 Bloodberry Rougeplant (Phytolaccaceae: *Rivina humilis* - 4" to 78" in height)
 Arizona Water-willow (Acanthaceae: *Justicia candidans* - 2' to 6' in height)
 Desert Christmas Cactus (Cactaceae: *Cylindropuntia leptocaulis* - 1' to 6' in height)
 White Brittlebush (Asteraceae: *Encelia farinosa* - 1' to 6' in height)
 American Threefold (Asteraceae: *Trixis californica* - 10" to 6' in height)

Scarlet Bouvardia (Rubiaceae: *Bouvardia ternifolia* - 1' to 5' in height)
 Coulter Brickellbush (Asteraceae: *Brickellia coulteri* - 1' to 5' in height)
 Gumhead (Asteraceae: *Gymnosperma glutinosum* - 1' to 5' in height)
 White Sagebrush (Asteraceae: *Artemisia ludoviciana* - 8" to 5' in height)
 Desert Mistletoe (Viscaceae: *Phoradendron californicum* - 8" to 5' in height, see NOTES)
 Fairyduster (Fabaceae: *Calliandra eriophylla* - 4" to 5' in height)
 Threadleaf Snakeweed (Asteraceae: *Gutierrezia microcephala* - 2" to 4½' in height)
 Turpentine Bush (Asteraceae: *Ericameria laricifolia* - 10" to 50" in height)
 Triangleleaf Bursage (Asteraceae: *Ambrosia deltoidea* - 1' to 4' in height)
 Desert Penstemon (Scrophulariaceae: *Penstemon pseudospectabilis* - 1' to 4' in height)
 Golden-flowered Agave (Agavaceae: *Agave chrysantha* - 20" to 40" in height)
 Arizona Rosemallow (Malvaceae: *Hibiscus biseptus* - 18" to 40" in height)
 Cliff Goldenbush (Asteraceae: *Ericameria cuneata* var. *spathulata* - 12" to 40" in height)
 Arizona Cockroach Plant (Apocynaceae: *Haplophyton crooksii* - 7" to 40" in height)
 Burroweed (Asteraceae: *Isocoma tenuisecta* - 6" to 40" in height)
 Range Ratany (Krameriaceae: *Krameria erecta* - 2" to 40" in height)
 Yellow-spined Pricklypear Cactus (Cactaceae: *Opuntia engelmannii* var. *flavispina* - to 3' in height)

Grasses

Bamboo Muhly (Poaceae: *Muhlenbergia dumosa* - 16" to 10' in height)
 Alkali Sacaton (Poaceae: *Sporobolus airoides* - 14" to 100" in height)
 Spidergrass (Poaceae: *Aristida ternipes* var. *ternipes* - 16" to 79" in height)
 Squirreltail (Poaceae: *Elymus elymoides* - 3" to 78" in height)
 California Brome (Poaceae: *Bromus carinatus* - 12" to 72" in height)
 Deergrass (Poaceae: *Muhlenbergia rigens* - 14" to 63" in height)
 Cane Bluestem (Poaceae: *Bothriochloa barbinodis* - 20" to 60" in height)
 Bullgrass (Poaceae: *Muhlenbergia emersleyi* - 20" to 60" in height)
 Tanglehead (Poaceae: *Heteropogon contortus* - 8" to 60" in height, see NOTES)
 Sideoats Grama (Poaceae: *Bouteloua curtipendula* - 3" to 52" in height)
 Sycamore Muhly (Poaceae: *Muhlenbergia elongata* - 16" to 48" in height)
 Arizona Cottonop (Poaceae: *Digitaria californica* - 12" to 48" in height)
 Sand Dropseed (Poaceae: *Sporobolus cryptandrus* - 12" to 48" in height)
 Plains Bristlegrass (Poaceae: *Setaria vulpiseta* - 8" to 48" in height)
 Bush Muhly (Poaceae: *Muhlenbergia porteri* - 10" to 44" in height)
 Southwestern Muhly (Poaceae: *Muhlenbergia palmeri* - 12" to 40" in height)
 Cotta Grass (Poaceae: *Cottea pappophoroides* - 10" to 40" in height)
 Tufted Lovegrass (Poaceae: *Eragrostis pectinacea* var. *pectinacea* - 10" to 40" in height)
 Plains Lovegrass (Poaceae: *Eragrostis intermedia* - 8" to 40" in height)
 Fendler Bluegrass (Poaceae: *Poa fendleriana* - 6" to 40" in height)
 Purple Threeawn (Poaceae: *Aristida purpurea* - 4" to 40" in height)
 Sixweeks Threeawn (Poaceae: *Aristida adscensionis* - 1¼" to 40" in height)
 Feather Fingergrass (Poaceae: *Chloris virgata* - ½" to 40" in height)
 Purple Grama (Poaceae: *Bouteloua radicata* - 12" to 32" in height)
 Slender Grama (Poaceae: *Bouteloua repens* - 4" to 32" in height)
 Hairy Grama (Poaceae: *Bouteloua hirsuta* var. *hirsuta* - 4" to 30" in height)
 Fall Witchgrass (Poaceae: *Digitaria cognata* - 10" to 28" in height)
 Santa Rita Grama (Poaceae: *Bouteloua eludens* - 8" to 28" in height)
 Bigelow Bluegrass (Poaceae: *Poa bigelovii* - 1" to 28" in height)
 Arizona Signalgrass (Poaceae: *Urochloa arizonica* - 6" to 26" in height)
 Bristly Wolfstail (Poaceae: *Lycurus setosus* - 12" to 24" in height)
 Sprucetop Grama (Poaceae: *Bouteloua chondrosioides* - 4" to 24" in height)
 Sixweeks Fescue (Poaceae: *Vulpia octoflora* var. *hirtella* - 2" to 24" in height)
 Sixweeks Fescue (Poaceae: *Vulpia octoflora* var. *octoflora* - 2" to 24" in height)
 Spike Pappusgrass (Poaceae: *Enneapogon desvauxii* - 4" to 20" in height)
 Arizona Muhly (Poaceae: *Muhlenbergia arizonica* - 3" to 20" in height)

Vines and Climbers

Fingerleaf Gourd (Cucurbitaceae: *Cucurbita digitata* - 3' to 40' in length)
 Canyon Grape (Vitaceae: *Vitis arizonica* - 16" to 33' in length)

Metcalf Bean (Fabaceae: *Phaseolus maculatus* subsp. *maculatus* - 2' to 23' in length)
 Fringed Twinevine (Asclepiadaceae: *Funastrum cynanchoides* subsp. *cynanchoides* - 40" to 20' in length)
 Hartweg Twinevine (Asclepiadaceae: *Funastrum cynanchoides* subsp. *heterophyllum* - 20" to 20' in length)
 Wavyleaf Twinevine (Asclepiadaceae: *Funastrum crispum* - 40" to 12' in length)
 Trans-Pecos Morning-glory (Convolvulaceae: *Ipomoea cristulata* - 8" to 11½' in length)
 Slender Janusia (Malpighiaceae: *Janusia gracilis* - 16" to 10' in length)
 Woolly Morning-glory (Convolvulaceae: *Ipomoea hederacea* - 16" to 8' in length)
 Little Snapdragon Vine (Scrophulariaceae: *Maurandella antirrhiniflora* - 1' to 8' in length)
 Gila Manroot (Cucurbitaceae: *Marah gilensis* - to over 6' in length)
 Tumamoc Globeberry (Cucurbitaceae: *Tumamoca macdougalii* - 28" to 5' in length)
 Longleaf Cologania (Fabaceae: *Cologania angustifolia* - 8" to 4' in length)
 Wild Bushbean (Fabaceae: *Macroptilium gibbosifolium* - to 40" in length)
 Bird's Foot Morning-glory (Convolvulaceae: *Ipomoea ternifolia* var. *leptotoma* - to 3' in length)
 Crestrub Morning-glory (Convolvulaceae: *Ipomoea costellata* - 4" to 30" in length)
 Pringle Clustervine (Convolvulaceae: *Jacquemontia pringlei* - 3' in height, 5' to 10' in length)

Shrubs (under 2 feet maximum height), Subshrubs, Herbs and Small Succulents

Hoary Indian Mallow (Malvaceae: *Abutilon incanum* - 8" to 7' rarely to 13' in height)
 New Mexico Thistle (Asteraceae: *Cirsium neomexicanum* - 16" to 9½' in height)
 Desert Night-blooming Cereus (Cactaceae: *Peniocereus greggii* var. *transmontanus* - 1' to 8' in height)
 Sweet Four O'Clock (Nyctaginaceae: *Mirabilis longiflora* - 16" to 78" in height)
 Shrubby Indian Mallow (Malvaceae: *Abutilon abutiloides* - 12" to 78" in height)
 Parish Indian Mallow (Malvaceae: *Abutilon parishii* - 8" to 75" in height)
 Longleaf False Goldeneye (Asteraceae: *Heliomeris longifolia* var. *annua* - 1' to 6' in height)
 Slimleaf Plainsmustard (Brassicaceae: *Schoenocrambe linearifolia* - 10" to 6' in height)
 Tansyleaf Tansyaster (Asteraceae: *Machaeranthera tanacetifolia* - 2" to 6' in height)
 Parry Penstemon (Scrophulariaceae: *Penstemon parryi* - 2' to 5' in height)
 Brownfoot (Asteraceae: *Acourtia wrightii* - 1' to 5' in height)
 Pineneedle Milkweed (Asclepiadaceae: *Asclepias linaria* - 1' to 5' in height)
 Hummingbird Trumpet (Onagraceae: *Epilobium canum* subsp. *latifolium* - 1' to 5' in height)
 Mexican Fireplant (Euphorbiaceae: *Euphorbia heterophylla* - 8" to 5' in height)
 California Plumseed (Asteraceae: *Rafinesquia californica* - 8" to 5' in height)
 Gregg Prairie Clover (Fabaceae: *Dalea greggii* - 4" to 5' in height, 40" to 10' in diameter)
 Brownplume Wirelettuce (Asteraceae: *Stephanomeria pauciflora* - 4" to 5' in height)
 Yellow Monkeyflower (Scrophulariaceae: *Mimulus guttatus* - 2" to 5' in height)
 Fragrant Flatsedge (Cyperaceae: *Cyperus odoratus* - 2" to 52" in height)
 Upright Prairie Coneflower (Asteraceae: *Ratibida columnifera* - 1' to 4' in height)
 Bladdermallow (Malvaceae: *Herissantia crispa* - 8" to 4' in height)
 Parish Larkspur (Ranunculaceae: *Delphinium parishii* var. *parishii* - 6½" to 4' in height)
 Tall Mountain Larkspur (Ranunculaceae: *Delphinium scaposum* - 6" to 4' in height)
 Yellow Menodora (Oleaceae: *Menodora scabra* - 6" to 4' in height)
 Bluestem Pricklepoppy (Papaveraceae: *Argemone pleiacantha* - 5" to 4' in height)
 Tufted Milkweed (Asclepiadaceae: *Asclepias nummularia* - 4" to 4' in height)
 Desert Tobacco (Solanaceae: *Nicotiana obtusifolia* var. *obtusifolia* - 12" to 42" in height, see NOTES)
 Fragrant Snakeroot (Asteraceae: *Ageratina herbacea* - 8" to 42" in height)
 Scarlet Four O'Clock (Nyctaginaceae: *Mirabilis coccinea* - 6" to 42" in height)
 Santa Catalina Prairie Clover (Fabaceae: *Dalea pulchra* - 20" to 40" in height)
 Violet Snapdragon (Scrophulariaceae: *Sairocarpus nuttallianus* - 12" to 40" in height)
 Scarlet Hedge-nettle (Lamiaceae: *Stachys coccinea* - 12" to 40" in height)
 Longflowered Tubetongue (Acanthaceae: *Justicia longii* - 8" to 40" in height)
 Desert Marigold (Asteraceae: *Baileya multiradiata* - 6" to 40" in height)
 Purplestem Phacelia (Hydrophyllaceae: *Phacelia crenulata* var. *ambigua* - 4" to 40" in height)
 Sandyseed Clammyweed (Capparaceae: *Polanisia dodecandra* subsp. *trachysperma* - 4" to 40" in height)
 Lacy Tansyaster (Asteraceae: *Machaeranthera pinnatifida* - 3" to 40" in height)
 Distant Phacelia (Hydrophyllaceae: *Phacelia distans* - 3" to 40" in height)
 Mesa Tansyaster (Asteraceae: *Machaeranthera tagetina* - 2" to 40" in height)
 Arizona Foldwing (Acanthaceae: *Dicliptera resupinata* - 12" to 32" in height)
 Desert Senna (Fabaceae: *Senna covesii* - 10" to 32" in height)
 Texas Toadflax (Scrophulariaceae: *Nuttallanthus texanus* - 8" to 32" in height)
 Mojave Lupine (Fabaceae: *Lupinus sparsiflorus* - 6" to 32" in height)

Arizona Centaury (Gentianaceae: *Centaurium arizonicum* - 5" to 32" in height)
 Whitestem Paperflower (Asteraceae: *Psilostrophe cooperi* - 4" to 32" in height)
 Abert Buckwheat (Polygonaceae: *Eriogonum abertianum* - 2" to 32" in height)
 Wright Buckwheat (Polygonaceae: *Eriogonum wrightii* var. *wrightii* - 4" to 30" in height)
 Caliche Globemallow (Malvaceae: *Sphaeralcea laxa* - 12" to 28" in height)
 Manyflowered Ipomopsis (Polemoniaceae: *Ipomopsis multiflora* - 6" to 28" in height)
 Covena (Liliaceae: *Dichelostemma capitatum* subsp. *capitatum* - 4" to 28" in height)
 Slender Goldenweed (Asteraceae: *Machaeranthera gracilis* - 4" to 28" in height)
 Spreading Fleabane (Asteraceae: *Erigeron divergens* - 2¾" to 28" in height)
 Slender Dwarf Morning-glory (Convolvulaceae: *Evolvulus alsinoides* var. *angustifolius* - 2¼" to 28" in height)
 Sierra Woolly Indian Paintbrush (Scrophulariaceae: *Castilleja lanata* subsp. *lanata* - 12" to 24" in height)
 Scarlet Gaura (Onagraceae: *Gaura coccinea* - 7" to 24" in height)
 Goodding Mock Vervain (Verbenaceae: *Glandularia gooddingii* - 6" to 24" in height)
 Mojave Milkweed (Asclepiadaceae: *Asclepias nyctaginifolia* - 4" to 24" in height)
 Wavy Scaly Cloakfern (Pteridaceae: *Astrolepis sinuata* subsp. *sinuata* - 4" to 24" in height)
 Hairyseed Bahia (Asteraceae: *Bahia absinthifolia* - 4" to 24" in height)
 Whitedaisy Tidytops (Asteraceae: *Layia glandulosa* - 4" to 24" in height)
 New Mexico Plumeseed (Asteraceae: *Rafinesquia neomexicana* - 4" to 24" in height)
 Golden Dogweed (Asteraceae: *Thymophylla pentachaeta* var. *pentachaeta* - 4" to 24" in height)
 Gordon Bladderpod (Brassicaceae: *Lesquerella gordonii* var. *gordonii* - 3" to 24" in height)
 Flatcrown Buckwheat (Polygonaceae: *Eriogonum deflexum* var. *deflexum* - 2" to 24" in height)
 Golden Lipfern (Pteridaceae: *Cheilanthes bonariensis* - 5½" to 21½" in height)
 Trelease Agave (Agavaceae: *Agave schottii* var. *treleasei* - 8" to 20" in height)
 Orange Flameflower (Portulacaceae: *Phemeranthus aurantiacus* - 6" to 20" in height)
 Dakota Mock Vervain (Verbenaceae: *Glandularia bipinnatifida* var. *bipinnatifida* - 4" to 20" in height)
 Desert Windflower (Ranunculaceae: *Anemone tuberosa* var. *tuberosa* - 3" to 20" in height)
 Desert Zinnia (Asteraceae: *Zinnia acerosa* - 3" to 20" in height)
 Wright's Cliffbrake (Pteridaceae: *Pellaea wrightiana* - 2½" to 18½" in height)
 Arizona Blue-eyes (Convolvulaceae: *Evolvulus arizonicus* - 4" to 18" in height)
 Bundle Hedgehog Cactus (Cactaceae: *Echinocereus fasciculatus* - 2" to 18" in height)
 Spiny Cliffbrake (Pteridaceae: *Pellaea truncata* - 3" to 16½" in height)
 Schott Agave (Agavaceae: *Agave schottii* var. *schottii* - 8" to 16" in height)
 California Goldfields (Asteraceae: *Lasthenia californica* subsp. *californica* - 3" to 16" in height)
 Toad Rush (Juncaceae: *Juncus bufonius* - 1" to 16" in height)
 Beaded Lip Fern (Pteridaceae: *Cheilanthes wootonii* - 3" to 15½" in height)
 Villous Lipfern (Pteridaceae: *Cheilanthes villosa* - 3" to 14" in height)
 Lemmon's Cloak Fern (Pteridaceae: *Notholaena lemmonii* - 3" to 14" in height)
 Creamcups (Papaveraceae: *Platystemon californicus* - 2" to 14" in height)
 Pygmy Bluet (Rubiaceae: *Houstonia wrightii* - 1" to 14" in height)
 Fairyswords (Pteridaceae: *Cheilanthes lindheimeri* - 3" to 13½" in height)
 Star Cloakfern (Pteridaceae: *Notholaena standleyi* - 2" to 13" in height)
 Copper Fern (Pteridaceae: *Bommeria hispida* - 2" to 12½" in height)
 Arizona Poppy (Zygophyllaceae: *Kallstroemia grandiflora* - 4" to 12" in height, stems to 4' in length)
 Cochise Scaly Cloakfern (Pteridaceae: *Astrolepis cochisensis* subsp. *cochisensis* - 3" to 12" in height)
 Shrubby Purslane (Portulacaceae: *Portulaca suffrutescens* - 3" to 12" in height)
 Desert Holly (Asteraceae: *Acourtia nana* - 2" to 12" in height)
 Graham Pincushion Cactus (Cactaceae: *Mammillaria grahamii* - 1" to 12" in height)
 Orcutt Lupine (Fabaceae: *Lupinus concinnus* subsp. *orcuttii* - 6" to 10" in height)
 Wright's Lipfern (Pteridaceae: *Cheilanthes wrightii* - 1½" to 10" in height)
 Tufted Evening-primrose (Onagraceae: *Oenothera caespitosa* subsp. *marginata* - 4" to 8" in height)
 Woolly Crinklemat (Boraginaceae: *Tiquilia canescens* - 4" to 8" in height)
 MacDougal Pincushion Cactus (Cactaceae: *Mammillaria heyderi* var. *macdougalii* - 2" to 8" in height)
 Rose Heath (Asteraceae: *Chaetopappa ericoides* - 1" to 8" in height)
 Golden Linanthus (Polemoniaceae: *Leptosiphon aureus* subsp. *aureus* - 2" to 7" in height)
 Green-flowered Pincushion Cactus (Cactaceae: *Mammillaria viridiflora* - 3" to 4" in height)
 Ledge Saliginella (Selaginellaceae: *Selaginella rupicola* - 1½" to 3" in height)
 Arizona Spikemoss (Selaginellaceae: *Selaginella arizonica* - ½" to 1½" in height)

CONSERVATION RELATED AGENCIES AND ORGANIZATIONS

Arizona Department of Agriculture

<http://www.azda.gov/>

Native Plant Crimes HOTLINE: 602-364-0907

The mission statement of the Arizona Department of Agriculture is to regulate and support Arizona agriculture in a manner that encourages farming, ranching, and agribusiness while protecting consumers and natural resources.

NOTICE OF INTENT TO CLEAR LAND

The Arizona Department of Agriculture enforces the sections of the Arizona Revised Statutes commonly referred to as the "Arizona Native Plant Law". The statutes require, in part, that anyone who is clearing land notify the State of Arizona in advance of the clearing. Some land owners involved in the clearing of land allow for nurseries and people who are interested in salvaging plants to do so prior to the clearing. The Arizona Department of Agriculture posts these notifications in their county offices. You may also contact the Arizona Department of Agriculture and, for a fee, be put on a mailing list of people receiving copies of the Notices of Intent to Clear Land.

Contact Information: Arizona Department of Agriculture, 1688 West Adams Street, Phoenix, Arizona 85007. Telephone number: 602-542-4373.

Arizona Game and Fish Department

<http://www.gf.state.az.us/>

Operation GAME THIEF: 602-942-3000

The mission statement of the Arizona Game and Fish Department is to conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use

As part of their conservation program the Arizona Game and Fish Department provides ideas on how to learn to live with, and landscape for, wildlife:

LIVING WITH WILDLIFE

http://www.azgfd.gov/w_c/urban_wildlife.shtml

Contact Information: Arizona Game and Fish Department, 5000 West Carefree Highway, Phoenix, Arizona 85086-5000. Telephone number: 602-942-3000

Arizona Native Plant Society

<http://www.aznativeplantsociety.org/>

The Arizona Native Plant Society is a statewide nonprofit organization devoted to Arizona's native plants. Its mission is to promote knowledge, appreciation, conservation, and restoration of Arizona native plants and their habitats. They work with the Southwest Rare Plant Task Force to develop strategies for protecting rare species and their habitats; they keep abreast of conservation issues concerning native plants species and responds to those through their Conservation Committee; they promote the use of native species in residential and commercial landscapes; they publish the Plant Press, support the publication of scholarly works and maintains a website with information and links about native plant, and they host a series of statewide events that provide forums to learn from professionals. Member activities and benefits include chapter and statewide gatherings; field trips and educational presentations; conservation through education, outreach and restoration; habitat restoration projects; informative website, newsletters and journals, and interactions with plant experts and enthusiasts.

LISTING OF SOURCES FOR NATIVE PLANTS AND SEEDS

The Arizona Native Plant Society maintains a listing of Native Plant and Seed Sources at:

<http://www.aznativeplantsociety.org/sources.php>

Contact Information: Arizona Native Plant Society, PO Box 41206, Tucson, Arizona 85717.

Tucson Cactus and Succulent Society

<http://www.tucsoncactus.org/>

The Tucson Cactus and Succulent Society is a non-profit organization dedicated to educating, teaching and learning about cacti and succulent plants. Their monthly programs feature knowledgeable individuals who can educate you and help you understand more about these fascinating plants. They conduct and sponsor native cactus and succulent rescue operations, plant sales, field trips, nursery and garden visits, conventions and conferences as well as other activities throughout the year.

NATIVE PLANT RESCUE NOTICE

Members of the Tucson Cactus and Succulent Society expend a tremendous amount of time and effort in organizing and overseeing their native plant rescue events. The native plant rescues carried out by the dedicated members of the Society provide an immeasurable service to our community. Members of the Tucson Cactus and Succulent Society organize native plant rescues in areas being cleared for development. If interested in rescuing plants and/or obtaining local native plants for your landscaping or restoration project join the Society and become a rescue crew member.

Contact Information: Tucson Cactus and Succulent Society, PO Box 64759, Tucson, Arizona 85728-4759. Telephone number: 520-885-6367.

Desert Survivors Native Plant Nursery

<http://www.desertsurvivors.org/nursery.asp>

The Desert Survivors Native Plant Nursery maintains a large selection of local native plants and is willing to consider growing any native plant for which there is a buyer.

Contact Information: Desert Survivors Native Plant Nursery, 1020 West Starr Pass Boulevard, Tucson, Arizona 85713. Telephone number: 520-791-9309.

Native Seeds/SEARCH

<http://www.nativeseeds.org>

The Native Seeds/SEARCH is a nonprofit conservation organization that seeks to preserve the crop seeds that connect the Native American cultures to their lands. The mission of the Native Seeds/SEARCH is to conserve, distribute and document the adapted and diverse varieties of agricultural seeds, their wild relatives and the role these seeds play in the cultures of the American Southwest and Northwest Mexico.

Contact Information: Native Seeds/SEARCH, 526 North Fourth Avenue, Tucson, Arizona 85705. Telephone number: 520-622-5561 or toll free at 866-622-5561; FAX 520-622-5561; e-mail: info@nativeseeds.org

LISTING OF PLANTS

**STRICTLY ENFORCED LAWS PROTECT MANY OF ARIZONA'S
NATIVE PLANTS FROM COLLECTION, MUTILATION AND DESTRUCTION**

Native Plant Crimes HOTLINE: 602-364-0907

Kingdom Plantae: The Plant Kingdom

Subkingdom Tracheobionta: The Vascular Plants

Division Lycopodiophyta: The Lycopods

CLASS LYCOPODIOPSIDA: The CLUBMOSES, FIRMOSES and SPIKEMOSSES

Selaginellaceae: The Spike-moss Family

***Selaginella arizonica* W.R. Maxon: Arizona Spikemoss**

COMMON NAMES: Arizona Selaginella; Arizona Spike-moss; Arizona Spikemoss; Desert Spike-moss; Flor de Piedra (Hispanic); Resurrection Fern. DESCRIPTION: Terrestrial perennial evergreen forb/herb (mat-forming and spreading prostrate or decumbent stems ½ to 1½ inches in height); the minute leaves are green or yellowish-green; the strobili are solitary; the megaspores of the sporangium are orange or yellow. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; rocky cliffs; rocky canyons; bases of cliffs; pockets of soil in bedrock; crevices in rocks; rocky bluffs; rocky ledges; rocky ridges; rocky foothills; rocky hilltops; rocky hillsides; rocky, stony, stony-sandy, gravelly, gravelly-sandy-loamy and loamy slopes, bajadas; rocky outcrops; on boulders and rocks; amongst boulders and rocks; bases of rocks; basins; streambeds; bouldery-gravelly-sandy, rocky, gravelly and sandy washes; rocky-gravelly drainages; banks of rivers, and riparian areas growing in wet, moist and dry bouldery, bouldery-gravelly-sandy, rocky, rocky-gravelly, stony, stony-sandy, gravelly and sandy ground and gravelly-sandy loam and loam ground, occurring from 1,900 to 6,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Selaginella arizonica* is native to southwest-central and southern North America. *5, 6, 15, 43 (052510), 44 (032411 - no record of species; genus record), 46 (Page 28), 51 (Page 76, color photograph 47), 63 (052510), 77, **85** (052510 - color presentation), 124 (032411 - no record of species; genus record), 140 (Page 305)*

***Selaginella rupincola* L.M. Underwood: Rockloving Spikemoss**

COMMON NAMES: Ledge Selaginella; Rock-loving Spike-moss; Rockloving Spikemoss. DESCRIPTION: Terrestrial perennial forb/herb (slightly creeping, sprawling, decumbent, ascending and/or erect aerial stems 1½ to 3 inches in height); the aerial leaves are gray-green or green. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky summits of peaks; cliffs; rock walls; rocky canyons; rocky canyon walls; rocky canyon sides; canyon bottoms; along crevices in boulders and rocks; shallow soil on bedrock, rock ledges; rocky ridgetops; foothills; rocky hills; rocky hillsides; bouldery, rocky, gravelly and loamy slopes; bases of slopes; bedrock and rocky outcrops; on boulders and rocks; amongst boulders and rocks; bases of boulders and rocks; arroyos; bouldery and rocky seepages; along streams; along creeks; near and in creekbeds; riverbeds; within bouldery drainages; rocky waterfalls; (rocky-sandy) banks of streams; around and in stock tanks, and gravelly riparian areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly and sandy ground and loam ground sometimes reported as growing in the shade, occurring from 100 to 7,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Selaginella rupincola* is native to southwest-central and southern North America. *5, 6, 15, 43 (082810), 44 (040411 - no record of species; genus record), 46 (Page 29), 51 (Page 72, color photograph *34), 63 (082810), **85** (040411 - color presentation), 124 (040411 - no record of species; genus record), 140 (Page 305)*

Division Pteridophyta: The Ferns

CLASS FILICOPSIDA: The FERNS

Pteridaceae: The Maidenhair Fern Family

***Astrolepis cochisensis* (L.N. Goodding) D.M. Benham & M.D. Windham subsp. *cochisensis*: Cochise Scaly Cloakfern**

SYNONYMY: *Notholaena cochisensis* L.N. Goodding; *Notholaena sinuata* (M. Lagasca y Segura ex O. Swartz) G.F. Kaulfuss var. *cochisensis* (L.N. Goodding) C.A. Weatherby. COMMON NAMES: Cloak Fern (Cloak-fern is a name also applied to other species and the genus *Astrolepis*); Cochise's Cloak Fern; Cochise Scaly Cloakfern; Helechillo (Hispanic); Jimmy Fern; Jimmyfern; Narrow Cloakfern; Scaly Cloak Fern; Scaly Star Fern. DESCRIPTION: Terrestrial perennial evergreen

forb/herb (fronds are 3 to 12 inches in length); the leaf blades are olive green or green above and reddish-brown beneath with brown to reddish-brown stipes; sporulation generally takes place summer through fall. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; cliffs; bouldery-sandy and rocky canyons; rocky and sandy canyon walls; talus slopes; bases of cliffs; crevices in rocks; buttes; rocky ledges; rocky and silty-loamy ridges; foothills; hills; rocky and gravelly-loamy hillsides; rocky, stony, gravelly-loamy and clayey-loamy slopes; rocky outcrops; amongst boulders and rocks; on boulders; flats; basins; valley floors; arroyos; rocky draws; along streams; in bouldery streambeds; in rocks along creeks; along and in sandy washes, and riparian areas growing in dry bouldery, bouldery-sandy, rocky, stony and sandy ground and gravelly loam, clayey loam and silty loam ground, occurring from 1,100 to 8,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Astrolepis cochisensis* subsp. *cochisensis* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Notholaena cochisensis* Goodding), 16 (recorded as *Notholaena cochisensis* Goodding), 28 (recorded as *Notholaena cochisensis*, color photograph 9), 43 (081009), 44 (031811 - no record of species or subspecies; genus record), 46 (recorded as *Notholaena sinuata* (Lag.) Kaulf. var. *cochisensis* (Goodding) Weatherby, Page 41), 51 (recorded as *Notholaena cochisensis*, Page 155, color photograph 171), 63 (081009), 77 (recorded as *Notholaena cochisensis* Goodd.), 80 (*Notholaena sinuata* var. *cochisensis* is listed as a Secondary Poisonous Range Plant. "Apparently only the variety *cochisensis* is poisonous. The nature of the poison is unknown but it is excreted in the milk and is not destroyed by drying of the plant. Sheep are most susceptible, especially pregnant ewes, but goats and cattle may be poisoned. ... The danger is greatest from the middle of November through February when other forage is dry and the evergreen fern remains succulent and relatively palatable. ... Losses may be prevented by deferring infested ranges during the danger period or by feeding supplements." See text for additional information.), 85 (082911 - color presentation), 115 (color presentation of species), 122, 124 (031811), 140 (Pages 230 - species & 303)*

***Astrolepis sinuata* (M. Lagasca y Segura ex O. Swartz) D.M. Benham & M.D. Windham (subsp. *sinuata* is the subspecies reported as occurring in Arizona): Wavy Scaly Cloakfern**

SYNONYMY: (for *A.s.* subsp. *sinuata*: *Cheilanthes sinuata* (M. Lagasca y Segura ex O. Swartz) K. Domin; *Notholaena sinuata* (M. Lagasca y Segura ex O. Swartz) G.F. Kaulfuss). COMMON NAMES: Bulb Cloak Fern; Bulb Cloakfern; Calaguala (a name also applied to other species, Spanish: Chihuahua)¹⁴⁰; Canaguala (a name also applied to other species, Hispanic); Cañahuala (Spanish: Chihuahua)¹⁴⁰; Candelilla ("Little Candle", Spanish: Coahuila)¹⁴⁰; Cloak-fern (a name also applied to other species and the genus *Astrolepis*); Doradillo ("Little Golden One", Spanish: Coahuila)¹⁴⁰; Helecho ("Fern" a name applied to ferns, Spanish: Edo. México)¹⁴⁰; Jimmy-fern; Kalawala (Uto-Aztec: Tarahumara)¹⁴⁰; Kalawala (Uto-Aztec: Tarahumara); Má□-la ("Fern", Uto-Aztec: Luiseño)¹⁴⁰; Mási-l'y ("Fern", Uto-Aztec: Cahuilla)¹⁴⁰; Nacahuela (Spanish: Mexico)¹⁴⁰; Star-scaled [Wavy, Wavyleaf, Scaley] Cloak-fern (English)¹⁴⁰; Wavy Cloak Fern; Wavy Cloak-fern; Wavy Cloakfern; Wavy Scaly Cloakfern; Wavy-leaved Star Fern. DESCRIPTION: Terrestrial perennial evergreen forb/herb (fronds are 4 to 52 inches in length); the leaf blades are gray-green, dark green or olive green with reddish-brown or brown stipes; sporulation generally takes place summer through fall. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; along rocky cliffs; cliff faces; rocky and gravelly-loamy canyons; canyon walls; rocky canyon bottoms; rocky gorges; talus slopes; gravelly-loamy bases of cliffs; along crevices in boulders and rocks; pockets of soil on bedrock; rocky knolls; rocky ledges; ridges; ridgetops; foothills; rocky hills; rocky hillsides; bouldery, bouldery-gravelly, rocky, rocky-stony, stony and gravelly-loamy slopes; rocky outcrops; amongst boulders and rocks; rock niches; shaded nooks; lava flows; rocky banks; arroyos; draws; along bedrock ravines; along streams; creekbeds; sandy riverbeds; along rocky and sandy washes; rocky drainages; banks of creeks; rocky margins of seeps, and riparian areas growing in moist and dry bouldery, bouldery-rocky-sandy, bouldery-gravelly, rocky, rocky-stony, gravelly and sandy ground; gravelly loam and sandy-clayey loam ground, and silty ground, occurring from 700 to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Astrolepis sinuata* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and northern, western and southern South America. *5, 6, 15, 28 (recorded as *Notholaena sinuata*, color photograph 10), 30, 43 (052610 - *Astrolepis sinuata* (Lag. ex Sw.) D.M. Benham & Windham, *Cheilanthes sinuata* Domin, *Notholaena sinuata* (Lag.) Kaulf.), 44 (032411 - no record of species; genus record), 46 (recorded as *Notholaena sinuata* (Lag.) Kaulf., Page 41), 51 (*Notholaena sinuata* var. *sinuata* Page 156, color photograph 173), 58, 63 (052610 - color presentation), 77, 85 (052410 - color presentation), 122, 124 (032411 - no record of species; records for subspecies *sinuata* and genus), 140 (Pages 229-230, 232 & 303)*

***Astrolepis sinuata* (M. Lagasca y Segura ex O. Swartz) D.M. Benham & M.D. Windham subsp. *sinuata*: Wavy Scaly Cloakfern**

SYNONYMY: *Cheilanthes sinuata* (M. Lagasca y Segura ex O. Swartz) K. Domin; *Notholaena sinuata* (M. Lagasca y Segura ex O. Swartz) G.F. Kaulfuss. COMMON NAMES: Bulb Cloak Fern; Bulb Cloakfern; Calaguala (a name also applied to other species, Spanish: Chihuahua)¹⁴⁰; Canaguala (a name also applied to other species, Hispanic); Cañahuala (Spanish: Chihuahua)¹⁴⁰; Candelilla ("Little Candle", Spanish: Coahuila)¹⁴⁰; Cloak-fern (a name also applied to other species and the genus *Astrolepis*); Doradillo ("Little Golden One", Spanish: Coahuila)¹⁴⁰; Helecho ("Fern" a name applied to ferns, Spanish: Edo. México)¹⁴⁰; Jimmy-fern; Kalawala (Uto-Aztec: Tarahumara)¹⁴⁰; Kalawala (Uto-Aztec: Tarahumara); Má□-la ("Fern", Uto-Aztec: Luiseño)¹⁴⁰; Mási-l'y ("Fern", Uto-Aztec: Cahuilla)¹⁴⁰; Nacahuela (Spanish: Mexico)¹⁴⁰; Star-scaled [Wavy, Wavyleaf, Scaley] Cloak-fern (English)¹⁴⁰; Wavy Cloak Fern; Wavy Cloak-fern; Wavy Cloakfern; Wavy Scaly Cloakfern; Wavy-leaved Star Fern. DESCRIPTION: Terrestrial perennial evergreen forb/herb (fronds are 4 to 24 inches in length); the leaf blades are

dark green or olive green with reddish-brown or brown stipes; sporulation generally takes place summer through fall. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; along cliffs; cliff walls; gravelly-loamy canyons; canyon bottoms; rocky gorges; talus slopes; bases of cliffs; along crevices in boulders and rocks; rocky ledges; rocky ridges; ridgetops; hills; rocky hillsides; bouldery, rocky, rocky-stony, stony and gravelly-loamy slopes; rocky outcrops; amongst boulders and rocks; rock niches; banks; arroyos; draws; along bedrock ravines; along streams; creekbeds; sandy riverbeds; along rocky and sandy washes; rocky drainages; banks of creeks; (rocky) margins of seeps, and riparian areas in moist and dry bouldery, bouldery-rocky-sandy, rocky, rocky-stony, gravelly and sandy ground and gravelly loam and sandy-clayey loam ground, occurring from 700 to 8,000 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, consider planting with native Selaginella (Spikemosses). *Astrolepis sinuata* subsp. *sinuata* is native to south-central and southern North America; Central America and coastal Caribbean Islands, and northern, western and southern South America. *5, 6, 15, 28 (recorded as *Notholaena sinuata*, color photograph 10), 30, 43 (052610 - *Astrolepis sinuata* (Lag. ex Sw.) D.M. Benham & Windham, *Cheilanthes sinuata* Domin, *Notholaena sinuata* (Lag.) Kaulf.), 44 (112110 - no record of species; genus record), 46 (recorded as *Notholaena sinuata* (Lag.) Kaulf., Page 41), 51 (recorded as *Notholaena sinuata* var. *sinuata* Page 156, color photograph 173), 58, 63 (052510), 77, **85** (052410 - color presentation), 122, 124 (102510), 140 (species, Pages 229-230 & 303)*

***Bommeria hispida* (G.H. Mettenius ex F.A. Kuhn) L.M. Underwood: Copper Fern**

COMMON NAMES: Bommer's Fuzzy Fern; Copper Fern; Hairy Bommeria. DESCRIPTION: Terrestrial perennial evergreen forb/herb (fronds are 2 to 12½ inches in length); the palmate leaf blades are green or yellow-green with light brown, brown or reddish-brown stipes; sporulation generally takes place between summer and fall. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; along shaded cliffs; along canyons; rocky canyon walls; rocky canyon bottoms; rocky talus slopes; bases of cliffs; crevices in rocks; along rocky ledges; under rock ledges; ridges; foothills; rocky hills; rocky hilltops; rocky hillsides; bouldery, bouldery-gravelly, rocky, rocky-gravelly-loamy, gravelly, gravelly-loamy, sandy-clayey-loamy and loamy slopes; bouldery and rocky outcrops; on mossy boulders; amongst boulders and rocks; bases of boulders and rocks; in the shelter of boulders and rocks; rocky shelves; shaded banks; rocky flats; rocky arroyos; rocky ravines; springs, in moist crevices along streams; dry washes; in crevices below waterfalls; around and in stock tanks, and rocky, gravelly and sandy riparian areas growing in moist, damp and dry bouldery, bouldery-gravelly, rocky, rocky-gravelly, gravelly and sandy ground; bouldery-gravelly loam, rocky loam, rocky-gravelly loam, gravelly loam, sandy-clayey loam and loam ground, and forest litter often reported in shaded areas, occurring from 2,200 to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Bommeria hispida* is native to southwest-central and southern North America. *5, 6, 15, 43 (100210 - *Bommeria hispida* (Mett.) Und.), 44 (112110 - no record of species), 46 (Page 37), 51 (Page 173, color photograph 207), 63 (100210 - color presentation), **85** (100310 - color presentation), 122, 124 (102410 - no record of species), 140 (Page 303)*

***Cheilanthes bonariensis* (C.L. von Willdenow) G.R. Proctor: Golden Lipfern**

SYNONYMY: *Notholaena aurea* (J.L. Poiret) N.A. Desvoux. COMMON NAMES: Bonaire Lip Fern, Calaguala (Hispanic), Doradilla (Hispanic), Golden Cloak Fern, Golden Lipfern, Helecho (Hispanic), Kalawala (Tarahumara), Slender Lipfern. DESCRIPTION: Terrestrial perennial evergreen forb/herb (ascending to erect fronds 5½ to 21½ inches in height with plants up to 8 inches in width at base having been reported) the leaf blades are gray, green or dark green above and light brown or white undersides with purplish-black stipes; sporulation generally takes place between summer and fall. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; crevices in cliff faces; rocky, rocky-gravelly and gravelly canyons; canyon sides; rocky canyon bottoms; bases of cliffs; shaded crevices in rocks; ledges; rocky hills; hilltops; bouldery, rocky, rocky-gravelly and gravelly hillsides; rocky and rocky-stony slopes; rocky outcrops; amongst boulders and rocks; bases of boulders; rocky banks; bottoms of draws; rocky gulches; rocky ravines (barrancas); along streams; along streambeds; along creeks; along creekbeds; along rivers; rocky-gravelly drainages; edges of streams, and riparian areas growing in moist and dry bouldery, rocky, rocky-stony, rocky-gravelly and gravelly ground and clay ground often reported as growing in shaded areas, occurring from 1,200 to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Cheilanthes bonariensis* is native to southwest-central and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 15 (recorded as *Notholaena aurea* (Poir.) Desv.), 28 (*Notholaena aurea* is mentioned in note under Wavy Cloak Fern, color photograph), 30, 43 (100410 - *Notholaena aurea* (Poir.) Desv.), 46 (recorded as *Notholaena aurea* (Poir.) Desv., Page 41), 51 (recorded as *Notholaena aurea*, Page 154, color photograph 167), 63 (100410 - color presentation), **85** (100410 - color presentation), 122, 140 (Page 303)*

Cheilanthes lemmonii (see *Notholaena lemmonii*)

***Cheilanthes lindheimeri* W.J. Hooker: Fairyswords**

COMMON NAMES: Canaguala (a name also applied to other species); Fairy Sword; Fairy Swords; Fairy-swords; Fairyswords; Hierba de la Peña ("Sorrow Herb", Spanish: San Luis Potosí)¹⁴⁰; Kalawala; Lindheimer Lip Fern; Lindheimer Lipfern; Lindheimer's Lip Fern. DESCRIPTION: Terrestrial perennial evergreen forb/herb (fronds are 3 to 13½ inches in length); the leaf blades are gray-green or light green above with a brown underside and black-brown, purplish-black or dark reddish-brown stipes; sporulation generally takes place summer through fall. HABITAT: Within the range of this species it has

been reported from mountains; bouldery, bouldery-rocky-gravelly and rocky mountainsides; rocky mesas; along rocky cliff; rock walls; along rocky bases of cliffs and rock walls; rocky and gravelly-loamy canyons; rocky canyon walls; rocky canyon bottoms; talus slopes; crevices in boulders and rocks; rocky buttes; rock ledges; under ledges; bedrock and rocky ridges; ridgetops; rocky foothills; rocky hills; bouldery-gravelly and rocky hilltops; bouldery, rocky, rocky-gravelly, rocky-sandy-loamy and gravelly hillsides; rocky and stony slopes; rocky outcrops; amongst and on boulders and rocks; along bases of boulders and rocks; rocky banks; flats; along roadsides; gulches; springs; along streams; along rocky creeks; along and in creekbeds; along and in rocky washes; within rocky, rocky-gravelly and rocky-gravelly-clayey drainages; (rocky) edges of arroyos; rock shelves; around and in stock tanks; rocky riparian areas and waste places growing in moist, damp and dry bouldery, bouldery-rocky, bouldery-rocky-gravelly, bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy, stony and gravelly ground; rocky-sandy loam and gravelly loam ground, rocky-gravelly clay and clay ground, often reported growing in the shade occurring from 600 to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Cheilanthes lindheimeri* is native to southwest-central and southern North America. *5, 6, 15 (color photograph, Page 93 in habitat with associated species), 28 (color photograph 4), 43 (052610), 44 (031811 - no record of species; genus record), 46 (Page 39), 51 (Pages 145-146, color photographs 156), 58, 63 (052610 - color presentation), 77, **85** (082911 - color presentation including habitat), 122, 124 (032411), 140 (Pages 231 & 303)*

Cheilanthes sinuata (see *Astrolepis sinuata* subsp. *sinuata*)

Cheilanthes standleyi (see *Notholaena standleyi*)

***Cheilanthes villosa* G.E. Davenport ex W.R. Maxon: Villous Lipfern**

COMMON NAMES: Hairy Lipfern; Villous Lip Fern; Villous Lipfern. DESCRIPTION: Terrestrial perennial evergreen forb/herb (fronds are 3 to 14 inches in length), the leaf blades are green with dark brown or purplish-black stipes; sporulation generally takes place from summer through fall. HABITAT: Within the range of this species it has been reported from mountains; rocky cliffs; canyons; talus slopes; crevices in boulders and rocks; rock ledges; rocky ridges; rocky hillsides; rocky slopes; rocky outcrops; amongst boulders and rocks; bases of boulders, and rock niches growing in dry bouldery, rocky and stony ground, occurring from 1,300 to 7,300 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Cheilanthes villosa* is native to southwest-central and southern North America. *5, 6, 15, 43 (062910 - *Cheilanthes villosa* Davenp.), 46 (Page 39), 51 (Page 147, color photograph 160), 63 (062910 - color presentation), **85** (062910 - color presentation of dried material)*

***Cheilanthes wootonii* W.R. Maxon: Beaded Lipfern**

COMMON NAMES: Beaded Lip Fern; Beaded Lip-fern; Beaded Lipfern; Lip Fern (a name also applied to other species and the genus *Cheilanthes*); Wooton Lace Fern; Wooton Lip Fern; Wooton Lip-fern; Wooton's Lace Fern; Wooton's Lacefern; Wooton's Lip Fern; Wooton's Lip-fern; Wooton's Lipfern. DESCRIPTION: Terrestrial perennial evergreen forb/herb (fronds are 3 to 15½ inches in length); the leaf blades are yellow-green (when young) or dark green (with age) with pale brown stipes; sporulation generally takes place between summer and fall. HABITAT: Within the range of this species it has been reported from mountains; cliffs; cliff faces; rocky walls; bases of rock walls; rocky canyons; along rocky canyon walls; bedrock and rocky canyon bottoms; gorges; loamy crevices in boulders and rocks; rocky ledges; under rock ledges; bouldery foothills; rocky hills; rocky hillsides; bouldery, bouldery-rocky, rocky, gravelly, gravelly-loamy and silty-loamy slopes; bouldery bajadas; rocky outcrops; amongst boulders and rocks; bases of boulders and rocks; banks; draws; gulches; along bedrock, bouldery-gravelly and rocky ravines; seeps; springs; along streams; bouldery and gravelly streambeds; along and in creeks; along and in rocky washes; along and in bouldery drainages; (rocky) banks of streams and creeks; rock shelves; around and in stock tanks, and riparian areas growing in dry bouldery, bouldery-rocky, bouldery-rocky-gravelly, bouldery-gravelly, rocky and gravelly ground; rocky loam, gravelly loam and silty loam ground, and on rotting logs often growing in shaded and sheltered areas, occurring from 1,300 to 9,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. This plant may be difficult to distinguish from *Cheilanthes yavapensis*. *Cheilanthes wootonii* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (081109 - presents an alternate spelling: *Cheilanthes wootoni* Maxon), 44 (031811), 46 (Page 39), 51 (Page 146, color photographs 158), 58, 63 (081109 - color presentation), 77, **85** (083011 - color presentation), 122, 124 (031811), 127, 140 (Page 303)*

***Cheilanthes wrightii* W.J. Hooker: Wright's Lipfern**

COMMON NAMES: Wright Lipfern; Wright's Lip Fern; Wright's Lipfern. DESCRIPTION: Terrestrial perennial evergreen forb/herb (fronds are 1½ to 10 inches in length); the leaf blades are green with brown to dark brown stipes; sporulation generally takes place between summer and fall. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rock cliffs; bases of cliffs; rocky canyons; rocky canyon walls; bouldery and rocky canyon bottoms; chasms; talus slopes; soil filled crevices in rocks; rocky ledges; rocky ridges; ridgetops; foothills; rocky hills; hilltops; bouldery and rocky hillsides; along bouldery, rocky and rocky-gravelly-clayey slopes; bouldery and rocky outcrops; amongst rocks; on boulders; bases of boulders and rocks; rocky nooks; shady and mossy banks; within bedrock and rocky arroyos; draws; rocky ravines; along streams; streambeds; within rocky washes; rocky-gravelly drainages; soil pockets in

depressions; rocky shelves; bottomlands, and rocky riparian areas growing in moist and dry bouldery, rocky, rocky-gravelly and gravelly ground; gravelly-sandy loam and sandy-clayey loam ground, and rocky-gravelly clay and gravelly clay ground, occurring from 900 to 7,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Cheilanthes wrightii* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (081109), 44 (031911 - no record of species; genus record), 46 (Page 40), 51 (Page 141, color photograph 144), 58, 63 (081109 - color presentation), 77, 85 (083011 - color presentation of dried material), 122, 124 (031911 - no record of species; genus record), 140 (Page 303)*

Notholaena aurea (see *Cheilanthes bonariensis*)

Notholaena cochisensis (see *Astrolepis cochisensis* subsp. *cochisensis*)

***Notholaena lemmonii* D.C. Eaton: Lemmon's Cloak Fern**

SYNONYMY: *Cheilanthes lemmonii* (D.C. Eaton) K. Domin. COMMON NAMES: Lemmon Cloak Fern; Lemmon's Cloak Fern. DESCRIPTION: Terrestrial perennial evergreen forb/herb (fronds are 3 to 14 inches in length); the leaf blades are green with black, dark brown or purplish-black stipes; sporulation generally takes place between summer and fall. HABITAT: Within the range of this species it has been reported from mountains; cliffs; canyons; crevices in rocks; rocky slopes; rocky outcrops; amongst boulders and rocks, and bases of boulders, occurring from 600 to 6,000 feet in elevation in the woodland and grassland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Notholaena lemmonii* is native to southwest-central and southern North America. *5, 6, 8, 15, 43 (040312), 46 (Page 42), 51 (Pages 157-158, color photograph 176 labeled *Notholaena lemmonii* var. *lemmonii*), 63 (color presentation), 85 (color presentation), 140 (Page 303), HR*

Notholaena sinuata (see *Astrolepis sinuata* subsp. *sinuata*)

Notholaena sinuata var. *cochisensis* (see *Astrolepis cochisensis* subsp. *cochisensis*)

***Notholaena standleyi* W.R. Maxon: Star Cloak Fern**

SYNONYMY: *Cheilanthes standleyi* (W.R. Maxon) J.T. Mickel. COMMON NAMES: Cloak Fern (a name also applied to the genus *Notholaena*); [Star] Cloak Fern (English)¹⁴⁰; Cloak-fern; Hehe Quina ("Hairy Plant", Seri)¹⁴⁰; Helecho ("Fern", Spanish)¹⁴⁰; Rock Fern (English)¹⁴⁰; Standley Cloak Fern; Standley's Cloak Fern; Star Cloak Fern; Star Cloak-fern; Star Cloakfern. DESCRIPTION: Terrestrial perennial evergreen forb/herb (fronds are 2 to 13 inches in length with the star-shaped laminae being 1 to 4 inches in width; one clump was observed and described as being up to 8 inches in width); the leaf blades are a shiny dark green above (with a cream-white, gold, silvery-yellow, yellow or yellow-green waxy-looking glandular exudate below) with brown or reddish-brown stipes; sporulation generally takes place between late spring and fall. HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; rocky mountainsides; rocky cliffs; along bases of cliffs; bouldery and rocky canyons; canyon walls; bouldery canyon bottoms; rocky gorges; along crevices in rimrock, boulders and rocks; buttes; bouldery-gravelly knobs; rocky knolls; rocky and sandy ledges; under rocky ledges; rocky ridges; foothills; hills; rocky hilltops; bouldery and rocky hillsides; bouldery, bouldery-gravelly, rocky, rocky-gravelly-clayey, rocky-sandy-clayey-loamy, rocky-loamy-silty, sandy-loamy and loamy slopes; bajadas; boulder and rocky outcrops; amongst boulders, broken rocks and rocks; bases of boulders and rocks; hidden beneath overhanging rocks; sandy lava flows; bouldery lava beds; shaded pockets; bouldery prairies; along rocky arroyos; within rocky draws; gulches; rocky ravines; creekbeds; in bouldery-sandy and sandy washes; drainages; rocky banks of washes, and riparian areas growing in dry rimrock; bouldery, bouldery-gravelly, bouldery-sandy, rocky and sandy ground; rocky-sandy-clayey loam, gravelly loam, sandy loam, silty loam and loam ground; rocky-gravelly clay ground, and rocky-loamy silty ground, occurring from 900 to 8,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, it is commonly found growing in clumps. *Notholaena standleyi* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 11), 43 (081109), 44 (031911 - no record of species; genus record), 46 (Page 42), 51 (Page 157, color photograph 174), 58, 63 (081109 - color presentation), 85 (083011 - color presentation), 115 (color presentation), 124 (031911), 140 (Pages 229, 231-232 & 303)*

Pellaea longimucronata (see *Pellaea truncata*)

Pellaea ternifolia var. *wrightiana* (see *Pellaea wrightiana*)

***Pellaea truncata* L.N. Goodding: Spiny Cliffbrake**

SYNONYMY: *Pellaea longimucronata* auct. non W.J. Hooker. COMMON NAMES: Calaguala (Spanish: Mexico)¹⁴⁰; Cliff Brake (a name that is also applied to the genus *Pellaea*); Cliff-brake Fern (a name also applied to the genus *Pellaea*); Spiny Cliff Brake (English)¹⁴⁰; Spiny Cliff-brake; Spiny Cliffbrake. DESCRIPTION: Terrestrial perennial evergreen forb/herb (ascending fronds are 3 to 16½ inches in length); the leaf blades are blue-green or gray-green with chestnut-brown, reddish or red-brown stipes; sporulation generally takes place from late spring to fall. HABITAT: Within the range of this species it has been reported from mountains; crags; mountainsides; rocky cliffs; cliff walls; niches and crevices in rock cliffs; along bases of

cliffs; bouldery and rocky canyons; along canyon walls; along rocky canyon bottoms; rocky gorges; talus slopes; crevices in boulders and rocks; pockets of sandy soil in boulders; rocky bluffs; rock ledges; under rocky ledges; ridgelines; foothills; rocky hills; bouldery-rocky and rocky hillsides; bouldery, bouldery-rocky, bouldery-gravelly, rocky, gravelly, gravelly-loamy, sandy, sandy-clayey-loamy and clayey slopes; bajadas; bouldery and rocky outcrops; amongst boulders and rocks; along bases of boulders and rocks; basins; rocky arroyos; rocky draws; gulches; ravines; seeps; along streams; bouldery, rocky and sandy streambeds; along creeks; along rivers; along and in bouldery-sandy and sandy washes; within drainages; bog-like areas; gravelly swales; banks of creeks; edges of streambeds and rivers; sandy benches; silty-loamy terraces, and bouldery riparian areas growing in dry bouldery, bouldery-rocky, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; bouldery loam, bouldery-rocky loam, rocky loam, rocky-gravelly loam, gravelly-sandy loam and silty loam ground, and rocky clay and clay ground, occurring from 600 to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Pellaea truncata* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 13), 43 (081209), 44 (090311), 46 (recorded as *Pellaea longimucronata* Hook., Page 38), 51 (Page 169, color photograph 201), 63 (081209 - color presentation), 77, **85** (090311 - color presentation including habitat), 115 (color presentation), 124 (090311 - no record of species; genus record), 140 (Pages 232-234 & 303)*

***Pellaea wrightiana* W.J. Hooker: Wright's Cliffbrake**

SYNONYMY: *Pellaea ternifolia* (A.J. Cavanilles) J.H. Link var. *wrightiana* (Hook.) A.F. Tyron. COMMON NAMES: Cliff Brake (a name also applied to other species and the genus *Pellaea*); Cliff-brake (a name also applied to other species and the genus *Pellaea*); Wright Cliffbrake; Wright's Cliff Brake; Wright's Cliff-brake; Wright's Cliff-brake Fern (North Carolina); Wright's Cliffbrake. DESCRIPTION: Terrestrial perennial evergreen forb/herb (fronds are 2½ to 18½ inches in length); the leaf blades may be bluish-green, gray-green or green with dark chestnut-brown stipes; sporulation generally takes place from summer to fall. HABITAT: Within the range of this species it has been reported from mountains; cliffs; hanging gardens; rocky bases of cliffs; rocky canyons; rocky canyon walls; canyon bottoms; bouldery talus slopes; crevices in boulders and rocks; rocky tops of buttes; rocky ledges; rocky hills; bouldery and rocky hillsides; bouldery, bouldery-rocky, bouldery-gravelly, rocky, rocky-gravelly-loamy, gravelly and gravelly-loamy slopes; bouldery bases of slopes; rocky outcrops; amongst boulders and rocks; around and on boulders and rocks; bases of rocks; under overhanging boulders, rocks and fallen logs; niches in rock walls; bouldery-gravelly-sandy flats; along streams; in rocky streambeds; along creeks; along and in washes; along and in sandy drainages; small water pockets; (rocky) banks of washes; riparian areas, and disturbed areas growing in leaf litter and wet, moist and dry bouldery, bouldery-rocky, bouldery-gravelly, bouldery-gravelly-sandy, rocky, gravelly and sandy ground; rocky-gravelly loam and gravelly loam ground, and clay ground, occurring from 900 to 9,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Pellaea wrightiana* is native to south-central and southern North America. *5, 6, 15, 28 (recorded as *Pellaea ternifolia* var. *wrightiana*, color photograph 12), 43 (032411 - *Pellaea ternifolia* var. *wrightiana* (Hook.) A.F. Tyron), 44 (032411 - no record of species; *P.w.* subsp. *californica* and genus records), 46 (Page 38), 51 (Pages 168-169, color photograph 200), 63 (032411 - color presentation), 77 (recorded as *Pellaea ternifolia* (Cav.) Link var. *wrightiana* (Hook.) A.F. Tyron), **85** (032511 - color presentation), 124 (032411), 140 (Pages 234 & 303)*

Superdivision Spermatophyta: The Seed Plants

Division Coniferophyta: The Conifers

CLASS PINOPSIDA: The CONIFERS

Cupressaceae: The Cypress Family

***Juniperus deppeana* E.G. von Steudel: Alligator Juniper**

SYNONYMY: *Juniperus deppeana* Steud. var. *pachyphlaea* (J. Torrey) M. Martínez. COMMON NAMES: Agoziza (Sonora); Alligator Bark Juniper; Alligator Juniper (var. *deppeana*); Aóri (Uto-Aztec: Guarijío)¹⁴⁰; Awari <awori-ki, aori> (Uto-Aztec: Tarahumara)¹⁴⁰; [Ban] Ga'a (Uto-Aztec: Mountain Pima); Cedar (English)¹⁴⁰; Cedro (Spanish); Cedro Chino ("Curly Cedar", Spanish: Puebla)¹⁴⁰; Cedro Chivo ("Goat Cedar", Spanish: New Mexico)¹⁴⁰; Checker Bark Juniper; Checker-bark Juniper (var. *deppeana*); Checkerbark Juniper; Dilt'áhi ("Popping Bark", Athapascan: Navajo)¹⁴⁰; Diltálé <tatlé>, <diltálétchéi'> ("Popping Bark", Athapascan: Western Apache)¹⁴⁰; Gad <kat> (Athapascan: Navajo)¹⁴⁰; Gad [Izee] (Athapascan: Western Apache)¹⁴⁰; Gayi (Uto-Aztec: Northern Tepehuan)¹⁴⁰; Hohu (Uto-Aztec: Hopi)¹⁴⁰; Huata (Spanish: Sonora)¹⁴⁰; Juniper (English)¹⁴⁰; Kálhtē (Athapascan: Jicarilla Apache)¹⁴⁰; Kneumapee (Uto-Aztec: ?Hopi)¹⁴⁰; Mexican Sandarac

(English)¹⁴⁰; Pal (Hokan: Washo); Robust Juniper (var. *robusta*); Sabino (Spanish)¹⁴⁰; Samapi (Uto-Aztecan: Panamint)¹⁴⁰; Sperry's Juniper (var. *sperryi*); Tahkali (Uto-Aztecan: Yaqui)¹⁴⁰; Talehtsai ("Large Juniper", Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Táscale <tásate, taxcate> (Uto-Aztecan: Mountain Pima - Chihuahua, Durango, Sonora)¹⁴⁰; Tascate (Spanish: Mountain Pima)¹⁴⁰; Táscate (Spanish: Chihuahua and Durango); Táscate Blanco (Spanish); Tc'auka (Yuman: Havasupai)¹⁴⁰; Tcóq <joq> (Yuman: Walapai)¹⁴⁰; Tlascal <tlaxcal> (Spanish: Hildago)¹⁴⁰; Tlásçal (or Tlaxcal, Spanish: Hildago)¹⁴⁰; Wa'a^s (Uto-Aztecan: Southern Paiute); Wa□ápu <wap> (Uto-Aztecan: Ute)¹⁴⁰; Wa□at (Uto-Aztecan: Luiseño)¹⁴⁰; Wa'p (Uto-Aztecan: Mono); Wa'pi [Wap, Wa'ap] ("To Burn", Uto-Aztecan: Shoshoni)¹⁴⁰; Wá'pi (Uto-Aztecan: Northern and Western Paiute); Wap (Uto-Aztecan: Comanche); Western Juniper (var. *deppeana*); Yuyily, Iswat (Uto-Aztecan: Cahuilla)¹⁴⁰; Zacatecas Juniper (var. *zacatecensis*). DESCRIPTION: Terrestrial perennial evergreen shrub or tree (6 to 99 feet in height with a dense, spreading crown; one tree was observed and described as being 25 feet in height with a crown 30 feet in diameter, one tree was observed and described as being 33 feet in height with a crown 26 feet in diameter); trunk bark, exfoliating in rectangular plates, may be light gray, gray, dark gray or gray brown; the branch bark may be gray-green or light green; the scale-like leaves may be blue-green, bluish-green or green; pollen is shed from late winter to early spring (cones opening February through March); seed cones (3/8 to 3/4 inch in diameter) maturing blue, bluish or green to copper-brown, green-brown, red-brown, dark reddish-brown, red-tan, reddish-tan or rose-brown. HABITAT: Within the range of this species it has been reported from rocky mountains; rocky mountaintops; sandy-humusy mountainsides; rocky mesas; rocky canyons; rocky canyon walls; rocky canyon bottoms; gravelly clearings in forests and woodlands; meadows; ridges; ridgetops; rocky foothills; rocky hills; rocky hillsides; rocky, rocky-clayey, rocky-humusy, gravelly, gravelly-loamy, sandy, clayey and clayey-loamy slopes; rocky bottoms of slopes; rocky outcrops; amongst rocks; sandy valley floors; sandy valley bottoms; along roadsides; rocky arroyos; bottoms of arroyos; gulches; within ravines; springs; in sand along streams; along streambeds; riverbeds; along and in rocky, gravelly and sandy washes; (rocky) banks of streams, streambeds and creeks; edges of creekbeds; washes and swamps; rocky benches; rocky terraces; bottomlands; lowlands; gravelly riparian areas, and disturbed areas growing in wet, moist, damp and dry rocky, cindery, gravelly and sandy ground; gravelly loam, gravelly-clayey loam and clayey loam ground; rocky clay and clay ground, and rocky humusy and sandy humusy ground, occurring from 3,000 to 9,600 feet in elevation in the forest, woodland, scrub, grassland and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat with the older trees having considerable character and is the largest of the southwestern Junipers. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or beverage crop; it was also noted that the dead wood was used for fuel. Elk (*Cervus elaphus*), Mule Deer (*Odocoileus hemionus*) and Coues' White-tailed Deer (*Odocoileus virginianus* subsp. *couesi*) browse this plant, and birds and mammals, including Coyotes (*Canis latrans*), Elk (*Cervus elaphus*), deer, Wild Turkey (*Meleagris gallopavo* (including subsp. *mexicana* (Gould's Wild Turkey))) and Collard Peccary (*Peccari tajacu*), feed on the berry-like cones. *Juniperus deppeana* is native to southwest-central and southern North America (var. *deppeana* is native to southwest-central and southern North America). *5, 6, 18, 26 (genus), 28 (color photograph 31), 43 (121510 - *Juniperus deppeana* var. *pachyphlaea* (Torr.) Martínez), 44 (121510), 46 (recorded as *Juniperus deppeana* Steud. var. *pachyphlaea* (Torr.) Martínez, Page 59), 48, 52 (color photographs), 53, 63 (121610 - color presentation), 68, 80 (Species of the genus *Juniperus* are listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "Forced use of these coniferous trees may result in abortion in livestock, especially when downed trees or lopped branches are available."), 85 (121810 - color presentation), 115 (color presentation), 124 (121510 - no record of species; genus record), 126, 127, 140 (Pages 126-127 & 290), **WTK** (August 6, 2005)*

Juniperus deppeana var. *pachyphlaea* (see *Juniperus deppeana*)

Pinaceae: The Pine Family

Pinus cembroides var. *bicolor* (see *Pinus discolor*)

***Pinus discolor* D.K. Bailey & F.G. Hawksworth: Border Pinyon**

SYNONYMY: *Pinus cembroides* J.G. Zuccarini var. *bicolor* E.L. Little. COMMON NAMES: A'ko (for the seeds, Yuman: Mojave); Border Pinyon; Cha'ol <ca'ol and c'a o-l> [Deetstsiin] ("Pinyon", Athapascan: Navajo); He'sho Tsi'tonné ("Gum Branch", Language Isolate: Zuni, New Mexico); Huk ("Pines" a name applied to the Pines in general, Uto-Aztecan: Akimel O'odham and Tohono O'odham); Huk (Uto-Aztecan: Mountain Pima); Huwál ("Pines" a name applied to the Pines in general, Yuman: Havasupai, Arizona); Hwio (Yuman: Yuma); Išikuri (a name applied to the Mexican Pinyon (*Pinus cembroides*), Uto-Aztecan: Tarahumara); Ixalúwi ("Pines" a name applied to the Pines in general, Yuman: Maricopa, Arizona); İzēnchí (Athapascan: Jicarilla Apache); Ništci <nictci> (Athapascan: Chiricahua, Jicarilla and Mescalero Apache); Nnai ("Pines" a name applied to the Pines in general, Yuman: Paipai); Nut Pine; Obé ("Pinyon Nut", Athapascan: Western Apache); Obé'tsin <obé'chin> ("Pinyon Nut", Athapascan: Western Apache); Obi ("Pinyons", Uto-Aztecan: Paiute); Oco ("Pines" a name applied to the Pines in general, Uto-Aztecan: Tarahumara); Ocosaguar ("Pines" a name applied to the Pines in general, Uto-Aztecan: Ópata, Sonora); Pine (a name also applied to other species); Pino (Spanish: Sonora); Piñon (Spanish: Sonora); Piñonero (Spanish: Sonora); Pinyon; Pinyon Pine; Tak ("Pines" a name applied to the Pines in general, Chumash: Barbareño Chumash); Ti'bawara (Uto-Aztecan: Shoshoni, the seed is called ti'ba); Ti'va□ (Uto-Aztecan: Southern Paiute); Tiba-t [T□ba-t] (Uto-Aztecan: Tübatulabal); T□pav□ (Uto-Aztecan: Kawaiisu); Tivat <téva-t and tewat> ("Pinyon", Uto-Aztecan: Cahuilla); Tlágū-m (Hokan: Washo); To (Kiowa Tanoan: Tewa); Tomol ("Pines" a name applied to the Pines in general, Chumash: Ineseño Chumash);

Ts□k□n□n (“Pines” a name applied to the Pines in general in general, Chumash: Ventureño Chumash); Tūvaq’ □ [Tūvápi] (Uto-Aztecan: Northern Paiute); Wa□ápu (also applied to *Juniperus*, Uto-Aztecan: Ute); Wahappin (Uto-Aztecan: Panamint); Wohkó (Uto-Aztecan: Guarijío); Woko (Uto-Aztecan: Yaqui); Wónūp (Uto-Aztecan: Mono); Xivatí (Oto-Manguean: Mazahua). DESCRIPTION: Terrestrial perennial evergreen tree (12 to 33 feet in height, one tree was observed and reported to be 26 feet in height and 13 feet in width); the bark is blackish, blackish-gray, brown, dark gray or reddish-brown; the twigs are red-brown aging to gray or gray-brown; the needles (1 to 2 inches in length in bundles of 3 to 4) are dull green, dark green or yellow-green. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky mesas; plateaus; rocky canyons; rocky canyon walls; rocky canyon bottoms; rocky ridges; foothills; rolling hills; rocky hillsides; rocky, rocky-loamy and gravelly slopes; amongst boulders; draws; gulches; along streams; along streambeds; in rocky-sandy washes; drainages, and riparian areas growing in dry bouldery, rocky and shaley ground and rocky loam ground, occurring from 2,200 to 8,200 feet in elevation in the forest, woodland, scrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The seeds are eaten by birds, squirrels, rodents and other wildlife. *Pinus discolor* is native to southwest-central and southern North America. *5, 6, 15, 26 (genus), 43 (100510 - *Pinus cembroides* Zucc., *Pinus cembroides* var. *bicolor* Little), 44 (112110 - no record of species), 46 (no record of species; genus, Pages 50-55 includes *Pinus cembroides* Zucc. on Page 52), 63 (100510), 85 (100610 - redirected to *Pinus cembroides*, color presentation), 115 (color presentation including habitat), 124 (102410 - no record of species), 134, 140 (Pages 122, 191-192 & 298)*

Division Gnetophyta: The Gnetophytes

CLASS GNETOPSIDA: The GNETOPS

Ephedraceae: The Mormon-tea Family

***Ephedra trifurca* J. Torrey ex S. Watson: Longleaf Joint-fir**

COMMON NAMES: Brigham Young Tea (a name also applied to other species and the genus *Ephedra*); Cañatilla [Canatilla] (“Cane or Little Pipe”, Spanish: Arizona and Texas)¹⁴⁰; Canutillo (a name also applied to other species); Canutillo [del Campo] (“[Wild] Cane or Little Pipe”, Spanish: New Mexico, Sonora)¹⁴⁰; Desert Ephedra; Desert Joint-fir; Desert Jointfir; Ephedra Tea; Hierba de la Coyuntura (“Jointed Herb”, Spanish: Mexico)¹⁴⁰; □I:šiw (Yuman: Cocopa)¹⁴⁰; Itama Real; Itamo Real (“Royal Spurge” a name also applied to other species, Spanish: Coahuila)¹⁴⁰; Joint Fir (English)¹⁴⁰; Joint Fir (a name also applied to other species and the genus *Ephedra*); Jumway (Yuman: Walapai)¹⁴⁰; Kanutio (Yaqui); Ku:pag (Uto-Aztecan: Tohono O’odham)¹⁴⁰; Ku:pag <ku’upok> (Uto-Aztecan: Hiá Ce□ O’odham)¹⁴⁰; Kuupag (Uto-Aztecan: Akimel O’odham)¹⁴⁰; Kuuvid Nonovi <koovit nawnov> (“Pronghorn’s Foreleg”, Uto-Aztecan: Akimel O’odham)¹⁴⁰; Long Leaf Ephedra; Long-leaf Ephedra; Long-leaf Jointfir; Long-leaf Mormon Tea; Long-leaf Mormon-tea; Long-leafed Ephedra; Long-leafed Joint-fir; Long-leafed Ephedra; Long-leafed Joint Fir; Long-leafed Joint-fir; Long-leafed Jointfir; Longleaf Desert Tea; Longleaf Ephedra; Longleaf Joint-fir; Longleaf Jointfir; Longleaf [Ephedra, Desert, Mexican, Mormon, Teamster’s] Tea (English)¹⁴⁰; Mexican Tea (a name also applied to other species and the genus *Ephedra*); Mexican-tea (a name also applied to other species); Mexican Mormon Tea; Mexican Mormon-tea; Mexican-tea; Mormon Tea (a name also applied to other species and the genus *Ephedra*); Mountain Rush (English)¹⁴⁰; Ösvi <□sivi> (Uto-Aztecan: Hopi)¹⁴⁰; Popotilla (Hispanic); Popotillo (a name also applied to other species and the genus *Ephedra*, Spanish: Chihuahua, New Mexico, Texas)¹⁴⁰; Sudupi (Uto-Aztecan)¹⁴⁰; Tepopote (Spanish: northeastern Baja California, Chihuahua, Coahuila, Sonora, Texas)¹⁴⁰; Teposote (Hispanic); Three-fork Ephedra (English)¹⁴⁰; Three-forked Ephedra; Threefork Ephedra; Tl’oh ‘azihii (Athapascan: Navajo)¹⁴⁰; Tułbái <tulbil bida> (“Gray Water”, Athapascan: Western Apache)¹⁴⁰; Tuttumpi (Uto-Aztecan: Panamint)¹⁴⁰; Tuttumpin (Uto-Aztecan: Shoshoni)¹⁴⁰; Tutut (Uto-Aztecan: Cahuilla)¹⁴⁰; Tütüpüvü (Uto-Aztecan: Ute)¹⁴⁰; Tūvūt (Uto-Aztecan: Cupeño, Luiseño)¹⁴⁰; U’us Ti <oo-oosti> (“Sticks Tea”, Uto-Aztecan: Akimel O’odham)¹⁴⁰. DESCRIPTION: Terrestrial perennial evergreen shrub (20 inches to 16½ feet in height; one plant was observed and described as being 3 feet in height with a crown 5 feet in width); the stems are blue-green, green, olive-green or yellow-green; the twigs are light green turning yellow and finally gray with age; the leaves have been reduced to scales in whorls of three located at the nodes; the tiny flowers are pale yellow with male and female flowers occurring on separate plants; the production of the tan-brown strobili (female and male cones) generally takes place between early February and early June (additional records: one for mid-January and one for late July). HABITAT: Within the range of this species it has been reported from mountains; bases of mountains; gravelly mesas; canyons; clayey ridges; rocky ridgetops; foothills; rocky and gravelly hills; hilltops; rocky hillsides; knolls; rocky, rocky-gravelly, gravelly, gravelly-loamy and sandy slopes; rocky-sandy and gravelly-sandy alluvial fans; sandy bajadas; rocky outcrops; gravelly lava hills; sand hills; sand dunes; ridges of sand dunes; inter-dune swales; rocky, rocky-gravelly and sandy plains; rocky, gravelly and sandy flats; sandy basins; valley floors; roadcuts; along rocky, rocky-sandy, gravelly, gravelly-clayey-loamy and sandy roadsides; within sandy arroyos; riverbeds; along and in rocky, sandy and sandy-silty washes; within drainages; (rocky, gravelly-sandy-loamy and sandy) banks of arroyos, rivers and washes; edges of rivers and swales; (sandy) margins of lakes; gravelly terraces; bottomlands; floodplains; lowlands; along canals; riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground;

gravelly loam, gravelly-sandy loam and gravelly-clayey loam ground; clay ground, and sandy silty ground, occurring from sea level to 6,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and may live to be 50 years of age. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. This plant is valuable as a soil binder. This plant is browsed by Bighorn Sheep. *Ephedra trifurca* is native to southwest-central and southern North America. *5, 6, 13 (Pages 379-380), 15, 16, 18, 28 (color photograph 483 A&B), 43 (081209), 44 (031911), 46 (Page 61), 48 (genus), 58, 63 (081209 - color presentation), 77, 85 (082911 - color presentation), 91 (Pages 196-197), 124 (031911 - no record of species; genus record), 127, 140 (Pages 130-131 & 291), **HR***

Division Magnoliophyta: The Flowering Plants

CLASS LILIOPSIDA: The MONOCOTS

Agavaceae: The Century-plant Family

***Agave chrysantha* R.H. Peebles: Goldenflower Century Plant**

SYNONYMY: *Agave palmeri* G. Engelm. var. *chrysantha* (R.H. Peebles) E.L. Little ex L.D. Benson. COMMON NAMES: Agave (a name also applied to other species, the genus *Agave* and the Agavaceae); Apache Trail Agave; Golden Flowered Agave; Golden-flower Agave; Golden-flowered Agave; Golden-flowered Century Plant; Goldenflower Century Plant. DESCRIPTION: Terrestrial perennial evergreen leaf-succulent forb/herb, subshrub or shrub (acaulescent 20 to 40 inches in height and 1 to 6 feet in diameter with a flowering stem reaching to 6½ to 23 feet in height); the spreading to ascending leaves may be light blue-glaucous green, blue-gray-green, bluish-green, gray-green, gray-dark green (bluish), dark gray-green, grayish, pale green, green, dark green, green-gray, green-yellow, dark-green-gray, red or reddish (when in flower), yellow-green, yellow-glaucous green or yellowish-green and sometimes tinged with maroon; the flowers may be light cream, cream, golden-yellow, orange-yellow, white, pale yellow, yellow or yellow-orange; the anthers may be light brown, golden-yellow, lemon-yellow, white, light yellow or yellow; the stigma may be a deep orange-yellow; flowering generally takes place between late May and late August (additional records: four for early May, one for late September and one for mid-October. HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; cliff faces; canyon bottoms; rocky knolls; rocky ledges; rocky ridges; ridgetops; foothills; rocky hills; hilltops; rocky and silty hillsides; bouldery and rocky slopes; bajadas; bedrock and rocky outcrops; amongst boulders; bouldery debris flows; rocky-clayey plains; bouldery flats; rocky roadsides, and within rocky-gravelly drainages growing in dry bouldery, rocky, rocky-gravelly, gravelly and sandy ground; rocky clay and clay ground, and silty ground, occurring from 2,300 to 7,000 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Hummingbirds have been observed visiting the flowers. *Agave chrysantha* is native to southwest-central North America. *5, 6, 13 (recorded as *Agave palmeri* Engelm. var. *chrysantha* (Peebles) Little, Page 76), 15, 17, 28 (color photograph 137), 43 (032511), 44 (032511 - no record of species; genus record), 45 (color photograph), 46 (Page 195), 48 (genus), 63 (032511), 85 (032511 - color presentation including habitat), 91 (Pages 45-47), 124 (032511 - no record of genus or species), 115 (color presentation), **WTK** (August 6, 2005)*

Agave palmeri var. *chrysantha* (see *Agave chrysantha*)

***Agave schottii* G. Engelm. var. *schottii*: Schott's Century Plant**

COMMON NAMES: A'u□ <'a'udh, a'o't> (Uto-Aztec: Tohono O'odham)¹⁴⁰; Agave (a name also applied to the species, other species and to the genus *Agave*); Amole ("Soap", Spanish: Sonora)¹⁴⁰; Amolillo <amoliyo> ("Little Soap", Spanish: Sonora)¹⁴⁰; Century Plant (a name also applied to other species); Century Plant (English)¹⁴⁰; Chugilla [Churiqui] (Spanish: Mountain Pima)¹⁴⁰; Maguey (Spanish)¹⁴⁰; Mayi (Uto-Aztec: Mountain Pima)¹⁴⁰; Schott Agave (a name also applied to the species); Schott's Century Plant (English: New Mexico)¹⁴⁰; Shin Dagger (English)¹⁴⁰; Shin Digger; 'Utko Je:j ("Mother's Stalks", Uto-Aztec: Hiá Cē□ O'odham)¹⁴⁰. DESCRIPTION: Terrestrial perennial evergreen leaf-succulent forb/herb, subshrub or shrub (8 to 16 inches and 14 inches in diameter with a flowering stem reaching 5 to 13 feet in height); the leaves are green, green-yellow or yellowish-green; the flowers are cream-yellow or yellow; the anthers may be light yellow, yellow or deep yellow; the stigmas are yellow; flowering generally takes place between mid-May and late November. HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; rocky canyon bottoms; ridgetops; rocky hills; rocky hillsides; rocky, rocky-sandy-loamy and gravelly slopes; rocky outcrops; bajadas, and riparian areas growing in dry rocky, rocky-gravelly and gravelly ground and rocky-sandy loam ground, occurring from 3,000 to 7,000 feet in elevation in the woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The sweet scented flowers are visited by bees, hummingbirds and wasps. The Southern Long-nosed Bat (*Leptonycteris curasoae* subsp. *yerbabuena*) is reported to be a pollinator of the Schott Agave. The species, *Agave schottii*, was reported to

have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Agave schottii* var. *schottii* is native to southwest-central and southern North America. *5, 6, 13 (Page 68, color photograph of species: Plate K.1., Page 398), 17, 43 (062310), 44 (122010 - no record of species), 45 (species, color photograph of species), 46 (Page 192), 48 (genus), 63 (062310), **85** (122010 - color presentation of dried material), 124 (122010 - no record of species), 127, 140 (Pages 33 & 281 - species), **WTK** (August 6, 2005)*

***Agave schottii* G. Engelmann var. *treleasei* (J.W. Toumey) T.H. Kearney & R.H. Peebles: Trelease's Century Plant**

COMMON NAMES: Agave (a name also applied to the species, other species and to the genus *Agave*); Schott Agave (a name also applied to the species); Trelease Agave; Trelease's Century Plant; Trelease Shindagger. DESCRIPTION: Terrestrial perennial evergreen leaf-succulent forb/herb, subshrub or shrub (8 to 20 inches in height with a flowering stem reaching 6 to 13 feet in height); the leaves are dark green; the flowers are deep yellow; the anthers are yellow; the stigmas are yellow; flowering generally takes place between May and October. HABITAT: Within the range of this species it has been reported from mountains; rocky slopes, and rocky outcrops growing in dry rocky and gravelly ground, occurring from 3,600 to 6,600 feet in elevation in the woodland and grassland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Southern Long-nosed Bat (*Leptonycteris curasoae* subsp. *yerbabuena*) is reported to be a pollinator of the Schott Agave and may be a pollinator of the Trelease Agave. *Agave schottii* var. *treleasei* is native to southwest-central North America. *5, 6, **8**, 9, 13, 17, 43 (062310), 45 (species, color photograph of species), 46 (Page 192), 48 (genus), 63 (062310), 85 (062310 - color presentation including habitat), 140 (Page 33)*

***Agave toumeyana* W. Trelease: Toumey's Century Plant**

COMMON NAMES: Toumey Agave; Toumey's Century Plant. DESCRIPTION: Terrestrial perennial evergreen leaf-succulent forb/herb, subshrub or shrub (acaulescent rosettes 2 to 20 inches in height and 6 to 32 inches in diameter with a flowering stem reaching 6 feet in height); ascending and/or erect light green, green, dark green or yellowish-green leaves; the flowers may be cream, chartreuse green or greenish-white; the anthers are pale yellow or yellow-cream; flowering generally takes place between May and July. HABITAT: Within the range of this species it has been reported from mountains; mesas; hills; rocky, rocky-gravelly and gravelly slopes, and benches, growing in dry rocky, rocky-gravelly and gravelly ground, occurring from 2,000 to 5,000 feet in elevation in the woodland, scrub and desertscrub ecological formations. NOTES: Observed as an escaped and naturalized ornamental? This plant may be an attractive component of a restored native habitat. *Agave toumeyana* is native to southwest-central North America. *5, 6, 13, 17, 43 (100810), 45 (color photograph), 46 (Page 194), 48 (genus), 63, **85** (color presentation)*

Yucca arizonica (see *Yucca x schottii* (pro sp.) [*baccata x elata*])

Yucca baccata var. *brevifolia* (see *Yucca x schottii* (pro sp.) [*baccata x elata*])

***Yucca elata* (G. Engelmann) G. Engelmann: Soaptree Yucca**

SYNONYMY: *Yucca elata* (G. Engelmann) G. Engelmann var. *elata*, *Yucca elata* (G. Engelmann) G. Engelmann var. *utahensis* (S.A. McKelvey) J.L. Reveal, *Yucca elata* (G. Engelmann) G. Engelmann var. *verdiensis* (S.A. McKelvey) J.L. Reveal, *Yucca utahensis* S.A. McKelvey, *Yucca verdiensis* S.A. McKelvey. COMMON NAMES: Amole (a name given to the roots); Datil; Palmella; Palmilla ("Small Palm", Spanish); Palmilija Jukka; Palmilla; Palmella; Seifen-palmilie (German); Soap-tree Yucca; Soaptree; Soaptree Yucca; Soap Weed (a name also applied to the genus *Yucca*); Soap-weed Yucca; Soapweed (a name also applied to the genus *Yucca*); Soapweed Yucca; Spanish Bayonet (a name also applied to other species and the genus *Yucca*); Takui (Tohono O'odham); Utah Yucca; Verde Yucca. DESCRIPTION: Terrestrial perennial evergreen leaf-succulent shrub or tree (acaulescent (rarely) and/or caulescent erect stems to 30 feet in height and 8 to 10 feet in diameter with a flowering stalk reaching 2 to 8 feet in height); the narrow leaves may be gray-green, pale green or green with dried leaves adhering to the stem; the bell-shaped flowers may be cream, cream-white with a light green (on outer tepals) and light yellow-green (on inner tepals) midstripe, creamish-white, creamy-white (often tinged with green or pink), greenish-white, white or yellowish-white; the anthers are yellow; the styles and stigmas may be cream-white, cream-light green-white, light green or white; flowering generally takes place between mid-April and early August (additional records: two for late February, one for late August, one for mid-September, one for early October and one for late November). HABITAT: Within the range of this species it has been reported from mountains; rocky-sandy-clayey-loamy and sandy mesas; plateaus; hanging gardens; rocky canyons; rocky canyon walls; canyon bottoms; meadows; rocky foothills; bases of foothills; hills; rocky and gravelly hillsides; along rocky, rocky-sandy-clayey-loamy, shaley-gravelly-sandy, sandy and loamy slopes; sandy bajadas; sand dunes; prairies; sandy plains; shaley esplanades; gravelly, sandy, sandy-loamy and clayey-loamy flats; basins; gravelly-silty-loamy and sandy valley floors; along rocky-sandy, gravelly gravelly-sandy-clayey-loamy, sandy and sandy-loamy roadsides; along clayey arroyos; rocky draws; along creeks; along rivers; along and in gravelly and sandy washes; within drainages; within drainage ways; inter-dune swales; edges of rivers; benches; terraces; floodplains; lowlands, and disturbed areas growing in dry rocky, rocky-gravelly, rocky-sandy, shaley, shaley-gravelly-sandy, gravelly and sandy ground; rocky-sandy-clayey loam, gravelly loam, gravelly-sandy-clayey loam, gravelly-silty loam, sandy loam, sandy-clayey loam, clayey loam and loam ground, and silty clay and clay ground, occurring from 900 to 7,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by

native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop; it was also noted as having been used in toys or in games, as ceremonial drug or medication, as a decoration and as a commodity used in personal hygiene. The growth rate of wild growing plants is about 1 inch in height each year with taller plants being 200 to 300 years of age. *Yucca elata* is native to southwest-central and southern North America. *5, 6, 13 (placed in the Liliaceae, Pages 48-49, color photograph including habitat: Plate G.1., Page 395), 15, 16, 18, 26 (color photograph), 28 (color photograph 146), 43 (081309), 44 (032511 - no record of species; genus record), 45 (color photograph), 46 (recorded as *Yucca elata* Engelm., Page 188; *Yucca utahensis* McKelvey, Page 188, and *Yucca verdiensis* McKelvey, Page 188, genus *Yucca* placed in the Liliaceae), 53 (placed in the Liliaceae), 58, 63 (081309 - color presentation), 77, 85 (090411 - color presentation), 115 (color presentation), 124 (032111 - no record of species; genus record), 127, 134, **WTK** (August 6, 2005)*

Yucca elata var. *elata* (see *Yucca elata*)

Yucca elata var. *utahensis* (see *Yucca elata*)

Yucca elata var. *verdiensis* (see *Yucca elata*)

Yucca madrensis (see *Yucca schottii*)

***Yucca madrensis* H.S. Gentry: Mountain Yucca**

SYNONYMY: *Yucca schottii* auct. non G. Engelmann. COMMON NAMES: Hairy Yucca; Hoary Yucca; Mountain Yucca; Schott Yucca; Schott's Yucca; Sierra Madre Yucca; Spanish Bayonet; Spanish-bayonet; Spanish Dagger; Spanish-dagger. DESCRIPTION: Terrestrial perennial evergreen leaf-succulent forb/herb, subshrub or shrub (3 to 18 feet in height and 3 to 4 feet in diameter with a flowering stalk reaching 1 to 3 feet in height); the leaves are bluish-glaucous, bluish-green, gray-green, green or yellow-green; the bell-shaped flowers are cream-white or white; flowering generally takes place between late April and late August. HABITAT: Within the range of this species it has been reported from mountains; canyons; along canyon bottoms; foothills; hills; hillsides; rocky and gravelly slopes; bajadas; valleys; gravelly arroyos; rocky draws; drainages; at waterfalls, and riparian areas in rocky and gravelly soils, occurring from 4,000 to 7,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop when grown on a limited basis. *Yucca madrensis* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Yucca schottii* Engelm., placed in the Liliaceae), 15 (recorded as *Yucca schottii* Engelm.), 18 (recorded as *Yucca schottii*), 26 (genus), 28 (recorded as *Yucca schottii*, color photograph 147), 43 (040312), 45 (recorded as *Yucca schottii*, color photograph), 46 (recorded as *Yucca schottii* Engelm., placed in the Liliaceae, Page 187), 48 (genus), 52 (recorded as *Yucca schottii* Engelm., placed in the Liliaceae), 53 (*Yucca schottii* Engelm., placed in the Liliaceae), 63 (050509), **85** (050509), 127*

Yucca schottii (see *Yucca madrensis*)

***Yucca x schottii* G. Engelmann (pro sp.) [*baccata x elata*]: Schott's Yucca**

SYNONYMY: *Yucca arizonica* S.A. McKelvey; *Yucca baccata* J. Torrey var. *brevifolia* (H.W. Schott ex J. Torrey) L.D. Benson & R.A. Darrow; *Yucca thornberi* S.A. McKelvey. COMMON NAMES: Arizona Yucca; Banana Yucca; Blue Yucca; Datil; Palma Criolla; Schott's Yucca; Spanish Dagger; Thornber Yucca. DESCRIPTION: Terrestrial perennial evergreen leaf-succulent forb/herb, subshrub, shrub or tree (cespitose to 10 feet in height with a flowering stalk 13 inches to 5 feet in height); the leaves are blue-green, gray-green, green, dark green, dark olive-green, yellow-green (older leaves), dark yellow-green or yellowish-green; the flowers are cream, cream-white, green-creamish-yellow & cream-white with maroon-purple markings, greenish-cream lightly flushed with maroon in center, greenish-yellow-cream or white; the anthers are white or yellow; flowering generally takes place between early March and early June (additional records: one for early February, one for late August, one for late September and one for early October). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; canyons; canyon bottoms; bases of cliffs; bluffs; knolls; ridges; ridgetops; foothills; hills; rocky hillsides; rocky slopes; bajadas; plains; gravelly flats; valley floors; arroyos; draws; along and in washes; along margins of washes, and benches growing in dry rocky, gravelly and sandy ground and gravelly loam ground, occurring from 1,900 to 6,400 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Do not confuse this plant with the Mountain Yucca, *Yucca schottii* auct non G. Engelmann [misapplied] which is now considered to be *Yucca madrensis* H.S. Gentry. *Yucca x schottii* (pro sp.) [*baccata x elata*] is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Yucca baccata* Torrey var. *brevifolia* (Schott) Benson & Darrow, Pages 55-56, color photograph: Plate J.1., Page 397), 15 (color photograph on back cover of *Yucca thornberi* in habitat), 26 (genus), 43 (052610 - *Yucca baccata* Torr. in Emory var. *brevifolia* L.D. Benson & R.A. Darrow), 44 (112210 - no record), 45 (color photograph, recorded as *Yucca arizonica*), 46 (recorded as *Yucca arizonica* McKelvey, Page 187 and *Yucca thornberi* McKelvey, Page 187), 48 (genus), 58, 63 (052610 - color presentation), 77, **85** (052710), 91 (recorded as *Yucca arizonica* McKelvey, Pages 407-409), 124 (102410 - no record, genus), 140 (recorded as *Yucca baccata* Torrey var. *brevifolia* (Schott ex Torrey) L.D. Benson & R.A. Darrow, Page 281), **WTK** (August 6, 2005)*

Yucca thornberi (see *Yucca x schottii* (pro sp.) [*baccata x elata*])

Yucca utahensis (see *Yucca elata*)

Yucca verdiensis (see *Yucca elata*)

Cyperaceae: The Sedge Family

***Cyperus esculentus* C. Linnaeus: Yellow Nutsedge**

COMMON NAMES: Amante de Terre (French); Amandes de Terre (French); □Aráwp <kwarao> (Yuman: Cocopa)¹⁴⁰; Bebolin; Cebollín (Spanish); Choufa (French); Chufa (a name also applied to other species, Portuguese); Chufa Flat Sedge; Chufa Flat-sedge; Chufa Flatsedge; Chufa Grass; Chufa Nut Grass; Chufa Nut-grass; Chufa Nut-sedge; Chufa Nut Sedge; Chufa Nut-sedge; Chufa Nutsedge; Chufa Umbrella Sedge; Chufa Umbrella-sedge; Coquillo (Hispanic); Coquillo Amarillo (Hispanic); Earth Almond; Earth-almond; Earth-nut (a name also applied to other species); Edible Cyperus; Edible Galingale; Erdmandel (German); Field Nut Sedge; Field Nut-sedge; Galingale (a name also applied to other species and to the genus *Cyperus*, Indiana); Ground Almond (a name also applied to other species); Juncia Avellanada (Spanish); Northern Nut Grass; Northern Nut-grass; Northern Nutgrass; Nut Grass (a name also applied to other species and the genus *Cyperus*); Nut-grass (a name also applied to other species and the genus *Cyperus*); Peonia [Pieoneo] (a name also applied to other species, Spanish: Valley of Mexico)¹⁴⁰; Rush Nut; Rush-nut; Sai' (Hispanic); Souchet Comestible (French); Straw Sedge (a name also applied to other species); Straw-sedge (a name also applied to other species); Taboose; Taboose Grass; Tiger Nut; Tiger-nut; Tigernut; Tiririca (Portuguese: Brazil); Tiririca-amarela (Portuguese: Brazil); Tiririca-mansa (Portuguese: Brazil); Water-grass (a name also applied to other species); Yellow Nut Grass (a name also applied to other species); Yellow Nut-grass (a name also applied to other species); Yellow Nutgrass (a name also applied to other species); Yellow Nut Sedge (a name also applied to other species); Yellow Nut-sedge (a name also applied to other species); Yellow Nutsedge (a name also applied to other species); Zacate (a name also applied to other species, Hispanic). DESCRIPTION: Terrestrial perennial graminoid (2½ to 40 inches in height); the leaves are yellow-green or bright green above and whitish below; the spikelets may be dark brown, golden-brown, golden-tan, reddish, yellow-brown, yellowish or yellowish-brown; flowering generally takes place between mid-June and early November (additional records: two for early May, two for late May and one for late December). HABITAT: Within the range of this species it has been reported from mountains; sandy pockets of soils on top of cliffs; canyons; canyon walls; rocky, rocky-sandy, gravelly and sandy canyon bottoms; pockets of soil amongst rocks; bluffs; sandy-loamy, loamy and clayey meadows; foothills; hills; bouldery hillsides; rocky, sandy, loamy and clayey slopes; bouldery and rocky outcrops; amongst boulders and rocks; along marshy banks; plains; rocky, gravelly, gravelly-loamy, sandy-clayey-loamy and clayey flats; basins; silty valley bottoms; along rocky and gravelly-loamy roadsides; arroyos; sandy arroyo bottoms; seeps; along streams; along and in sandy streambeds; along sandy creeks; along creekbeds; along rivers; sandy riverbeds; along and in clayey washes; drainages; along drainage ways; palm oases; sandy-loamy ephemeral ponds; playas; bogs; marshes; gravelly-sandy and sandy depressions; sandy-loamy sinks; along (sandy-silty) banks of arroyos, streams, creeks, rivers and washes; (muddy and sandy) edges of rivers, pools, ponds, lakes and playas; along (sandy) shorelines of lakes; gravel bars; sandy benches; rock shelves; bottomlands; sandy floodplains; around stock tanks (charcos); dikes of reservoirs; along canals; along and in ditches; cobbly and gravelly riparian areas, and disturbed areas growing in muddy and wet, moist or damp bouldery, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, sandy-clayey loam, humusy-clayey loam and loam ground; clay ground, and sandy silty and silty ground, occurring from sea level to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC**, no varieties have been reported as being native to Arizona. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication. *Cyperus esculentus* var. *esculentus* is native to the Old World. *5, 6, 15, 30, 43 (081309), 44 (032111), 46 (Page 150), 58, 63 (081309 - color presentation), 68, 77, **85** (090511 - color presentation), 101 (color photograph), 124 (022111), 127, 140 (Pages 128, 141 & 290 - recorded as *Cyperus esculentus* Linnaeus [*Cyperus esculentus* Linnaeus var. *leptostachyus* Boeckeler])*

Cyperus aristatus (see *Cyperus squarrosus*)

***Cyperus odoratus* C. Linnaeus: Fragrant Flatsedge**

COMMON NAMES: Coarse Cyperus (a name also applied to other species); Engelmann Flatsedge; Engelmann's Cyperus; Engelmann's Sedge; False Rusty Flat Sedge; False Rusty Flat-sedge; Fragrant Cyperus; Fragrant Flat Sedge; Fragrant Flat-sedge; Fragrant Flatsedge; Fragrant Umbrella Sedge; Fragrant Umbrella-sedge; Galingale (a name also applied to other species and the genus *Cyperus*); Large Head Flat Sedge; Long Spike Flatsedge; Long-spike Flatsedge; Longspike Flatsedge; Michaux's Cyperus; Odorous Flatsedge; Rusty Cyperus; Rusty Flat Sedge; Rusty Flat-sedge; Rusty Flatsedge; Rusty Umbrella-sedge; Rusty-flatsedge; Scented Flatsedge; Slender Flatsedge (a name also applied to other species). DESCRIPTION: Terrestrial annual or perennial graminoid (2 to 52 inches in height; plants were observed and described as being 10 inches in height and 8 inches in width); the foliage is yellow-green; the spikelets may be green, red-brown, yellow-brown or yellow-green; flowering generally takes place between mid-May and late November (additional records: four for mid-January, one for late January, one for early February, eight for mid-March, two for late March and one for mid-April). HABITAT: Within the range of this species

it has been reported from mountains; gravelly canyons; sandy canyon bottoms; chasms; foothills; rocky and clayey slopes; amongst rocks; sandy prairies; sandy and clayey flats; valley bottoms; along arroyos; draws; bottoms of gullies; around springs; along streams; gravelly streambeds; along creeks; along sandy creekbeds; along rivers; along sandy and sandy-loamy riverbeds; sandy washes; drainages; along sandy drainage ways; around pools; clayey rain pools; around lakes; ciénegas; marshes; silty swamps; along (rocky, sandy, clayey, silty and silty-clayey) banks of springs, streams, creeks, rivers and lakes; along (sandy and silty-clayey) edges of rivers; pools, poolbeds, ponds, lakes and lagoons; margins of ponds and lakes; shorelines of rivers, ponds and lakes; mudflats; sandbanks; gravel and sand bars; beaches; sandy benches; terraces; sandy floodplains; around sandy-silty tanks; sandy-silty shorelines of reservoirs; banks of levees; canal banks; along ditches; ditch banks; gravelly, sandy and muddy riparian areas, and disturbed areas growing in shallow water; muddy, and wet and moist rocky, stony, gravelly and sandy ground; sandy loam and silty-clayey loam ground; clay ground, and sandy silty and silty ground, occurring from sea level to 6,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, it forms large dense bunches. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Ducks use this plant for cover and feed on the seeds, shoots and roots. *Cyperus odoratus* is native to Australia; western and southeastern Asia and coastal islands in the North Pacific Ocean; central and southern Africa and coastal islands in the West Indian Ocean; east-central, southwest-central and southern North America and coastal islands in the North Atlantic Ocean; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 43 (081309), 44 (090511), 46 (Page 149), 58, 63 (081309 - color presentation), 85 (090511 - color presentation), 124 (090511), 127, 140 (Page 290)*

***Cyperus squarrosus* C. Linnaeus: Bearded Flatsedge**

SYNONYMY: *Cyperus aristatus* C.F. Rottböll. COMMON NAMES: Apoyamate (Spanish)¹⁴⁰; Awned Cyperus; Awned Flat Sedge; Awned Flat-sedge; Awned Galingale; Awned Nut-grass; Awned Nut-sedge; Awned Nutsedge; Awned Sedge; Awned Umbrella Sedge; Awned Umbrella-sedge; Beard Flatsedge; Bearded Flat Sedge; Bearded Flat-sedge (English)¹⁴⁰; Bearded Flatsedge; Bearded Nutgrass; Curve-tip Flatsedge (Colorado); Dwarf Odorous Galingale; Dwarf Sedge; <grulla> (Spanish: Mountain Pima)¹⁴⁰; Incurved Umbrella Sedge; Incurved Umbrella-sedge; Marsh Sedge; [Dwarf] Marsh Sedge (English)¹⁴⁰; Nut-sedge (English)¹⁴⁰; Rice-field Flatsedge; Ricefield Flatsedge; Squarrose Cyperus; Squarrose Flat-sedge; Squarrose Flatsedge; Squarrose Umbrella Sedge; Squarrose Umbrella-sedge; Teel Niyiz <te.l ni'izi> ("Round Cattail" a name also applied to other species, Athapascan: Navajo)¹⁴⁰; Tloiyesze ("Plants That Stand Next To Horses", Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; To'ora (Uto-Aztecan: Mountain Pima)¹⁴⁰; Tule (a name also applied to other species, Spanish)¹⁴⁰; Tullillo ("Little Sedge", Spanish)¹⁴⁰; Umbrella Sedge; Vashai S-uuv ("Scented Grass", Uto-Aztecan: Akimel O'odham)¹⁴⁰; Wa□ai S-u:w (Uto-Aztecan: Tohono O'odham)¹⁴⁰. DESCRIPTION: Terrestrial annual tufted graminoid (½ to 4 inches in height); the spikelets are reddish-bronze to yellowish with green margins; flowering generally takes place between late June and late October (additional records: one for late May and one for late November). HABITAT: Within the range of this species it has been reported from mountains; mountain summits; rocky crags; mountainsides; mesas; along canyon rims; along sandy canyons; along rocky-sandy, gravelly and loamy canyon bottoms; sand-filled crevices; shallow pockets of soil; rocky ridgetops; clayey meadows; foothills; hills; rocky hillsides; rocky, rocky-loamy, sandy-loamy and loamy slopes; rocky outcrops; amongst boulders; sandy prairies; sandy plains; salty flats; bedrock basins; bouldery-silty valley floors; along gravelly roadsides; arroyos; bottoms of arroyos; rocky draws; seeps; springs; along spring seeps; along seeping streams; along sandy streams; along sandy streambeds; along creeks; gravelly and silty creekbeds; along rivers; gravelly riverbeds; along and in rocky, gravelly and sandy washes; drainages; along bedrock and sandy drainage ways; waterholes; playas; bogs; ciénegas; marshes; sandy depressions; sandy swales; along (sandy and silty) banks of arroyos, streams, creeks, rivers and washes; edges of rivers, puddles, pools, lakes, playas and marshes; margins of washes, depressions, ponds and lakes; along (gravelly-loamy, pebbly-sandy and sandy) shorelines of ponds and lakes; mudflats; areas of drawdown; gravel, gravelly-sandy and sand bars; benches; coves; rock shelves; along bottomlands; sandy-clayey floodplains; lowlands; around and in stock tanks; sandy shores of reservoirs; along canal banks; riparian areas, and disturbed areas growing in wet, moist, damp and dry (seasonally wet) bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; rocky loam, rocky-stony loam, gravelly loam, sandy loam and loam ground; sandy clay and clay ground, and bouldery silty, gravelly silty and silty ground, occurring from 100 to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Cyperus squarrosus* is native to central and southern North America; Central America and coastal islands in the Caribbean Sea, South America; Australia; southern Asia, and Africa and coastal islands in the Indian Ocean. *5, 6, 43 (081409), 44 (040511), 46 (recorded as *Cyperus aristatus* Rottb., Page 149), 58, 63 (081409 - color presentation), 77, 85 (081509 - color presentation), 124 (040511), 127, 140 (Pages 127-128 & 290)*

Juncaceae: The Rush Family

***Juncus bufonius* C. Linnaeus: Toad Rush**

COMMON NAMES: Bog Rush (a name also applied to the genus *Juncus*); Coe Grass; Coe-grass; Common Toad Rush; Common Toad-rush; Common Toadrush; Frog Grass; Frog Weed; Frog-grass; Frog-weed; Frogweed; *Juncus Palustris* Humilior Erectus Etiam Repens; Salt Weed; Salt-weed; Saltweed; Toad Rush; Toad-grass; Toadweed. DESCRIPTION: Semi-aquatic and terrestrial annual graminoid (decumbent, ascending and/or erect stems 1 to 16 inches in height); the foliage may be

dark red-purple or yellow-green; the flowers are green or greenish; flowering generally takes place between early March and mid-October (additional records: one for early November, one for late November, one for mid-December and one for late December). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; plateaus; bases of cliffs; rocky canyons; bouldery-gravelly-sandy, rocky-sandy, rocky-silty and sandy canyon bottoms; buttes; rock ledges; sandy-silty, clayey-loamy and loamy meadows; foothills; rocky hills; rocky hillsides; bouldery, bouldery-sandy, rocky, shaley, sandy and clayey slopes; amongst boulders; prairies; plains; sandy, clayey and silty flats; basins; valley floors; valley bottoms; along roadsides; along arroyos; sandy bottoms of arroyos; within sandy draws; bottoms of draws; ravines; along and in sandy and loamy seeps; along and in springs; along and in streams; along and in gravelly-sandy and sandy streambeds; along and in creeks; in rocky-sandy and cobbly creekbeds; in sandy-clay along rivers; rocky, rocky-clayey, sandy and sandy-clayey riverbeds; along and in rocky-sandy, gravelly, sandy and sandy-silty washes; within rocky and loamy drainages; palm oases; mudholes; around pools; around clayey vernal pools; poolbeds; around ponds; along lakes; bogs; clayey-loamy ciénegas; freshwater and saltwater marshes; swamps; clayey and clayey-loamy depressions; swales; along (muddy, sandy, sandy-clayey, sandy-silty and clayey) banks of streams, streambeds, creeks, rivers, poolbeds, ponds and lakes; edges of seeps, springs, streams, creeks, rivers and lakes; along (sandy and silty-loamy) margins of streamlets, streams, creeks, creekbeds, pools and ponds; along (sandy, sandy-clayey and clayey) along shorelines of rivers, lakes, lakebeds and lagoons; areas of drawdown; mudflats; rocky-sand, clayey-sand and sand bars; sandy beaches, benches; sandy bottomlands; rocky-sandy-clayey and silty-clayey floodplains; lowlands; around stock tanks; along edges of reservoirs; along and in gravelly ditches; stony-loamy, gravelly, gravelly-sandy, sandy, sandy-loamy and silty-loamy riparian areas, and disturbed areas growing in shallow water and mucky, muddy and wet, moist, damp and dry (seldom reported) bouldery, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-sandy, shaley, cobbly, gravelly, gravelly-sandy and sandy ground; stony loam, sandy loam, clayey loam, silty loam and loam ground; rocky-sandy clay, sandy clay, silty clay and clay ground, and rocky silty, sandy silty and silty ground, occurring from sea level to 9,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Juncus bufonius* is native to North America; Central America and coastal islands in the Caribbean Sea; northern, western and southern South America; Europe; Asia and coastal islands in the western Pacific Ocean; northern and eastern Africa and coastal islands in the western Indian Ocean, and Australia. *5, 6, 15, 43 (040511), 44 (040511), 46 (Page 171), 58, 63 (040511 - color presentation), 80 (Species of the genus *Juncus* are listed as a Rarely Poisonous and Suspected Poisonous Range Plant, based on the report that a species of this genus has caused loss of cattle in Europe, but no losses have been reported from American species.), 85 (090611 - color presentation), 101 (color photographs), 124 (040511), 127, 140 (Page 294)*

Liliaceae: The Lily Family

Brodiaea capitata (see *Dichelostemma capitatum* subsp. *capitatum*)

Brodiaea pulchella (see *Dichelostemma capitatum* subsp. *capitatum*)

Brodiaea pulchella var. *pauciflora* (see *Dichelostemma capitatum* subsp. *pauciflorum*)

***Dasyilirion wheeleri* S. Watson: Common Sotol**

COMMON NAMES: Cactus Spoon; Common Sotol; Desert Spoon (English)¹⁴⁰; Desert-spoon; Húumug (Uto-Aztec: Onavas Pima); Igabaané <ekibanne, k'ashbaané> (Athapascan: Western Apache)¹⁴⁰; Kokiše <kogice> (“Fire Stick?”, Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Palma [Palmilla] (“[Little] Palm”, Spanish: Chihuahua); Sanó (Spanish)¹⁴⁰; Seré <selé> (Uto-Aztec: Guarijío)¹⁴⁰; Seréke <sere-ke> (Uto-Aztec: Tarahumara)¹⁴⁰; Seriki <shereki> (“Straight”, Uto-Aztec: Mountain Pima)¹⁴⁰; Sotol (Spanish)¹⁴⁰; Spoon Flower; Spoon Plant; Spoon-flower; Spoon-leaf; Šušida Kúru (Uto-Aztec: Northern Tepehuan)¹⁴⁰; Tehuizote (Spanish)¹⁴⁰; Umoga (Uto-Aztec: Mountain Pima)¹⁴⁰; Umug <uhmug, umu'k, 'umug> (Uto-Aztec: Akimel O'odham and Tohono O'odham)¹⁴⁰; Wheeler Dasyilirion; Wheeler Sotol. DESCRIPTION: Terrestrial perennial evergreen leaf-succulent subshrub or shrub (16 inches to 8 feet in height and 4 to 6 feet in width with a flowering spike reaching 6 to 17 feet in height; one plant was observed and described as being 6 feet in height and width); the spiny leaves (14 to 40 inches in length and ½ to 1 inch in width) may be bluish-gray, bluish-green, green or whitish; the flowers (dioecious, female and male flowers are born on separate plants) may be cream, greenish, greenish-white, greenish-yellow, white, pale yellow, yellow, yellow-green or yellowish-white; flowering generally takes place between early June and early October (additional records: one for mid-February, one for mid-May, one for late October and one for mid-November); the papery three-winged fruits may be golden-brown, reddish or straw. HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; plateaus; canyon rims; rocky canyons; rocky canyon bottoms; talus slopes; bases of cliffs; rocky ledges; rocky and shaley ridges; rocky ridgetops; bases of ridges; rocky and gravelly hills; hilltops; rocky, rocky-gravelly, stony-gravelly and gravelly hillsides; bedrock, bouldery-gravelly-loamy, rocky, rocky-gravelly-clayey-loamy, shaley, gravelly and sandy-clayey slopes; bajadas; rocky outcrops; lava flows; prairies; rocky valley floors; rocky arroyos; gulches; along rivers; along drainages; benches, and riparian areas growing in dry rocky desert pavement; rocky, rocky-gravelly, stony-gravelly, gravelly and sandy ground; bouldery-gravelly loam, rocky-gravelly-clayey loam, gravelly loam, gravelly-sandy loam and sandy loam ground, and sandy clay ground, occurring from 2,900 to 7,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland

ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or fiber crop; it was also noted as having been used in ceremonial items as a tool (fire drill hearths). This plant may be browsed by Bighorn Sheep (*Ovis canadensis*). *Dasyilirion wheeleri* is native to southwest-central and southern North America. *5, 6, 13 (Pages 62-63), 15 (placed in the Agavaceae), 18, 26 (color photograph 141), 28 (color photograph), 43 (081010), 44 (122210 - no record of species), 45 (color photograph), 46 (Page 190), 48, 58 (placed in the Agavaceae), 63 (081010 - color presentation), 77 (placed in the Agavaceae), **85** (081110 - color presentation including habitat), 86 (color photograph), 115 (color presentation), 124 (102510 - no record of species), 127, 140 (placed in the Agavaceae/Ruscaceae, Pages 33-34 & 281), **WTK** (August 6, 2005)*

***Dichelostemma capitatum* (G. Bentham) A. Wood subsp. *capitatum*: Bluedicks**

SYNONYMY: *Brodiaea capitata* G. Bentham; *Brodiaea pulchella* (R.A. Salisbury) E.L. Greene; *Dichelostemma pulchellum* (R.A. Salisbury) A.A. Heller; *Dichelostemma pulchellum* (R.A. Salisbury) A.A. Heller var. *capitatum* (G. Bentham) J.L. Reveal. COMMON NAMES: Blue Dicks (a name also applied to the species and genus *Dichelostemma*); Bluedicks (a name also applied to the species and genus *Dichelostemma*); Brodiaea (a name also applied to the species); Covena (a name also applied to the species); Covenna (a name also applied to the species); Coveria (a name also applied to the species); Crow Poison (a name also applied to the species and other species); Desert Hyacinth (a name also applied to the species and other species); Few-flowered Covena (a name also applied to the species); Fool's Onion (a name also applied to the species and other species); Fool's-onion (a name also applied to the species and other species); Grass Nuts (a name also applied to the species and other species); Grass-nuts (a name also applied to the species and other species); Hahd (a name also applied to the species, Pima); Indian Hyacinth (not recommended, a name also applied to the species); Papago Lily (a name also applied to the species); Purplehead (a name also applied to the species); Typical Beautiful Blue Dicks; Typical Beautiful Blue-dicks; Typical Beautiful Bluedicks; Typical Blue-dicks California-hyacinth; Typical Capitate Blue Dicks; Typical Capitate Blue-dicks (a name also applied to the genus *Dichelostemma*); Typical Capitate Bluedicks; Typical Chester Lily; Typical Common Blue Dick; Typical Common Blue Dicks; Typical Common Blue-dick; Typical Common Blue-dicks; Typical Common Bluedicks; Typical Common Brodiaea; Typical Common Saitas; Typical Covenna; Typical Desert Hyacinth Blue Dicks; Typical Desert Hyacinth Blue-dicks; Typical Desert Hyacinth Bluedicks; Typical Hyacinth Blue Dicks; Typical Hyacinth Blue-dicks; Typical Hyacinth Bluedicks; Typical Papago Lily; Typical Vernal Pool Bluedicks; Typical Wild Hyacinth Blue Dicks; Typical Wild Hyacinth Blue-dicks; Typical Wild Hyacinth Bluedicks (a name also applied to the species); Wild Hyacinth (a name also applied to the species and other species). DESCRIPTION: Terrestrial perennial forb/herb (4 to 28 inches in height); the leaves are dark green; the flowers may be light blue, blue, dark blue, blue-purple, bluish-purple, lavender, dark lavender, pink, pinkish-purple, pale purple, purple, dark purple, purple-blue, violet or white; flowering generally takes place between early February and early June (additional records: two for late June, one for mid-July, one for late August; flowering beginning as early as December and ending as late as July has been reported). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky mesas; gravelly plateaus; along canyon rims; canyons; canyon walls; gravelly-sandy canyon bottoms; talus; sandy pockets of soil on rocky banks; bluffs; rocky ridges; ridgetops; meadows; rocky foothills; cobbly-sandy-loamy hills; rocky hilltops; bouldery, rocky, rocky-sandy, gravelly-clayey-loamy and sandy hillsides; bouldery, rocky, cobbly-sandy-loamy, gravelly, gravelly-sandy-clayey-loamy, sandy and sandy-loamy slopes; bajadas; bouldery and rocky outcrops; amongst boulders and rocks; rocky banks; rocky, rocky-clayey-loamy, gravelly, sandy and sandy-loamy flats; valley floors; in gravelly roadbeds; bouldery roadcuts; along rocky, rocky-clayey, stony-clayey and sandy roadsides; draws; gravelly streambeds; creekbeds; along and in stony-gravelly and sandy washes; depressions; (sandy) banks of rivers; sandy benches; sandy terraces; riparian areas; waste places, and disturbed areas growing in dry (one record for a wet sandy wash) desert pavement; bouldery, rocky, rocky-sandy, stony-gravelly, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, cobbly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam and loam ground; rocky clay, stony clay and clay ground, and silty ground, occurring from sea level to 9,800 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Dichelostemma capitatum* subsp. *capitatum* is native to southwest-central and southern North America. *5, 6, 16 (recorded as *Dichelostemma pulchellum* (Salisb.) Heller), 28 (recorded as *Dichelostemma pulchellum*, color photograph 680), 43 (081609), 44 (100311), 46 (recorded as *Dichelostemma pulchellum* (Salisb.) Heller, Page 182), 63 (081609 - color presentation), **85** (100311 - color presentation), 115 (color presentation of the species), 124 (100311 - no record of genus, species), 140 (Page 306 - recorded as *Dichelostemma pulchellum* (Salisbury) Heller, placed in the Themidaceae)*

***Dichelostemma capitatum* (G. Bentham) A. Wood subsp. *pauciflorum* (J. Torrey) G. Keator: Bluedicks**

SYNONYMY: *Brodiaea pulchella* (R.A. Salisbury) E.L. Greene var. *pauciflora* (J. Torrey) C.V. Morton; *Dichelostemma pulchellum* (R.A. Salisbury) A.A. Heller var. *pauciflorum* (J. Torrey) R.F. Hoover. COMMON NAMES: Blue Dicks (a name also applied to the species and genus *Dichelostemma*); Bluedicks (a name also applied to the species and genus *Dichelostemma*); Brodiaea (a name also applied to the species); Covena (a name also applied to the species); Covenna (a name also applied to the species); Coveria (a name also applied to the species); Crow Poison (a name also applied to the species and other species); Desert Blue-dicks (a name also applied to the species); Desert Hyacinth (a name also applied to the species and other species); Few Flower Blue Dicks; Few Flowered Blue Dicks; Few-flower Blue Dicks; Few-flowered Blue Dicks; Few-flower Blue-dicks; Few-flowered Blue-dicks; Few-flowered Bluedicks; Few-flowered Covena; Fewflowered Blue Dicks; Fool's Onion (a name also applied to other species); Fool's-onion (a name also applied to other species); Grass Nuts (a name also

applied to the species and other species); Grass-nuts (a name also applied to the species and other species); Hahd (a name also applied to the species, Pima); Indian Hyacinth (not recommended, a name also applied to the species); Papago Lily (a name also applied to the species); Purplehead (a name also applied to the species); Wild Hyacinth (a name also applied to the species and other species). DESCRIPTION: Terrestrial perennial forb/herb (4 to 30 inches in height); the leaves are dark green; the flowers may be pale blue, blue, blue-lavender-purple, blue-purple, bluish-lavender, lavender, pink, pink-purple, purple or white; flowering generally takes place between late January and mid-June (additional records: one record for early January, one record for mid-July, one record for mid-September and one record for early November). HABITAT: Within the range of this species it has been reported from rocky mountains; rocky mountainsides; gravelly and sandy mesas; plateaus; along rocky canyons; rocky canyon bottoms; buttes; gravelly ridges; rocky ridgetops; foothills; rocky hills; sandy hilltops; rocky, gravelly hillsides; rocky and sandy slopes; rocky-sandy alluvial fans; bajadas; rocky outcrops; amongst rocks; prairies; plains; gravelly, gravelly-loamy and sandy flats; basins; sandy valley floors; along roadsides; rocky arroyos; along draws; gulches; ravines; along streams; silty creekbeds; rivers; riverbeds; along and in rocky and sandy washes; sandy beaches; gravelly terraces; sandy lowlands; ditches; around stock tanks; riparian areas, and disturbed areas growing in dry desert pavement; rocky, rocky-sandy, cindery, gravelly and sandy ground; cobbly-silty loam, gravelly loam and sandy loam ground; rocky clay, stony clay and clay ground, and silty ground, occurring from 900 to 8,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers are reported to be fragrant. *Dichelostemma capitatum* subsp. *pauciflorum* is native to southwest-central and southern North America. *5, 6, 15, 28 (recorded as *Dichelostemma pulchellum*, color photograph 680), 43 (081609), 44 (100311), 46 (recorded as *Dichelostemma pulchellum* (Salisb.) Heller var. *pauciflorum* (Torr.) Hoover, Page 182), 58, 63 (081609 - color presentation), 77 (recorded as *Dichelostemma pulchellum* (Salisb.) Heller, color photographs #56 and #103), 85 (100411 - color presentation), 86 (note, *Dichelostemma pulchellum*), 115 (color presentation of the species), 124 (100311 - no record of genus, species or subspecies), **HR***

Dichelostemma pulchellum (see *Dichelostemma capitatum* subsp. *capitatum*)

Dichelostemma pulchellum var. *capitatum* (see *Dichelostemma capitatum* subsp. *capitatum*)

Dichelostemma pulchellum var. *pauciflorum* (see *Dichelostemma capitatum* subsp. *pauciflorum*)

***Nolina microcarpa* S. Watson: Sacahuista**

COMMON NAMES: Bear Grass; Bear-grass (English)¹⁴⁰; Beargrass; Bì?, Gogisa (Athapascan: Western Apache)¹⁴⁰; Duya <ruya, guru> (Uto-Aztecan: Tarahumara)¹⁴⁰; Etlodeitsa (Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Hogéesh <ho.gisi?> (“Cutting Leaves”, Athapascan: Navajo)¹⁴⁰; Kurú [Wirúku] (Uto-Aztecan: Guarijio)¹⁴⁰; Moho (Uto-Aztecan: Hiá Ce□ O’odham)¹⁴⁰; Moho <mōhō> (Uto-Aztecan: Tohono O’odham)¹⁴⁰; Moho <moh, moj> (Uto-Aztecan: Mountain and Onavas Pima)¹⁴⁰; Ōk’inyúda (Yuman: Havasupai)¹⁴⁰; Palma (“Palm”, Spanish: Chihuahua)¹⁴⁰; Palmilla (“Little Palm”, Spanish: Sonora)¹⁴⁰; Qanyud (Yuman: Walapai)¹⁴⁰; Sacahuista (Spanish: Arizona, Sonora)¹⁴⁰; Saw-grass (English)¹⁴⁰; Si Lio Mo Hi (Hopi for “Long Yucca”)¹⁴⁰; Siliómóhu (Uto-Aztecan: Hopi)¹⁴⁰; Small-seed *Nolina*; Sotol Chiquita (Mexico), Sotol Chiquito (“Little Sotol”, Spanish: Sonora)¹⁴⁰; Soyate (Spanish)¹⁴⁰; Squaw-flowers (English)¹⁴⁰; Zacate [Cortador, de Aparajo, de Amazón] (“[Cutting, Packsaddle, Framework] Grass”, Spanish)¹⁴⁰. DESCRIPTION: Terrestrial perennial evergreen grass-like subshrub or shrub (acaulescent (branching below ground) 2 to 6½ feet in height in clumps to 40 inches to 6½ feet in width with a flower bearing spike (scape) reaching 1 to 12 feet in height; plants were observed and described as being 32 inches in height and 40 inches in width, plants were observed and described that had dark gray trunks up to 2 feet in length); the leaves (24 to 79 inches in length and ¼ to ½ inch in width) may be gray-green, light green, green, dark green, olive-green, light yellowish-green or yellow-green; the flowers (1/16 to 1/8 inch in width in dense terminal clusters 16 inches to 4 feet in length; dioecious (female and male flowers are born on separate plants) may be cream, creamy-white, creamy-yellow, pale green, greenish, greenish-white, greenish-yellow, white, pale yellow, yellow or yellow-cream; flowering generally takes place between mid-April and late July (additional records: two for mid-August, two for late August, two for early September, one for late September, one for early October, one for mid-October and one for mid-November); the papery fruits (1/4 to 3/8 inch in diameter) are brownish-orange, tan or yellow-white. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky, gravelly and sandy mesas; rocky cliffs; rocky headlands; rocky canyons; rocky canyon bottoms; talus slopes; crevices in rocks; bluffs; rocky knolls; ledges; along rocky ridges; rocky ridgetops; foothills; rocky hills; bouldery hilltops; bedrock and rocky hillsides; rocky, rocky-sandy, gravelly, sandy and clayey slopes; bajadas; rocky outcrops; amongst boulders and rocks; plains; flats; rocky and shaley esplanades; valley floors; along gravelly roadsides; rocky arroyos; bottoms of arroyos; rocky ravines; seeps; along creeks; along rocky creekbeds; within gravelly washes; within rocky-clayey drainages; banks of creeks and rivers; benches; terraces, and gravelly riparian areas growing in dry, well drained bouldery, rocky, rocky-gravelly, rocky-sandy, shaley, gravelly, gravelly-sandy and sandy ground and rocky clay and clay ground, occurring from 2,500 to 8,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat; it may live to be 50 year of age. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage, fiber and/or dye crop; it was also noted as having been used in the making of cooking tools and ceremonial items, and as a commodity used in personal hygiene. Beargrass may be browsed by wildlife in times of drought. *Nolina microcarpa* is native to southwest-central and southern North America. *5, 6, 13 (Pages 60-61), 15 (placed in the Agavaceae), 18 (placed in the

Agavaceae), 28 (color photograph 143), 43 (122210), 44 (122210 - no record of species), 45 (color photograph, placed in the Nolinaceae), 46 (Page 189), 48 (genus), 58 (placed in the Agavaceae), 63 (122210 - color presentation), 80 (This plant is listed as a Secondary Poisonous Range Plant. "The poisonous principle is unknown; it is found mainly in the flower buds, flowers and fruits. The evergreen leaves are usually grazed without ill effects and are even considered desirable forage for cattle in times of drought. However, excessive grazing of the plant may cause photosensitization. Cattle, sheep and goats may be poisoned but goats and sheep are most susceptible. ... The best control is to remove animals from heavily infested pastures for a short period during the flowering and early fruiting stage when the stalks are succulent and palatable." See text for additional information.), 85 (122310 - color presentation including habitat), 124 (122210 - no record of species), 127, 140 (Pages 253-254 - placed in the Ruscaceae & 281 - placed in the Agavaceae), **WTK** (August 6, 2005)*

Najadaceae: The Waternymph Family

Najas major (see *Najas marina*)

***Najas marina* C. Linnaeus: Spiny Naiad**

SYNONYMY: *Najas major* C. Allioni. COMMON NAMES: Alkaline Water-nymph; Holly Leaved Naiad; Holly Leaved Water Nymph; Holly-leaf Naiad; Holly-leaf Water Naiad; Holly-leaf Water-naiad; Holly-leaf Water-nymph; Holly-leaf Waternymph; Holly-leafed Naiad; Holly-leaved Naiad; Holly-leaved Naias; Holly-leaved Water Nymph; Holly-leaved Water-nymph; Holly-leaved Waternymph; Hollyleaf Naiad; Large Naias; Marine Naiad; Marine Naias; Marine Water Nymph; Marine Water-nymph; Naiad (a name also applied to the genus *Najas*); Pond Naiad; Pond Weed (a name also applied to other species); Pondweed (a name also applied to other species); Prickly Naiad; Prickly Water-nymph; Prickly Waternymph; Sawtooth Naiad; Sawtooth Najas; Sea Naiad; Slender Naiad; Spiny Naiad (a name also applied to other species); Spiny Naias; Spiny Water Nymph; Spiny Water-naiad; Spiny Water-nymph; Spiny Waternymph; Spiny-leaf Naiad. DESCRIPTION: Aquatic annual forb/herb (2 to 18 inches in length); the herbage is bright green; the male and female flowers are born on separate plants; based on few records located, flowering generally takes place between early January and late October (flowering records: one for early January, one for late April, one for mid-July and one for late October). HABITAT: Within the range of this species it has been reported from springs; streams; rivers; ponds; lakes; lagoons; sloughs; swamps; edges of springs; along shores of lakes; mudflats; reservoirs, and ditches growing either as a submerged aquatic or on wet mud in sandy loam ground, occurring from sea level to 5,100 feet in elevation in wetland ecological formations within the grassland and desertscrub ecological formations. NOTES: The stems, leaves, flowers and seeds are fed on by ducks. *Najas marina* is nearly cosmopolitan and has been reported from south-central and southern North America; Central America and coastal islands in the Caribbean Sea; South America, and Eurasia. *5, 6, 43 (081609), 44 (100411), 46 (Page 67), 63 (100411 - color presentation of seed), 85 (100411 - color presentation of dried material), 124 (100411)*

Poaceae (Gramineae): The Grass Family

Andropogon barbinodis (see *Bothriochloa barbinodis*)

Andropogon contortus (see *Heteropogon contortus*)

***Aristida adscensionis* C. Linnaeus: Sixweeks Threeawn**

COMMON NAMES: Annual Bristle Grass (a name also applied to other species); Dog-town Grass (a name also applied to other species); Flechilla (Spanish); Needle Grass (a name also applied to other species and to the genus *Aristida*); Plumilla (Spanish); Purple Beard Grass (a name also applied to other species); Six Weeks Three Awn; Six Weeks Three Awn Grass; Six Weeks Threeawn; Six-weeks Needle Grass; Six-weeks Needle-grass; Six-weeks Needlegrass; Six-weeks Three-awn; Six-weeks Three-awn Grass; Six-weeks Threeawn; Sixweeks Three Awn; Sixweeks Three-awn; Sixweeks Threeawn; Three-awn (a name also applied to other species and to the genus *Aristida*); Tres Barbas (Spanish), Triple-awn Beard Grass (a name also applied to other species and to the genus *Aristida*); Triple-awned Beard Grass (a name also applied to other species and to the genus *Aristida*); Triple-awned Beard-grass (a name also applied to other species and to the genus *Aristida*); Zacate Cola de Zorra (Spanish); Zacate de Semilla (Spanish); Zacate Tres Barbas (a name also applied to other species and to the genus *Aristida*, Spanish); 6-Weeks 3-Awn. DESCRIPTION: Terrestrial annual tufted graminoid (ascending to erect culms 1/4 to 40 inches in height); the color of the foliage has been described as being bright green, purple or yellow curing to straw; the florets may be purple, purplish or red-purple; flowering may take place year-round between early January and late December; the seed heads may be purple. HABITAT: Within the range of this species it has been reported from rocky mountains; mountaintops; mountainsides; bedrock, rocky, rocky-sandy-loamy, gravelly-sandy-clayey and sandy mesas; plateaus; rocky canyons; rocky and sandy canyon bottoms; rocky gorges; talus slopes; crevices in rocks; shallow pockets of soil; buttes; rocky ledges; rocky ridges; rocky ridgetops; meadows; foothills; rocky and sandy hills; rocky-gravelly and gravelly hilltops; rocky hillsides; escarpments; sandy bases of escarpments; bedrock, bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-clayey, stony, stony-clayey, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey, gravelly-clayey-loamy, sandy, sandy-clayey, sandy-clayey-loamy, sandy-silty, clayey and clayey-loamy slopes; rocky alluvial fans; gravelly-sandy bajadas; rocky outcrops; amongst boulders and

rocks; sandy lava flows; sand hills; sandy dunes; sandy-loamy prairies; gravelly-sandy, sandy and clayey-loamy plains; rocky, rocky-sandy, gravelly, gravelly-loamy, gravelly-sandy-loamy, sandy, sandy-loamy and sandy-clayey-loamy flats; valley bottoms; along rocky railroad right-of-ways; along roadbeds; gravelly roadcuts; along rocky, rocky-gravelly, rocky-sandy, rocky-clayey-loamy, gravelly, gravelly-sandy, gravelly-loamy, sandy and sandy-loamy roadsides; along sandy arroyos; rocky draws; ravines; seeps; silty springs; along streams; streambeds; along creeks; creekbeds; along rivers; sandy riverbeds; along and in rocky, rocky-sandy, cobbly-pebbly-sandy, gravelly, gravelly-sandy and sandy washes; bedrock drainages; within rocky drainage ways; silty depressions; swales; banks of draws; along (rocky) edges of washes; along margins of washes; mudflats; sandy benches; shelves; terraces; bottomlands; floodplains; ditches; gravelly-sandy riparian areas; sandy waste places, and disturbed areas growing in dry desert pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-pebbly, rocky-sandy, shaley, stony, cobbly-pebbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-sandy loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam and silty loam ground; rocky clay, stony clay, gravelly clay, gravelly-sandy clay, sandy clay and clay ground, and gravelly-sandy silty, sandy silty and silty ground, occurring from below sea level to 12,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant may be confused with *Aristida purpurea* var. *parishii*. *Aristida adscensionis* is native to south-central and southern North America; Central America; South America, and other tropic, sub-tropic and warm-temperate regions of the world. *5, 6, 15, 16, 33 (Page 242), 43 (080109), 44 (032611 - color presentation including habitat), 46 (Page 120), 58, 63 (081709 - color presentation), 77, **85** (100811 - color presentation of dried material), 105, 124 (032611), 140 (Pages 197 & 298)*

***Aristida purpurea* T. Nuttall: Purple Threeawn**

COMMON NAMES: Beard Grass; Blue Threeawn; Bunch Grass; Democrat Grass; Muskit Grass; Nealley Three-awn; No-eatum, O'g'ip [O'g'wip, Toi'yaogwip, Yo'nip] (Uto-Aztecan: Shoshoni)¹⁴⁰; Perennial Three-awn; Poverty Grass (a name also applied to other species and to the genus *Aristida*); Purple Aristida; Purple Beard Grass; Purple Needle Grass; Purple Needlegrass; Purple Three Awn; Purple Three-awn; Purple 3-awn; Purple Three-awn Grass; Purple Three-awned Grass; Purple Threeawn; Red Threeawn; Reverchon Three-awn; Purple Triple-awn Grass; Purple Triple-awned Grass; Red 3 Awn; Red Three Awn; Red Three Awn Grass; Red 3-awn; Red Three-awn; Red Three-awn Grass; Red Threeawn; Red Threeawn Grass; Reverchon Threeawn; Spear-grass; Three Awn (a name also applied to other species and to the genus *Aristida*); Three-awn (a name also applied to other species and to the genus *Aristida*); Threeawn (a name also applied to other species and to the genus *Aristida*); Tres Barbas (a name also applied to other species and to the genus *Aristida*); Tres Barbas Purpurea; Western Beard Grass; Western Beard-grass; Wire Grass (a name also applied to other species and to the genus *Aristida*); Wiregrass.

DESCRIPTION: Terrestrial annual or perennial graminoid (a bunchgrass (clumpgrass) with erect culms 4 to 40 inches in height and up 4 to 12 inches in width at the base; plants were observed and reported as being 8 to 12 inches in height and 4 to 6 inches in width at the base, plants were observed and reported as being 14 inches in height and 2 to 6 inches in width at the base); the foliage is light to dark green curing to gray or straw; the inflorescence is green, purplish or dark red-purple; the awns are purple; flowering generally takes place between early January and mid-August; however, flowering may occur throughout the year under favorable conditions (additional records, including varieties: one for early September, six for mid-September, two for late September, four for early October, three for late October, two for mid-November and two for late November). HABITAT: Within the range of this species it has been reported from mountains; rocky summits; gravelly-sandy, sandy and clayey-loamy mesas; plateaus; along canyon rims; rocky cliffs; chutes; along rocky and sandy canyons; rocky canyon sides; along bouldery-rocky-cobbly, rocky, rocky-gravelly, gravelly-sandy and sandy canyon bottoms; scree; talus slopes; crevices in boulders and rocks; gravelly bluffs; buttes; rocky knolls; ledges; bouldery and rocky, gravelly-sandy-clayey and sandy ridges; ridgetops; silty ridgelines; rocky openings in forests; along meadows; foothills; rocky, gravelly, sandy, loamy and clayey hills; rocky, rocky-gravelly and gravelly hillsides; sandy bases of escarpments; bedrock, bouldery, bouldery-gravelly-loamy, rocky, rocky-cobbly, rocky-sandy, rocky-sandy-loamy, shaley, cindery, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-sandy-clayey, gravelly-clayey, sandy, loamy, clayey, clayey-loamy, silty-loamy and silty-clayey slopes; sandy alluvial fans; rocky, rocky-gravelly, gravelly and sandy bajadas; bedrock, bouldery, rocky and shaley outcrops; amongst boulders and rocks; sandy lava flows; sand hills; sand dunes; in blow sand; gravelly and silty banks; breaks; cobbly-sandy terraces; rocky-sandy and sandy steppes; rocky, sandy, sandy-clayey, clayey, clayey-loamy and silty-loamy prairies; bouldery-rocky, rocky, gravelly, gravelly-sandy and sandy plains; rocky, rocky-sandy, cindery, gravelly, gravelly-loamy, gravelly-clayey, sandy, loamy, clayey, clayey-loamy and silty-clayey flats; rocky, gravelly-sandy and sandy valley floors; valley bottoms; along railroad right-of-ways; two-tracks and roadbeds; along gravelly, gravelly-loamy, sandy, sandy-loamy and clayey roadsides; along and in rocky, gravelly, sandy and clayey-loamy arroyos; along sandy bottoms of arroyos; along and in sandy draws; gulches; gravelly-sandy bottoms of gulches; rocky gullies; rocky-gravelly ravines; springs; in rocks along streams; bouldery streambeds; along creeks; along and in creekbeds; riverbeds; along and in bouldery, bouldery-cobbly-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; along and in bedrock, rocky, gravelly-sandy and sandy drainages; bouldery-rocky, rocky and pebbly drainage ways; sandy lakebeds; swamps; depressions; (rocky, gravelly and sandy) banks of washes; (sandy) edges of rivers and washes; (gravelly) margins of washes; shorelines of lakes; mudflats; gravel bars; sandy beaches; rocky-clayey, gravelly and sandy benches; gravelly terraces; bottomlands; gravelly and sandy floodplains; mesquite bosques; along ditches; recently burned areas; riparian areas, and disturbed areas growing in moist (rarely reported) and dry rocky desert pavement; bouldery, bouldery-rocky, bouldery-rocky-cobbly, bouldery-cobbly-sandy, bouldery-cindery, bouldery-gravelly, rocky, rocky-cobbly, rocky-gravelly, rocky-sandy, shaley, shaley-sandy, cobbly-sandy, cindery, gravelly, gravelly-sandy, pebbly and sandy ground; bouldery-gravelly loam, rocky loam, rocky-sandy loam, rocky-clayey loam, cobbly-gravelly loam, gravelly loam, gravelly-sandy loam, gravelly-

clayey loam, sandy loam, sandy-clayey loam, sandy-silty loam, clayey loam, silty loam, humusy loam and loam ground; rocky clay, rocky-sandy clay, gravelly clay, gravelly-sandy clay, sandy clay, silty clay and clay ground, and gravelly silty, sandy silty and silty ground, occurring from sea level to 9,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant may be grazed by Black-tailed Prairie Dogs (*Cynomys ludovicianus*) and White-tailed Jackrabbits (*Lepus townsendii*). *Aristida purpurea* is native to central and southern North America. *5, 6, 15, 33 (Page 244), 43 (081709), 44 (032611), 46 (Page 120), 48, 58, 63 (081709 - color presentation), 85 (100911 - color presentation), 105, 124 (032611), 140 (Page 197), **HR***

***Aristida ternipes* A.J. Cavanilles: Spidergrass**

COMMON NAMES: *Aristida* Grass (a name that could possibly be applied to any other species in the genus *Aristida*); Ba'aso (Uto-Aztecan: Mayo)¹⁴⁰; Chak-suuk <tok-suuk> (Mayan: Maya)¹⁴⁰; Guatoco (Uto-Aztecan: Guarijío)¹⁴⁰; Hahay'iqálmongwa <hahai'iqálmongwa> (Uto-Aztecan: Hopi)¹⁴⁰; Otatillo (a name also applied to other species, Spanish: Mexico)¹⁴⁰; Spider Grass; Spidergrass; Spider Three-awn; Spider Threeawn; Spider Three-awn Grass; Three Awn (a name also applied to other species and the genus *Aristida*); [Poverty, Six-weeks] Three Awn (English)¹⁴⁰; Three-awn (a name also applied to other species and the genus *Aristida*); Three-awn Spidergrass; Threeawn (a name also applied to other species and the genus *Aristida*); Tl'oh ("Grass" a name applied to grasses, Athapascan: Western Apache)¹⁴⁰; Tres Barbas Arqueado ("Arched Three Barbs", Spanish: Mexico)¹⁴⁰; Wahá□ ("Grass" a name applied to any grass, Uto-Aztecan: Northern Paiute)¹⁴⁰; Wa□ai ("Grass" a name applied to any grass, Uto-Aztecan: Tohono O'odham)¹⁴⁰; Zacate (Spanish)¹⁴⁰; Zacate Araña [de Tres Barbas] ("[Three-awn] Spider Grass" names also historically applied to other species, Spanish: Arizona, New Mexico, Sonora)¹⁴⁰; Zacate Barba ("Barbed Grass", Spanish: Sonora)¹⁴⁰; Zacate Barbón (Mexico: Sonora). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) 10 to 79 inches in height; one plant was observed and described as being 52 inches in height and 4 inches in diameter at the base); flowering generally takes place between mid-March and mid-December. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; bouldery-cobbly and rocky mesas; plateaus; rock cliffs; rocky canyons; rocky canyon walls; along rocky canyon bottoms; rocky talus; crevices in rocks; rock ledges; rocky ridges; rocky ridgetops; meadows; foothills; rocky, rocky-gravelly, gravelly-sandy, gravelly-clayey-loamy and sandy hills; rocky hillsides; bedrock, bouldery, rocky, rocky-gravelly, rocky-gravelly-clayey, rocky-loamy, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy and loamy slopes; alluvial fans; gravelly and sandy bajadas; rocky outcrops; amongst boulders and rocks; cobbly and gravelly plains; bouldery-sandy, rocky-loamy, gravelly, gravelly-sandy, sandy and silty flats; valley floors; valley bottoms; coastal plains; in roadbeds; along bouldery-rocky and gravelly roadsides; along rocky and sandy arroyos; rocky bottoms of arroyos; along draws; ravines; along streams; streambeds; along bouldery creeks; rocky creekbeds; along rivers; riverbeds; along and in rocky and sandy washes; within drainages; banks of creeks; along edges of washes; sandy beaches; benches; rocky terraces; bottomlands; sandy floodplains; mesquite bosques; along fencelines; stock tanks [charcos, repressos]; ditches; sandy riparian areas, and disturbed areas growing in dry bouldery, bouldery-rocky, bouldery-cobbly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, humusy loam and loam ground; sandy clay ground, and sandy silty and silty ground, occurring from sea level to 6,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Aristida ternipes* is native to southwest-central and southern North America; Central America, and northern South America. *5, 6, 15, 16, 33 (Page 238), 43 (092709), 44 (033011), 46 (Page 119), 58, 63 (092709 - color presentation), 77, **85** (101011 - color presentation), 124 (033011 - no record of species; genus record), 140 (Pages 196-198)*

***Aristida ternipes* A.J. Cavanilles: Spidergrass**

COMMON NAMES: *Aristida* Grass (a name that could possibly be applied to any other species in the genus *Aristida*); Ba'aso (Uto-Aztecan: Mayo)¹⁴⁰; Chak-suuk <tok-suuk> (Mayan: Maya)¹⁴⁰; Guatoco (Uto-Aztecan: Guarijío)¹⁴⁰; Hahay'iqálmongwa <hahai'iqálmongwa> (Uto-Aztecan: Hopi)¹⁴⁰; Otatillo (a name also applied to other species, Spanish: Mexico)¹⁴⁰; Spider Grass; Spidergrass; Spider Three-awn; Spider Threeawn; Spider Three-awn Grass; Three Awn (a name also applied to other species and the genus *Aristida*); [Poverty, Six-weeks] Three Awn (English)¹⁴⁰; Three-awn (a name also applied to other species and the genus *Aristida*); Three-awn Spidergrass; Threeawn (a name also applied to other species and the genus *Aristida*); Tl'oh ("Grass" a name applied to grasses, Athapascan: Western Apache)¹⁴⁰; Tres Barbas Arqueado ("Arched Three Barbs", Spanish: Mexico)¹⁴⁰; Wahá□ ("Grass" a name applied to any grass, Uto-Aztecan: Northern Paiute)¹⁴⁰; Wa□ai ("Grass" a name applied to any grass, Uto-Aztecan: Tohono O'odham)¹⁴⁰; Zacate (Spanish)¹⁴⁰; Zacate Araña [de Tres Barbas] ("[Three-awn] Spider Grass" names also historically applied to other species, Spanish: Arizona, New Mexico, Sonora)¹⁴⁰; Zacate Barba ("Barbed Grass", Spanish: Sonora)¹⁴⁰; Zacate Barbón (Mexico: Sonora). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) 10 to 79 inches in height; one plant was observed and described as being 52 inches in height and 4 inches in diameter at the base); flowering generally takes place between mid-March and mid-December. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; bouldery-cobbly and rocky mesas; plateaus; rock cliffs; rocky canyons; rocky canyon walls; along rocky canyon bottoms; rocky talus; crevices in rocks; rock ledges; rocky ridges; rocky ridgetops; meadows; foothills; rocky, rocky-gravelly, gravelly-sandy, gravelly-clayey-loamy and sandy hills; rocky hillsides; bedrock, bouldery, rocky, rocky-gravelly, rocky-gravelly-clayey, rocky-loamy, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy and loamy slopes; alluvial fans; gravelly and sandy bajadas; rocky outcrops; amongst boulders and rocks; cobbly and gravelly plains; bouldery-sandy, rocky-loamy, gravelly,

gravelly-sandy, sandy and silty flats; valley floors; valley bottoms; coastal plains; in roadbeds; along bouldery-rocky and gravelly roadsides; along rocky and sandy arroyos; rocky bottoms of arroyos; along draws; ravines; along streams; streambeds; along bouldery creeks; rocky creekbeds; along rivers; riverbeds; along and in rocky and sandy washes; within drainages; banks of creeks; along edges of washes; sandy beaches; benches; rocky terraces; bottomlands; sandy floodplains; mesquite bosques; along fencelines; stock tanks [charcos, repressos]; ditches; sandy riparian areas, and disturbed areas growing in dry bouldery, bouldery-rocky, bouldery-cobbly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, humusy loam and loam ground; sandy clay ground, and sandy silty and silty ground, occurring from sea level to 6,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Aristida ternipes* is native to southwest-central and southern North America; Central America, and northern South America. *5, 6, 15, 16, 33 (Page 238), 43 (092709), 44 (033011), 46 (Page 119), 58, 63 (092709 - color presentation), 77, **85** (101011 - color presentation), 124 (033011 - no record of species; genus record), 140 (Pages 196-198 & 298 - recorded as *Aristida ternipes* Cavailles var. *ternipes*)*

***Avena fatua* C. Linnaeus: Wild Oat**

COMMON NAMES: Aveia-brava (Portuguese: Brazil); Aveia-fátua (Portuguese: Brazil); Aveia-selvagem (Portuguese: Brazil); Avena Cimarrona (Spanish); Avena Loca (a name also applied to other species, Spanish); Avena Silvestre (Spanish); Avoine Folle (French); Common Wild Oat; Common Wild Oats; Common Wildoat; Common Wildoats; Drake; Fat Oat; Fat Wild Oat; Flaver; Flax Grass; Flax-grass; Flaxgrass; Flughafer (German); Folle Avoine (French); Havercorn (a name also applied to other species); Hever; Oat Grass (a name also applied to other species and to the genus *Avena*); Oatgrass (a name also applied to other species); Pin Grass (a name also applied to other species); Poor Oat; Potato Oat; Potato Oats; Spring Wild Oat; Spring Wild-oat; Tartarean Oat (a name also applied to other species); Wheat Oat; Wheat Oats; Wild Oat (a name also applied to other species); Wild Oats (a name also applied to other species and to the genus *Bromus* in New Mexico); Windhafer (German). DESCRIPTION: Terrestrial annual graminoid (erect culms 3 to 79 inches in height); the foliage is green; the flowers are green; flowering generally takes place between early February and late August (additional records: two for mid-January, one for early October, one for late October, one for mid-December and one for late December). HABITAT: Within the range of this species it has been reported from mountains; cliffs; rocky and rocky-sandy canyons; rocky canyon bottoms; pockets of soil in rocks; bluffs; ridgetops; openings in woodlands; meadows; hills; rocky, cobbly-sandy-loamy and clayey hillsides; rocky, rocky-loamy, rocky-clayey, sandy, sandy-loamy, loamy, loamy-clayey and clayey slopes; sandy bajadas; rocky outcrops; sandy plains; sandy, clayey and clayey-loamy flats; basins; valley floors; coastal flats; coastal hills; along railroad right-of-ways; along rocky, rocky-gravelly-loamy, gravelly, gravelly-loamy and clayey-loamy roadsides; seeps; springs; along streams; sandy streambeds; along and in rocky-cobbly creeks; creekbeds; along rivers; along and in gravelly and sandy washes; drainages; freshwater marshes; depressions; swales; (rocky) banks of streams, rivers, riverbeds and washes; (rocky) edges of ponds and lakes; margins of washes; benches; terraces; bottomlands; floodplains; lowlands; stock tanks; canals; canal banks; along ditches; silty ditch banks; bouldery and sandy riparian areas; waste places and disturbed areas growing in wet, moist and dry bouldery, rocky, rocky-cobbly, rocky-sandy, gravelly and sandy ground; rocky loam, rocky-gravelly loam, cobbly-sandy loam, gravelly loam, sandy loam, clayey loam, silty loam and loam ground; bouldery clay, rocky clay, loamy clay and clay ground, and silty ground, occurring from sea level to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant which poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food. Seed can remain dormant in soil for as long as 10 years. *Avena fatua* is native to Europe; Asia, and northern Africa. *5, 6, 15, 16, 33 (Page 166), 43 (092709), 44 (032611 - color photograph), **46** (Page 100), 63 (092709 - color presentation), 68, 77, **85** (101311 - color presentation), 101 (color photograph), 124 (032611), 127, **WTK** (August 4, 2005)*

***Bothriochloa barbinodis* (M. Lagasca y Segura) W.G. Herter: Cane Bluestem**

SYNONYMY: *Andropogon barbinodis* M. Lagasca y Segura. COMMON NAMES: Algodoneso (Spanish: Mexico)¹⁴⁰; Barbed Beard Grass (Oklahoma); Barbed Beard-grass (Oklahoma); Beard-grass (a name also applied to other species and the genus *Bothriochloa*); Bristlejoint Bluestem; Cane Beard Grass; Cane Beard-grass (English)¹⁴⁰; Cane Beardgrass; Cane Bluestem; Cola de Coyote (“Coyote’s Tail”, Spanish: Nuevo León)¹⁴⁰; Feather Bluestem; Feather Grass; Fuzzy Top; Fuzzy Top Beardgrass; Fuzzy-top; Palmer’s Cane Bluestem; Perforated Bluestem; Pin-hole Beard Grass; Pinhole Beardgrass; Pinhole Bluestem; Pitted Beardgrass; Plains Beardgrass; Popotillo [Perforado, Plateado] (“[Perforated, Folded] Little Broom”, Spanish: Sonora)¹⁴⁰; Popotillo Algodonero (Spanish); Silver Beardgrass; T’oh (“Grass” a word used for any grass, Athapascan: Western Apache)¹⁴⁰; Wahá□ (“Grass” a word used for any grass, Uto-Aztecan: Northern Paiute)¹⁴⁰; Wa□ai (“Grass” a word used for any grass, Uto-Aztecan: Tohono O’odham)¹⁴⁰; Ya-jewel-g-ute (Havasupai); Zacate Popotillo (“Little Broom Grass”, Spanish: Mexico)¹⁴⁰; Zacatón (Hispanic). DESCRIPTION: Terrestrial perennial graminoid (a bunchgrass (clumpgrass) with decumbent and/or erect to spreading culms 20 inches to 5 feet in height; one plant was observed and described as being 4 inches in width at the base); the foliage is bluish-green or yellow-green curing to a dull red, reddish-brown or yellow; the spikelets (flowers) are tawny-green or tan; the silvery-white inflorescences are oblong to fan-shaped; flowering generally takes place between late March and early December (additional records: one for early February and one for mid-February). HABITAT: Within the range of this species it has been reported from rocky mountains; rocky and gravelly mesas; plateaus; along cliff faces; rocky and gravelly-loamy canyons; along bedrock, bouldery-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy canyon bottoms; rocky chasms; rocky bases of cliffs; crevices in bedrock, boulders and rocks; buttes; ledges; rocky and sandy-loamy ridges; rocky ridgetops;

clearings in woodlands; meadows; cinder cone peaks; rocky foothills; rocky hills; rocky and gravelly hillsides; escarpments; rocky, rocky-loamy, gravelly, gravelly-sandy-loamy, gravelly-loamy, gravelly-clayey, gravelly-clayey-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy and clayey-loamy slopes; bases of slopes; bajadas; rocky outcrops; amongst boulders and rocks; sand dunes; sandy plains; gravelly, sandy, sandy-clayey and clayey flats; rocky valley floors; railroad right-of-ways; sandy roadbeds; along gravelly, gravelly-loamy, sandy and silty-clayey-loamy roadsides; along rocky, stony and sandy arroyos; sandy bottoms of arroyos; sandy-clayey-loamy draws; gullies; ravines; seeps; springs; along sandy streams; along and in bouldery streambeds; along creeks; along and in creekbeds; along rivers; within bouldery-cobbly-sandy riverbeds; along and in rocky, rocky-gravelly, cobbly-sandy-loamy, gravelly, gravelly-sandy, gravelly-loamy, sandy and clayey washes; within gravelly-sandy-loamy drainages; within rocky drainage ways; ciénegas; swales; rock tanks; along (sandy) banks of creeks, rivers, washes and lakes; (sandy) edges of creeks; bouldery-sandy and sandy beaches; benches; rocky and gravelly terraces; bottomlands; floodplains; mesquite bosques; stock tanks; along and in ditches; bouldery-cobbly-sandy, rocky and sandy riparian areas, and disturbed areas growing in moist and dry rocky desert pavement; bouldery, bouldery-cobbly-sandy, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-clayey loam, cobbly-sandy loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam, silty-clayey loam and loam ground; gravelly clay, sandy clay and clay ground, and silty ground, occurring from sea level to 7,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and is extremely drought-resistant and tolerant of coastal conditions. Pronghorn (*Antilocapra americana*) browse this plant. *Bothriochloa barbinodis* is native to southwest-central and southern North America; Central America, and western and southern South America. *5, 6, 15, 16, 30, 33 (recorded as *Andropogon barbinodis* Lag., Page 306), 43 (092709), 44 (032711), 46 (recorded as *Andropogon barbinodis* Lag., Page 142), 48, 58, 63 (092709 - color presentation), 77, **85** (101511 - color presentation), 105 (recorded as *Andropogon barbinodis* Lag.), 124 (032711), 140 (Pages 198-199 & 299)*

***Bouteloua aristidoides* (K.S. Kunth) A.H. Grisebach: Needle Grama**

COMMON NAMES: Aceitilla (Spanish); Navajita; Needle Grama; Needle Grama Grass; Needle Gramma; Needlegrama; Pasto de Cabra (Spanish); Six Weeks Grama Grass; Six Weeks Needle Grama; Six-weeks Needle Grama; Sixweeks Needle Grama; Tochite (Spanish); Zacate Saitillo. DESCRIPTION: Terrestrial annual tufted graminoid (decumbent and/or geniculate culms 2 to 24 inches in height); the foliage is light green or purple curing to straw; the flowers are purplish; the anthers are yellow or yellow & red; flowering generally takes place between mid-July and late October (additional records: two for early January, one for late January, one for early February, one for early March, one for mid-March, five for early April, one for late April, one for early May, one for mid-November, two for late November and one for late December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy mesas; sandy mesas; cliffs; along rocky canyons; canyon bottoms; chasms; bluffs; ridges; meadows; rocky hills; rocky-gravelly hilltops; rocky hillsides; sandy bases of escarpments; rocky, rocky-gravelly, rocky-clayey-loamy, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-clayey, gravelly-clayey-loamy, sandy, sandy-loamy, sandy-clayey, sandy-silty and clayey-loamy slopes; gravelly bajadas; rocky coves; sand hills; sand dunes; sand hummocks; sand dunes; in blow sand; edges of dune fields; plains; rocky, gravelly, sandy and sandy-loamy flats, basins; clayey valley floors; loamy valley bottoms; coastal dunes; gravelly, gravelly-sandy, sandy and sandy-loamy roadsides; within arroyos; sandy bottoms of arroyos; stony-sandy draws, seeps; springs; along streams; streambeds; creekbeds; along rivers; sandy riverbeds; along and in rocky, gravelly, gravelly-sandy, sandy, clayey and silty-clayey washes; within drainages; ciénegas; depressions; (sandy-loamy) banks of washes; margins of washes; (rocky-sandy) shores of lakes; benches; gravelly deltas; sandy terraces; loamy bottomlands; sandy and silty floodplains; clayey lowlands; sandy mesquite bosques; riparian areas; waste places, and disturbed areas growing in dry rocky desert pavement; bouldery, rocky, rocky-gravelly, rocky-sandy, stony-sandy, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; gravelly clay, sandy clay, silty clay and clay ground, and sandy silty and silty ground, occurring from sea level to 8,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The Six-weeks Needle Grama is a favored food of the Rufous-winged Sparrow (*Aimophila carpalis*). *Bouteloua aristidoides* is native to southwest-central and southern North America. *5, 6, 15, 16, 30, 33 (Page 141), 43 (092809), 44 (032711), 46 (Page 128), 58, 63 (052809 - color presentation), 68, 77, 85 (101611 - color presentation), 105, 124 (032711 - no record of species; genus record), 140 (Pages 200 & 299), **HR***

***Bouteloua chondrosioides* (K.S. Kunth) G. Bentham ex S. Watson: Sprucetop Grama**

COMMON NAMES: Harvard Grama; Pasto (Hispanic); Spruce-top Grama; Sprucetop; Sprucetop Grama; Uitsaku (Purépecha); Woolly-spiked Grama. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with erect culms 4 to 24 inches in height); the foliage is bright green, purple or yellow curing to gray-white; the anthers are orange or yellow; the spikelets (flowers) are purple-hued; flowering generally takes place between early August and early November (additional records: one for early April, one for late June and one for mid-July). HABITAT: Within the range of this species it has been reported from mountains; bases of mountains; rocky and gravelly mesas; grassy plateaus; canyons; canyon sides; canyon bottoms; pockets of soil in rocks; rocky bluffs; ridges; ridgetops; rocky and gravelly-loamy foothills; rocky, rocky-gravelly and stony hills; rocky hillsides; along rocky, rocky-gravelly, gravelly-sandy-loamy, gravelly-loamy, gravelly-clayey, gravelly-clayey-loamy and sandy slopes; bases of slopes; rocky outcrops; amongst boulders; sandy plains; rocky flats; along rocky-loamy roadsides; within draws; bottoms of draws; gulches; along streams; within creekbeds; floodplains, and disturbed areas growing in dry bouldery, rocky, rocky-gravelly, stony, gravelly and sandy ground; rocky loam, gravelly loam, gravelly-sandy loam, gravelly-

clayey loam, sandy loam and clayey loam ground, and gravelly clay ground, occurring from 600 to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Purple and yellow forms were reported. *Bouteloua chondrosioides* is native to southwest-central and southern North America and Central America. *5, 6, 15, 30, 33 (Page 145), 43 (081910), 44 (011411 - no record of species; genus record), 46 (Page 128), 48, 58, 63 (081910), 77, 85 (081910 - color presentation), 105, 124 (020211 - no record of species; genus record), 140 (Page 299)*

***Bouteloua curtipendula* (A. Michaux) J. Torrey: Sideoats Grama**

COMMON NAMES: Avenilla (Hispanic); Banderilla (“Little Flag”, Spanish: Baja California, Chihuahua, Sonora); [Pasto] Banderilla (“Little Flag [Grass]”, Spanish: Chihuahua, Sonora)¹⁴⁰; Banderita (Hispanic); Dadpk Wa□ai <da:pk washai, dadpk washai> (“Slippery Grass / Smooth Grass”, Uto-Aztecan: Hiá Ce□ O’odham, Tohono O’odham)¹⁴⁰; Fall Grama Grass; Fall Gramma Grass; Grama (a name also applied to other species and the genus *Bouteloua*, Spanish: Oklahoma); Grama-azul (Portuguese: Brazil); Grama del Cerro (Hispanic); Grama Grass (a name also applied to other species and the genus *Bouteloua*, Nebraska); Gramilla (“Little Grass”, Spanish: Mexico)¹⁴⁰; Hairy Mesquite Grass (a name also applied to other species, New Mexico); Hairy Muskit (a name also applied to other species); Harushö (Uto-Aztecan: Hopi)¹⁴⁰; Isnáap Ic Is (“Whose Fruit Is On One Side” a name also applied to other species, Hokan: Seri); Mesquit Grass (a name also applied to other species); Mesquite Grass (a name also applied to other species [Nebraska] and the genus *Bouteloua*); Muskit (Nebraska, a name also applied to other species); Navaja Sa’i <sha’i> (“Grass” a word used for any grass, Uto-Aztecan: Mountain Pima)¹⁴⁰; Navajita (“Little Knife” a name also applied to other species, Spanish: Baja California, Chihuahua, Sonora); Navajita Banderilla (Spanish: Baja California, Chihuahua, Sonora)¹⁴⁰; Owiv (“Grass”, Uto-Aztecan: Ute); Prairie Oats (Kansas)¹⁴⁰; Qm-u-se’-a (Havasupai); Racemed Atheropogon; Racemed Boutelous; Side Oat Grama; Side Oats; Side Oats Grama (Nebraska); Side Oats Grama Grass; Side Oats Gramma Grass; Side Oats Grammagrass; Side-oat Grama; Sideoat Gramma; Side-oat Gramma; Side-oats; Side-oats Grama (a name also applied to the genus *Bouteloua* - Nebraska); Side-oats Grama Grass; Side-oats Grama-grass; Side-oats Gramina; Side-oats Gramma; Side-oats Gramma-grass; Side-oats Gramma Grass; Side-oats Grass; Sideoat Grama; Sideoat Gramma; Sideoats Grama (English)¹⁴⁰; Sideoats Grama Grass; Sideoats Gramma-grass; Sideoats Grass; Ta Tān Ij (Kiowa Tanoan: Tewa)¹⁴⁰; Tall Grama (a name also applied to other species [Nebraska] and the genus *Bouteloua*); Tall Grama Grass; Tall Grama Oats (Iowa); Tall Grama-grass; Tall Gramma Grass; Tall Mesquite (a name also applied to other species); Tall Mesaquite Grass; Tap’ēñita (Kiowa Tanoan: Tewa)¹⁴⁰; Tl’oh (“Grass”, a word used for grasses, Athapascan: Western Apache)¹⁴⁰; Tl’oh Lichii <y’oh lici> (“Red Grass”, Athapascan: Navajo)¹⁴⁰; Tl’oh Nástasi (“Grass That Bends Back Around”, Athapascan: Navajo)¹⁴⁰; Tlobindaiñkehntii (“Grass With Seeds Lying on Top of One Another”, Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Uitsaku Juatarhu (Purépecha); Wahái (“Grass” a word used for grasses, Uto-Aztecan: Northern Paiute)¹⁴⁰; Wiry Grama; Zacate de Navaja (“Knife Grass”, Spanish: Sonora)¹⁴⁰. DESCRIPTION: Terrestrial perennial (usually) tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 3 to 52 inches in height and up to 2 feet in width at the base; one plant was observed and described as being 12 to 16 inches in height and 16 inches in width at the base, one plant was observed and described as being 28 inches in height and 4 inches in width at the base); the foliage is bluish-green or purple-green curing to reddish-brown or straw; the flowers are bright purple; the anthers are orange, purple, red, yellow or dark yellow; flowering generally takes place between late April and mid-November (additional records: one for early April, one for early December); the mature fruits are red-brown. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; bouldery, rocky, rocky-gravelly, gravelly, pebbly-sandy, sandy and clayey-loamy mesas; plateaus; cliffs; hanging gardens; sandy bases of cliffs; rocky and sandy canyon rims; along rocky and loamy canyons; stony canyon walls; in sand along canyon walls; along rocky and sandy canyon bottoms; rocky gorges; talus ridges; sandy crevices in rocks; rocky-gravelly and sandy bluffs; rocky, gravelly-clayey and clayey buttes; knolls; rocky and sandy ledges; along rocky, rocky-sandy, gravelly-loamy and sandy-silty-loamy ridges; rocky, gravelly-clayey, gravelly-silty-loamy ridgetops; clayey ridge slumps; openings in forests and woodlands; meadows; rocky and clayey-loamy foothills; rocky, rocky-gravelly and cindery (scoria) hills; sandy hilltops; rocky, shaley, stony and sandy hillsides; sandy bases of escarpments; along bedrock, bouldery, bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy, rocky-sandy-loamy, rocky-loamy, rocky-clayey-silty, shaley, shaley-silty, stony, stony-gravelly, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey, sandy, sandy-loamy, sandy-clayey-loamy, sandy-silty, loamy, clayey, clayey-loamy, clayey and silty-loamy slopes; gravelly bajadas; rocky outcrops; amongst boulders, rocks and cobbles; rockbeds; sandy lava flows; sand hills; sand bluffs; sand dunes; sandy-clayey banks; breaks; stony-gravelly benches; benchlands; shaley barrens; sandy, clayey-loamy and silty-clayey prairies; sandy and sandy-clayey plains; rocky, rocky-gravelly, sandy, sandy-clayey, sandy-silty and clayey flats; sandy, clayey, clayey-loamy and silty-clayey uplands; sandy valley floors; sandy roadcuts; along gravelly and sandy roadsides; along and in bedrock, rocky and gravelly arroyos; sandy bottoms of arroyos; along and in rocky, loamy, loamy-clayey and silty draws; bottoms of gullies; along ravines; bedrock bottoms of ravines; seeps; along springs; around streams; along streambeds; in silty-loamy soils along and in creeks; along rocky creekbeds; along rivers; riverbeds; along and in rocky, rocky-gravelly, gravelly and sandy washes; along and in rocky-clayey-silty, gravelly-sandy, sandy, gravelly-clayey, sandy, clayey and silty-loamy drainages; within drainage ways; ciénegas; marshes; silty-clayey depressions; in low swales with Desert Willow; along (gravelly-sandy, sandy, clayey and silty) banks of draws, creeks and rivers, gullies, streams, rivers and washes; along (rocky) edges of ravines, springs and washes; margins of rivers and pools; (clayey-loamy) shores of lakes; gravel bars; rocky-sandy benches; rock shelves; gravelly terraces; bottomlands; gravelly, sandy and clayey floodplains; mesquite bosques; along sandy fencelines; clayey catchments; stock tanks; rocky riparian areas, and disturbed areas growing in wet (rarely recorded); mucky-clayey (rarely recorded), and wet (rarely recorded), moist (rarely recorded) and dry rimrock; rocky desert pavement; bouldery, bouldery-rocky-sandy, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, stony-

gravelly, cobbly, cindery (scoria), cindery-gravelly, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; rocky loam, rocky-sandy loam, rocky-clayey loam, gravelly loam, gravelly-clayey loam, gravelly-silty loam, sandy loam, sandy-clayey loam, sandy-silty loam, clayey loam, silty loam, silty-clayey loam and loam ground; bouldery clay, gravelly clay, gravelly-sandy clay, sandy clay, loamy clay, silty clay and clay ground; rocky silty, rocky-clayey silty, shaley silty, sandy silty and silty ground, and chalky ground, occurring from 300 to 9,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial fiber or fodder crop; it was also noted as having been used as a decoration. Sideoats Grama may be useful in controlling erosion. Stems may occur singly or in small clusters from creeping rhizomes (var. *curtipendula*), or form into large clumps from a common root crown (var. *caespitosa*). In areas where it occurs naturally, consider including Sideoats Grama seed in reseeding mixtures. This plant is a larval food plant for the Orange Skipperling (*Copaeodes aurantiacus*). *Bouteloua curtipendula* is native to central and southern North America; Central America, and South America. *5, 6, 15, 16, 18, 30, 33 (Page 143, "One of the most important range grasses in the Southwest, highly palatable and a vigorous grower."), 43 (092909), 44 (041311), 46 (Page 129), 48, 58, 63 (092909 - color presentation), 77, 82, 85 (102211 - color presentation), 105 ("This is one of our most important range grasses. ... It cures well and maintains a fairly high feeding value throughout the year. ... Sideoats is a normal component of most Arizona grassland ranges, and these ranges are not in excellent condition without an abundance of the grass. It lengthens the grazing season and increases forage production, in addition to providing variety in the feed."), 106 (061407), 124 (041311), 127, 140 (Pages 199-200 & 299)*

***Bouteloua eludens* D. Griffiths: Santa Rita Mountain Grama**

COMMON NAMES: Elusive Grama; Santa Rita Grama; Santa Rita Mountain Grama. DESCRIPTION: Terrestrial perennial tufted graminoid (culms 8 to 28 inches in height); the leaf blades are light green; the flowers are purplish or yellow-green; flowering generally takes place between early August and mid-September (additional records: one for early April, one for late October and four for early November). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; crevices in rocks; pockets of soil; ridges; foothills; rocky, rocky-gravelly and gravelly hills; hilltops; hillsides; rocky slopes; rocky, rocky-gravelly and gravelly slopes; rocky outcrops; amongst rocks; banks; flats; along sandy roadsides; gulches; riverbeds; along washes; banks of gulches, and floodplains growing in dry rocky, rocky-gravelly, gravelly and sandy ground and rocky loam ground, occurring from 2,600 to 6,200 feet in elevation in the woodland, grassland and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Santa Rita Mountain Grama may somewhat resemble the Sprucetop Grama (*Bouteloua chondrosioides*) and is often observed to be growing with it. *Bouteloua eludens* is native to southwest-central and southern North America. *5, 6, 33 (Pages 143-145), 43 (022011), 44 (022011 - no record of species), 46 (Page 128), 58, 63 (022011), 85 (022011 - color presentation), 124 (022011 - no record of species; genus record)*

Bouteloua filiformis (see *Bouteloua repens*)

***Bouteloua hirsuta* M. Lagasca y Segura (var. *hirsuta* is the variety reported as occurring in Arizona): Hairy Grama**

COMMON NAMES: Black Grama; Black Grama Grass; Bristly Mesquit; Bristly Mesquite; Bristly Muskit; Buffalo Grass; Grama Grass; Gramma Grass; Hairy Grama; Hairy Mesquite; Hairy Mesquite Grass; Hairy Mesquite-grass; Mezquit Grass; Navajita Velluda (Hispanic); Peyiokiyata ("Forked Grass?" Lakota?); Short Grama; Spiked Grama; Tall Grama; Zacate Banderita (Hispanic). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent to erect culms 4 to 30 inches in height); the foliage is bluish-green curing to gray or straw; the flowers may be green, dark purple or purple-green; the anthers are cream or yellow; flowering generally takes place between late June and early November (flowering beginning as early as April and May has been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky, rocky-clayey, gravelly, gravelly-sandy and sandy mesas; plateaus; rocky canyons; along sandy canyon bottoms; in sandy crevices; rocky-gravelly and sandy bluffs; rocky and gravelly knolls; stony tops of knolls; rocky ridges; rocky, gravelly and gravelly-loamy ridgetops; sandy bases of ridges; meadows; foothills; rocky and rocky-gravelly hills; bouldery and stony hilltops; bouldery, rocky, gravelly-sandy, sandy and clayey hillsides; along bouldery, bouldery-rocky, bouldery-gravelly-loamy, rocky, rocky-gravelly-sandy, rocky-sandy-loamy, rocky-loamy, stony-gravelly, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, loamy and clayey-loamy slopes; rocky outcrops; amongst boulders and rocks; lava flows; sandhills; sand dunes; breaks; rocky and rocky-sandy steppes; rocky and sandy prairies; gravelly-sandy and sandy plains; rocky and sandy flats; rocky and sandy valley floors; road beds along gravelly-loamy and sandy roadsides; rocky arroyos; within draws; streambeds; creekbeds; sandy washes; within rocky and rocky-clayey-silty drainages; along banks of creeks; shores of lakes; stony-gravelly benches; sandy alluvial mounds; gravelly terraces; clayey bottomlands; floodplains; lowlands; around and in stock tanks; gravelly and sandy riparian areas, and disturbed areas growing in moist and dry desert pavement; bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, stony, stony-gravelly, gravelly, gravelly-sandy and sandy ground; bouldery-gravelly loam, rocky loam, rocky-gravelly loam, rocky-sandy loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; rocky clay, sandy clay and clay ground, and rocky silty, rocky-clayey silty and silty ground, occurring from 100 to 8,300 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, and may form rings. This plant was reported to have been utilized by native peoples of North America;

it was noted as having been used as a fodder and as a ceremonial item. Like Blue Grama (*Bouteloua gracilis*) and Buffalo Grass (*Buchloë dactyloides*) it is a hardy, drought resistant species of the Great Plains. Hairy Grama may be browsed by Pronghorn (*Antilocapra americana*). *Bouteloua hirsuta* is native to south-central and southern North America and Central America. *5, 6, 15, 30, 33 (Pages 147-148), 43 (081210 - *Bouteloua hirsuta* Lag.), 46 (Page 128), 48, 58, 63 (081310 - color presentation of seed), 77, 85 (081310 - color presentation), 105, 124 (102510), 127, 140 (Page 299)*

***Bouteloua radicata* (E.P. Fournier) D. Griffiths: Purple Grama**

COMMON NAME: Navajita Morada (Spanish); Purple Grama. DESCRIPTION: Terrestrial perennial graminoid (a bunchgrass (clumpgrass) with erect culms 12 to 32 inches in height); the florets are purplish; based on few records located flowering generally takes place between mid-August and early October. HABITAT: Within the range of this species it has been reported from mountains; gravelly mesas; bases of cliffs; rocky canyons; rocky canyon sides; canyon bottoms; rocky points; crevices in boulders and rocks, buttes; rock ledges; rocky ridges; ridgetops; meadows; foothills; rocky hills; hilltops; along rocky hillsides; rocky, rocky-gravelly, stony and gravelly slopes; pebbly-clayey-loamy piedmonts; rocky outcrops; on boulders and rocks; amongst boulders; on rocks; rocky flats; along roadsides; along and in rocky draws; in cobbly streambeds; riverbeds; within sandy washes; (gravelly) edges of arroyos, draws and washes; margins of washes; sandy riparian areas, and disturbed areas growing in moist and dry rocky, rocky-gravelly, stony, cobbly, gravelly and sandy ground; rocky loam, gravelly loam, pebbly-clayey loam and loam ground, and rocky clay ground sometimes forming small localized colonies or almost pure stands over large areas, occurring from 600 to 9,900 feet in elevation in the forest, woodland, scrub, grassland, desert scrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Bouteloua radicata* is native to southwest-central and southern North America. *5, 6, 15, 30 (unable to access 120906), 33 (Pages 145-146), 43 (100910 - *Bouteloua radicata* Griffiths), 44 (102211 - no record of species; genus record), 46 (Pages 128-129), 63 (100910), 85 (102211 - color presentation including habitat), 124 (102211 - no record of species; genus record), 140 (Page 299)*

***Bouteloua repens* (K.S. Kunth) F.L. Scribner & E.D. Merrill: Slender Grama**

SYNONYMY: *Bouteloua filiformis* (E.P. Fournier) D. Griffiths). COMMON NAMES: Navajita ("Little Knife" a name also applied to other species, Spanish: Mexico, Sonora); Navajita Rastrera (Spanish); Large Mesquite Grama; Slender Grama; Zacate Sabanilla (Spanish). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 4 to 32 inches in height and up to 4 inches in width at the base); the leaves are bright green (purple and yellow forms were also reported) curing to gray or yellow; the spikelets (flowers) are reddish-purple; the anthers are orange, purple, red or yellow; flowering generally takes place between early August and early November (additional records: two for early January, three for late February and one for mid-June; flowering beginning as early as June and July and ending as late as December has also been reported). HABITAT: Within the range of this species it has been reported from rocky mountains; gravelly and gravelly-loamy mesas; cliff faces; bases of cliffs; rocky canyons; along gravelly-sandy canyon bottoms; talus slopes; crevices in rocks; pockets of soil in rocks; rocky buttes; rocky ledges; bedrock ridges; rocky ridgetops; openings in forests; rocky and gravelly-loamy foothills; rocky hills; hilltops; rocky and rocky-clayey hillsides; along rocky, rocky-gravelly, rocky-gravelly-sandy-loamy, rocky-clayey, rocky-sandy-loamy, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy and clayey slopes; alluvial fans; bajadas; bedrock and rocky outcrops; amongst rocks; prairies; llanos; rocky, cobbly and sandy plains; sandy and clayey flats; bedrock valley floors; railroad right-of-ways; along rocky roadbeds; along gravelly and sandy roadsides; along rocky arroyos; bottoms of arroyos; rocky draws; bottoms of draws; gulches; ravines; along streams; along and in rocky streambeds; along and in rocky, gravelly, gravelly-loamy and sandy washes; along and in bedrock drainages; within drainage ways; ciénegas; rocky-clayey swales; (gravelly-loamy) banks of washes; edges of arroyos; (sandy) shorelines of oceans; benches; bottomlands; floodplains; riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy loam, rocky-sandy loam, cobbly-sandy loam, gravelly loam, gravelly-sandy loam, sandy loam and clayey loam ground, and rocky clay and clay ground, occurring from sea level to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desert scrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Slender Grama holds up well under heavy grazing pressure. *Bouteloua repens* is native to southwest-central and southern North America; Central America and coastal islands in the Caribbean Sea, and northern South America. *5, 6, 15, 16, 33 (recorded as *Bouteloua filiformis* (Fourn.) Griffiths, Page 145), 43 (093009), 44 (112210 - no record of species; genus record), 46 (recorded as *Bouteloua filiformis* (Fourn.) Griffiths, Page 129), 48, 58, 63 (093009 - color presentation), 77, 85 (102211 - color presentation), 105 (recorded as *Bouteloua filiformis* (Fourn.) Griffiths), 124 (102510 - no record of species; genus record), 140 (Page 299)*

Bouteloua repens var. *repens* (see footnote 85 under *Bouteloua repens*)

Brachiaria arizonica (see *Urochloa arizonica*)

***Bromus carinatus* W.J. Hooker & G.W. Arnott: California Brome**

COMMON NAMES: Arizona Brome (a name also applied to other species); Basiawari (Hispanic); Basicuáare (Hispanic); Bromo de California (Spanish); California Brome; California Brome Grass; California Brome-grass; California Bromegrass; California Keeled Brome; California Mountain Brome; Californian Brome; Camaloti (Hispanic); Grama (Hispanic); Great Western Brome; Keeled Brome; Large Flowered Brome; Large-flowered Brome; Masiyague (Hispanic); Mountain Brome; Mountain Bromegrass; Native California Brome; Pipillo (Hispanic); Pipilo (Hispanic); Sweet Brome; Tigrillo (Hispanic);

Tupikua (Purépecha); Zacate (Hispanic); Zacate Bromo (Hispanic). DESCRIPTION: Terrestrial annual or perennial tufted graminoid (a bunchgrass (clumpgrass) with ascending and/or erect culms 1 to 6 feet in height and up to 12 inches in width at the base); the foliage may be reddish or yellow-green; the flowers may be dull green, green, purplish or purplish-red; the anthers are cream-yellow or pale yellow; flowering generally takes place between late March and early October (additional records: one for late February, one for early March, two for late October and one for late December). HABITAT: Within the range of this species it has been reported from mountains; bedrock-shaley-clayey and rocky mountaintops; mountainsides; cobbly peaks; mesas; rocky bases of cliffs; rock walls; chutes; along bouldery and gravelly-loamy canyons; along rocky and gravelly canyon bottoms; chasms; bases of limestone fins; scree slopes; rocky talus; crevices in rocks; along bluffs; rocky buttes; knolls; bouldery and stony ridges; along rocky and rocky-sandy-loamy ridgetops; along ridgelines; clayey clearings in forests and woodlands; rocky, stony, sandy-loamy, clayey-loamy and loamy meadows; foothills; rocky, loamy and chalky hills; rocky, cobbly-sandy-loamy, gravelly and sandy hillsides; bouldery, rocky, rocky-gravelly, rocky-sandy-loamy, rocky-clayey, shaley-sandy, shaley-clayey-loamy, stony, stony-gravelly, gravelly, gravelly-loamy, gravelly-clayey-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy, loamy, clayey and clayey-loamy slopes; rocky-sandy-loamy alluvial fans; sandy bajadas; bouldery and rocky outcrops; on boulders; amongst rocks; lava flows; sand dunes; breaks; benches; pebbly and sandy plains; rocky, gravelly, sandy, loamy, clayey-loamy and silty-loamy flats; uplands; basins; gravelly-silty valley floors; coastal dunes; sandy coastal flats; along coasts; cut banks; along railroad right-of-ways; along gravelly, sandy, sandy-loamy and loamy roadsides; along and in rocky arroyos; sandy-loamy bottoms of arroyos; along bouldery-rocky, gravelly and sandy draws; slopes and bottoms of draws; gulches; gullies; rocky bottoms of gullies; within sandy-loamy ravines; along humusy seeps; springs; along streams; along bouldery and stony streambeds; in springy rocky soil along creeks; along and in gravelly and sandy creekbeds; along rivers; riverbeds; along and in rocky-sandy, rocky-silty, gravelly, gravelly-sandy, gravelly-sandy-silty and sandy washes; within rocky and gravelly drainages; along and in drainage ways; among and in pools; along ponds; rocky-clayey lakebeds; boggy areas; ciénegas; marshes; swamps; gravelly depressions; swales; along (rocky-silty, gravelly, gravelly-sandy and sandy) banks of arroyos, draws, streams, creeks, rivers, washes, pools and lakes; edges of springs, streams, creeks, washes, drainages, lakes and ciénegas; margins of seeps, streams, rivers, washes and lakes; shores of lakes; mudflats; along stony-cobbly-sandy, gravel and sand bars; rocky-sandy and sandy beaches; sandy benches; rocky strands; gravelly and sandy terraces; loamy bottomlands; sandy floodplains; mesquite bosques; along fencelines; along canals; along gravelly ditches; along reservoirs; loamy beaver meadows; along reservoirs; bouldery and gravelly-loamy riparian areas; waste places, and disturbed areas growing in spongy mossy; mucky-sandy, and wet, moist, damp and dry bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, shaley-sandy, stony, stony-cobbly-sandy, stony-gravelly, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, shaley-clayey loam, cobbly-sandy loam, gravelly loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; rocky clay, shaley clay, gravelly clay, sandy clay and clay ground; rocky silty, gravelly-silty, gravelly-sandy silty, sandy silty and silty ground; humusy ground; chalky ground, and rocky powdery and powdery ground, occurring from sea level to 11,400 feet in elevation in the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Bromus carinatus* is native to west-central and southern North America and Central America. *5, 6, 15, 30, 33 (Page 45), 43 (100209), 44 (032711), 46 (Page 77), 58, 63 (100209 - color presentation), 77 (recorded as *Bromus carinatus* H.&A. [incl. *B. arizonicus* (Shear) Stebbins]. Arizona Brome), 80 (The Ergot Fungus (*Claviceps* sp.) is listed as a Secondary Poisonous Range Plant. Species of the genus *Bromus* can be hosts of the Ergot Fungus. "Ergot contains poisonous alkaloids and other compounds that may cause chronic poisoning (gangrenous ergotism) in the extremities when consumed in small amounts, or convulsive poisoning when large amounts are eaten. Animals may be poisoned by feeding on mature, infected grain or hay. Livestock, especially cattle, and humans are susceptible. ... Pastures causing ergot poisoning should be mowed or the animals removed. Mildly poisoned animals will usually recover if removed from the infested pastures, kept quiet, and supplied with good feed and water. In Arizona, some losses may be expected on rangelands during wet years, but most losses have occurred from grazing pastures of Dallas Grass (*Paspalum dilatatum*).” See text for additional information.), 85 (102511 - color presentation), 101 (color photograph), 124 (032711), 127, 140 (Pages 201 & 299)*

Bromus carinatus var. *carinatus* (see footnote 85 under *Bromus carinatus*)

Bromus madritensis subsp. *rubens* (see *Bromus rubens*)

Bromus mairitensis subsp. *rubens* (see *Bromus rubens*)

***Bromus rubens* C. Linnaeus: Red Brome**

SYNONYMY: *Bromus madritensis* C. Linnaeus subsp. *rubens* (C. Linnaeus) Duvin; *Bromus matritensis* C. Linnaeus subsp. *rubens* (C. Linnaeus) Duvin ort. var.). COMMON NAMES: Bromo (a name also applied to the genus *Bromus*); Bromo Rojo (Spanish); Foxtail Brome; Foxtail Chess; Red Brome; Red Brome Foxtail Chess; Red Brome Grass; Red Brome-grass; Red Bromegrass; Red Foxtail Brome; Red Foxtail Chess; Red Foxtail Cheat-grass; Tufted Brome. DESCRIPTION: Terrestrial annual tufted graminoid (decumbent, geniculate, ascending and/or erect culms 3 inches to 2 feet in height); the foliage is light green curing to a light straw yellow; the spikelets (flowers) may be purple, red-brown, reddish or reddish-purple; the awns are reddish; flowering generally takes place between late January and early June (additional records: one for late June, one for early July and one for late August); the seedheads are red, reddish-brown or purplish. HABITAT: Within the range of this species it

has been reported from mountains; rocky mountainsides; sandy-silty mesas; cliffs; rocky-pebbly cliffsides; hanging gardens; bases of cliffs; rocky and stony canyons; rocky and clayey canyon bottoms; talus; pockets of sandy soil in bedrock, boulders and rocks; bluffs; buttes; rocky and rocky-stony ledges; rocky promontories; along rocky and silty-loamy ridges; ridgetops; sandy meadows; sandy edges of meadows; cinder cones; rocky foothills; bouldery, rocky, gravelly-sandy, sandy, loamy and silty-loamy hills; sandy-clayey and clayey hilltops; rocky and clayey hillsides; bedrock, bouldery, bouldery-rocky, rocky, rocky-sandy, rocky-clayey, rocky-clayey-loamy, rocky-loamy, cobbly-sandy-loamy, cindery, gravelly, gravelly-sandy, gravelly-clayey, sandy, loamy and silty-loamy slopes; rocky alluvial fans; rocky, gravelly and sandy bajadas; rocky outcrops; sandy bases of rock outcrops; amongst boulders and rocks; sand dunes; plains; rocky, rocky-sandy-clayey, cindery, gravelly, loamy, clayey and silty-loamy flats; cindery valley floors; valley bottoms; coastal bluffs; coastal flats; along railroad right-of-ways; along gravelly roadbeds; along rocky-clayey-silty, gravelly, gravelly-sandy and sandy-loamy roadsides; within rocky arroyos; draws; along rocky gullies; rocky and gravelly ravines; seeps; springs; around seeping streams; bouldery and rocky-sandy streambeds; along and in creeks; rocky creekbeds; along rivers; riverbeds; along and in rocky, stony-gravelly, gravelly, gravelly-sandy and sandy washes; within rocky and sandy drainages; rocky and sandy drainage ways; pondbeds; gravelly-clayey soils around lakes; sandy, sandy-silty and silty lakebeds; saltwater marshlands; depressions; swales; (gravelly-sandy, sandy and loamy) banks of streams, rivers and washes; along (sandy) edges of washes, lakes and freshwater and saltwater marshes; margins of washes; sandy beaches; sandy benches; rocky-silty, gravelly and sandy terraces; sandy, sandy-loamy and loamy bottomlands; rocky, sandy and loamy floodplains; mesquite bosques; stock tanks; around reservoirs; canal banks; bouldery, gravelly, gravelly-sandy and sandy riparian areas; sandy waste places; recently burned areas of scrub, and disturbed areas growing in wet, moist, damp and dry desert pavement; bouldery, bouldery-rocky, rocky, rocky-pebbly, rocky-sandy, shaley, stony, stony-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-clayey loam, cobbly-sandy loam, sandy loam, clayey loam, silty loam and loam ground; rocky-sandy clay, rocky clay, gravelly clay, sandy clay and clay ground, and rocky silty, rocky-clayey silty, gravelly silty, sandy silty and silty ground, occurring from sea level to 8,000 feet in elevation in the forest, woodland, scrub, grassland, deserts scrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant which poses a significant threat to our native biotic communities. *Bromus rubens* is native to southern Europe; middle and western Asia, and northern Africa. *5, 6, 15, 16, 22 (color photograph), 33 (Page 50), 43 (100309 - no record for *Bromus madritensis* subsp. *rubens*), 44 (032711 - species records located under *Bromus madritensis* L. subsp. *rubens* (L.) Husn; genus record), 46 (Page 78), 58, 63 (100409 - color presentation), 68, 77, 80 (**The Ergot Fungus (*Claviceps* sp.) is listed as a Secondary Poisonous Range Plant.** Species of the genus *Bromus* can be hosts of the Ergot Fungus. "Ergot contains poisonous alkaloids and other compounds that may cause chronic poisoning (gangrenous ergotism) in the extremities when consumed in small amounts, or convulsive poisoning when large amounts are eaten. Animals may be poisoned by feeding on mature, infected grain or hay. Livestock, especially cattle, and humans are susceptible. ... Pastures causing ergot poisoning should be mowed or the animals removed. Mildly poisoned animals will usually recover if removed from the infested pastures, kept quiet, and supplied with good feed and water. In Arizona, some losses may be expected on rangelands during wet years, but most losses have occurred from grazing pastures of Dallas Grass (*Paspalum dilatatum*).” See text for additional information.), 85 (102611 - color presentation), 105, 124 (032711 - no record of species; genus record), 140 (Pages 201, 202, 214 & 299), **WTK** (July 13, 2005)*

Cenchrus ciliaris (see *Pennisetum ciliare*)

Cenchrus incertus (see *Cenchrus spinifex*)

Cenchrus pauciflorus (see *Cenchrus spinifex*)

***Cenchrus spinifex* A.J. Cavanilles: Coastal Sandbur**

SYNONYMY: *Cenchrus incertus* M.A. Curtis, *Cenchrus pauciflorus* G. Bentham. COMMON NAMES: Bur Grass (a name also applied to other species and the genus *Cenchrus*, Oklahoma); Bur-grass (a name also applied to other species and the genus *Cenchrus*, Oklahoma); Burgrass (a name also applied to other species and the genus *Cenchrus*, Oklahoma); Capim-amoroso-da-areia (Portuguese: Brazil); Capim-carrapicho-da-areia (Portuguese: Brazil); Coast Sand Bur; Coast Sandbur (Texas); Coast Sandbur Grass; Coast Sandburr; Coast Sandspur; Coastal Sand Bur; Coastal Sand-bur; Coastal Sandbur; Coastal Sandburr; Coastal Sandburr Grass; Coastal Sandspur; Cock-spur Burr; Common Grass Bur; Common Grass Burr; Common Grass-bur; Common Grass-burr; Common Grassbur; Common Grassburr; Common Sandbur (a name also applied to other species); Field Sandbur (a name also applied to other species, Texas); Guizazo (Spanish); Huipapore; Mat Sandbur (a name also applied to other species); Sand Bur (a name also applied to other species and the genus *Cenchrus*); Sand-bur (a name also applied to other species and the genus *Cenchrus*); Sandbur (a name also applied to other species and the genus *Cenchrus*); Southern Sand-bur (a name also applied to other species); Southern Sandbur (a name also applied to other species); Spiny Bur Grass (a name also applied to other species); Spiny Burrgrass (a name also applied to other species). DESCRIPTION: Terrestrial annual or perennial (short-lived) tufted graminoid (spreading prostrate and/or geniculate culms 4 to 12 inches or occasionally to 40 inches in height or length); flowering generally takes place between late June and late October or possibly continuing until first frost (flowering records: one for early March, one for early April, two for late May, (one for late June, one for early July, one for mid-July, two for late July, three for early September, two for late September, one for early October, one for mid-October, two for late October), one for mid-November and one for mid-December); the spiny and hairy burs (1/2 inch in length) are reddish or yellowish. HABITAT: Within range reported from mountains; rocky canyons; canyon bottoms; rocky-sandy ridges; meadows; foothills; sandy hills; hillsides; gravelly-loamy, gravelly-clayey, sandy and clayey-loamy slopes; rocky-sandy-loamy alluvial

fans; dunes; sandy flats; valley floors; coastal dunes; along gravelly-loamy, sandy and sandy-loamy roadsides; rocky ravines; along streams; streambeds; along creeks; along rivers; riverbeds; along and in stony, gravelly, gravelly-clayey and sandy washes; drainages; depressions; sink-holes; swales; (gravelly) banks of washes; (sandy-loamy) edges of bays and ponds; sandy beaches; sandy strands; sandy terraces; bottomlands; rocky-sandy and sandy floodplains; mesquite bosques; along ditches; riparian areas; waste places, and disturbed areas growing in damp and dry rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly loam, sandy loam, clayey loam and loam ground, and rocky clay and gravelly clay ground, occurring from sea level to 6,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The barbed spines of the burs are painful to human beings and animals, sometimes causing inflammation and infection. *Cenchrus spinifex* may be confused with *Cenchrus longispinus* or *Cenchrus tribuloides*. *Cenchrus spinifex* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 15 (recorded as *Cenchrus incertus* M.A. Curtis), 33 (recorded as *Cenchrus pauciflorus* Benth., Page 265), 43 (020911), 44 (020911 - no record for Common Names under *Cenchrus spinifex*; common names listed under *Cenchrus incertus*), 46 (recorded as *Cenchrus pauciflorus* Benth., Page 140), 58 (recorded as *Cenchrus incertus* M.A. Curtis), 63 (021011 - color presentation), 68 (recorded as *Cenchrus incertus* M.A. Curtis, *Cenchrus pauciflorus* Benth.), 85 (021011 - color presentation), 124 (021011)*

Chloris elegans (see *Chloris virgata*)

***Chloris virgata* O. Swartz: Feather Fingergrass**

SYNONYMY: *Chloris elegans* K.S. Kunth. COMMON NAMES: Barbas de Indio (Hispanic); Cola de Zorra (Spanish); Plumerito (Hispanic); Feather Finger; Feather Finger Grass; Feather Finger-grass; Feather Fingergrass; Feather Windmill Grass; Feather Windmill-grass; Feather Windmillgrass; Feathered Chloris; Feathery Rhodes Grass; Feather-finger (Texas); Feather-top Chloris; Feather-top Rhodes Grass; Featherfinger (Texas); Feathertop Chloris; Feathertop Rhodes Grass; Feathertop Rhodesgrass; Finger Grass (a name also applied to other species and the genus *Chloris*); Five-finger Windmillgrass; Klossiegras (Afrikaans); Oldland Grass; Showy Chloris; Showy Windmillgrass; Silky Chloris; Silky Fingergrass; Sweet Grass (a name also applied to other species); Verdillo (Hispanic); Verdillo Plumerito (Spanish); Zacate de Cinco Dedos; Zacate de Cola de Zorra (Hispanic); Woolly-top Rhodes Grass; Zacate Lagunero (Spanish); Zacate Mota (Spanish); Zacate Pluma (Spanish). DESCRIPTION: Terrestrial annual tufted (usually) graminoid (a bunchgrass with decumbent, geniculate, ascending and/or erect culms ½ to 40 inches in height); the foliage is light green curing to light straw; the flowers are greenish; flowering generally takes place between mid-July and late October (additional flowering records: one for late January, one for early May, three for mid-May, one for mid-November, two for late November; flowering beginning as early as April has been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky and clayey-loamy mesas; bases of cliffs; rocky canyons; gravelly canyon bottoms; ridges; meadows; rocky foothills; amongst hills; rocky hillsides; rocky, rocky-clayey-loamy, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy, loamy and clayey-loamy slopes; gravelly bajadas; amongst boulders, rocks and pebbles; sand dunes; sandy prairies; plains; gravelly, sandy-loamy, loamy and clayey-loamy flats; clayey valley floors; valley bottoms; along rocky-gravelly-clayey, gravelly, gravelly-sandy, gravelly-loamy and sandy roadsides; arroyos; sandy bottoms of arroyos; draws; bottoms of draws; seeps; along streams; rocky streambeds; along creeks; creekbeds; along and in rocky, gravelly, sandy and clayey washes; within drainages; within drainage ways; around ponds; ciénegas; freshwater marshes; silty depressions; swales; along banks of rivers; (sandy and sandy-clayey) edges of washes; margins of washes; (rocky-sandy) shores of lakes; clayey mudflats; gravel bars; sandy beaches; sandy benches; rocky shoals; terraces; loamy bottomlands; floodplains; mesquite bosques; along fencelines; clayey-loamy stock tanks (represos); around reservoirs; along ditches; ditch banks; bouldery-cobbly-sandy and sandy riparian areas; gravelly waste places, and disturbed areas growing in moist, damp and dry bouldery, bouldery-cobbly-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy, pebbly and sandy ground; rocky-clayey loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam, clayey-humusy loam and loam ground; rocky clay, rocky-gravelly clay, sandy clay and clay ground, and silty ground, occurring from sea level to 7,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Chloris virgata* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea; northern, western and southern South America; southern Asia, and Africa and islands in the West Indian Ocean. *5, 6, 15, 16, 30, 33 (Page 130), 43 (100509), 44 (110211), 46 (Page 126), 58, 63 (110211 - color presentation), 68, 77, 85 (110211 - color presentation including habitat), 105, 124 (110211)*

***Cottea pappophoroides* K.S. Kunth: Cotta Grass**

COMMON NAME: Cotta Grass. DESCRIPTION: Terrestrial annual or perennial tufted graminoid (ascending and/or erect culms 10 to 40 inches in height); the inflorescence is purple; flowering generally takes place between early September and late October (flowering records: one for early February, seven for early September, two for late September and three for late October; flowering beginning as early as August and ending as late as November has been reported). HABITAT: Within the range of this species it has been reported from along mountains; cliffs; bases of cliffs; rocky canyons; rocky talus; rocky buttes; ledges; ridges; foothills; hills; hilltops; rocky hillsides; rocky and sandy slopes; sandy bajadas; amongst rocks; sandy and sandy-loamy plains; gravelly flats; valley floors; along rocky-sandy roadsides; along and in draws; streambeds; along rocky and sandy washes; within drainages; along (sandy and loamy) banks of arroyos and washes; benches; rocky shelves; terraces; bottomlands; floodplains; mesquite bosques; ditches; riparian areas, and disturbed areas growing in moist and dry rocky, rocky-sandy, gravelly and sandy ground and sandy loam and loam ground, occurring from 900 to 4,800 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat.

Cottea pappophoroides is native to southwest-central and southern North America and western and southern South America. *5, 6, 15, 16, 33 (Page 100), 43 (100509), 44 (110211 - no record of genus or species), 46 (Page 91), 58, 63 (110211 - color presentation of seed), 77, 85 (022711 - color presentation of dried material and seed), 124 (110211 - no record of genus or species), 140 (Page 299)*

Critesion murinum subsp. *leporinum* (see *Hordeum murinum* subsp. *leporinum*)

***Cynodon dactylon* (C. Linnaeus) C.H. Persoon: Bermudagrass**

COMMON NAMES: 'A'ai Hihimdam Va□ai (Uto-Aztecan: Hiá Ce□ O'odham)¹⁴⁰; 'A'ai Himdam Vashai [A'ai Hihimdam Wa□ai] ("Grass that Spreads in All Directions", Uto-Aztecan: Akimel O'odham and Tohono O'odham)¹⁴⁰; Acabacahuiztle (Hispanic); Acacahuiztli (Náhuatl); Acaxacahuiztli <acabacahuiztli> (Uto-Aztecan: Náhuatl)¹⁴⁰; Bahama Grass (var. *dactylon*); Bahama-grass; Bermud Grass; Bermudgrass; Bermuda Couch Grass; Bermuda Devil Grass; Bermuda Grass (a name applied to var. *dactylon* and to the genus *Cynodon*); Bermuda Grass (English)¹⁴⁰; Bermudagras (German, a name applied to var. *dactylon*); Bermudagrass (a name also applied to the genus *Cynodon*); Bramilla (Hispanic); Cane Grass; Canzuuc (Maya); Capim-bermuda (Portuguese, applied to var. *dactylon*); Chiendent Pied-de-poule (French); Coarse Kweek; Common Bermuda Grass; Common Bermuda-grass; Common Bermudagrass; Creeping Bermuda Grass; Creeping *Cynodon*; Creeping-cynodon; *Cynodon Dactyle* (French, applied to var. *dactylon*); Devil Grass; Devil's Grass (var. *dactylon*); Devilgrass; Dhub (India, applied to var. *dactylon*); Diente de Perro ("Dog's Tooth", Spanish)¹⁴⁰; Doab Grass; Doab-grass; Dog-tooth Grass (a name also applied to the genus *Cynodon*); Dog'-tooth; Dog's Grass; Dog's Tooth; Dog's Tooth Grass; Dog's-tooth Grass; Doob (India, applied to var. *dactylon*); Doob Grass; Doob-grass; Doorba; Dub (northern India); Dub Grass; Dub-grass; Durba (Bengal); European Bermuda Grass; Gallito ("Little Rooster", Spanish: Mexico)¹⁴⁰; Gallitos (Hispanic); Gewonekweek (Afrikaans); Giant Bermuda Grass (var. *aridus*); Giant Bermudagrass; Grama ("Grass", Spanish: Spain)¹⁴⁰; Grama de la Costa (Spanish); Grama-seda; Gramilla (Hispanic); Grana (Hispanic); Grama Rastrera (Spanish, applied to var. *dactylon*); Grand Chiendent (French, applied to var. *dactylon*); Green Couch; Green Couch Grass; Guix-biguiñi (Zapotec); Hariali (Deccan); Hariali Grass (var. *dactylon*); Hundezahngas (German, applied to var. *dactylon*); Indian Couch Grass; Indian Couch-grass; Indian Doab; Indian Doob; Kan-suuk (Mayan: Maya)¹⁴⁰; Ki: Weco Va□ai (Uto-Aztecan: Hiá Ce□ O'odham)¹⁴⁰; Kii Wecho Vashai [Ki: Weco Wa□ai] ("Grass Around Houses" used when first seen, Uto-Aztecan: Akimel O'odham and Tohono O'odham)¹⁴⁰; Komal Himdam ("Spreads Out Flat Grass", Uto-Aztecan: Akimel O'odham)¹⁴⁰; Kweekgras (Afrikaans, applied to var. *dactylon*); Lan-suuk (Maya); Manienie; Motie Molulu; Owiv ("Grass", Uto-Aztecan: Ute)¹⁴⁰; Pasto Bermuda (Hispanic); Pasto Estrella (Hispanic); Pata de Gallo ("Rooster's Foot", Spanish: Sonora)¹⁴⁰; Pata de Perdiz (Hispanic); Pata de Pollo (Hispanic); Quick Grass (var. *dactylon*); Scotch Grass; Scutch Grass; T'oh ("Grass" a word applied to any grass, Athapascan: Western Apache)¹⁴⁰; Tsakam Toom (Hispanic); Vai□oi [Vásoi] ("Grass" a word applied to any grass, Uto-Aztecan: Northern Tepehuan)¹⁴⁰; Wahá□ ("Grass" a word applied to any grass, Uto-Aztecan: Northern Paiute)¹⁴⁰; White Quick Grass; Wire Grass (a name also applied to other species and to the genus *Aristida*); Wire-grass; Xusí (Yuman: Cocopa)¹⁴⁰; Zacate (Hispanic); Zacate Bermuda (Spanish: Sonora)¹⁴⁰; Zacate Borrego (Hispanic); Zacate Chino (Hispanic); Zacate Conejo ("Rabbit Grass", Spanish: Chihuahua)¹⁴⁰; Zacate de Bermuda (Spanish, applied to var. *dactylon*); Zacata de Lana ("Wool Grass", Spanish: Mayo, Sonora)¹⁴⁰; Zacate del Conejo (Hispanic); Zacate Inglés ("English Grass", Spanish: Sonora)¹⁴⁰; Zacate Pillo (Hispanic); Zaruue (Hispanic); Zaruue (Mayan: Maya, Yucatán)¹⁴⁰.

DESCRIPTION: Terrestrial perennial graminoid (a sodgrass with usually stoloniferous, creeping decumbent and geniculate culms 2 to 24 inches in height); the foliage is green or yellow-green curing to straw after a frost; the color of the florets has been described as being purple; flowering generally takes place between mid-February and late November (additional records: one for early January and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky canyons; bouldery-gravelly-sandy, rocky and sandy canyon bottoms; pockets of sandy soil in boulders; buttes; meadows; foothills; rocky hills; bouldery and rocky hillsides; rocky, gravelly, sandy and clayey slopes; rocky outcrops; sand hummocks; prairies; plains; gravelly, sandy and clayey flats; valley floors; clayey valley bottoms; along railroad right-of-ways; along gravelly, gravelly-clayey-loamy and sandy roadsides; along sandy arroyos; gravelly and sandy bottoms of arroyos; seeps; springs; about streams; seeping streams; along streambeds; along creeks; along sandy creekbeds; along rivers; riverbeds; along and in rocky and sandy washes; within drainages; within rocky drainage ways; tinajas; waterholes; in clayey soils around ponds; ciénegas; freshwater marshes; clayey marshlands; sandy depressions; along (sandy) banks of draws, streams, creeks, rivers and washes; (sandy) edges of rivers, ponds, lagoons, bogs and marshes; shores of lakes; gravel bars; sandy beaches; sandy benches; loamy bottomlands; floodplains; mesquite bosques; in and around clayey-loamy stock tanks; sandy-loamy edges of reservoirs; edges of canals; along canal banks; along ditch banks; bouldery and sandy riparian areas; waste places, and disturbed areas growing in muddy and wet, moist, damp and dry bouldery, bouldery-cobbly-sandy, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; clay ground, and bouldery-gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 6,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant which poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a veterinary aid. Bermuda Grass is sometimes confused with another exotic species, Large Crabgrass (*Digitaria sanguinalis*) a species of similar general appearance. Bermuda Grass goes dormant when nighttime temperatures drop below freezing or average daytime temperatures are below 50 degrees Fahrenheit. Vigorous growth is achieved when nighttime temperatures are above 60 degrees Fahrenheit and daytime temperatures are above 85 degrees Fahrenheit. *Cynodon dactylon* is native to Africa. *5, 6, 15, 16, 18, 22 (color photograph), 30, 33 (Page 129), 43 (100509), 44 (032711), 46 (Page 124), 58, 63 (053109 - color presentation), 68, 77,

80 (Bermudagrass is listed as a Poisonous Cropland and Garden Plant. “Cattle grazing on Bermudagrass pasture may develop photosensitization, paralysis or a nervous syndrome.”), 85 (110311 - color presentation), 101 (color photograph), 105, 109, 124 (032711), 127, 140 (Pages 202-203 & 299), **HR***

***Digitaria californica* (G. Bentham) J.T. Henrard: Arizona Cottontop**

SYNONYMY: *Trichachne californica* (G. Bentham) M.A. Chase. COMMON NAMES: Arizona Cotton Grass; Arizona Cotton Top; Arizona Cotton-grass; Arizona Cotton-top; Arizona Cottongrass; Arizona Cottontop; California Cotton-grass; California Cotton-top; California Cottontop; California Crab Grass; California Crabgrass; Cotton Grass (a name also applied to other species); Cotton Top (Texas, a name also applied to other species); Cotton-top (a name also applied to other species); [Arizona, California] Cotton-top (English)¹⁴⁰; Cottongrass (a name also applied to other species); Cottontop (a name also applied to other species); Plumero Blanco (“White Feather Duster”, Spanish)¹⁴⁰; Punta Blanca (Spanish); T’oh (“Grass” a word applied to any grass, Athapascan: Western Apache)¹⁴⁰; Waháí (“Grass” a word applied to any grass, Uto-Aztecan: Northern Paiute)¹⁴⁰; Wáíai (“Grass” a word applied to any grass, Uto-Aztecan: Tohono O’odham)¹⁴⁰; Zacate Punta Blanca (“White Top Grass”, Spanish: Chihuahua, Sonora)¹⁴⁰. DESCRIPTION: Terrestrial perennial graminoid (a bunchgrass (clumpgrass) with geniculate, ascending and/or erect culms 1 to 4 feet in height); the foliage may be dark bluish-green, gray-green, green or yellow-green curing to gray or straw; spikelets (flowers) are purplish-pink, flowering generally takes place between early August and early December (additional records: one for early May and one for early July); the cottony seedheads are covered by silky hairs. HABITAT: Within the range of this species it has been reported from rocky mountains; mountaintops; sandy-loamy mesas; shaded rocky cliffs; bases of cliffs; rocky and gravelly-loamy canyons; rocky canyon walls; sandy canyon bottoms; bouldery and rocky talus slopes; crevices in rocks; rock buttes; knobs; ledges; rocky ridges; foothills; bouldery and rocky hills; rocky hillsides; bouldery escarpments; bouldery, bouldery-rocky, bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy-loamy, gravelly, gravelly-sandy, gravelly-clayey, gravelly-sandy-loamy, sandy, sandy-loamy, sandy-clayey and clayey-loamy slopes; alluvial fans; bajadas; bouldery outcrops; amongst boulders and rocks; silty plains; rocky and gravelly flats; hollows; valley floors; valley bottoms; roadbeds; along gravelly and sandy roadsides; arroyos; rocky draws; gulches; ravines; springs; along creeks; creekbeds; riverbeds; along and in sandy and silty-clayey washes; within drainage ways; marshes; along (rocky and sandy) banks of arroyos, streams and washes; gravel bars; along benches; terraces; clayey bottomlands; sandy floodplains; ditches; sandy riparian areas, and disturbed areas growing in dry rocky desert pavement; bouldery, bouldery-rocky, bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, cobbly, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; rocky-sandy loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam and loam ground; gravelly clay, sandy clay, silty clay and clay ground, and sandy silty and silty ground, occurring from 200 to 7,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Digitaria californica* is native to southwest-central and southern North America; Central America, and western and southern South America. *5, 6, 15, 16, 33 (recorded as *Trichachne californica* (Benth.) Chase, Page 296), 43 (100609), 44 (110311), 46 (recorded as *Trichachne californica* (Benth.) Chase, Page 132), 48, 58, 63 (100609 - color presentation), 77, **85** (110311 - color presentation), 105 (recorded as *Trichachne californica* (Benth.) Chase), 124 (110311), 140 (Pages 199, 203-204 & 299)*

***Digitaria cognata* (J.A. Schultes) R.K. Pilger: Carolina Crabgrass**

SYNONYMY: *Digitaria cognata* (J.A. Schultes) R.K. Pilger var. *cognata*; *Leptoloma cognatum* (J.A. Schultes) M.A. Chase. COMMON NAMES: Carolina Crabgrass; Carolina Cottontop; Diffuse Crabgrass; Fall Witchgrass. DESCRIPTION: Terrestrial perennial graminoid (a bunchgrass (clumpgrass) 10 to 28 inches in height), the anthers are purple or yellow; based on few records located, flowering generally takes place between late April and mid-September (flowering records: two for late April, one for early June, one for early September and one for mid-September, flowering ending as late as November has been reported). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky canyons; bases of cliffs; foothills; rocky hills; rocky hillsides; rocky and sandy-loamy slopes; sandy bajadas; sand hills; sand dunes; loamy steppes; gravelly plains; rocky-gravelly-sandy and sandy basins; sandy and sandy-loamy flats; coastal prairies; sandy railroad right-of-ways; arroyos; bottoms of arroyos; along gullies; ravines; along streams; creeks; drainages; sandy depressions; edges of washes; rocky shores of lakes; gravelly-sandy terraces, and disturbed areas growing in moist and dry rocky, rocky-gravelly-sandy, gravelly and sandy ground; rocky-clayey loam, sandy loam and loam ground, and clay ground, occurring from 1,500 to 5,600 feet in elevation in the forest, woodland, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Digitaria cognata* is native to northeast, south-central and southern North America. *5, 6, 15, 33 (recorded as *Leptoloma cognatum* (Schult.) Chase, Page 298), 43 (053010 - *Leptoloma cognata* (Schult.) Chase), 46 (recorded as *Leptoloma cognatum* (Schult.) Chase, Page 132), 63 (053010), **85** (053010 - color presentation of dried material), 127, 140 (Page 204 - recorded as *Digitaria cognata* (Schultes) Pilger [*Leptoloma cognatum* (Schultes) Chase])*

Digitaria cognata var. *cognata* (see *Digitaria cognata*)

***Digitaria sanguinalis* (C. Linnaeus) J.A. Scopoli: Hairy Crabgrass**

COMMON NAMES: Abu Rokba (Arabic); Blutfennich (Bohemia); Bluthirse (German); Common Crab Grass (a name also applied to other species); Common Crabgrass (a name also applied to other species); Crab Finger Grass; Crab Finger-grass;

Crab Fingergrass; Crab Grass (a name also applied to other species); Crab-grass (a name also applied to other species); Crabgrass (a name also applied to other species); Crowfoot (a name also applied to other species); Digitale Sanguine; Finger Grass (a name also applied to other species); Finger-grass (a name also applied to other species); Fingergrass (a name also applied to other species); Garrachuelo (Spanish); Hairy Crab Grass; Hairy Crabgrass (a name also applied to other species); Hairy Finger Grass (a name also applied to other species); Large Crab Grass; Large Crab-grass; Large Crabgrass (a name also applied to other species); Manne Terrestre (French); Mock Sandburr; Northern Crab Grass; Northern Crab-grass; Northern Crabgrass; Panic Sanguin (French); Pigeon Grass (a name also applied to other species, Hopkinton, Iowa); Polish Millet; Purple Crabgrass (a name also applied to other species); Redhair Crab-grass; Redhair Crabgrass; Zacate Cangrejo (Spanish); Zacate Cangrejo Velludo (Spanish). DESCRIPTION: Terrestrial annual graminoid (spreading-decumbent culms 6 to 52 inches in height); flowering generally takes place between late June and late October (additional records: two for late May and two for mid-November). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rock walls; rocky canyons; sandy canyon bottoms; ridges; meadows; foothills; gravelly hills; hillsides; bouldery, rocky, rocky-sandy, sandy, sandy-loamy, loamy, clayey and clayey-loamy slopes; amongst rocks; sandy, sandy-loamy and clayey-loamy flats; uplands; valley floors; valley bottoms; coastal dunes; along gravelly, gravelly-sandy and sandy roadsides; arroyos; draws; seeps; springs; along streams; within rocky and sandy streambeds; along creeks; along and in rocky creekbeds; along rivers; sandy riverbeds; along and in sandy washes; within drainages; drainage ways; pools; sandy-loamy soils along ponds; saltwater marshes; swales; (sandy and silty) banks of streams, creeks, washes and drainages; edges of saltmarshes and depressions and lakes; sandy benches; rocky shelves; rocky and sandy bottomlands; sandy floodplains; seeps along canals; sandy edges of canals; along and in ditches; edges of ditches; sandy riparian areas; waste places, and disturbed areas growing in wet, moist, damp and dry rocky, rocky-sandy, rocky-cobbly-sandy, gravelly, gravelly-sandy and sandy ground; sandy loam, clayey loam, silty loam and loam ground; gravelly clay and clay ground, and silty ground, occurring from sea level to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant. Large Crabgrass is sometimes confused with another exotic species, Bermudagrass (*Cynodon dactylon*) a species of similar general appearance. *Digitaria sanguinalis* is native to eastern and southern Europe; central and southern Asia, and northern Africa and islands in the North Atlantic Ocean. *5, 6, 15, 33 (Page 295), 43 (100609), 44 (110311), 46 (Page 132), 58, 63 (110311 - color presentation), 68, **85** (110311 - color presentation), 101 (color photograph), 124 (110311)*

***Echinochloa crus-galli* (C. Linnaeus) A.M. Palisot de Beauvois: Barnyardgrass**

COMMON NAMES: Ankee Millet (Iowa); Arrocillo (Spanish); Barn Grass; Barn Yard Grass (a name also applied to other species); Barn-grass (a name also applied to other species); Barngrass (a name also applied to other species); Barnyard Grass (a name also applied to other species and the genus *Echinochloa*, Nebraska); Barnyard Millet (a name also applied to the genus *Echinochloa*); Barnyard-grass (a name also applied to other species and the genus *Echinochloa*, Nebraska); Barnyardgrass (a name also applied to other species); Chicken Panic; Chicken Panic Grass; Chicken Panicgrass; Chicken-panic Grass; Chicken-panic-grass; Cock's Foot (a name also applied to other species); Cock's-foot (a name also applied to other species); Cock-spur Barnyard Grass; Cocks Foot Grass (a name also applied to other species); Cocks-foot Grass (a name also applied to other species); Cock-spur Barnyard Grass; Cocksfoot Panicum; Cockspur (a name also applied to the genus *Echinochloa*); Cockspur Barnyard Grass; Cockspur Grass (a name also applied to the genus *Echinochloa*); Cockspur-grass (a name also applied to the genus *Echinochloa*); Common Barnyard Grass; Common Barnyard-grass; Common Barnyardgrass; Common Cockspur; Common Cockspur Grass; Crugalli Barnyard Grass; *Echinochloa* Pied-de-coq (French); Gewöhnliche Hühnerhirse (German); Grama Morada (Hispanic); Hedgehog Grass; Hühnerhirse (German); Japanese Millet (a name also applied to other species); Large Barnyard Grass; Large Barnyard-grass; Large Barnyardgrass; Large Crowfoot Grass (New Mexico); Loose Panic Grass; Loose Panic-grass; Mexican Barnyard Grass; Pasto Alemán (Hispanic); Pata de Gallo (Spanish); Pie de Gallina (Spanish); Pied-de-coq (French); Sanwak (India); Water Grass (a name also applied to other species); Water-grass (a name also applied to other species); Watergrass (a name also applied to other species); Zacate de Agua (Spanish); Zacate de Corral (Hispanic). DESCRIPTION: Terrestrial annual graminoid (spreading, decumbent and/or erect culms 4 to 83 inches in height; one plant was described as being 4 feet in height and 40 inches in diameter at the base); the foliage may be gray-green or yellow-green; the leaves may have purple bands; flowering generally takes place between mid-May and early November; however, flowering year round has been reported (additional record: one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; gravelly-sandy and sandy mesas; gravelly-sandy plateaus; bases of cliffs; rocky and gravelly-loamy canyons; rocky, rocky-sandy, sandy and loamy canyon bottoms; pockets of soil; bluffs; ridges; ridgetops; openings in woodlands; loamy meadows; escarpments; rocky, gravelly, sandy, sandy-clayey-loamy, loamy, clayey and clayey-loamy slopes; amongst cobbles; gravelly-sandy plains; gravelly, gravelly-loamy and sandy flats; uplands; hollows; valley floors; coastal plains; along gravelly and sandy-loamy roadbeds; along gravelly, gravelly-loamy, gravelly-clayey-loamy, sandy and sandy-loamy roadsides; arroyos; along draws; gulches; gullies; bottoms of gullies; ravines; sandy and clayey seeps; springs; along and in sandy streams; along and in rocky-sandy and sandy streambeds; along creeks; within rocky creekbeds; along and in rivers; in cobbly-sandy and sandy riverbeds; along and in rocky and sandy washes; within drainages; poolbeds; along and in ponds; muddy pondbeds; along lakes; clayey lakebeds; bogs; ciénegas; clayey freshwater marshes; swamps; clayey-muddy depressions; within muddy sloughs; swales; along (muddy, gravelly-sandy, sandy-loamy and sandy) banks of springs, streams, creeks, rivers, washes, ponds and lakes; along (muddy, rocky and sandy) edges of streams, creeks, rivers, watercourses, ponds, lakes and sloughs; along (sandy and clayey) margins of creeks and ponds; along (sandy-loamy) shores of ponds and lakes; mudflats; gravel, gravelly-sand and sand bars; sandy beaches; sandy benches; along terraces; sandy bottomlands; sandy floodplains; lowlands; fencelines; dams; levees; in mud around stock tanks (charcos, represos); muddy edges and shores of

reservoirs; along and in muddy canals; muddy canal banks; along sandy-clayey ditches; along clayey-loamy ditch banks; cobbly-sandy riparian areas; waste places, and disturbed areas growing in shallow water; muddy, and wet, moist, damp and dry bouldery, rocky, rocky-sandy, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clay loam, silty loam, humus-clayey loam and loam ground, and sandy clay, loamy clay and clay ground, occurring from sea level to 9,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food. *Echinochloa crus-galli* is native to Europe. *5, 6, 30, 33 (Pages 276-277), 43 (100809), 44 (041411), 46 (Page 138), 58, 63 (100809 - color presentation), 68, 80 (Barnyard Grass is listed as a Rarely Poisonous and Suspected Poisonous Range Plant “This annual grass has been reported to develop toxic levels of nitrate.”), 85 (110611 - color presentation of dried material), 101 (color photograph), 124 (041411), 127*

***Elymus elymoides* (C.S. Rafinesque-Schmaltz) G.D. Swezey: Squirreltail**

COMMON NAMES: Alkali Rye; Barb Goatgrass; Beardless Wild Rye; Bottle Brush (a name also applied to other species); Bottle Brush Grass; Bottle Brush Squirrel Tail; Bottle Brush Squirreltail; Bottle-brush Squirreltail; Bottle-brush Squirrel-tail; Bottlebrush Squirrel Tail; Bottlebrush Squirrel-tail; Bottlebrush Squirreltail; Common Squirrel-tail; Common Squirreltail (subsp. *elymoides*); Creeping Wild Rye; Long-bristle Wild Rye; Long-bristled Wild Rye; Long-bristled Wild-rye; Long-bristle Wild Rye; Mono’pü (Uto-Aztecan: Paiute)¹⁴⁰; O’ro [O’do, O’ro, O’rorop] (Uto-Aztecan)¹⁴⁰; Odorûmbiv (Uto-Aztecan: Ute)¹⁴⁰; Orchard Barley; Pahankis (Uto-Aztecan: Cahuilla)¹⁴⁰; Pesru <pésru> (Uto-Aztecan: Hopi)¹⁴⁰; Porcupine Grass; Squaw Grass; Squirrel Tail; [Bottlebrush] Squirrel-tail (English)¹⁴⁰; Squirreltail (a name also applied to other species and the genus *Elymus*); Tl’oh (“Grass” a word applied to any grass, Athapascan: Western Apache)¹⁴⁰; Triguillo Desértico (“Little Desert Wheat”, Spanish: Mexico)¹⁴⁰; Wa□ai (“Grass” a word applied to any grass, Uto-Aztecan: Tohono O’odham)¹⁴⁰; Western Bottle Brush Grass; Western Bottle-brush Grass; Western Squirreltail; Zacate Cebadilla [Sevaidilla] (“Little Nourishing Grass”, Spanish: Mexico)¹⁴⁰; Zacate Ladera (“Slope Grass, Spanish: Sonora)¹⁴⁰; Zee’iilwo’ii Ntsaaigii (Navajo); ‘Zéé’iilwoii <□aze□ i.l “o□i> (Athapascan: Navajo)¹⁴⁰. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 3 inches to 6½ feet in height; plants were observed and reported as being 12 inches in height and 6 inches in width at the base, plants were observed and reported as being 20 inches in height and 2 inches in width at the base); the foliage is green; the spikelets (flowers) are gray-green or green; flowering generally takes place between mid-March and late September (additional records: one for early October and one for mid-October). HABITAT: Within the range of this species it has been reported from mountains; rocky and gravelly mountaintops; sandy mountainsides; rocky-sandy-silty bases of peaks; bases of mountains; rocky-sandy, stony-cobbly, shaley and sandy-clayey-loamy mesas; rocky, sandy and clayey-loamy plateaus; tablelands; canyon rims; cliff faces; bases of cliffs; bouldery, rocky, gravelly-sandy and sandy canyons; along pebbly-sandy canyon walls; shaley, gravelly and gravelly-sandy canyonsides; rocky and gravelly-sandy canyon bottoms; rocky gorges; rocky and clayey scree; rocky talus slopes; crevices in rocks; sandy bluffs; rocky, rocky-gravelly, gravelly, gravelly-sandy, gravelly-clayey, sandy-clayey and clayey buttes; stony, sandy and clayey knolls; rocky and sandy ledges; bouldery, rocky, rocky-gravelly, shaley, stony, gravelly, gravelly-sandy, sandy, sandy-silty-loamy and clayey ridges; rocky, shaley, stony-cobbly, gravelly, sandy and clayey ridgetops; ridgelines; rocky clearings in forests; rocky, rocky-silty, gravelly, sandy and loamy meadows; foothills; rocky, shaley, cindery (scoria), gravelly-sandy, sandy, sandy-clayey and clayey hills; rocky, stony-cobbly, gravelly, sandy and clayey hilltops; rocky, rocky-sandy, rocky-clayey and gravelly hillsides; sandy bases of hills; bouldery, bouldery-rocky, bouldery-silty, rocky, rocky-gravelly-loamy, rocky-sandy, rocky-sandy-loamy, rocky-sandy-clayey, rocky-loamy, rocky-clayey, rocky-clayey-loamy, rocky-silty, shaley, shaley-sandy, shaley-clayey, stony, stony-cobbly, stony-cobbly-sandy-clayey, stony-sandy, stony-clayey, cobbly-sandy-loamy, cindery-clayey, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy, gravelly-clayey, gravelly-clayey-loamy, pebbly-sandy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy, loamy, clayey, clayey-loamy, clayey-silty, silty and silty-clayey slopes; gravelly bajadas; bouldery, rocky, shaley and clayey outcrops; amongst boulders, rocks and gravels; rocky fell-fields; rocky-clayey rock beds; bases of rocks; sandy alcoves; sandy lava flows; lava beds; sand dunes; sandy hummocks; blow-sand deposits; clayey mounds; gravelly mudslopes; breaks; shaley and gravelly benches; edges of clayey balds; loamy steppes; stony and sandy prairies; gravelly, pebbly, sandy, sandy-clayey and clayey plains; rocky, rocky-sandy, rocky-clayey, gravelly, gravelly-sandy-clayey, gravelly-loamy, sandy, sandy-clayey, clayey, silty-loamy and silty-clayey flats; pebbly-sandy, sandy and clayey uplands; rocky and clayey basins; basin floors; sandy and sandy-silty valley floors; clayey valley bottoms; along sandy and clayey railroad right-of-ways; roadbeds; sandy roadcuts; along rocky, rocky-gravelly-silty, rocky-sandy, cindery, gravelly and clayey roadsides; within arroyos; within rocky-sandy, shaley, gravelly-sandy, sandy and clayey draws; sandy bottoms of draws; gulches; bottoms of gulches; muddy-clayey, rocky and sandy gullies; bottoms of gullies; ravines; seeps; springs; along streams; gravelly-clayey streambeds; along creeks; rocky and clayey creekbeds; along rivers; sandy riverbeds; along and in rocky, rocky-sandy, shaley, sandy and clayey washes; within cobbly-gravelly, gravelly-sandy and sandy drainages; within rocky drainage ways; playas; sandy-clayey depressions; clay pits; swales; along (gravelly, sandy and silty) banks of streams, creeks and rivers; along edges of washes and lakes; margins of rivers, playas and (soda) lakes; (sandy) shores of lakes; along gravel, gravelly-sand and sand bars; sandy beaches; rocky, rocky-sandy, shaley, gravelly and sandy-clayey benches; gravelly and clayey terraces; sandy and clayey bottomlands; along sandy, sandy-clayey and clayey floodplains; clayey lowlands; mesquite bosques; fencelines; clayey catchments; around stock tanks; edges and margins of reservoirs; dry bottoms of reservoirs; along ditches; sandy-loamy banks of ditches; sandy riparian areas, and disturbed areas growing in cryptogamic; shallow water and wet, moist, damp and dry rimrock; rocky desert pavement; bouldery, bouldery-rocky, bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-gravelly, stony, stony-

cobbly, stony-sandy, cobbly-gravelly, cindery, gravelly, gravelly-sandy, pebbly, pebbly-sandy and sandy ground; rocky loam, rocky-gravelly-sandy-clayey loam, rocky-gravelly loam, rocky-sandy loam, rocky-clayey loam, stony-clayey loam, cobbly-sandy loam, gravelly-sandy-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, sandy-silty loam, clayey loam, silty loam, humusy loam and loam ground; rocky clay, rocky-sandy clay, shaley clay, stony clay, stony-cobbly-sandy clay, cindery clay, gravelly clay, gravelly-sandy clay, sandy clay, silty clay and clay ground; bouldery silty, rocky silty, rocky-gravelly silty, rocky-sandy silty, sandy silty, clayey silty and silty ground; humusy ground; peaty ground, and chalky ground, occurring from 1,500 to 11,600 feet in elevation in the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial fodder crop. *Elymus elymoides* is native to west-central and southern North America. *5, 6, 15, 33 (*Elymus elymoides* (Raf.) Swezey (*Sitanion hystrix* J.G. Smith) subsp. *elymoides*, Pages 115-117), 43 (100809), 44 (110611 - color photograph), 46 (subsp. *elymoides*, recorded as *Sitanion hystrix* J.G. Smith, "The mature awns penetrate the flesh of grazing animals, causing inflammation.", Page 96), 48, 63 (110611 - color presentation including habitat), 68, 77 (recorded as *Elymus elymoides* (Raf.) Swezey [*Sitanion hystrix* (Nutt.) J.G. Smith]. Squirrel Tail), 85 (111011 - color presentation including habitat), 124 (110611), 127, 140 (204-206, 215 & 299)*

***Enneapogon desvauxii* N.A. Desvaux ex A.M. Palisot de Beauvois: Nineawn Pappusgrass**

SYNONYMY: *Pappophorum wrightii* S. Watson. COMMON NAMES: False Pappus Grass; Feather Pappus Grass (a name also applied to the genus *Enneapogon*); Feather Pappusgrass (a name also applied to the genus *Enneapogon*); Kalkgras (Afrikaans); Nine Awned Pappus Grass; Nine-awn Feather Pappus Grass; Nine-awn Feather-pappus Grass; Nine-awn Pappus Grass; Nine-awn Pappus-grass; Nine-awn Pappusgrass; Nine-awned Feather-pappus Grass; Nine-awned Pappus Grass; Nineawn Pappusgrass; Purple Grass (a name also applied to other species); Purple-grass; Spike Pappus Grass (Texas); Spike Pappus-grass; Spike Pappusgrass; Spike-pappus Grass; Wondergras (Afrikaans); Wright Pappusgrass; Zacate Ladera (Spanish); Zacate Lobero (Spanish). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 4 to 20 inches in height); the foliage may be grayish-green or light green; the flowers are grayish, grayish-green or purplish; flowering generally takes place in summer and fall between early August and early November (additional records: two for late January, two for early July and one for mid-December; flowering beginning in February and ending in March has also been reported). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mountainsides; bedrock, gravelly and sandy mesas; plateaus; cliffs; along bases of cliffs; sandy rims of canyons; along bouldery, rocky and clayey canyons; sandy canyon bottoms; talus slopes; crevices; pockets of sandy soil in rim rock sandstone; knolls; bouldery and rocky ledges; bedrock ridges, ridgetops; rocky foothills; rocky, gravelly and clayey hills; gravelly hilltops; rocky hillsides; escarpments; bedrock, rocky, rocky-gravelly, rocky-loamy, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy and clayey slopes; bedrock and gravelly bajadas; rocky outcrops; amongst rocks; sandy lava flows; lava fields; debris fans; plains; gravelly and sandy-loamy flats, basins; rocky valley floors; rocky valley bottoms; along rocky, rocky-gravelly, gravelly and sandy roadsides; rocky bottoms of arroyos; gulches; gullies; ravines; along streambeds; gravelly-loamy creekbeds; within rocky and gravelly washes; along and in drainages; drainage ways; depressions; edges of ravines; sand bars; benches; terraces; bottomlands; floodplains; stock tanks; ditches; riparian areas; waste areas, and disturbed areas growing in moist (rarely reported) and dry rocky desert pavement; bouldery, bouldery-rocky-sandy, rocky, rocky-cindery-sandy, rocky-sandy, gravelly, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, gravelly-sandy loam and sandy loam ground; gravelly clay, sandy clay and clay ground, and rocky-gravelly silty ground, occurring from 900 to 7,300 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, consider using in a mix with other grasses when over-seeding. *Enneapogon desvauxii* is native to southwest-central and southern North America, and west-central and southern South America; central and southern Asia, and Africa. *5, 6, 15, 16, 33 (Pages 102-103), 43 (112311 - *Enneapogon desvauxii* P. Beauv.), 44 (112211), 46 (Page 91), 58, 63 (112211 - color presentation), 77, 85 (112311 - color presentation including habitat), 105 ("This grass seems to be rather short-lived for a perennial. However, it is a prolific seeder and re-establishes rapidly and abundantly during seasons of good rainfall"), 106 (053109), 124 (112211), 140 (Page 299)*

***Eragrostis cilianensis* (C. Allioni) F. Vignolo-Lutati ex E.E. Janchen: Stinkgrass**

SYNONYMY: *Eragrostis megastachya* (G.L. Koeler) J.H. Link. COMMON NAMES: Amoresco (Hispanic); Candy Grass (a name also applied to other species and the genus *Eragrostis*); Candy-grass (a name also applied to other species and the genus *Eragrostis*); Candygrass (a name also applied to other species and the genus *Eragrostis*); Éragrostide Fétide; Graminha (Portuguese: Brazil); Großes Liebesgras (German); Gray Love Grass; Lovegrass (a name also applied to other species and the genus *Eragrostis*); Stink Grass (a name also applied to other species and the genus *Eragrostis*); Stinkgrass (a name also applied to other species and the genus *Eragrostis*); Stinking Lovegrass; Strong-scented Lovegrass (a name also applied to other species); Strong-scented Lovegrass (a name also applied to other species); Watergrass; Zacate Apestoso (Hispanic); Zacate Arestoso¹⁴⁰; Zacate Borreguero (Hispanic); Zacate de Amor Hediondo (Hispanic); Zacate Esteparío (Hispanic). DESCRIPTION: Terrestrial annual tufted graminoid (a bunchgrass with prostrate, decumbent, geniculate and/or erect culms 3 to 36 inches in height); the foliage is gray-green or light green; the spikelets (flowers) are greenish, white or whitish with green veins turning tawny with age, the anthers are yellow; flowering generally takes place between early July and late October (additional records: one for mid-March, one for late March, one for mid-May, one for late May, two for early June, one for mid-November, one for late November and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas;

sandy bases of cliffs; rocky, gravelly and sandy canyons; gravelly-sandy and sandy canyon bottoms; bluffs; knolls; ledges; bedrock ridges; bases of ridges; sandy meadows; bouldery foothills; rocky and gravelly hills; rocky and gravelly hillsides; rocky, rocky-gravelly, rocky-clayey-loamy, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy-loamy, sandy-clayey, sandy-humusy, loamy, clayey and clayey-loamy slopes; sandy-loamy bottoms of slopes; rocky outcrops; amongst boulders and rocks; coves; sandy outwash; gravelly-clayey slides; gravelly-sandy plains; gravelly, sandy, sandy-loamy, sandy-silty and clayey-loamy flats; uplands; valley floors; valley bottoms; roadbeds; roadcuts; along gravelly, gravelly-loamy, sandy, sandy-silty and loamy roadsides; two-tracks; along sandy arroyos; bottoms of arroyos; loamy and loamy-clayey draws; gulches; gullies; gravelly-sandy seeps; springs; along streams; along and in cobbly-sandy and loamy-clayey streambeds; along creeks; in gravelly-sandy and sandy creekbeds; along rivers; in gravelly-sandy, sandy and sandy-clayey riverbeds; along and in gravelly, sandy and silty-clayey washes; within drainage ways; clayey lakebeds; ciénegas; marshes; bedrock depressions; silty swales; along (rocky-sandy, gravelly, sandy and sandy-loamy) banks of streams, creeks, rivers, washes and drainages; (sandy) edges of streams, ponds, lakes and marshes; mud flats; sandy areas of drawdown; sand bars; sandy benches; gravelly-loamy terraces; loamy bottomlands; gravelly, sandy and clayey floodplains; sandy mesquite bosques; sandy fencerows; around and in stock tanks (charcos, represos); around and in reservoirs; banks of reservoirs; along sandy ditches; sandy riparian areas; waste places, and disturbed areas growing in clayey-loamy mucky and wet, moist, damp and dry bouldery, rocky, rocky-gravelly, stony, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam, clayey-humusy loam and loam ground; gravelly clay, sandy clay, loamy clay, silty clay and clay ground; sandy silty and silty ground, and sandy humusy ground, occurring from sea level to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant. This plant may have a foul odor. *Eragrostis cilianensis* is native to middle, eastern and southern Europe; western, eastern and southern Asia, and Africa. *5, 6, 15, 16, 30, 33 (recorded as *Eragrostis megastachya* (Koel.) Link, Pages 82-83), 43 (101009), 44 (032811), 46 (Page 86), 58, 63 (101009 - color presentation of seed), 68, 77, 80 (This plant is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "This annual grass was reported to cause poisoning in horses when fed in large quantities over a long period of time."), 85 (112511 - color presentation), 101 (color photograph), 105 (recorded as *Eragrostis megastachya* (Koel.) Link), 124 (032811), 140 (Pages 207 & 300)*

***Eragrostis curvula* (H.A. Schrader) C.G. Nees von Esenbeck: Weeping Lovegrass**

SYNONYMY: *Eragrostis curvula* (H.A. Schrader) C.G. Nees von Esenbeck var. *conferta* O. Stapf. COMMON NAMES: Boer Love Grass; Boer Love-grass; Boer Lovegrass; Catalina Lovegrass; Cured Lovegrass; Ermelo Love Grass; Ermelo Lovegrass; Weeping Love Grass; Weeping Love-grass; Weeping Lovegrass. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with ascending to erect culms 8 inches to 6¼ feet in height with a basal crown diameter of up to 15 inches); the foliage may be bluish, bluish-green, gray-green, light green, green or yellow-green; the spikelets (flowers) are grayish-green, lead-colored, yellow or yellowish; the anthers are reddish-brown; flowering generally takes place between early April and early October (additional records: one for early November and one for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky tops of peaks; rocky mountainsides; rocky rims; cliffs; gravelly-sandy mesas; canyons; along bouldery-rocky and rocky canyon bottoms; crevices in rocks; edges of forests and woodlands; meadows; ridgetops; cindery flanks of craters; rocky foothills; rocky hillsides; rocky, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy and sandy-silty slopes; bedrock outcrops; amongst boulders and rocks; bases of rocks; bouldery-sandy debris fans; sandy-loamy prairies; rocky and rocky-silty-clayey flats; valley floors; in roadbeds; along rocky, rocky-sandy, gravelly, gravelly-loamy and sandy roadsides; sandy bottoms of arroyos; cobbly streambeds; rocky-sandy riverbeds; along and in gravelly and sandy washes; within rocky-sandy drainages; cienegas; depressions; swales; (sandy) banks of streams, rivers and washes; edges of rivers; margins of streams; sandy sandbars; gravelly benches; sandy and sandy-loamy floodplains; around tanks; within ditches; ditch banks; rocky-sandy riparian areas; waste places, and disturbed areas growing in moist, damp and dry bouldery, bouldery-rocky, bouldery-sandy, rocky, rocky-sandy, stony, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, clayey loam and loam ground; rocky-silty clay, sandy clay and clay ground, and sandy silty and silty ground, occurring from sea level to 9,000 feet (two records at 12,400 feet) in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. *Eragrostis curvula* is native to southern Africa. *5, 6, 33 (Page 78), 43 (101010 - no record for *Eragrostis curvula* var. *conferta*), 44 (120410), 46 (Page 87), 58 (recorded as *Eragrostis curvula* (Schrader) Nees. var. *conferta* Nees.), 63 (101010 - color presentation), 77 (recorded as *Eragrostis curvula* (Schrader) Nees. var. *conferta* Nees.), 85 (101110 - color presentation), 105, 124 (102610), 140 (Page 300 - recorded as *Eragrostis curvula* (Schrader) Nees var. *conferta* Nees)*

Eragrostis curvula var. *conferta* (see *Eragrostis curvula*)

Eragrostis diffusa (see *Eragrostis pectinacea* var. *pectinacea*)

***Eragrostis intermedia* A.S. Hitchcock: Plains Lovegrass**

COMMON NAMES: Love-grass (a name also applied to other species and the genus *Eragrostis*); Love-grass (English)¹⁴⁰; Plains Love Grass; Plains Love-grass; Plains Lovegrass; T'oh ("Grass" a name applied to grasses, Athapascan: Navajo, Western Apache)¹⁴⁰; Wa□ai ("Grass" a name applied to grasses, Uto-Aztecan: Tohono O'odham)¹⁴⁰; Zacate Amor de Planicie (Hispanic); Zacate de Amor (Hispanic); Zacate Llanero ("Prairie Grass", Spanish: Sonora)¹⁴⁰; Zacate Pradera (Hispanic); Zacate Volador ("Flying Grass", Spanish: Arizona, Sonora)¹⁴⁰. DESCRIPTION: Terrestrial perennial tufted graminoid (a

bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 8 to 40 inches in height; plants in clumps 2 inches to 1 foot in width at the base were observed and reported); the foliage is gray-green, green or yellow-green curing to a light straw-yellow; the branches of the inflorescence is red-purple; the spikelets (flowers) are green or greenish-tan; flowering generally takes place between early July and late October (additional records: one for mid-March, one for late March, one for mid-April, three for mid-May and one for late November; flowering beginning as early as June has been reported). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; bases of mountains; rocky, gravelly-sandy and sandy mesas; plateaus; bases of cliffs; canyons; canyon walls; along rocky and sandy canyon bottoms; talus slopes; crevices in rocks; clefts in granite domes; rocky bluffs; along rocky ridges; ridgetops; ridgelines; meadows; rocky and rocky-gravelly-loamy foothills; rocky hills; rocky hilltops; bouldery, rocky, gravelly-loamy and silty hillsides; rocky, rocky-gravelly, stony-clayey-loamy, gravelly, sandy, sandy-clayey, sandy-clayey-loamy, clayey and clayey-loamy slopes; bases of slopes; rocky outcrops; bases of rock outcrops; amongst boulders and rocks; sandy prairies; rocky, gravelly-sandy and sandy plains; clayey flats; sandy basins; dells; valley floors; roadbeds; along gravelly roadsides; two-tracks; sandy bottoms of arroyos; gulches; within sandy ravines (barrancas); springs; in cobbles and sand along streams; rocky and cobbly streambeds; along sandy creeks; riverbeds; along and in rocky, rocky-sandy and sandy washes; along and in sandy drainages; low spots; along (rocky-sandy, gravelly and sandy) banks of creeks, rivers and washes; edges of washes and lakes; along margins of streams; (rocky) shores of lakes and bays; benches; rock shelves; floodplains; along fencelines; sandy riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, stony, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-clayey loam, stony loam, stony-clayey loam, gravelly loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky-clay, gravelly clay, sandy clay and clay ground, and silty ground, occurring from 100 to 8,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Eragrostis intermedia* is native to south-central and southern North America and Central America. *5, 6, 15, 30, 33 (Pages 80-81), 43 (053110), 44 (041511 - no record of Common Names listed under species; genus record), 46 (Page 87), 48, 58, 63 (053110 - color presentation), 77, **85** (112611 - color presentation), 105, 124 (041511), 140 (Pages 206-207 & 300)*

***Eragrostis lehmanniana* C.G. Nees von Esenbeck: Lehmann Lovegrass**

COMMON NAMES: Lehman (error) Lovegrass; Lehmann Love Grass; Lehmann Lovegrass; Lehmann's Love Grass; Lehmann's Lovegrass; Lovegrass (a name also applied to other species and the genus *Eragrostis*); Zacate Africano; Zacate de Amor; Zacate de Amor Lehman (Spanish). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 8 to 48 inches in height); the foliage is bright green or yellow-green curing to a dull yellow; the spikelets (flowers) are grayish-green, lead or straw colored with yellowish anthers; flowering generally takes place between late July and early November (flowering records: one for early March, one for mid-March, one for early May, one for mid-May, two for early June, two for early July, two for late July, one for early August, three for mid-August, three for late August, one for early September, two for mid-September, one for late September, three for early October, two for mid-October, two for late October and two for early November; flowering beginning in February and ending in May and again beginning in August and ending in November has also been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; rocky canyons; along rocky canyon bottoms; gravelly ridges; meadows; rocky foothills; rocky hills; rocky hillsides; rocky, gravelly, gravelly-loamy and sandy-loamy slopes; gravelly bajadas; rock outcrops; amongst boulders; dunes; gravelly plains; gravelly, sandy and clayey flats; clayey valley floors; roadbeds; along sandy and clayey roadsides; two-tracks; along arroyos; springs; along and in streambeds; along creeks; along and in creekbeds; along rivers; sandy riverbeds; along gravelly and sandy washes; drainages; depressions; along banks of rivers; shores of lakes; sandy beaches; cobbly-sandy benches; travertine clefts; terraces; loamy bottomlands; sandy floodplains; mesquite bosques; ditches; riparian areas, and disturbed areas growing in dry bouldery, bouldery-cobbly-sandy, rocky, rocky-cobbly-sandy, rocky-sandy, stony, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam and clayey loam ground, and clay ground, occurring from 100 to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. *Eragrostis lehmanniana* is native to southern Africa. *5, 6, 15, 16, 22 (color photograph), 33 (Page 79), 43 (101009), 44 (112611), 46 (Page 87), 58, 63 (101009 - color presentation of seeds), 77, 85 (112611 - color presentation), 105, 124 (112611 - no record of species; genus record), 140 (Pages 206, 207 & 300), **HR***

Eragrostis megastachya (see *Eragrostis cilianensis*)

***Eragrostis pectinacea* (A. Michaux) C.G. Nees von Esenbeck ex E.G. von Steudel: Tufted Lovegrass**

COMMON NAMES: Carolina Love Grass; Carolina Lovegrass; Comb Grass (Nebraska); Desert Love Grass; Desert Lovegrass; Éragrostide Pectinée; False Red Top; False Redtop; Ihta Zaa (Mixteco); Kšam <košom, kwšam> (this name may refer to *Eragrostis mexicana* and/or *Eragrostis pectinacea*, Yuman: Cocopa)¹⁴⁰; Meadow Comb Grass; Pasto de Semillas de Pajarito (Hispanic); Pink Grass; Purple Eragrostis; Purple Love Grass; Purple Love-grass; Purple Lovegrass; Pursh's Eragrostis; Pursh's Love Grass; Pursh's Love-grass; Southern Eragrostis; Southern Love-grass; Spreading Lovegrass; Tufted Love Grass; Tufted Love-grass; Tufted Lovegrass; Western Love Grass; Western Lovegrass. DESCRIPTION: Terrestrial annual or perennial tufted graminoid (a bunchgrass (clumpgrass) with spreading decumbent, geniculate and/or erect culms 4 to 40 inches in height); the spikelets (flowers) may be green, lead-green, dark reddish-purple, grayish-green or yellowish-brown; the anthers are purplish; flowering generally takes place between early July and mid-November (additional records: one for mid-February, two for early

March, two for mid-March, one for late March, one for mid-May, one for early June and one for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; plateaus; gravelly bases of cliffs; rocky canyons; sandy canyon bottoms; gravelly-clayey slides; along talus slopes; crevices in rocks; foothills; rocky hills; hillsides; bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy, gravelly-sandy-loamy, sandy-loamy, sandy-clayey, loamy and clayey-loamy slopes; bajadas; rocky outcrops; amongst boulders; short grass prairies; sandy plains; sandy flats; basins; loamy valley floors; valley bottoms; coastal plains; along sandy railroad right-of-ways; gravelly roadbeds; along gravelly-sandy, sandy and clayey roadsides; in two-tracks; within arroyos; sandy-silty bottoms of arroyos; draws; gulches; sandy ravines; springs; along streams; along and in sandy streambeds; along gravelly-sandy creeks; creekbeds; gravelly soils along rivers; sandy riverbeds; along and in bouldery-sandy, gravelly and sandy washes; within sandy, sandy silty and silty drainage ways; dry ephemeral pools; poolbeds; clayey lakebeds; playas; ciénegas; marshes; sandy-silty and silty depressions; clayey swales; along (muddy, sandy and sandy-loamy) banks of arroyos, streams, creeks, rivers and washes; (sandy) edges of arroyos, ponds, playas, marshes, rivers and washes; margins of washes and ponds; along (silty) shores of rivers, pools and lakes; mudflats; cobbly-sand, gravel, gravelly-sand and sand bars; sandy beaches; sandy benches; gravelly terraces; clayey-loamy bottomlands; sandy floodplains; lowlands; mesquite bosques; in stock ponds; sandy edges of tanks and reservoirs; along and in ditches; gravelly and sandy riparian areas; waste places, and disturbed areas growing in muddy and wet, damp and dry bouldery, bouldery-rocky, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, sandy loam, clayey loam, humusy-clayey loam and loam ground; gravelly clay, sandy clay and clay ground, and sandy silty and silty ground, occurring from sea level to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Eragrostis pectinacea* is native to northeast-central, south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 15, 16, 30, 33 (Pages 87-88), 43 (101009), 44 (112711), 46 (Page 86), 58, 63 (112711), 77, **85** (112711 - color presentation including habitat), 124 (112711), 140 (Page 300 - recorded as *Eragrostis pectinacea* (Michaux) Nees [*Eragrostis pectinacea* (Michaux) Nees var. *miserrima* (E. Fournier) J. Reeder])*

***Eragrostis pectinacea* (A. Michaux) C.G. Nees von Esenbeck ex E.G. von Steudel var. *pectinacea*: Tufted Lovegrass**

SYNONYMY: *Eragrostis diffusa* S.B. Buckley. COMMON NAMES: Carolina Love Grass; Carolina Lovegrass; Ihta Zaa (Mixteco); Pasto de Semillas de Pajarito (Hispanic); Purple Lovegrass; Spreading Lovegrass; Tufted Love Grass; Tufted Lovegrass. DESCRIPTION: Terrestrial annual tufted graminoid (a bunchgrass (clumpgrass) with spreading decumbent, geniculate, ascending or erect culms 10 to 40 inches in height); flowering generally takes place between early August and mid-November (additional records: one for mid-February, two for early March, two for mid-March, one for late March, one for mid-May, one for early June, one for early July and one for late December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; canyons; canyon bottoms; meadows; foothills; rocky hills; rocky hillsides; rocky, gravelly, sandy, sandy-loamy and clayey slopes; rock outcrops; amongst boulders; sand dunes; prairies; sandy, clayey and silty-loamy flats; basins; valley floors; coastal plains; along railroad right-of-ways; along sandy and silty roadsides; along rocky and stony arroyos; sandy and sandy-silty bottoms of arroyos; gulches; ravines; seeps; springs; sandy soils along streams; along and in sandy streambeds; along creeks; rocky creekbeds; along rivers; along and in sandy washes; drainages; within sandy drainage ways; around pools; lakebeds; playas; cienegas; depressions; along rocky-sandy, sandy and sandy-loamy banks of streams and washes; clayey edges of pools and ponds; margins of pools; shores of lakes; sandy benches; terraces; sandy floodplains; mesquite bosques; sandy edges of canals; ditches; rocky-sandy and sandy riparian areas; waste places, and disturbed areas growing in wet and dry bouldery, rocky, rocky-sandy, stony, gravelly and sandy ground; sandy loam, silty loam and humus-clayey loam ground; clay ground, and sandy silty and silty ground, occurring from sea level to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Eragrostis pectinacea* var. *pectinacea* is native to northeast-central, south-central and southern North America; Central America, and South America. *5, 6, 30 (species), 33 (recoded as *Eragrostis diffusa* Buckl., Page 85), 43 (101009), 46 (recoded as *Eragrostis diffusa* Buckl., Page 86), 63 (101009), **85** (101009 - color presentation of dried material)*

***Eriochloa acuminata* (J.S. Presl) K.S. Kunth: Tapertip Cupgrass**

COMMON NAMES: Cupgrass (a name also applied to other species and the genus *Eriochloa*); Southwestern Cup Grass; Southwestern Cup-grass; Southwestern Cupgrass; Tapertip Cup Grass; Taper Tipped Cup Grass; Taper-tip Cup Grass; Taper-tip Cup-grass; Taper-tipped Cup Grass; Taper-tipped Cup-grass; Tapertip Cup Grass; Tapertip Cupgrass; Tapertipped Cup Grass. DESCRIPTION: Terrestrial annual tufted graminoid (decumbent, ascending and/or erect culms 6 inches to 4 feet in height); the foliage may be bright green or yellow-green; based on few records located, flowering generally takes place between late August and mid-October (flowering records: three for late August and one for mid-October). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky canyons; bedrock canyon bottoms; talus slopes; in pockets of soil on bedrock; sandy meadows; foothills; hills; rocky hillsides; rocky, rocky-gravelly, gravelly, sandy, rocky-loamy, gravelly-clayey, sandy-loamy, loamy and clayey slopes; bedrock outcrops; amongst boulders; plains; gravelly, sandy and loamy flats; valley floors; valley bottoms; along gravelly-loamy roadsides; arroyos; bottoms of arroyos; draws; gulches; seeps; along streams; streambeds; sandy riverbeds; along and in gravelly and sandy washes; rocky drainages; within rocky drainage ways; pools; depressions; swales; along banks of rivers and drainage ways; edges of ponds; benches; terraces; loamy bottomlands; sandy floodplains; mesquite bosques; along margins of stock tanks; along canals; along and in clayey ditches; sandy riparian

areas, and disturbed areas growing in moist and dry rocky, rocky-gravelly, gravelly and sandy ground; rocky loam, gravelly-loam, sandy-loam, humus-clayey loam and loam ground, and gravelly clay, sandy-clay and clay ground, occurring from 100 to 9,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Alternate spellings of *lemmonii* were presented: *lemmonii* and *lemmoni*. *Eriochloa acuminata* is native to south-central and southern North America. *5, 6, 33 (recoded as *Eriochloa lemmoni* Vasey & Scribn. var. *gracilis* (Fourn.) Gould., Pages 273-274), 43 (101109), 44 (041511), 46 (recoded as *Eriochloa gracilis* (Fourn.) Hitchc., Page 133), 58, 63 (021011), 68 (recoded as *Eriochloa gracilis* (Fourn.) Hitchc.), 77, **85** (112811 - color presentation), 101 (color photograph, recoded as *Eriochloa gracilis* (Fourn.) A.S. Hitchc.), 124 (041511 - no record of species; genus record)*

Festuca octoflora (see *Vulpia octoflora* var. *octoflora*)

Festuca octoflora subsp. *hirtella* (see *Vulpia octoflora* var. *hirtella*)

Festuca octoflora subsp. *octoflora* (see *Vulpia octoflora* var. *octoflora*)

Festuca octoflora var. *hirtella* (see *Vulpia octoflora* var. *hirtella*)

Festuca octoflora var. *octoflora* (see *Vulpia octoflora* var. *octoflora*)

***Heteropogon contortus* (C. Linnaeus) A.M. Palisot de Beauvois ex J.J. Roemer & J.A. Schultes: Tanglehead**

SYNONYMY: *Andropogon contortus* C. Linnaeus. COMMON NAMES: Assegaaigras (Afrikaans); Barba Negra (“Black Beard”, Spanish: Mexico)¹⁴⁰; Bihag Wa□ai (“Wrap-around Grass”, Uto-Aztecan: Tohono O’odham)¹⁴⁰; Biibhinol Vashai (“Wrap-around Grass”, Uto-Aztecan: Akimel O’odham, Arizona)¹⁴⁰; Black Spear Grass; Black Speargrass; Bunch Spear Grass; Bunched Speargrass; Carrizo (a name also applied to other grasses, Spanish: Sonora)¹⁴⁰; Common Tangleweed; Contorted Tanglehead; Hierba Negros de los Prados (“Black Herb of the Prairies”, Spanish: Mexico)¹⁴⁰; Hierba Torcida (Spanish); Needlegrass (English: New Mexico)¹⁴⁰; Pili Grass; Piligrass (Hawaii); Rabo de Asno (“Donkey’s Tail”, Spanish: Mexico)¹⁴⁰; Retorcido Moreno (“Black Twisted”, Spanish: Mexico)¹⁴⁰; Spear Grass (a name also applied to other species); Speergras (German); Steekgras (Afrikaans); Tangel Head; Tangle Grass; Tangle Head; Tangle-head (English)¹⁴⁰; Tangle-head Grass; Tangelhead; Tanglehead (a name also applied to the genus *Heteropogon*); Tanglehead Grass (a name also applied to the genus *Heteropogon*); Tl’oh (“Grass” a name applied to any grass, Athapascan: Western Apache, Navajo)¹⁴⁰; Twisted Tanglehead; Ujchú (Uto-Aztecan: Guarijio)¹⁴⁰; Wahá□ (“Grass” any grass, Uto-Aztecan: Northern Paiute)¹⁴⁰; Zacate Aceitillo (“Oily Grass”, Spanish: Chihuahua, Sonora)¹⁴⁰; Zacate Colorado (“Red Grass”, Spanish: Arizona, Chihuahua, Sonora)¹⁴⁰; Zacate Retorcido (“Twisted Grass”, Spanish: Mexico)¹⁴⁰. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with ascending and/or erect culms 8 inches to 5 feet in height); the foliage is bright green or yellow-green curing to orange-brown; the spikelets (flowers) may be brown or purple; based on few records located, flowering generally takes place between early January and late May and again between late July and early December (flowering records: one for early January, three for late January, one for late February, one for mid-March, one for early May, one for late May, one for late July, three for early August, five for late August, three for early September, five for mid-September, four for late September, three for early October, three for mid-October, five for early November, one for mid-November and one for early December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky, gravelly and sandy mesas; cliffs; cliff faces; bases of cliffs; along and in rocky canyons; along canyon walls; along bouldery, rocky and gravelly canyon bottoms; rockslides; crevices in rocks; ledges; along rocky ridges; bouldery and rocky ridgetops; volcanic cones; gravelly and sandy foothills; rocky hills; rocky and gravelly-clayey hillsides; bedrock, rocky, gravelly, gravelly-sandy and sandy slopes; rocky outcrops; amongst boulders and rocks; lava flows; rocky and sandy plains; gravelly flats; valley floors; along sandy roadsides; along and in rocky and sandy arroyos; rocky-sandy bottoms of arroyos; along draws; gulches; within gullies; ravines; around seeping streams; streambeds; creekbeds; along and in rocky, rocky-sandy, cobbly, gravelly-sandy and sandy washes; within gravelly-sandy-loamy drainages; within rocky and sandy drainage ways; bedrock tinajas; around pools; (silty) banks of streams and rainwater basins; edges of washes; margins of waterways; sandy beaches; terraces; floodplains; riparian areas, and disturbed areas growing in dry bouldery, bouldery-sandy, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam and loam ground; gravelly clay ground, and silty ground, occurring from sea level to 7,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat; however, the awns may bring about painful sores in livestock and pets and in some areas may be considered to be a noxious weed. It is able to become established in newly disturbed and poor soils. *Heteropogon contortus* is native to south-central and southern North America; eastern Asia, and possibly to other tropic sub-tropic and warm-temperate regions of the world. *5, 6, 15, 16, 33 (Page 302), 43 (101209), 44 (120411 - color photograph), **46** (Page 144), 48, 58, 63 (120411 - color presentation), 77, **85** (120411 - color presentation including habitat), 105 (Reports that Tanglehead Grass “is one of the easiest grasses to establish under conditions of low rainfall.”), 124 (120411 - no record of genus or species), **140** (Pages 207-208 & 300), **MBJ/WTK** (September 12, 2005)*

Hordeum leporinum (see *Hordeum murinum* subsp. *leporinum*)

***Hordeum murinum* C. Linnaeus subsp. *glaucum* (E.G. von Steudel) N.N. Tzvelev: Smooth Barley**

SYNONYMY: *Hordeum stebbinsii* G. Covas. COMMON NAMES: Barley (a name also applied to the species and genus *Hordeum*); Blue Barley-grass; Blue-gray Barley; Blue-green Foxtail Barley; Cebada (Spanish); Glaucous Barley; Seagreen Barley; Northern Barley Grass; Northern Barley-grass; Northern Barleygrass; Smooth Barley; Spädkorn; Wild Barley (a name also applied to subsp. *leporinum* and the genus *Hordeum*); -ya-jewel-g-ute- (Hairs Kills Horses - Supai). DESCRIPTION: Terrestrial annual tufted graminoid (nearly prostrate, ascending and/or erect culms 4 to 16 inches in height); the florets are green; flowering generally takes place between early March and early June (additional record: one for mid-February). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; gravelly canyons; rocky-gravelly and sandy canyon bottoms; bases of cliffs; sandy bluffs; buttes; meadows; foothills; hills; rocky and sandy hillsides; rocky, cobbly-gravelly-loamy and loamy slopes; sandy bajadas; boulder outcrops; sand dunes; sandy flats; valley floors; along railroad right-of-ways; along sandy roadsides; arroyos; draws; gulches; springs; along streams; along creeks; loamy creekbeds; along and in rocky and gravelly-sandy washes; rocky drainage ways; pools; lakebeds; ciénegas; depressions; banks of arroyos and rivers; edges of seeps, creekbeds and rivers, margins of playas; channel bars; along sandy and silty floodplains; around stock tanks; along canal banks; along ditches; banks of ditches; sandy riparian areas; waste places, and disturbed areas growing in dry bouldery, rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground; cobbly-gravelly loam and loam ground; clayey ground, and silty ground, occurring from 100 to 9,100 feet in elevations in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food and as a drug or medication. *Hordeum murinum* subsp. *glaucum* is native to southwestern Europe and islands in the Mediterranean Sea; western, central and southern Asia, and northern Africa and islands in the North Atlantic Ocean. *5, 6, 15, 43 (101309), 44 (120911), 46 (recorded as *Hordeum stebbinsii* Covas, Page 97), 58, 63 (120911 - color presentation), 77, **85** (120911 - color presentation of dried material), 124 (120911 - no record of subspecies or species; genus record), 127, 140 (Page 300)*

***Hordeum murinum* C. Linnaeus subsp. *leporinum* (J.H. Link) G. Arcangeli: Hare Barley**

SYNONYMY: *Critesion murinum* (C. Linnaeus) Á. Löve subsp. *leporinum* (J.H. Link) Á. Löve; *Hordeum leporinum* J.H. Link. COMMON NAMES: Cebadilla Silvestre; Charming Barley; Common Foxtail (a name also applied to other species); Hare Barley; Hare Wall Barley; Lepor Barley; Leporinum Barley; Mouse Barley (a name also applied to the species); Wild Barley (a name also applied to other species and the genus *Hordeum*). DESCRIPTION: Terrestrial annual tufted graminoid (nearly prostrate, ascending and/or erect culms 4 to 44 inches in height); flowering generally takes place between mid-March and early June. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; canyons; bluffs; ridgetops; openings in woodlands; foothills; hills; rocky and sandy slopes; sand dunes; sandy flats; valley floors; along roadsides; springs; along creeks; washes; depressions; edges of ponds; floodplains; ditches; ditch banks; riparian areas; waste places, and disturbed areas growing in wet and dry rocky, gravelly, gravelly-sandy and sandy ground and loam ground, occurring from sea level to 9,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant. The species, *Hordeum murinum*, was reported to have been utilized by native peoples of North America; it was noted as having been used for food and as a drug or medication (*H.m.* subsp. *glaucum*). *Hordeum murinum* C. Linnaeus subsp. *leporinum* is native to central, eastern and southern Europe; western and central Asia, and northern Africa and coastal islands in the North Atlantic Ocean. *5, 6, 15, 33 (recorded as *Hordeum leporinum* Link, Page 106), 43 (101309), 44 (041611), 46 (recorded as *Hordeum leporinum* Link, Page 97), 63 (041611 - color presentation of seed), 68 (recorded as *Hordeum leporinum* Link), 85 (041611 - color presentation of dried material), **101** (color photograph, recorded as *Hordeum leporinum* Link, "Awns of mature plants can cause serious injury to eyes, nose, and throat of grazing animals."), 124 (041611 - no record of species or subspecies; genus record), 127 (species), **WTK** (July 13, 2005)*

Hordeum stebbinsii (see *Hordeum murinum* subsp. *glaucum*)

***Lamarckia aurea* (C. Linnaeus) C. Moench: Goldentop Grass**

COMMON NAMES: Golden Dog's Tail; Golden Dog's-tail; Golden Dogs Tail; Golden Dogs-tail; Golden Lamarckia; Golden Top (a name also applied to other species); Golden Top Grass (a name also applied to the genus *Lamarckia aurea*); Golden-top (a name also applied to other species); Golden-top Grass (a name also applied to the genus *Lamarckia aurea*); Goldentop (a name also applied to other species); Goldentop Grass (a name also applied to the genus *Lamarckia aurea*); Guldäxing (Swedish). DESCRIPTION: Terrestrial annual tufted graminoid (decumbent, geniculate, ascending and/or erect culms 2 to 16 inches in height); the foliage is pale green; the inflorescences are golden-yellow, purplish, straw or yellow; flowering generally takes place between late February and late May (additional records: one for early January, one for early February and one for late August). HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; mountainsides; rocky mesas; plateaus; rocky canyons; rocky canyon bottoms; chasms; crevices in boulders and rocks; sandy-humusy pockets of soil; bluffs; buttes; ridges; ridgetops; sandy meadows; foothills; rocky hills; rocky and sandy-loamy hilltops; bouldery and rocky hillsides; bouldery, rocky, rocky-clayey and sandy slopes; rocky-sandy-loamy alluvial fans; amongst rocks; sand dunes; flats; valley floors; coastal plains; along rocky roadsides; arroyos; bottoms of arroyos; rocky draws; sandy seeps; along streams; streambeds; creeks; rocky and sandy creekbeds; riverbeds; along and in sandy washes; drainages; rocky-sandy bases of waterfalls; pools; freshwater and saltwater marshes; (sandy) edges of creeks; beaches; rocky-loamy benches; bottomlands; riparian areas; waste places, and disturbed areas growing in moist and dry bouldery, rocky, rocky-sandy and sandy ground; rocky loam, rocky-sandy loam, sandy loam and clayey loam ground; rocky clay and clay ground, and sandy humusy ground, occurring from sea level to 5,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland

ecological formations. NOTES: **EXOTIC** Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Lamarckia aurea* is native to southern Europe and islands in the Mediterranean Sea; western Asia and islands in the Mediterranean Sea, and northern Africa and islands in the North Atlantic Ocean. *5, 6, 33 (Page 93), 43 (101409), 44 (121211 - color photograph), 46 (Page 88), 63 (121211 - color presentation), 77, **85** (121211 - color presentation including habitat), 124 (121211 - no record of genus or species), 127*

Leptoloma cognatum (see *Digitaria cognata*)

***Lycurus setosus* (T. Nuttall) C.O. Reeder: Bristly Wolfstail**

COMMON NAMES: Bristly Wolfstail; Texas Timothy; Wolfstail (a name also applied to other species). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with erect culms (longer stems may be decumbent) 1 to 2 feet in height; plants were observed and recorded as being up to 3 to 4 inches in width at the base); the foliage is gray-green; the anthers are yellowish; flowering generally takes place between mid-July and early October (additional records: three for late October; flowering ending as late as November has been reported). HABITAT: Within the range of this species it has been reported from open mountains; mountainsides; bases of mountains; rocky-clayey mesas; rocky-clayey plateaus; rocky canyon rims; rocky canyons; rocky canyon walls; sandy canyon bottoms; rocky gorges; talus slopes; crevices in rocks; rocky ledges; bouldery-rocky and rocky ridges; along gravelly ridgetops; gravelly-loamy and sandy meadows; cinder cones; rocky foothills; rocky, rocky-gravelly and gravelly hills; bouldery-gravelly hilltops; bouldery, rocky and sandy hillsides; rocky, rocky-gravelly, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey, pebbly-sandy, sandy, sandy-loamy, sandy-clayey-loamy and clayey-loamy slopes; bajadas; pediment slopes; rocky outcrops; amongst boulders and rocks; pebbly and sandy lava flows; breaks; prairies; sandy and sandy-clayey plains; rocky and sandy flats; basins; sandy valley floors; along gravelly, gravelly-sandy and gravelly-loamy roadsides; along arroyos; within rocky draws; gulches; ravines; along streams; along and in sandy streambeds; creekbeds; riverbeds; sandy washes; sandy-loamy playas; banks of streams and creeks; stony-sandy margins of streambeds; rocky-sandy and sandy benches; bottomlands; floodplains; lowlands; along ditches; riparian areas, and disturbed areas growing in moist, damp and dry bouldery, bouldery-rocky, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony-sandy, gravelly, gravelly-sandy, pebbly, pebbly-sandy and sandy ground; rocky-gravelly loam, rocky-sandy loam, gravelly loam, sandy loam, sandy-clayey loam, humusy loam, clayey loam and loam ground; rocky clay, gravelly clay and sandy clay ground, and sandy silty ground, occurring between 1,000 and 11,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Lycurus setosus* is native to southwest-central and southern North American and central and southern South America. *5, 6, 15, 33 (no record of species), 43 (110910 - *Lycurus setosus* (Nutt.) C. Reeder), 44 (112310 - no record for common names), 46 (no record of species), 63 (110910), 77, **85** (011511 - color presentation), 124 (110910 - no record of species; genus listed), 140 (Page 300)*

***Melinis repens* (C.L. von Willdenow) G. Zizka: Rose Natal Grass**

SYNONYMY: *Rhynchelytrum repens* (C.L. von Willdenow) C.E. Hubbard; *Rhynchelytrum roseum* (C.G. Nees von Esenbeck) O. Stapf & C.E. Hubbard ex J.W. Bews. COMMON NAMES: Creeping Molasses Grass; Espiga Colorada (Spanish); Natal Grass (a name also applied to other species); Natal Red Grass; Natal Red Top; Natal Red Top Grass; Natal Red-top; Natal Redtop; Natal Redtop Grass; Natal Ruby Grass; Pasto (Hispanic); Red Natal Grass; Red Natalgrass; Rose Natal Grass; Rose Natalgrass; Yerba de Natal (Spanish); Zacate Natal (Hispanic); Zacate Rosado (for *M.r.* subsp. *repens*, Spanish: Mexico, Sonora). DESCRIPTION: Terrestrial annual or perennial tufted graminoid (trailing, spreading, prostrate, decumbent and/or geniculate culms 8 inches to 5 feet in height); the inflorescence has been described as being brownish-pink, pink, deep pink, darkish purple, purplish-pink, reddish, rose or white; the (spikelets) flowers are red or dark rose with long silky purplish-pink hairs; the anthers are orange or orange-brown; flowering generally takes place between late January and mid-December. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; cliff faces; bases of cliffs; rocky canyons; rocky canyon walls; along rocky and gravelly canyon bottoms; crevices in boulders and rocks; rocky bluffs; ledges; rocky ridges; rocky ridgetops; meadows; foothills; hills; rocky hilltops; rocky hillsides; bouldery, rocky, rocky-gravelly, sandy and clayey slopes; rocky outcrops; amongst boulders and rocks; fumaroles; sand dunes; cobbly-sandy and clayey flats; basins; valley floors; coastal plains; coastal flats; railroad right-of-ways; along sandy roadsides; sandy arroyos; bottoms of arroyos; along streams; rocky streambeds; along creeks; creekbeds; along and in rocky, stony and sandy washes; drainages; drainage ways; swamps; depressions; sloughs; bouldery swales; banks of streams, rivers and drainage ways; terraces; bottomlands; sandy floodplains; lowlands; riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, stony, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam ground, and clay ground, occurring from sea level to 6,400 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. *Melinis repens* is native to southern Asia; Africa, and coastal islands in the North Atlantic Ocean and Western Indian Ocean. *5, 6, 15 (recorded as *Rhynchelytrum repens* (Willd.) C.E. Hubb.), 18, 22 (color photograph), 30, 33 (recorded as *Rhynchelytrum roseum* (Nees) Stapf & Hubb., Pages 271-272), 43 (101609), 44 (121811 - listing of Common Names located under *Rhynchelytrum repens* (Willd.) C.E. Hubb.), 46 (recorded as *Rhynchelytrum roseum* (Nees) Stapf & Hubb., Page 138), 63 (121811 - color presentation), 77 (recorded as *Rhynchelytrum repens* (Willd.) C.E. Hubb.), **85** (121811 - color presentation including habitat), 124 (121811 - no record of genus or species), 140 (Page 300 - recorded as *Melinis repens* (Willdenow) Zizka subsp. *repens* [*Rhynchelytrum repens* (Willdenow) C.E. Hubbard]), **WTK** (August 6, 2005)*

***Muhlenbergia arizonica* F.L. Scribner: Arizona Muhly**

COMMON NAME: Arizona Muhly, Liendrilla (Spanish). DESCRIPTION: Terrestrial perennial tufted graminoid (decumbent and/or erect culms 3 to 20 inches in height); the flowers are purplish; the anthers are purplish; flowering generally takes place between mid-September and mid-October (additional records: two for mid-March and one for late April, flowering beginning as early as August was reported); the caryopses (fruits) are brownish. HABITAT: Within the range of this species it has been reported from mountains; rocky mesas, sandy plateaus, rocky and gravelly canyons; bedrock and sandy canyon bottoms; pockets of gravelly soil in bedrock; buttes; bedrock ridges; ridgetops; rocky foothills; rocky hills; rocky hillsides; rocky, rocky-loamy, gravelly, gravelly-clayey and sandy-loamy slopes; gravelly pediment fans; prairies; sandy plains; rocky, gravelly and clayey flats; bottoms of arroyos; along rocky draws; bottoms of draws; along and in rocky washes; sandy drainages; depressions; (gravelly) banks of washes, and terraces growing in dry rocky, rocky-gravelly, gravelly and sandy ground; rocky loam, gravelly loam and sandy loam ground, and gravelly clay and clay ground, occurring from 600 to 7,400 feet in elevation in the forest, woodland, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Muhlenbergia arizonica* is native to southwest-central and southern North America *5, 6, 15, 33 (Pages 200-201), 43 (040512), 44 (040612 - no record of species; genus record), 46 (Page 111), 58, 63 (040512), 85 (040612), 124 (040612 - no record of species; genus record), 140 (Page 300)*

Muhlenbergia dubioides (see *Muhlenbergia palmeri*)

***Muhlenbergia dumosa* F.L. Scribner ex G. Vasey: Bamboo Muhly**

COMMON NAMES: Áli Tótoikami (Uto-Aztecan: Northern Tepehuan)¹⁴⁰; Bamboo Muhley; Bamboo Muhley Grass; Bamboo Muhly (English)¹⁴⁰; Bamboo Muhly Grass; Bamboo-muhly; Carricillo (“Little Sedge”, Spanish: Sonora)¹⁴⁰; Faury Bamboo; Liendrilla Abierta (Hispanic); Otatillo (“Little Cane” a name also applied to other species, Spanish: Chihuahua, Sonora)¹⁴⁰; Saawi (“Grass” a word used for any grass, Uto-Aztecan: Yaqui)¹⁴⁰; Tlo (“Grass” a name given to any grass (Athapascan: Chiricahua and Mescalero Apaches)¹⁴⁰; Tl’oh (“Grass” a name given to any grass (Athapascan: Navajo)¹⁴⁰; Totchkam <totčkam> (Uto-Aztecan: Mountain Pima, Sonora)¹⁴⁰; Wa□ai (“Grass” a word used for any grass, Uto-Aztecan: Tohono O’odham)¹⁴⁰. DESCRIPTION: Terrestrial perennial graminoid (a bunchgrass (clumpgrass) with ascending and/or erect (woody) culms 16 inches to 10 feet height; plants were observed and reported as being up to 1 to 6 feet in width, a number of plants were observed and reported as being 5 feet in height); the spikelets (flowers) are greenish or purplish; the anthers are purplish; flowering generally takes place between early February and late April (flowering records: one for early January, one for early February, one for mid-February, one for late February, one for early March, two for mid-March, one for late March, four for early April, two for mid-April, one for late April, one for mid-July, one for mid-August, one for late October, one for early November and one for late December); the caryopses (fruits) are reddish-brown. HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; rocky and rocky-sandy-loamy mesas; along rocky cliffs; cliff faces; along rocky bases of cliffs; rocky canyons; rocky canyon bottoms; flat areas in canyon bottoms; crevices in rocks; rocky ledges; ridges; foothills; rocky hillsides; bouldery-rocky, rocky and rocky-sandy-loamy slopes; amongst rocks; banks; valley floors; roadsides; rocky arroyos; within ravines; along rocky streams; along rocky streambeds; in sandy washes; bases of waterfalls; (rocky) edges of barrancas and streams; shelves, and riparian areas growing in moist and dry bouldery-rocky, rocky and sandy ground and rocky-sandy loam and sandy loam ground, occurring from 700 to 7,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This cane-like grass may be an attractive component of a restored native habitat and is grown as an ornamental. This plant is a larval food plant for the Orange Skipperling (*Copaeodes aurantiacus*). This plant is a host for the smut fungi *Ustilago muhlenbergiae* P.C. Hennings and *Ustilago sonoriانا* Zundel. *Muhlenbergia dumosa* is native to southwest-central and southern North America. *5, 6, 15, 18, 30, 33 (Pages 206-207), 43 (011711), 44 (011711), 46 (Page 109), 63 (011711), 82, 85 (011711 - color presentation), 124 (011711 - no record of species; genus record), 140 (Pages 210-211 & 300)*

***Muhlenbergia elongata* F.L. Scribner ex W.J. Beal: Sycamore Muhly**

SYNONYMY: *Muhlenbergia xerophila* C.O. Goodding. COMMON NAMES: Sycamore Canyon Muhly; Sycamore Muhly; Weeping Muhly. DESCRIPTION: Terrestrial perennial graminoid (a clumpgrass with erect culms 16 inches to 4 feet in height); the anthers are yellow; flowering generally takes place between late September and late October (additional record: one for early March, flowering may begin as early as August and may end as late as November); the caryopses (fruits) are brownish. HABITAT: Within the range of this species it has been reported from mountains; cliffs; rock walls; rocky canyons; rocky canyon walls; along rocky canyon bottoms; crevices in bedrock and rocks; pockets of soil; ledges; rocky hills; hilltops; rocky ledges; rocky, gravelly and gravelly-slopes slopes; rocky outcrops; amongst boulders and rocks; seeps; bedrock streambeds; in rocky washes; drainages; edges of streambeds, and bedrock-bouldery riparian areas in bouldery, rocky and gravelly soils and gravelly loam soils often growing in wet and moist ground, occurring from 700 to 6,900 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: In the appropriate setting this plant may be an attractive component of a restored native habitat. *Muhlenbergia elongata* is native to southwest-central and southern North America. *5, 6, 8, 9, 33 (recorded as *Muhlenbergia xerophila* C.O. Goodding, Page 217), 43 (040512 - *Muhlenbergia elongata* F.L. Scribner in W.J. Beal), 44 (040612 - no record of species; genus record), 46 (recorded as *Muhlenbergia xerophila* C.O. Goodding, Page 112), 63 (040612), 85 (040612), 124 (040612 - no record of species; genus record), 140 (Page 300)*

***Muhlenbergia emersleyi* G. Vasey: Bullgrass**

COMMON NAMES: Bull Grass; Bull-grass; Bullgrass; Cola de Ratón (Chihuahua)¹⁴⁰; Cola de Zorra; Pičiraka (Tarahumara)¹⁴⁰; Zacate Toro (Spanish: Sonora)¹⁴⁰. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent and/or erect culms 20 inches to 5 feet in height and up to 8 inches to 5 feet in width at the base); the foliage is gray-green or light green curing to a light gray; the panicles (inflorescences) are light brownish, maroon or light purplish; the spikelets (flowers) are light-maroonish-brown or purple; the anthers are purple, purplish or yellowish; flowering generally takes place between mid-August and late September (additional records: one for late July, one for late October, one for early November and one for late November); the caryopses (fruits) are reddish-brown. HABITAT: Within the range of this species it has been reported from rocky mountains; mountaintops; bouldery-gravelly mountainsides; plateaus; rocky cliffs; rocky canyons; rocky canyon sides; along rocky canyon bottoms; talus; crevices in boulders and rocks; bluffs; rocky ledges; rocky ridges; ridgetops; openings in forests and woodlands; foothills; bouldery, bouldery-rocky and rocky hills; hilltops; bouldery, rocky and rocky-clayey hillsides; bouldery, rocky, rocky-gravelly, rocky-gravelly-clayey, rocky-loamy, gravelly, gravelly-loamy, loamy and clayey-loamy slopes; rocky bases of slopes; rocky outcrops; amongst boulders and rocks; sandy bases of boulders; along breaks; prairies; flats; gravelly dells; valley floors; along roadsides; along arroyos; within rocky draws; within ravines; bottoms of ravines; springs; rocky, rocky-sandy and sandy streambeds; in sand along creeks; along gravelly-sandy creekbeds; along and in rocky-sandy, gravelly and sandy washes; within drainages; (rocky) banks of gullies, streams and drainages; along (bouldery and rocky) edges of gullies, ravines (barrancas), seeps, washes and drainages; benches; rocky-gravelly terraces; floodplains, and sandy riparian areas growing in wet, moist and dry bouldery, bouldery-rocky, bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; rocky loam, stony loam, gravelly loam, sandy-clayey loam, clayey loam, humusy loam and loam ground; rocky clay and rocky-gravelly clay ground, and rocky-silty ground, occurring from 2,600 to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desert scrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and is grown as an ornamental. *Muhlenbergia emersleyi* is native to southwest-central and southern North America. *5, 6, 15, 18, 33 (Pages 219-220), 43 (060810), 44 (010711 - no record), 46 (Page 112), 48, 58, 63 (060810 - color presentation), 77, **85** (060810 - color presentation), 105, 124 (010711 - no record, genus), 140 (Pages 212 & 300)*

***Muhlenbergia fragilis* J.R. Swallen: Delicate Muhly**

COMMON NAMES: Annual Muhly (a name also applied to other species); Delicate Muhley; Delicate Muhly; Fragile Muhley; Fragile Muhly. DESCRIPTION: Terrestrial annual tufted graminoid (spreading or erect culms 4 to 16 inches in height); the stems may be purple; the anthers are purplish; flowering generally takes place between mid-September and mid-October (flowering beginning as early as August has been reported); the caryopses (fruits) are reddish-brown. HABITAT: Within the range of this species it has been reported from mountains; rocky-clayey mesas; cliffs; bouldery and rocky canyons; canyon walls; along sandy canyon bottoms; gorges; rocky talus slopes; pockets of sandy soil in bedrock and sandstone; soil filled potholes in slickrock; crevices; bluffs; rocky buttes; rocky ledges; gravelly-loamy ridges; meadows; rocky foothills; rocky and rocky-gravelly hills; hilltops; hillsides; bedrock, bouldery-gravelly-loamy, rocky, rocky-gravelly, rocky-loamy, rocky-clayey, gravelly, gravelly-loamy, gravelly-sandy-loamy, sandy, sandy-loamy and clayey slopes; rocky outcrops; amongst boulders and rocks; lava flows; gravelly, gravelly-loamy and sandy flats; valley floors; roadcuts; along rocky and sandy roadsides; stony-sandy arroyos; sandy seeps; along streams; streambeds; along creeks; riverbeds; along and in bouldery-rocky-sandy, rocky and sandy washes; along and in pebbly and sandy drainages; bottoms of drainage ways; (rocky-gravelly) banks of arroyos; along edges of streambeds and washes; benches; terraces; bottomlands; floodplains; within ditches; sandy riparian areas, and disturbed areas growing in moist and dry bouldery, bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy, stony-sandy, gravelly, pebbly and sandy ground; bouldery-gravelly loam, rocky loam, gravelly loam, gravelly-sandy loam and sandy loam ground, and rocky clay and clay ground reported as often found growing in moist ground, occurring from 1,100 to 7,300 feet in elevation in the forest, woodland, scrub, grassland, desert scrub and wetland ecological formations. NOTE: *Muhlenbergia fragilis* is native to southwest-central and southern North America. *5, 6, 15, 33 (Page 198), 43 (041711), 44 (041711), 46 (Page 108), 58, 63 (041711 - color presentation), **85** (041711 - color presentation), 124 (041711 - no record of species; genus record), 140 (Page 300)*

***Muhlenbergia palmeri* G. Vasey: Southwestern Muhly**

SYNONYMY: *Muhlenbergia dubioides* C.O. Goodding. COMMON NAMES: Box Canyon Muhly; Southwestern Muhly; Weeping Muhly. DESCRIPTION: Terrestrial perennial densely tufted graminoid (a bunchgrass (clumpgrass) with erect culms 12 to 40 inches in height); the spikelets (flowers) may be purplish to yellowish-brown; the anthers may be yellow to purple-tinged; based on few records located, flowering generally takes place between early October and late November (flowering records: eight for early October, one for mid-October, one for late October and one for late November; flowering beginning as early as August has been reported); the caryopses (fruits) are brownish. HABITAT: Within the range of this species it has been reported from mountains; rock walls; rocky canyons; crevices in rocks; pockets in rocky outcrops; rock ledges; bouldery-rocky and rocky slopes; rocky outcrops; rocky banks; along rocky draws; in sand along stream courses; rocky and gravelly streambeds, in sand along creeks; creekbeds; within gravelly washes; edges of draws; bottomlands, and bedrock and sandy riparian areas growing in wet and dry (seasonally wet) bouldery-rocky, rocky, gravelly and sandy ground, occurring from 2,700 to 6,900 feet in elevation in the woodland, grassland, desert scrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Muhlenbergia palmeri* is native to southwest-central and southern North America. *5, 6, 33 (recorded as *Muhlenbergia dubioides* C.O. Goodding, Page 217), 43 (040512), 46 (recorded as

Muhlenbergia dubioides C.O. Goodding, Page 111), 63 (040512), 85 (040512 - color presentation including habitat), 140 (Page 300 - recorded as *Muhlenbergia dubioides* C.O. Goodding), **HR***

***Muhlenbergia porteri* F.L. Scribner ex W.J. Beal: Bush Muhly**

COMMON NAMES: Bakú (Tarahumara in Chihuahua)¹⁴⁰; Bush Grass (a name also applied to other species); Bush-grass (a name also applied to other species); Bush Muhly (a name also applied to other species); Hoe Grass (a name also applied to other species); Hoegrass; Liendrilla Amacollada (Hispanic); Mesquite Grass (a name also applied to other species); Mesquite Muhley; Mesquite Muhly; Mesquitegrass; Porter Muhlenbergia; Porter's Muhlenbergia; Porter Muhley; Porter Muhly; Porter's Muhley; Porter's Muhly; Telaraña (Hispanic); Zacate Aparejo (Spanish: Sonora)¹⁴⁰. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass with spreading, trailing prostrate, decumbent, geniculate, ascending and/or erect culms 10 to 44 inches in height/length and 18 inches to 10 feet in width; one plant was observed and described as being 20 inches in height and 40 inches in width, several plants were observed and described as being 28 inches in height and 6½ feet in width, several plants were observed and described as being 3 feet in height and 10 feet in width); the stems are dull green but, and along with the leaves, may be tinged with purple; the leaves are green, purplish-green or yellow-green curing to buff; the panicles (compound inflorescences) are usually purple; the spikelets (flowers) are green becoming purple when mature; the anthers are purple to yellow; flowering generally takes place between late February and late October (additional records: one for late November and one for early December); the caryopses (fruits) are yellowish-brown the aggregate of which covers the plants in a misty shroud. HABITAT: Within the range of this species it has been reported from mountains; rocky and stony-sandy mountainsides; mesas; rocky cliffs; bouldery and rocky canyons; rocky canyonsides; rocky-sandy and gravelly canyon bottoms; gorges; bouldery talus slopes; crevices in rocks; buttes; along sandy-silty and silty ledges; ridges; rocky ridgetops; rocky foothills; rocky and sandy hills; bouldery-sandy and rocky hillsides; rocky escarpments; along bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-loamy, gravelly, gravelly-loamy, sandy and sandy-loamy slopes; bajadas; rocky outcrops; gravelly bases of rock outcrops; amongst boulders and rocks; alcoves; clefts in rocky hillsides; sandy lava flows; lava fields; sand dunes; dune-like areas of fine blow-sand deposits; gravelly-sandy banks; gravelly plains; rocky, gravelly-sandy, sandy and sandy loamy flats; open sandy ground amongst Ephedra and Larrea; basins; sandy valley floors; valley bottoms; along rocky, rocky-gravelly, gravelly, gravelly-loamy and sandy roadsides; rocky arroyos; within draws; bottoms of draws; gulches; ravines; springs; bouldery streambeds; along rivers; along and in rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy washes; along drainages; bouldery-cobbly and rocky drainage ways; around ponds; margins of washes; sandy-silty and silty benches; gravelly terraces; sandy floodplains; sandy mesquite bosques; around represos; riparian areas, and disturbed areas growing in damp and dry rocky desert pavement; bouldery, bouldery-rocky, bouldery-cobbly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-clayey loam, cobbly-sandy loam, gravelly loam, sandy loam, clayey loam and loam ground; gravelly clay, sandy clay and clay ground, and cobbly-sandy silty, sandy silty and silty ground often found growing in the protection of shrubs and trees, occurring from sea level to 7,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. In areas where it occurs naturally, consider including Bush Muhly seed in reseeding mixtures. According to the USDA Forest Service Fire Effects Information System, Bush Muhly germinates best when temperatures are at 86 degrees Fahrenheit (30 degrees Centigrade). When re-vegetating desert washes consider planting Bush Muhly along with Whitethorn Acacia (*Acacia constricta*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Limberbush (*Jatropha cardiophylla*), Triangleleaf Bursage (*Ambrosia deltoidea*) and White Bursage (*Ambrosia dumosa*). Bush Muhly is browsed by the Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*). This plant is a host for the smut fungus *Ustilago muhlenbergiae*. *Muhlenbergia porteri* is native to southwest-central and southern North America. *5, 6, 15, 16, 30, 33 ("Bush Muhly originally existed in extensive stands on the open range lands of southern Arizona but now occurs for the most part in the protection of shrubs and subshrubs and is seldom locally abundant. It is highly palatable and well liked by livestock despite the wiry culms.", Pages 201-202), 43 (101709), 44 (121911), 46 (Page 111), 48, 58, 63 (121911 - color presentation including habitat), 77, 85 (121911 - color presentation including habitat), 105 ("This was formerly one of the most abundant and important grasses of southern Arizona, but is found now largely as individual plants under the protection of shrubs. ... Where possible this grass should be allowed to set a full crop of seed during the summer growing season at least every second or third year. Deferment of grazing during July and August every year is recommended on run-down ranges."), 124 (121911), 140 (Pages 211, 212 & 301), **HR***

***Muhlenbergia rigens* (G. Bentham) A.S. Hitchcock: Deergrass**

COMMON NAMES: Basket Muhly; California Deer Grass; California Deer-grass; California Deergrass; Deer Grass (a name also applied to other species); Deer Muhley; Deer Muhly; Deer-grass (a name also applied to other species, English: Arizona)¹⁴⁰; Deergrass (a name also applied to other species); Escobón ("Big Brush", Spanish: Sonora)¹⁴⁰; Hierba del Paisano ("Country-man's Herb", Spanish: Sonora)¹⁴⁰; Liendrilla de Venado (Hispanic); Mašil ("Plant", Uto-Aztec: Tübatulabal)¹⁴⁰; Monopi [Monope, Mónop] (Uto-Aztec: Mono)¹⁴⁰; Nor <norr> <no> ("To Turn [Leaves]", Uto-Aztec: Mountain Pima)¹⁴⁰; Pi'shu Li'awe (Language Isolate: Zuni)¹⁴⁰; Šipu(m)biv□ [Šipu(m)bav□] (Uto-Aztec: Kawaiisu)¹⁴⁰; Suul (Uto-Aztec: Cahuilla)¹⁴⁰; Tlo ("Grass", a word for any grass, (Athapaskan: Chiricahua and Mescalero Apache)¹⁴⁰; T'oh ("Grass", a word applied to any grass, Athapaskan: Navajo)¹⁴⁰; Wa□ai ("Grass", a word applied to any grass, (Uto-Aztec: Tohono O'odham)¹⁴⁰; Zacate Venado ("Deer Grass", Spanish: Sonora)¹⁴⁰. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with erect culms 14 to 63 inches in height in clumps to 4 to 40 inches in width at the base; one plant was observed and described as being 30 inches in height and 30 inches in width, one plant was observed and described as being 40 inches in height and 28 inches in width); the foliage is blue-green, gray-green or grayish curing to a gray straw color; the flowers are in

long narrow spikes (3 to 16 inches in length and 1/4 to 3/8 inch in diameter); the panicles (inflorescences) are grayish-green; the spikelets (flowers) are grayish or light green; the anthers are purplish or yellow; flowering generally takes place between mid-July and late November (additional records: one for mid-April, three for early May, four for early June and two for late June); the caryopses (fruits) are brownish. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; plateaus; along rocky canyons; along bouldery, rocky, rocky-sandy, gravelly and sandy canyon bottoms; gorges; crevices in bedrock; meadows; foothills; rocky hills; rocky hillsides; rocky, rocky-sandy-loamy, sandy, clayey-loamy and clayey slopes; alluvial fans; amongst boulders and rocks; clayey flats; basins; valley bottoms; roadsides; along rocky and sandy arroyos; bottoms of arroyos; within rocky and rocky-gravelly-sandy draws; bottoms of draws; gulches; along and in rocky gullies; bouldery and rocky bottoms of ravines; along seeps; around and in gravelly and sandy springs; along streamlets; along streams; along and in bedrock, rocky, gravelly and sandy streambeds; in boulders and rocky-sandy soil along creeks; along and in rocky, rocky-sandy, stony and sandy creekbeds; rocky riverbeds; along and in bouldery, rocky, rocky-gravelly, cobbly, gravelly and sandy washes; along and in bouldery and rocky drainages; water courses; bases of waterfalls; depressions; along (rocky, cobbly and sandy) banks of draws, streams, creeks, rivers and washes; along (gravelly-sandy) edges of arroyos, seeps, streams, streambeds, creeks, rivers and washes; along margins of streambeds and washes; sand bars; sandy terraces; bottomlands; gravelly-sandy floodplains; along fencelines; along ditch banks, and bouldery-cobbly-sandy, rocky-gravelly-sandy, cobbly, gravelly and sandy riparian areas growing in shallow water; muddy, and wet, moist, damp and dry (seasonally wet) bouldery, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly-clayey-loamy, gravelly-silty loam and clayey loam ground; clay ground, and silty ground, occurring from sea level to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder and/or fiber crop; it was also noted as having been used in the making of cooking tools and containers, and as a ceremonial item. *Muhlenbergia rigens* is native to southwest-central and southern North America. *5, 6, 15, 18, 30, 33 (Page 218), 43 (060910), 44 (010811), 46 (Page 110), 48, 58, 63 (060910 - color presentation), 77, 85 (010811 - color presentation including habitat), 105, 124 (010811 - no record, genus), 127, 140 (Pages 211-212 & 301)*

Muhlenbergia xerophila (see *Muhlenbergia elongata*)

Panicum arizonicum (see *Urochloa arizonica*)

Pappophorum wrightii (see *Enneapogon desvauxii*)

***Pennisetum ciliare* (C. Linnaeus) J.H. Link: Buffelgrass**

SYNONYMY: *Cenchrus ciliaris* C. Linnaeus. COMMON NAMES: African Buffel Grass; African Buffel-grass; African Buffelgrass; African Foxtail; African Foxtail Grass; Alien Buffel Grass; Alien Buffelgrass; Anjangrass; Blue Buffalo Grass; Buffel (Spanish); Buffel Grass; Buffle Grass; Buffel-grass; Buffle-grass; Büffelgras (German); Buffelgrass; Bufflegrass; Bufle; Cadillo Buffel (Hispanic); Cenchrus Cilié (French); Common Buffel Grass; Common Buffel-grass; Common Buffelgrass; Common Bufflegrass; Dhaman (India); Hairy Buffelgrass; Huizapal (Hispanic); Introduced Buffel Grass; Introduced Pasture Buffel Grass; Invasive African Buffel Grass; Invasive Buffel-grass; Invasive Buffelgrass; Non-native Buffel Grass; Non-native Buffelgrass; Nonnative Buffel-grass; Nonnative Buffelgrass; Pasto Buffel (Spanish); Pasture Buffel Grass; Perennial Buffel Grass; Sabat (Arabic); Sandbur (a name also applied to other species); South African Buffel Grass; South African Buffelgrass; Weedy Buffel Grass; Zacate Buffel (Spanish; Mexico); Zacate Buffle (Hispanic). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 4 inches to 5 feet in height); the leaves are green; the spikelets are reddish turning a golden-brown when dry; flowering may take place several times a year when sufficient moisture is available (flowering records: two for mid-February, one for early April, one for mid-April, one for early June, one for mid-August, one for late September, two for early October, four for mid-October, one for late October, one for late November and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; gravelly mesas; bases of cliffs; along rocky and sandy canyons; canyon bottoms; rocky-gravelly-clayey bluffs; buttes; ridges; ridgetops; foothills; rocky hills; rocky hillsides; rocky and gravelly slopes; alluvial fans; bajadas; rocky and rocky-gravelly outcrops; cobbly and sandy plains; rocky-loamy, gravelly-sandy and sandy flats; sandy uplands; valley floors; along rocky and sandy roadsides; along and in rocky and sandy arroyos; bottoms of arroyos; within draws; ravines; springs; along creeks; cobbly creekbeds; rocky, rocky-cobbly-sandy and cobbly riverbeds; along and in gravelly-sandy washes; along drainages; oases; marshes; within sandy depressions; (rocky-sandy) banks of washes; edges of arroyos and washes; (sandy) sides of rivers; sandy beaches; floodplains; lowlands; mesquite bosques; riparian areas, and disturbed areas growing in moist and dry rocky, rocky-cobbly-sandy, rocky-gravelly, rocky-sandy, stony, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam and loam ground; rocky-gravelly clay ground, and sandy-silty (loess) ground, occurring from sea level to 7,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. *Pennisetum ciliare* is native to southeastern Europe and coastal islands in the Mediterranean Sea; western and southern Asia, and Africa. *5, 6, 16, 22 (color photograph), 30, 33 (Page 266), 43 (101909), 44 (010112 - Common Names listed under *Cenchrus ciliaris* L.), 46 (Supplement Page 1041), 63 (010112 - color presentation), 77, 85 (010112 - color presentation), 124 (010112 - no record of species; genus record)*

Pennisetum ruppelii (see *Pennisetum setaceum*)

***Pennisetum setaceum* (P. Forsskål) E. Chiovenda: Crimson Fountaingrass**

SYNONYMY: *Pennisetum ruppelii* E.G. von Steudel. COMMON NAMES: African Fountain Grass (a name also applied to other species); Annual Fountain Grass; Crimson Fountain Grass; Crimson Fountain-grass; Crimson Fountaingrass; Fjäderborstgräs (Swedish); Fountain Grass (a name also applied to the genus *Pennisetum*); Fountain-grass (a name also applied to the genus *Pennisetum*); Plumitas (Spanish); Pronkgras (Afrikaans); Purple Fountain Grass (a name also applied to other species); Red Fountain Grass; Red Fountain-grass; Red Fountaingrass; Tender Fountain Grass; Tender Fountain-grass; Tender Fountaingrass; Zacate de la Fuente. DESCRIPTION: Terrestrial perennial graminoid (a bunchgrass (clumpgrass) with ascending and/or erect culms 1 to 5 feet in height; one clump was noted as being 5 feet in height and width); the leaves are green; the inflorescences are purplish; flowering generally takes place from early March to mid-December (additional record: one for early February); the fruits are purplish. HABITAT: Within the range of this species it has been reported from mountains; bases of cliffs; canyons; canyon walls; rocky and rocky-sandy and sandy canyon bottoms; crevices in rocks; ridges; swards; rocky foothills; rocky hills; hilltops; rocky hillsides; bouldery, bouldery-sandy, rocky and loamy slopes; rocky-sandy-loamy alluvial fans; bajadas; amongst boulders and rocks, rocks cobbles and gravels; flats; coastal dunes; rocky coastal beaches; railroad right-of-ways; along rocky-clayey roadsides; draws; along streams; along and in creeks; riverbeds; along and in rocky and sandy washes; drainages; drainage ways; banks of drainages; along (pebbly-sandy and sandy) edges of creeks and lakes; margins of washes, pools and ponds; lake shores; sand bars; rocky strands; mesquite bosques; rocky edges of reservoirs; canals; culverts; ditches; riparian areas, and disturbed areas growing in wet, moist and dry bouldery, bouldery-sandy, rocky, rocky-cobbly-sandy, rocky-sandy, cobbly, cobbly-gravelly, gravelly, pebbly-sandy and sandy ground; rocky-sandy loam and loam ground, and rocky clay and clay ground, occurring from sea level to 7,200 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. *Pennisetum setaceum* is native to western and southern Asia and northern, eastern and southern Africa. *5, 6, 16, 22 (color photograph), 26 (color photograph), 33 (recorded as *Pennisetum ruppelii* Steud., Page 266), 43 (101909), 44 (010512), 46 (Page 140), 63 (010512), 77, **85** (010512 - color presentation), 109, 124 (010512 - no record of species; genus record)*

***Poa bigelovii* G. Vasey & F.L. Scribner: Bigelow's Bluegrass**

COMMON NAMES: Bigelow Blue Grass; Bigelow Blue-grass; Bigelow Bluegrass; Bigelow's Blue Grass; Bigelow's Blue-grass; Bigelow's Bluegrass; Zacate Azule Nativo. DESCRIPTION: Terrestrial annual tufted graminoid (rarely geniculate (at base), ascending and/or erect culms 1 to 28 inches in height); the inflorescences are greenish or silvery; flowering generally takes place between late February and late May (additional records: two for early February, four for late June, two for early July, two for mid-July, three for mid-August and two for late August). HABITAT: Within the range of this species it has been reported from mountains; gravelly mesas; sandy cliffs; hanging gardens; rocky and gravelly-sandy canyons; bouldery, rocky, sandy, sandy-loamy and sandy-clayey canyon bottoms; chasms; along talus slopes; bases of cliffs; crevices in rocks; rocky and sandy ledges; ridges; clayey meadows; gravelly-sandy foothills; hills; rocky hillsides; bouldery, bouldery-gravelly, rocky, rocky-clayey-loamy, gravelly, gravelly-loamy, sandy, sandy-clayey-loamy, loamy, clayey-loamy and silty-loamy slopes; gravelly and sandy bajadas; bouldery and rocky outcrops; amongst boulders and rocks; coves; shelves; steppes; sandy plains; gravelly and sandy, loamy, clayey-loamy and silty-loamy flats; uplands; basins; rocky and sandy-clayey valley floors; valley bottoms; along gravelly roadsides; rocky, gravelly and sandy arroyos; rocky draws; bottoms of draws; ravines; seeps; bouldery and sandy springs; around seeping streams; along streams; streambeds; along creeks; sandy creekbeds; along rivers; riverbeds; along and in bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and sandy-loamy washes; drainages; within drainage ways; edges of washes; along (sandy) banks of arroyos, streams and washes; along edges of washes; shore of lakes; river channel bars; sandy beaches; sandy benches; terraces; gravelly-loamy and loamy bottomlands; sandy floodplains; rocky-sandy catchments; rocky margins of reservoirs; riparian areas, and disturbed areas growing in moist, damp and dry desert pavement; bouldery, bouldery-gravelly, rocky, rocky-sandy, shaley, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, rocky-clayey loam, gravelly loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clay loam, silty loam and loam ground, and sandy clay and clay ground, occurring from 500 to 9,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Poa bigelovii* is native to southwest-central and southern North America. *5, 6, 15, 16, 33 (Pages 64-65), 43 (102009), 44 (011012), 46 (Page 83), 48 (genus), 58, 63 (011012), 77, **80** (The Ergot Fungus (*Claviceps* sp.) is listed as a Secondary Poisonous Range Plant. Bluegrasses of the genus *Poa* can be hosts of the Ergot Fungus. "Ergot contains poisonous alkaloids and other compounds that may cause chronic poisoning (gangrenous ergotism) in the extremities when consumed in small amounts, or convulsive poisoning when large amounts are eaten. Animals may be poisoned by feeding on mature, infected grain or hay. Livestock, especially cattle, and humans are susceptible. ... Pastures causing ergot poisoning should be mowed or the animals removed. Mildly poisoned animals will usually recover if removed from the infested pastures, kept quiet, and supplied with good feed and water. In Arizona, some losses may be expected on rangelands during wet years, but most losses have occurred from grazing pastures of Dallas Grass (*Paspalum dilatatum*).” See text for additional information.), **85** (011012 - color presentation including habitat), 124 (010912 - no record of species; genus record), 140 (Page 301)*

***Poa fendleriana* (E.G. von Steudel) G. Vasey: Muttongrass**

COMMON NAMES: Blue-grass (a name also applied to other species); Bluegrass (a name also applied to other species); Fendler Blue Grass; Fendler Blue-grass; Fendler Bluegrass; Fendler Muttongrass; Fendler's Blue Grass; Fendler's Bluegrass; Fendler's Bluegrass; Fendler's Mutton Grass; Fendler's Muttongrass; Long-liguled Muttongrass; Longtongue Mutton Grass; Mutton Blue Grass; Mutton Bluegrass; Mutton Grass; Mutton-grass; Muttongrass; Timber Grass. DESCRIPTION: Terrestrial perennial tufted (sometimes producing rhizomes) graminoid (a cespitose bunchgrass (clumpgrass) with decumbent to erect culms 6 to 40 inches in height and 1 to 20 inches in diameter at the base; one plants was observed and described as being 8 to 12 inches in height and 4 to 6 inches in diameter at the base, plants were observed and described as being 20 inches in height and 20 inches in diameter at the base, plants were observed and described as being 32 inches in height and 4 inches in diameter at the base); the foliage may be a pale bluish-green, gray-green, green or yellow-green; the inflorescence may be purplish, red-brown, reddish or reddish-brown with pinkish-red or white-pink florets; flowering generally takes place between late February and early September (additional records: one for late September and one for mid-October). HABITAT: Within the range of this species it has been reported from bouldery mountains; along bouldery and rocky mountaintops; balds on top of volcanic mountains; at and above (in alpine meadows) timberline; gravelly-loamy mountainsides; clayey-loamy mesas; sandy plateaus; rim rock; canyon rims; cliffs; hanging gardens; rocky, rocky-gravelly and sandy bases of cliffs; along gravelly and sandy canyons; rocky and pebbly-sandy canyon walls; canyonsides; bouldery, rocky-clayey and gravelly canyon bottoms; chasms; within clefts; scree slopes; rocky talus slopes; bases of scree; crevices in rocks; pockets of sand in rocks; sandy bluffs; rocky buttes; rocky hogbacks; rocky knobs; rocky and rocky-sandy knolls; rocky, rocky-gravelly-loamy and rocky-sandy ledges; under rock ledges; along bouldery, rocky, rocky-shaley, rocky-sandy, stony, cobbly-gravelly, gravelly, sandy and sandy-loamy ridges; rocky, shaley, gravelly, sandy and clayey ridgetops; bouldery-rocky and rocky ridgelines; rocky clearings and openings in forests and woodlands; rocky, rocky-gravelly-loamy, rocky-sandy, shaley, stony-loamy, gravelly, gravelly-sandy, gravelly-loamy, sandy-loamy and loamy meadows; cinder cones; rocky foothills; bouldery-clayey, rocky, shaley-clayey and clayey hills; rocky, rocky-sandy, sandy, sandy-clayey, sandy-silty and silty hilltops; bouldery, rocky, rocky-gravelly and gravelly-sandy hillsides; escarpments; bedrock, bouldery, rocky, rocky-gravelly, rocky-gravelly-loamy, rocky-gravelly-clayey, rocky-gravelly-silty-loamy, rocky-sandy, rocky-loamy, rocky-clayey, rocky-clayey-loamy, rocky-silty-loamy, shaley, stony, stony-sandy, stony, stony-clayey, cobbly, cobbly-loamy, cindery, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, loamy, clayey and clayey-loamy slopes; along bouldery, rocky, rocky-clayey and shaley outcrops; along bases of rocky outcrops; amongst boulders, rocks, cobbles and gravels; bases of boulders; boulder fields; fellfields; felsenmeer; rocky moraines; alcoves; lava beds; sand dunes; rocky and gravelly banks; bases of embankments; in rocks along rocky-sandy-clayey breaks; steppes; prairies; gravelly plains; stony, stony-clayey, gravelly, gravelly-sandy, gravelly-loamy, sandy and sandy-loamy flats; rocky basins; cobbly-loamy hollows; valley floors; along silty valley bottoms; roadcuts; along sandy and clayey roadsides; along arroyos; within bouldery, rocky-sandy, gravelly, sandy, sandy-clayey and clayey draws; bottoms of draws; gulches; bottoms of gulches; along and in sandy and silty-loamy gullies; sandy and sandy-loamy ravines; seeps; along springs; in gravel and sand along streams; along and in bouldery, rocky-sandy and sandy streambeds; in sand along and in creeks; along creekbeds; along rivers; along riverbeds; along and in bouldery, rocky, gravelly and sandy washes; along and in rocky, gravelly-sandy, sandy and silty-loamy drainages; bases of waterfalls; around lakes; clayey playas; boggy areas; rocky-sandy bowls; depressions; swales; along (bouldery, rocky and sandy) banks of streams, creeks, rivers, washes and beaver ponds; edges of streams; along margins of streams, rivers and washes; (gravelly-sandy and sandy) shores of creeks, rivers and lakes; along bouldery-cobbly-sandy, cobbly-sandy, gravel and sand bars; gravelly, sandy and loamy benches; rocky-sandy coves; shelves; terraces; sandy bottomlands; sandy, sandy-silty and clayey floodplains; along aqueducts; along and in ditches; gravelly, gravelly-sandy, sandy, sandy-humusy and loamy riparian areas (including beaver dam systems), and disturbed areas growing in shallow water and mucky, soggy and wet, moist, damp and dry cryptogammic; rimrock pavement; bouldery, bouldery-rocky, bouldery-shaley-sandy, bouldery-cobbly-sandy, bouldery-sandy, rocky, rocky-shaley, rocky-gravelly, rocky-sandy, shaley, stony, stony-sandy, cobbly, cobbly-gravelly, cobbly-sandy, cindery, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-gravelly-silty loam, rocky-sandy loam, rocky-clayey loam, rocky-silty loam, stony loam, cobbly loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam, silty loam, silty-clayey loam, humusy loam and loam ground; bouldery clay, rocky clay, rocky-sandy clay, stony clay, gravelly clay, sandy clay and clay ground; sandy silty and silty ground, and rocky humusy and sandy humusy ground, occurring from 1,100 to 13,000 feet in elevation in the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fodder crop; it was also noted as having been used as a ceremonial drug or medication. This plant is a valuable forage plant for wildlife, it is browsed by deer and was observed at the center of a low density prairie dog town. *Poa fendleriana* is native to west-central and southern North America. *5, 6, 15, 33 (Pages 69-70, "The most valuable and abundant of the native Bluegrasses and among the twenty most important range grasses of the Rocky Mountain area. Range Plant Handbook, 1937"), 43 (022111), 44 (022111), 46 (Page 84), 48, 63 (022111 - color presentation), **80** (The Ergot Fungus (*Claviceps* sp.) is listed as a Secondary Poisonous Range Plant. Bluegrasses of the genus *Poa* can be hosts of the Ergot Fungus. "Ergot contains poisonous alkaloids and other compounds that may cause chronic poisoning (gangrenous ergotism) in the extremities when consumed in small amounts, or convulsive poisoning when large amounts are eaten. Animals may be poisoned by feeding on mature, infected grain or hay. Livestock, especially cattle, and humans are susceptible. ... Pastures causing ergot poisoning should be mowed or the animals removed. Mildly poisoned animals will usually recover if removed from the infested pastures, kept quiet, and supplied with good feed and water. In Arizona, some losses may be expected on rangelands during wet years, but most losses have occurred from grazing pastures of Dallas Grass (*Paspalum dilatatum*).” See text for additional information.), **85** (022511 - color presentation including habitat), 105, 127, 140 (Page 301)*

***Polypogon monspeliensis* (C. Linnaeus) R.L. Desfontaines: Annual Rabbitsfoot Grass**

COMMON NAMES: Annual Beard Grass; Annual Beard-grass; Annual Beardgrass; Annual Rabbit's Foot Grass; Annual Rabbit-foot Grass; Annual Rabbit's-foot Grass; Annual Rabbits-foot Grass; Annual Rabbitfoot Grass; Annual Rabbitsfoot Grass; Ban Bai (Pima); Ban Bahi (Uto-Aztec: Akimel O'odham)¹⁴⁰; Beard Grass (a name also applied to other species and the genus *Polypogon*); Beard-grass (a name also applied to other species and the genus *Polypogon*); [Rabbitfoot] Beard-grass (English)¹⁴⁰; Bearded Fox-tail Grass (a name also applied to other species); Ch'it' N'dinisé <c'it' dinesá> (Athapascan: Navajo)¹⁴⁰; [Zacate] Cola de Zorro ("Fox Tail [Grass]", Spanish: Sonora)¹⁴⁰; Dhail Al Qut (Arabic); Dlozilgai Bitsee' <Aozilgai bice> (Athapascan: Navajo)¹⁴⁰; Hierba de Caso ("Event Herb", Spanish: Sonora)¹⁴⁰; Montpellier Beard Grass; Montpellier Beard-grass; Montpellier Polypogon; Pata de Canejo ("Rabbit-foot Grass", Spanish: Sonora)¹⁴⁰; Pombikanan (Uto-Aztec: Tübatulabal)¹⁴⁰; Rabbit-foot Grass (a name also applied to the genus *Polypogon*); Rabbit-foot Grass (English)¹⁴⁰; [Annual] Rabbit('s)-foot Grass [Annual Rabbitfoot Grass] (English)¹⁴⁰; Rabbit-foot Polypogon; Rabbit-foot-grass; Rabbitfoot Beard-grass; Rabbitfoot Beardgrass; Rabbitfoot Grass; Rabbitfoot Polypogon; Rabbitfoot-grass (a name also applied to the genus *Polypogon*); Rabbitfoot-grass (English)¹⁴⁰; Rabbit's Foot Beardgrass; Rabbit's Foot Polypogon; Rabbit's-foot Polypogon; Rabbit'sfootgrass; Rabbitfootgrass; Rabbitsfoot Beardgrass; Rabbitsfoot Polypogon (English)¹⁴⁰; □a'i <sa'e> ("Grass", a word for grasses, Uto-Aztec: Mountain Pima)¹⁴⁰; Shelik Bahi <sheshelik baabhai pl.> (Uto-Aztec: Akimel O'odham)¹⁴⁰; Skäggräs (Swedish); Tawny Rabbit-foot Grass; Va□a'i ("Grass", a word for grasses, Uto-Aztec: Mountain Pima)¹⁴⁰; Wah□ ("Grass" a word used for grasses, Uto-Aztec: Northern Paiute)¹⁴⁰; Wa□ai ("Grass" a word used for grasses, Uto-Aztec: Tohono O'odham)¹⁴⁰; X□pa Nk□šyu□ (Yuman: Cocopa)¹⁴⁰; Zacate Cola de Zorra (Spanish); 'Zee' iilwoii <□aze□ i.l "o□i"> ("Runs Into the Mouth", Athapascan: Navajo)¹⁴⁰. DESCRIPTION: Terrestrial and/or semi-aquatic annual tufted graminoid (decumbent, geniculate, ascending and or erect culms 2 to 40 inches in height); the flowers may be brown, pale green, green, white or white-green; flowering generally takes place between early March and early November (additional records: two for early February, one for late November and one for mid-December); the awns are yellow. HABITAT: Within the range of this species it has been reported from mountains; rocky and sandy mesas; plateaus; cliff faces; hanging gardens; escarpments; rocky canyons; along bouldery-gravelly-sandy, rocky, rocky-sandy, shaley and sandy canyon bottoms; talus; crevices in rocks; bluffs; rocky buttes; ridges; clayey-loamy ridgetops; sandy, loamy and clayey meadows; foothills; rocky and sandy hills; rocky hillsides; escarpments; rocky, rocky-sandy, cobbly-sandy-clayey, gravelly, gravelly-loamy, sandy, loamy, loamy and clayey slopes; bedrock, rocky and sandy outcrops; lava beds; amongst rocks; sand dunes; hummocks; clayey-loamy steppes; prairies; sandy and chalky plains; along muddy, rocky, gravelly-silty, sandy, loamy and silty flats; sandy uplands; sandy basins; boggy hollows; valley floors; valley bottoms; coastal marshes; tidal flats; sandy-clayey roadbeds; along gravelly, gravelly-sandy and sandy roadsides; within arroyos; within muddy and sandy-loamy draws; bottoms of draws; gulches; gullies; sandy bottoms of gullies; silty ravines; muddy, rocky and sandy seeps; along and in gravelly, clayey and loamy springs; along and in gravelly-sandy, sandy and sandy-clayey soils along streams; along rocky, rocky-sandy, shaley, sandy, loamy-clayey and silty-loamy streambeds; along and in creeks; along and in rocky, stony and sandy creekbeds; in clayey soils along rivers; in rocky, rocky-clayey, rocky-silty, gravelly-sandy, sandy and sandy-clayey riverbeds; along and in bouldery-sandy, rocky-silty, gravelly and sandy washes; along and in drainages; mucky drainage ways; poolbeds; ponds; vernal ponds; freshwater pozos; in lakes; silty lakebeds; playas; boggy areas; ciénegas; in cindery and clayey freshwater and saltwater marshes; sandy swamps; depressions; sink holes; within clayey-loamy swales; along (muddy, muddy-sandy-silty, cobbly-silty, sandy, sandy-loamy, sandy-clayey, clayey and silty) banks of streams, creeks, creekbeds, rivers, riverbeds, washes, ponds and lakes; (muddy, rocky, rocky-clayey, cobbly, gravelly-sandy, sandy and loamy-clayey) edges of springs, streams, creeks, rivers, washes, pools, ponds, pozos, lakes, lagoons, salt-marshes, swamps and sloughs; along margins of streams, creeks, pools, backwaters and freshwater marshes; along (gravelly, gravelly-sandy, gravelly-clayey, sandy, sandy-clayey and clayey) shores of creeks, rivers, ponds and lakes; mudflats; muddy-sand, rocky-sand, stony-sand, gravel, gravelly-sand, sand and sandy-clayey-sand bars; rocky and sandy beaches; sandy benches; terraces; cobbly, cobbly-loamy and loamy bottomlands; along rocky-cobbly, gravelly-sandy, sandy-loamy, sandy-silty and silty-clayey floodplains; lowlands; mesquite bosques; along fencelines; dams; around stock tanks; around reservoirs; along canals; along canal banks; along mucky-sandy, sandy-clayey and clayey ditches; along silty-clayey ditch banks; muddy, rocky-sandy, gravelly-sandy, gravelly-loamy and sandy riparian areas; waste places, and disturbed areas growing in shallow water; peat deposits; mucky; muddy, and wet, moist, damp and dry bouldery, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-cobbly, rocky-sandy, shaley, stony, stony-sandy, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; cobbly loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam, silty loam and loam ground; rocky clay, rocky-stony clay, cobbly-sandy clay, sandy clay, loamy clay, silty clay and clay ground; rocky silty, cobbly silty, gravelly silty, sandy silty and silty ground, and chalky ground occurring from sea level to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, as a drug or medication and as a soap to wash figurines before painting them. *Polypogon monspeliensis* is native to northern, eastern and southern Europe and coastal islands in the Mediterranean Sea; Asia and coastal islands in the North Pacific Ocean; northern Africa and coastal islands in the North Atlantic Ocean. *5, 6, 15, 16, 33 (Pages 182-183), 43 (102109), 44 (011012), 46 (Page 104), 58, 63 (011012 - color presentation), 68, 77, **85** (011012 - color presentation), 101 (color photograph), 124 (011012), 127, 140 (Pages 214-215 & 301)*

Rhynchelytrum repens (see *Melinis repens*)

Rhynchelytrum roseum (see *Melinis repens*)

***Schismus barbatus* (P. Loeffling ex C. Linnaeus) A. Thellung: Common Mediterranean Grass**

COMMON NAMES: Abu Mashi (a name also applied to *Schismus arabicus*); Abu-mashi (a name also applied to *Schismus arabicus*); Bearded Mediterranean Grass; Camel Grass (a name also applied to other species); Common Mediterranean Grass; Common Mediterranean Schismus; Common Mediterraneangrass; Kelch Grass; Kelch-grass; Mediterranean Grass (a name also applied to other species and the genus *Schismus*); Mediterranean Schismus; Mediterraneangrass (a name also applied to other species and the genus *Schismus*); Old Han Schismus; Zacate Mediterrane Comun. DESCRIPTION: Terrestrial annual tufted graminoid (prostrate, decumbent, geniculate, ascending and/or erect culms 1 to 14 inches in height); the foliage is green; the inflorescence is greenish-purple; the spikelets (flowers) may be purple tinged; flowering generally takes place between early January and early June (additional records: one for mid-October and one for late October, flowering beginning as early as November has been reported). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; sandy and sandy-silty mesas; rocky cliffs; rocky and clayey canyons; sandy canyon bottoms; rocky talus; bluffs; rocky ridges; ridgetops; ridgelines; rocky, stony-gravelly, sandy-loamy and clayey hills; hilltops; rocky hillsides; along rocky, rocky-gravelly-loamy, rocky-loamy-clayey, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, loamy and clayey slopes; rocky alluvial fans; gravelly-sandy bajadas; rocky outcrops; amongst boulders; sand dunes; blow-sand deposits; shelves; gravelly-sandy plains; gravelly, gravelly-sandy, gravelly-loamy, sandy and silty flats; sandy valley floors; around wharves; roadbeds; along gravelly and sandy roadsides; springs; in sandy soils along streams; along gravelly-sandy and sandy creekbeds; along rivers; along rocky, gravelly and clayey-loamy riverbeds; along and in rocky-sandy, rocky-silty, gravelly, gravelly-sandy and sandy washes; drainages; sandy and silty lakebeds; depressions; (sandy) banks of streams; borders of washes; (sandy) edges of streambeds and lakes; margins of washes; beaches; sandy benches; gravelly and sandy terraces; floodplains; canal banks; gravelly-sandy riparian areas, and disturbed areas growing in wet, moist and dry desert pavement; bouldery, rocky, rocky-gravelly, rocky-sandy, stony-gravelly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam and loam ground; rocky-loamy clay and clay ground, and rocky silty, gravelly silty, sandy silty and silty ground, occurring from sea level to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. *Schismus barbatus* is native to southwestern Europe; western, central and southern Asia, and northern and southern Africa and coastal islands in the North Atlantic Ocean. *5, 6, 15, 16, 22 (color photograph), 33 (Pages 172-173), 43 (102209), 44 (011112 - color photograph), 46 (Page 98), 58, 63 (011112 - color presentation of seed), 68, 77, 85 (011112 - color presentation of dried material), 124 (011112 - no record of genus or species), **HR***

Setaria macrostachya (see NOTES and related footnotes 33, 46, 85, 105 and 140 under *Setaria vulpiseta*)

***Setaria vulpiseta* (J.B. de Lamarck) J.J. Roemer & J.A. Schultes: Plains Bristlegrass**

COMMON NAMES: Assaak; Bristle-grass (a name also applied to other species and the genus *Setaria*); [Plains, Summer] Bristle-grass (a name applied to *S. macrostachya*, English)¹⁴⁰; Bristlegrass (a name also applied to other species and the genus *Setaria*); Foxtail [Wild] Millet (a name applied to *S. macrostachya*, English)¹⁴⁰; Hasac (a name applied to *S. macrostachya*, Hokan: Seri)¹⁴⁰; Ne-kuuk-suuk (a name applied to *S. macrostachya*, Mayan: Maya)¹⁴⁰; Plains Bristle-grass (a name also applied to other species); Plains Bristlegrass (a name also applied to other species); Summer Bristle-grass; Wa□ai (“Grass” a word applied to any grass, Uto-Aztecan: Tohono O’odham)¹⁴⁰; Xica Quiix (“Globular Things” a name applied to *S. macrostachya*, Hokan: Seri)¹⁴⁰; Xikkaa Kiix; Zacate Tempranero [Temprano] (“Early Grass” a name applied to *S. macrostachya*, Spanish: Chihuahua, Sonora)¹⁴⁰; Zacate Temprano (a name applied to *S. macrostachya*); Zéé’iilwoii (“One That Goes Into the Throat” a name applied to *S. macrostachya*, Athapascan: Navajo)¹⁴⁰. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent, geniculate, ascending and/or erect culms 8 inches to 4 feet in height; one plant was observed and described as being 2 inches in width at the base, several plants were observed and described as being 8 to 16 inches in width at the base); the stems and leaves are pale to bright green sometimes with a bluish tinge curing to an orange-brown; the flowers may be orange and purple; flowering generally takes place between mid-April and mid-October (additional records: one for early March and one for mid-November). HABITAT: Within the range of this species it has been reported from mountains; mesas; cliffs; bases of cliffs; rocky canyons; rocky canyon sides; rocky canyon bottoms; canyons; rocky talus; crevices in rocks; amongst rocky buttes; crests of buttes; rocky ledges; ridges; openings in woodlands; foothills; rocky hills; hilltops; rocky hillsides; rocky, rocky-loamy, gravelly, gravelly-loamy, sandy and clayey slopes; bajadas; rocky outcrops; amongst boulders and rocks; sandy dunes; sandy mesquite hummocks; plains; gravelly flats; valley floors; valley bottoms; along gravelly roadsides; rocky arroyos; bottoms of arroyos; gravelly-sandy-loamy draws; streambeds; sandy creeks; sandy riverbeds; along and in gravelly washes; within drainages; drainage ways; depressions; ciénegas; (gravelly-sandy) banks of streambeds, creeks, rivers and washes; (rocky) edges of streambeds and washes; benches; sandy-loamy bottomlands; sandy floodplains; mesquite bosques; stock tanks; riparian areas, and disturbed areas growing in muddy and moist and dry bouldery, rocky, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, gravelly-sandy loam, sandy loam and clayey loam ground; sandy clay and clay ground, and cobbly-sandy silty ground sometimes in the partial shade of shrubs and trees, occurring from sea level to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: *Setaria vulpiseta*, the Plains Bristlegrass has been recorded in many texts as *Setaria macrostachya*; however, it has been reported that *Setaria macrostachya*, with the common name Large-spike Bristlegrass is an EXOTIC species that may also be found in Arizona. There appears to be some confusion as to what’s what with this species with regard to its taxonomy. The native Plains Bristlegrass may

be an attractive component of a restored native habitat, and the plant is reportedly a good soil binder. Plains Bristlegrass is an important forage grass with a high palatability; however, it is often selectively grazed over other range grasses and does not stand up well to heavy grazing. The seeds are eaten by doves, quails, sparrows and other songbirds. *Setaria vulpiset* is native to south-central (again, some authors say that it is native and other authors say that it isn't) and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 15 (recorded as *Setaria macrostachya* H.B.K.), 16 (recorded as *Setaria macrostachya* H.B.K.), 33 (recorded as *Setaria macrostachya* H.B.K., Plains Bristlegrass, Page 270), 43 (102409), 44 (011212 - no record of species; genus record), 46 (recorded as *Setaria macrostachya* H.B.K., Plains Bristlegrass, Page 139 and Supplement, Page 1041), 48 (recorded as *Setaria macrostachya*), 58 (recorded as *Setaria macrostachya* H.B.K.), 63 (011212 - color presentation of seed), 77 (recorded as *Setaria macrostachya* H.B.K.), 85 (011312 - *Setaria macrostachya* Kunth and *Setaria vulpiset* (Lam.) Roemer & J.A. Schultes, color presentation of dried material), 105 (recorded as *Setaria macrostachya* H.B.K.), 124 (011212 - no record of species; genus record), 140 (Pages 215-216 & 301 - recorded *Setaria macrostachya* Kunth)*

***Sorghum halepense* (C. Linnaeus) C.H. Persoon: Johnsongrass**

COMMON NAMES: Alabama Guinea Grass; Alabama Guinea-grass; Aleppo Grass; Aleppo Millet Grass; Aleppo Milletgrass; Aleppo Sorgho; Aleppo Sorgho; Aleppo Sorghum; Aleppo-grass; Aleppohirse (German); Arabian Millet; Arabian Millet Grass (Utah); Australian Grass (a name also applied to other species); Cañota (Spanish); Chinese Sugarcane (a name also applied to other species); Common Johnson Grass; Common Johnson-grass; Common Johnsongrass; Cuba Grass; Doura; Egyptian Grass; Egyptian Millet (a name also applied to other species); Egyptian Rice-corn (a name also applied to other species); Evergreen Millet; False Guinea Grass; False Guinea-grass; False Guineagrass; Great Millet (a name also applied to other species); Green Valley Grass; Green Valley-grass; Green-valley Grass; Guinea Corn (a name also applied to other species); Guinea Grass; Halepa Grass; Halepa Sorghum; Herbe d'Alep (French); Herbe de Cuba; Hierba Johnson (Spanish); Imphee; Indian Millet (a name also applied to other species and the genus *Sorghum*); Johnson Grass (a name also applied to other species); Johnson-grass (a name also applied to other species); Johnsongras (Afrikaans); Johnsongrass (a name also applied to other species); Johnson Sorghum; Johnson's Sorghum; Maiden Cane (a name also applied to other species); Maiden-cane (a name also applied to other species); Meanie Grass; Mean's Grass; Means Grass; Means' Grass; Means-grass; Millet Seed; Morocco Millet; Ogräsdurra (Swedish); Racehorse Grass; Racehorse-grass; Saint Mary's Grass (a name also applied to other species); Shi Mao (transcribed Chinese); Sorgho d'Alep (French); Sorgho de Aleppo; Sorgho de Aleppo (Spanish); St. Mary's Grass (a name also applied to other species); Syria Grass; Syria Millet; Syrian Grass; Syrian Millet; Wilde Mohrenhirse (German); Zacate Johnson (Spanish); Zacate Nilo (Spanish). DESCRIPTION: Terrestrial perennial graminoid (erect culms 20 inches to 8 feet in height, reportedly may reach 12 feet in flower); the foliage is green; the flowers may be cream-purple, greenish-purple, dark red-purple or purplish; flowering may take place year-round. HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; sandy canyon bottoms; bluffs; meadows; foothills; hills; rocky hillsides; rocky, sandy, sandy-loamy, sandy-silty and clayey-loamy slopes; amongst boulders and rocks; sand hummocks; rocky mudflows; sandy steppes; prairies; plains; gravelly, sandy, loamy and clayey-loamy flats; valley floors; coastal prairies; along cindery railroad right-of-ways; along gravelly-sandy, gravelly-loamy and sandy roadsides; arroyos; bottoms of arroyos; gulches; springs; rocky-sandy soil along streams; along and in streambeds; along and in rocky and rocky-gravelly-sandy creeks; along creekbeds; in sandy soil along and in rivers; along and in rocky and sandy riverbeds; within rocky and sandy washes; drainages; ciénegas; freshwater marshes; depressions; (sandy) banks of creeks, rivers and washes; edges of streams; gravel and sand bars; cobbly-sandy and sandy benches; cobbly-sandy and sandy terraces; sandy, loamy and silty bottomlands; sandy and sandy-loamy floodplains; mesquite bosques; silty-clayey stock tanks; along canals; along canal banks; along and in sandy-loamy ditches; along clayey and clayey-loamy ditch banks; gravelly-sandy and sandy riparian areas; waste places, and disturbed areas growing in wet, moist, damp and dry bouldery, rocky, rocky-gravelly-sandy, rocky-sandy, cobbly, cobbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; sandy loam, clayey loam, silty-clayey loam and loam ground; silty clay and clay ground, and sandy-silty and silty ground, occurring from sea level to 7,500 feet elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a fodder and as a toy or in games (Kiowa children used stems and leaves to make grass whistles). Johnsongrass was reportedly introduced into the United States around 1830. *Sorghum halepense* readily hybridizes with *Sorghum bicolor* (Sorghum) which is also an exotic. *Sorghum halepense* is native to western, middle and southern Asia and northern Africa. *5, 6, 15, 16, 22 (color photograph), 33 (Pages 310-313), 43 (102409), 44 (011312 - color photograph), 46 (Page 143), 58, 63 (011312 - color presentation including habitat), 68 ("Johnsongrass ordinarily is good feed, but sometimes the plant, particularly the leaves, contain hydrocyanic (prussic) acid, a cyanide type of poisoning. Any factor which interrupts normal growth may cause the release of HCN within plants. Rapid growth of new leaves, wilting due to drought, frost, freezing, cutting, or trampling are the most dangerous events." See text for additional information), 77, 80 (**Johnsongrass is Listed as a Major Poisonous Range Plant**). "Most losses from Johnsongrass are due to hydrocyanic-acid poisoning, but plants also accumulate dangerous levels of nitrate. Danger from HCN poisoning is greatest when soils are high in available nitrogen and low in phosphorus, when plants have been exposed to drought or disease which results in slow or stunted growth, and when plants are making rapid regrowth or have been frosted. Leaves are more toxic than stems, and young plants are more toxic than mature ones.... Management to defer pastures during dangerous periods of growth, and feeding of animals before turning them on pastures containing Johnsongrass are the best preventive measures." See text for additional information.), 85 (011312 - color presentation including habitat), 101 (color photograph), 105, 124 (042711), 127, 140 (Page 301)*

***Sporobolus airoides* (J. Torrey) J. Torrey: Alkali Sacaton**

COMMON NAMES: Alkalai Drop-seed; Alkalai Dropseed; Alkalai Sacaton; Alkalai Sacaton Grass; Alkali Drop-seed; Alkali Dropseed; Alkali Grass (a name also applied to other species); Alkali Sacaton; Alkali Sacaton Grass; Alkali Sacatone; Alkali Zacaton; Alkalai-sacaton; Alkali-sacaton; Alkili Sacatone; Big Alkali Sacaton (more commonly refers to *Sporobolus wrightii*); Bunch Grass (a name also applied to other species); Bunch-grass (a name also applied to other species); Dropseed (a name also applied to other species, the genus *Sporobolus* and historically to the genus *Muhlenbergia*); Dropseed (English)¹⁴⁰; Fine Top (Kansas); Fine Top Grass (a name also applied to other species); Fine-top Grass (a name also applied to other species); Fine-top Salt Grass; Fine-top Salt-grass; Finetop Saltgrass; Hair Grass (a name also applied to other species); Hair Grass Dropseed; Hair-grass Drop-seed; Hair-grass Dropseed; Hairgrass Dropseed; No□ <nawt, not> (Uto-Aztec: Akimel O'odham and Tohono O'odham)¹⁴⁰; Nöönö <n□:n□> (Uto-Aztec: Hopi)¹⁴⁰; Rush Grass (a name also applied to other species and the genus *Sporobolus*); Sacaton (a name also applied to the genus *Sporobolus*); [Big Alkali] Sacaton (English)¹⁴⁰; Tava'i (Yaqui); Salt Grass (a name also applied to other species); Salt-grass (a name also applied to other species); Tłaltso ("Big Grass", Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Tl'oh Dahikalii (Navajo); Tl'oh Ts'ósi <y'oh c'ó's> ("Slender Grass", Athapascan: Navajo)¹⁴⁰; Zacatón <sacatón> (Spanish)¹⁴⁰; Zacaton Alcalino. DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with ascending and/or erect culms 14 inches to 8¼ feet in height developing clonal rings up to 3 to 7 feet in width; 3 plants were observed and described as being 44 inches in height (with inflorescences to 6 feet in height) and 32 inches in width at the base, plants were observed and described as being 5 feet in height and over 40 inches in width at the base); the color of the foliage has been described as grayish-green; the spikelets are brownish or lead-colored; the florets are pale green; flowering generally takes place between mid-April and late November. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; gravelly-sandy and sandy-loamy mesas; sandy plateaus; canyon rims; sandy bases of cliffs; rocky canyons; bouldery-sandy, rocky, sandy and sandy-silty canyon bottoms; rocky bluffs; sandy-clayey buttes; sandy knolls; sandy and clayey ridges; ridgetops; meadows; foothills; rocky, shaley, sandy and clayey hills; gravelly-silty hilltops; along rocky, rocky-sandy and sandy hillsides; sandy hillocks; mounds; escarpments; bouldery-clayey, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-sandy, shaley-loamy, stony-gravelly-loamy, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy, clayey and powdery-loamy slopes; gravelly alluvial fans; rocky and gravelly outcrops; bases of outcrops; alcoves; sand dunes; sandy hummocks; breaks; rocky-clayey and clayey patches; sandy steppes; sandy, clayey, silty-loamy-clayey and silty-clayey prairies; gravelly-sandy and sandy plains; rocky, shaley, cobbly, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, clayey and clayey-loamy flats; clayey-loamy sandy and sandy uplands; cobbly and sandy basins; basin bottoms; sandy, clayey and silty-loamy valley floors; sandy valley bottoms; along railroad right-of-ways; along gravelly, gravelly-sandy, sandy, sandy-loamy, clayey and silty roadsides; within gravelly and clayey-loamy arroyos; sandy bottoms of arroyos; along and in draws; bottoms of draws; shaley-sandy gulches; rocky and sandy-clayey gullies; ravines; sandy-loamy seeps; around springs; around seeping springs; along clayey streambeds; along creeks; creekbeds; in sandy and loamy soils along rivers; gravelly-sandy and sandy riverbeds; along and in gravelly and sandy washes; along and in sandy, sandy-clayey and clayey drainages; within gravelly, sandy and sandy-clayey drainage ways; pools; lakebeds; sandy-loamy and clayey playas, boggy peat deposits; ciénegas; marshy areas; swampy areas; gravelly-sandy, sandy and sandy-loamy depressions; clayey sloughs; clayey swales; along (sandy and clayey) banks of streams, creeks, creekbeds, rivers, drainages, ponds and lakes; (rocky-clayey and sandy) edges of seepages, rivers, ponds and marshes; (sandy) margins of draws, streams, creeks, rivers, washes, pools, lakes and marshes; (clayey) berms and rims at edges of wetlands; along (sandy) shores of drainages and lakes; mudflats; cobbly, cobbly-silty, sandy, sandy-silty and silty bars; sandy beaches; clayey benches; sandy, sandy-clayey and sandy-silty terraces; sandy bottomlands; along cobbly, sandy and loamy-clayey floodplains; sandy lowlands; mesquite bosques; fencelines; in clayey soils around stock tanks; sandy, sandy-clayey and clayey banks of reservoirs; canal banks; in loamy soils along ditches; sandy ditch banks; rocky, gravelly, sandy and clayey-loamy riparian areas, and disturbed areas growing in shallow water and in wet, moist, damp and dry bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-sandy, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; shaley loam, stony-gravelly loam, gravelly loam, gravelly-sandy loam, gravelly-silty loam, sandy loam, sandy-clayey loam, clayey loam, silty loam, powdery loam and loam ground; bouldery clay, rocky clay, sandy clay, loamy clay, silty clay, silty-loamy clay and clay ground, and cobbly silty, gravelly silty, sandy silty and silty ground, occurring from sea level to 8,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food (utilized as food during times of famine) crop; it was also noted as having been used as a tool (moist grass laid on hot stones to keep steam from escaping). It is useful in stabilizing soils in disturbed areas and slowing erosion. The establishment of seedlings may require frequent irrigations, but once established it is tolerant of both drought and flooding. It grows best where it receives 12 to 18 inches of mean annual precipitation. Earl F. Aldon (Aldon, Earl F. 1975. Establishing alkali sacaton on harsh sites in the Southwest. Journal of Range Management. 28(2): 129-132. [2872], found in the United State Department of Agriculture Forest Service, Fire Effects Information System) developed the following guidelines for establishing alkali sacaton from seed on harsh sites: plant when soil moisture is at least 14% or higher; plant when probabilities for weekly precipitation are greatest and soil temperatures will be near 86 ° Fahrenheit (30° Centigrade); use large seeds at least 1 year old; saturate the planting site just prior to planting; cover seed with about ½ inch (13 mm) of mulch to keep conditions moist and dark, and if rainwater does not deposit at least 6 mm of rain within the first 5 days, rewater to bring the soil to saturation. Alkali Sacaton may be browsed by Mule Deer (*Odocoileus hemionus*), White-tailed Deer (*Odocoileus virginianus*), Elk (*Cervus elaphus*), Pronghorn (*Antilocapra americana*), small mammals and birds. *Sporobolus airoides* is native to west-central, southeast-central and southern North America. *5, 6, 18, 33 (Pages 228-229), 43 (102409), 44 (011312), 46 (Page 114), 48, 63

(011312 - color presentation including habitat), 77, 85 (011412 - color presentation), 105, 124 (011312), 127, 140 (Pages 216-218 & 301 - recorded as *Sporobolus airoides* (J. Torrey) J. Torrey [*S. wrightii* Munro ex Scribner, *S. airoides* Torrey var. *wrightii* (Munro ex Scribner) Gould]), **HR***

Sporobolus airoides var. *airoides* (see *Sporobolus airoides*)

***Sporobolus cryptandrus* (J. Torrey) A. Gray: Sand Dropseed**

COMMON NAMES: Covered Spike Drop-seed; Covered-spike Drop-seed; Covered-spike Dropseed; Cryptandrous Dropseed; Dropseed (a name also applied to other species and the genus *Sporobolus*); Drop Seed Grass (a name also applied to other species and the genus *Sporobolus*); Hidden-spike Dropseed; Large-panicle Vilfa; Larfe-panicked Vilfa; Lesser Dropseed; Prairie Grass; Prairie-grass; Sand Drop-seed; Sand Dropseed; Sand Rush Grass; Sand Rush-grass; Sand Rushgrass; Sporobole à Fleurs Cachées (French, alternate spelling Sporobole à Fleures Cachées also observed); Vai Tava'i (Yaqui, also called this grass "Vaso" which is the Yaqui generic name for grass); Zacate de Arena (Spanish); Zacate Encubierto (Spanish). DESCRIPTION: Terrestrial perennial tufted graminoid (a bunchgrass (clumpgrass) with decumbent (rarely), ascending and/or erect culms 1 to 4 feet (one record of 6½ feet) in height and up to 1 to 12 inches in width at the base; plants were observed and reported as being 40 inches in height and 4 to 6 inches in width at the base); the foliage may be bluish-green, light green, dark green or purple curing to light straw-yellow; the spikelets may be brownish, purplish, bright red-maroon or yellow; the anthers may be purplish to yellowish or white; flowering generally takes place between late April and late October (additional records: one for late January and one for early April; flowering ending as late as November has been reported); the fruits are light brown to reddish-orange. HABITAT: Within the range of this species it has been reported from mountains; gravelly mountaintops; bouldery, rocky, gravelly-sandy, sandy and sandy-loamy mesas; sandy plateaus; rocky and sandy rims of canyons; cliffs; gravelly and sandy bases of cliffs; rocky and gravelly-loamy canyons; along bouldery-cobbly-sandy, gravelly, gravelly-sandy and sandy canyon bottoms; gorges; bouldery talus slopes; sandy crevices in boulders and rocks; pockets of sandy soil in rocks; bluffs; gravelly sides of bluffs; along tops of bluffs; buttes; sandy knolls; rocky ledges; along rocky, gravelly-loamy and sandy ridges; ridgetops; openings in woodlands; glades; sandy, sandy-loamy and clayey meadows; tops of cinder cones; sandy foothills; shaley, gravelly, gravelly-sandy and sandy hills; rocky and sandy hillsides; escarpments; along bedrock, bouldery, bouldery-cobbly-clayey, rocky, rocky-gravelly, rocky-sandy, rocky-sandy-loamy, rocky-loamy, shaley, cobbly, gravelly, gravelly-sandy-loamy, gravelly-clayey, gravelly-clayey-loamy, sandy, sandy-loamy, sandy-clayey, loamy, clayey, clayey-loamy, silty-clayey and silty-clayey slopes; alluvial fans; bajadas; rocky outcrops; amongst boulders and rocks; sheltered nooks of rim rock; sandy lava flows; sand hills; sand dunes; sand hummocks; steppes; sandy and sandy-loamy prairies; pebbly, gravelly-sandy, sandy and sandy-clayey plains; bouldery, rocky, rocky-sandy, gravelly, sandy, sandy-loamy, sandy-clayey, sandy-silty, loamy, clayey, clayey-loamy, silty-loamy and silty-clayey flats; sandy and clayey uplands; sandy basins; basin floors; sandy bowls; gravelly-sandy and sandy-loamy valley floors; valley bottoms; coastal dunes; sandy coastal plains; sandy coastal flats; along gravelly railroad right-of-ways; sandy roadways; sandy and clayey roadcuts; along rocky-sandy, cindery, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, sandy-silty and clayey roadsides; sandy and clayey arroyos; sandy bottoms of arroyos; within sandy draws; bottoms of draws; sandy ravines; sandy, sandy-clayey and clayey seeps; sandy, sandy-clayey and clayey springs; gravelly-loamy soils along streams; along and in sandy, sandy-silty-clayey and clayey streambeds; along creeks; rocky and sandy creekbeds; along rivers; along and in sandy, sandy-clayey and clayey riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy, sandy, sandy-loamy, clayey and silty-clayey washes; within rocky-clayey-silty and sandy drainages; drainage ways; clayey playas; blowouts; gravelly-sandy, sandy and silty-clayey depressions; sandy and clayey swales; along (muddy, sandy and sandy-loamy) banks of arroyos, springs, streams, creeks, rivers, washes and lakes; (rocky, gravelly and sandy) edges of draws, gullies; streams, drainage ways, pools and depressions; margins of streams, creeks, rivers, pools and lakes; (gravelly-sandy and sandy) shores of rivers and lakes; areas of drawdown; mudflats; sand and silty-sand bars; gravelly and sandy beaches; gravelly and sandy benches; stony-loamy, cobbly-gravelly, cobbly-sandy, sandy, sandy-loamy, silty and silty-clayey terraces; sandy, sandy-clayey, loamy and clayey bottomlands; gravelly-sandy, sandy and clayey floodplains; lowlands; mesquite bosques; along sandy fencerows; around stock tanks (charcos); gravelly banks and sandy shores of reservoirs; along and in sandy, sandy-clayey, loamy and clayey ditches; ditch banks; rocky, gravelly, gravelly-sandy and sandy riparian areas; sandy and loamy waste places, and disturbed areas growing in muddy and wet, moist, damp and dry rimrock; bouldery, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony-gravelly, cobbly, cobbly-sandy, cindery, gravelly, gravelly-sandy, pebbly and sandy ground; rocky loam, stony loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, sandy-silty loam, silty loam, silty-clayey loam and loam ground; bouldery-cobbly clay, cobbly-sandy clay, gravelly clay, gravelly-sandy clay, sandy-clay, sandy-silty clay, silty clay and clay ground, and rocky-clayey silty, gravelly silty, sandy silty and silty ground, occurring from sea level to 10,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, established plants are drought resistant. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop. When using this plant in landscaping and re-vegetation projects use plants and/or seed collected from as local a population as possible. Rocky Mountain Bighorn Sheep (*Ovis canadensis*) browse this plant, Scaled Quail (*Callipepla squamata*), Black-tailed Jackrabbits (*Lepus californicus*), Black-tailed Prairie Dogs (*Cynomys ludovicianus*) feed on this plant, small mammals and birds also utilize this plant. *Sporobolus cryptandrus* is native to central and southern North America and southern South America (report for Argentina found in the Germplasm Resources Information Network). *5, 6, 15, 16, 33 (very similar to *Sporobolus flexuosus* and difficult to distinguish without having mature panicles, Pages 226-227), 43 (102409 -

Sporobolus cryptandrus A. Gray), 44 (011412), 46 (Page 114), 48, 58, 63 (011412 - color presentation including habitat), 77, **85** (011612 - color presentation including habitat), 105, 124 (011412), 127, 140 (Page 301)*

Trichachne californica (see *Digitaria californica*)

***Urochloa arizonica* (F.L. Scribner & E.D. Merrill) O. Morrone & F.O. Zuloaga: Arizona Signalgrass**

SYNONYMY: *Brachiaria arizonica* (F.L. Scribner & E.D. Merrill) S.T. Blake, *Panicum arizonicum* F.L. Scribner & E.D. Merrill. COMMON NAMES: Arizona Panicgrass; Arizona Panicum; Arizona Signal Grass; Arizona Signal-grass; Arizona Signalgrass; Piojillo de Arizona. DESCRIPTION: Terrestrial annual tufted graminoid (decumbent, geniculate and/or erect culms 6 to 26 inches in height); the flowers are purple; flowering generally takes place between late July and early November (flowering beginning as early as June has been reported). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky canyons; canyon bottoms; chasms; rocky talus; meadows; foothills; rocky hills; hilltops; rocky and rocky-clayey hillsides; bouldery, rocky, rocky-gravelly, rocky-sandy, stony, gravelly, gravelly-loamy, sandy, sandy-clayey loam, loamy and clayey slopes; alluvial fans; gravelly bajadas; sand dunes; rocky banks; rock outcrops; amongst boulders; bases of rocks; sand dunes; sandy flats; coastal dunes; coastal plains; along roadsides; arroyos; bottoms of arroyos; sandy draws; along rocky ravines; seeps; rivulets; along and in gravelly-sandy streambeds; along and in rocky, gravelly and sandy washes; drainages; within clayey drainage ways; (rocky-sandy and sandy) banks of washes; shores of lakes; benches; terraces; sandy floodplains; mesquite bosques; margins of stock tanks; ditches; riparian areas, and disturbed areas growing in dry bouldery, bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy, stony, gravelly and sandy ground; gravelly loam, gravelly-clayey loam, sandy-clayey loam and loam ground, and rocky clay, sandy clay and clay ground, occurring from sea level to 6,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Urochloa arizonica* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Brachiaria arizonica* (Scribn. & Merr.) S.T. Blake), 16 (recorded as *Panicum arizonicum* Scribn. & Merr.), 33 (*Panicum arizonicum* Scribn. & Merr., Page 281), 43 (102609), 44 (011712), 46 (recorded as *Panicum arizonicum* Scribn. & Merr., Page 135), 58 (recorded as *Brachiaria arizonica* (Scribn. & Merr.) S.T. Blake), 63 (011712), 68, 77 (recorded as *Brachiaria arizonica* (Scribn. & Merr.) S.T. Blake), **85** (011711 - color presentation), 124 (011712 - no record of species or genus), 140 (Page 299 - recorded as *Brachiaria arizonica* (Scribner & Merrill) S.T. Blake)*

***Vulpia octoflora* (T. Walter) P.A. Rydberg: Sixweeks Fescue**

COMMON NAME: Common Six Weeks Grass (for var. *octoflora*); Common Six-weeks Fescue (for var. *octoflora*); Common Six-weeks Grass (for var. *octoflora*); Common Sixweeks Fescue (for var. *octoflora*); Common Sixweeks Grass (for var. *octoflora*); Common Sixweeksgrass (for var. *octoflora*); Eight Flowered Fescue (for var. *octoflora*); Eight-flower Six Weeks Grass (for var. *octoflora*); Eight-flower Six-weeks Fescue (for var. *octoflora*); Eight-flower Six-weeks Grass (for var. *octoflora*); Eight-flower Sixweeks Grass (for var. *octoflora*); Eight-flowered Annual Fescue (for var. *octoflora*); Eight-flowered Fescue (for var. *octoflora*); Eight-flowered Six-weeks Grass (for var. *octoflora*); Eightflower Six Weeks Grass (for var. *octoflora*); Fescue Grass (for var. *octoflora*); Hairy Pullout Grass (for var. *hirtella*); Hairy Six Weeks Fescue (for var. *hirtella*); Hairy Six-weeks Fescue (for var. *hirtella*); Hairy Sixweeks Fescue (for var. *hirtella*); Pull-out Grass (for var. *octoflora*); Pull-out Vulpia (for var. *octoflora*); Pullout Grass (for var. *octoflora*); Six Weeks Fescue (a name also applied to the genus *Vulpia*); Six-weeks Fescue (a name also applied to the genus *Vulpia*); Six-weeks Grass; Six-weeks Rescue (for var. *octoflora*); Sixweeks Fescue (a name also applied to the genus *Vulpia*); Sixweeks Grass; Sixweeks Rescue (for var. *octoflora*); Slender Eight-flower Grass (for var. *octoflora*); Slender Eight-flowered Fescue (for var. *octoflora*); Slender 8-Flowered Fescue (for var. *octoflora*); Slender Fescue Grass (for var. *octoflora* and other species); Slender Fescue-grass (for var. *octoflora* and other species); Slender Rescue-grass (for var. *octoflora*). DESCRIPTION: Terrestrial annual solitary or loosely tufted graminoid (decumbent, geniculate, ascending and/or erect culms 2 inches to 2 feet in height); the foliage may be bright green or yellow-green; the florets are green; flowering generally takes place between early February and early August (additional record: one for mid-November). HABITAT: Within the range of this species it has been reported from bouldery mountains; rocky mountaintops; rocky mountainsides; gravelly, pebbly-sandy-silty, sandy and clayey-loamy mesas; plateaus; cobbly and sandy rims; rocky cliffs; sandy bases of cliffs; rocky canyons; canyon walls; bouldery, rocky, gravelly and sandy canyon bottoms; talus slopes; crevices in boulders and rocks; pockets of sandy soil in rock; gravelly-silty-clayey, sandy and chalky bluffs; rocky, rocky-gravelly-clayey, gravelly-sandy, gravelly-silty-loamy and sandy-clayey buttes; rocky and sandy ledges; along bouldery, rocky, rocky-gravelly, rocky-sandy, shaley, gravelly, sandy and silty-loamy ridges; sandy ridgetops; ridgelines; rocky-clayey patches; rocky and clayey balds; rocky-sandy and sandy meadows; rocky-sandy rims of craters; rocky foothills; rocky, stony, stony-sandy, stony-clayey, cobbly-sandy-loamy, cindery (scoria), gravelly, gravelly-clayey, sandy-loamy and silty-loamy hills; rocky hilltops; rocky, rocky-gravelly, rocky-silty, gravelly and gravelly-loamy hillsides; escarpments; bouldery, rocky, rocky-cobbly, rocky-gravelly, rocky-gravelly-loamy, rocky-sandy, rocky-clayey, shaley, shaley-clayey, stony-cobbly, stony-sandy, gravelly, gravelly-loamy, gravelly-clayey-loamy, sandy, sandy-loamy, sandy-clayey, loamy, loamy-clayey, clayey, clayey-loamy and clayey-silty slopes; gravelly-sandy bases of slopes; rocky, rocky-sandy, rocky-sandy-loamy, gravelly-sandy and sandy alluvial fans; gravelly bajadas; bouldery, rocky, rocky-clayey, shaley and cindery (scoria) outcrops; sandy bases of outcrops; amongst boulders and rocks; rock beds; lava flows; sand hills; sand dunes; sandy and clayey breaks; benchlands; in silty-loam at edges of tablelands; clay pans; sandy steppes; gravelly, gravelly-sandy, sandy, sandy-loamy, loamy, loamy-clayey, silty, silty-loamy and silty-loamy-clayey prairies; stony and sandy plains; rocky, stony, gravelly, gravelly-clayey-loamy, sandy, sandy-clayey and clayey flats; rocky, gravelly, sandy, loamy, loamy-clayey, silty, silty-loamy and silty-loamy-clayey uplands; sandy and clayey basins; stony-clayey hollows; sandy-loamy valley

floors, valley bottoms; coastal plains; coastal beaches; sandy coastal shorelines; railroad right-of-ways; sandy roadcuts; along rocky, gravelly, gravelly-sandy, gravelly-loamy, sandy, loamy-clayey, clayey and silty-loamy roadsides; along gravelly and sandy-loamy arroyos; bottoms of arroyos; sandy draws; sandy bottoms of draws; gulches; gullies; bottoms of gullies; ravines; sandy bottoms of ravines; rocky-clayey seeps; springs; humusy-loamy soils along streams; sandy streambeds; along creeks; rocky-sandy creekbeds; along rivers; gravelly-sandy and sandy riverbeds; along and in rocky-sandy, stony-gravelly, gravelly-sandy, sandy and sandy-loamy washes; along and in rocky-sandy, gravelly-sandy, clayey, silty-loamy and silty-clayey drainages; within sandy drainage ways; oases; around lakes; within sandy-silty-loamy buffalo wallows; sandy depressions; swales; along (gravelly-loamy, sandy, sandy-silty, loamy, loamy-clayey, silty and silty-clayey) banks of streambeds, creeks, rivers, washes and drainages; borders of washes; along (sandy) edges of washes; margins of streams, creeks, rivers, pools and ciénegas; (sandy) shorelines of rivers; areas of drawdown; gravel, gravelly-sand and sand bars; sandy beaches; cobbly-sandy-loamy and sandy benches; gravelly, gravelly-sandy and sandy terraces; sandy and loamy bottomlands; clayey floodplains; fencerows; clayey catchments; stock tanks (charcos); around reservoirs; ditches; sandy riparian areas; waste places, and disturbed areas growing in wet, moist, damp and dry cryptogamic; rimrock pavement; bouldery, rocky, rocky-gravelly, rocky-cobbly, rocky-sandy, shaley, stony, stony-cobbly, stony-gravelly, stony-sandy, cindery (scoria), gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-clayey loam, cobbly loam, cobbly-sandy loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, gravelly-silty loam, sandy loam, sandy-silty loam, clayey loam, silty loam, humusy loam and loam ground; rocky clay, rocky-gravelly clay, shaley-clay, stony clay, gravelly clay, gravelly-silty clay, sandy clay, loamy clay, silty-loamy clay, silty clay and clay ground; rocky silty, pebbly-sandy silty, sandy silty, clayey silty and silty ground; chalky ground, and rocky-powdery ground, occurring from sea level to 10,600 feet in elevation in the forest, woodland; scrub, grassland, desertscrub and wetland ecological formations. NOTES: Sixweeks Fescue may be useful in the restoration of disturbed areas and acts as a soils stabilizer, once established it is very drought tolerant. The Creosote Bush may serve as a nurse plant for Sixweeks Fescue. This plant is browsed by Bison (*Bos bison*), Black-tailed Jack Rabbits (*Lepus californicus*), Desert Mule Deer (*Odocoileus hemionus* subsp. *crooki*), Lesser Prairie Chicken (*Tympanuchus pallidicinctus*), Pronghorn (*Antilocapra americana*), White-tailed Prairie Dogs (*Cynomys leucurus*) and other small mammals, and Ground Squirrels (Townsend Ground Squirrel noted), Kangaroo Rats (Merriam's Kangaroo Rat noted), Pocket Gophers (Plains Pocket Gopher noted), Pocket Mice (Bailey's and Rock Pocket Mice noted) and other small mammals and birds (Chukar and Sharp-tailed Grouse noted) feed on the seed. *Vulpia octoflora* is native to central and southern North America. *5, 6, 15, 16, 33 (recorded as *Festuca octoflora* Walt., Page 55), 43 (102709), 44 (011912 - records located under *Festuca octoflora*), 46 (recorded as *Festuca octoflora* Walt., Page 80), 58, 63 (011712 - color presentation), **85** (011812 - color presentation including habitat), 124 (011712)*

***Vulpia octoflora* (T. Walter) P.A. Rydberg var. *hirtella* (C.V. Piper) J.T. Henrard: Sixweeks Fescue**

SYNONYMY: *Festuca octoflora* T. Walter subsp. *hirtella* C.V. Piper, *Festuca octoflora* T. Walter var. *hirtella* (C.V. Piper) C.V. Piper ex A.S. Hitchcock. COMMON NAMES: Eight-flowered Fescue (a name also applied to var. *octoflora*); Fescua; Hairy Pullout Grass; Hairy Six Weeks Fescue; Hairy Six-weeks Fescue; Hairy Sixweeks Fescue; Six Weeks Fescue (a name also applied to var. *octoflora*); Six-weeks Fescue (a name also applied to the species); Sixweeks Fescue (a name also applied to the species); Sixweeks Grass (a name also applied to the species and other species); Tufted Fescue (a name also applied to var. *octoflora*). DESCRIPTION: Terrestrial annual solitary or loosely tufted graminoid (decumbent, geniculate, ascending and/or erect culms 2 inches to 2 feet in height); the foliage is bright green or yellow-green; the florets are green; flowering generally takes place between early February and late June. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; gravelly and sandy mesas; rocky cliffs; rocky canyons; gravelly and sandy canyon bottoms; crevices in rocks; cobbly-loamy buttes; rocky ledges; along ridges; ridgetops; ridgelines; meadows; rocky foothills; rocky hills; bases of hills; rocky-gravelly hillsides; rocky, rocky-sandy, gravelly, gravelly-loamy, gravelly-clayey-loamy, sandy, sandy-loamy, sandy-clayey, loamy and humusy-loamy slopes; bajadas; bouldery and rocky outcrops; amongst boulders and rocks; bases of boulders; lava flows; sand dunes; along sandy outwash fans; breaks; plains; stony, gravelly and sandy flats; sandy-loamy valley floors; valley bottoms; along roadsides; sandy arroyos; sandy draws; gulches; gullies; springs; humusy-loamy soils along streams; sandy streambeds; along creeks; rocky-sandy creekbeds; along rivers; riverbeds; along and in bouldery, stony-gravelly, gravelly-sandy, sandy and sandy-loamy washes; within sandy drainage ways; swales; around lakes; margins of ciénegas; shores of lakes; sandy beaches; gravelly and sandy terraces; sandy and loamy bottomlands; floodplains; stock tanks (charcos); ditches; sandy riparian areas; waste places; recently burned areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, stony-gravelly, gravelly, gravelly-sandy, sandy and chalky ground; rocky-clayey loam, cobbly loam, gravelly loam, gravelly-clayey loam, sandy loam, clayey loam, humusy loam and loam ground, and sandy clay and clay ground, occurring from 200 to 7,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Sixweeks Fescue may be useful in the restoration of disturbed areas and acts as a soils stabilizer. This plant is browsed by Bison (*Bos bison*), Black-tailed Jack Rabbits (*Lepus californicus*), Desert Mule Deer (*Odocoileus hemionus* subsp. *crooki*), Lesser Prairie Chicken (*Tympanuchus pallidicinctus*), Pronghorn (*Antilocapra americana*), White-tailed Prairie Dogs (*Cynomys leucurus*) and other small mammals, and Ground Squirrels (Townsend Ground Squirrel noted), Kangaroo Rats (Merriam's Kangaroo Rat noted), Pocket Gophers (Plains Pocket Gopher noted), Pocket Mice (Bailey's and Rock Pocket Mice noted) and other small mammals and birds (Chukar and Sharp-tailed Grouse noted) feed on the seed. *Vulpia octoflora* var. *hirtella* is native to west-central and southern North America. *5, 6, 33 (recorded as *Festuca octoflora* var. *hirtella* Piper, Page 55), 43 (060710), 44 (011912 - records located under *Festuca octoflora*, color photograph), 46 (recorded as *Festuca octoflora* Walt. var. *hirtella* Piper, Page 80), 63 (011912), 77, **85** (011912), 124 (011912)*

***Vulpia octoflora* (T. Walter) P.A. Rydberg var. *octoflora*: Sixweeks Fescue**

SYNONYMY: *Festuca octoflora* T. Walter. COMMON NAMES: Common Six Weeks Grass; Common Six-weeks Fescue; Common Six-weeks Grass; Common Sixweeks Fescue; Common Sixweeks Grass; Common Sixweeksgrass; Eight Flowered Fescue; Eight-flower Six Weeks Grass; Eight-flower Six-weeks Fescue; Eight-flower Six-weeks Grass; Eight-flower Sixweeks Grass; Eight-flowered Annual Fescue; Eight-flowered Fescue; Eight-flowered Six-weeks Grass; Eightflower Six Weeks Grass; Fescue Grass; Pull-out Grass (a name also applied to the species); Pull-out Vulpia (a name also applied to the species); Pullout Grass (a name also applied to the species); Six-weeks Fescue (a name also applied to the species); Sixweeks Fescue (a name also applied to the species); Sixweeks Grass (a name also applied to the species and other species); Six-weeks Rescue; Sixweeks Rescue; Slender Eight-flower Grass; Slender Eight-flowered Grass; Slender Eight-flowered Fescue; Slender 8-flowered Fescue; Slender Fescue Grass; Slender Fescue-grass; Slender Rescue-grass; Tufted Fescue (a name also applied to var. *hirtella*). DESCRIPTION: Terrestrial annual solitary or loosely tufted graminoid (decumbent, geniculate, ascending and/or erect culms 2 inches to 2 feet in height); the foliage is bright green or yellow-green; the florets are green; flowering generally takes place between early February and late June. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; sandy and clayey-loamy mesas; plateaus; rocky cliffs; rocky canyons; rocky, gravelly and sandy canyon bottoms; sandy bases of cliffs; crevices in rocks; rocky ledges; along ridges; ridgelines; meadows; rocky foothills; rocky and stony-clayey hills; rocky, rocky-gravelly, gravelly and gravelly-loamy hillsides; rocky, rocky-sandy, gravelly, sandy and sandy-loamy slopes; bajadas; boulder and rock outcrops; amongst boulders and rocks; sand hills; dunes; sandy plains; stony, gravelly, sandy and sandy-loamy flats; basins; stony-clayey hollows; along gravelly-loamy, sandy and silty roadsides; along arroyos; gulches; gullies; sandy bottoms of ravines; springs; along streams; sandy streambeds; along creeks; rocky-sandy creekbeds; along rivers; sandy riverbeds; along and in stony-gravelly, gravelly-sandy and sandy washes; within sandy drainage ways; around lakes; swales; sandy banks of creeks; margins of ciénegas; sand bars; gravelly and sandy terraces; sandy and loamy bottomlands; floodplains; stock tanks (charcos); ditches; sandy riparian areas; waste places, and disturbed areas growing in dry bouldery, rocky, rocky-gravelly, rocky-sandy, stony-gravelly, gravelly, gravelly-sandy, sandy and chalky ground; gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; stony clay, sandy clay and clay ground, and rocky silty and silty ground, occurring from 100 to 10,600 feet in elevation in the forest, woodland; scrub, grassland, deserts scrub and wetland ecological formations. NOTES: Sixweeks Fescue may be useful in the restoration of disturbed areas and acts as a soils stabilizer. This plant is browsed by Bison (*Bos bison*), Black-tailed Jack Rabbits (*Lepus californicus*), Desert Mule Deer (*Odocoileus hemionus* subsp. *crooki*), Lesser Prairie Chicken (*Tympanuchus pallidicinctus*), Pronghorn (*Antilocapra americana*), White-tailed Prairie Dogs (*Cynomys leucurus*) and other small mammals, and Ground Squirrels (Townsend Ground Squirrel noted), Kangaroo Rats (Merriam's Kangaroo Rat noted), Pocket Gophers (Plains Pocket Gopher noted), Pocket Mice (Bailey's and Rock Pocket Mice noted) and other small mammals and birds (Chukar and Sharp-tailed Grouse noted) feed on the seed. *Vulpia octoflora* var. *octoflora* is native to central and southern North America. *5, 6, 33 (recorded as *Festuca octoflora* Walt., Page 55), 43 (102809), 44 (011912 - records located under *Festuca octoflora*), 46 (recorded as *Festuca octoflora* Walt., Page 80), 63 (011912), 77, 85 (011912 - color presentation of dried material), 124 (011912)*

Typhaceae: The Cat-tail Family

Typha angustata (see *Typha domingensis*)

Typha angustifolia (see NOTES under *Typha domingensis*)

***Typha domingensis* C.H. Persoon: Southern Cattail**

SYNONYMY: *Typha angustata* J.B. Bory & L.A. Chabard. COMMON NAMES: Cat-tail (a name also applied to other species; the genus *Typha*, and to the Typhaceae), Cattail (a name also applied to other species, the genus *Typha* and to the family Typhaceae); Dominican Cat-tail; Dominican Cattail; Lesser Reedmace; Narrow-leaf Cattail (a name also applied to other species); Narrow Leaf Cumbungi; Narrow-leaf Cumbungi; Narrow Leafed Cumbungi; Narrow-leafed Cumbungi; Narrow Leaved Cumbungi; Narrow-leaved Cumbungi; Piripepe (Spanish); Piriveví (Spanish); Santo Domingo Cattail; Southern Cat-tail; Southern Cattail; Southern Narrow-leaved Cat-tail; Southern Narrow-leaved Cattail; Southern Cat-tail; Southern Cattail; Southern Reed-mace; Southern Reedmace; Totorá (Spanish); Tropical Cattail; Tule (a name also applied to other species, Spanish); U□vak <oodvak, otoxak> (Uto-Aztecán: Akimel O'odham)¹⁴⁰; Woody Cattail. DESCRIPTION: Semi-aquatic perennial forb/herb (erect shoots 3 to 13 feet in height); the leaves may be dark green or light yellowish-green; the pistillate flowers are light brown, tawny-brown or brown becoming buff or grayish; the staminate flowers are golden-yellow or yellow-green; flowering generally takes place between early March and late November (flowering records: one for early March, one for early April, one for late April, two for early May, three for mid-May, two for late May, four for early June, four for mid-June, one for late June, two for early July, two for mid-July, three for late July, two for early August, one for late August, one for early September, one for late September, one for early October, one for late October and one for late November). HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; canyons; rocky canyon bottoms; gorges; rocky hills; bouldery and rocky hillsides; muddy, rocky and clayey slopes; prairies; clayey flats; valley floors; draws; ravines; seeps; around and in gravelly and gravelly-sandy springs; along and in streams; along and in rocky-sandy and sandy streambeds, along and in creeks; cobbly creekbeds; along rivers; sandy and sandy-silty riverbeds; within rocky washes; along and in clayey drainages; waterholes (pozos); pools; around ponds; around lakes; lakebeds; lagoons (esteros); around bogs; boggy areas; ciénegas; along

freshwater marshes; swamps; depressions; sinkholes; sloughs; (gravelly-sandy) banks of streams, rivers and washes; (silty) edges of creeks, rivers, pools; along shores of lakes; sand bars; sandy benches; bottomlands; sandy floodplains; lowlands; reservoirs; along canals; along ditches; muddy-sandy and gravelly-sandy riparian areas; waste places, and disturbed areas growing in shallow water; muddy, and wet, moist and damp bouldery, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; clayey loam ground; clay ground, and sandy-clayey silty and sandy silty ground, occurring from sea level to 6,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, and may be aggressively invasive in wetlands. Arizona specimens were historically referred to as *Typha angustifolia*. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop. *Typha domingensis* is native to the subtropics; tropics, and warm-temperate regions of south-central and southern North America; Central America and coastal islands in the Caribbean Sea; South America; Eurasia, and Africa, and Australia and islands in the South Pacific Ocean. *5, 6, 15, 16, 28 (color photograph), 43 (042911), 44 (042911 - color photograph), 46 (Page 64), 58, 63 (011912 - color presentation), 68, 77, 85 (011912 - color presentation including habitat), 124 (042911), 127, 140 (Pages 34, 254 & 306), **HR***

CLASS MAGNOLIOPSIDA: The DICOTS

Acanthaceae: The Acanthus Family

***Anisacanthus thurberi* (J. Torrey) A. Gray: Thurber's Desert Honeysuckle**

COMMON NAMES: Anisacanthus; Buckbrush (English)¹⁴⁰; Chuparosa (Spanish: Sonora)¹⁴⁰; Chuparrosa (Spanish: Sonora); Cola de Gallo ("Rooster Tail", Spanish: Sonora)¹⁴⁰; Colegallo <colegaiyo, colegayo> (Spanish: Chihuahua, Sonora)¹⁴⁰; Desert Honeysuckle; [Thurber's] Desert Honeysuckle (English)¹⁴⁰; Hierba de Cáncer ("Cancer Herb" a name also applied to other species, Spanish: Mexico)¹⁴⁰; Lustich <lustiej> (Uto-Aztec: Guarijio)¹⁴⁰; Muicle (a name also applied to other species, Uto-Aztec)¹⁴⁰; Taparosa (Spanish)¹⁴⁰; Thurber Anisacanthus; Thurber Desert-honeysuckle; Thurber's Desert Honeysuckle; Thurber's Desert-honeysuckle. DESCRIPTION: Terrestrial perennial cold deciduous shrub (3 to 8 feet in height; one plant was observed and described as being 6½ feet in height and 40 inches in width); the stems are pale gray, gray, tan or white; the leaves are green or yellow-green; the tubular flowers may be brick-red, brown-orange, brownish-red, burnt-orange, copper-red, orange, orange-brown, orange-red, orange with a purple fringe, orange-salmon, dull pink-orange, purplish, light red, red, red-orange, red-orange-brown, reddish-brown, reddish-orange or yellow; flowering generally takes place between late February and early August and again between late September and mid-December (additional records: one for early February and one for late August; flowering has also been reported as occurring mainly in the spring, but may take place almost throughout the year). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; cliffs; gravelly bases of cliffs; along bouldery, rocky and sandy canyons; rocky canyon bottoms; meadows; foothills; hills; gravelly hilltops; rocky and rocky-gravelly-loamy hillsides; escarpments; rocky, rocky-gravelly, rocky-clayey, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy and sandy slopes; bajadas; rocky outcrops; amongst boulders; traces; plains; flats; valley floors; valley bottoms; along roadsides; along arroyos; bottoms of arroyos; draws; sandy bottoms of draws; grottos; gulches; ravines; springs; along streams; along and in streambeds; along creeks; creekbeds; along rivers; riverbeds; along and in bouldery-rocky, rocky, gravelly and sandy washes; bouldery drainage ways; ciénegas; along (rocky and gravelly-sandy) banks of arroyos, rivers and washes; borders of washes; along edges of creeks and washes; rocky shelves; bottomlands; rocky-sandy floodplains; mesquite bosques; ditches, and bouldery riparian areas growing in dry bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, pebbly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam and gravelly loam ground; rocky clay and gravelly clay ground, and silty ground, occurring from sea level to 7,200 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, and is currently being used in plantings, often to attract hummingbirds. The Anna's Hummingbird (*Calypte anna*), Black-chinned Hummingbird (*Archilochus alexandri*), Broad-billed Hummingbird (*Cyanthus latirostris*), Costa's Hummingbird (*Calypte costae*) and Rufous Hummingbird (*Selasphorus rufus*) have been observed visiting the flowers, and the Verdin (*Auriparus flaviceps*) may use the flowers as a source of nectar. This plant is browsed by wildlife. *Anisacanthus thurberi* is native to southwest-central and southern North America. *5, 6, 10, 13 (Pages 216-217), 15, 16, 18, 28 (color photograph 539), 43 (102909 - *Anisacanthus thurberi* A. Gray), 44 (012112 - no record of species or genus), 46 (Page 801), 48, 58, 63 (012112 - color presentation of seed), 77 (color photograph #1), **85** (012112 - color presentation), 91 (Pages 92-94), 115 (color presentation), 124 (012112 - no record of species or genus), 140 (Pages 27-28 & 281)*

Dicliptera pseudoverticillaris (see *Dicliptera resupinata*)

***Dicliptera resupinata* (M.H. Vahl) A.L. de Jussieu: Arizona Foldwing**

SYNONYMY: *Dicliptera pseudoverticillaris* A. Gray. COMMON NAMES: Alfalfilla (Spanish); Arizona Dicliptera; Arizona Foldwing; Dicliptera (a name also applied to the genus *Dicliptera*); Foldwing (a name also applied to the genus *Dicliptera*); Purple Drop; Ramoneada Flor Morada (Spanish); Twin Seed. DESCRIPTION: Terrestrial perennial forb/herb (12 to 32 inches in height); the stems are dark green; the leaves are dark green; the flowers may be lavender, lavender-pink, magenta,

pink, dark pink, pink-lavender, pinkish-purple, purple, purple-blue, purple-green and rose; flowering generally takes place between early February and early November (additional records: two for early January, two for mid-December and three for late December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; bases of cliffs; along rocky canyons; canyon bottoms; foothills; rocky and gravelly hills; rocky hillsides; rocky, stony and stony-clayey slopes; bajadas; amongst rocks; stony flats; valley floors; roadsides; within gravelly and sandy arroyos; along gravelly and sandy bottoms of arroyos; along and in rocky streambeds; along creeks; along rivers; along and in rocky and sandy washes; drainage ways; swales; banks of arroyos and washes; borders of washes; sandy beaches; terraces; bottomlands; floodplains; lowlands; mesquite bosques; riparian areas, and disturbed areas growing in damp and dry rocky, stony, gravelly and sandy ground; rocky-sandy loam and silty-clayey loam ground, and rocky clay, stony clay and sandy clay ground, sometimes reported as growing in the shade, occurring from sea level to 6,100 feet in elevation in the scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Dicliptera resupinata* is native to southwest-central and southern North America. *5, 6, 15, 43 (103009 - *Dicliptera resupinata* Juss.), 44 (012312 - no record of species or genus), 46 (Page 801), 63 (012312), **85** (012312 - color presentation), 115 (color presentation), 124 (012312 - no record of species; genus record), 140 (Pages 28 & 281)*

Jacobinia candicans (see *Justicia candicans*)

Jacobinia ovata (see *Justicia candicans*)

***Justicia candicans* (C.G. Nees von Esenbeck) L.D. Benson: Arizona Water-willow**

SYNONYMY: *Jacobinia candicans* (C.G. Nees von Esenbeck) G. Bentham & J.D. Hooker; *Jacobinia ovata* A. Gray. COMMON NAMES: Arizona Water-willow; Chuparosa; Espuela de Caballero (Spanish); Hierba Azul; Jacobinia; Rama del Toro; Red Jacobinia. DESCRIPTION: Terrestrial perennial evergreen shrub (2 to 6 feet in height); the stems may be brown or straw colored; the leaves are grayish-green; the flowers may be bright red, red (often streaked with white) or deep red; flowering generally takes place between February and May (flowering on and off throughout the year has also been reported). HABITAT: Within the range of this species it has been reported from desert mountains; canyons; canyon bottoms; rocky gorges; rocky foothills; hillsides; rocky slopes; bajadas; amongst rocks; arroyos; along streams; along washes, and riparian areas growing in rocky ground, occurring from 400 to 3,500 feet in elevation in the desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Broad-billed Hummingbird (*Cynanthus latirostris*), Costa's Hummingbird (*Calypte costae*) and White-eared Hummingbird (*Hylocharis leucotis*) have been observed visiting the flowers. *Justicia candicans* is native to southwest-central and southern North America. *5, 6, 10, 13 (color photograph of *Justicia candicans* var. *subglabra* in the Ajo Mountains, Pima County, Arizona), 18, 28 (recorded as *Jacobinia ovata* Gray, color photograph 565 labeled *Jacobinia*), 43 (040912 - *Jacobinia candicans* Benth. & Hook. f.), 46 (recorded as *Jacobinia ovata* Gray, Page 802), 63 (040912 - color presentation), 85 (color presentation), 91 (note under *Justicia californica*), **HR***

***Justicia longii* R.A. Hilsenbeck: Longflower Tube Tongue**

SYNONYMY: *Siphonoglossa longiflora* (J. Torrey) A. Gray. COMMON NAMES: Longflower Tube Tongue; Long-flowered Justicia; Longflower Tubetongue; Longflowered Tube Tongue; Longflowered Tubetongue; Siphonoglossa (a name also applied to the genus *Siphonoglossa*); Tubetongue (a name also applied to the genus *Siphonoglossa*); White Needle Flower. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (8 to 40 inches in height, one plant was described as being 12 inches in height with a crown 12 inches in width, one plant was described as being 16 inches in height with a crown 16 inches in width); the foliage is gray-green or dark green; the flowers are white or light yellow; based on few records examined, flowering generally takes place between mid-April and early November (additional records: one for early February and one for mid-March); the green fruits turn dark brown when mature. HABITAT: Within the range of this species it has been reported from mountains; crevices in cliffs; canyons; canyon bottoms; bases of cliffs; rocky foothills; rocky and gravelly hills; bouldery-rocky, rocky and rocky-sandy hillsides; rocky and gravelly slopes; rocky outcrops; amongst boulders and rocks; plains; gravelly-sandy flats; basins; sandy arroyos; bottoms of arroyos; ravines; springs; along washes; within rocky and rocky-gravelly drainages; within drainage ways; along rocky banks of washes; margins of washes; mesquite bosques; , and bouldery-sandy riparian areas growing in dry bouldery, bouldery-rocky, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground, occurring from 1,200 to 4,900 feet in elevation in the scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the tubular flowers open in the evening and are reported to be slightly fragrant. This plant is browsed by wildlife and Hawkmoths reportedly visit the flowers. *Justicia longii* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Siphonoglossa longiflora* (Torr.) Gray), 16 (recorded as *Siphonoglossa longiflora* (Torr.) Gray), 28 (recorded as *Siphonoglossa longiflora*, color photograph), 43 (103009), 44 (012312 - no record of species; genus record lacks a listing under Common Names), 46 (recorded as *Siphonoglossa longiflora* (Torr.) Gray, Page 802, 58 (recorded as *Siphonoglossa longiflora* (Torr.) Gray), 63 (103009), 77 (recorded as *Siphonoglossa longiflora*, color photograph #58), **85** (012312 - color presentation including habitat), 115 (color presentation), 124 (012312 - no record of species; genus record), 140 (Pages 28 & 281)*

Siphonoglossa longiflora (see *Justicia longii*)

Amaranthaceae: The Amaranth Family

***Amaranthus fimbriatus* (J. Torrey) G. Bentham ex S. Watson: Fringed Amaranth**

SYNONYMY: *Amaranthus fimbriatus* (J. Torrey) G. Bentham ex S. Watson var. *fimbriatus*. COMMON NAMES: Agwáva <agwávic> (Yuman: Maricopa)¹⁴⁰; Agwáve (Yuman: Havasupai)¹⁴⁰; Akwa'av <akwavdh> (Yuman: Mohave)¹⁴⁰; Akwav (Yuman: Yuma)¹⁴⁰; Amaranth (a name also applied to other species and the genus *Amaranthus*); Amaranth (English)¹⁴⁰; Ats (Uto-Aztecan: Shoshoni); Basori <wasori, waso-ri> (Uto-Aztecan: Tarahumara)¹⁴⁰; Bledo (Spanish: Sinaloa)¹⁴⁰; Blite; Chuuhuggia <chu-hy-ki-ia, tchohokia> ("Night Carrying", Uto-Aztecan: Akimel O'odham)¹⁴⁰; Cuhkkia <cuhugia> (Uto-Aztecan: Hiá Ce□ O'odham)¹⁴⁰; Cuhugia <cuhkkia, chuhugia, teuhukia> (Uto-Aztecan: Tohono O'odham)¹⁴⁰; Fringe Amaranth; Fringed Amaranth; Fringed Amaranthus; Fringed Pigweed; Góchi Bichan (Athapascan: Western Apache)¹⁴⁰; Guey Cimarron (Mayo); Hué (Uto-Aztecan: Mayo)¹⁴⁰; Hue-hué (Uto-Aztecan: Guarijio)¹⁴⁰; K^wa:p <ko.p> (Yuman: Cocopa)¹⁴⁰; Ndaji ("Black Eye", Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Pigweed (a name also applied to other species and the genus *Amaranthus*); [Fringed] Pigweed (English)¹⁴⁰; Poosiw <pó:siowu> (Uto-Aztecan: Hopi)¹⁴⁰; Quelite (Spanish)¹⁴⁰; Quelite Cimarron (Mayo); Quelite de las Aguas ("Watery Greens", Spanish: Arizona, Sonora)¹⁴⁰; Quelitillo; Red Root (a name also applied to other species, English)¹⁴⁰; Siim (Seri); Su (Kiowa Tanoan: Tewa)¹⁴⁰; T'ohdeef'idí (Athapascan: Navajo)¹⁴⁰; Toothed Amaranth; Tucugusa (Uto-Aztecan: Nevome)¹⁴⁰; Tukya (Uto-Aztecan: Mountain Pima)¹⁴⁰; Tukya <tungi'ia> (Uto-Aztecan: Onavas Pima)¹⁴⁰; Wé□e <wée□e> (Uto-Aztecan: Yaqui)¹⁴⁰; Wee'e (Yaqui); Xpši: <hdhpši> (immature plants or greens, Yuman: Cocopa)¹⁴⁰; Ziim Caitic (Hokan: Seri)¹⁴⁰. DESCRIPTION: Terrestrial annual forb/herb (erect stems 6 to 64 inches in height); the stems may be pale green, green, pink, pink-red or red; the foliage may be green or purple, pinkish-purple, pink-red or reddish; the flowers (in spikes) may be green, pink, pinkish-white or white; flowering generally takes place between early March and late November (additional records: two record for mid-December and two for late December), the fruits are pinkish-purple. HABITAT: Within the range of this species it has been reported from mountains; mesas; cliffs; rocky canyons; rocky and gravelly-sandy canyon bottoms; ridgetops; foothills; bouldery, bouldery-gravelly and rocky hills; hilltops; bouldery and rocky hillsides; bouldery-rocky, rocky, gravelly, gravelly-sandy, gravelly-loamy, sandy and clayey-loamy slopes; rocky alluvial fans; gravelly bajadas; bouldery and rocky outcrops; amongst boulders; sandy-silty lava flows; sand hills; sand dunes; sand hummocks; blow-sand deposits; sandy banks; sandy plains; gravelly and sandy flats; valley floors; coastal dunes; sandy coastal banks; coastal plains; coastal flats; along railroad right-of-ways; along gravelly and sandy roadsides; within rocky arroyos; bottoms of arroyos; draws; seeps; springs; riverbeds; along and in bouldery, bouldery-rocky, bouldery-gravelly, rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and sandy-clayey washes; waterholes; silty lakebeds; playas; marshes; along banks of rivers and washes; (sandy-clayey) edges of washes, lagoons and swales; margins of esteros; mudflats; cobbly and sandy beaches; sandy floodplains; sandy mesquite bosques; stock tanks (charcos), riparian areas, and disturbed areas growing in dry bouldery, bouldery-rocky, bouldery-gravelly, bouldery-sandy, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam ground; sandy clay ground, and sandy silty and silty ground, occurring from sea level to 5,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Amaranthus fimbriatus* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (110109), 44 (012712), 46 (Page 266), 63 (012712), 68, 77 (recorded as *Amaranthus fimbriatus* (Torr.) Benth. ex S. Watson var. *fimbriatus*), 85 (043011 - color presentation), 115 (color presentation), 124 (012712 - no record of species; genus record), 127, 140 (Pages 34-36 & 281)*

Amaranthus fimbriatus var. *fimbriatus*: (see *Amaranthus fimbriatus*)

***Gomphrena caespitosa* J. Torrey: Tufted Globe Amaranth**

SYNONYMY: *Gomphrena viridis* E.O. Wooton & P.C. Standley. COMMON NAMES: Ball Clover; Ball-clover; Tufted Ball Clover; Tufted Globe Amaranth; Tufted Globe-amaranth. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (prostrate, decumbent and/or ascending stems 2 to 6 inches in height); the leaves are green; the flowers are white or yellow; the anthers are yellow; flowering generally takes place between late March and late June (additional records: two for mid-July, one for late July, two for early August and one for mid-September). HABITAT: Within the range of this species it has been reported from mountains; mesas; bases of cliffs; canyons; canyon bottoms; gravelly knolls; rocky, rocky-gravelly and gravelly ridges; openings in forests; meadows; foothills; rocky hills; rocky hilltops; gravelly-sandy-loamy hillsides; bouldery-rocky, rocky, rocky-loamy, stony, gravelly-loamy and clayey-loamy slopes; rocky-sandy alluvial fans; rocky and gravelly bajadas; rocky outcrops; amongst boulders; plains; gravelly-loamy and sandy-loamy flats; along railroad right-of-ways; roadsides; gravelly-sandy-loamy arroyos; gulches; along creekbeds; within washes; within drainages; riparian areas, and disturbed areas growing in dry bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, stony, gravelly and sandy ground and rocky loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, sandy loam, clayey loam and loam ground, occurring from 600 to 7,000 feet in elevation in the forest (rarely reported), woodland, scrub, grassland, desertscrub (rarely reported) and wetland ecological formations. NOTE: *Gomphrena caespitosa* is native to southwest-central and southern North America. *5, 6, 15, 43 (011811), 44 (011811 - no record of species), 46 (Page 270), 58, 63 (011811), 85 (011911 - color presentation), 124 011811 - no record of species), 115 (color presentation), 140 (Page 281)*

***Gomphrena sonorae* J. Torrey: Sonoran Globe Amaranth**

COMMON NAMES: Ball Clover; Globe Amaranth; Sonoran Globe Amaranth; Sonoran Globe-amaranth. DESCRIPTION: Terrestrial annual or perennial forb/herb (ascending or erect stems 6 to 32 inches in height); the leaves are green; the flowers may be cream, gold, pink, pink-cream, purplish, rose-pink, white, white-cream, white & pink, white tinged with purple, whitish-cream or pale yellow; flowering generally takes place between late June and late November (additional records: one for mid-January, one for mid-March, one for early June and three for late December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy bases of mountains; rocky mesas; cliffs; bases of cliffs; along rocky canyons; rocky canyon bottoms; crevices in rocks; buttes; meadows; foothills; hills; rocky hillsides; rocky, gravelly-loamy, sandy and sandy-clayey slopes; rocky outcrops; plains; rocky flats; along gravelly roadsides; arroyos; along streams; streambeds; riverbeds; along gravelly washes; along and in drainages; within drainage ways; banks of lakes; edges of washes; clayey bottomlands; mesquite bosques; around and in stock tanks; riparian areas, and disturbed areas growing in wet, moist, damp and dry rocky, gravelly, gravelly-sandy and sandy ground; gravelly loam and loam ground, and sandy clay and clay ground, occurring from sea level to 6,600 feet (one record for 8,200 feet) in elevation in the forest (rarely reported), woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant is browsed by White-tailed Deer (*Odocoileus virginianus*). *Gomphrena sonora* is native to southwest-central and southern North America. *5, 6, 15, 43 (011911), 44 (011911 - no record), 46 (Page 269), 58, 63 (011911), 77, **85** (011911 - color presentation of dried material), 115 (color presentation), 124 (011911 - no record), 140 (Page 281)*

Gomphrena viridis (see *Gomphrena caespitosa*)

***Guilleminia densa* (F.W. von Humboldt & A.J. Bonpland ex J.A. Schultes) C.H. Moquin-Tandon: Small Matweed**

COMMON NAME: Dense Cotton-flower; Dense Cottonflower; Small Matweed. DESCRIPTION: Terrestrial perennial forb/herb (low, mat-forming prostrate stems); the woolly foliage is green, dark green or green & white; the insignificant flowers are cream, cream-white or white; flowering generally takes place between mid-April and late October. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rocky canyons; bottoms of canyons; gravelly crevices in boulders; along rocky ridges; ridgetops; clearings in forests; foothills; rocky hills; hillsides; rocky, rocky-gravelly, gravelly, sandy, sandy-loamy and clayey-loamy slopes; bajadas; amongst boulders; gravelly, sandy and clayey flats; gravelly-sandy valley floors; along gravelly and gravelly-loamy roadsides; within arroyos; bouldery-sandy and sandy draws; gulches; along streams; along silty creekbeds; along gravelly and sandy washes; rocky-gravelly and gravelly drainages; along lakes; along (sandy) edges of creeks, lakes and cienegas; terraces; sandy floodplains; riparian areas; waste places, and disturbed areas growing in bouldery, bouldery-sandy, rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly loam, sandy loam and clayey loam ground; rocky-sandy clay, sandy clay and clay ground, and silty ground, occurring from under 300 to 7,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Guilleminia densa* is native to southwest-central and southern North America; Central America, and western and southern South America. *5, 6, 15, 43 (022511), 44 (022511), 46 (*Brayulinea densa* (Humb. & Bonpl.) Small, Page 268), 58, 63 (022511 - color presentation), 68 (*Brayulinea densa* (Humb. & Bonpl.) Small), **85** (022511 - color presentation of dried material), 124 (022511), 140 (Page 282)*

Anacardiaceae: The Sumac Family

Rhus aromatica (see NOTES under *Rhus trilobata* var. *trilobata*)

Rhus aromatica var. *pilosissima* (see *Rhus trilobata* var. *pilosissima*)

Rhus aromatica var. *trilobata* (see *Rhus trilobata* var. *trilobata*)

***Rhus trilobata* T. Nuttall: Skunkbush Sumac**

COMMON NAMES: Acedillo (“Little Sour One”, Spanish: Mexico, found as a name listed for *Rhus aromatica*)¹⁴⁰; Agrillas (Hispanic); Agrillo (“Sour One”, Spanish: Durango, found as a name listed for *Rhus aromatica*)¹⁴⁰; Agritas <agrito> (“Sour One”, Spanish: Coahuila and Sonora, found as a name listed for *Rhus aromatica*)¹⁴⁰; Agrito (Hispanic); Ai'tcīb [Dit(b), I'tcīb] (Uto-Aztecan: Shoshoni, found as a name listed for *Rhus aromatica*)¹⁴⁰; Canyon Shrub (Nebraska); Ch'it Lichí' (Athapascan: Navajo, found as a name listed for *Rhus aromatica*)¹⁴⁰; Chascarillo; Chiilchin <çilçin, cil cin, tchiilchin, tsiilchin> (Athapascan: Navajo, found as a name listed for *Rhus aromatica*)¹⁴⁰; Chínk'ózhé <tsink'ózhé, nk'oze> (Athapascan: Western Apache, found as a name listed for *Rhus aromatica*)¹⁴⁰; Chiquihuite (Spanish: California, found as a name listed for *Rhus aromatica*)¹⁴⁰; Divi'uka (Uto-Aztecan: Mountain Pima, found as a name listed for *Rhus aromatica*)¹⁴⁰; Fragrant Sumac; I'ishi <ici, c'i'ci, cii, si'ibi> (Uto-Aztecan: Southern Paiute, found as a name listed for *Rhus aromatica*)¹⁴⁰; Iiçiv□ (Uto-Aztecan: Kawaiisu, found as a name listed for *Rhus aromatica*)¹⁴⁰; Ill Scented Sumac; Ill-scented Sumac (English, found as a name listed for *Rhus aromatica*)¹⁴⁰; K'ii' (“To Peel”, Athapascan: Navajo, found as a name listed for *Rhus aromatica*); K'o'se mowe (Zuni, “salty berries”); Ke□e'é <gith'e> (Yuman: Walapai, found as a name listed for *Rhus aromatica*)¹⁴⁰; Kith-a (Havasupai); Ko'se O'tsi (Language Isolate: Zuni, found as a name listed for *Rhus aromatica*)¹⁴⁰; Lambrisco (“Wormy”, Spanish: Tamaulipas, found as a name listed for *Rhus aromatica*)¹⁴⁰; Lantrisco; Lemita (“Little Lemon”, New Mexico, also found as a name listed for *Rhus*

aromatica)¹⁴⁰; Lemon[ade]-berry (English, found as names listed for *Rhus aromatica*)¹⁴⁰; Lemonade Berry; Lemonade Sumac; Lentisco; Limonita; Lima (“Lime”, Spanish: Mountain Pima, found as a name listed for *Rhus aromatica*)¹⁴⁰; Low Sumac (Nebraska); Low Sumach (Nebraska, South Dakota); Motambiäts (Uto-Aztecan: Ute, found as a name listed for *Rhus aromatica*)¹⁴⁰; Pubescent Skunkbush Sumac; Red-fruit Sumac; Red-fruited Sumac; Salidillo (“Little Salty One”, Spanish: Mexico, found as a name listed for *Rhus aromatica*)¹⁴⁰; Sapi’in (Kiowa Tanoan: Tewa, found as a name listed for *Rhus aromatica*)¹⁴⁰; Selet <selit, silit> (Uto-Aztecan: Cahuilla, found as a name listed for *Rhus aromatica*)¹⁴⁰; Shu’nay (Chumash: Barbareño Chumash, found as a name listed for *Rhus aromatica*)¹⁴⁰; Shuna’y (Chumash: Ineseño Chumash, found as a name listed for *Rhus aromatica*)¹⁴⁰; Si-l (Uto-Aztecan: Tübatulabal, found as a name listed for *Rhus aromatica*)¹⁴⁰; Sidra (“Cider”, Spanish: Mexico, found as a name listed for *Rhus aromatica*)¹⁴⁰; Skunk Bush; Skunk-brush [-bush] (English, found as names listed for *Rhus aromatica*)¹⁴⁰; Skunk-bush; Skunkbush; Skunkbush Sumac; Squaw Berry; Squaw- [berry] Bush (English, found as a name listed for *Rhus aromatica*)¹⁴⁰; Skunk-brush [bush] (English, found as a name listed for *Rhus aromatica*)¹⁴⁰; Squaw Bush (Rocky Mountains); Squaw-bush; Squawberry (Rocky Mountains); Squawbush (Rocky Mountains); Stink Bush (Nebraska); Stinkbush (Nebraska); Suuvi <sú:vi> (Uto-Aztecan: Hopi, found as a name listed for *Rhus aromatica*)¹⁴⁰; Şııvıv, □İsıvı (Uto-Aztecan: Ute, found as a name listed for *Rhus aromatica*)¹⁴⁰; Sweet Sumac (Montana); Tciłtci (“Smelly Wood”, Athapaskan: Chiricahua and Mescalero Apache, found as a name listed for *Rhus aromatica*)¹⁴⁰; Three-leaf Sumac (English: New Mexico, found as a name listed for *Rhus aromatica*)¹⁴⁰; Three-leaved Sumac; Three-leaved Sumach; Threeleaf Sumac, Tsiibi <cübi, si:vi> (Uto-Aztecan: Hopi, found as a name listed for *Rhus aromatica*); Yaa (Keres: Acoma, Laguna, found as a name listed for *Rhus aromatica*)¹⁴⁰.

DESCRIPTION: Terrestrial perennial deciduous shrub (erect branches 1 to 12 feet in height; one plant was observed and described as being 5 feet in height and 5 feet in width, one plant was observed and described as being 5½ feet in height and 8 feet in width, plants were observed and described as being 6 feet in height and 6 to 8 feet in diameter, one plant was observed and described as being 7 feet in height and 10 feet in width, one plant was observed and described as being 10 feet in height and 7 feet in width, plants reaching 16½ feet in height were reported at one location); the bark is gray or gray-brown; the stems are arching and spreading; the leaves are dark green or yellow-green turning a brilliant yellow to red before dropping in the fall; the flowers may be cream, cream-green, cream-yellow, green-yellow, greenish-white, reddish, white-cream, yellow or yellow-green; flowering generally takes place between late February and early November (additional records: two for early January, four for early February and one for early December); the mature berries are orange, orange-red, light red, bright red or bright reddish-orange. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky-gravelly mountainsides; mesas; plateaus; rim rock, cliff tops; shaded walls of cliffs; rims of canyons; bouldery, bouldery-rocky and rocky canyons; canyon walls; along bouldery-cobbly, rocky, rocky-gravelly, stony and sandy canyon bottoms; talus slopes; crevices in rocks; rocky bluffs; bouldery-sandy, rocky-gravelly-clayey, cindery and gravelly-clayey buttes; cindery knolls; rocky ledges; rocky, rocky-gravelly and sandy ridges; rocky and gravelly-clayey ridgetops; meadows; foothills; hills; bouldery, rocky and gravelly hillsides; rocky escarpments; sandy bases of escarpments; bouldery, bouldery-gravelly, rocky, rocky-loamy-clayey, shaley, cobbly, gravelly, gravelly-loamy, sandy, sandy-silty, loamy and clayey slopes; bouldery and rocky outcrops; amongst boulders and rocks; shaded niches; lava flows; lava beds; sand hills; sand dunes; banks; sandy breaks; prairies; plains; flats; basins; sandy bowls; sandy valleys; along gravelly, gravelly-loamy, gravelly-clayey and sandy roadsides; along and in rocky, rocky-sandy, gravelly and sandy arroyos; bottoms of arroyos; within rocky-gravelly-sandy and sandy draws; sandy-clayey bottoms of draws; within gulches; sandy gullies; along gravelly ravines; sandy bottoms of ravines; springs; along streams; along streambeds; along rocky creeks; creekbeds; along rivers; rocky riverbeds; along and in rocky-gravelly-sandy, gravelly, gravelly-sandy, sandy and silty washes; within gravelly-sandy and sandy drainages; marshy areas; sink holes; along (rocky) banks of draws, streams, creeks and rivers; margins of springs and creeks; (gravelly-sandy) shores of rivers; cobbly and silty benches; sandy terraces; rocky and sandy bottomlands; floodplains; banks of reservoirs; canal banks; along and in ditches; sandy and clayey-loamy riparian areas, and disturbed areas growing in wet and dry bouldery, bouldery-cobbly, bouldery-gravelly, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, stony, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-clayey loam, gravelly-loamy, gravelly-clayey loam, sandy loam and clayey loam ground; rocky-gravelly clay, rocky-loamy clay, rocky-silty clay, gravelly clay, sandy-loamy clay, sandy clay, silty clay and clay ground, and sandy silty and silty ground, occurring from 500 to 10,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, it may form thickets some of which have reached 30 feet in diameter. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage, spice, fiber (used in basketry and in the making of cradles and hats, it was also used as a sewing material) and/or dye (used in the making of black, blue, red and red-brown dyes, and its ashes were used in setting dyes) crop; it was also noted as having been used as a ceremonial item, as a fuel, in the making of tools (used in making bows, arrows, spear shafts, hoe handles and seed fans), as a drug or medication, as an insecticide (the leaves were used on the body), and the roots were used as a perfume. *Rhus aromatica* of the eastern United States has a pleasant odor, whereas, *Rhus trilobata* (*Rhus aromatica* var. *trilobata*) of the western United States is ill-scented. It may be a useful plant in the re-vegetation of disturbed areas and excellent for use in erosion control. It provides cover for many mammals and birds. Cottontails/Mule Deer (*Odocoileus hemionus*), White-tailed Deer (*Odocoileus virginianus*), Elk (*Cervus elaphus*), jackrabbits, Porcupines (*Erethizon dorsatum*), Pronghorn (*Antilocapra americana*), Bighorn Sheep (*Ovis canadensis*) and small mammals feed on the foliage and twigs, and Black Bears (*Ursus americanus*), Bobwhite Quail (*Colinus virginianus*), Gambel’s Quail (*Callipepla gambelii*), prairie chickens, Merriam’s Turkey (*Meleagris gallopavo* subsp. *merriami*), Ruffed Grouse (*Bonasa umbellus*), Sage Grouse (*Centrocercus minimus*), Scaled Quail (*Callipepla squamata*), Sharp-tailed Grouse (*Tympanuchus phasianellus*), California (Valley) Quail (*Callipepla californica*), White-tailed Deer (*Odocoileus virginianus*), songbirds and other birds and small mammals feed on the berries. According to one current treatment of *Rhus*

aromatica, all Arizona specimens of this species belong to *Rhus trilobata* T. Nuttall var. *trilobata*. *Rhus trilobata* is native to central and southern North America. *5, 6, 13 (recorded as *Rhus aromatica* Aiton var. *trilobata* (Nutt.) A. Gray, Pages 141-142), 28 (color photograph 839), 30, 43 (082910), 44 (122410 - no record of species), 46 (Pages 523-524), 48, 63 (082910 - color presentation), 85 (082910 - *Rhus aromatica* var. *trilobata* (Nutt.) Gray ex S. Wats., color presentation), 115 (color presentation), 124 (122410), 127, 140 (Pages 37-39 - recorded as *Rhus aromatica*; Page 282 - recorded as *Rhus aromatica* Aiton var. *trilobata* (Nuttall ex Torrey & A. Gray) A. Gray [*Rhus trilobata* Nuttall ex Torrey & A. Gray, *Rhus trilobata* Nuttall ex Torrey & A. Gray var. *pilosissima* Engler, *Rhus emoryi* (Greene) Wooton]), **WTK** (August 6, 2005)*

***Rhus trilobata* T. Nuttall var. *pilosissima* G. Engelm.: Pubescent Skunkbush Sumac**

SYNONYMY: *Rhus aromatica* W. Aiton var. *pilosissima* (G. Engelm.) L.H. Shinn. COMMON NAMES: Acedillo (“Little Sour One”, Spanish: Mexico, found as a name listed for *Rhus aromatica*)¹⁴⁰; Agrillo (“Sour One”, Spanish: Durango, found as a name listed for *Rhus aromatica*)¹⁴⁰; Agritas <agrito> (“Sour One”, Spanish: Coahuila and Sonora, found as a name listed for *Rhus aromatica*)¹⁴⁰; Ai’tcīb [Dit(b), I’tcīb] (Uto-Aztecan: Shoshoni, found as a name listed for *Rhus aromatica*)¹⁴⁰; Ch’i’ Lichí’ (Athapascan: Navajo, found as a name listed for *Rhus aromatica*)¹⁴⁰; Chascarillo; Chiilchin <čilčín, cil cin, tchiilchin, tsiilchin> (Athapascan: Navajo, found as a name listed for *Rhus aromatica*)¹⁴⁰; Chínk’ózhé <tsínk’ózhé, nk’oze> (Athapascan: Western Apache, found as a name listed for *Rhus aromatica*)¹⁴⁰; Chiquihuite (Spanish: California, found as a name listed for *Rhus aromatica*)¹⁴⁰; Divi’uka (Uto-Aztecan: Mountain Pima, found as a name listed for *Rhus aromatica*)¹⁴⁰; I’iši <’ici, c’i’ci, cī, si’ibi> (Uto-Aztecan: Southern Paiute, found as a name listed for *Rhus aromatica*)¹⁴⁰; Iičiv □ (Uto-Aztecan: Kawaiisu, found as a name listed for *Rhus aromatica*)¹⁴⁰; Ill-scented Sumac (English, found as a name listed for *Rhus aromatica*)¹⁴⁰; K’ī’ (“To Peel”, Athapascan: Navajo, found as a name listed for *Rhus aromatica*); Ke□e’é <gith’e> (Yuman: Walapai, found as a name listed for *Rhus aromatica*)¹⁴⁰; Ko’sse O’tsi (Language Isolate: Zuni, found as a name listed for *Rhus aromatica*)¹⁴⁰; Lambrisco (“Wormy”, Spanish: Tamaulipas, found as a name listed for *Rhus aromatica*)¹⁴⁰; Lemita (“Little Lemon”, New Mexico, also found as a name listed for *Rhus aromatica*)¹⁴⁰; Lemon[ade]-berry (English, found as names listed for *Rhus aromatica*)¹⁴⁰; Lemonade Berry; Lima (“Lime”, Spanish: Mountain Pima, found as a name listed for *Rhus aromatica*)¹⁴⁰; Motambiāts (Uto-Aztecan: Ute, found as a name listed for *Rhus aromatica*)¹⁴⁰; Pubescent Skunkbush Sumac; Salidillo (“Little Salty One”, Spanish: Mexico, found as a name listed for *Rhus aromatica*)¹⁴⁰; Sapi’in (Kiowa Tanoan: Tewa, found as a name listed for *Rhus aromatica*)¹⁴⁰; Selet <selit, silit> (Uto-Aztecan: Cahuilla, found as a name listed for *Rhus aromatica*)¹⁴⁰; Shu’nay (Chumash: Barbareño Chumash, found as a name listed for *Rhus aromatica*)¹⁴⁰; Shuna’y (Chumash: Ineseño Chumash, found as a name listed for *Rhus aromatica*)¹⁴⁰; Si-l (Uto-Aztecan: Tübatulabal, found as a name listed for *Rhus aromatica*)¹⁴⁰; Sidra (“Cider”, Spanish: Mexico, found as a name listed for *Rhus aromatica*)¹⁴⁰; Skunk-brush [-bush] (English, found as names listed for *Rhus aromatica*)¹⁴⁰; Skunk Bush; Squaw- [berry] Bush (English, found as a name listed for *Rhus aromatica*)¹⁴⁰; Skunk-brush [bush] (English, found as a name listed for *Rhus aromatica*)¹⁴⁰; Squawbush; Suuvi < sú:vi> (Uto-Aztecan: Hopi, found as a name listed for *Rhus aromatica*)¹⁴⁰; Sūqūvū, □Isivū (Uto-Aztecan: Ute, found as a name listed for *Rhus aromatica*)¹⁴⁰; Tciłtci (“Smelly Wood”, Athapascan: Chiricahua and Mescalero Apache, found as a name listed for *Rhus aromatica*)¹⁴⁰; Three-leaf Sumac (English: New Mexico, found as a name listed for *Rhus aromatica*)¹⁴⁰; Tsiibi <cūbi, si:vi> (Uto-Aztecan: Hopi, found as a name listed for *Rhus aromatica*)¹⁴⁰; Yaa (Keres: Acoma, Laguna, found as a name listed for *Rhus aromatica*)¹⁴⁰. DESCRIPTION: Terrestrial perennial deciduous shrub (1 to 6½ feet in height); the bark is gray or gray-brown; the stems are arching and spreading; the leaves are green, dark green or yellow-green turning a brilliant yellow to red before dropping in the fall; the flowers may be cream, cream-green, cream-yellow, green, green-yellow, greenish-red, greenish-white, reddish, white-cream, yellow or yellow-green; based on few records located, flowering generally takes place between mid-March and early July (additional records: one for mid-September and one for early November); the fruits are red-orange. HABITAT: Within the range of this species it has been reported from mountains; canyons; rocky-gravelly canyon bottoms; bouldery bases of rock cliffs; bouldery-sandy buttes; foothills; shaley-clayey hills; gravelly hillsides; rocky escarpments; sandy bases of escarpments; gravelly, gravelly-loamy and loamy slopes; rocky outcrops; amongst boulders; lava flows; sand hills; breaks; sandy prairies; plains; flats; valley floors; along gravelly roadsides; within arroyos; bottoms of arroyos; draws; ravines; springs; along streams; along streambeds; benches; along ditches, and sandy riparian areas growing in dry bouldery, bouldery-sandy, rocky, rocky-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam and loam ground, and shaley clay ground, occurring from 1,500 to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, it may form thickets some of which have reached 30 feet in diameter. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or fiber (stems used in basketry) crop; it was also noted as having been used as a drug or medication. It is a useful plant in the re-vegetation of disturbed areas and excellent for use in erosion control. It provides cover for many mammals and birds. Bighorn Sheep (*Ovis canadensis*), cottontails, Elk (*Cervus elaphus*), jackrabbits, Mule Deer (*Odocoileus hemionus*), Porcupines (*Erethizon dorsatum*), Pronghorn (*Antilocapra americana*), White-tailed Deer (*Odocoileus virginianus*) and small mammals feed on the foliage and twigs, and Black Bears (*Ursus americanus*), Bobwhite Quail (*Colinus virginianus*), Gambel’s Quail (*Callipepla gambelii*), prairie chickens, Merriam’s Turkey (*Meleagris gallopavo* subsp. *merriami*), Ruffed Grouse (*Bonasa umbellus*), Sage Grouse (*Centrocercus minimus*), Scaled Quail (*Callipepla squamata*), Sharp-tailed Grouse (*Tympanuchus phasianellus*), California (Valley) Quail (*Callipepla californica*), White-tailed Deer (*Odocoileus virginianus*), songbirds and other birds and small mammals feed on the berries. *Rhus trilobata* var. *pilosissima* is native to southwest-central North America. *5, 6, 15, 18 (species), 28 (color photograph of species- *Rhus trilobata*), 43 (082010 - *Rhus trilobata* T. Nuttall var. *pilosissima* G. Engelm. in A.D.C.), 46 (Pages 523-524), 63 (082010), 77, 85 (082010), 115 (color presentation of species), 127, 140 (Pages 37-39 - recorded as *Rhus aromatica*; Page 282 - recorded as

Rhus aromatica Aiton var. *trilobata* (Nuttall ex Torrey & A. Gray) A. Gray [*Rhus trilobata* Nuttall ex Torrey & A. Gray, *Rhus trilobata* Nuttall ex Torrey & A. Gray var. *pilosissima* Engler, *Rhus emoryi* (Greene) Wooton]]*

***Rhus trilobata* T. Nuttall var. *trilobata*: Skunkbush Sumac**

SYNONYMY: *Rhus aromatica* W. Aiton var. *trilobata* (T. Nuttall) A. Gray ex S. Watson. COMMON NAMES: Acedillo (“Little Sour One”, Spanish: Mexico, found as a name listed for *Rhus aromatica*)¹⁴⁰; Agrillas (Hispanic); Agrillo (“Sour One”, Spanish: Durango, found as a name listed for *Rhus aromatica*)¹⁴⁰; Agritas <agrito> (“Sour One”, Spanish: Coahuila and Sonora, found as a name listed for *Rhus aromatica*)¹⁴⁰; Agrito (Hispanic); Ai’tcīb [Dit(b), I’tcīb] (Uto-Aztecan: Shoshoni, found as a name listed for *Rhus aromatica*)¹⁴⁰; Aromatic Sumac; Chascarillo; Ch’ih Lichíi’ (Athapascan: Navajo, found as a name listed for *Rhus aromatica*)¹⁴⁰; Chascarillo; Chiilchin <çilçin, cil cin, tchiilchin, tsiilchin> (Athapascan: Navajo, found as a name listed for *Rhus aromatica*)¹⁴⁰; Chink’ózhé <tsínk’ózhé, nk’oze> (Athapascan: Western Apache, found as a name listed for *Rhus aromatica*)¹⁴⁰; Chiquihuite (Spanish: California, found as a name listed for *Rhus aromatica*)¹⁴⁰; Divi’uka (Uto-Aztecan: Mountain Pima, found as a name listed for *Rhus aromatica*)¹⁴⁰; Fetid Sumac (Nebraska); Fragrant Sumac; Fragrant Sumach; I’iši <’ici, c’i’ci, cīī, si’ibi> (Uto-Aztecan: Southern Paiute, found as a name listed for *Rhus aromatica*)¹⁴⁰; Iiçiv□ (Uto-Aztecan: Kawaiisu, found as a name listed for *Rhus aromatica*)¹⁴⁰; Ill-scented Sumac (English, found as a name listed for *Rhus aromatica*)¹⁴⁰; K’iī’ (“To Peel”, Athapascan: Navajo, found as a name listed for *Rhus aromatica*); Ke□e’é <gith’e> (Yuman: Walapai, found as a name listed for *Rhus aromatica*)¹⁴⁰; Ko’sé O’tsi (Language Isolate: Zuni, found as a name listed for *Rhus aromatica*)¹⁴⁰; Lambrisco (“Wormy”, Spanish: Tamaulipas, found as a name listed for *Rhus aromatica*)¹⁴⁰; Lantrisco; Lemita (“Little Lemon”, New Mexico, also found as a name listed for *Rhus aromatica*)¹⁴⁰; Lemon[ade]-berry (English, found as names listed for *Rhus aromatica*)¹⁴⁰; Lemonade Berry; Lemonade-berry; Lemonade Bush; Lemonade Sumac; Lentisco; Lima (“Lime”, Spanish: Mountain Pima, found as a name listed for *Rhus aromatica*)¹⁴⁰; Limonita; Motambiäts (Uto-Aztecan: Ute, found as a name listed for *Rhus aromatica*)¹⁴⁰; Salidillo (“Little Salty One”, Spanish: Mexico, found as a name listed for *Rhus aromatica*)¹⁴⁰; Sapi’in (Kiowa Tanoan: Tewa, found as a name listed for *Rhus aromatica*)¹⁴⁰; Selet <selit, silit> (Uto-Aztecan: Cahuilla, found as a name listed for *Rhus aromatica*)¹⁴⁰; Shu’nay (Chumash: Barbareño Chumash, found as a name listed for *Rhus aromatica*)¹⁴⁰; Shuna’y (Chumash: Ineseño Chumash, found as a name listed for *Rhus aromatica*)¹⁴⁰; Si-l (Uto-Aztecan: Tübatulabal, found as a name listed for *Rhus aromatica*)¹⁴⁰; Sidra (“Cider”, Spanish: Mexico, found as a name listed for *Rhus aromatica*)¹⁴⁰; Skunk Brush; Skunk-brush [-bush] (English, found as names listed for *Rhus aromatica*)¹⁴⁰; Skunk Bush; Skunk-bush; Skunkbush; Skunkbush Sumac; Squaw Berry; Squaw- [berry] Bush (English, found as a name listed for *Rhus aromatica*)¹⁴⁰; Squaw Bush; Squaw-bush; Stinking Sumac (Oklahoma); Suuvi <sú:vi> (Uto-Aztecan: Hopi, found as a name listed for *Rhus aromatica*)¹⁴⁰; Sūqvū, □Isivū (Uto-Aztecan: Ute, found as a name listed for *Rhus aromatica*)¹⁴⁰; Tciitci (“Smelly Wood”, Athapascan: Chiricahua and Mescalero Apache, found as a name listed for *Rhus aromatica*)¹⁴⁰; Three-leaf Sumac (English: New Mexico, found as a name listed for *Rhus aromatica*)¹⁴⁰; Tsiibi <cūbi, si:vi> (Uto-Aztecan: Hopi, found as a name listed for *Rhus aromatica*)¹⁴⁰; Yaa (Keres: Acoma, Laguna, found as a name listed for *Rhus aromatica*)¹⁴⁰. DESCRIPTION: Terrestrial perennial deciduous shrub (2 to 10 feet in height; one plant was observed and described as being 10 feet in height and 6½ feet in width); the bark may be gray or gray-brown; the stems are arching and spreading; the leaves are green, dark green or yellow-green turning a brilliant yellow to red before dropping in the fall; the flowers may be whitish, whitish-green, yellow, yellowish-green or yellowish-white; flowering generally takes place between late February and late October (additional records: one for early January, one for early February and one for mid-November); the mature berries are bright orange, orange-red, red, red-orange or yellowish-orange. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky-sandy and sandy mesas; plateaus; canyon rims; shaley and chalky cliffs; bases of cliffs; talus slopes; clayey walls; along rocky canyons; rocky and stony canyon walls; canyon bottoms; crevices in boulders; rocky, shaley, clayey and silty bluffs; bases of bluffs; rocky-gravelly-clayey, rocky, shaley, stony and chalky buttes; tops of buttes; hogbacks; rocky, stony, gravelly, sandy and chalky knolls; rocky, rocky-gravelly-silty, sandy and clayey ledges; along rocky, rocky-shaley, rocky-gravelly, rocky-sandy, shaley-sandy, stony-sandy, stony-clayey, gravelly-sandy and sandy ridges; rocky, rocky-sandy, rocky-loamy-clayey, shaley, gravelly-clayey and sandy ridgetops; bases of ridges; rocky, stony and sandy meadows; foothills; bouldery, rocky, shaley, stony, cindery, gravelly, sandy, sandy-clayey and chalky hills; rocky and cindery hilltops; rocky, rocky-sandy, sandy and chalky hillsides; bouldery, rocky, rocky-gravelly, rocky-sandy, rocky-sandy-clayey-loamy, rocky-loamy, rocky-clayey, shaley, shaley-sandy, stony, stony-gravelly, stony-sandy, cobbly, cobbly-sandy, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey, gravelly-clayey-loamy, pebbly, sandy, sandy-loamy, sandy-clayey, sandy-silty, loamy, clayey, clayey-loamy and silty slopes; rocky, shaley, sandy and sandy-clayey outcrops; along bases of rock outcrops; amongst boulders and rocks; bases of boulders; shady alcoves; cindery lava flows; sand dunes; shady niches; rocky banks; shaley, shaley-clayey-loamy, sandy and clayey breaks; moraines; loamy and loamy-clayey prairies; stony, sandy and chalky plains; rocky, stony, cobbly, gravelly, gravelly-loamy and sandy flats; basins; sandy valley floors; valley bottoms; along sandy river valleys; railroad right-of-ways; gravelly, gravelly-loamy, gravelly-clayey and sandy roadsides; along rocky-gravelly-sandy, rocky-sandy, cobbly, gravelly-sandy, sandy and chalky draws; bottoms of draws; within gulches; along sandy and silty-loamy gullies; bottoms of gullies; along rocky, cindery and sandy ravines; sandy bottoms of ravines; seeps; springs; sandy soils along streams; along rocky, gravelly-clayey and sandy streambeds; along and in creeks; along sandy-loamy and loamy creekbeds; in sand along rivers; along and in rocky riverbeds; along and in bedrock & bouldery-sandy, rocky-gravelly-sandy, stony-gravelly, gravelly, gravelly-sandy, sandy and loamy-clayey washes; within rocky, shaley, gravelly, gravelly-sandy, sandy, clayey and silty-loamy drainages; along watercourses; marshes; sandy bowls; silty-loamy depressions; swales; along (bedrock, bouldery-gravelly-sandy, rocky, loamy and loamy-clayey) banks of draws, streams, creeks, rivers, washes and drainages; (sandy) edges of streams, rivers and washes; (sandy) margins of creeks, rivers and lakes; (gravelly, gravelly-sandy, gravelly-clayey, sandy and clayey) shores of creeks and rivers; mudflats; bouldery

sandbars; stony-gravelly, cobbly and cobbly-clayey-loamy benches; terraces; sandy bottomlands; floodplains; stock ponds; along banks of reservoirs; canals; canal banks; along ditches; rocky and sandy riparian areas, and disturbed areas growing in wet, moist and dry bouldery, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-shaley, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, shaley-sandy, stony, stony-gravelly, stony-sandy, cobbly, cobbly-sandy, cindery, gravelly, gravelly-sandy, pebbly and sandy ground; rocky loam, rocky-sandy-clayey loam, shaley-clayey loam, cobbly-clayey loam, gravelly loam, gravelly-clayey loam, sandy loam, silty loam and loam ground; rocky-gravelly clay, rocky clay, rocky-silty clay, shaley clay, gravelly clay, sandy clay, loamy clay, silty clay and clay ground; rocky-gravelly silty, sandy silty and silty ground, and chalky ground, occurring from 1,200 to 9,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, it may form thickets some of which have reached 30 feet in diameter. Variety *trilobata* is reportedly ill-scented. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or beverage crop; the species, *Rhus trilobata*, was also noted as having been used as a spice, fiber (used in basketry and making furniture), fuel, for making tools and dyes (black, blue, red, red-brown, and the fruits were used for the mordant effect), for incense and fragrance, as a drug or medication and in the making of ceremonial items. According to one current treatment of *Rhus aromatica*, all Arizona specimens of this species belong to *Rhus trilobata* T. Nuttall var. *trilobata*. It is may be useful in the re-vegetation of disturbed areas and excellent for use in erosion control. It provides cover for many mammals and birds. Bighorn Sheep (*Ovis canadensis*), cottontails, Elk (*Cervus elaphus*), jackrabbits, Mule Deer (*Odocoileus hemionus*), Porcupines (*Erethizon dorsatum*), Pronghorn (*Antilocapra americana*), White-tailed Deer (*Odocoileus virginianus*) and small mammals feed on the foliage and twigs, and Black Bears (*Ursus americanus*), Bobwhite Quail (*Colinus virginianus*), Gambel's Quail (*Callipepla gambelii*), prairie chickens, Merriam's Turkey (*Meleagris gallopavo* subsp. *merriami*), Ruffed Grouse (*Bonasa umbellus*), Sage Grouse (*Centrocercus minimus*), Scaled Quail (*Callipepla squamata*), Sharp-tailed Grouse (*Tympanuchus phasianellus*), California (Valley) Quail (*Callipepla californica*), White-tailed Deer (*Odocoileus virginianus*), songbirds and other birds and small mammals feed on the berries. Calliphorid Flies have been observed visiting the flowers. *Rhus trilobata* var. *trilobata* is native to northwest-central, south-central and southern North America. *5, 6, 13 (recorded as *Rhus aromatica* Aiton var. *trilobata* (Nutt.) A. Gray), 18, 28 (color photograph of species, *Rhus trilobata*), 30 (species), 43 (081310 - *Rhus trilobata* Nutt.), 44 (022511 - no records listed under Common Names), 46 (species, Pages 523-524), 48 (species), 63 (081310), **85** (081610 - *Rhus aromatica*; color presentation), 115 (color presentation of species), 124 (022511), 127, 140 (Pages 37-39 - recorded as *Rhus aromatica*; Page 282 - recorded as *Rhus aromatica* Aiton var. *trilobata* (Nuttall ex Torrey & A. Gray) A. Gray [*Rhus trilobata* Nuttall ex Torrey & A. Gray, *Rhus trilobata* Nuttall ex Torrey & A. Gray var. *pilosissima* Engler, *Rhus emoryi* (Greene) Wooton])*

Apiaceae (Umbelliferae): The Carrot Family

Caucalis microcarpa (see *Yabea microcarpa*)

***Daucus pusillus* A. Michaux: American Wild Carrot**

COMMON NAMES: American Carrot; American [Wild] Carrot (English)¹⁴⁰; Bikéghad Litsogi (Athapascan: Western Apache)¹⁴⁰; C□anahoria Silvestre (“Wild Carrot”, Spanish)¹⁴⁰; Chąąsht’ezhiitsoh (“Carrot” a name also applied to *Daucus carota*, Athapascan: Navajo)¹⁴⁰; Hierba de la Víbora <yerba de la víbora> (“Rattlesnake Herb” a name also applied o other species, Spanish: New Mexico, Mexico)¹⁴⁰; Little Wild Carrot; □□ąrunąągtį, Tónąci (Uto-Aztecan: Ute)¹⁴⁰; Rattlesnake Bite Cure; Rattlesnake Carrot; Rattlesnake Cure; Rattlesnake Weed (a name also applied to other species); Rattlesnake Weed (English: California, New Mexico)¹⁴⁰; Rattlesnake Wild Carrot; Rattlesnake-bite-cure; Rattlesnake-weed (a name also applied to other species); Rattlesnakeweed; Sanooria (Uto-Aztecan: Yaqui)¹⁴⁰; Seed Ticks (English)¹⁴⁰; Seedticks; Small Queen Anne’s Lace; Small Queen Anne’s-lace; Southwest Carrot; Southwest Wild Carrot; Southwestern Carrot; Southwestern Wild Carrot; Wild Carrot (a name also applied to other species and the genus *Daucus*); Yerba del Vibora (Spanish); Zanahoria Cimarrona (Spanish); Zanahoria Silvestre (“Wild Carrot”, Spanish)¹⁴⁰. DESCRIPTION: Terrestrial annual forb/herb (erect stems 1 to 40 inches in height); the flowers may be cream, greenish-white, purplish, white or light yellow; flowering generally takes place between early March and late June (additional records: one for early September and one for mid-September); the seed heads are reddish. HABITAT: Within the range of this species it has been reported from bouldery and rocky mountains; rocky, rocky-sandy and sandy-clayey mesas; plateaus; rocky and stony canyons; rocky and sandy-loamy canyon bottoms; rocky talus slopes; bases of cliffs; bluffs; rocky knobs; clayey-loamy and silty-loamy ridges; bouldery ridgetops; rocky foothills; bouldery, rocky, rocky-clayey and clayey hills; bouldery hilltops; rocky, rocky-clayey and loamy hillsides; bouldery, bouldery-gravelly, rocky, rocky-gravelly-loamy, rocky-clayey, gravelly, gravelly-loamy, sandy, loamy, clayey and clayey-loamy slopes; rocky-sandy-loamy alluvial fan; bajadas; bouldery and rocky outcrops; amongst rocks; along shaded bases of rocks; cobbly and sandy plains; cobbly-sandy-loamy, cobbly-sandy-loamy-clayey, gravelly and sandy flats; basins; clayey valley bottoms; coastal marshes; gravelly edges of railroad beds; along rocky, gravelly and sandy roadsides; along bouldery arroyos; silty draws; gullies; ravines; around springs; moist sandy soil along streams; sandy streambeds; along rivers; riverbeds; along and in rocky, rocky-clayey, gravelly, gravelly-sandy and sandy washes; drainages; along and in drainage ways; clayey freshwater marshes; clayey depressions; gravelly-sandy and sandy banks of arroyos, streams and rivers; clayey edges of creeks and salt marshes; margins of washes; mudflats; along sandy benches; sandy terraces; sandy bottomlands; floodplains; canals; gravelly-sandy and sandy riparian areas, and disturbed areas growing in moist, damp and dry bouldery, bouldery-gravelly, rocky, rocky-sandy, stony,

cobbly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-sandy loam, cobbly-sandy loam, gravelly loam, gravelly-clayey loam, sandy loam, clay loam, silty loam and loam ground; rocky clay, cobbly-sandy-loamy clay and clay ground, and silty ground, occurring from sea level to 7,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication and as a talisman in gambling (a good luck charm). This plant may be confused with the False Carrot (*Yabea microcarpa*). *Daucus pusillus* is native to west-central, southeast-central and southern North America and central and southern South America. *5, 6, 16, 28 (color photograph 274), 43 (110309), 44 (012912 - color photograph), 46 (Page 612), 58, 63 (012912 - color presentation), 77, **85** (012912 - color presentation), 115 (color presentation), 124 (012912), 127, 140 (Pages 41-43 & 282)*

***Lomatium nevadense* (S. Watson) J.M. Coulter & J.N. Rose: Nevada Biscuitroot**

COMMON NAMES: Nevada Biscuitroot, Nevada Desert-parsley, Parish Biscuitroot, Parish's Biscuitroot, Wild Parsley. DESCRIPTION: Terrestrial perennial forb/herb (erect stems 4 to 20 inches in height); the lower portion of the stem, below the leaves, is purple-red; the leaves are gray-green, grayish-green and dark green; the flowers are cream, cream-white, creamy-yellow, pale purple, purple, purplish, white, white-pinkish, white with a purple tinge, whitish, yellow, yellow-orange or pale yellowish; the anthers are purple, dark purple or reddish; flowering generally takes place between late February and early July (additional records: two for early August, one for mid-August and one for early November). HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; bouldery-silty-clayey and sandy mesas; canyon rims; canyons; canyon sides; talus slopes; rocky spurs; knolls; ledges; rocky and sandy ridges; ridgetops; rocky clearings in forests; meadows; foothills; rocky and clayey hills; rocky hilltops; rocky and sandy hillsides; bases of hills; bouldery-silty, bouldery-silty-clayey, rocky, rocky-sandy, gravelly, gravelly-sandy, gravelly-loamy, sandy, clayey and clayey-loamy slopes; rocky outcrops; amongst boulders and rocks; prairies; rocky fields; rocky, stony and gravelly-loamy flats; rocky basins; along gravelly, gravelly-sandy and sandy roadsides; along draws; rocky ravines; along creeks; along and in sandy washes; along and in drainages; (gravelly) banks of rivers; along edges of creeks; shores of lakes; lowlands; riparian areas; waste places, and disturbed areas growing in moist, damp and dry bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, rocky-clayey loam, stony-gravelly-silty loam, stony-silty loam, gravelly-loamy, gravelly-silty loam, sandy loam, clayey loam and silty loam ground; bouldery-silty clay, rocky clay, gravelly clay, silty clay and clay ground; bouldery silty, shaley silty and silty ground, and chalky ground, occurring from 1,500 to 9,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Lomatium nevadense* is native to southwest-central and southern North America. *5, 6, 43 (082410 - *Lomatium nevadense* J.M. Coult. & Rose), 46 (Page 622), 58, 63 (082410 - color presentation), **85** (082610 - color presentation), 127, 140 (Page 282)*

***Lomatium nevadense* (S. Watson) J.M. Coulter & J.N. Rose var. *nevadense* (J.M. Coulter & J.N. Rose) W.L. Jepson: Biscuitroot**

COMMON NAMES: Nevada Biscuitroot, Nevada Desert-parsley, Wild Parsley. DESCRIPTION: Terrestrial perennial forb/herb (erect stems 4 to 20 inches in height); the leaves are gray-green or grayish-green; the flowers are cream, creamy-yellow or white; the anthers are purple; flowering generally takes place between late February and mid-June (additional records: one for early July, two for early August and one for early November). HABITAT: Within the range of this species it has been reported from mountains; knolls; gravelly ridges; foothills; clayey hills; rocky hillsides; rocky and gravelly, gravelly-sandy, clayey and clayey-loamy slopes; rocky outcrops; amongst boulders; rocky and stony flats; along roadsides; along and in washes; along drainages, and lowlands growing in moist and dry bouldery, bouldery-sandy, rocky, rocky-gravelly, stony, gravelly, gravelly-sandy and sandy ground; stony-gravelly-silty loam, gravelly-silty loam, clayey loam and silty loam ground; clay ground, and shaley silty ground, occurring from 2,500 to 9,600 feet in elevation in the forest, woodland, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Lomatium nevadense*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Lomatium nevadense* var. *nevadense* is native to southwest-central and southern North America. *15, 43 (082410 - *Lomatium nevadense* J.M. Coult. & Rose), 46 (Page 622), 63 (082410 - color presentation), 77, **85** (082610), 127 (species)*

***Yabea microcarpa* (W.J. Hooker & G.A. Arnott) B.M. Koso-Poljansky: False Carrot**

SYNONYMY: *Caucalis microcarpa* W.J. Hooker & G.A. Arnott. COMMON NAMES: California Hedge Parsley; California Yabea; False Carrot (a name also applied to other species, English: Arizona, New Mexico)¹⁴⁰; Falsecarrot (a name also applied to other species); False Hedge Parsley; False Hedge-parsley; Hedge Parsley (a name also applied to other species); [California] Hedge-parsley (English)¹⁴⁰; Wild Parsley; Yabea (a name also applied to the genus *Yabea*). DESCRIPTION: Terrestrial annual forb/herb (1 to 16 inches in height); the flowers are white; flowering generally takes place between late February and late May. HABITAT: Within the range of this species it has been reported from mountains; mesas; cliffs; bases of cliffs; rocky, gravelly, gravelly-sandy and sandy canyons; rocky canyon bottoms; talus slopes; buttes; rocky ridges; foothills; rocky hills; rocky and clayey hillsides; bouldery, rocky, rocky-gravelly, gravelly, gravelly-loamy, sandy-loamy, loamy and clayey-loamy slopes; rocky outcrops; amongst rocks; banks; gravelly and sandy flats; basins; along grassy roadsides; gulches;

along seeps; along streams; along creeks; rocky creekbeds; along rivers; along rocky and rocky-gravelly washes; along and in drainage ways; along banks of washes; sandy benches; bottomlands; riparian areas, and disturbed areas growing in damp and dry bouldery, rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground; cobbly-gravelly loam, gravelly loam, sandy loam, clayey loam and loam ground, and stony clay and clay ground, occurring from sea level to 6,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be confused with the American Wild Carrot (*Daucus pusillus*). *Yabea microcarpa* is native to west-central and southern North America. *5, 6, 15, 16, 43 (110509 - *Yabea microcarpa* Koso-Pol.), 44 (020112 - color photograph), 46 (*Caucalis microcarpa* Hook. & Arn., Page 612), 58, 63 (020112), 77, **85** (020112 - color presentation), 124 (020112 - no record of species or genus), 140 (Pages 44-45 & 282)*

Apocynaceae: The Dogbane Family

Haplophyton cimidum (see *Haplophyton crooksii*)

Haplophyton cimidum var. *crooksii* (see *Haplophyton crooksii*)

***Haplophyton crooksii* (L.D. Benson) L.D. Benson: Cockroachplant**

SYNONYMY: *Haplophyton cimidum* auct. non A.L. de Candolle, *Haplophyton cimidum* A.L. de Candolle var. *crooksii* L.D. Benson. COMMON NAMES: Actimpatli; Atempatli; Arizona Cockroach Plant; Cockroachplant; Crooks Cockroachplant; Hierba-de-la-cucuracha (Hispanic). DESCRIPTION: Terrestrial perennial subshrub or shrub (stems 7 to 40 inches in height); the foliage is dark green; the flowers are cream-white, green-yellow or yellow; flowering generally take place between mid-July and mid-November (additional records: one for early March, two for mid-March, two for early April, one for mid-April, two for late April, one for late May and one for early December); the slender, smooth and elongate fruits are gray-green or green pods. HABITAT: Within the range of this species it has been reported from mountains; bases of cliffs; rocky canyons; canyon walls; canyon bottoms; rocky talus slopes; below rocky ledges; rocky ridges; foothills; rocky hills; rocky hillsides; bouldery, bouldery-rocky and rocky slopes; bouldery and rocky outcrops; amongst boulders and rocks; shade of boulders; valley bottoms; gulches; within rocky and gravelly drainages; within rocky drainage ways; (rocky) banks of creeks, drainages and drainage ways; floodplains, and riparian areas growing in dry bouldery, bouldery-rocky, rocky, gravelly and sandy ground and gravelly loam ground, occurring from 1,900 to 5,200 feet in elevation in the forest, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers open in the evening and close in the early morning, this plant is slow growing and may be drought deciduous, it may best be used planted with succulents in rock gardens. *Haplophyton crooksii* is native to southwest-central and southern North America. *5, 6, 13, 15, 16, 43 (110509), 44 (020112 - no record of species or genus), 46 (Page 651), 58, 63 (020112 - color presentation of seed), 77 (color photograph #4), **85** (020112 - color presentation), 115 (color presentation), 124 (020112 - no record of species or genus), 140 (Page 282), MBJ*

Asclepiadaceae: The Milkweed Family

***Asclepias linaria* A.J. Cavanilles: Pineneedle Milkweed**

COMMON NAMES: Algodoncillo (“Little Cotton” a name also applied to other species, Spanish: Durango)¹⁴⁰; Ali Okága (Uto-Aztec: Tarahumara)¹⁴⁰; Atu'sh-juátsi (en Mich); Ban Wi:bam (Uto-Aztec: Tohono O'odham)¹⁴⁰; Chiche de Burra (Hispanic); Chichivilla Cimarrona (Hispanic); Ch'il 'abee'e (Athapascan: Navajo)¹⁴⁰; Chucoipe (en Mich); Cinco Negritos (Hispanic); Cola de Gato (Hispanic); Dé'í'chéhé Izee (Athapascan: Western Apache)¹⁴⁰; Guajito (Hispanic); Hierba de Cuervo (Hispanic); Hierba de Vibora (Hispanic); Hierba de la Punzada (“Puncture Herb”, Spanish: Durango)¹⁴⁰; Hierba de la Vibora (“Rattlesnake Herb” a name also applied to other species, Spanish: Sonora - Guarijío)¹⁴⁰; Hierba del Cuervo (“Raven Herb”, Spanish: Sonora)¹⁴⁰; Immortal (“Immortal” a name also applied to other species, Spanish: Mexico)¹⁴⁰; Kivat <kiyal> (Uto-Aztec: Cahuilla)¹⁴⁰; Lechestrenza (“Milk Braids”, Spanish: Mexico); Lechuguilla (“Little Lettuce” a name also applied to other species, Spanish: Mexico)¹⁴⁰; Lumu Turhipiti Xukurhi (en Mich); Na'ash□'iidaá' (Athapascan: Navajo)¹⁴⁰; Needle Leaf Milkweed; Needle-leaf Milkweed; Oreja de Liebre (Hispanic); Patito (Hispanic); Pine Leaf Milkweed; Pine Needle Butterfly Weed; Pine Needle Milkweed; Pine-leaf Milkweed; Pine-leaved Milkweed; Pine-needle Butterfly-weed; Pine-needle Milkweed (English)¹⁴⁰; Pineleaf Milkweed; Pineneedle Milkweed; Pinillo (“Little Pine”, Spanish: Edo. México, San Luis Potosí)¹⁴⁰; Plumerillo (“Little Feathery One”, Spanish: Aguascalientes)¹⁴⁰; Plumilla (Hispanic); Romerillo (“Little Rosemary”, Spanish: Edo. México)¹⁴⁰; Solimán (Spanish: Edo. México)¹⁴⁰; Ta□áma□ávi (Uto-Aztec: Ute)¹⁴⁰; Talayote de Coyote (Hispanic); Teperronero (Spanish: Mexico)¹⁴⁰; Terbisco <torovisco> (Spanish: Durango, Hidalgo)¹⁴⁰; Tezonpatli (Uto-Aztec: Náhuatl)¹⁴⁰; Thread Leaf Milkweed; Thread-leaf Milkweed; Threadleaf Milkweed; Tlalayote <tlayotle> (Spanish: Mexico)¹⁴⁰; Tlalacxoyatl (Uto-Aztec: Náhuatl)¹⁴⁰; Tlalnóchtli (Uto-Aztec: Náhuatl)¹⁴⁰; Tlalochtli (Uto-Aztec: Náhuatl)¹⁴⁰; Thiish Izee' (Athapascan: Western Apache)¹⁴⁰; Tloibee (“Milk Plant”, Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Torbisco (Hispanic); Venenillo (“Little Poisonous One” Spanish: Edo. México, San Luis Potosí)¹⁴⁰; Wi's (Uto-Aztec: Southern Paiute)¹⁴⁰. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (ascending and/or erect stems 1 to 5 feet in height; plants were observed and described as being 2½ feet in height and 3½ feet in width); the needle-like leaves are green; the flowers may be cream, greenish or white; flowering generally takes place between mid-March and late October (additional records: two for mid-December; flowering

beginning as early as February has been reported). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; rocky canyon rims; rocky cliffs; bases of cliffs; rock walls; rocky, gravelly and sandy canyons; canyonsides; canyon bottoms; crevices in bedrock; talus slopes; rocky ledges; foothills; hills; rocky and rocky-clayey hillsides; rocky, rocky-clayey, stony-clayey-loamy, gravelly, gravelly-loamy and sandy-loamy slopes; bedrock and rocky outcrops; amongst rocks; plains; along roadsides; draws; ravines; springs; along streams; within washes; rocky drainages; along watercourses; banks of ravines; rock and sand bars; rocky margins of reservoirs; around stock tanks; around reservoirs, and riparian areas growing in moist and dry rocky, rocky-gravelly, gravelly and sandy ground; stony-clayey loam, gravelly loam, sandy loam and sandy-clayey loam ground, and rocky clay ground, occurring from 700 to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant has a milky sap. The Queen Butterfly (*Danaus gilippus*) sometimes visits the flowers. *Asclepias linaria* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph 224), 30, 43 (071710), 44 (020212), 46 (species within this genus may contain a glucoside that is poisonous to livestock, especially to sheep; however, the plants are seldom eaten, Page 661), 63 (020212), 85 (020212 - color presentation), 115 (color presentation), 124 (020212 - no record of species; genus record), 140 (Pages 46-48 & 282)*

***Asclepias nummularia* J. Torrey: Tufted Milkweed**

COMMON NAMES: Tufted Milkweed; Yerba de Guerve. DESCRIPTION: Terrestrial perennial forb/herb (4 inches to 4 feet in height); the leaves are gray; the flowers may be pinkish, purple-pink or purplish with pinkish or purplish to yellowish hoods; flowering generally takes place between mid-March and early May. HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; shaded sandy canyon bottoms; knolls; rocky-gravelly ridges; rocky ridgetops; foothills; rocky and clayey hills; grassy hilltops; rocky hillsides; rocky, gravelly, sandy and clayey slopes; rocky outcrops; along roadsides, and arroyos in rocky, rocky-gravelly, gravelly and sandy soils and clayey soils, occurring from 3,000 to 6,300 feet in elevation in the forest, woodland and grassland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Asclepias nummularia* is native to southwest-central and southern North America. *5, 6, 43 (040912), 46 (species within this genus may contain a glucoside that is poisonous to livestock, especially to sheep; however, the plants are seldom eaten), 63 (061309), 85 (061309)*

***Asclepias nyctaginifolia* A. Gray: Mojave Milkweed**

COMMON NAMES: Four O'clock Milk-weed; Four O'clock Milkweed; Four O'clock-leaved Milkweed; Hierba Lechosa ("Milky Herb" a name also applied to other species, Spanish); Mohave Milkweed; Mojave Milkweed. DESCRIPTION: Terrestrial perennial forb/herb (decumbent and/or erect stems 4 inches to 2 feet in height); the leaves are dark purplish-green, green or green and tinged with dark purple; the flowers may be pale green, green, purplish-green, white or yellow-cream with yellowish to orangish hoods; flowering generally takes place between mid-April and mid-September (flowering ending as late as October has been reported); the fruit is pale green. HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; canyon bottoms; ridges; foothills; rocky-sandy and sandy hills; rocky hillsides; rocky, rocky-sandy and gravelly slopes; bajadas; plains; gravelly flats; valley floors; clayey roadsides; along and in arroyos; sandy creekbeds; along and in rocky-sandy, gravelly, gravelly-sandy and sandy washes; within in sandy drainages; drainage ways; swales; margins of washes; sand bars; floodplains, and disturbed areas growing in dry rocky, rocky-sandy, gravelly and sandy ground; rocky-sandy loam and sandy loam ground, and clay ground, occurring from 1,500 to 6,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Asclepias nyctaginifolia* is native to south-central and southern North America. *5, 6, 15, 16, 43 (110609), 44 (020212), 46 (species within this genus may contain a glucoside that is poisonous to livestock, especially to sheep; however, the plants are seldom eaten, Page 662), 58, 63 (020212), 77 (color photograph #60), 85 (020212 - color presentation), 115 (color presentation), 124 (020212 - no record of species, genus record), 127*

***Cynanchum arizonicum* (A. Gray) L.H. Shinnars: Arizona Swallow-wort**

SYNONYMY: *Metastelma arizonicum* A. Gray. COMMON NAMES: Arizona Milkweed Vine; Arizona Smallwort; Arizona Swallow-wort; Arizona Swallowwort; Milkweed Vine. DESCRIPTION: Terrestrial perennial forb/herb or vine (a twining vine with stems to 40 inches in length); the leaves are green; the small flowers are cream-white, white, whitish, pale yellow or yellowish; flowering generally takes place between mid-January and mid-December (with heaviest flowering reported as occurring between May and October). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; rocky crags; bases of cliffs; rocky canyons; rocky canyon bottoms; ridges; ridgetops; foothills; bouldery and rocky hills; rocky hilltops; rocky hillsides; rocky slopes; rocky outcrops; amongst boulders; valley floors; low sand dunes near beaches; arroyos; along sandy bottoms of arroyos; gulches, ravines, around seeping streams; creeks; along rocky washes; rocky drainages; rocky drainage ways, and riparian areas growing in dry bouldery, rocky and sandy ground, occurring from sea level to 5,300 feet in elevation in the woodland, scrub, grassland and desertscrub ecological formations. NOTE: *Cynanchum arizonicum* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (110709), 44 (020312 - no record of species; genus record), 46 (recorded as *Metastelma arizonicum* Gray, Page 663), 58, 63 (020312), 77 (color photograph #61), 85 (020312 - color presentation of dried material), 124 (020312 - no record of species; genus record), 140 (Page 282)*

***Funastrum crispum* (G. Bentham) F.R. Schlechter: Wavyleaf Twinevine**

SYNONYMY: *Sarcostemma crispum* G. Bentham. COMMON NAMES: Climbing Milkweed; Wavyleaf Twinevine. DESCRIPTION: Terrestrial perennial forb/herb or vine (climbing, sprawling, trailing or twining stems 40 inches to 12 feet in length); the leaves are dark green; the flowers may be green (rarely), dark purple, white or yellow; flowering generally takes place between late May and late September (flowering beginning as early as April has been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky-gravelly-sandy-clayey-loamy mesas; gravelly-sandy cliffs; along rocky canyons; talus slopes; rocky ridges; clearings; foothills; hills; hilltops; rocky hillsides; rocky, gravelly-loamy and sandy-loamy slopes; bouldery-rocky and rocky outcrops; banks; flats; roadsides; arroyos; gulches; gullies; sandy creekbeds; washes; around lakes; mesquite bosques; riparian areas, and disturbed areas growing in dry bouldery-rocky, rocky, gravelly-sandy and sandy ground and rocky-gravelly-sandy-clayey loam, gravelly loam and sandy loam ground, occurring from 2,900 to 6,700 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Funastrum crispum* is native to southwest-central and southern North America. *5, 6, 15, 43 (122710 - *Funastrum crispum* F.R. Schlechter), 44 (122710 - no record), 46 (Page 664), 58, 63 (122710), **85** (122810 - color presentation), 124 (122410), 140 (Page 282)*

***Funastrum cynanchoides* (J. Decaisne) F.R. Schlechter subsp. *cynanchoides*: Fringed Twinevine**

SYNONYMY: *Sarcostemma cynanchoides* J. Decaisne. COMMON NAMES: Arroyo Twine Vine; Arroyo Twinevine; Climbing Milk Weed; Climbing Milkweed (a name also applied to other species); Climbing Milkweed (English)¹⁴⁰; Fringed Climbing Milkweed (a name also applied to the species); Fringed Twine-vine (a name also applied to the species); Fringed Twine-weed [vine] (Arizona, New Mexico)¹⁴⁰; Fringed Twinevine (a name also applied to the species); Güichire (Spanish)¹⁴⁰; Güirote Lechoso (“Milky ‘Vine’”, Spanish: Sinaloa, Sonora)¹⁴⁰; Hexe (Hokan: Seri)¹⁴⁰; Hierba Lechosa (“Milky Herb” a name also applied to other species, Spanish: Sonora)¹⁴⁰; Huichuri <huichoori> (Uto-Aztecan: Mayo)¹⁴⁰; Mata Nene (“Baby Killer”, Spanish: Sonora)¹⁴⁰; Platanito (“Little Banana” [literally “flat one”], Spanish: Sonora)¹⁴⁰; Sandia de la Pasion (“Watermelon of the Crucifixion”, Spanish: Sonora)¹⁴⁰; Vi:bam <vi’ibgam> (Uto-Aztecan: Hiá Ce□ O’odham)¹⁴⁰; Vibam (Uto-Aztecan: Mountain Pima)¹⁴⁰; Viibam (“Milk It Has”, Uto-Aztecan: Akimel O’odham)¹⁴⁰; Wibam <wi’ibgam> (Uto-Aztecan: Tohono O’odham)¹⁴⁰. DESCRIPTION: Terrestrial perennial forb/herb or vine (clambering, climbing, sprawling, trailing and/or twining stems 40 inches to 20 feet in length); the leaves are dark green; the flowers may be brownish-white, cream, cream-white, pale green & white, green, green & maroon & white; greenish-white, maroon, pink, purplish, purplish-white, white, white & green, white & lilac, white & pink, whitish or off white-brownish-purple; flowering generally takes place between mid-March and early November (additional records: one for early February and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky and sandy canyons; rocky canyon walls; canyon bottoms; talus; crevices; rocky foothills; hills; hillsides; rocky and sandy slopes; bajadas; bouldery and rocky outcrops; amongst boulders; gravelly plains; sandy flats; along sandy roadsides; along arroyos; seeps; springs; along streams; bouldery and sandy streambeds; gravelly-sandy creeks; rocky-cobbly-sandy riverbeds; along and in bouldery, gravelly-sandy and sandy washes; drainages; within drainage ways; swamps; depressions; along banks of rivers and washes; (gravelly-silty) edges of draws; (sandy) shores of rivers; sandy beaches; benches; sandy terraces; sandy floodplains; mesquite bosques; along ditches; clayey-loamy ditch banks; fencelines; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-cobbly-sandy, gravelly-sandy and sandy ground; gravelly loam, clayey loam and loam ground; silty clay ground, and gravelly silty and silty ground, occurring from sea level to 6,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers may be fragrant. Bees, moths and other insects have been observed visiting the flowers. *Funastrum cynanchoides* subsp. *cynanchoides* is native to south-central and southern North America. *5, 6, 16 (recorded as *Sarcostemma cynanchoides* Decne. var. *cynanchoides*), 28 (color photograph), 43 (110709), 44 (020412 - no record of subspecies; species and genus records, with Common Names listed under var. *hartwegii* only), 46 (Page 664), 58 (recorded as *Sarcostemma cynanchoides* Decne. ssp. *cynanchoides*), 63 (020412 - color presentation), 68, 77 (recorded as *Sarcostemma cynanchoides* Decne. ssp. *cynanchoides*, color photograph labeled *Sarcostemma cynanchoides* #6), **85** (020412 - color presentation), 86 (color photograph), 115 (color presentation of species), 124 (050211), 140 (recorded as *Funastrum cynanchoides* (Decaisne) Schlechter [*Sarcostemma cynanchoides* Decaisne], Pages 48-49 & 283)*

***Funastrum cynanchoides* (J. Decaisne) F.R. Schlechter subsp. *heterophyllum* (G. Engelmann ex J. Torrey) J.T. Kartesz: Hartweg’s Twinevine**

SYNONYMY: *Funastrum heterophyllum* (G. Engelmann) P.C. Standley; *Sarcostemma cynanchoides* J. Decaisne subsp. *hartwegii* (A.M. Vail) R.W. Holm; *Sarcostemma cynanchoides* J. Decaisne var. *hartwegii* (A.M. Vail) L.H. Shinnars. COMMON NAMES: Climbing Milkweed (a name also applied to other species); Climbing Townula; Guirote Lechoso (Spanish); Hartweg Climbing Milkweed; Hartweg Climbing-milkweed; Hartweg Fringed Milkvine; Hartweg Milk-vine; Hartweg Milkvine; Hartweg Twine-vine; Hartweg Twinevine; Hartweg Twining Milkweed; Hartweg Vine-milkweed; Hartweg’s Climbing-milkweed; Hartweg’s Fringed Milkvine; Hartweg’s Milk-vine; Hartweg’s Milkvine; Hartweg’s Twine-vine; Hartweg’s Twinevine; Hartweg’s Twining Milkweed; Hartweg’s Vine-milkweed; Hexe (Seri); Purple Climbing-milkweed (a name also applied to the species). DESCRIPTION: Terrestrial perennial forb/herb or vine (clambering, climbing, sprawling, trailing and/or twining stems 20 inches to 20 feet in length); the leaves (3 to 4 times long as broad) are dark green; the flowers may be dull cream-white & maroon, cream-purple, cream-white & purple, greenish-white, greenish-white & purple, lilac-mauve, magenta-cream, maroon-cream, pinkish-white, purple, purple & cream, purplish, dull purplish & white, dull purplish-red & whitish, purplish-tan & white, violet-pink, white, white & brown, white & maroon, white & dull purple, white & purple or white & purple-maroon; flowering generally takes place between mid-March and early November (additional records: one for early February,

one for mid-February, one for late November and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; bouldery-cobbly mesas; canyons; along rocky and gravelly-sandy canyon bottoms; ridges; clayey ridgetops; foothills; rocky and sandy hills; rocky hillsides; bouldery, rocky and gravelly slopes; bajadas; rocky outcrops; amongst rocks; lava flows; sand dunes; banks; bouldery-cobbly, cindery and sandy flats; bouldery basins; sandy valley floors; valley bottoms; coastal sand dunes; along sandy roadsides; along and in rocky and sandy arroyos; springs; along streams; along creeks; creekbeds; along rivers; riverbeds; along and in rocky, gravelly, gravelly-sandy, gravelly-sandy-silty, sandy and sandy-silty washes; drainages; drainage ways; waterholes (tinajas); playas; swampy areas; (rocky, gravelly-sandy and sandy) banks of arroyos, streams, rivers, washes and drainages; along (gravelly) margins of arroyos and washes; gravel and sand bars; sandy benches; terraces; bottomlands; sandy floodplains; mesquite bosques; fencelines; canal banks; along ditches; sandy riparian areas, and disturbed areas growing in dry bouldery, bouldery-cobbly, rocky, rocky-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-clayey loam and gravelly loam ground; clay ground, and gravelly-sandy silty and sandy silty ground, occurring from sea level to 5,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Funastrum cynanchoides* subsp. *heterophyllum* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Sarcostemma cynanchoides* Decne. var. *hartwegii* (Vail) Shinnery), 16 (recorded as *Sarcostemma cynanchoides* Decne. var. *hartwegii* (Vail) Shinnery), 43 (110709 - *Funastrum cynanchoides* Schltr. subsp. *heterophyllum* (Engelm. ex J. Torr.) Kartesz), 44 (020412), 46 (recorded as *Funastrum heterophyllum* (Engelm.) Standl., Page 664), 58 (recorded as *Sarcostemma cynanchoides* Decne. ssp. *hartwegii* (Vail) R. Holm), 63 (020412 - color presentation), 68, 77 (recorded as *Sarcostemma cynanchoides* Decne. ssp. *hartwegii* (Vail) Holm), **85** (020412 - color presentation), 115 (color presentation of species), 124 (020412 - no record of subspecies or species; genus record), 140 (Page 49), **WTK** (August 4, 2005)*

Funastrum heterophyllum (see *Funastrum cynanchoides* subsp. *heterophyllum*)

Gonolobus arizonicus (see *Matelea arizonica*)

Gonolobus parvifolius (see *Matelea parvifolia*)

Lachnostoma arizonicum (see *Matelea arizonica*)

***Matelea arizonica* (A. Gray) L.H. Shinnery: Arizona Milkvine**

SYNONYMY: *Gonolobus arizonicus* (A. Gray) R.E. Woodson; *Lachnostoma arizonicum* A. Gray. COMMON NAMES: Arizona Milkvine, Rincon Milkweed Vine. DESCRIPTION: Terrestrial perennial forb/herb or vine (climbing and twining stems to 6½ feet in length); the flowers are white, whitish or yellowish; based on few records located, flowering generally takes place between early July and late November (flowering records: one for early July, one for late July, one for late August, two for early September and one for late November, flowering beginning as early as May was also reported). HABITAT: Within the range of this species it has been reported from mountains; cliff faces; rocky canyons; bottoms of canyons; crevices; bases of cliffs; foothills; hillsides; rocky slopes; amongst boulders; roadsides; along streams; bouldery streambeds; rocky creekbeds; riverbeds; along and in washes; drainages; rocky banks of streams, and riparian areas growing in bouldery and rocky ground often in shaded areas, occurring from 400 to 4,500 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTE: *Matelea arizonica* is native to southwest-central and southern North America. *5, 6, **8**, 15, 43 (071710), 46 (recorded as *Lachnostoma arizonicum* A. Gray, Pages 665-666), 63 (111806), **85** (072910), 124 (102710 - no record), 140 (Page 283 - recorded as *Gonolobus arizonicus* (A. Gray) Woodson)*

***Matelea parvifolia* (J. Torrey) R.E. Woodson: Spearleaf**

SYNONYMY: *Gonolobus parvifolius* J. Torrey. COMMON NAMES: Angle-pod (a name also applied to the genus *Matelea*); Anglepod (a name also applied to the genus *Matelea*); Little Leaf Milk Vine; Little-leaf Matelea; Littleleaf Matelea; Milkweed Vine; Small-leaf Angle Pod; Small-leaf Angle-pod; Small-leaf Anglepod; Small-leaved Milkvine; Spearleaf; Spear-leaf Matelea; Spearleaf Matelea. DESCRIPTION: Terrestrial perennial shrub or vine (a clambering, climbing and twining vine 16 inches to 5 feet in length); the stems are gray-green or green; the leaves are green; the flowers may be black, dark brownish-purple, green, greenish-purple, dark purple or purple-brown; based on few records located, flowering generally takes place between early March and mid-May and again between mid-October and early December (flowering records: three for late January, three for early March, three for mid-March, four for late March, three for early April, two for mid-April, one for early May, one for mid-May, one for mid-October, one for late October, five for early November, one for mid-November, one for late November and one for early December); the fruits are long, warty, green seed pods. HABITAT: Within the range of this species it has been reported from rocky mountains; rocky mountainsides; mesas; rocky canyons; canyon bottoms; under ledges; rocky ridge tops; ridgelines; foothills; rocky and stony-gravelly hills; rocky and rocky-gravelly hillsides; bedrock, bouldery, rocky and sandy slopes; bajadas; amongst boulders and rocks; bouldery, cobbly, gravelly and gravelly-sandy flats; along roadsides; along arroyos; springs; rivers; along and in rocky washes; along drainages; edges of washes; floodplains, and rocky riparian areas growing in dry bouldery, rocky, rocky-gravelly, stony-gravelly, cobbly, gravelly and sandy ground, occurring from 1,200 to 5,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Matelea parvifolia* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (110809), 44 (020512), 46 (recorded as

Gonolobus parvifolius Torr., Page 665), 63 (020512), 77, **85** (020512 - color presentation), 124 (020512 - no record of species; genus record)*

Metastelma arizonicum (see *Cynanchum arizonicum*)

Sarcostemma crispum (see *Funastrum crispum*)

Sarcostemma cynanchoides (see *Funastrum cynanchoides* subsp. *cynanchoides*)

Sarcostemma cynanchoides subsp. *cynanchoides* (see footnotes 16 and 85 under *Funastrum cynanchoides* subsp. *cynanchoides*)

Sarcostemma cynanchoides subsp. *hartwegii* (see *Funastrum cynanchoides* subsp. *heterophyllum*)

Sarcostemma cynanchoides var. *cynanchoides* (see *Funastrum cynanchoides* subsp. *cynanchoides*)

Sarcostemma cynanchoides var. *hartwegii* (see *Funastrum cynanchoides* subsp. *heterophyllum*)

Asteraceae (Compositae): The Aster Family

***Acourtia nana* (A. Gray) J.L. Reveal & R.M. King: Dwarf Desertpeony**

SYNONYMY: *Perezia nana* A. Gray. COMMON NAMES: Ban Auppa-ga (Gila River Pima); Desert Holly (a name also applied to other species); Desert-holly; Dwarf Desertpeony. DESCRIPTION: Terrestrial perennial forb/herb (divaricately branching stems 2 to 12 inches in height; plants were observed and described as being 4 to 5 inches in height and 3 to 6 inches in width); the holly-like leaves are pale grayish-green or olive-green; the flower heads may be cream, pale lavender-pink, lavender, lavender-pink, maroon and white, pale pink-lavender, pink, pink-purple, purple, white or white-pink; flowering generally takes place between late March and early July (additional records: one for late January, one for late February, two for late July, one for early August, one for mid-August, one for late August, two for early September, three for late September, one for mid-October, one for mid-November and two for mid-December). HABITAT: Within the range of this species it has been reported from rocky mountains; sandy mesas; gravelly-loamy canyons; talus slopes; bedrock ridges; ridgetops; rocky foothills; rocky and gravelly hills; rocky and gravelly hillsides; bouldery, rocky, stony, gravelly, gravelly-sandy and sandy slopes; bajadas; amongst boulders and rocks; gravelly breaks; gravelly plains; rocky, gravelly, gravelly-sandy, sandy, sandy-loamy and clayey flats; basins; basin bottoms; rocky valley floors; valley bottoms; gravelly-loamy roadsides; arroyos; bottoms of arroyos; rocky gullies; gravelly-loamy creekbeds; riverbeds; within gravelly, gravelly-sandy and sandy-clayey washes; drainage ways; playas; sandy-loamy, sandy-clayey-loamy and clayey-loamy swales; (clayey-loamy) banks of washes; benches; gravelly and sandy terraces; floodplains; mesquite mosques; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, rocky, rocky-sandy, stony, gravelly, gravelly-sandy, pebbly and sandy ground; gravelly loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; sandy clay and clay ground, and silty ground often in the shade of trees and shrubs, occurring from 1,200 to 7,100 feet (one record for 8,500 feet) in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Consider using Desert Holly as a ground cover under larger shrubs and trees. The flowers give off a fragrance similar to that of violets or lilacs. *Acourtia nana* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 285), 43 (110809), 44 (020512 - no record of species; genus record), 46 (recorded as *Perezia nana* Gray, Page 957), 58, 63 (020512 - color presentation), 77, 85 (020512 - color presentation), 115 (color presentation), 124 (020512 - no record of species or genus), **HR***

***Acourtia wrightii* (A. Gray) J.L. Reveal & R.M. King: Brownfoot**

SYNONYMY: *Perezia wrightii* A. Gray. COMMON NAMES: Brownfoot; Desert Holly (a name also applied to other species); *Perezia*; Pink *Perezia*; Pink *Perezia*; Wright's Desertpeony. DESCRIPTION: Terrestrial perennial forb/herb (1 to 5 feet in height; one plant was observed and described as being 1 foot in height with a crown 1 foot in width); the holly-like leaves are dark green; the flower heads may be lavender, dark lavender, pink, pink-brown, pink-lavender, pink-purple, light purple, purple, white, white & pink, whitish-maroon or white & purple; flowering generally takes place between early February and early July and sometimes in autumn between early September and early November (additional records: one for mid-August, one for late November and one for early December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; plateaus; rock cliffs; bases of cliffs; rocky canyons; rocky canyon bottoms; talus slopes; along crevices in boulders and rocks; buttes; along ledges; ridges; ridgetops; crater walls; foothills; rocky, stony-gravelly and sandy hills; rocky and rocky-gravelly-loamy hillsides; bouldery-rocky, rocky, rocky-gravelly, shaley, shaley-gravelly, gravelly, gravelly-clayey and sandy slopes; sandy alluvial fans; gravelly and sandy bajadas; along bedrock and rocky outcrops; amongst boulders and rocks; around bases of boulders; in shaded alcoves; rocky plains; rocky and silty flats; railroad right-of-ways; rocky and gravelly-sandy-clayey-loamy roadsides; along rocky arroyos; rocky draws; gullies; ravines; seeps; rocky springs; along creeks; along rocky, gravelly and sandy washes; along drainage ways; (rocky) banks of ravines, streams and washes; borders of washes; edges of washes; mudflats; beaches; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry desert pavement;

bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-gravelly, stony-gravelly, gravelly and sandy ground; rocky-gravelly loam, rocky silty loam, gravelly-sandy-clayey loam, sandy loam, silty-clayey loam and silty loam ground; gravelly clay ground, and silty ground, occurring from 700 to 7,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers are reported to be fragrant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Acourtia wrightii* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 677), 43 (110809), 44 (050411 - no record of species; genus record), 46 (recorded as *Perezia wrightii* Gray, Page 957), 58, 63 (020512 - color presentation), 77, 85 (020612 - color presentation), 115 (color presentation), 124 (050411 - no record of species or genus), 127, 140 (Page 283), **WTK** (July 13, 2005)*

***Adenophyllum porophylloides* (A. Gray) J.L. Strother: San Felipe Dogweed**

SYNONYMY: *Dyssodia porophylloides* A. Gray. COMMON NAMES: San Felipe Adenophyllum; San Felipe Dogweed; San Felipe Dyssodia; San Felipe Fetid Marigold; Yerba del Venado. DESCRIPTION: Terrestrial perennial subshrub (erect stems 8 to 32 inches in height; one plant was described as being approximately 18 inches in height and 2 feet in width); the leaves are dark green; the disk florets may be golden-yellow, maroon, orange or yellow-orange; the ray florets may be pink, pink-maroon, red-orange, yellow (becoming red-orange), yellowish-brown or yellow-orange; flowering generally takes place between early February and early December. HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; mountainsides; mesas; rocky cliffs; bouldery and rocky canyons; canyon walls; rocky canyon bottoms; buttes; ridgetops; foothills; rocky-gravelly and stony-gravelly hills; rocky hillsides; bouldery, rocky, rocky-gravelly, shaley, gravelly and sandy slopes; alluvial fans; rocky-gravelly bajadas; bouldery and rocky outcrops; amongst boulders and rocks; boulder fields; plains; gravelly and sandy flats; valley floors; along roadsides; along the bottoms of rocky arroyos; gulches; ravines; streambeds; along creeks; along and in rocky, gravelly, gravelly-sandy and sandy washes; borders of washes; (rocky) edges of washes; benches; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, rocky, rocky-gravelly, rocky-sandy, shaley, stony-gravelly, stony-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam and cobbly-gravelly loam ground, and sandy clay ground, occurring from sea level to 4,200 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The leaves give off a strong odor when bruised, reportedly similar to that of Deerweed (*Porophyllum gracile*). *Adenophyllum porophylloides* is native to southwest-central and southern North America. *5, 6, 13, 15 (recorded as *Dyssodia porophylloides* Gray), 16 (recorded as *Dyssodia porophylloides* Gray), 28 (recorded as *Dyssodia porophylloides*, color photograph 480), 43 (111009), 44 (020712), 46 (recorded as *Dyssodia porophylloides* Gray, Page 932), 63 (020712 - color presentation), 77 (recorded as *Dyssodia porophylloides* Gray), **85** (020812 - color presentation), 115 (color presentation), 124 (020712 - no record of species or genus), 140 (Page 283)*

***Ageratina herbacea* (A. Gray) R.M. King & H.E. Robinson: Fragrant Snakeroot**

SYNONYMY: *Eupatorium herbaceum* (A. Gray) E.L. Greene. COMMON NAMES: Ageratina (English)¹⁴⁰; Bil Háách'í [Bikáꞑi] <bilha.zef'n> ([Male] Wind Odor¹⁴⁰), Athapascan: Navajo¹⁴⁰, Desert Ageratina; Desert Eupatorium; Desert Thoroughwort; Fragrant Snakeroot; Fragrant Thorough-wort; Herbaceous Joepieweed; Mata ("Plant", Spanish)¹⁴⁰; Snakeroot; [Fragrant] Snakeroot (English)¹⁴⁰; Tabardillo (a name also applied to other species, Spanish)¹⁴⁰; White Thoroughwort (English)¹⁴⁰. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (spreading and or erect stems 8 to 42 inches in height; plants were observed and described as being 2 feet in height and width, one plant was observed and described and being 28 inches in height and 6½ feet in width, plants were observed and described as being 3 feet in height and width); the heart-shaped leaves are grayish, light green, green, pale yellow-green or yellow-green; the florets may be cream, cream-white, greenish-white, pink-mauve, purplish, white, white tinged with purple, whitish; yellow or yellowish, one record reported plants with purple ray flowers and yellow disk flowers; flowering generally takes place between late June and early November (additional record.: one for mid-April, one for late April and one for mid-May). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mountainsides; rocky and sandy mesas; plateaus; canyon rims; along cliff faces; rocky bases of cliffs; rock walls; bases of rock walls; along canyons; rocky canyon walls; canyon bottoms; rock clefts; sandy bottoms of cracks; rocky talus slopes; crevices in bedrock; along ledges; below ledges; rocky-silty ridges; ridgetops; rocky ridgelines; gravelly clearings in forests and woodlands; humusy-loamy meadows; foothills; shaley hills; rocky, rocky-gravelly, rocky-clayey and gravelly hillsides; bases of hillsides; bouldery, bouldery-rocky, rocky, gravelly, gravelly-loamy, sandy and clayey-loamy slopes; rocky outcrops; bases of rock outcrops; amongst boulders and rocks; bases of boulders; lava flows; rocky-clayey flats; valley floors; along roadsides; within arroyos; within rocky draws; gulches; gullies; rocky seeps; springs; in rocks along streams; along and in bouldery-rocky and gravelly-loamy streambeds; creekbeds; along rivers; riverbeds; along and in stony and gravelly washes; along and in sandy and sandy-silty drainages; around lakes; banks of arroyos and washes; floodplains; along fencelines; riparian areas, and disturbed areas growing in wet (rarely reported), moist and dry bouldery, bouldery-rocky, rocky, rocky-gravelly, shaley, stony, gravelly and sandy ground; gravelly loam, clayey loam, humusy loam and loam ground; rocky clay and sandy clay ground, and rocky silty and sandy silty ground, occurring from 4,000 to 9,600 feet in elevation in the forest, woodland, scrub, grassland (rarely reported), desertscrub (rarely reported) and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Ageratina herbacea* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph 262), 43 (122810 - *Eupatorium herbaceum* Greene), 44 (122810), 46 (recorded as *Eupatorium herbaceum* (Gray) Greene, Page 845), 63 (122810 - color presentation), **85** (122910 - color presentation), 124 (022511 - no record of species; genus record), 127, 140 (Pages 52-53 & 283)*

***Ambrosia ambrosioides* (A.J. Cavanilles) W.W. Payne: Ambrosia Leaf Bur Ragweed**

SYNONYMY: *Franseria ambrosioides* A.J. Cavanilles. COMMON NAMES: Ambrosia Bursage; Ambrosia Leaf Bur Ragweed; Ambrosia Leaf Burr Ragweed; Ambrosia-leaf Burr Ragweed; Ambrosia-leaf Burr-ragweed; Ambrosia-leaf Bursage; Ambrosia-leaved Burbush; Big Bursage; Big Bur-sage; Burr Sage (a name also applied to the genus *Ambrosia*); Bur-sage (a name also applied to other species and the genus *Ambrosia*); Bursage (a name also applied to other species and the genus *Ambrosia*); Canyon Ambrosia; Canyon Ragweed; Canyon Ragweed Ambrosia; Chicura (Spanish); Giant Bursage; Leaf Burr Ragweed; Nu Nu Ju Its (Tohono O'odham); Tinkl (Seri). DESCRIPTION: Terrestrial perennial cold- and drought-deciduous subshrub or shrub (erect stems 1 to 7 feet in height, one plant was described as being 3 feet in height and 6 feet in width); the branches are reddish-brown with white hairs; the leaves are dull gray-green or green; the flower heads are yellowish or yellowish-green; flowering generally takes place between mid-February and early May (additional records: two for mid-January, one for late May, one for early June, one for mid-June, one for early July and one for mid-September), the fruits are burrs. HABITAT: Within the range of this species it has been reported from rocky mountains; rocky mountainsides; mesas; bases of cliffs; rocky canyons; canyon walls; rocky, gravelly and gravelly-sandy canyon bottoms; ridges; crevices in rocks; pockets of sandy soil in rocks; foothills; rocky hills; hilltops; rocky hillsides; rocky and sandy slopes; bajadas; rocky outcrops; amongst boulders; terraces; barrens; plains; flats; basins; silty valley floors; along coasts; coastal plains; along rocky-sandy roadsides; rocky, gravelly and sandy arroyos; rocky and gravelly bottoms of arroyos; along seeping streams; along streams; rocky and sandy streambeds; along creeks; creekbeds; along rivers; riverbeds; along and in rocky, gravelly, gravelly-sandy, gravelly-silty and sandy washes; along and in sandy drainages; along and in cobbly and sandy drainage ways; around waterholes; (rocky and sandy) banks of creeks and lakes; borders of washes; (sandy) edges of washes; (sandy) margins of arroyos; benches; bottomlands; floodplains; riparian areas, and disturbed areas growing in muddy (rarely reported) and dry bouldery, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam and sandy-clayey loam ground, and gravelly silty and silty ground, occurring from sea level to 5,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat; however, its pollen may bring about an allergic reaction in some people. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Ambrosia ambrosioides* is native to southwest-central and southern North America. *5, 6, 13 (Pages 303-304), 15, 28 (color photographs 806 A&B), 43 (111009 - *Ambrosia ambrosioides* (Delpino) W.W. Payne), 44 (050411), 46 (recorded as *Franseria ambrosioides* Cav., Page 895), 63 (020812), 77 (color photograph #67), 85 (020912 - color presentation including habitat), 91 (Pages 75-77), 115 (color presentation), 124 (050411 - no record of species; genus record), 127, 140 (Page 283), **WTK** (July 13, 2005)*

***Ambrosia confertiflora* A.P. de Candolle: Weakleaf Bur Ragweed**

SYNONYMY: *Franseria confertiflora* (A.P. de Candolle) P.A. Rydberg. COMMON NAMES: Altamisa de Playa; Altamisa [del Campo] (Spanish: Mexico)¹⁴⁰; Bur Ragweed (a name also applied to other species and the genus *Ambrosia*); Bursage (a name also applied to other species and the genus *Ambrosia*); Bur-weed (a name also applied to other species); Bursage [Field, Weak-leaf Burr] Ragweed (English: New Mexico)¹⁴⁰; Ch'it Diwozh <c'it dahwosi [dohwosi]> (Athapascan: Navajo)¹⁴⁰; Chi'ichivo (Yaqui); Chichibo (Uto-Aztecan: Mayo)¹⁴⁰; Estafiate (a name also applied to other species, Spanish: Mountain Pima)¹⁴⁰; Estafijate (Mexico: Sonora); Field Ragweed; Istafiate (Mexico: northern Sinaloa); Mexican Ragweed; Mo'ota <mo'ota□k, mo'otadk, mo'ostalk, mo'otari> ("To Stick Its Head Out", Uto-Aztecan: Tohono O'odham)¹⁴⁰; Mo'ota □k Je:j ("Mother of Broom Rape", Uto-Aztecan: Akimel O'odham)¹⁴⁰; Mo'ostadk (Uto-Aztecan: Hiá Ce □ O'odham)¹⁴⁰; Mo'otatk Juich (Gila River Pima); Musha (Uto-Aztecan: Mountain Pima)¹⁴⁰; Nuñuwí Je:j ("Mother of Vultures", Uto-Aztecan: Tohono O'odham)¹⁴⁰; Pawya <pawíya> (Uto-Aztecan: Hopi)¹⁴⁰; Paxáza (Hokan: Seri)¹⁴⁰; Ragweed (a name also applied to other species and the genus *Ambrosia*); Slender Ragweed; Slim-leaf [weak-leaf] Bursage (English)¹⁴⁰; Slim-leaf Ragweed; Slimleaf Bursage; Slimleaf Ragweed; Tat□agi <ta□shagi, tatshagi> (Uto-Aztecan - Tohono O'odham)¹⁴⁰; Tu'rosip (Uto-Aztecan: Shoshoni)¹⁴⁰; Waejoka (Kiowa Tanoan: Tewa)¹⁴⁰; Weakleaf Burbush; Weak-leaf Bur-ragweed; Weak-leaf Burr Ragweed; Weak-leaf Burr-ragweed; Weak-leaf Bur-sage; Weak-leaf Bursage; Weak-leaved Bur-sage; Weak-leaved Bursage; Weak-leaved Burweed; Weakleaf Bur Ragweed; Weakleaf Burr Ragweed; Weakleaf Bursage; Yerba del Sapo ("Toad Herb", Spanish: New Mexico)¹⁴⁰. DESCRIPTION: Terrestrial perennial forb/herb (procumbent (rarely observed) and/or erect stems 4 inches to 6 feet in height and up to 7 feet in width); the leaves may be gray, gray-green or whitish; the florets may be greenish, greenish-yellow, tan-yellow, white, yellow, yellow-brown or yellow-green; flowering generally takes place between late April and mid-December (additional records: one for early January, one for mid-March, one for late March and one for early April). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; bases of cliffs; rocky canyons; along rocky and sandy canyon bottoms; crevices in rock faces; knolls; ridges; rocky ridgetops; sandy meadows; foothills; rocky and rocky-gravelly-loamy hills; hilltops; rocky hillsides; rocky, rocky-loamy, rocky-clayey, gravelly, gravelly-loamy, gravelly-clayey, sandy, sandy-loamy and sandy-clayey slopes; bajadas; piedmonts; shaley-sandy outcrops; terraces; prairies; sandy-silty plains; gravelly, gravelly-sandy, sandy and clayey flats; rocky-silty, gravelly-sandy and sandy valley floors; valley bottoms; coastal plains; coastal beaches; along railroad right-of-ways; along clayey roadsides; along sandy arroyos; bottoms of arroyos; ravines; seeps; springs; along streams; streambeds; along rivers; sandy riverbeds; along and in gravelly, gravelly-sandy, gravelly-sandy-silty and sandy washes; along rocky drainages; within rocky drainage ways; around ponds; around lakes; (drying) lakebeds; playas; ciénegas; depressions; silty swales; along banks of creeks, rivers and washes; borders of washes; (gravelly-sandy) edges of washes and playas; margins of pools; beaches; rocky benches; terraces; bottomlands; floodplains; rocky mesquite bosques; fencerows; around stock tanks (represos); around reservoirs; canal banks; ditches; riparian areas; waste places, and disturbed

areas growing in muddy (rarely reported) and moist and dry boulders, rocky, shaley-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, gravelly loam, sandy loam and sandy-clayey loam ground; rocky clay, gravelly clay and clay ground, and rocky silty, gravelly silty, gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 8,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The flowers are reported to be fragrant. *Ambrosia confertiflora* is native to south-central and southern North America. *5, 6, 15, 16, 43 (061309), 44 (033011), 46 (recorded as *Franseria confertiflora* (DC.) Rydb., Page 895), 58, 63 (020912), 68, 77, 85 (020912 - color presentation), 115 (color presentation), 124 (033011), 140 (Pages 53-54, 56 & 283)*

***Ambrosia deltoidea* (J. Torrey) W.W. Payne: Triangle Bur Ragweed**

SYNONYMY: *Franseria deltoidea* J. Torrey. COMMON NAMES: Ambrosia (a name also applied to other species and the genus *Ambrosia*, Spanish); Burrobush (a name also applied to other species); Bur-sage (a name also applied to other species and the genus *Ambrosia*); Bursage (a name also applied to other species and the genus *Ambrosia*); Chamizo Forrajero (Spanish); Chicurilla (a name also applied to other species, Spanish); Estafiate (a name also applied to other species, Spanish); Rabbit Bush; Kokomak Segoi (Pima); Shегоi (Pima); Todshag (Papago); Triangle Bur Ragweed; Triangle Burr Ragweed; Triangle Bursage; Triangle-leaf Bursage; Triangle-leaved Bursage; Triangle-leaf Burr Ragweed. DESCRIPTION: Terrestrial perennial evergreen (or drought-deciduous) subshrub or shrub (erect stems 1 to 4 feet in height; one plant was observed and described as being 2 feet in height and width); the leaves are gray, gray-green or green (turning gray with age); the flower heads may be greenish, greenish-yellow, purple, white or yellow; flowering generally takes place between early January and early May (additional records: three for late May; flowering ending as late as July has been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; cliffs; bases of cliffs; rocky canyons; canyon bottoms; buttes; ridges; crater floors; rocky foothills; rocky hills; rocky hillsides; bases of hills; rocky, rocky, gravelly and gravelly-clayey slopes; bases of slopes; sandy bajadas; lava flows; dunes; sandy plains; rocky, stony-chalky, gravelly and sandy flats; basins; rocky valley floors; along rocky-sandy roadsides; shallow arroyos; ravines; runnels; riverbeds; along and in stony-gravelly, gravelly, gravelly-sandy and sandy washes; within drainages; (rocky and sandy) banks of creeks and washes; edges of dry lakes (playas); margins of washes; gravelly terraces; bottomlands; floodplains; riparian areas, and disturbed areas growing in moist and dry desert pavement; rocky, rocky-gravelly, rocky-sandy, stony-gravelly, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam and loam ground; rocky clay, gravelly clay and sandy clay ground, and stony chalky ground, occurring from sea level to 4,000 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and may be useful in the restoration of disturbed habitat. It may live to be about 50 years of age. The Triangleleaf Bursage serves as a nurse plant for Saguaro (*Carnegiea gigantea*), Ocotillo (*Fouquieria splendens*), Foothill Paloverde (*Parkinsonia microphylla*) and other woody plants. The Triangleleaf Bursage is one of the first plants to colonize disturbed areas. *Ambrosia deltoidea* is native to southwest-central and southern North America. *5, 6, 13 (Pages 305-306), 15, 16, 28 (color photograph 807), 43 (070910), 44 (033011), 46 (recorded as *Franseria deltoidea* Torr., Page 896), 63 (021012 - color presentation), 77 (color photograph #68), 85 (021112 - color presentation including habitat), 91 (Pages 82-85, 115 (color presentation), 124 (033011 - no record of species; genus record), HR*

Ambrosia monogyra (see *Hymenoclea monogyra*)

***Antheropeas lanosum* (A. Gray) P.A. Rydberg: White Easterbonnets**

SYNONYMY: *Eriophyllum lanosum* (A. Gray) A. Gray. COMMON NAMES: Gray's Woollyleaf; Gray's Woollyleaf; White Easter Bonnets; White Easter-bonnets; White Easterbonnets; White Woolly Eriophyllum; White Woolly Daisy; White Woolly Sunflower; White Woolly Daisy; White Woolly-sunflower; White-flowered Woolly Daisy; Whoolly Daisy; Whoolly Daisy; Woolly Daisy (a name also applied to the genus *Eriophyllum*); Woolly-daisy (a name also applied to the genus *Eriophyllum*); Woolly Eriophyllum (a name also applied to other species); Woolly Fleabane. DESCRIPTION: Terrestrial annual forb/herb (decumbent, ascending and/or erect stems $\frac{3}{4}$ to 8 inches in height); the stems are reddish; the leaves are gray-green; the disk florets may be orange-yellow or yellow; the ray florets are white; flowering generally takes place between early February and mid-May (additional records: two for mid-June and one for mid-November). HABITAT: Within the range of this species it has been reported from mountains; gravelly and pebbly-sandy-silty mesas; along gravelly canyons; rocky slopes; bases of cliffs; bluffs; rocky and gravelly ridges; gravelly foothills; rocky, stony-gravelly and gravelly hills; hilltops; rocky hillsides; rocky, rocky-loamy, cobbly, gravelly, gravelly-sandy and gravelly-loamy slopes; bases of slopes; alluvial fans; bajadas; bouldery and rocky outcrops; amongst rocks; sand hills; gravelly and sandy plains; rocky, gravelly and sandy flats; basins; valley floors; silty valley bottoms; along gravelly, sandy and clayey roadsides; along and in gravelly and sandy arroyos; creekbeds; riverbeds; along and in rocky, gravelly, gravelly-sandy and sandy washes; along (muddy, gravelly-sandy and sandy) banks of arroyos and washes; shores of lakes; gravelly-sand bars; benches; terraces; sandy bottomlands, and disturbed areas growing in dry gravelly desert pavement; bouldery-rocky-gravelly, rocky, rocky-gravelly, rocky-sandy, stony, stony-gravelly, stony-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly-sandy loam, gravelly loam, sandy loam and silty loam ground; clay ground, and pebbly-sandy silty, powdery silty and silty ground, occurring from 500 to 6,800 feet in elevation in the grassland, desertscrub and wetland ecological formations. NOTE: *Antheropeas lanosum* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (recorded as *Eriophyllum lanosum*, color photograph 251), 43 (111109 - *Antheropeas lanosum* Rydb.), 44 (021412 - records located under *Eriophyllum lanosum*), 46 (recorded as *Eriophyllum lanosum* Gray, Page 921), 58, 63 (021412 - color presentation including habitat), 77 (recorded as *Eriophyllum lanosum*, color photograph #19), 85 (021412 - color presentation),

115 (color presentation), 124 (021412 - no record of species or genus), 140 (Page 284 - recorded as *Eriophyllum lanosum* A. Gray)*

Aplopappus cuneatus var. *spathulatus* (see footnote 46 under *Ericameria cuneata* var. *spathulata*)

Aplopappus gracilis (see footnote 46 under *Machaeranthera gracilis*)

Aplopappus laricifolius (see footnote 46 under *Ericameria laricifolia*)

Aplopappus tenuisectus (see footnote 46 under *Isocoma tenuisecta*)

Arida arizonica (see footnote 85 under *Machaeranthera arida*)

***Artemisia ludoviciana* T. Nuttall: White Sagebrush**

COMMON NAMES: Absinthe; Ajenjo [del País] (“[Country] Absinth”, Spanish: New Mexico, Mexico)¹⁴⁰; Altamisa de la Casa (“House Ambrosia”, Spanish: Mexico)¹⁴⁰; Ambf (Otomí); Artemisia (a name also applied to the genus *Artemisia*); Altamiza (Hispanic); Azumate de Puebla (Hispanic); Chamiso Cenizo (Spanish: Mexico)¹⁴⁰; Ch’ilzhóó <ce□ éžih, ce□ ezih > (“Rock Sage”, Athapascan: Navajo)¹⁴⁰; Chíchibo (Uto-Aztecan: Mayo)¹⁴⁰; Cola de Zorrillo (Hispanic); Cud-weed; Cudweed (a name also applied to the genus *Artemisia*); Cudweed Mugwort; Cudweed Sagebrush; Cudweed Sagewort; Cudweed Wormwood; Dark-leaf Mugwort; Dark-leaved Mugwort; Darkleaf Mugwort; Epazote de Castilla; Estafiate <astafiate, estafeate, istafiate> (Spanish: Chihuahua, Coahuila, San Luis Potosi, Sonora)¹⁴⁰; Estomiate (Hispanic); Gray Sagewort; Green Sagewort; Grey Sagewort; Hierba Maestra (Hispanic); Incieso Verde (Hispanic); Istafiate (Hispanic); Iztauhyatl (Náhuatl); J’mpizi (Oto-Manguan: Mazahua)¹⁴⁰; Kamaistra (Popoloca); Ko□sidab [Koósiddúp, Kosedap, Kusedáp] (Uto-Aztecan: Mono)¹⁴⁰; Ko□sidava (Uto-Aztecan: Northern Paiute)¹⁴⁰; Lobed Cud-weed (Iowa); Lobed Cudweed (Iowa); Louisiana Cudweed Sagewort; Louisiana Sage; Louisiana Sagebrush; Louisiana Sagewort; Louisiana Wormwood; Man-sage (English: Montana, translated from Cheyenne name)¹⁴⁰; Mexican White Sagebrush; Mexican Wormwood (subsp. *mexicana*); Mountain Sagewort; Mugwort (a name also applied to the genus *Artemisia*, Kansas); Mugwort Wormwood; Musa, Sanankdam (Uto-Aztecan: Mountain Pima)¹⁴⁰; Native Wormwood; Páakušh (Uto-Aztecan: Luiseño, Juaneño dialect)¹⁴⁰; Popohoppeh (Uto-Aztecan: Shoshoni)¹⁴⁰; Prairie Sage; Prairie-sage; Romerillo (“Little Rosemary”, Spanish: Mexico)¹⁴⁰; Ros’ Sabl’ I (Rarámuri); Rosáberi (Uto-Aztecan: Tarahumara)¹⁴⁰; Sage (a name also applied to the genus *Artemisia*, Minnesota); [Black, Prairie, White] Sage [brush] (English)¹⁴⁰; Sage Brush (a name also applied to the genus *Artemisia*); Sagebrush (a name also applied to the genus *Artemisia*); Sagewort (a name also applied to the genus *Artemisia*); Silver Mugwort; [Mexican] Silver Sage-brush (English: Coahuila)¹⁴⁰; Silver [Mexican] Worm-wood (English)¹⁴⁰; Tavotqa <tavótka> (Uto-Aztecan: Hopi)¹⁴⁰; Tsejintci (“Strong-smelly Sage”, Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Weißer Beifuß (a name also applied to other species, German); Western Mugwort; [Mexican] Western Mugwort (English)¹⁴⁰; Western Sage; Western-sage; White Sage; White Sagebrush; White Sagewort; White Wormwood (Iowa); White-sage; Wild Sage (Meriwether Lewis); Woolly Sage; Worm-seed; Wormseed; Wormwood (a name also applied to the genus *Artemisia*, Kansas, Nebraska, Old World). DESCRIPTION: Terrestrial perennial forb/herb or subshrub (decumbent to erect stems 8 inches to 5 feet in height and may form colonies up to 50 feet in diameter); the foliage is gray, gray-green, silver-green, white or whitish-gray; the flowers may be cream, cream-yellow, greenish, greenish-yellow, white, white-green or yellow, on some plants both the disk and ray flowers are yellow; flowering generally takes place between late May and mid-December (additional records: one for early February, one for mid-March, one for late March, one for early April, one for mid-April and two for late April). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky mountainsides; rocky mesas; plateaus; rock cliffs; cliff faces; bases of cliffs; rocky canyons; along rocky and sandy canyon bottoms; gorges; talus slopes; sandy bottoms of crevices; sandy bases of bluffs; buttes; rocky knolls; ledges; rocky and rocky-clayey ridges; ridgetops; rocky and loamy meadows; foothills; hills; rocky hillsides; bouldery, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-loamy, rocky-loamy, rocky-clayey, shaley-sandy, stony-sandy-clayey, cobbly-loamy, gravelly, gravelly-loamy, sandy-loamy, loamy and silty-clayey slopes; alluvial fans; sandy bajadas; bouldery and rocky outcrops; amongst boulders, rocks and cobbles; bases of boulders and rocks; around ice caves; lava beds; sand dunes; bouldery-sandy debris fans; sandy banks; hilly sandy-loess prairies; plains; gravelly and sandy flats; valley floors; valley bottoms; along railroad right-of-ways; along rocky and sandy roadsides; along sandy arroyos; along bottoms of arroyos; sandy draws; gulches; rocky gullies; ravines; seeps; springs; along streams; streambeds; along creeks; along stony and sandy creekbeds; along rivers; riverbeds; along and in bouldery-rocky-sandy, rocky, cobbly, cobbly-loamy, gravelly, gravelly-loamy and sandy washes; within rocky-sandy, stony-loamy, cobbly-loamy and loamy drainages; along watercourses; bogs; ciénegas; marshes; depressions; (cobbly and silty) banks of gullies, ravines, streams, creeks and rivers; (rocky) edges of washes and ponds; along margins of river banks; (sandy) shores of lakes; sandy beaches; benches; terraces; rocky-sandy and cobbly-loamy bottomlands; floodplains; lowlands; fencerows; along ditches; rocky, rocky-sandy, cobbly and sandy riparian areas, and disturbed areas growing in wet, moist, damp and dry bouldery, bouldery-rocky-sandy, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley-cobbly-sandy, shaley-sandy, stony, cobbly, gravelly and sandy ground; rocky loam, rocky-gravelly loam, rocky-clayey loam, stony loam, cobbly loam, gravelly loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky clay, stony-sandy clay, silty clay and clay ground, and silty ground, occurring from 1,200 to 11,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North

America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop; it was also noted as having been used as a drug or medication, incense and as a ceremonial item and charm. Prairie Sage is browsed by Pronghorn (*Antilocapra americana*); Elk (*Cervus elaphus*); Mule Deer (*Odocoileus hemionus*), and White-tailed Deer (*Odocoileus virginianus*); the Sage-grouse (*Centrocercus minimus*) uses the plant for feed and cover; grasshoppers feed on this plant, and it is the host plant for the Fruit Fly *Eutreta simplex*. The foliage is reportedly aromatic. *Artemisia ludoviciana* is native to central and southern North America. *5, 6, 30, 43 (081110), 44 (050711 - color photograph), 46 (Page 940), 58, 63 (081110 - color presentation), 77 (subsp. *albula* (E.O. Wooton) K. Keck; subsp. *sulcata* (P.A. Rydberg) K. Keck), 85 (050711 - color presentation including habitat), 124 (050711), 127, 140 (Pages 56-57 & 283)*

Aster arenosus (see *Chaetopappa ericoides*)

Aster hirtifolius (see *Chaetopappa ericoides*)

Aster tagetinus (see *Machaeranthera tagetina*)

Aster tanacetifolius (see *Machaeranthera tanacetifolia*)

***Baccharis brachyphylla* A. Gray: Shortleaf Baccharis**

COMMON NAMES: Hairy Baccharis; Short Leaf Baccharis; Short Leaf False Willow; Short Leaved Baccharis; Short-leaf Baccharis; Short-leaf False Willow; Short-leaf False-willow; Short-leaf Seep Willow; Short-leaf Seep-willow; Short-leaved Baccharis; Short-leaved Broom¹⁴⁰; Shortleaf Baccharis; Shortleaf False Willow; Shortleaf False-willow; Shortleaf Seepwillow. DESCRIPTION: Terrestrial perennial subshrub or shrub (erect stems 8 inches to 5 feet in height; plants were observed and described as being 2 feet in height and width, one plant was observed and described as being 24 inches in height and 40 inches in width, one plant was observed and described as being 40 inches in height and width); the branches are green or yellow-green; the leaves are yellow-green; the flower heads may be dull cream, greenish-white or white; flowering generally takes place between mid-August and early November (additional records one for early April and one for late November; flowering beginning in July has also been reported). HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; rocky canyons; bouldery and rocky canyon bottoms; gorges; rocky buttes; foothills; rocky hills; rocky hillsides; bouldery-rocky, rocky, rocky-sandy, gravelly, sandy and clayey-loamy slopes; bajadas; amongst boulders; lava flows; stabilized debris flows; plains; gravelly and sandy flats; rocky roadsides; arroyos; along sandy bottoms of arroyos; rocky draws; gullies; springs; streambeds; along creeks; along and in rocky, shaley, gravelly, gravelly-sandy and sandy washes; in shallow drainages; in drainage ways; (gravelly) banks of arroyos, creeks, rivers, washes and drainages; borders of washes; rocky and sandy beaches; alluvial terraces; floodplains; dams, and gravelly-sandy, sandy and loamy riparian areas growing in moist and dry bouldery, bouldery-rocky, rocky, rocky-sandy, shaley, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, clayey loam and loam ground, and gravelly clay ground, occurring from 900 to 5,800 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Small bees, bombyliids, digger wasps, Great Purple Hairstreak, Snout Butterfly and tarantula hawk wasps have been observed visiting the flowers. *Baccharis brachyphylla* is native to southwest-central and southern North America. *5, 6, 13, 15, 16, 43 (111209), 44 (021412), 46 (Page 883), 58, 63 (021412), 77, 85 (021412 - color presentation), 124 (021412 - no record of species; genus record), 140 (Pages 60 & 283)*

Baccharis glutinosa (see *Baccharis salicifolia*)

***Baccharis salicifolia* (H. Ruiz Lopez & J.A. Pavon) C.H. Persoon: Mule-fat**

SYNONYMY: *Baccharis glutinosa* C.H. Persoon. COMMON NAMES: Azumiate (Hispanic); Ba'asham <baashoma> (Uto-Aztecan: Mountain Pima)¹⁴⁰; Bacho'ma <bachomo> (Uto-Aztecan: Mayo)¹⁴⁰; Bachomo (Hispanic); Baldag Shi (Hispanic); Bašam (Uto-Aztecan: Onavas Pima)¹⁴⁰; Batamote (Spanish: Mexico, Sonora); Batamote [Guatamotie] (Spanish: Baja California, California, Sinaloa, Sonora)¹⁴⁰; Black Willow (a name also applied to other species, Santa Barbara County, California); Broom Baccharis; Caaōj (Hokan: Seri)¹⁴⁰; Čaguši <čagu'si> (Uto-Aztecan: Tarahumara)¹⁴⁰; Chamiso (Hispanic); Chamiso del Rio (Hispanic); Chilca; Cucamoarisha (Cora); Cuerepillo (Hispanic); Dsea Miis Ro (Hispanic); Dsea Miis Tee (Hispanic); False Water Willow; False Water-motie; False Water-wally; False Willow (a name also applied to other species); Gila Water-motie; Gila Water-wally; Gila Water Willow; Gila Willow; Groundsel Tree (a name also applied to the genus *Baccharis*); Groundsel Tree (English)¹⁴⁰; Guachomó <uachama> (Uto-Aztecan: mountain Guarijío)¹⁴⁰; Guagualuasi (Uto-Aztecan: mountain Guarijío)¹⁴⁰; Guamate; Guatamote (Hispanic); Guatemote (Spanish); Guatarote (Hispanic); Hamaséiva (Yuman: Havasupai)¹⁴⁰; Ham□avil (Yuman: Walapai)¹⁴⁰; Hanta Veél (Yuman: Mohave and Yuma)¹⁴⁰; Hierba del Carbonero ("Charcoal Maker's Herb", Spanish: Valley of Mexico)¹⁴⁰; Hierba del Pasma (Spanish); Huamate; Jara ("Arrow", Spanish: Guanajuato, Texas)¹⁴⁰; Jara Amarilla (Hispanic); Jara Mexicana (Hispanic); Jaral (Spanish: Guanajuato, Tamaulipas)¹⁴⁰; Jarilla [Jarillo del Rio] (Little [River] Arrow", Spanish: Chihuahua, Durango, Sinaloa, Sonora)¹⁴⁰; K'idzitso Bi'tsiin Łigai <k'itcoi bicin łagai> (Athapascan: Navajo)¹⁴⁰; KáaW (Seri); Mb'axu (Oto-Manguean: Mazahua)¹⁴⁰; Mule Fat; Mule-fat; Mule's Fat (English: Arizona, New Mexico)¹⁴⁰; Mule's-fat; Mulefat; Mulefat Baccharis; Mulesfat; Ñehol ("Servant", Uto-Aztecan: Tohono O'odham); Ñehol ("Servant", Uto-Aztecan: Tohono O'odham)¹⁴⁰; Oágam ("Brains or Marrow", Uto-Aztecan: Akimel O'odham)¹⁴⁰; Paq'ily <paki> (Uto-Aztecan: Cahuilla)¹⁴⁰; Pogos□v□ (Uto-Aztecan: Kawaiisu)¹⁴⁰; Romerello; Rosin Brush; Seep Willow (a name also applied to other species); Seep Willow Baccharis; Seep-willow (a name also applied to other species); Seep-willow (English)¹⁴⁰; Seep-

willow Baccharis; Seepwillow (a name also applied to other species); Seepwillow Baccharis; Shu' (Chumash: Barbareño and Ineseño Chumash)¹⁴⁰; Sticky Baccharis; Sticky False-willow; Sticky Seep-willow; □u:□k Kuasī <šū:šk, susk, kuagsig> (Uto-Aztecan: Hiá Ce □ O'odham, Sonora)¹⁴⁰; □u□k Ku'agi <šū:šk kuagsig> (Uto-Aztecan: Tohono O'odham)¹⁴⁰; <tle> (Athapascan: Western Apache)¹⁴⁰; Tóeejí Bée'dító <tó□i□'i keǎ'o> (Athapascan: Navajo)¹⁴⁰; Togzten (Hispanic); Tu Ta' Vi (Hispanic); Uachamo (Uto-Aztecan: Mayo, Sonora)¹⁴⁰; Vara Dulce ("Sweet Bush", Spanish: Chihuahua)¹⁴⁰; Wa□lurúbisi <wa□erúgesi> (Uto-Aztecan: Guarijío)¹⁴⁰; Water Motie; Water-motie; Water-motor (California); Water Wally; Water Willow (a name also applied to other species); [False, Gila] Water Willow [Water-motie, Water-Wally] (English)¹⁴⁰; Water-wally; Watermotie; Waterwally; Waterwillow; Willow Groundsel-tree; Willow Leafed Baccharis; Willow-leaf Baccharis; Willow-leaf False-willow; Willow-leafed Baccharis; Willow-leaved Baccharis; Wita' (Chumash: Ventureño Chumash)¹⁴⁰; Xa'tam Mual (Yuman: Paipai)¹⁴⁰; Xantavaiy (Yuman: Maricopa)¹⁴⁰; Yerba del Pasma ("Herb for Pasma" a name also applied to other species, Spanish: Chihuahua)¹⁴⁰. DESCRIPTION: Terrestrial perennial deciduous shrub (clustered ascending and/or erect stems 1 to 15 feet in height; plants were observed and described as being 10 feet in height forming clones 6 to 13 feet in width); the bark is gray; the stems may be green to tan; the leaves may be gray, green or dark green; the disc florets (no ray florets) may be cream, cream-maroon, cream-maroon-purple, cream-white, grayish-white, off white, white, white-magenta, whitish-yellow or yellow; flowering generally takes place between mid-January and mid-November (additional record: one for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky and sandy mesas; bouldery-rocky, rocky and rocky-sandy canyons; sandy canyon bottoms; along rocky, sandy and sandy-silty canyon bottoms; chasms; talus; bases of cliffs; foothills; hills; rocky hillsides; rocky, gravelly, sandy, sandy-loamy, sandy-clayey-loamy clayey-loamy, loamy and clayey slopes; bajadas; amongst rocks; alcoves; sand dunes; plains; rocky-sandy, sandy and clayey flats; valley floors (bolsons); coastal dunes; along railroad right-of-ways; along gravelly-sandy, sandy and sandy-loamy roadsides; along and in rocky and sandy arroyos; clayey bottoms of arroyos; draws; gullies; ravines (barrancas); seeps; gravelly and sandy springs; seeping springs; silty soils along streams; in bouldery-rocky, rocky and sandy streambeds; along and in bouldery creeks; along and in sandy creekbeds; along rivers; along and in rocky, gravelly, sandy and silty riverbeds; along and in bouldery-sandy, rocky, cobbly, gravelly, gravelly-sandy, sandy and silty washes; along and in bouldery-rocky and rocky-clayey drainages; along and in sandy drainage ways; along watercourses; bases of waterfalls; rock tanks; around and in ponds; lakebeds; playas; ciénegas; freshwater and saltwater marshes; swampy areas; depressions; along (sandy) banks of arroyos, springs, streams, streambeds, creeks, rivers, washes and pools; borders of washes; along (sandy, sandy-silty and clayey) edges of springs, streams, creeks, rivers, washes, ponds, lakes, playas and saltmarshes; along (clayey-loamy) margins of streams, washes and lakes; (rocky-sandy and sandy) shores of rivers and lakes; mudflats; gravel and sand bars; sandbanks; shell-mantled beach ridges; rocky and sandy beaches; sandy benches; bouldery-gravelly-sandy terraces; gravelly and sandy bottomlands; sandy floodplains; lowlands; along dikes; along dam outlets; margins of stock tanks (charcos); reservoirs; along canals; along ditches; muddy, rocky-gravelly-sandy, rocky-sandy and sandy riparian areas, and disturbed areas growing in shallow water and wet, moist, damp and dry ground in bouldery, bouldery-rocky, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-gravelly-sandy, rocky-sandy, shaley, cobbly, cobbly-loamy, gravelly, gravelly-sandy and sandy ground; sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky clay, silty clay and clay ground, and sandy silty and silty ground, occurring from sea level to 7,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop; it was also noted as having been used as tools, as a drug or medication and as a commodity used in personal hygiene (the leaves were used in a hair wash solution to prevent baldness). Seep Willow is useful in controlling watercourse erosion and slowing stream flow. Bees and butterflies have been observed visiting the flowers. *Baccharis salicifolia* is native to southwest-central and southern North America; Central America, and South America. *5, 6, 13 (recorded as *Baccharis glutinosa* Pers., Page 335), 15 (recorded as *Baccharis glutinosa* Pers.), 16, 28 (recorded as *Baccharis glutinosa*, color photograph 264), 30, 43 (111209), 44 (051111), 46 (recorded as *Baccharis glutinosa* Pers., Page 884), 48 (recorded as *Baccharis glutinosa*), 58 (recorded as *Baccharis glutinosa* Pers.), 63 (021512 - color presentation), 68, 77, **85** (021612 - color presentation), 115 (color presentation), 124 (051111), 127, 134, 140 (Pages 57-59, 60 & 283)*

***Baccharis sarothroides* A. Gray: Desertbroom**

COMMON NAMES: A:n <'a:ñ> (Uto-Aztecan: Tohono O'odham)¹⁴⁰; Amargo; Batamote <guatamote, huatemote> (Spanish: Mexico)¹⁴⁰; Broom Baccharis; Broom Seep Willow; Broom Seep-willow; Caasot Caocl (Seri); Casol Caacöl (Hokan: Seri)¹⁴⁰; Desert Broom; Desert Broom False Willow; Desert Broom False-willow; Desert-broom (English: Arizona, New Mexico)¹⁴⁰; Desert-broom False Willow; Desert-broom False-willow; Desertbroom; Desertbroom Baccharis; Escoba; Escoba Amarga ("Bitter Broom", Spanish: Baja California)¹⁴⁰; Grease-wood (a name also applied to other species); Grease-wood (English)¹⁴⁰; Greasewood (a name also applied to other species); Groundsel (a name also applied to other species and the genus *Baccharis*); Hierba del Pasma ("Herb for Pasma", Spanish: Baja California)¹⁴⁰; □I:x'wír (Yuman: Cocopa)¹⁴⁰; Mexican Broom; Romerillo ("Little Rosemary", Spanish: Sonora)¹⁴⁰; Rosin Brush; Rosin Bush (a name also applied to other species); Rosin-brush (a name also applied to other species); Rosinbrush (a name also applied to other species); Shooshk Vakch ("Wet Shoes", Pima); Shuushk Vakchk ("Wet Sandals/Shoes", Uto-Aztecan: Akimel O'odham)¹⁴⁰; Soosk Vaks ("Wet Shoes", questionably Maricopa); □u□k Kuagi <su:sk, □u□k kuagig> (Uto-Aztecan: Hiá Ce □ O'odham, Sonora)¹⁴⁰; □u□k Wakc <□uu□k wakchk, šū:šk uwakita> (Uto-Aztecan: Tohono O'odham)¹⁴⁰; Wet Shoes. DESCRIPTION: Terrestrial perennial deciduous shrub (erect stems 3 to 13 feet in height; one plant was observed and described as being 40 inches in height and 40 inches in width, one plant was observed and described as being 7 feet in height and 8 feet in width); the foliage is green or yellow-green; the flower heads

(dioecious) may be cream, golden, rust, white or yellow; flowering generally takes place between mid-September and late February (additional records: one for mid-March, two for late March, two for mid-April, one for late April, one for mid-July, one for early August and one for late August). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rocky canyons; canyon bottoms; chasms; ridges; foothills; silty-clayey hills; rocky hillsides; bouldery-gravelly, rocky, gravelly-loamy and loamy slopes; bajadas; debris fans; terraces; sandy plains; rocky and gravelly flats; rocky valley floors; coastal plains; along rocky, rocky-gravelly-sandy-clayey-loamy, rocky-gravelly-sandy-silty-clayey-loamy, gravelly-loamy and sandy roadsides; along sandy arroyos; along sandy and clayey bottoms of arroyos; draws; gulches; gullies; springs; along streams; streambeds; along gravelly-sandy creeks; gravelly and sandy creekbeds; along rivers; along bouldery-cobbly-sandy, rocky-sandy, gravelly and sandy riverbeds; along and in cobbly, gravelly and sandy washes; along drainages; along drainage ways; waterholes; playas; ciénegas; oases; along (gravelly and sandy) banks of arroyos, rivers and washes; borders of washes; edges of washes; sandy beaches; sandy benches; terraces; bottomlands; floodplains; lowlands; mesquite bosques; along canals; along ditches; muddy and sandy riparian areas, and disturbed areas growing in muddy and damp and dry bouldery-cobbly-sandy, bouldery-gravelly, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy-clayey loam, rocky-gravelly-sandy-silty-clayey loam, gravelly loam and loam ground; silty clay and clay ground, and sandy silty ground, occurring from sea level to 6,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, consider planting only male plants to eliminate seed production. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial beverage and/or fiber crop; it was also noted as having been used in the making of weapons and as a drug or medication. The pollen produced by male plants of this species may cause an allergic reaction in some individuals. *Baccharis sarothroides* is native to southwest-central and southern North America. *5, 6, 13 (Pages 338, 339-340), 15, 16, 18, 26 (color photograph), 28 (color photograph 265), 43 (111209), 44 (033111), 46 (Page 883), 48, 58, 63 (021712), 77, **85** (021712 - color presentation including habitat), 115 (color presentation), 124 (033111 - no record of species; genus record), 127, 140 (Pages 59-60, 79, 87 & 283), **ADS** (Tuesday, January 10, 2012, "Broom nothing to sneeze at," page A1), **WTK** (August 4, 2005)*

***Baccharis thesioides* K.S. Kunth: Arizona Baccharis**

COMMON NAMES: Arizona Baccharis; Arizona False Willow; Broom¹⁴⁰; Batamote de Monte¹⁴⁰; Hierba del Pasm¹⁴⁰; Mogollon Baccharis. DESCRIPTION: Terrestrial perennial subshrub (ascending and/or erect stems 1 to 6½ feet in height); the stems may be red; the foliage is dark green; the flowers (dioecious) may be cream, cream-white, pale green or white; flowering generally takes place between late July and mid-November (additional record: one for late April). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; cliffs; bases of cliffs; rock walls; rocky canyons; canyon bottoms; rocky ridges; openings in woodlands; foothills; rocky hillsides; escarpments; bedrock, rocky and clayey-loamy slopes; amongst boulders; on rocks; banks; rocky roadcuts; rocky roadsides; bottoms of arroyos; rocky draws; barrancas; in springs; along streams; along and in bouldery streambeds; along washes; banks of streams; riparian areas, and disturbed areas growing in shallow water and moist and dry bouldery and rocky ground and gravelly loam, clayey loam and loam ground, occurring from 3,600 to 8,200 feet in elevation in the forest, woodland, scrub, grassland and wetland ecological formations. NOTE: *Baccharis thesioides* is native to southwest-central and southern North America. *5, 6, 15, 43 (012011), 44 (012011 - no record of species), 46 (Page 883), 63 (012011), **85** (012211 - color presentation of dried material), 124 (012011 - no record of species; genus record), 140 (Pages 60 & 283)*

Baeria chrysostoma (see *Lasthenia californica* subsp. *californica*)

Baeria chrysostoma var. *gracilis* (see *Lasthenia californica* subsp. *californica*)

***Bahia absinthifolia* G. Bentham: Hairyseed Bahia**

COMMON NAMES: Bahia (a name also applied to the genus *Bahia*); Hairyseed Bahia. DESCRIPTION: Terrestrial perennial forb/herb (erect stems 4 inches to 2 feet in height; plants were observed and described as being 12 to 18 inches in height and width); the herbage may be gray, gray-green, light green, silvery-gray-green or white woolly; the disk florets may be orange, orange-yellow or yellow; the ray florets are yellow; flowering generally takes place between mid-March and mid-November). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy mesas; sandy-loamy plateaus; cliff faces; rocky canyons; talus; shaley ridges; rocky ridgetops; foothills; clayey hills; rocky hillsides; bouldery escarpments; bedrock, rocky, rocky-gravelly, rocky-loamy, gravelly, clayey and silty-clayey slopes; alluvial fans; gravelly and sandy bajadas; gravelly pediment fans; rocky outcrops; amongst creosote bushes; sand dunes; sandy banks; plains; gravelly and sandy flats; basins; rocky and sandy valley floors; along rocky and sandy roadsides; within arroyos; clayey bottoms of arroyos; draws; gullies; within gravelly and sandy washes; swales; banks of ravines; terraces; floodplains; lowlands; riparian areas, and disturbed areas growing in dry rocky desert pavement; bouldery, rocky, rocky-gravelly, shaley, gravelly and sandy ground; rocky loam and sandy loam ground; silty clay and clay ground, and sandy silty ground, occurring from 1,800 to 8,800 feet, in elevation in the woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Bahia absinthifolia* is native to southwest-central and southern North America. *5, 6, 16, 28 (color photograph 395), 43 (111309), 44 (051111 - no listing under Common Names), 46 (Page 925), 63 (021712 - color presentation), 77 (color photograph #16), **85** (021712 - color presentation including habitat), 115 (color presentation), 124 (051111 - no record of species; genus record), 140 (Page 283 - recorded as *Bahia absinthifolia* var. *dealbata* (A. Gray) A. Gray)*

***Baileya multiradiata* W.H. Harvey & A. Gray ex A. Gray: Desert Marigold**

SYNONYMY: *Baileya multiradiata* W.H. Harvey & A. Gray ex A. Gray var. *thurberi* (P.A. Rydberg) M.T. Kittell. COMMON NAMES: *Baileya del Desierto*; Cloth-of-gold; Desert *Baileya*; Desert Marigold (a name also applied to the genus *Baileya*); Desert-marigold (a name also applied to the genus *Baileya*); Hierba Amarilla (Spanish); Many-flowered Desert Marigold; Many-flowered Desert-marigold; Many-ray Desert-marigold; Many-rayed Desert-marigold; Paper Daisy (a name also applied to other species); Paper Flower Desert-marigold; Paper-flower Desert-marigold; Paperdaisy; Showy Desert Marigold; Showy Desert-marigold; Wild Desert-marigold; Wild Marigold (a name also applied to other species). DESCRIPTION: Terrestrial annual, biennial or perennial forb/herb (ascending and/or erect stems 6 to 40 inches in height); the foliage may be gray-green, gray-white-green, grayish and woolly or silvery-green; the flower heads (1½ to 2 inches in width) may be lemon-yellow, orange, light yellow or yellow; flowering generally takes place between mid-January and late December but may continue year round under favorable conditions. HABITAT: Within the range of this species it has been reported from mountains; rocky and sandy mesas; rocky plateaus; rocky and sandy canyons; sandy pockets of soil in rocks; rocky bluffs; buttes; bedrock and sandy ridges; foothills; rocky, gravelly and gravelly-sandy hills; rocky, rocky-gravelly, sandy-clayey and clayey hillsides; rocky hilltops; rocky, stony-gravelly-sandy, cindery, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy and sandy-clayey slopes; rocky-sandy alluvial fans; bajadas; amongst rocks; sand hills; sand dunes; sandy embankments; bench tops; terraces; prairies; gravelly and sandy plains; gravelly, sandy and sandy-loamy flats; rocky bowls; valley floors; along gravelly, gravelly-sandy, sandy and sandy-loamy roadsides; within stony-gravelly-sandy arroyos; bottoms of arroyos; stony and gravelly draws; along streams; sandy streambeds; sandy creekbeds; along rivers; rocky riverbeds; within rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; depressions; swales; (sandy) banks of rivers and washes; borders of washes; (gravelly) edges of washes; benches; gravelly terraces; sandy and loamy bottomlands; floodplains; ditch banks; riparian areas, and disturbed areas growing in damp and dry rocky, rocky-gravelly, rocky-sandy, stony, stony-gravelly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-clayey loam, sandy loam and loam ground, and gravelly clay, sandy clay and clay ground, occurring from sea level to 7,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial fiber crop; it was also noted as being a commodity used in personal hygiene. The larva of the the Desert Marigold Moth (*Schinia minima*) uses the flower head in its development. Consider seeding Desert Marigold with native Lupines (*Lupinus* spp.) and Globemallows (*Sphaeralcea* spp.) for a late winter and early spring desert wildflower display. *Baileya multiradiata* is native to southwest-central and southern North America. *5, 6, 15, 16, 18, 28 (color photograph 397), 43 (111309), 44 (051111), 46 (“It is said that horses crop the heads, but fatal poisoning of sheep and goats eating this plant on overgrazed ranges has been reported.”, Page 915), 48, 58, 63 (021712 - color presentation including habitat), 68 (“Desert *Baileya*, either fresh or dried, is poisonous to sheep and goats, but not to horses or cattle. The plant is not palatable to sheep, but the showy flower heads are relished, however, the flowering and fruiting heads are nearly twice as poisonous as the green leaves. Goats evidently do not graze the plant under range conditions, but have been poisoned in experimental feeding. Sheep losses from Desert *Baileya* have occurred in Arizona when green forage is scarce.”), 77 (color photograph #17), 80 (This plant is listed as a Secondary Poisonous Range Plant. “The toxic principle is an unknown water-soluble compound. Plants are toxic to sheep on the range in both the green and dry state. ... Goats have been poisoned by experimental feeding but apparently do not eat the plant on the range. Both cattle and horses graze the plant on the range but no losses have been observed. Losses generally occur only when other feed is short or animals are trailed through dense stands.” See text for additional information.), 85 (021812 - “*Baileya multiradiata* is reportedly toxic to livestock, especially to sheep and goats, where losses as high as 25% have been reported on overgrazed rangeland in Texas (D. W. Hill et al. 1979, 1980). Cattle and horses seem to be unaffected, or at least poisoning of these animals has gone unreported. The chemical agent responsible is believed to be hymenoxon, a sesquiterpene lactone originally found in the genus *Hymenoxys*, where it is also toxic.”, color presentation), 86 (color photograph), 115 (color presentation), 124 (051111 - no record of genus or species), 127, HR*

Baileya multiradiata var. *multiradiata* (see *Baileya multiradiata*)

Baileya multiradiata var. *thurberi* (see *Baileya multiradiata*)

***Bebbia juncea* (G. Bentham) E.L. Greene: Sweetbush**

COMMON NAMES: Chuckwalla Delight; Chuckwalla’s Delight; Junco; Rush *Bebbia*; Rush Sweet Bush; Rush Sweetbush; Rush Sweetbush; Sweetbush (a name also applied to the genus *Bebbia*). DESCRIPTION: Terrestrial perennial subshrub or shrub (16 inches to 5 feet in height); the older stems are brown; the younger stems and leaves are green; the flowers (½ inch in width - disk flowers only, no ray flowers) may be cream, gold, golden-yellow, orange, orange-yellow, yellow or yellow-orange; flowering may take place throughout the year. HABITAT: Within the range of this species it has been reported from mountains; mountain summits; rocky mountainsides; rocky-sandy and sandy mesas; plateaus; cliffs; rocky cliff faces; rocky canyons; rocky canyon walls; rocky and rocky-sandy canyon bottoms; rocky bluffs; buttes; sandy-loamy ridges; foothills; bouldery and rocky hills; rocky hillsides; bouldery, bouldery-gravelly, rocky, rocky-gravelly, rocky-loamy, shaley, gravelly and sandy slopes; bouldery-stony-gravelly-sandy alluvial fans; bajadas; amongst boulders and rocks; plains; gravelly and sandy flats; sandy valley floors; beach dunes; coastal terraces; coastlines; along gravelly roadsides; within rocky-gravelly arroyos; sandy bottoms of arroyos; rocky and sandy draws; within rocky gulches; bottoms of gulches; rocky gullies; silty springs; along streams; along

creeks; sandy creekbeds; along rivers; sandy riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; drainages; sandy drainage ways; (bouldery gravelly-sandy) banks of rivers and washes; edges of streams, rivers, washes and ponds; margins of arroyos; (bouldery and sandy) shores of rivers and lakes; rocky, rocky-sandy, gravelly and sandy beaches; sandy terraces; sandy-loamy floodplains; canals; canal banks; rocky riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-stony-gravelly-sandy, bouldery-gravelly, rocky, rocky-sandy, shaley, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, sandy loam, clayey loam and silty loam ground, and silty ground, occurring from sea level to 6,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The flowers are reportedly sweet-scented. *Bebbia juncea* is native to southwest-central and southern North America. *5, 6, 13, 16, 43 (061409), 44 (051111 - color photograph), 46 (Page 912), 63 (111309 - color presentation), **85** (111309 - color presentation), 115 (color presentation), 124 (051111 - no record of genus or species), 140 (Page 85)*

***Bebbia juncea* (G. Bentham) E.L. Greene var. *aspera* (G. Bentham) E.L. Greene: Sweetbush**

COMMON NAMES: Chuckwalla Delight; Chuckwalla's Delight (a name also applied to the species); Junco; Rough Sweet Bush; Rough Sweet-bush; Rough Sweetbush; Rush Bebbia (a name also applied to the species); Sweetbush (a name also applied to the species and to the genus *Bebbia*); Sweetbush Bebbia. DESCRIPTION: Terrestrial perennial subshrub or shrub (16 inches to 5 feet in height, one plant was described as being 20 inches in height and 26 inches in width); the older stems are brown; the younger stems and leaves are green; the flowers (½ inch in diameter: disk flowers only, no ray flowers) may be cream, gold, golden-yellow, orange-yellow or yellow; flowering may take place throughout the year. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; sandy mesas; rocky cliff faces; rocky-sandy canyons; rocky bluffs; buttes; foothills; bouldery and rocky hills; rocky and gravelly hillsides; rocky, shaley and sandy slopes; bajadas; bouldery outcrops; amongst boulders; sand dunes; sandy plains; gravelly and sandy flats; sandy valley floors; beach dunes; along gravelly and sandy roadsides; sandy arroyos; bottoms of arroyos; sandy draws; springs; along streams; along creeks; along rivers; riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; within rocky and gravelly drainages; within drainage ways; (stony and gravelly-sandy) banks of river and washes; (bouldery-sandy) edges of streams, rivers, washes, ponds and lakes; sand bars; rocky, rocky-sandy, gravelly and sandy beaches; sandy benches; sandy terraces; sandy-loamy floodplains; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-sandy, rocky, rocky-sandy, shaley, cobbly, gravelly, gravelly-sandy and sandy ground; sandy loam, clayey loam and silty loam ground, and silty ground, occurring from sea level to 6,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The flowers are reportedly sweet-scented. *Bebbia juncea* var. *aspera* is native to southwest-central and southern North America. *5, 6, 13, 15, 43 (061409), 44 (051311 - photograph), 46 (Page 912), 63 (051311 - color presentation), 77, **85** (051311 - color presentation of dried material), 115 (species), 124 (051311 - no record of genus, species or variety)*

***Bidens leptoccephala* E.E. Sherff: Fewflower Beggarticks**

COMMON NAME: Acahual [Acuahualillo] (Spanish: Mexico)¹⁴⁰; Aceitilla ("Little Oily One", Spanish: Edo. México, San Luis Potosí)¹⁴⁰; Bur Marigold (a name also applied to the genus *Bidens*); Bur Marigold (English)¹⁴⁰; Bur-marigold (a name also applied to the genus *Bidens*); Ch'il Hosh (Athapascan: Navajo)¹⁴⁰; Few-flower Beggar Ticks; Few-flower Beggar-ticks [Fewflower Beggarticks] (a name also applied to other species, English)¹⁴⁰; Few-flower Beggarticks; Fewflower Beggarticks; Mozote (a name also applied to other species, Spanish: Mexico)¹⁴⁰; Saitilla (Spanish); Tickseed (a name also applied to the genus *Bidens*). DESCRIPTION: Terrestrial annual forb/herb (4 inches to 3 feet in height); the leaves are medium green; the disk florets may be white (rarely), whitish, yellow or yellowish; small ray florets may be white (rarely), whitish, yellow or yellowish; flowering generally takes place between mid-August and early November. HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky canyons; along sandy canyon bottoms; pockets of soil in boulders; meadows; hills; along gravelly hillsides; rocky, gravelly and silty-loamy slopes; bajadas; bedrock outcrops; amongst gravels and sands; gravelly flats; valley floors; along rocky-clayey roadsides; gravelly arroyos; rocky draws; along streams; along streambeds; along creeks; along creekbeds; along rivers; along and in gravelly, gravelly-sandy, sandy and clayey washes; along drainages; swales; (silty) banks of creeks and rivers; (rocky) edges of streams; sand bars; gravelly benches; terraces; floodplains; mesquite bosques; riparian areas, and waste places growing in moist and dry bouldery, rocky, gravelly, gravelly-sandy and sandy ground; sandy loam and silty loam ground; rocky clay and clay ground, and sandy silty and silty ground, occurring from 1,600 to 8,000 feet in elevation in the forest, woodland; scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Bidens leptoccephala* is native to southwest-central and southern North America. *5, 6, 15, 43 (061409), 44 (021812 - no record of species; genus record), 46 (Page 911), 58, 63 (021812 - color presentation), **85** (021812 - color presentation), 124 (021812 - no record of species; genus record), 140 (Pages 60-61 & 283)*

***Brickellia baccharidea* A. Gray: Resinleaf Brickellbush**

COMMON NAMES: Baccharis-leaf Brickellia; Baccharisleaf Brickellbush; Brickell-bush; Brickellbush; Resinleaf Brickellbush. DESCRIPTION: Terrestrial perennial subshrub or shrub (18 inches to 8¼ feet in height; one plant was observed and described as being 8¼ feet in height and width); the leaves are green; the flowers are pale yellow with a green tinge; flowering generally takes place between mid-September and late November. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; cliff faces; shaded canyons; bases of cliffs; crevices in boulders; bedrock and rocky ridges; foothills; hills; rocky-clayey and cobbly hillsides; bouldery-rocky-sandy and rocky slopes; rocky outcrops; amongst boulders; gravelly road banks; draws; riverbeds; clayey washes; within drainages; rocky waterholes, and riparian areas growing

in dry bouldery, bouldery-rocky-sandy, rocky, cobbly, gravelly and sandy ground and rocky clay and clay ground, occurring from 500 to 5,800 feet in elevation in the woodland, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Brickellia baccharidea* is native to southwest-central and southern North America. *5, 6, 13, 15, 43 (063010), 46 (Page 849), 48 (genus), 58, 63 (063010), 77, **85** (080810 - color presentation of dried material), 140 (Page 283)*

***Brickellia californica* (J. Torrey & A. Gray) A. Gray (var. *californica* is the variety reported as occurring in Arizona): California Brickellbush**

COMMON NAMES: ‘Azee’ Dich’íízh <□aze□ dičíž> (Athapascan: Navajo)¹⁴⁰; Bił Háách’i <bilha.zef’n> (“Its Scent is Carried on the Breeze”, Athapascan: Navajo)¹⁴⁰; Brickellbush (a name also applied to the genus *Brickellia*); [California] Bricklebush [Brickellbush] (English)¹⁴⁰; California Boneset; California Brickle-bush; California Brickelbush; California Brickell Bush; California Brickell-bush; California Brickellbush; California Brickellia; California Bricklebush; California Tasselflower; Canyon Bricklebush; False Boneset (a name also applied to the genus *Brickellia*); False Boneset (English)¹⁴⁰; Hamula (“Hooked”, Spanish: Mexico)¹⁴⁰; Hierba <yerba> de la Vaca (“Cow Herb”, Spanish: New Mexico, Mexico, Baja California)¹⁴⁰; Kwaq Impal (Yuman: Paipai)¹⁴⁰; Pachaba (Spanish: Arizona)¹⁴⁰; Patcavu (Uto-Aztecan: Hopi)¹⁴⁰; Prodigiosa (“Marvelous” a name also applied to other species, Spanish: Mexico)¹⁴⁰; Tségháá’adixsas <cek’i.n□alcizi> (Athapascan: Navajo)¹⁴⁰. DESCRIPTION: Terrestrial perennial subshrub or shrub (stems (branched from near base) 1 to 7 feet in height; plants were observed and described as being 28 inches in height and width, plants were observed and described as being 28 inches in height and 5 feet width, plants were observed and described as being 40 inches in height and width, plants were observed and described as being 40 inches in height and 80 inches in width); the branches may be gray or white; the leaves may be gray-green, dark green or green tinged with dark purple; the florets may be cream, cream-pink, cream-white, greenish, greenish-yellow, red-purple, white, yellow, pale yellow-green, yellow-green or pale yellowish; flowering generally takes place between early July and early December. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mountainsides; mesas; mesa rims; bases of mesas; plateaus; rocky rims; along rocky cliffs; hanging gardens; bases of cliffs; along bouldery-sandy, rocky and gravelly canyons; rocky-sandy canyonsides; rocky bases of canyon walls; along bouldery, rocky, rocky-gravelly and rocky-sandy-silty canyon bottoms; rock clefts; rocky gorges; bouldery and rocky talus slopes; (sandy) crevices in bedrock, boulders and rocks; along bluffs; buttes; rocky ledges; rocky and rocky-clayey ridges; sandy ridgetops; bouldery ridgelines; openings in forests and chaparral; rocky-sandy rims of craters; foothills; rocky hills; rocky and rocky-sandy hillsides; escarpments; rocky, rocky-clayey, rocky-clayey-loamy, shaley, stony-loamy, cindery, gravelly, gravelly-clayey, sandy, sandy-clayey, sandy-silty-loamy, loamy, clayey and clayey-loamy slopes; sandy alluvial fans; bajadas; bouldery and rocky outcrops; bases of rock outcrops; amongst boulders, rocks and cobbles; bases of rocks; lava flows; lava fields; lava beds; sand dunes; rocky banks; debris flows; rocky, cindery and sandy flats; valley floors; along rocky and rocky-shaley roadsides; along and in gravelly arroyos; rocky bottoms of arroyos; draws; rocky ravines; seeps; bouldery, gravelly, gravelly-sandy and sandy springs; along streams; along and in bouldery-rocky, rocky-cobbly and gravelly streambeds; along creeks; along and in rocky-sandy and sandy creekbeds; along rivers; in gravelly riverbeds; along and in rocky, rocky-sandy, cobbly, gravelly and sandy washes; bouldery drainages; along rocky drainage ways; bogs; ciénegas; (rocky) banks of arroyos, ravines, rivers and washes; borders of washes; along (gravelly-sandy) edges of rivers and washes; (sandy) margins of creeks; gravelly-sandy and sandy beaches; benches; terraces; floodplains; muddy, rocky, sandy and sandy-clayey riparian areas, and disturbed areas growing in muddy and damp and dry bouldery, bouldery-rocky, bouldery-sandy, rocky, rocky-shaley, rocky-cobbly, rocky-gravelly, rocky-sandy, shaley, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-clayey loam, stony loam, gravelly loam, sandy-silty loam, clayey loam and loam ground; rocky clay, gravelly clay, sandy clay and clay ground, and rocky-sandy silty ground, occurring from sea level to 9,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food/beverage crop (the leaves were used as a substitute for tea); it was also noted as having been used as a drug or medication. *Brickellia californica* is native to southwest-central and southern North America. *5, 6, 13 (Pages 346-347), 15, 16, 43 (111409), 44 (021912 - color presentation), 46 (Page 849), 48 (genus), 58, 63 (021912 - color presentation), 77, **85** (012111 - color presentation), 124 (021912), 127, 140 (Pages 62-63 & 283)*

***Brickellia coulteri* A. Gray: Coulter’s Brickellbush**

SYNONYMY: *Brickellia coulteri* A. Gray var. *coulteri*. COMMON NAMES: Brickellbush (a name also applied to the genus *Brickellia*); Coulter Brickellbush; Coulter’s Brickellbush. DESCRIPTION: Terrestrial perennial subshrub or shrub (stems (branched from base) 1 to 5 feet in height); the florets may be cream, cream-maroon-purple, cream-purple, cream-white, cream-yellow, green, greenish-yellow, purplish, purplish-brown, white, yellow, pale yellow-green (often tinged with purple) or yellow-green; flowering generally takes place between late January and late December. HABITAT: Within the range of this species it has been reported from bouldery mountains; rocky and gravelly-sandy mountainsides; mesas; cliffs; cliff faces; bases of rocky cliffs; rocky and rocky-sandy canyons; along rocky canyon bottoms; rocky talus slopes; crevices in rocks; rocky ledges; rocky ridges; clearings in woodlands; foothills; rocky hills; gravelly-clayey-loamy hilltops; rocky hillsides; bedrock, rocky and gravelly slopes; bajadas; rocky outcrops; amongst boulders and rocks; plains; flats; basins; valley floors; roadcuts; along roadsides; rocky, gravelly and sandy arroyos; rocky and sandy bottoms of arroyos; rocky draws; rocky walls of ravines; springs; along streams; along bouldery and bouldery-rocky streambeds; along rivers; riverbeds; along and in rocky, rocky-gravelly, gravelly, gravelly-sandy, gravelly-loamy and sandy washes; rocky and pebbly drainages; bouldery and rocky drainage ways; around waterholes;

along (sandy and silty-loamy) banks of streams, washes and drainages; borders of washes; (rocky) edges of rivers, riverbeds and washes; along (rocky and sandy) margins of arroyos; bottomlands; floodplains; mesquite woodlands; rocky and gravelly-sandy riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy, pebbly and sandy ground; gravelly loam, gravelly-clayey loam, sandy loam, silty loam and loam ground, and rocky clay ground, occurring from sea level to 5,000 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The flowers are reported to be fragrant. *Brickellia coulteri* is native to southwest-central and southern North America. *5, 6, 13, 15, 16, 28 (color photograph 458), 43 (111409), 44 (021912 - no record of species; genus record), 46 (Page 849), 48 (genus), 58, 63 (021912), 77, **85** (021912 - color presentation), 115 (color presentation), 124 (021912 - no record of species; genus record), 140 (Pages 63 & 283 - recorded as *Brickellia coulteri* A. Gray var. *coulteri*)*

Brickellia coulteri var. *coulteri* (see *Brickellia coulteri*)

***Carphochaete bigelovii* A. Gray: Bigelow's Bristlehead**

COMMON NAME: Bristlehead; Bigelow Bush; Bigelow's Bristlehead. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (erect stems 4 to 40 inches in height); the stems are reddish-brown; the leaves are grayish-green; the disk flowers are pinkish or white; the ray flowers may be creamy-white, pale lavender, lavender, light pink, pink, pink-white, pinkish-white, pale purple, pale violet, white, white-pale lavender or whitish; flowering generally takes place between mid-February and early June (additional records: one for late June, one for early July and two for early August; flowering beginning as early as January and ending as late as July has been reported.) HABITAT: Within the range of this species it has been reported from mountains; rocky-loamy peaks; mesas; cliffs; rocky canyons; canyon bottoms; talus slopes; crevices in boulders and rocks; rock ledges; rocky and gravelly ridges; foothills; rocky hills; rocky, rocky-gravelly and gravelly hillsides; escarpments; rocky, rocky-sandy, rocky-loamy, rocky-silty-loamy, gravelly and sandy slopes; bouldery and rocky outcrops; bases of rocky outcrops; amongst rocks; bases of rocks; rocky flats; gravelly roadcuts; roadsides; arroyos; rocky draws; ravines; creekbeds; drainages, and riparian areas growing in moist and dry bouldery, rocky, rocky-gravelly, shaley, gravelly and sandy ground; rocky loam, rocky-silty loam and gravelly loam ground, and gravelly silty ground, occurring from 2,300 to 7,500 feet in elevation in the forest, woodland, scrub, grassland and wetland ecological formations. NOTES: This plant is browsed by deer. *Carphochaete bigelovii* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph 640), 43 (022511), 44 (022511 - no record of species), 46 (Page 846), 63 (022511 - color presentation), **85** (022611), 124 (022511 - no record of species), 140 (Page 284)*

***Chaetopappa ericoides* (J. Torrey) G.L. Nesom: Rose Heath**

SYNONYMY: *Aster arenosus* (A.A. Heller) S.F. Blake; *Aster hirtifolius* S.F. Blake; *Leucelene ericoides* (J. Torrey) E.L. Greene. COMMON NAMES: Baby Aster; Baby White Aster; Baby Whiteaster; Heath Least-daisy; Heath Least-daisy; Heath-leaved Chaetopappa; Heath Leastdaisy; Rose Heath; Rose Heath Aster (a name also applied to the genus *Chaetopappa*); Rose-heath; Roseheath; Sand Aster; Sya:yahkya Udeya ("Gnat Flower" and also known as "Snowbird Medicine", Zuni); Smallflower Aster (a name also applied to other species); White Aster (a name also applied to other species and the genus *Chaetopappa*). DESCRIPTION: Terrestrial perennial forb/herb or subshrub (erect stems 1 to 8 inches in height; plants were observed and reported as being 4 inches in height and width, patches 10 feet in diameter were observed and reported); the foliage is gray-green; the disc florets may be orange or yellow; the ray florets may be blue, pink, pink-purple, pink-white, pinkish-lavender, purple, white or whitish; flowering generally takes place between early March and late October (additional record: flowering ending as late as November has been reported). HABITAT: Within the range of this species it has been reported from rocky mountains; shaley mountaintops; rocky, rocky-clayey, stony, gravelly, sandy, sandy-clayey, sandy-silty, clayey and clayey-loamy mesas; rocky-sandy plateaus; along rocky rims of canyons; bouldery summits of cliffs; rocky-gravelly and shaley cliffs; bases of cliffs; along rocky, cobbly-sandy and sandy canyons; along canyon walls; cobbly-sandy and sandy canyon bottoms; scree slopes; rocky and sandy talus slopes; pockets of sandy soil in bedrock and rocks; rocky, gravelly and pebbly bluffs; rocky-clayey tops of buttes; rocky hogbacks; shaley knolls; ledges; along rocky, gravelly and sandy ridges; rocky ridgetops; clearings and openings in forests and woodlands; meadows; cindery cinder cones; sandy and clayey-loamy foothills; rocky, rocky-sandy-loamy, stony, gravelly and clayey hills; sandy hilltops; rocky, shaley and gravelly-loamy hillsides; gravelly-loamy bases of hills; bouldery escarpments; bouldery-sandy, rocky, rocky-shaley-gravelly-clayey, rocky-gravelly, rocky-sandy, rocky-sandy-clayey, rocky-loamy, rocky-clayey, shaley, shaley-sandy, shaley-clayey, stony, stony-cobbly, stony-cobbly-sandy-clayey, stony-sandy, stony-loamy, cobbly, cindery, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey, gravelly-silty-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy, loamy, clayey, clayey-loamy and silty slopes; alluvial fans; bajadas; rocky and clayey outcrops; amongst boulders, rocky boulder fields; rocks and gravels; sandy lava flows; lava beds; sand dunes; blow-sand deposits; banks; gravelly and sandy-loamy benches; sandy terraces; rocky mounds; shaley barrens; sandy steppes; rocky, rocky-clayey-loamy, gravelly, gravelly-sandy and sandy prairies; sandy, sandy-loamy, clayey and clayey-loamy plains; stony, cobbly-sandy, cindery-gravelly, cindery-sandy, gravelly, gravelly-sandy, sandy and clayey-loamy flats; uplands; sandy basins; basin bottoms; sandy and silty valley floors; valley bottoms; roadcuts; along rocky, rocky-sandy, rocky-silty, stony, gravelly, gravelly-sandy, gravelly-sandy-loamy, sandy, clayey and clayey-loamy roadsides; within arroyos; along and in rocky-sandy, rocky-clayey-loamy and gravelly draws; gulches; shaley-clayey gullies; seeps; along streams; along sandy streambeds; along and in creeks; sandy creekbeds; riverbeds; along and in rocky-sandy and sandy washes; within rocky-sandy and gravelly-sandy drainages; along rocky drainage ways; (gravelly) banks of washes; edges of draws and rivers; gravel bars; sandy and sandy-

loamy benches; breaks; gravelly terraces; sandy bottomlands; cobbly-sandy and cobbly-sandy-silty floodplains; lowlands; fencerows; within ditches; ditch banks; sandy riparian areas; waste places; recently burned areas of woodland, and disturbed areas growing in moist and dry cryptogamic soil; rimrock pavement; gravelly desert pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-sandy, stony, stony-cobbly, stony-sandy, cobbly, cobbly-sandy, cindery, cindery-gravelly, cindery-sandy, gravelly, gravelly-sandy, pebbly and sandy ground; rocky loam, rocky-sandy loam, rocky-clayey loam, stony loam, gravelly loam, gravelly-sandy loam, gravelly-silty loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky clay, rocky-shaley-gravelly clay, rocky-gravelly-sandy-silty clay, rocky-gravelly clay, rocky-sandy clay, shaley clay, stony-cobbly-sandy clay, cobbly-sandy clay, gravelly clay, sandy clay and clay ground, and rocky silty, cobbly-sandy silty, sandy silty and silty ground, occurring from 1,700 to 8,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Chaetopappa ericoides* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Leucelene ericoides* (Torr.) Greene), 28 (recorded as *Leucelene ericoides*, color photograph 253), 43 (061509), 44 (022012), 46 (recorded as *Aster arenosus* (Heller) Blake, Page 872 and *Aster hirtifolius* Blake, Page 872), 48 (genus), 58 (recorded as *Leucelene ericoides* (Torr.) Greene), 63 (022012 - color presentation including habitat), 77 (recorded as *Leucelene ericoides* (Torr.) Greene), 80 (Species of *Aster* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "These annual and perennial forbs may act as secondary or facultative selenium absorbers, converters, and indicators and may become toxic to livestock."), 85 (022312 - color presentation including habitat), 124 (022012), 127*

***Cirsium neomexicanum* A. Gray: New Mexico Thistle**

COMMON NAMES: 'Azee' Dít'ooí <□aze'tít'oih> (Athapascan: Navajo)¹⁴⁰; 'Azee' Hókáníi <□azé□ hukani> ("Round Medicine", Athapascan: Navajo)¹⁴⁰; 'Azee' Yishdloh (Athapascan: Navajo); Cardillo ("Little Thistle", Spanish: New Mexico)¹⁴⁰; Cardo (Spanish)¹⁴⁰; Cardo Santo (Spanish: Mexico, Sonora); Čiiyav□ (a name applied to other species in the genus *Cirsium*, Uto-Aztec: Kawaiisu)¹⁴⁰; Cuna (Uto-Aztec: Cupeño)¹⁴⁰; Cunalá (Uto-Aztec: Luiseno)¹⁴⁰; Desert Thistle; Gewel <gewihol> (Uto-Aztec: Híá Ce□ O'odham)¹⁴⁰; Gewul (Uto-Aztec: Tohono O'odham)¹⁴⁰; Hosh Ikaz, K□' Dahosh <goda hosh> (Athapascan: Western Apache)¹⁴⁰; Intermountain Thistle; Lavender Thistle; Mexican Thistle; New Mexico desert-thistle; New Mexico Thistle; Pa'bogo [Pa'bogwo] (Uto-Aztec)¹⁴⁰; Thistle (a name also applied to other species and the genus *Cirsium*); [New Mexico, Yellow] Thistle (English)¹⁴⁰; Tlobindadatidje (Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Tsīñ'ga (Uto-Aztec: Shoshoni)¹⁴⁰; Tsininga <tcininga, ciniņa> (Uto-Aztec: Hopi)¹⁴⁰; Yellow Thistle. DESCRIPTION: Terrestrial biennial or perennial forb/herb (erect stems 16 inches to 9½ feet in height); the leaves may be gray, gray-green, dark green or silvery; the flower heads (produced in the second and subsequent years) may be creamy-white, pale lavender, lavender, lavender-pink, pale pink, pink, pinkish-lavender, pink-purple, pink-violet, light purple, purple, rose, rose-purple, violet-purple, white, whitish-cream or white tinged with pink; flowering generally takes place between mid-February and late August (additional record: one for early January; flowering in September has also been reported). HABITAT: Within the range of this species it has been reported from mountains; bouldery mountaintops; rocky mountainsides; sandy mesas; rocky rims; cliff faces; hanging gardens; rocky and sandy-loamy canyons; canyon sides; bouldery-rocky-cobbly and rocky canyon bottoms; talus slopes; crevices in rocks; shallow pockets of soil in rocks; rocky ledges; rocky and shaley-clayey ridges; rocky-gravelly-sandy ridgetops; balsam glades; meadows; foothills; rocky and gravelly-clayey hills; rocky-gravelly-clayey hilltops; rocky, gravelly and silty hillsides; bouldery, rocky, rocky-gravelly, rocky-gravelly-clayey, rocky-silty, rocky-silty-clayey, shaley, stony, gravelly and clayey slopes; bajadas; rocky and gravelly-rocky outcrops; amongst boulders and rocks; sandy bases of rocks; sandy lava flows; sandflats; banks; sandy terraces; plains; along esplanades; rocky, sandy and clayey flats; uplands; valley floors; along rocky, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-silty and clayey roadsides; gravelly-sandy-clayey arroyos; gulches; seeps; around springs; along streams; gravelly streambeds; along creeks; along rivers; riverbeds; within rocky, gravelly, gravelly-sandy and sandy washes; within cobbly drainages; within rocky and sandy drainage ways; silty depressions; along (rocky, stony-gravelly and sandy) banks of streams and rivers; borders of washes; benches; sandy and loamy bottomlands; floodplains; margins of stock ponds; along canals; riparian areas, and disturbed areas growing in moist and dry cryptogamic soil; rimrock pavement; bouldery, bouldery-rocky-cobbly, rocky, rocky-gravelly, rocky-gravelly-sandy, shaley, stony, stony-gravelly, cobbly, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly loam, sandy loam and loam ground; rocky-gravelly clay, rocky-silty clay, shaley clay, gravelly clay, gravelly-sandy clay, sandy clay and clay ground, and rocky-silty, sandy-silty and silty ground, occurring from 300 to 9,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formation. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication. This plant provides food for many types of insects including being a host plant for the Painted Lady Butterfly, *Vanessa cardui*. Hummingbirds have been observed visiting the flowers. Thistles (*Cirsium* spp.) provide pollen and nectar for bees, and goldfinches and other birds feed on the seeds. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop (the peeled stems were used for food); it was also noted as having been used as a drug or medication. This plant was reported to have been utilized by native peoples of North America; the stems were peeled and used for food. *Cirsium neomexicanum* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph), 43 (111809), 44 (051711 - color photograph), 46 (Page 952), 58, 63 (051711 - color presentation), 77, 85 (022412 - color presentation), 115 (color presentation), 124 (051711 - no record of species; genus record), 127, 134, 140 (Pages 63-64 & 284)*

***Conyza canadensis* (C. Linnaeus) A.J. Cronquist: Canadian Horseweed**

COMMON NAMES: Aster canadensis annuus (a name applied to var. *canadensis*, Brunyer 1653); Ataklo:lasti (Muskogean: Creek)¹⁴⁰; Atsil-sun'ti (Iroquoian: Cherokee)¹⁴⁰; 'Azee' Dilk□□h <□aze□ dilk□ki> (Athapascan: Navajo)¹⁴⁰; Beschreikraut (var. *canadensis*, German); Bitter Weed (a name also applied to var. *canadensis* and other species); Bitter-weed (a name also applied to var. *canadensis* and other species); Bitterweed (a name also applied to var. *canadensis* and other species); Bitterweed (English: New Mexico)¹⁴⁰; Blood Stanch (var. *canadensis*); Blood-stanch (var. *canadensis*); Bloodstanch (var. *canadensis*); Butter Weed (a name applied to var. *canadensis* and other species); Butter-weed (a name applied to var. *canadensis* and other species); Butterweed (a name also applied to other species); Butterweed (English)¹⁴⁰; Caenotus Canadense (var. *canadensis*); Canada Erigeron (var. *canadensis*); Canada Flea-bane (var. *canadensis*); Canada Fleabane (a name applied to var. *canadensis* and the genus *Erigeron*); Canada Fleawort (var. *canadensis*); Canada Horseweed (var. *canadensis*); Canadian Fleabane (var. *canadensis*); Canadian Horse Weed (var. *canadensis*); Canadian Horse-weed (var. *canadensis*); Canadian Horseweed (var. *canadensis*); Canadian-fleabane; Canadisches Berufkraut (var. *canadensis*, German); Canhlo'gan Was'te'mna Iye'cece ("Resembling Sweet-smelling Weed", Siouan: Lakota)¹⁴⁰; Cola de Caballo ("Horse Tail", Spanish: Arizona, Sonora)¹⁴⁰; Cola de Zorra (Spanish); Colt's Tail (var. *canadensis*); Colt's Tail (English: New Mexico)¹⁴⁰; Colt's-tail (var. *canadensis*); Coltstail (var. *canadensis*); Common Horse-weed (var. *canadensis*); Common Horseweed (var. *canadensis*); Cow Tail (var. *canadensis*); Cow's Tail (var. *canadensis*); Cow-tail (var. *canadensis*); Cow's-tail (var. *canadensis*); Cows' Tail; Cowstail (var. *canadensis*); Cowtail (var. *canadensis*); D□□dāq' <ǎó□dā□> (Athapascan: Navajo)¹⁴⁰; Erigeron (a name also applied to var. *canadensis*, other species and to the genus *Erigeron*); Erigeron de Canada (var. *canadensis*, French); Fire Weed (a name also applied to var. *canadensis* and other species); Fire-weed (a name also applied to var. *canadensis* and other species); Fireweed (a name also applied to var. *canadensis* and other species); Flea Bane (a name also applied to var. *canadensis*, other species and to the genera *Conyza* and *Erigeron*); Fleabane (a name also applied to var. *canadensis*, other species and to the genera *Conyza* and *Erigeron*); Fleabane (English: New Mexico)¹⁴⁰; Fox Tail (English: Dutch Antilles)¹⁴⁰; Gababi'kwúna'tig ("Knotted Tree", Chippewa)¹⁴⁰; Gababi'kwuna'tig ("Knotted Tree", Algic: Ojibwa)¹⁴⁰; Ha'mo Uvteawe (Language Isolate: Zuni)¹⁴⁰; Hierba de Burro ("Donkey Herb", Spanish: Sinaloa)¹⁴⁰; Hierba del Caballo ("Horse's Herb", Spanish: Sonora)¹⁴⁰; Hog-weed (a name also applied to var. *canadensis* and other species); Hogweed (a name also applied to var. *canadensis* and other species); Horse Tail (var. *canadensis*); Horse Weed (var. *canadensis*); Horse-weed (a name applied to var. *canadensis* and the genus *Erigeron*); Horsetail (var. *canadensis*); Horsetail (English)¹⁴⁰; Horsetail Conyza (a name also applied to other species); Horseweed (a name also applied to var. *canadensis* and the genera *Conyza* and *Erigeron*); [Canadian, Smooth] Horseweed (English)¹⁴⁰; Horseweed Fleabane (var. *canadensis*); Jarilla (Spanish); Kanadabinka (Swedish); Kanadisches Berufkraut (German); Mare's Tail (a name applied to var. *canadensis* and other species); Lemonhead (Arizona); Mare's-tail (a name applied to var. *canadensis* and other species); Mares Tail (a name also applied to other species); Monáhaña (Uto-Aztecan: Hopi)¹⁴⁰; Ne'etsah 'Azee' <ne□eac□ azé□> (Athapascan: Navajo)¹⁴⁰; Ne'etsah Béé'ditó <ne□ eac□ be'oh> (Athapascan: Navajo)¹⁴⁰; No'sowini ("Sweat", Algic: Mesquakie)¹⁴⁰; On'timpíwai [On'timpíwatsíp] (also used for *Chenopodium*, Uto-Aztecan: Shoshoni)¹⁴⁰; Pazotillo ("Little Skunk Feces", Spanish: New Mexico)¹⁴⁰; Pride Weed (var. *canadensis*); Pride Weed (English: New Mexico)¹⁴⁰; Pride-weed (var. *canadensis*); Prideweed (var. *canadensis*); Rayed Horseweed (var. *canadensis*); Scabious (a name also applied to var. *canadensis* and other species); Taklô:cí ("BlackBush", Muskogean: Mikasuki)¹⁴⁰; Tall Horseweed (var. *canadensis*); Virga aurea virginiana annua (a name applied to var. *canadensis*, Tournefort 1694); Vopoksha <vopoghakam> ("Quiver" or "Step-child", Uto-Aztecan: Akimel O'odham)¹⁴⁰; Vtaklv Lvste (Muskogean: Muskogee)¹⁴⁰; Wild Daisy (var. *canadensis*); Wili'lik (Chumash: Barbareño Chumash)¹⁴⁰; Wililik' (Chumash: Ineseño Chumash)¹⁴⁰; Yerba del Aire [Aigre] ("Air [Bitter] Herb", Spanish: California)¹⁴⁰.

DESCRIPTION: Terrestrial annual or biennial forb/herb (erect stems 1 inch to 1½ feet in height); the stem and leaves are a dull light olive-green; the disk florets may be greenish, green-yellow, white or yellow; the ray florets may be cream, pink, white, white with pink tips or yellow; flowering generally takes place between early May and late November (additional records: two for early April, one for mid-April, one for mid-December and one for late December; flowering year round has also been reported with most flowering taking place summer through fall). HABITAT: Within the range of this species it has been reported from along mountains; mountainsides; rocky mesas; plateaus; rocky rims; cliffs; hanging gardens; bases of cliffs; rocky, rocky-clayey and sandy canyons; canyon walls; sandy, sandy-silty and silty canyonsides; rocky-sandy and sandy canyon bottoms; chasms; rincons; talus slopes; bluffs; knolls; ledges; along shaley ridges; loamy clearings and openings in forests and scrub; sandy meadows; foothills; rocky hills; grassy hilltops; along hillsides; bouldery and rocky hillsides; escarpments; rocky, rocky-sandy, rocky-sandy-loamy, rocky-loamy, shaley, stony-loamy, cobbly-sandy-clayey, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, loamy, clayey and clayey-loamy slopes; bajadas; rocky, shaley and shaley-sandy outcrops; amongst boulders; lava flows; sand hills; sand dunes; sandy-clayey banks; benches; breaks; clay pans; steppes; prairies; sandy plains; rocky-loamy, gravelly, gravelly-loamy, sandy, sandy-loamy, sandy-clayey-loamy, clayey and silty flats; gravelly, gravelly-sandy, sandy and clayey uplands; silty-clayey basins; sandy valley floors; valley bottoms; coastal salt marshes; along railroad right-of-ways; two-tracks; roadbeds; roadcuts; along rocky, rocky-clayey, gravelly, gravelly-sandy, gravelly-clayey and sandy roadsides; within arroyos; along sandy and clayey bottoms of arroyos; within shaley-silty, loamy and loamy-clayey draws; bottoms of draws; gulches; ravines; bottoms of ravines; along rocky and sandy-clayey seeps; along springs; in wet soil along spring runs; along streams; along and in sandy streambeds; along and in creeks; along rocky, stony, gravelly, gravelly-sandy and sandy creekbeds; along rivers; in rocky-clayey and sandy riverbeds; along and in rocky, gravelly, gravelly-sandy and sandy washes; along and in rocky-clayey-silty, gravelly, sandy, loamy and silty-clayey drainages; along waterways; floating mats; palm oases; vernal pools; around ponds; along lakes; lakebeds; sandy-loamy playays; ciénegas; freshwater and saltwater marshes; around and in clayey, clayey-loamy and silty-clayey depressions; swales; along (muddy, rocky, gravelly, gravelly-sandy, sandy, sandy-loamy and

loamy) banks of springs, streams, streambeds, creeks, creekbeds, rivers and washes; borders of washes; along (rocky, sandy and loamy-clayey) edges of springs, streams, streambeds, creekbeds; rivers, riverbeds, washes, watercourses, lakes and salt marshes; along margins of seeps, streams, streambeds, washes, ponds and lakes; along (sandy and sandy-clayey) shores of creeks, ponds and lakes; along stony-sand, gravel, gravelly-sand, sand, sandy-rock and silty-sand bars; rocky, rocky-sandy, stony and sandy beaches; benches; sandy shelves; rocky strands; stony and gravelly-sandy terraces; gravelly, sandy-clayey, loamy and loamy-clayey bottomlands; along stony, sandy and sandy-loamy floodplains; sandy lowlands; along sandy fencerows; dams; beaver dams; catch basins; sandy stock tanks (represos); along sandy, loamy-clayey and clayey-loamy edges, margins and shores of reservoirs; dry reservoir beds; along canals; canal banks; along and in sandy ditches; along ditch banks; rocky, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy, sandy-loamy and clayey-loamy riparian areas; gravelly, sandy and loamy waste places, and gravelly disturbed areas growing in cryptogamic soil; mucky; muddy and wet, moist, damp and dry bouldery, bouldery-rocky, rocky, rocky-sandy, shaley, shaley-sandy, stony, stony-sandy, stony-loamy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, gravelly loam, gravelly-sandy loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky clay, cobbly-sandy clay, gravelly clay, sandy clay, loamy clay, loamy clay and clay ground, and rocky-clayey silty, shaley silty, sandy silty and silty ground, occurring from sea level to 9,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food (*E.c.* var. *canadensis*) and as a drug or medication. *Conyza canadensis* is native to northern, central and southern North America including coastal islands in the North Pacific Ocean and Gulf of St. Lawrence, and Central America; its native range on coastal islands in the North Atlantic Ocean and Caribbean Sea, as well as South America, is obscure. *5, 6, 16, 43 (061609), 44 (022612 - no listing of Common Names under species or genus, records located under *Erigeron canadensis*, color photograph), 46 (recorded as *Erigeron canadensis* L. and *Erigeron canadensis* L. var. *glabratus* Gray, Page 881), 58, 63 (022612 - color presentation), 68, 77 (recorded as *Conyza canadensis* (L.) Cronq. [*Erigeron canadensis* L.]), 85 (022712 - color presentation), 101 (color photograph of the species), 115 (color presentation), 124 (022512), 127, 140 (Pages 64-66 & 284 - recorded as *Conyza canadensis* (Linnaeus) Cronquist [*Erigeron canadensis*])*

Dyssodia pentachaeta (see *Thymophylla pentachaeta* var. *pentachaeta*)

Dyssodia porophylloides (see *Adenophyllum porophylloides*)

***Encelia farinosa* A. Gray ex J. Torrey: Brittlebush**

SYNONYMY: *Encelia farinosa* A. Gray ex J. Torrey var. *farinosa* A. Gray ex J. Torrey; *Encelia farinosa* A. Gray ex J. Torrey var. *phenicodonta* (S.F. Blake) I.M. Johnston; *Encelia farinosa* A. Gray ex J. Torrey var. *radians* T.S. Brandegees ex S.F. Blake. COMMON NAMES: Brittle Bush (a name also applied to the genus *Encelia*); Brittle-bush (a name also applied to the genus *Encelia*, Arizona); [White] Brittle-bush (English: Arizona, Sonora)¹⁴⁰; Brittlebush (a name also applied to the genus *Encelia*); Brittlebush Encelia; Brown-center Brittlebush (*E.f.* var. *phenicodonta*); Button Brittlebush; California Desert Brittlebush; Choyoguo (“Tar Bush”, Uto-Aztecan: Mayo, Sonora)¹⁴⁰; Common Brittle Bush; Common Brittle-bush; Common Brittlebush; Cotx (“Acrid Smell”, Hokan: Seri)¹⁴⁰; Desert Brittle Bush; Desert Brittle-bush; Desert Brittlebush; Farinose Brittlebush; Farinose Encelia; Farinose Goldenhills; Goldenhills (English: Arizona)¹⁴⁰; Hierba Cenisa, Hierba Ceniza (“Ashy Herb”, Spanish: Sonora)¹⁴⁰; Hierba de Gusano; Hierba de las Ánimas (“Soul Herb”, Spanish: Sonora)¹⁴⁰; Hierba del Bazo <vaso> (Enlarged Spleen Herb”, Spanish: Sonora)¹⁴⁰; Hierba del Gusano (Spanish: Sonora); Hierba del Vaso; Incienso (“Incense”, Spanish: Arizona, Baja California, California and New Mexico)¹⁴⁰; Incienso Brittle Bush; Incienso Brittle-bush; Incienso Brittlebush; Pa’akal (Uto-Aztecan: Cahuilla)¹⁴⁰; Palo Blanco (“White bush”, Spanish: Sonora)¹⁴⁰; Rama Blanca (“White Branch”, Spanish: Sonora)¹⁴⁰; Tahavis (Uto-Aztecan: Mountain Pima)¹⁴⁰; Tohaves (Uto-Aztecan: Hiá Ce □ O’odham)¹⁴⁰; Tohavs (Uto-Aztecan: Akimel O’odham)¹⁴⁰; Tohaves (Uto-Aztecan: Tohono O’odham)¹⁴⁰; White Brittle Bush; White Brittle-bush (Arizona); White Brittlebush; Yerba de la Vaca (“Cow Herb”, Spanish: Paipai)¹⁴⁰; Wóláchíí’ Bitsijí’ Bił Nát’oh <wóláčí □ bici □ ičí □ bił nát’oh> (Athapascan: Navajo)¹⁴⁰. DESCRIPTION: Terrestrial perennial evergreen (leaves will be shed under extreme drought conditions) subshrub or shrub (stems 1 to 6 feet in height, the relatively few branches located beneath a covering of leaves gives this plant a rounded appearance; one plant was observed and described as being 2 feet in height and width); the foliage may be dark green, pale gray-green, silvery-gray, silvery-gray-green, silvery-green, silvery or whitish; the disk florets are brown, brown-maroon, brown-purple, maroon-brown, orange-yellow, purple, dark purple or yellow; the ray florets may be yellow or yellow-orange (the flowers appear 6 to 12 inches above or beyond the end of the foliage); flowering generally takes place between early November and mid-June (additional records: three for early July, four for late August, one for early September, two for mid-October; the primary flowering period generally occurs February through May). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky and gravelly mesas; cliffs; bases of cliffs; rocky and shaley canyons; rocky canyon walls; rocky, rocky-sandy, gravelly and sandy canyon bottoms; talus slopes; bluffs; buttes; rocky ledges; along ridges; rocky ridgetops; sandy meadows; foothills; rocky and sandy hills; hilltops; bouldery, rocky, stony and cobbly hillsides; bedrock, bouldery-gravelly, rocky, rocky-sandy, rocky-loamy, stony, gravelly, gravelly-clayey, sandy, loamy and clayey slopes; bouldery-stony-gravelly-sandy, rocky and rocky-sandy-loamy alluvial fans; gravelly-sandy bajadas; gravelly pediments; bouldery and rocky outcrops; amongst boulders and rocks; lava flows; sand dunes; banks; cobbly, sandy and clayey plains; rocky-sandy, gravelly, gravelly-sandy and sandy flats; uplands; rocky and gravelly-sandy valley floors; coastal dunes; sandy coastal plains; coastal beaches; sandy railroad right-of-ways; along rocky, sandy and clayey roadsides; rocky and sandy arroyos; sandy-silty bottoms of arroyos; around springs; along creeks; creekbeds; along rivers; sandy riverbeds; along and in rocky, stony, gravelly, gravelly-sandy and sandy washes; within sandy drainages; drainage ways; along swales; borders of washes; edges of arroyos and

washes; shores of rivers; sand bars; sandy beaches; gravelly benches; gravelly, rocky shelves; gravelly-sandy and sandy terraces; rocky-sandy floodplains; mesquite bosques; canal banks; riparian areas, and disturbed areas growing in moist and dry gravelly desert pavement; bouldery, bouldery-stony-gravelly-sandy, bouldery-gravelly, rocky, rocky-sandy, shaley, stony, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam and loam ground; gravelly clay, sandy clay and clay ground (where it reportedly does poorly), and sandy silty ground, occurring from sea level to 4,800 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, and has an estimated life span of 32 years. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food (candy), and/or paint (varnish) crop; it was also noted as having been used as fuel, as a tool and waterproofing agent and as a drug or medication. According to the Fire Effects Information System, Brittlebush competes strongly with Buffelgrass (*Pennisetum ciliare*); however, it may be top-killed or completely killed by fire, wind dispersed seed produced by plants located off site may quickly aid in the reestablishment of this plant on burned areas. It is an early colonizer of disturbed areas. Plants with yellow ray flowers and dark purple disk flowers have historically been referred to as variety *phenicodonta*, it has been observed growing with the typical plant (which has yellow disk flowers). The Brittle Bush is browsed by Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*) and Desert Mule Deer (*Odocoileus hemionus* subsp. *crooki*), and birds and rodents feed on the seeds. *Encelia farinosa* is native to southwest-central and southern North America. *5, 6, 13 (Pages 293-294, color photograph: Plate V., Page 407), 16, 18, 26 (color photograph), 28 (color photograph 403), 43 (112009), 44 (022912 - color photograph), 46 (Page 904), 48, 58, 63 (022912 - color presentation including habitat), 77 (recorded as *Encelia farinosa* A. Gray var. *farinosa*), **85** (022912 - color presentation), 86 (color photograph), 91 (Pages 188-192), 115 (color presentation), 124 (051911 - no record of species or genus), 127, 140 (Pages 67-68 & 284), **WTK** (July 13, 2005)*

Encelia farinosa var. *farinosa* (see *Encelia farinosa*)

Encelia farinosa var. *phenicodonta* (see *Encelia farinosa*)

Encelia farinosa var. *radians* (see *Encelia farinosa*)

***Ericameria cuneata* (A. Gray) A.J. McClatchie var. *spathulata* (A. Gray) H.M. Hall: Cliff Goldenbush**

SYNONYMY: *Aplopappus cuneatus* A. Gray var. *spathulatus* (A. Gray) S.F. Blake ex P.A. Munz; *Haplopappus cuneatus* A. Gray var. *spathulatus* (A. Gray) S.F. Blake ex P.A. Munz. COMMON NAMES: Cliff Goldenbush, Desert Rock Goldenbush, Desert Rock Golden Weed, Wedgeleaf Golden Weed, Wide-leaved Rock Goldenbush. DESCRIPTION: Terrestrial perennial subshrub or shrub (12 to 40 inches in height with a rounded crown); the disc and ray flowers are yellow; flowering generally takes place between late September and mid-November (additional records: one for mid-February, two for mid-April, one for early May, one for mid-August, two for early September, one for early December and two for mid-December). HABITAT: Within the range of this species it has been reported from bouldery and rocky mountains; along mountaintops; rocky crags; rocky cliffs; rock faces; bouldery and rocky canyons; canyon walls; crevices in boulders and rocks; bases of cliffs; tops of buttes; rocky ledges; atop windswept prominences; rocky ridges; ridgetops; rocky hillsides; rocky and sandy slopes; rocky outcrops; amongst boulders, and on boulders and rocks growing in moist and dry bouldery, rocky, rocky-sandy and sandy ground and sandy silty ground, occurring from 3,000 to 7,000 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Ericameria cuneata* var. *spathulata* is native to southwest-central and southern North America. *5, 6, 13 (species, *Haplopappus cuneatus* A. Gray), 15, 43 (071710 - *Ericameria cuneata* McClatchie var. *spathulata* (A. Gray) H.M. Hall), 46 (recorded as *Aplopappus cuneatus* Gray var. *spathulatus* (Gray) Blake, Page 861), 63 (100506), **85** (072910)*

***Ericameria laricifolia* (A. Gray) L.H. Shinnars: Turpentine Bush**

SYNONYMY: *Haplopappus laricifolius* A. Gray. COMMON NAMES: *Ericameria* (a name also applied to the genus *Ericameria*); Gold-brush (English)¹⁴⁰; Hierba del Pasma (Herb for Pasma", a name also applied to other species, Spanish)¹⁴⁰; Larch-leaf [Narrow-leaved] Golden-weed (English)¹⁴⁰; Larch-leaf Goldenweed; Narrow-leaved Golden-weed; Roundleaf Rabbitbrush; Turpentine Brush (a name also applied to other species); Turpentine Brush [Bush] (English)¹⁴⁰; Turpentine Bush (a name also applied to other species); Turpentine Golden-bush; Turpentine Goldenbush; Turpentine-brush (a name also applied to other species); Turpentine-brush *Ericameria*; Turpentine-bush (a name also applied to other species); Turpentine-bush *Ericameria*; Turpentinebrush; Xal ShaB U (Yuman: Paipai)¹⁴⁰. DESCRIPTION: Terrestrial perennial subshrub or shrub (ascending to erect stems 10 to 50 inches in height; one plant was observed and described as being 1 foot in height and 2 to 3 feet in width, one plant was observed and described as being 16 inches in height and 40 inches in width, one plant was observed and described as being 40 inches in height and 40 inches in width); the young stems are green; the leaves may be gray, gray-green, gray-silver, green or yellow-green; the disk florets may be orange-yellow or yellow, the ray florets may be orange-yellow or yellow; flowering generally takes place between mid-August to late January (additional records: one for mid-February, one for late March, one for late April, two for early May, one for mid-May, four for late May, one for early July and one for late July); the fruits are white. HABITAT: Within the range of this species it has been reported from mountains; bouldery-gravelly mountainsides; mesas; plateaus; rock walls; bouldery bases of cliffs and walls; bouldery and rocky canyons; along bouldery and rocky-clayey canyon bottoms; rocky talus; crevices in rocks; rocky knolls; rocky ledges; rocky and gravelly ridges; stony ridgetops; ridgelines; clearings in woodlands; bouldery foothills; rocky hills; rocky and silty hillsides; bases of hills; bedrock,

rocky, rocky-gravelly, gravelly, gravelly-loamy-silty sandy-loamy, loamy-clayey and clayey-loamy slopes; bouldery and rocky outcrops; amongst boulders and rocks; bases of boulders; bouldery coves; plains; gravelly and sandy flats; rocky basins; valley floors; along gravelly, gravelly-sandy, sandy and loamy roadsides; along arroyos; draws; gulches; rocky gullies; seeps; along streams; along streambeds; along creekbeds; bouldery-cobbly-sandy riverbeds; along and in bedrock, bouldery and sandy washes; drainage ways; borders of washes; (gravelly-sandy) edges of washes; margins of arroyos; gravelly terraces; floodplains; riparian areas, and disturbed areas growing in dry rocky desert pavement; bouldery, bouldery-cobbly-sandy, bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy loam, gravelly-silty loam, clayey loam and loam ground; rocky clay and gravelly clay ground, and gravelly-loamy silty and silty ground, occurring from 1,000 to 8,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The flowers are visited by many types of insects. *Ericameria laricifolia* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Haplopappus laricifolius* A. Gray, Pages 330-331), 15, 16, 28 (color photograph 481), 43 (112109), 44 (022912), 46 (recorded as *Aplopappus laricifolius* Gray, Page 861), 58, 63 (022912 - color presentation including habitat), 77, 85 (022912 - color presentation), 115 (color presentation), 124 (022912 - no record of species; genus record), 140 (Pages 68-70, 87 & 284), **WTK** (July 13, 2005)*

***Erigeron divergens* J. Torrey & A. Gray: Spreading Fleabane**

SYNONYMY: *Erigeron divergens* J. Torrey & A. Gray var. *typicus* A.J. Cronquist. COMMON NAMES: Ats'os Níí'iinit <□acose ní□in'iil> (Athapascan: Navajo)¹⁴⁰; 'Azee' [Ch'il] Libá <aze'[c'il] labahi, laba□igi> (Athapascan: Navajo)¹⁴⁰; 'Azee' Ná'ooltáidii <azee'ná'oltxátiih> (Athapascan: Navajo)¹⁴⁰. <c'os be'yi'c'ol, béyi.c'ol> ("Vein Spurter", Athapascan: Navajo)¹⁴⁰; Ch'íih 'Azee' <c'is □azé□> (Athapascan: Navajo)¹⁴⁰; Desert Fleabane (a name also applied to other species); Dibetsétah Ch'il <dibecetah ch'il> (Athapascan: Navajo)¹⁴⁰; Diffuse Daisy; Divergent Fleabane; Fleabane (a name also applied to other species and the genera *Conyza* and *Erigeron*); [Desert, Spreading] Fleabane (English)¹⁴⁰; Fleabane Daisy (a name also applied to other species and the genus *Erigeron*); Green Rabbit Bush; Hierba Pulguera ("Herb for Fleas", Spanish: Mexico)¹⁴⁰; K'aalógiidáá (Athapascan: Navajo)¹⁴⁰; Layered Daisy; Na'ashjé'iidáá (Athapascan: Navajo)¹⁴⁰; Spreading Daisy (English: Utah)¹⁴⁰; Spreading Daisy Fleabane; Spreading Daisy-fleabane; Spreading Fleabane; Spreading Fleabane Daisy; Spreading Fleabane-daisy; Wóláchíí Dáá <wolaci□ da> (Athapascan: Navajo)¹⁴⁰. DESCRIPTION: Terrestrial biennial forb/herb (ascending and/or erect stems 2¾ to 28 inches in height; plants were observed and described as being 8 inches in height and 6 inches in width, plants were observed and described as being 12 inches in height and 16 inches in width); the stems may be reddish at base; the leaves are a dull gray-green or green; the disk florets may be orange-yellow or yellow; the ray florets may be blue, blue-lavender, blue-purple, pale lavender, lavender, lavender-blue, lavender-pink, lavender-purple, pale pink, pink, pinkish, pinkish-white, light purple, pale violet, white or white tinged with lavender or purple; flowering may take place throughout the year with flowering records for mid-January through late December. HABITAT: Within the range of this species it has been reported from mountains; rocky, gravelly-loamy and sandy mountaintops; rocky crags; mountainsides; rocky-gravelly and sandy mesas; rocky and sandy plateaus; rocky and sandy rims; rocky cliffs; bases of cliffs; rocky, gravelly, gravelly-loamy and sandy canyons; rocky canyon walls; along rocky, stony, sandy and sandy-silty canyon bottoms; talus slopes; sandy pockets of soil in rock; bluffs; shaley buttes; bases of hogbacks; rocky and sandy knolls; rocky ledges; bouldery and rocky ridges; rocky and gravelly ridgetops; sandy clearings in forests and woodlands; rocky, rocky-sandy, stony, gravelly, sandy and clayey meadows; margins of meadows; cinder cones; bases of cinder cones; rocky foothills; bouldery, bouldery-rocky and rocky hills; rocky hilltops; rocky, rocky-sandy and sandy hillsides; escarpments; bouldery, bouldery-rocky-gravelly, rocky, rocky-loamy, rocky-clayey, shaley, stony, cobbly, cobbly-sandy-clayey, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy, gravelly-clayey, gravelly-silty-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy, loamy, clayey, clayey-loamy, silty and silty-loamy slopes; bajadas; bedrock, bouldery, rocky and shaley outcrops; amongst boulders and rocks; lava flows; sandy hills; sandy dunes; rocky-sandy ashflows; banks; sandy benchlands; steppes; stony, gravelly, gravelly-loamy, sandy, sandy-loamy, loamy, silty and silty-loamy prairies; rocky and sandy plains; muddy, bouldery-rocky-gravelly, bouldery-gravelly-sandy, rocky, gravelly, gravelly-sandy, gravelly-clayey-loamy, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy, loamy, clayey, clayey-loamy and silty-loamy flats; rocky and clayey basins; glens; rocky and sandy valley floors; along railroad right-of-ways; along roadcuts; along rocky, gravelly, gravelly-clayey-loamy, sandy, sandy-clayey-loamy and clayey roadsides; along sandy arroyos; bottoms of arroyos; bouldery and rocky-sandy draws; bottoms of draws; gulches; stony and sandy ravines; within seeps; springs; along rivulets in silted beaver ponds; along streams; along rocky-gravelly, rocky-sandy and gravelly-loamy streambeds; in sand along creeks; along cobbly-loamy, gravelly-sandy and sandy creekbeds; gravelly and sandy soil along rivers; along sandy riverbeds; along and in bedrock, gravelly, gravelly-sandy, sandy and silty washes; along and in rocky and clayey drainages; along and in rocky, rocky-silty-clayey, sandy, silty-clayey and clayey drainage ways; within watercourses; along waterways; boggy areas; ciénegas; marshes; depressions; sinks; swales; (muddy and gravelly-sandy) banks of streams, creeks, rivers and ponds; borders of washes; (sandy-silty) edges of rivers, vernal pools and playas; margins of streams, creeks, rivers and lakes; along shores of lakes; mudflats; gravel, gravelly-sand and sand bars; beaches; sandy and silty-loamy benches; clayey shelves; sandy terraces; sandy bottomlands; sandy, sandy-silty, clayey and silty floodplains; clayey lowlands; mesquite bosques; sandy fencerows; along levees; edges of stock tanks; along sandy shores and rocky embankments of reservoirs; along and in sandy ditches; gravelly, gravelly-sandy and sandy riparian areas; sandy waste places; recently burned areas of forests, and disturbed areas growing in muddy and wet, moist, damp and dry cryptogamic soil; rimrock pavement and bouldery, bouldery-rocky, bouldery-rocky-gravelly, bouldery-gravelly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-sandy, stony, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-sandy loam, rocky-clayey loam, cobbly loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, gravelly-silty loam, sandy loam, sandy-clayey loam,

clayey loam, silty loam and loam ground; rocky clay, rocky-silty clay, cobbly-sandy clay, gravelly clay, sandy clay, silty clay, powdery clay and clay ground, and rocky silty, sandy silty and silty ground, occurring from 300 to 12,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication and the plants were used in the home as a good luck charm. The flowers may be visited by butterflies. *Erigeron divergens* is native to west-central and southern North America. *5, 6, 15, 16, 43 (112209), 44 (030212), 46 (Page 880), 48 (genus), 58, 63 (030212 - color presentation including habitat), 77, **85** (030312 - color presentation including habitat), 86 (color photograph), 115 (color presentation), 124 (030212), 127, 140 (Pages 70-71 & 284)*

Erigeron divergens var. *typicus* (see *Erigeron divergens*)

Eriophyllum lanosum (see *Antheropeas lanosum*)

Eupatorium herbaceum (see *Ageratina herbacea*)

Franseria ambrosioides (see *Ambrosia ambrosioides*)

Franseria confertiflora (see *Ambrosia confertiflora*)

Franseria deltoidea (see *Ambrosia deltoidea*)

Gnaphalium chilense (see *Pseudognaphalium stramineum*)

***Guardiola platyphylla* A. Gray: Apache Plant**

COMMON NAMES: Apache Plant; Guardiola. DESCRIPTION: Terrestrial perennial forb/herb (1 to 5 feet in height); the leaves are gray-green or dark green; the disk florets are cream or white; the ray florets are cream or white; the anthers are green; flowering generally takes place between late May and late October (additional records: one for mid-March, three for late March, one for early April, four for mid-April, one for mid-November and one for late December; flowering beginning as early as February has also been reported). HABITAT: Within the range of this species it has been reported from mountains; bouldery mountaintops; rocky mountainsides; cliffs; rocky canyons; canyon walls; rocky and rocky-clayey canyon bottoms; talus slopes; crevices in rocks; rocky ridges; foothills; hills; rocky hillsides; bouldery, rocky, silty-loamy and loamy slopes; rocky outcrops; amongst boulders and rocks; sandy-loamy and clayey plains; flats; along roadsides; along rocky arroyos; rocky draws; ravines; springs; along streams; within rocky and rocky-sandy streambeds; in rocks along creeks; along rocky creekbeds; within rocky and sandy washes; within drainages; (rocky) banks of rivers; benches; bouldery-sandy riparian areas, and disturbed areas growing in moist and dry bouldery, bouldery-sandy, rocky, rocky-sandy and sandy ground; sandy loam, silty loam and loam ground, and rocky clay, sandy clay and clay ground, occurring from 1,000 to 6,300 feet in elevation in the forest, woodland, scrub, grassland and wetland ecological formations. NOTE: *Guardiola platyphylla* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph 234), 43 (010211), 44 (010211 - no record of species), 46 (Page 889), 63 (010211 - color presentation), **85** (010211 - color presentation of dried material), 115 (color presentation), 124 (010211 - no record of species), 140 (Page 284)*

***Gutierrezia microcephala* (A.P. de Candolle) A. Gray: Threadleaf Snakeweed**

COMMON NAMES: Broomweed (a name also applied to other species and the genus *Gutierrezia*); Hair-worm Snakeweed; Little-head Snakeweed; Matchweed (a name also applied to other species); Perennial Snakeweed; Resinweed; Small-head Matchbrush; Small-head Snakeweed; Small-headed Matchweed; Smallhead Snakeweed; Snakeweed (a name also applied to other species and the genus *Gutierrezia*); Sticky Snakeweed (a name also applied to other species); Thread Leaf Snake Weed; Thread Snakeweed; Thread-leaf Snake-weed; Thread-leaf Snakeweed; Thread-leaved Snakeweed; Threadleaf Snakeweed; Turpentinweed (a name also applied to other species). DESCRIPTION: Terrestrial perennial subshrub or shrub (erect stems 2 inches to 4½ feet in height); the lower portion of the stem may be brown with the upper portion of the stem being green or yellow; the leaves are dark gray-green; the disk florets may be gold or yellow; the ray florets are yellow; flowering generally takes place between mid-June and late November, plants may cease flowering during a summer drought (additional records: two for early January, one for late January, one for late February, one for late March, one for early April, one for mid-April and three for late December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy and sandy-silty mesas; plateaus; rocky rims of canyons and craters; rocky spurs; rocky bases of cliffs; along rocky and gravelly-loamy canyons; rocky canyon walls; along rocky canyon bottoms; rocky gorges; knolls; rocky ridges; sandy ridgetops; clearings in forests; glades; meadows; foothills; bouldery, rocky, sandy and silty hills; gravelly-silty hilltops; rocky hillsides; bedrock, bouldery-cobbly-gravelly, rocky, shaley, cobbly, cindery, gravelly, gravelly-loamy, sandy and clayey-loamy slopes; sandy bajadas; rocky outcrops; amongst boulders; alcoves; rocky lava flows; sand hills; sand dunes; stony and sandy plains; gravelly, sandy and silty-loamy flats; basins; rocky valley floors; gravelly-sandy valley bottoms; along rocky railroad right-of-ways; along rocky, gravelly, gravelly-loamy and sandy roadsides; along arroyos; bottoms of arroyos; within gravelly draws; gullies; seeps; springs; along streams; gravelly-loamy streambeds; creekbeds; along rivers; along rocky, gravelly-sandy and sandy washes; silty lakebeds; ciénegas; along (gravelly and sandy) banks of streams, creeks, rivers and washes; (sandy) edges of washes and

marshes; mudflats; beaches; benches; cobbly terraces; floodplains; mesquite bosques; ditches; sandy riparian areas, and disturbed areas growing in wet (rarely reported) and dry rocky desert pavement; bouldery, bouldery-rocky, bouldery-cobbly-gravelly, rocky, shaley, stony, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, clayey loam and silty loam ground; rocky clay, shaley clay, gravelly clay, sandy clay and clay ground, and gravelly silty, sandy silty and silty ground, occurring from 1,200 to 8,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication, as cooking tools and as decorations on prayer sticks. Threadleaf Snakeweed may live to be 10 to 18 years of age; however, the average lifespan is less than ten years. Threadleaf Snakeweed invades disturbed areas and may serve as an indicator of overgrazed rangelands reducing both native plant diversity and forage values, populations may best be reduced by increasing native grass competition. *Gutierrezia microcephala* is native to southwest-central and southern North America. *5, 6, 13 (Page 317), 15, 16, 28 (note under *Gutierrezia sarothrae*), 43 (112909), 44 (052411 - color photograph), 46 (Snake-weeds “are more or less poisonous to sheep and goats when eaten in quantity, but are unpalatable and are seldom grazed. It is said that *G. microcephala* absorbs selenium in large quantity on certain soils.”, Page 853), 58, 63 (030512 - color presentation), 68, 77, 80 (This species is listed as a Major Poisonous Range Plant. “The poisonous principal is apparently a saponin. It is most toxic at earlier stages of growth during early leaf development and when growing on sandy soils. ... Livestock apparently eat small amounts of the relatively unpalatable snakeweed without serious consequences. Therefore, range improvement to provide alternate, desirable feed and to reduce snakeweed infestations through grass competition will control most losses.” See text for additional information.), 85 (030512 - color presentation), 86 (note under *Gutierrezia sarothrae*), 124 (052411 - no record of species; genus record), 127, 140 (pages 73, 74 & 284), **HR***

***Gymnosperma glutinosum* (C.P. Sprengel) C.F. Lessing: Gumhead**

SYNONYMY: *Selloa glutinosa* C.P. Sprengel. COMMON NAMES: Cola de Zorro; Escobilla; Glutinous Gymnosperma; Gumhead; Hierba Pegajosa; Jarilla; Jucu Ndede; Mariquita; Motita; Moto; Nakedseed Weed; Pegajosa; Tatalencho; Tata Lencho; Xonequilitl; Zazal. DESCRIPTION: Terrestrial perennial subshrub or shrub (erect stems 1 to 5 feet in height); the leaves are green; the flowers are golden or yellow; flowering generally takes place between late July and late November (additional records: one for late January, one for mid-February, five for mid-March, three for early April, one for mid-April, two for late April, one for late May, three for mid-June, one for late June and one for late December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; rocky canyons; rocky, gravelly and sandy canyon bottoms; bases of cliffs; crevices; rocky ridges; bouldery ridgetops; foothills; rocky, rocky-gravelly and gravelly hills; rocky hillsides; rocky and gravelly-loamy slopes; amongst boulders; bases of rocks; volcanic dikes and plugs; gravelly-loamy flats; rocky valley floors; rocky roadcuts; along roadsides; within sandy arroyos; bottoms of arroyos; bottoms of gullies; within ravines; springs; along streams; streambeds; creekbeds; along and in rocky, gravelly and sandy washes; within drainages; palm oases; along (gravelly-sandy) banks of ravines, streams and washes; edges of arroyos; (rocky) margins of arroyos; floodplains, and riparian areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground and gravelly loam and sandy loam ground, occurring from 100 feet to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Gymnosperma glutinosum* is native to southwest-central and southern North America and Central America. *5, 6, 13, 15, 28, 43 (071710 - *Gymnosperma glutinosum* Less.), 46 (recorded as *Selloa glutinosa* Spreng., Page 851), 77, **85** (072910 - color presentation)*

Haplopappus cuneatus var. *spathulatus* (see *Ericameria cuneata* var. *spathulata*)

Haplopappus gracilis (see *Machaeranthera gracilis*)

Haplopappus laricifolius (see *Ericameria laricifolia*)

Haplopappus tenuisectus (see *Isocoma tenuisecta*)

***Helianthus annuus* C. Linnaeus: Common Sunflower**

COMMON NAMES: Alizeti (Swahili); Annual Sunflower (a name also applied to other species); Chimalati (Mexico); Comb Flower (a name also applied to other species); Comb-flower (a name also applied to other species); Common Annual Sunflower; Common Garden Sunflower; Common Sunflower (a name also applied to other species); Common Western Sunflower; Common Wild Sunflower; Flor de Sol (Spanish); Garden Sunflower; Girasol (a name also applied to other species, Spanish); Girassol (Portuguese); Gold (a name also applied to other species); Golden (a name also applied to other species); Grand Soleil (French); Haebaragi (transcribed Korean); Himaawari (Japanese Rōmaji); Hopi Sunflower; Isoauringonkukka; Kansas Sunflower (a name also applied to other species); Kirik-tara-kata (“Yellow Eyes”, Pawnee); Larea Ball; Larea-bell; Larrabell; Le Tournesol (French); Mira Sol (a name also applied to other species, New Mexico); Mirasol (“Looks at the Sun”, Spanish); Omatts'aba (Zuni); Soleil; Sonnenblume (German); Solros (Swedish); Sunflower (a name also applied to other species, the genus *Helianthus* and to the Asteraceae); Tournesol (French); Wah'cha-zizi (“Yellow Flower”, Dakota); Wallflower (misapplied); Western Sunflower (a name also applied to other species); Wild Artichoke (a name also applied to other species); Wild Sun-flower (a name also applied to other species); Wild Sunflower (a name also applied to other species); Zha-zi (“Yellow

Weed", Omaha-Ponca). DESCRIPTION: Terrestrial annual forb/herb (erect stems 1 to 13 feet in height); the leaves are green; the disk florets may be black, brown, dark brown, brownish, maroon, purple, dark purple, dark purple-brown, reddish, reddish-brown, reddish-purple, rust-brown or yellow; the ray florets may be golden, orange-yellow, yellow or yellow with red-brown tips; the anthers are brownish to black; flowering generally takes place between early February and early November (additional records: one for mid-January, one for late November and two for late December). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; silty-loamy mesas; plateaus; cliffs; rocky walls; canyons; rocky and sandy canyon bottoms; talus slopes; bluffs; rocky, gravelly-sandy, gravelly-clayey, sandy-clayey and clayey buttes; clayey knolls; rocky ridges; gravelly-clayey ridgetops; rocky, sandy and loamy meadows; clayey foothills; rocky, stony and sandy hills; hilltops; bouldery, rocky and clayey hillsides; rocky-gravelly, shaley-silty, stony-gravelly, cobbly-sandy-clayey, gravelly, gravelly-loamy, gravelly-sandy, gravelly-loamy, gravelly-clayey, sandy, sandy-loamy, clayey, clayey-loamy, silty-loamy and silty-clayey slopes; bajadas; pediments; rocky outcrops; amongst rocks; sandy hummocks; sand bluffs; sand dunes; banks; steppes; rocky, sandy, clayey-loamy, silty-clayey and silty-clayey-loamy prairies; sandy, sandy-clayey and chalky plains; muddy, gravelly, gravelly-silty, sandy and clayey flats; clayey, clayey-loamy, silty-clayey and silty-clayey-loamy uplands; sandy valley floors; along gravelly railroad right-of-ways; shaley roadcuts; along muddy-clayey, rocky-gravelly, shaley, cindery, gravelly, gravelly-loamy, sandy, sandy-loamy, loamy-clayey and clayey roadsides; within sandy arroyos; bottoms of arroyos; within sandy, loamy and loamy-clayey draws; clayey bottoms of draws; within gullies; bottoms of gullies; ravines; seeps; springs; along streams; gravelly-clayey and clayey streambeds; along and in creeks; muddy, sandy and clayey creekbeds; along rivers; gravelly-sandy riverbeds; bouldery and bouldery-cobbly-sandy, stony, gravelly and sandy riverbeds; along and in rocky, rocky-sandy, sandy, clayey and silty washes; within rocky-clayey-silty, gravelly, sandy, clayey and silty-loamy drainages; along and in rocky drainage ways; watersheds; vernal pools; around ponds; around lakes; ciénegas; freshwater and saltwater marshes; blowout areas; sandy depressions; clay pans; swales; along (gravelly and sandy) banks of streams, creeks, creekbeds, rivers and lakes; along (silty) edges of streams, rivers, ponds and lakes; around and along (silty) margins of ponds and lakes; along and in (sandy, sandy-loamy, gravelly-clayey, clayey and clayey-loamy) shores of creeks, rivers, ponds, lakes and backwaters; stony-sand, cobbly-stony-gravel and gravel bars; stony-gravelly and loamy benches; gravelly-sandy and sandy bottomlands; mucky and clayey floodplains; gravelly lowlands; along sandy fencelines; around sandy-clayey stock tanks; along mucky-clayey-loamy margins and shores of reservoirs; canals; canal banks; along and in gravelly, sandy, sandy-loamy and silty ditches; along ditch banks; sandy and clayey riparian areas; waste places, and disturbed areas growing in mucky; muddy, and wet, moist, damp and dry bouldery, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, stony-gravelly, stony-sandy, cobbly-stony-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-clayey loam, gravelly loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; rocky clay, cobbly-sandy clay, gravelly clay, sandy clay, loamy clay, silty clay and clay ground; rocky-clayey silty, shaley silty, gravelly-sandy silty, gravelly silty, sandy silty and silty ground, and chalky ground, occurring from sea level to 9,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, candy, cooking agent, fodder, fiber, and/or dye (red) crop; it was also noted as having been used for lighting, as a tool, as musical instruments, as a drug or medication, as ceremonial items, decorations and as a commodity used for personal hygiene. The flower heads follows the sun through the day. *Helianthus annuus* is native to northwest-central, south-central and southern North America. *5, 6, 15, 18, 28 (color photograph), 43 (061709), 44 (052611), 46 (Page 903), 48, 58, 63 (030612 - color presentation including habitat), 68, 77, 80 (The Common Sunflower is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "This common, annual forb has been reported to accumulate toxic levels of nitrate."), 85 (030712 - color presentation), 86 (color photograph), 101 (color photograph), 115 (color presentation), 124 (052611), 127*

***Heliomeris longifolia* (B.L. Robinson & J.M. Greenman) T.D. Cockerell var. *annua* (M.E. Jones) L.G. Yates: Longleaf False Goldeneye**

SYNONYMY: *Viguiera annua* (M.E. Jones) S.F. Blake. COMMON NAMES: Annual Goldeneye; Ch'il 'At'aa' 'Alts' Óózi <c'il bit'a□ □a'lc'ozigi> (Athapascan: Navajo)¹⁴⁰; Golden-eye (English)¹⁴⁰; Goldeneye; Longleaf False Goldeneye; Longleaf Falsegoldeneye; Resinweed; Southern Goldeneye; Tacote <tecote> (Spanish: Mexico)¹⁴⁰; Tallowweed; Tlalpopote (Spanish: Mexico)¹⁴⁰. DESCRIPTION: Terrestrial annual forb/herb (1 to 6 feet in height); the stems are reddish; the leaves are green or dark green; the disk flowers may be golden-yellow, orange-yellow, yellow, dark yellow or yellow-orange; the ray flowers may be golden-yellow, orange-yellow, yellow or dark yellow; flowering generally takes place between early August and mid-November (additional records: one for late March, two for mid-April, three for late April, two for mid-May, one for late May and one for early July, it has been reported that flowering may continue thru mild winters). HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; cliff-facings; rocky and gravelly-loamy canyons; canyon bottoms; ridges; rocky-sandy, stony and gravelly meadows; rocky foothills; clayey rocky hills; rocky and gravelly-clayey hillsides; rocky, rocky-loamy and gravelly-clayey slopes; rocky-clayey alluvial fans; rocky outcrops; lava flows; banks; plains; cindery and clayey flats; valley floors; along railroad right-of-ways; along gravelly and clayey roadsides; arroyos; bottoms of arroyos; rocky-gravelly-loamy soils along streams; gravelly-loamy streambeds; along and in rocky-gravelly creekbeds; riverbeds; along and in sandy and clayey washes; along and in sandy and sandy-clayey drainages; beside clayey-loamy waterholes; around ponds; ciénegas; marshes; swampy areas; (sandy-loamy) banks of streams; mudflats; sandy benches; gravelly terraces; bottomlands; floodplains; lowlands; around and in stock tanks; ditches; ditch banks; gravelly-sandy and sandy riparian areas, and disturbed areas growing in wet, moist and dry rocky, rocky-sandy, stony, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, gravelly loam, sandy loam and clayey loam ground, and rocky clay, gravelly clay, sandy clay, silty clay and

clay ground, occurring from 2,500 to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Heliomeris longifolia* var. *annua* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Viguiera annua* (Jones) Blake), 28 (recorded as *Viguiera annua*), 43 (061809 - no record of *Heliomeris longifolia* var. *annua*, *Viguiera annua* (Jones - note that Jones is the standard form abbreviation for W. Jones and not M.E. Jones) S.F. Blake), 46 (recorded as *Viguiera annua* (Jones) Blake), 48 (genus - *Viguiera*), 63 (081610 - color presentation), 68, 77 (recorded as *Viguiera annua* (Jones) Blake), 80, 85 (081610 - color presentation including habitat), 115 (color presentation), 140 (Pages (species 74-75) & 284 - recorded as *Heliomeris longifolia* (B.L. Robinson) Cockerell var. *annua* (M.E. Jones) Yates [*Heliomeris annua* (M.E. Jones) Cockerell, *Viguiera annua* (M.E. Jones) Blake])*

***Heterosperma pinnatum* A.J. Cavanilles: Wingpetal**

COMMON NAMES: Fineleaf; Wingpetal. DESCRIPTION: Terrestrial annual forb/herb (1½ inches to 3 feet in height); the disk and ray flowers are yellow, dark yellow or yellow-gold; flowering generally takes place between mid-August and early November (additional record: one for late July). HABITAT: Within the range of this species it has been reported from mountains; mountain summits; plateaus; cliffs; along bases of cliffs; along rocky and gravelly-loamy canyons; canyon bottoms; rocky gorges; talus slopes; crevices in rocks; pockets of soil in rock; ledges; ridges; ridgetops; ridgelines; gravelly clearings in woodlands; meadows; foothills; hills; rocky and gravelly hillsides; rocky, cindery, cindery-clayey, gravelly and clayey slopes; bedrock, bouldery and rocky outcrops; amongst boulders and rocks; rocky-loamy, cindery and clayey flats; valleys; along rocky, gravelly, gravelly-loamy and gravelly-sandy-loamy roadsides; in stony-sandy and sandy arroyos; shaded draws; along streams; along streambeds; along creeks; along rivers; along and in rocky-gravelly and sandy washes; drainages; lakebeds; depressions; sandy banks of arroyos; rocky margins of arroyos and pools; bottomlands; floodplains; in cindery ditches; riparian areas, and waste places growing in bouldery, rocky, rocky-gravelly, stony-sandy, cindery, gravelly and sandy ground; rocky loam, gravelly loam, gravelly-sandy loam and gravelly-clayey loam ground, and cindery clay ground, occurring from 3,700 to 8,400 feet in elevation in the forests, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Heterosperma pinnatum* is native to southwest-central and southern North America. *5, 6, 15, 43 (061909), 46, 58, 63 (061909), 85 (061909), 140 (Page 285)*

Heterotheca psammophila (see *Heterotheca subaxillaris*)

***Heterotheca subaxillaris* (J.B. de Lamarck) N.L. Britton & H.H. Rusby: Camphorweed**

SYNONYMY: *Heterotheca psammophila* B.L. Wagenknecht. COMMON NAMES: Árnica (Spanish: Kickapoo in Cahuilla and others in Durango, Sonora)¹⁴⁰; Arniko (Uto-Aztecan: Mountain Pima)¹⁴⁰; Camphor Daisy; Camphor Weed; Camphor-daisy; Camphor-daisy [weed] (English: Arizona, New Mexico)¹⁴⁰; Camphor-weed; Camphor-weed Golden-aster; Camphorweed; Camphorweed Golden-aster; Camphorweed Goldenaster; Dune Camphorweed; False Arnica (a name which may also be applied to other species); False Arnica (English)¹⁴⁰; Golden Aster (a name also applied to other species); Golden [Gold] - aster (English)¹⁴⁰; Gordo Lobo ("Fat Wolf", Spanish: Chihuahua, Sonora)¹⁴⁰; Gordolobo; Haramkulyi (Uto-Aztecan: Mountain Pima)¹⁴⁰; Heterotheca (a name also applied to the genus *Heterotheca*); Malamujer ("Bad Woman", Spanish: Mountain Pima)¹⁴⁰; Telegraph Plant (a name also applied to other species); Telegraph Plant (English)¹⁴⁰; Wóláchíí' Bi'ghá <wolaci be.ga> (Athapaskan: Navajo)¹⁴⁰. DESCRIPTION: Terrestrial annual forb/herb (procumbent and/or erect stems 4 inches to 6½ feet in height); the leaves are light green; the disk florets may be orange or yellow; the ray florets may be yellow or yellow-orange; flowering generally takes place between mid-May and late December (additional records: two for late January, two for early March and two for early April). HABITAT: Within the range of this species it has been reported from mountains; mesas; bases of cliffs; bouldery and rocky canyons; canyon bottoms; sandy ridgetops; openings in woodlands; sandy meadows; sandy foothills; sandy hilltops; rocky hillsides; rocky, gravelly and gravelly-sandy slopes; alluvial fans; bajadas; amongst boulders; sand dunes; breaks; sandy prairies; rocky-loamy, gravelly, gravelly-sandy, sandy and clayey flats; basins; valley floors; along railroad right-of-ways; along gravelly, gravelly-sandy, gravelly-sandy-clayey-loamy and sandy roadsides; along arroyos; ravines; along streams; streambeds; rocky creekbeds; rocky-gravelly-sandy and rocky-sandy creekbeds; riverbeds; along and in sandy and clayey washes; within drainages; around ponds; sandy depressions; within swales; along banks of rivers; edges of streams; along (gravelly and sandy-loamy) shores of ponds and lakes; benches; cobbly terraces; clayey bottomlands; floodplains; along and in sandy ditches; ditch banks; sandy riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam and sandy loam ground, and gravelly clay and clay ground, occurring from sea level to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The foliage is strongly scented with crushed leaves smelling like camphor. *Heterotheca subaxillaris* is native to south-central and southern North America. *5, 6, 15, 16, 28 (color photographs 414 A&B), 43 (061909), 44 (030812), 46 (Page 854, with an additional note on Page 1071 in the supplement), 58, 63 (030812 - color presentation), 68, 77, 85 (030812 - color presentation), 101 (color photograph), 115 (color presentation), 124 (030812), 140 (Pages 75-76 & 285), **WTK** (August 6, 2005)*

***Hymenoclea monogyra* J. Torrey & A. Gray: Singlewhorl Burrobrush**

SYNONYMY: *Ambrosia monogyra* (J. Torrey & A. Gray) J.L. Strother & B.G. Baldwin. COMMON NAMES: Arrow-wood (English)¹⁴⁰; Burro Brush (a name also applied to other species and the genus *Ambrosia*); [Single-whorl] Burrobrush [bush] (English)¹⁴⁰; Burrobrush (a name also applied to other species and the genus *Ambrosia*); Burrobrush (a name also

applied to other species); Cheese-bush (a name also applied to other species); Cheese-bush (English)¹⁴⁰; Cheeseweed Burrobrush; Hécota <jécota, jejejo> (Spanish: Guarijio, Mayo, Onavas Pima)¹⁴⁰; Hierba del Pasma (“Herb for Treating Pasma”, Spanish: Sonora)¹⁴⁰; ‘I:vadhod (Uto-Aztec: Hiá Ce □ O’odham); I’ivdag <i’ivdag> (Uto-Aztec: Onavas Pima)¹⁴⁰; Iivdad (Pima Bajo); Iivdat (Gila Pima); Iivdhat (Uto-Aztec: Akimel O’odham)¹⁴⁰; ‘I:wadhó □ <i:wato □, i:watodh, iivadhó □> (Uto-Aztec: Tohono O’odham)¹⁴⁰; Jeco (Uto-Aztec: Guarijio, Mayo)¹⁴⁰; Jécota (Spanish); Jejejo (Spanish); Leafy Burrobrush; Leafy Burrobush; O’gach (Yuman: Walapai)¹⁴⁰; Mono Burrobrush; Pañab (Uto-Aztec: Southern Paiute)¹⁴⁰; Romerillo (a name also applied to other species, Spanish); Romerillo [Dulce] (“[Sweet] Little Rosemary”, Spanish: Baja California, Sinaloa, Sonora)¹⁴⁰; Single-whorl Burro-brush; Single-whorl Burrow-brush; Single-whorl Burro-bush; Single-whorl Cheesebush; Singlewhorl Burrobrush; Singlewhorl Burrobush; Singlewhorl Cheesebush; Slender Burro Brush; Slender Burrow-brush; Slender Burrowbrush; <tlet> (Athapascan: Western Apache)¹⁴⁰; White Burrobush (a name also applied to other species); Winged Ragweed (English)¹⁴⁰. DESCRIPTION: Terrestrial perennial deciduous subshrub or shrub (erect stems 1 to 13 feet in height; plants were observed and described as being 71 inches in height and 79 inches in width); the foliage may be gray-green, green or olive-green; the flower heads may be cream, light green, greenish-white, white, yellow or yellow-cream; flowering generally takes place between early March and early June and again between early September and mid-December (additional records: two for mid-January, one for mid-March, one for early April, one for mid-May and two for late July; flowering in August has also been reported). HABITAT: Within the range of this species it has been reported from mountains; clayey mesas; bases of cliffs; rocky canyons; along rocky and sandy canyon bottoms; rocky-sandy buttes; foothills; bases of foothills; rocky hills; rocky hillsides; bouldery-gravelly, rocky, rocky-clayey and sandy slopes; sand dunes; plains; rocky and gravelly flats; basins; valley floors; valley bottoms; gravelly banks; sandy flats; valley floors; coastal sand dunes; coastal plains; along rocky, gravelly-sandy, gravelly-loamy, sandy-loamy and clayey roadsides; along and in rocky, gravelly and sandy arroyos; rocky, gravelly and sandy bottoms of arroyos; gulches; within sandy ravines; springs; along streams; along and in streambeds, along creeks; along and in gravelly-sandy and sandy creekbeds; along rivers; along and in cobbly-sandy, gravelly and sandy riverbeds; along and in rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy, sandy and sandy-clayey washes; along and in gravelly drainages; along watercourses; ciénegas; along (gravelly and gravelly-sandy) banks of rivers and washes; borders of washes; along edges of arroyos and rivers; margins of rivers and washes; (sandy) sides of rivers; gravel bars; gravelly-sandy benches; sandy terraces; bottomlands; sandy floodplains; mesquite bosques; within ditches; rocky edges of ditches; along canals; sandy riparian areas, and disturbed areas growing in damp and dry bouldery-gravelly, rocky, rocky-sandy, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam and sandy loam ground, and rocky clay, sandy clay and clay ground, occurring from sea level to 6,100 feet elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, and is useful in controlling erosion. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Burrowbrush is a host plant of the Burrobrush Leaf Beetle, *Leptinotarsa lineolata*; rodents, including the Merriam’s Kangaroo Rat (*Dipodomys merriami*), feed on the buds and sprouts. *Hymenoclea monogyra* is native to southwest-central and southern North America. *5, 6, 13 (Pages 301-302), 15, 43 (062009), 44 (030912 - recorded as *Ambrosia monogyra*), 46 (Page 894), 48 (genus), 58, 63 (030812 - color presentation), 85 (030912 - color presentation), 91 (Page 236), 124 (030812 - no record of species or genus; record of the genus *Ambrosia* L.), 127, 140 (Pages 55-56, 68,87 & 283 - recorded as *Ambrosia monogyra* (Torrey & A. Gray) Strother & B.G. Baldwin), **WTK** (August 4, 2005)*

***Hymenothrix wislizeni* A. Gray: Trans-Pecos Thimblehead**

COMMON NAMES: Burro-brush (English)¹⁴⁰; Golden Ragweed; Thimblehead (a name also applied to the genus *Hymenothrix*); [Trans-Pecos] Thimblehead (English: Arizona, California, Texas)¹⁴⁰; Trans-Pecos Thimblehead; TransPecos Thimblehead; Wislizen’s Burro-brush (English)¹⁴⁰; Wislizenus Beeflower; Yellow Thimblehead. DESCRIPTION: Terrestrial annual or biennial forb/herb (erect stems 8 inches to 5 feet in height); the foliage is green; the disc florets may be creamish to bright yellow; the ray florets may be green-yellow or yellow; the anthers are yellowish; flowering generally takes place between early June and early December (additional record: one for late March). HABITAT: Within the range of this species it has been reported from mountains; mesas; clefts in cliffs; rocky canyons; crevices in lava; buttes; meadows; foothills; rocky and stony-gravelly hills; rocky and gravelly hillsides; escarpments; bouldery-rocky-sandy, rocky, rocky-stony, rocky-clayey-loamy, sandy, sandy-loamy and sandy-clayey slopes; alluvial fans; bajadas; amongst boulders; rocky lava beds; plains; gravelly, sandy and clayey flats; valley floors; valley bottoms; along gravelly, gravelly-sandy-clayey-loamy, gravelly-silty, sandy and sandy-clayey-loamy roadsides; along and in sandy arroyos; along sandy bottoms of arroyos; springs; sandy streambeds; along creeks; along rivers; sandy riverbeds; along and in rocky, gravelly, gravelly-sandy, sandy and clayey washes; drainages; (gravelly-sandy and sandy) banks of washes; (sandy) edges of washes; terraces; floodplains; mesquite bosques; around stock tanks, and disturbed areas growing in dry bouldery, bouldery-rocky-sandy, rocky, rocky-stony, rocky-sandy, stony-gravelly, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly-sandy-clayey loam, sandy loam, sandy-clayey loam and loam ground; gravelly clay, sandy clay and clay ground, and gravelly silty ground, occurring from 1,300 to 7,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Javelina (*Peccari tajacu*) may browse this plant. Leaf-cutting Ants (*Acromyrmex* spp.) and Lesser Goldfinch (*Carduelis psaltria*), House Finch (*Carpodacus mexicanus*) and other birds feed on the seed. *Hymenothrix wislizeni* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (062009), 44 (052811 - no species record; genus record), 46 (Page 920), 58, 63 (030912), 77, 85 (030912 - color presentation), 115 (color presentation), 124 (052811 - no record of species or genus), 140 (Pages 76-78 & 285)*

***Isocoma coronopifolia* (A. Gray) E.L. Greene: Common Goldenbush**

COMMON NAMES: Burroweed (a name also applied to other species); Common Goldenbush; Common Goldenweed; Common Jimmyweed; Goldenaster; Goldenbush (a name also applied to other species); Goldenweed (a name also applied to other species); Hierba del Burro (a name also applied to other species, Spanish). DESCRIPTION: Terrestrial perennial subshrub (erect stems 8 inches to 2 feet in height); the flower heads are gold-yellow; based on few flowering records located, flowering generally takes place between early July and mid-October (flowering records: two for early July, one for late July, three for late September and two for mid-October; flowering beginning as early as May and June has been reported). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; rocky-sandy canyon walls; foothills; rocky and sandy slopes; gravelly bajadas; plains; gravelly-sandy flats; basins; along roadsides; draws; within sandy-clayey washes; (sandy) edges of marshy areas; floodplains; ditch banks, and disturbed areas growing in dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly-clayey loam ground; sandy clay ground, and sandy silty ground, occurring from sea level to 5,600 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTE: *Isocoma coronopifolia* is native to southwest-central and southern North America. *5, 6, 43 (120209 - *Isocoma coronopifolia* Greene), 44 (052811 - no record of species; genus record), 46 (no record of species), 63 (052811 - this species is not recognized as being present in Arizona), **85** (030912), 124 (052811 - no record of species or genus), 140 (Page 285)*

***Isocoma tenuisecta* E.L. Greene: Burroweed**

SYNONYMY: *Haplopappus tenuisectus* (E.L. Greene) S.F. Blake. COMMON NAMES: Bitter-weed (English)¹⁴⁰; Burro Weed; Burro-weed (a name also applied to other species); Burro-weed (English)¹⁴⁰; Burrow Golden-bush; Golden-bush (English)¹⁴⁰; Goldenweed; Burroweed (a name also applied to other species); Goldenweed (a name also applied to other species); Hierba del Burrow (a name also applied to other species); Shrine Golden-weed (English)¹⁴⁰; Shrine Jimmy-weed (English)¹⁴⁰; Shrine Jimmyweed; Tat[□]agī <ta[□]shagi, tatshagi> (Uto-Aztecan: Tohono O'odham, Arizona)¹⁴⁰; Turpentine Bush (a name also applied to other species); Turpentine-bush (English)¹⁴⁰. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (erect stems 6 to 40 inches in height and 12 to 40 inches in width); the bark is gray or whitish; the leaves may be gray, green, silvery or yellow-green; the flower heads may be cream, tawny-yellow or yellow; flowering generally takes place between late July and mid-November (additional records: three for late June, one for early July, three for early December and two for late December). HABITAT: Within the range of this species it has been reported from rocky mountains; mountainsides; mesas; canyons; along canyon bottoms; ridges; rocky-loamy foothills; rocky hills; rocky and gravelly hillsides; rocky, gravelly, sandy and sandy-clayey slopes; bajadas; rocky outcrops; amongst rocks; rocky-clayey plains; gravelly, gravelly-clayey, sandy and clayey flats; valley floors; along gravelly roadsides; sandy arroyos; draws; gulches; sandy bottoms of ravines; around streams; along and in sandy and sandy-silty washes; drainages; within clayey drainage ways; clayey playas; (rocky, gravelly-sandy and sandy) banks of arroyos and washes; borders of washes; sides of washes; mudflats; alluvial terraces; gravelly floodplains; mesquite bosques; ditch banks; gravelly-sandy and sandy riparian areas; waste places, and disturbed areas growing in dry rocky, gravelly, gravelly-sandy and sandy ground; rocky loam and gravelly-sandy loam ground; rocky clay, gravelly clay, sandy clay and clay ground, and sandy silty ground, occurring from 2,000 to 7,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and may live to be from 7 to 20 years of age. The fruits are gathered by a Leaf-cutting Ant (*Acromyrmex* sp.). *Isocoma tenuisecta* is native to southwest-central and southern North America. *5, 6, **13** (recorded as *Haplopappus tenuisectus* (Greene) Blake Pages 327-328) 15, 16, 28 (note under *Isocoma wrightii*), 43 (062009), 44 (031012 - no record of species; genus record), 46 (recorded as *Aplopappus tenuisectus* (Greene) Blake, Page 862), 58, 63 (031012), **68**, **77**, **80** (This species is listed as a Major Poisonous Range Plant. "The poisonous principle of burroweed is the alcohol, tremetol. All parts of the plant are poisonous, although the dried flowers are most often eaten. ... Burroweed produces the affliction called "trembles." Poisoned animals tremble violently when exercised and usually lie down in the normal position. Upon arising, the trembling recurs. Appetite is markedly depressed, and the severely poisoned animal eventually stays down until it dies. Acetonemia, characterized by the odor of acetone in the urine and on the breath, is also a product of burroweed poisoning. ... Burroweed is generally low in palatability, but is eaten in quite large amounts when better forage is not available. Special precautions must be taken with new animals brought into burroweed-infested areas as they are more likely to graze the plants. Native livestock apparently become sickened from eating the plant and tend to avoid it. An adequate supply of good feed during harsh times when livestock might be more prone to consume burroweed, may reduce its consumption." See text for additional information.), **85** (031012 - color presentation), 115 (color presentation), 124 (031012 - no record of species or genus), **140** (Pages 78-79 & 285), **WTK** (August 4, 2005)*

***Lasthenia californica* A.P. de Candolle ex J. Lindley subsp. *californica*: California Goldfields**

SYNONYMY: *Baeria chrysostoma* F.E. von Fischer & C.A. von Meyer; *Baeria chrysostoma* F.E. von Fischer & C.A. von Meyer var. *gracilis* (A.P. de Candolle) H.M. Hall; *Lasthenia chrysostoma* (F.E. von Fischer & C.A. von Meyer) E.L. Greene. COMMON NAMES: California Gold Fields (a name also applied to the species); California Gold-fields (a name also applied to the species); California Goldfield (a name also applied to the species); California Goldfields (a name also applied to the species); California Goldenfields (a name also applied to the species); California Goldfield (a name also applied to the species); California Goldfields (a name also applied to the species); Coast Gold Fields (a name also applied to the species); Coast Gold-fields (a name also applied to the species); Coast Goldfield (a name also applied to the species); Coast Goldfields (a name also applied to the species); Dwarf Goldfields (a name also applied to the species); Gold-fields (a name also applied to the species and the genus *Lasthenia*); Goldfields (a name also applied to the species and the genus *Lasthenia*). DESCRIPTION: Terrestrial annual forb/herb (decumbent [cespitose], ascending and/or erect stems 3 to 16 inches in height); the foliage is green; the disc florets may be orange or yellow; the ray florets may be golden-yellow, yellow or yellow-orange; flowering generally takes place between late

January and mid-June. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; gravelly mesas; plateaus; rocky canyons; canyon bottoms; bluffs; ridges; ridgetops; meadows; foothills; rocky hills; rocky hillsides; rocky, gravelly and stony-loamy slopes; bajadas; amongst boulders and rocks; clayey-loamy plains; gravelly flats; sandy basins; valley floors; along roadsides; sandy draws; seeps; along streams; bouldery-gravelly streambeds; sandy riverbeds; along and in rocky and sandy washes; clayey lakebeds; banks of washes; edges of creeks and rivers; gravelly and sandy-loamy terraces; bottomlands; floodplains; gravelly-sandy riparian areas, and disturbed areas growing in dry bouldery, bouldery-gravelly, rocky, rocky-gravelly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, stony loam, sandy loam and clayey loam ground, and clay ground, occurring from sea level to 5,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The flowers are reportedly fragrant. The species, *Lasthenia californica*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Lasthenia californica* subsp. *californica* is native to southwest-central and southern North America. *5, 6, 15, 28 (recorded as *Lasthenia chrysostoma*, color photograph 418), 43 (120409), 44 (060211), 46 (recorded as *Baeria chrysostoma* Fisch. & Mey. var. *gracillis* (DC.) Hall, reports that variety *gracillis* is the only form occurring in Arizona, Pages 917-918), 63 (031712 - color presentation including habitat), 77, **85** (031712 - color presentation), 86 (recorded as *Lasthenia chrysostoma* - color photograph), 124 (053111 - no record of subspecies, species or genus), 127 (species), 140 (Page 285 - recorded as *Lasthenia californica* DeCandolle ex Lindley [*Lasthenia chrysostoma* (Fischer & C.A. Meyer) Greene])*

Lasthenia chrysostoma (see *Lasthenia californica* subsp. *californica*)

***Layia glandulosa* (W.J. Hooker) W.J. Hooker & G.A. Arnott: Whitedaisy Tidytops**

COMMON NAMES: Tidy Tips; White Layia; White Tidytops; Whitedaisy Tidytops. DESCRIPTION: Terrestrial annual forb/herb (erect stems 2 to 24 inches in height); the stems are red-purple; the basal rosette of leaves are gray-green; the disk flowers are orange, orange-yellow, yellow or yellow-orange; the ray flowers cream, pure white, white-cream, whitish-cream, whitish-yellow, light yellow, yellow or yellowish fading to pinkish; the anthers are yellow; flowering generally takes place between mid-February and early July (additional records: one for late January and one for mid-September). HABITAT: Within the range of this species it has been reported from mountains; clayey mesas; plateaus; rocky canyons; canyon bottoms; buttes; ledges; rocky and sandy ridges; sandy ridgetops; gravelly openings in forests; meadows; foothills; rocky hills; hilltops; rocky and clayey hillsides; gravelly bases of hills; bouldery-gravelly, rocky, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-clayey-loamy and clayey slopes; slopes; gravelly-sandy alluvial fans; bajadas; rocky outcrops; amongst boulders; sand dunes; prairies; sandy and sandy-silty flats; sandy coastal strands; along rocky, gravelly-sandy and sandy roadsides; sandy arroyos; along clayey-loamy draws; amongst grasses surrounding springs; along streams; along creeks; along creekbeds; rocky-sandy, gravelly, gravelly, gravelly-sandy and sandy washes; wash bottoms; clayey lakebeds; edges of washes and lakes; (sandy) shores of rivers; gravelly sandbars; benches; gravelly terraces; lowlands; riparian areas; recently burned areas in woodlands, and disturbed areas growing in dry bouldery, bouldery-gravelly, bouldery-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-silty loam, sandy loam, sandy-clayey loam and clayey loam ground; clay ground, and sandy silty ground, occurring from sea level to 7,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Layia glandulosa* is native to west-central and southern North America. *5, 6, 28 (color photograph), 43 (082910), 46 (Page 914), 63 (082910 - color presentation), 77, **85** (083010 - color presentation), 127*

Leucele erioides (see *Chaetopappa ericoides*)

***Machaeranthera arida* B.L. Turner & D.B. Horne: Arid Tansyaster**

SYNONYMY: *Arida arizonica* (R.C. Jacks. & R.R. Johnson) D.R. Morgan & R.L. Hartm.; *Machaeranthera coulteri* (A. Gray) B.L. Turner & D.B. Horne var. *arida* (B.L. Turner & D.B. Horne) B.L. Turner; *Psilactis coulteri* auct. non A. Gray. p.p. COMMON NAMES: Arid Machaeranthera; Arid Spiny Daisy; Arid Tansyaster; Silver Lake Daisy. DESCRIPTION: Terrestrial annual forb/herb (ascending and/or erect stems 2 to 16 inches in height); the disk florets may be gold or yellow; the ray florets may be blue, bluish-lavender, lavender, lavender-blue, pale lavender-pink, lavender-white, pink, purple, pale violet, violet, white or whitish; flowering generally takes place between early March and early September (additional records: one for late September, three for early October, one for mid-October, one for early November, two for late November and one for early December). HABITAT: Within the range of this species it has been reported from mountains; mesas; crater walls; hills; hilltops; hillsides; rocky and gravelly slopes; gypsum outcrops; sand dunes; blowout areas between dunes; banks; sandy breaks; sandy plains; gravelly and sandy flats; basins; gravelly-sandy and sandy-clayey-loamy valley floors; coastal plains; along railroad right-of-ways; along rocky, sandy and sandy-loamy roadsides; along sandy arroyos; springs; gravelly-sandy and sandy-silty riverbeds; along and in gravelly and sandy washes; drainages; around pools; silty lakebeds; depressions; alkali sinks; banks of rivers; edges of seeps and playas; shores of lakes; sandy islands in riverbeds; gravelly benches; along gravelly-sandy-silty and clayey floodplains; along and in ditches; ditch banks, and disturbed areas growing in wet, moist and dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; sandy loam and sandy-clayey loam ground; clay ground, and gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 4,800 feet in elevation in the scrub, desertscrub and wetland ecological formations. NOTE: *Machaeranthera arida* is native to southwest-central and southern North America. *5, 6, 43 (120509), 44 (031712 - no

listing under Common Names; genus listing), 46 (recorded as *Psilactis coulteri* Gray, Page 867), 63 (031712), 80 (Species of the genus *Machaeranthera* (*Aster* sp.) are listed as Rarely Poisonous and Suspected Poisonous Range Plants. “Species of this genus are secondary or facultative selenium absorbers and can be dangerous to livestock.”), 85 (031712 - color presentation of dried material), 124 (031712 - no record of species; genus record)*

Machaeranthera coulteri var. *arida* (see *Machaeranthera arida*)

***Machaeranthera gracilis* (T. Nuttall) L.H. Shinnery: Slender Goldenweed**

SYNONYMY: *Haplopappus gracilis* (T. Nuttall) A. Gray. COMMON NAMES: Goldenweed (a name also applied to other species); Slender Goldenweed; Slender Spine-aster (New Mexico); Tabacote (Spanish); Yellow Daisy; Yellow Spiny Daisy. DESCRIPTION: Terrestrial annual forb/herb (decumbent, ascending and/or erect stems 4 to 28 inches in height); the foliage may be gray-green or yellow-green; the disk florets may be gold, yellow or yellow-orange; the ray florets may be gold, yellow or yellow-orange; flowering generally takes place between mid-March and mid-November (additional records: one for early January, two for early February and three for early December). HABITAT: Within the range of this species it has been reported from mountains; mountain summits; mountainsides; bases of mountains; mesas; sandy bases of cliffs; rocky canyons; sandy canyon bottoms; bouldery and sandy ridges; rocky ridgetops; clearings in forests and woodlands; sandy meadows; foothills; rocky, stony and sandy hills; rocky, gravelly-clayey, sandy-clayey and clayey hillsides; rocky, rocky-stony, rocky-silty, gravelly, gravelly-loamy, silty-loamy, sandy and clayey slopes; bajadas; amongst boulders; sand dunes; plains; rocky, sandy and clayey flats; valley floors; valley bottoms; along railroad right-of-ways; along rocky, gravelly-sandy, sandy and clayey roadsides; arroyos; draws; along streams; streambeds; along gravelly-sandy creeks; rocky creekbeds; along rivers; bouldery-cobbly-sandy and sandy riverbeds; along and in bouldery, rocky, stony, gravelly, gravelly-sandy, sandy and clayey washes; drainages; bouldery and gravelly-sandy-loamy drainage ways; within swales; along lakes; bog-like areas; (sandy and silty) banks of streams, creeks and lakes; shores of lakes; beaches; sandy benches; sandy and loamy bottomlands; sandy floodplains; lowlands; around and in stock tanks; along ditches; gravelly and sandy riparian areas; waste places, and disturbed areas growing in moist and dry bouldery, bouldery-cobbly-sandy, rocky, rocky-stony, rocky-sandy, stony, cindery, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly loam, gravelly-sandy loam, sandy loam, silty loam and loam ground; gravelly clay, sandy clay and clay ground, and rocky silty and powdery silty ground, occurring from 1,100 to 8,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication. *Machaeranthera gracilis* is native to south-central and southern North America. *5, 6, 15, 16, 28 (color photograph 419), 43 (062009), 44 (022711 - no listings under Common Names; genus record), 46 (recorded as *Aplopappus gracilis* (Nutt.) Gray, Page 860), 58, 63 (031812 - color presentation), 77, 80 (Species of the genus *Machaeranthera* (*Aster* sp.) are listed as a Rarely Poisonous and Suspected Poisonous Range Plant. “Species of this genus are secondary or facultative selenium absorbers and can be dangerous to livestock.”), 85 (031912 - color presentation), 124 (031812 - no record of species; genus record), 127, 140 (Page 285)*

***Machaeranthera pinnatifida* (W.J. Hooker) L.H. Shinnery: Lacy Tansyaster**

SYNONYMY: *Xanthisma spinulosum* (F.T. Pursh) D.R. Morgan & R.L. Hartman. COMMON NAMES: Cut-leaf Ironplant; Cutleaf Goldenweed; Cutleaf Ironplant; Ironplant (a name also applied to the genus *Machaeranthera*); Lacy Tansyaster; Lacy Tansyaster; Pinnate Machaeranthera; Spiny Daisy; Spiny Goldenweed; Spiny Haplopappus; Tansyaster (a name also applied to the genus *Machaeranthera*); Yellow Spiny Daisy. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (spreading to sprawling and/or stiffly erect (rarely) stems 3 to 40 inches in height); the leaves may be bluish, gray-green or green; the disk florets may be brown, brownish, golden-yellow, pale orange, orange, orange-yellow, yellow or yellow-orange; the ray florets may be golden-yellow, yellow or yellow-orange; flowering generally takes place year round from early January to late December. HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; rocky peaks; rocky mountainsides; bases of mountains; rocky mesas; plateaus; rock cliffs; rocky and rocky-sandy rims of canyons and craters; bases of cliffs; along rocky, shaley and sandy canyons; canyon walls; bouldery-gravelly-sandy and sandy canyon bottoms; talus slopes; rocky clefts; crevices in bedrock, boulders, rocks and cracks in soil; sand bluffs; cindery (scoria) tops of buttes; stony-gravelly, rocky and sandy knolls; ledges; rocky, sandy and chalky ridges; bouldery, sandy-clayey and sandy-silty ridgetops; openings in forests and woodlands; gravelly meadows; crater walls; foothills; along rocky, gravelly, shaley-clayey, stony and sandy hills; hilltops; bouldery and rocky hillsides; escarpments; bouldery, rocky, rocky-sandy, stony-sandy, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, loamy, clayey-loamy and silty-loamy slopes; gravelly, gravelly-sandy and sandy bajadas; rocky outcrops; amongst bedrock, boulders and rocks; alcoves; along lava flows; lava fields; sand hills; sand dunes; sandy hummocks; clayey banks; sandy benches; breaks; sandy, sandy-loamy, clayey, silty-loamy and silty-loamy-clayey prairies; rocky, gravelly, sandy and sandy-clayey plains; rocky, gravelly, sandy, sandy-clayey and clayey flats; clayey-loamy uplands; sandy bowls; valley floors; along gravelly roadbeds; gravelly, sandy and clayey roadcuts; along rocky, rocky-sandy, rocky-loamy, gravelly, gravelly-loamy and sandy roadsides; two-tracks; arroyos; within sandy, sandy-silty and silty draws; gulches; gullies; springs; along streams; along streambeds; along creeks; creekbeds; along rivers; riverbeds; along and in rocky, gravelly and sandy washes; along and in rocky-sandy, cobbly and sandy drainages; silty-clayey depressions; swales; along banks of creeks and rivers; borders of washes; edges of rivers; margins of rivers; shorelines of lakes; mudflats; sand bars; along rocky beaches; gravelly and sandy benches; rocky and gravelly-sandy terraces; rocky terrace alcoves; bottomlands; floodplains;

mesquite bosques; fencelines; dry bottoms of stock tanks (charcos); along and in sandy ditches; sandy riparian areas, and disturbed areas growing in wet (rarely reported) and dry rimrock; bouldery, bouldery-gravelly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, stony-gravelly, stony-sandy, cobbly, cindery, gravelly, gravelly-sandy, sandy and chalky ground; rocky loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, clayey loam, silty loam and loam ground; shaley clay, sandy clay, silty clay, silty-loamy clay and clay ground; sandy silty and silty ground, and chalky ground, occurring from sea level to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Machaeranthera pinnatifida* is native to central and southern North America. *5, 6, 16, 43 (062109), 44 (032112 - no listings under Common Name; genus record), 46 (recorded as *Aplopappus spinulosus* (Pursh) DC., Page 860; *Aplopappus spinulosus* (Pursh) DC. subsp. *typicus* H.M. Hall, Page 860; *Aplopappus spinulosus* (Pursh) DC. var. *gooddingii* (A. Nels.) Blake, Page 860, and *Aplopappus spinulosus* (Pursh) DC. var. *turbinellus* (Rydb.) Blake, Page 860), 63 (032212 - color presentation), 80 (Species of the genus *Machaeranthera* (*Aster* sp.) are listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "Species of this genus are secondary or facultative selenium absorbers and can be dangerous to livestock."), 85 (032412 - color presentation), 86 (recorded as *Haplopappus spinulosus*, color photograph), 124 (032112), 140 (Page 286 - recorded as *Xanthisma spinulosum* (Pursh) D.R. Morgan & R.L. Hartman var. *gooddingii* (A. Nelson) D.R. Morgan & R.L. Hartman), **MBJ/WTK** (September 12, 2005)*

***Machaeranthera tagetina* E.L. Greene: Mesa Tansyaster**

SYNONYMY: *Aster tagetinus* (E.L. Greene) S.F. Blake. COMMON NAMES: Flor de Capita (Spanish); Mesa Tansyaster; Mesa Tansyaster; Tansyleaf Spine Aster. DESCRIPTION: Terrestrial annual forb/herb (erect stems 2 to 40 inches in height; one plant was observed and described as being 10 inches in height and width); the foliage is gray-green; the disk florets are yellow, the ray florets may be blue, dark blue, blue-purple, blue-violet, lavender, dark lavender, purple, purple-blue, purple-indigo or violet; flowering generally takes place between early July and mid-December (additional records: one for mid-March and one for mid-April). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; canyon bottoms; bases of cliffs; ridges; ridgetops; foothills; hills; rocky and rocky-clayey hillsides; rocky, gravelly, gravelly-sandy-loamy and sandy-loamy slopes; alluvial fans; bajadas; rocky-loamy, gravelly, gravelly-sandy and clayey flats; basins; valley floors; gravelly roadbeds; along rocky roadsides; bottoms of arroyos; springs; along streams; streambeds; along creeks; sandy creekbeds; along and in rocky washes; rocky drainages; within drainage ways; ciénegas; banks of rivers; benches; terraces; floodplains; rocky mesquite bosques; ditch banks; riparian areas, and disturbed areas growing in dry rocky, stony-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly-sandy loam, sandy loam and clayey loam ground, and rocky clay, sandy clay and clay ground, occurring from 300 to 8,100 feet elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Machaeranthera tagetina* is native to southwest-central and southern North America. *5, 6, 16, 43 (062109), 44 (060611 - no record of species; genus record), 46 (recorded as *Aster tagetinus* (Greene) Blake, Page 873), 58, 63 (032512), 77, 80 (Species of the genus *Machaeranthera* (*Aster* sp.) are listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "Species of this genus are secondary or facultative selenium absorbers and can be dangerous to livestock."), 85 (032512 - color presentation), 124 (060611 - no record of species; genus record), 140 (Page 285), **MBJ/WTK** (September 12, 2005)*

***Machaeranthera tanacetifolia* (K.S. Kunth) C.G. Nees von Esenbeck: Tansyleaf Tansyaster**

SYNONYMY: *Aster tanacetifolius* K.S. Kunth. COMMON NAMES: Aster (a name also applied to other species and the genus *Machaeranthera* and to the Aster Family); Prärieaster (Swedish); Tahoka Daisy; Tahoka-daisy; Tansy Leaf Aster; Tansy Leaved Aster; Tansy-aster (a name also applied to other species and the genus *Machaeranthera*); Tansy-leaf Aster; Tansyleaf Tansy Aster; Tansy-leaf Tansy-aster; Tansy-leaf-aster; Tansy-leaved Aster; Tansyleaf Aster; Tansyleaf Goldenweed; Tansyleaf Spine Aster; Tansyleaf Tansyaster; Udeya Lianna (Zuni, "Blue Flower"). DESCRIPTION: Terrestrial annual or biennial forb/herb (ascending and/or erect stems 2 inches to 6 feet in height); the foliage is gray-green or pale green; the disk florets may be orange-yellow or are yellow; the ray florets may be light bluish-purple, blue, dark blue, blue-lavender, blue-purple, lavender, deep lavender, lavender-blue, pink, purple, red-violet, violet or violet-lavender; flowering generally takes places between late April and mid-November (additional record: one for early April). HABITAT: Within the range of this species it has been reported from mountains; mesas; sandy-loamy plateaus; rocky rims of canyons; sandy bases of cliffs; along rocky and gravelly-loamy canyons; canyonsides; sandy and sandy-silty canyon bottoms; bouldery-silty-clayey talus slopes; sandy pockets of soil; sandy-clayey bluffs; cindery (scoria) and sandy-clayey buttes; rocky and gravelly ridges; sandy ridgetops; meadows; foothills; sandy hills, rocky and rocky-gravelly-loamy hillsides; rocky, rocky-gravelly-loamy, rocky-sandy, shaley, shaley-clayey, stony-sandy, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey-loamy, clayey, clayey-loamy and clayey-silty slopes; sandy banks; clayey breaks; sand hills; sand dunes; clayey breaks; rocky-sandy and sandy steppes; gravelly-sandy, sandy and clayey prairies; rocky, sandy and sandy-clayey plains; sandy, sandy-loamy, sandy-clayey, sandy-silty, clayey and clayey-loamy flats; rocky, sandy and sandy-clayey uplands; sandy valley floors; along cindery railroad right-of-ways; along rocky-gravelly, rocky-clayey, shaley, gravelly, gravelly-sandy, gravelly-loamy, sandy and clayey roadsides; bottoms of arroyos; along bouldery draws; gullies; ravines; seeps; around and in springs; streambeds; in sand along creeks; sandy creekbeds; along rivers; sandy riverbeds; within gravelly and sandy washes; within sandy and clayey drainages; swampy areas; sumps; grassy swales; along banks of streams, creeks and rivers; (sandy) edges of rivers and lakes; margins of creeks and rivers; along (marshy and sandy-loamy) shores of ponds; sand and silty-sand bars; sandy beaches; sandy-clayey benches; sandy terraces; sandy bottomlands; sandy floodplains; lowlands; margins of reservoirs; along canals; within ditches; sandy riparian areas; waste places, and disturbed areas growing in wet (rarely reported), moist (rarely reported), damp (rarely reported) and dry bouldery, rocky,

rocky-gravelly, rocky-sandy, shaley, stony-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-sandy loam, gravelly loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; bouldery-silty clay, rocky clay, shaley clay, sandy clay and clay ground, and rocky silty, gravelly silty, gravelly-sandy silty, sandy silty, clayey silty and silty ground, occurring from 1,000 to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Machaeranthera tanacetifolia* is native to west-central and southern North America. *5, 6, 18, 28 (color photograph), 43 (062109), 44 (032512), 46 (recorded as *Aster tanacetifolius* H.B.K., Page 873), 63 (032512 - color presentation), 80 (Species of the genus *Machaeranthera* (*Aster* sp.) are listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "Species of this genus are secondary or facultative selenium absorbers and can be dangerous to livestock."), 85 (032712 - color presentation), 86 (color photograph), 124 (032512 - no record of species; genus record), 127, 140 (Page 285)*

***Microseris lindleyi* (A.P. de Candolle) A. Gray: Lindley's Silverpuffs**

SYNONYMY: *Microseris linearifolia* (T. Nuttall) C.H. Schultz; *Uropappus lindleyi* (A.P. de Candolle) T. Nuttall; *Uropappus linearifolius* T. Nuttall. COMMON NAMES: Lindley False Silverpuffs; Lindley Microseris; Lindley Silver Puff; Lindley Silver Puffs; Lindley Silver-puffs; Lindley Silverpuffs; Lindley Uropappus; Lindley's False Silverpuffs; Lindley's Microseris; Lindley's Silver Puff; Lindley's Silver Puffs; Lindley's Silver-puffs; Lindley's Silverpuffs; Lindley's Uropappus; Linear-leaf Microseris; Linearleaf Microseris; Narrowleaf Microseris; Narrow-leaved Microseris; Silver Puffs (a name also applied to other species); Starpoint. DESCRIPTION: Terrestrial annual forb/herb (erect stems 2 to 20 inches in height); the foliage is gray-green or green with the leaves located in a basal rosette; the ray florets may be greenish, straw-yellow, white, pale yellow or yellow; flowering generally takes place between mid-January and mid-June (additional record: one for early September). HABITAT: Within the range of this species it has been reported from mountains; rocky-clayey mountaintops; mesas; canyon rims; bases of cliffs; rocky, gravelly-sandy and sandy canyons; along rocky, rocky-sandy and sandy canyon bottoms; chasms; gorges; rocky knobs; knolls; rocky and rocky-stony ledges; rocky promontories; along ridges; bedrock and rocky ridgetops; openings in woodlands; rocky-sandy meadows; sandy foothills; bouldery, rocky, cobbly-sandy-loamy, gravelly and gravelly-sandy hills; hilltops; rocky and clayey hillsides; along rocky, rocky-gravelly-loamy, rocky-sandy, rocky-clayey, gravelly, gravelly-sandy, gravelly-loamy, sandy-loamy, sandy-clayey-loamy, clayey, clayey-loamy, loamy and silty slopes; gravelly bajadas; bouldery and rocky outcrops; amongst boulders and rocks; lava flows; sand dunes; sandy plains; rocky and sandy flats; basins; sandy and clayey valley floors; along gravelly, gravelly-sandy and sandy roadsides; along bottoms of arroyos; around streams; bouldery and gravelly-clayey-loamy streambeds; creeks; sandy creekbeds; riverbeds; along and in rocky, gravelly, gravelly-sandy and sandy washes; along and in sandy drainages; in cobbly drainage ways; playas; sandy and clayey depressions; along (sandy) banks of arroyos, rivers and washes; edges of streams and creeks; (sandy) margins of creeks; benches; shelves; sandy terraces; sandy and loamy bottomlands; floodplains; mesquite bosques; along fencelines; ditches; sandy riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-stony, rocky-sandy, cobbly, cindery-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, cobbly-sandy loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky-loamy clay, rocky clay and clay ground, and silty ground, occurring from sea level to 7,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant has a milky sap. *Microseris lindleyi* is native to west-central and southern North America and coastal islands in the North Pacific Ocean. *5, 6, 15, 16 (recorded as *Microseris linearifolia* (DC.) Schultz Bip.), 28 (recorded as *Microseris lindleyi* and *Microseris linearifolia*, color photographs 452 & 453), 43 (120809 - *Microseris lindleyi* A.Gray), 44 (033112 - no listings under Common Names; records located under *Uropappus lindleyi*, color photograph, 46 (recorded as *Microseris linearifolia* (DC.) Schultz Bip., Page 959), 58, 63 (033112 - color presentation), 77 (recorded as *Microseris linearifolia* (DC.) Schultz Bip., color photograph #20), 85 (033112 - color presentation), 115 (color presentation), 124 (033112 - no record of species or genus), 140 (Page 286 - recorded as *Uropappus lindleyi* (DeCandolle) Nuttall)*

Microseris linearifolia (see *Microseris lindleyi*)

***Pectis filipes* W.H. Harvey & A. Gray var. *subnuda* M.L. Fernald: Fivebract Chinchweed**

COMMON NAME: Fivebract Chinchweed. DESCRIPTION: Terrestrial annual forb/herb (2½ to 8 inches in height); the stems are red or reddish; the ray flowers are golden, golden-yellow, yellow or yellow-maroon; flowering generally takes place between late July and early November. HABITAT: Within the range of this species it has been reported from mountains; gravelly mountaintops; mountainsides; mesas; canyons; canyon bottoms; crevices in lava rock; pockets of soil; bluffs; ridges; ridgetops; (stony and gravelly) openings in forests and woodlands; foothills; rocky hills; bases of hills; rocky hilltops; rocky and sandy hillsides; along rocky, shaley, stony, gravelly, gravelly-loamy and sandy-loamy slopes; bajadas; amongst rocks; lava flows; rocky, cobbly and sandy plains; gravelly and sandy flats; sandy valley floors; along rocky roadsides; arroyos; bottoms of arroyos; draws; along streams; along creeks; within rocky creekbeds; along sandy washes; (rocky-sandy) shores of lakes; sandy gravelbars; gravelly and sandy benches; floodplains; riparian areas; gravelly waste places, and disturbed areas growing in wet, moist and dry bouldery-gravelly, rocky, rocky-sandy, shaley, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam and sandy loam ground, and sandy clay ground, occurring from 1,800 to 7,000 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant reportedly has a pleasant fragrance. *Pectis filipes* var. *subnuda* is native to southwest-central and southern North America. *5, 6, 15, 43 (082010 - *Pectis filipes* var. *subnuda* Fernald),

44 (040112 - no record of species; genus record), 46 (species, Page 935), 63 (082010), **85** (082110), 124 (040112 - no record of species; genus record)*

***Pectis longipes* A. Gray: Longstalk Chinchweed**

COMMON NAME: Longstalk Chinchweed; Longstalk Cinchweed; Mat Cinchweed. DESCRIPTION: Terrestrial perennial forb/herb or subshrub; the foliage is dark green; the disk are yellow; the ray flowers may be orange-yellow or yellow; flowering generally takes place between late April and mid-September (additional record: one for late March). HABITAT: Within the range of this species it has been reported from mountains; canyons; along canyon bottoms; bases of cliffs; crevices in rocks; rocky-gravelly ridges; foothills; gravelly-loamy hills; rocky hillsides; rocky, rocky-gravelly, gravelly and clayey slopes; bajadas; rocky-gravelly plains; rocky, rocky-sandy, gravelly and sandy flats; gravelly-sandy valleys; roadbeds; along rocky roadsides; gulches; streambeds; along rocky creekbeds; in sandy washes; banks of washes and lakes; edges of seeps; ditches; riparian areas, in rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy soils; gravelly loam and loam soils, and clay soils, occurring from 3,500 to 7,500 feet in elevation in the forest, woodland, grassland and wetland ecological formations. NOTE: *Pectis longipes* is native to southwest-central and southern North America. *5, 6, 15, 43 (062209), 44 (040112 - no record of species; genus record), 46, 58, 63 (062209), **85** (062209), 124 (040112 - no record of species; genus record)*

***Pectis papposa* W.H. Harvey & A. Gray var. *papposa*: Manybristle Chinchweed**

COMMON NAMES: Chinchweed (a name also applied to the species and genus *Pectis*), typical Cinchweed Fetid-marigold; typical Cinchweed Fetidmarigold; typical Common Chinchweed; typical Desert Chinchweed; typical Desert Chinchweed; typical Dissected Chinchweed; Fetid Marigold (a name also applied to the species and other species); Fetid-marigold (a name also applied to the species and other species); Limoncillo (a name also applied to other species, Spanish); typical Many Bristle Cinchweed; typical Many-bristle Cinchweed; typical Many-bristle Fetid-marigold; typical Many-bristled Cinch-weed; typical Many-bristled Cinchweed; typical Manybristle Chinchweed; typical Manybristle Cinchweed; typical Manzanilla Coyote; Manzanilla de Coyote (a name also applied to the species and other species, Spanish). DESCRIPTION: Terrestrial annual forb/herb (ascending stems ½ to 8 inches in height and up to 2 to 12 inches in width, plants were described as being 2 inches in height and 2 to 4 inches in width); the foliage may be green or yellow; the disk florets are yellow; the ray florets are yellow; flowering generally takes place between mid-July and late December (additional records: one for late May and two for early June). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; buttes; sandy ridges; crater floors; rocky foothills; rocky hillsides; rocky, rocky-loamy, gravelly and sandy slopes; bajadas; sand hills; sand dunes; sand hummocks; gravelly and gravelly-sandy plains; bouldery-sandy, rocky-sandy, gravelly, sandy and sandy-loamy flats; sandy valley floors; coastal dunes; coastal flats; gravelly roadsides; sandy arroyos; sandy bottoms of arroyos; sandy bottoms of ravines; along streams; along streambeds; sandy riverbeds; along and in cobbly, gravelly-sandy, sandy and silty washes; gravelly drainages; depressions; (sandy) banks of rivers and washes; (sandy) baysides; terraces; floodplains; lowlands; sandy riparian areas; waste areas, and disturbed areas growing in dry desert pavement; bouldery-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, gravelly loam, sandy loam, silty loam and loam ground; clay ground, and gravelly-sandy silty and silty ground, occurring from below sea level to 5,900 feet in elevation in the scrub, grassland, desertscrub ecological formation. NOTES: This plant may be an attractive component of a restored native habitat, and has been reported to be pleasantly aromatic (one record reported that it has a pungent aroma somewhat like that of a lemon). The species, *Pectis papposa*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or spice crop; it was also noted as having been used as a drug or medication and as a ceremonial item. This plant is a host of the Beet Leaf Hopper. *Pectis papposa* var. *papposa* is native to southwest-central and southern North America. *5, 6, 15, 43 (121009), 44 (040312), 46 (species, Page 935), 63 (040312), **85** (040312 - color presentation of dried material), 86 (color photograph of species), 124 (040112 - no record of species; genus record), 127 (species)*

Perezia nana (see *Acourtia nana*)

Perezia wrightii (see *Acourtia wrightii*)

***Porophyllum gracile* G. Bentham: Slender Poreleaf**

COMMON NAMES: Deerweed (a name also applied to other species); Hierba del Venado (“Herb of the Deer” a name also applied to other species, Spanish); Odora; Poreleaf (a name also applied to other species and the genus *Porophyllum*); Slender Pore Leaf; Slender Pore-leaf; Slender Poreleaf; Yerba de Venado (a name also applied to other species); Yerba del Vernada; Yerba del Vernada. DESCRIPTION: Terrestrial perennial subshrub (spreading and/or erect stems 4 inches to 5 feet in height; one plant was observed and described as being 8 inches in height and 12 inches in width, one plant was described as being 16 inches in height and 20 inches in width); the foliage may be bluish, blue-gray, gray, gray-green, green or purple-gray; the disk florets may be cream, cream-maroon, cream-purple, cream-white, flesh, grayish-white, maroon, maroon-cream, pinkish, pinkish-white, purple, purple-white, purplish, purplish-white, white, whitish, white tinged with purple, yellow or yellow-white; flowering generally takes place between mid-February and late December (additional records: one for early January and one for mid-January). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky-gravelly, stony and gravelly mesas; cliffs; bouldery bases of cliffs; in rocks along walls; bouldery, rocky and stony canyons; rocky and sandy canyon bottoms; scree; talus slopes; crevices in boulders and rocks; rocky bluffs; ledges; rocky ridges; rocky ridgetops;

meadows; foothills; rocky and rocky-sandy hills; along bouldery hilltops; rocky hillsides; bedrock, bouldery, rocky, rocky-gravelly, rocky-loamy, rocky-clayey, gravelly and sandy slopes; alluvial fans; rocky and gravelly bajadas; rocky outcrops; amongst boulders and rocks; gravelly bases of boulders; sandy lava beds; sand dunes; sandy hummocks; sandy plains; rocky-sandy, gravelly and sandy flats; basins; valley floors; sea-bluffs; sandy coastal dune ridges; along gravelly roadsides; along rocky and sandy arroyos; rocky arroyo walls; rocky bottoms of arroyos; draws; along gullies; seeps; around springs; along streams; along creeks; sandy creekbeds; along rivers; rocky riverbeds; along and in rocky, rocky-clayey, gravelly, gravelly-sandy and sandy washes; drainages; within drainage ways; (rocky, cobbly and sandy) banks of arroyos, rivers and washes; borders of washes; (rocky) edges of arroyos; along shores; beaches; gravelly terraces; floodplains; riparian areas, and recently burned areas of chaparral growing in wet and dry gravelly desert pavement; bouldery, bouldery-gravelly, rocky, rocky-gravelly, shaley, shaley-pebbly, stony, cobbly, cindery, cindery-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam and rocky-gravelly loam ground, and rocky clay and clay ground, occurring from sea level to 6,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Slender Poreleaf emits a pungent odor when bruised. This plant was reported to have been utilized by native peoples of North America crop; it was noted as having been used as a drug or medication. Deer browse this plant. *Porophyllum gracile* is native to southwest-central and southern North America. *5, 6, 13 (Page 311), 15, 16, 28 (color photograph 733), 43 (121109), 44 (040512), 46 (Pages 933-934), 58, 63 (040512 - color presentation), 77, 85 (040512 - color presentation), 115 (color presentation), 124 (040512 - no record of species or genus), 127, 140 (Page 285)*

Porophyllum macrocephalum (see *Porophyllum ruderales* subsp. *macrocephalum*)

***Porophyllum ruderales* (N.J. von Jacquin) A.H. de Cassini subsp. *macrocephalum* (A.P. de Candolle) R.R. Johnson: Yerba Porosa**

SYNONYMY: *Porophyllum macrocephalum* A.P. de Candolle. COMMON NAME: Yerba Porosa. DESCRIPTION: Terrestrial annual forb/herb (erect stems 6 inches to 4 feet in height); the florets may be brown, brownish, pale green-white, greenish, purple, purplish, red-brown or rose; flowering generally takes place between late August and early October (additional records: one for late February, one for late October and one for early November). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky mesas; rocky cliffs; rocky canyons; canyon walls; along canyon bottoms; pockets of soil; gravelly and sandy ledges; openings in woodlands; hills; rocky hillsides; rocky and rocky-gravelly-sandy slopes; bases of rocky slopes; rocky outcrops; amongst boulders and rocks; gravelly flats; along roadsides; bottoms of arroyos; springs; in rocky-sandy and sandy soil along streams; streambeds; along and in rocky-sandy washes; within drainages; around and in stock tanks; riparian areas, and disturbed areas growing in moist, damp and dry (seasonally wet) bouldery, rocky, rocky-gravelly-sandy, rocky-sandy, gravelly and sandy ground and sandy loam and loam ground, occurring from 700 to 6,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The herbage and flowers are aromatic. *Porophyllum ruderales* subsp. *macrocephalum* is native to southwest-central and southern North America; Central America and coastal islands in the Caribbean Sea, and northern and western South America. *5, 6, 15, 30 (species), 43 (012111), 44 (012111 - no record of common names), 46 (recorded as *Porophyllum macrocephalum* DC., Page 933), 58, 63 (012111), 85 (012211 - color presentation), 124 (012111 - no record of species), 140 (Page 285)*

***Pseudognaphalium stramineum* (K.S. Kunth) A.A. Anderberg: Cottonbatting Plant**

SYNONYMY: *Gnaphalium chilense* C.P. Sprengel. COMMON NAMES: Annual Cudweed; 'Azee' Dis (Athapascan: Navajo)¹⁴⁰; Cotton Batting (English)¹⁴⁰; Cotton Weed (English)¹⁴⁰; Cotton-batting (English)¹⁴⁰; Cottonbatting Cudweed; Cottonbatting Plant; Cotton Cudweed; Cudweed (English)¹⁴⁰; Gordolobo (applied to the genus in Mexico, Spanish)¹⁴⁰; Narag^wan (m) (Uto-Aztecan: Kawaiisu)¹⁴⁰; Pussy Toes; Rosáberi (Uto-Aztecan: Tarahumara)¹⁴⁰; Small-flowered Cudweed; Toi'yadatibuda (Uto-Aztecan: Shoshoni)¹⁴⁰. DESCRIPTION: Terrestrial annual or biennial forb/herb (8 to 36 inches in height); the leaves are woolly; the flowers may be white, yellow, yellowish or yellowish-cream; flowering generally takes place between late April and mid-October (additional record: one for mid-March). HABITAT: Within the range of this species it has been reported from mountains; mesas; cliffs; canyons; sandy-loamy canyon bottoms; talus slopes; pockets of soil on bedrock outcrops; meadows; foothills; rocky hills; bouldery and rocky slopes; amongst boulders; rocky alcoves; rims of craters; valleys; along sandy roadsides; gravelly arroyos; draws; springs; along gravelly streams; sandy streambeds; clayey-loamy creekbeds; along rivers; cobbly riverbeds; along and in rocky-sandy and sandy washes; rocky and rocky-gravelly drainages; sandy-clayey soils along ponds; lakebeds; marshlands; sloughs; sandy-loamy swales; along sandy-clayey banks of streams, rivers, rocky and rocky-gravelly drainages and lakes; sandy borders of marshes; banks of lakes; wet mud at edges of pools and lakes; fringes of ponds; margins of creeks; along sandy shores of rivers and lakes; sand bars; sandy benches; sandy terraces; gravelly-loamy bottomlands; rocky and sandy-clayey floodplains; around margins of stock tanks; ditches; gravelly-loamy and clayey-loamy riparian areas, and disturbed areas in rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly and sandy soils; gravelly loam, sandy loam and clay loam soils, and rocky clay and sandy clay soils, occurring from 100 to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America. *Pseudognaphalium stramineum* is native to southwest-central and southern North America. *5, 6, 15, 43 (062309), 46, 58, 63 (062309), 85 (062309), 127, 140 (Pages 71-72 & 286 - recorded as *Pseudognaphalium stramineum* (Kunth) Anderberg [*Gnaphalium chilense* Sprengel])*

Psilactis coulteri (see *Machaeranthera arida*)

***Psilostrophe cooperi* (A. Gray) E.L. Greene: Whitestem Paperflower**

SYNONYMY: *Riddellia cooperi* A Gray. COMMON NAMES: Cooper Paper Daisy; Cooper Paper Flower; Cooper Paper Daisy; Cooper Paper-flower; Cooper Paperflower; Cooper's Paper Daisy; Cooper's Paper Flower; Cooper's Paper-daisy; Cooper's Paper-flower; Coopers Paperflower; Paper Daisy; Paper Flower (a name also applied to the genus *Psilostrophe*); Paper-daisy; Paper-flower (a name also applied to the genus *Psilostrophe*); Paperflower (a name also applied to the genus *Psilostrophe*); White Stem Paperflower; White-stem Paper-flower; White-stem Paperflower; Whitestem Paperflower; Yellow Paper Daisy. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (erect stems 4 to 32 inches in height; one plant was observed and described as being 32 inches in height and 40 inches in width); the stems are white; the leaves may be blue-green, gray, gray-green, green, greenish-gray or white; the disk florets are yellow, the ray florets are lemon-yellow, pale yellow or yellow fading to cream or white and remaining on the plants when dry; flowering generally takes place between early January and early December. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky mesas; bouldery, bouldery-gravelly and rocky canyons; along canyon bottoms; buttes; rocky and chalky ridges; ridgelines; foothills; rocky, stony-gravelly, cobbly-gravelly-loamy and clayey hills; rocky and gravelly hillsides; bouldery, rocky, rocky-gravelly-clayey, stony, gravelly-sandy-silty, gravelly-clayey, sandy-loamy and sandy-silty slopes; sandy bajadas; rocky outcrops; amongst boulders and rocks; lava fields; sand dunes; rocky banks; plains; gravelly, sandy and clayey-loamy flats; basins; sandy valley floors; roadbeds; along rocky-sandy-loamy, gravelly-sandy, sandy and clayey roadsides; arroyos; along streams; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; drainages; sandy along rocky drainage ways; sandy depressions; along (sandy) banks of arroyos, rivers and washes; borders of washes; (gravelly-silty) edges of draws; mudflats; rocky benches; gravelly terraces; sandy bottomlands; floodplains; sandy riparian areas, and disturbed areas growing in moist and dry desert pavement; bouldery, bouldery-gravelly, rocky, rocky-sandy, stony, stony-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, cobbly-gravelly loam, sandy-clayey loam, sandy-silty loam and clayey loam ground; rocky clay, rocky-gravelly clay, gravelly clay and clay ground; gravelly silty, gravelly-sandy silty and sandy silty ground, and chalky ground, occurring from 500 to 6,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Psilostrophe cooperi* is native to southwest-central and southern North America. *5, 6, 13 (Page 309, color photograph: Plate W., Page 408), 15, 16, 18, 28 (color photograph 421), 43 (040912 - *Psilostrophe cooperi* Greene), 44 (060611), 46 (Page 914), 48 (genus), 63 (040912 - color presentation), 77, 80 (This species is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "This showy, low-growing shrub is widespread in Arizona. No losses have been documented, but it may cause some poisoning similar to the other paperflowers."), 85 (060811 - color presentation), 86 (color photograph), 115 (color presentation), 124 (060611 - no record of species; genus record), 140 (Page 286)*

***Rafinesquia californica* T. Nuttall: California Plumeseed**

COMMON NAMES: California Chicory; California Plumeseed. DESCRIPTION: Terrestrial annual forb/herb (erect stem 8 inches to 5 feet in height); the ray flowers are cream, cream-white with a pinkish tint, cream-yellow or white possibly tinged with rose; flowering generally takes place between mid-February and late June (flowering ending as late as July has been reported). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; plateaus; rocky canyons; along canyon floors; bases of cliffs; pockets of soil in boulders; clayey-loamy ridges; ridgetops; openings in chaparrals; rocky-sandy meadows; rocky hills; hilltops; rocky and cobbly-loamy hillsides; bouldery-gravelly, rocky, rocky-gravelly-loamy, rocky-loamy-clayey, cobbly-sandy-loamy and clayey slopes; amongst rocks; rocky banks; clay lenses; silty flats; along rocky and gravelly roadsides; gulches; along streams; in streambeds; in rocky-gravelly creekbeds; along and in rocky and sandy washes; drainages; rocky-sandy bases of waterfalls; gravelly banks of streams; gravelly-sandy riparian areas; recently burned areas of pinyon-juniper woodland, grassland, chaparral and coastal sage scrub, and disturbed areas growing in wet, moist and dry bouldery, bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, cobbly loam, cobbly-sandy loam, clayey loam and silty loam ground; rocky-loamy clay and clay ground, and silty ground, occurring from 600 to 6,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Rafinesquia californica* is native to southwest-central and southern North America. *5, 6, 15, 43 (071710), 46 (Page 961), 63 (071710), 77, 80 (Listed as a Rarely Poisonous and Suspected Poisonous Range Plant, this annual forb has been reported to accumulate toxic levels of nitrate.), 85 (073110 - color presentation), 140 (Pages 83 & 286)*

***Rafinesquia neomexicana* A. Gray: New Mexico Plumeseed**

COMMON NAMES: Desert Chickory (a name also applied to other species); Desert Chicory (a name also applied to other species); Desert Chicory (English)¹⁴⁰; Desert-chicory (a name also applied to other species); Desert Dandelion (a name also applied to other species); Goatsbeard; Mexican Plumeseed; New Mexico Chicory; New Mexico Desert Chicory; New Mexico Desert-chicory; New Mexico Plumeseed; New Mexico Plumeseed; New Mexico Plumeseed; New Mexico Plumeseed; Plumeseed (a name also applied to the genus *Rafinesquia*); [New Mexico] Plumeseed (English: Arizona, New Mexico, Texas)¹⁴⁰; Plumeseed (a name also applied to the genus *Rafinesquia*); S□ (Uto-Aztecan: Southern Paiute)¹⁴⁰. DESCRIPTION: Terrestrial annual forb/herb (ascending or erect stems 4 to 24 inches in height); the foliage may be bluish-gray-green or gray; the flowering heads (to 2 inches in width) may be cream, cream-white, white, white with lavender or pink stripes, yellow or yellow-cream; flowering generally takes place between early January and late May (additional record: one for mid-July). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy-silty mesas, along rocky cliffs; bases of cliffs; rocky

canyons; sandy and sandy-loamy canyon bottoms; knobs; ridges; ridgetops; foothills; rolling hills; rocky and sandy hillsides; bases of hills; rocky escarpments; bouldery-sandy-clayey, rocky, rocky-gravelly-loamy, rocky-sandy, rocky-silty-clayey, rocky-powdery, stony, cobbly-gravelly-sandy, cobbly-sandy loam, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey, gravelly-clayey-loamy, sandy, sandy-loamy and silty slopes; alluvial fans; rocky-sandy and gravelly bajadas; amongst rocks; lava fields; sand dunes; sand flats; blow-sand deposits; terraces; bouldery-pebbly and sandy plains; rocky, cindery-sandy, gravelly, sandy, sandy-loamy, sandy-silty silty flats; rocky uplands; gravelly and sandy valley floors; coastlines; along rocky-sandy, gravelly, gravelly-sandy-clayey-loamy and sandy roadsides; rocky and sandy arroyos; draws; along gullies; along and in rocky, gravelly, gravelly-sandy and sandy washes; drainages; cobbly drainage ways; silty lakebeds; sandy and silty depressions; alkaline sinks; (gravelly-sandy and sandy) banks of washes; (sandy) edges of washes and lakes; margins of washes; shores of lakes; gravelly-sandy benches; terraces; floodplains; ditches; sandy riparian areas and disturbed areas growing in dry desert pavement; bouldery-pebbly, bouldery-sandy, rocky, rocky-sandy, stony, cobbly, cobbly-gravelly-sandy, cindery, cindery-sandy, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; rocky-gravelly loam, cobbly-sandy loam, gravelly loam, gravelly-sandy-clayey loam, gravelly-clayey loam and sandy loam ground; bouldery-sandy clay, gravelly-silty clay, gravelly clay, sandy clay, silty clay and clay ground; sandy silty and silty ground, and rocky powdery ground, occurring from sea level to 5,800 feet in elevation in the scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The flowers “close” for the night and then re-open in the morning. It is often found growing up through the crowns of and supported by Triangleleaf Bursage (*Ambrosia deltoidea*) and other small low shrubs. *Rafinesquia neomexicana* is native to southwest-central and southern North America. *5, 6, 16, 28 (color photograph 261), 43 (121209), 44 (040912 - color photograph, 46 (Page 961), 58, 63 (040912 - color presentation), 77 (color photograph #22), 85 (041012 - color presentation), 86 (color photograph), 115 (color presentation), 124 (040912 - no record of species or genus), 140 (Pages 82-83 & 286)*

Ratibida columnaris (see *Ratibida columnifera*)

***Ratibida columnifera* (T. Nuttall) E.O. Wooton & P.C. Standley: Upright Prairie Coneflower**

SYNONYMY: *Ratibida columnaris* (Sims) D. Don. COMMON NAMES: Columnar Prairie Coneflower; Cone Flower; Long Headed Coneflower; Mexican Hat; Mohakedasha (Zuni); Prairie Coneflower; Prairie-coneflower; Thimble Flower; Upright Prairie Coneflower; Yellow Coneflower. DESCRIPTION: Terrestrial perennial forb/herb (1 to 4 feet in height, a plant was described as being 18 inches in height and 24 inches in diameter); the leaves are green; the disk flowers, covering a columnar floral-disk ($\frac{1}{2}$ to $2\frac{1}{2}$ inches in length), are brown, greenish-brown, purplish-brown or yellow-green; the ray flowers ($\frac{1}{2}$ to $\frac{3}{4}$ inches in length) are maroon, maroon with a yellow border, dark purple, reddish, reddish-brown, yellow or yellow with reddish brown, flowering generally takes place between early May and mid-October (additional record: one for mid April). HABITAT: Within the range of this species it has been reported from mountains, mesas; rocky and sandy canyons; ridges; clearings in forests and woodlands; sandy and sandy-loamy meadows; rocky, sandy and silty hills; hillsides; gravelly-sandy, gravelly-sandy-clayey, sandy-clayey-loamy, sandy, clayey-loamy, loamy and silty-clayey slopes; rocky-sandy and sandy steppes; prairies; sandy plains; rocky, gravelly-sandy-clayey-loamy and sandy flats; valley bottoms; along railroad right-of-ways; along rocky, gravelly, sandy-clayey, loamy, clayey and clayey-loamy roadsides; within sandy and clayey arroyos; bottoms of arroyos; springs; sandy soils along streams; streambeds; along creeks; along rivers; in clayey drainages; along ponds; marshes; swales; (rocky) banks of streams, drainages, lakes and lakebeds; edges of rivers; along shores of lakes; terraces; sandy and clayey bottomlands; floodplains; around stock tanks; along ditches; riparian areas; waste places, and disturbed areas in rocky, rocky-sandy, gravelly and sandy soils; gravelly loam, gravelly-sandy-clayey loam, sandy loam, sandy-clayey loam, clayey loam and loam soils; gravelly clay, gravelly-sandy clay, sandy clay, silty clay and clay soils, and sandy silty and silty soils, occurring from 2,500 to 8,900 feet in elevation in the forest, woodland, grassland and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America. This plant may be browsed by Mule Deer (*Odocoileus hemionus*), Pronghorn (*Antilocapra americana*), White-tailed Deer (*Odocoileus virginianus*), small mammals and birds, and Wild Turkey (*Meleagris gallopavo*) feed on the seed. *Ratibida columnifera* is native to central and southern North America. *28 (color photograph), 43 (080209 - *Ratibida columnaris* Raf.), 46 (*Ratibida columnaris* (Sims) D. Don), 63 (080209), 85 (080209), 86 (color photograph), 127*

Riddellia cooperi (see *Psilostrophe cooperi*)

***Sanvitalia aberti* A. Gray: Abert's Creeping Zinnia**

COMMON NAMES: Abert Creeping Zinnia; Abert Dome; Abert Sanvitalia; Abert's Creeping Zinnia; Abert's Dome; Abert's Sanvitalia. DESCRIPTION: Terrestrial annual forb/herb (erect stems 2 to 24 inches in height; one plant was described as being 24 inches in height and 32 inches in width); the stems are green, sometimes with a reddish tinge; the leaves are green; the disk florets are pale green, green, greenish-yellow, yellow or yellow-green; the ray florets are lemon-yellow, pale yellow or yellow drying cream or straw; flowering generally takes place between early August and late October (additional record: one for mid-July). HABITAT: Within the range of this species it has been reported from mountains; rocky and clayey mesas; rocky cliffs; rocky canyons; sandy and clayey canyon bottoms; rocky gorges; pockets of soil in rock; rocky ledges; ridges; ridgetops; clearings in forests; meadows; cinder cones; foothills; rocky-sandy and sandy hills; rocky, gravelly and gravelly-clayey hillsides; rocky, cindery, gravelly, gravelly-loamy, gravelly-clayey, sandy, sandy-loamy, sandy-clayey and loamy slopes; bajadas; plains; rocky and clayey outcrops; bouldery-sandy, rocky-gravelly, gravelly, sandy and sandy-loamy flats; valley floors; along gravelly-loamy and sandy-clayey-loamy roadsides; rocky, sandy and clayey arroyos; sandy bottoms of arroyos; along draws; springs;

along streams; rocky-gravelly streambeds; along creeks; rocky creekbeds; along rivers; riverbeds; along and in rocky, gravelly, gravelly-sandy, sandy and clayey washes; drainages; depressions; swales; banks of washes, drainages and lakes; edges of washes; sandy-loamy terraces; bottomlands; floodplains; mesquite bosques; ditches; along sandy and silty riparian areas; waste places, and disturbed areas growing in dry bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly loam, sandy loam, sandy-clayey loam and loam ground; sandy clay and clay ground, and sandy-silty and silty ground, occurring from 2,600 to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Sanvitalia aberti* is native to southwest-central and southern North America. *5, 6, 15, 43 (072009), 44 (041612), 46 (Page 898), 63 (041612 - color presentation), 77, **85** (041612 - color presentation), 115 (color presentation), 124 (041612 - no record of species or genus), 127, 140 (Page 286)*

Selloa glutinosa (see *Gymnosperma glutinosum*)

Senecio douglasii var. *monoensis* (see *Senecio flaccidus* var. *monoensis*)

***Senecio flaccidus* C.F. Lessing var. *monoensis* (E.L. Greene) B.L. Turner & T.M. Barkley: Smooth Threadleaf Ragwort**

SYNONYMY: *Senecio douglasii* A.P. de Candolle var. *monoensis* (E.L. Greene) W.L. Jepson; *Senecio monoensis* E.L. Greene. COMMON NAMES: Bush Groundsel; Bush Ragwort; Bush Senecio; Comb Butterweed; Felty Groundsel; Creek Senecio; Groundsel (a name also applied to other species and to the genus *Senecio*); Mono Groundsel (a name applied to other species); Mono Ragwort (a name also applied to other species); Mono Senecio; Sand Wash Butterweed; Sand Wash Groundsel; Sand-wash Butterweed; Sand-wash Groundsel; Sandwash Senecio; Shrubby Butterweed; Shrubby Ragwort; Smooth Threadleaf; Smooth Threadleaf Ragwort; Thread-leaf Groundsel; Thread-leaf Ragwort; Thread-leaved Ragwort; Threadleaf Butterleaf; Threadleaf Groundsel; Threadleaf Ragwort; Wash Groundsel. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (erect stems 1 to 4 feet in height); the hairless foliage may be green, dark green or yellow-green; the disk florets may be orange-yellow or yellow; the ray florets are yellow; flowering generally takes place between late January and late November. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; plateaus; cliffs; canyons; rocky canyon bottoms; foothills; bouldery and rocky hills; rocky hillsides; bedrock, bouldery-rocky, rocky, rocky-sandy-loamy, rocky-silty, cindery, gravelly, gravelly-loamy, gravelly-clayey and sandy slopes; gravelly alluvial fans; bajadas; rocky and shaley outcrops; amongst boulders and rocks; banks; sandy plains; gravelly and sandy flats; basins; valley floors; along gravelly, gravelly-loamy and sandy roadsides; rocky and rocky-gravelly arroyos; bottoms of arroyos; silty draws; bottoms of draws; deep shaded ravines; springs; along rivulets; along streams; streambeds; along creeks; sandy creekbeds; riverbeds; along and in rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy, sandy and sandy-loamy washes; within drainages; clayey depressions; borders of washes; edges of washes; benches; sandy bottomlands; sandy floodplains; bouldery, gravelly-sandy and sandy riparian areas, and disturbed areas growing in dry bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, shaley, cindery, gravelly, gravelly-sandy and sandy ground; bouldery-gravelly loam, rocky-sandy loam, gravelly loam, sandy loam and clayey loam ground; gravelly clay and clay ground, and rocky silty, gravelly-sandy silty and silty ground, occurring from sea level to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant is reported to be a nectar source for many butterflies. *Senecio flaccidus* var. *monoensis* is native to southwest-central and southern North America. *5, 6, 13 (Pages 349-350), 15 (recorded as *Senecio douglasii* DC. var. *monoensis* (Greene) Jepson), 16, **28** (color photograph 426 labeled Sand Wash Groundsel [*Senecio douglasii* var. *douglasii* (*Senecio monoensis*)] Page 289), 43 (062409), 44 (060811), 46 (recorded as *Senecio monoensis* Greene, Page 947), 63 (041612 - color presentation), 77 (recorded as *Senecio douglasii* DC. var. *monoensis* (Greene) Jepson), **80** (**The Threadleaf Groundsel, Woolly Groundsel, Senecio (*Senecio longilobus* and others) are listed as Major Poisonous Range Plants.** Poisoning by Threadleaf Groundsel has been attributed to the presence of a number of alkaloids. "These alkaloids belong to a single group - the pyrrolizidine alkaloids. Upon hydrolysis, these break into a nitrogen-containing fraction and a mono- or di-carboxylic necic acid. The nitrogen oxides are hepatotoxic, causing liver lesions that are attributed to senecio poisoning. ... Cattle and horses are equally sensitive to senecio poisoning; sheep and goats are less susceptible. ... Also, the consumption of small amounts of the plant over a period of a month or more will have a cumulative effect. ... When possible, livestock should be kept from areas heavily infested with Threadleaf Groundsel, particularly when the range is excessively dry." See text for additional information.), **85** (060811 - color presentation), 115 (color presentation), 124 (060811 - no record of variety or species; genus record), 140 (Page 286)*

***Senecio lemmonii* A. Gray: Lemmon's Ragwort**

COMMON NAMES: Groundsel (a name also applied to the genus *Senecio*); Lemmon Butterweed; Lemmon Groundsel; Lemmon Ragwort; Lemmon's Butterweed; Lemmon's Ragwort. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (stems 4 inches to 5 feet in height); the stems are reddish; the foliage is purple beneath and green above; the disk florets are golden-yellow, orange-yellow or yellow, the ray florets may be buttery-yellow, green-yellow or yellow, flowering generally takes place between early February and mid-May (additional records: one for early January, one for mid-January, one for early February, one for early June, one for late June, two for mid-November and four for late November). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky peaks; rocky mountainsides; mesas; canyon rims; rocky cliffs; rocky cliff faces; bases of cliffs; along rocky canyons; crevices in boulders and rocks; buttes; rocky ridges; foothills; rolling hills; rocky, shaley, gravelly and gravelly-silty hillsides; bouldery, bouldery-rocky and rocky slopes; bajadas; rocky

outcrops; amongst boulders and rocks; bases of boulders and rocks; valley floors; along arroyos; draws; around seeps; along streams; rocky streambeds; along creeks; along and in rocky, rocky-sandy, gravelly and sandy washes; banks of streams and washes; borders of washes, and riparian areas growing in dry bouldery, rocky, rocky-sandy, shaley, gravelly and sandy ground; gravelly loam ground; clay ground, and gravelly silty ground, occurring from 300 to 4,700 feet in elevation in the scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Senecio lemmonii* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph), 43 (121509), 44 (041612 - no record of species; genus record), 46 (recorded as *Senecio lemmoni* Gray, Page 949), 58, 63 (041612), 77, **85** (041712 - color presentation), 115 (color presentation), 124 (041612 - no record of species; genus record), 140 (Page 286)*

Senecio monoensis (see *Senecio flaccidus* var. *monoensis*)

Solidago arizonica (see *Solidago velutina*)

Solidago canadensis var. *arizonica* (see *Solidago velutina*)

Solidago sparsiflora (see *Solidago velutina*)

***Solidago velutina* A.P. de Candolle: Threenerve Goldenrod**

SYNONYMY: *Solidago arizonica* (A. Gray) E.O. Wootton & P.C. Standley; *Solidago canadensis* C. Linnaeus var. *arizonica* A. Gray; *Solidago sparsiflora* A. Gray. COMMON NAMES: Arizona Goldenrod; California Goldenrod; Few-flowered Goldenrod; Sparse Goldenrod; Three Nerved Goldenrod; Three-nerve Goldenrod; Threenerve Goldenrod; Velvet Goldenrod; Velvety Foothills Goldenrod; Velvety Goldenrod. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (ascending and/or erect stems 6 inches to 5 feet in height); the older stems may be reddish and woody; the foliage may be gray-green, green or dark green; the flower heads may be golden or yellow; flowering generally takes place between early June and late November (additional record: one for mid-February). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mountainsides; clayey mesas; gravelly plateaus; along mesa rims; rocky cliffs; hanging gardens; bouldery bases of cliffs; along rocky canyons; canyon walls; canyonsides; along rocky-clayey, stony and sandy canyon bottoms; gorges; rocky scree slopes; talus slopes; crevices in rocks; pockets of soil in rocks and talus fields; buttes; hogbacks; rocky ledges; along rocky ridges; ridgetops; clearcuts; rocky clearings and openings in forests; bouldery, stony and sandy meadows; gravelly hills; rocky hillsides; escarpments; bouldery, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, rocky-loamy, shaley, shaley-clayey, gravelly, gravelly-loamy, gravelly-silty-loamy, sandy, sandy-loamy, sandy-clayey, clayey-loamy, loamy and clayey slopes; rocky outcrops; amongst rocks; along and around bases of rocks; debris fans; sandy and sandy-clayey banks; plains; rocky, rocky-loamy, shaley-clayey, gravelly and clayey flats; uplands; stony-loamy and cobbly-loamy hollows; rocky valley floors; valley bottoms; roadbeds; shaley roadcuts; along gravelly, sandy and sandy-silty roadsides; arroyos; bottoms of arroyos; bouldery and rocky draws; stony gulches; rocky and stony ravines; bottoms of ravines; seeps; springs; in sand along streams; along and in rocky, rocky-sandy, gravelly and gravelly-loamy streambeds; along rocky-sandy creeks; creekbeds; along rivers; along riverbeds; along and in bouldery-sandy, rocky, cobbly and sandy washes; along drainages; in rocky and rocky-cindery drainage ways; around ponds; boggy areas; ciénegas; along (rocky, cobblestone, gravelly-sandy and sandy) banks of arroyos, streams and creeks; borders of washes; along edges of lakes; margins of streams; shorelines of lakes; gravel and sand bars; rocky-sandy and sandy beaches; sandy benches; bouldery-sandy and stony terraces; rocky bottomlands; floodplains; lowlands; rocky-gravelly-sandy, sandy, sandy-loamy and clayey-loamy riparian areas; waste places; recently burned areas in forests, and disturbed areas growing in wet, moist and dry rimrock; bouldery, bouldery-sandy, rocky, rocky-cindery, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, stony, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, stony loam, cobbly loam, gravelly loam, gravelly-silty loam, sandy loam, clayey loam, silty loam, humus loam and loam ground; rocky-clay, sandy clay and clay ground, and rocky silty, sandy silty and silty ground, occurring from 1,200 to 11,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Solidago velutina* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph 475 [photograph of *Solidago canadensis*]), 43 (121609), 44 (041712), **46** (*Solidago sparsiflora* Gray), 58, 63 (041712), **80** (Species of the genus *Solidago* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Forced use of these unpalatable perennial forbs may result in abortion and death of livestock. Apparently plants are not toxic until after flowering."), **85** (041812 - color presentation), 86 (color photograph of *Solidago canadensis*), 101 (color photograph of *Solidago canadensis*), 124 (041712), 127, 140 (Page 286)*

***Stephanomeria pauciflora* (J. Torrey) A. Nelson: Brownplume Wirelettuce**

SYNONYMY: *Stephanomeria pauciflora* (J. Torrey) A. Nelson var. *parishii* (W.L. Jepson) P.A. Munz; *Stephanomeria pauciflora* (J. Torrey) A. Nelson var. *pauciflora*. COMMON NAMES: Brown Plume Wire Lettuce; Brown Plume Wire-lettuce; Brown Plume Wirelettuce; Brown-plume Ptiloria; Brown-plume Wire-lettuce (English)¹⁴⁰; Brownplume Wirelettuce; Brown-plumed Ptiloria; Desert Milk-aster; Desert Milkaster; Desert Straw (a name also applied to other species); Desert-straw (English: Arizona)¹⁴⁰; Few Flower Wreath-plant; Few Flowered Wire Lettuce; Few-flower Desert-straw; Few-flower Wreath-plant; Few-flower Wire-lettuce; Few-flower Wreath-plant; Few-flowered Stephanomeria; Few-flowered Wire Lettuce; Few-flowered Wire-lettuce; Few-flowered Wirelettuce; Fewflower Wire-lettuce; Fewflower Wirelettuce; Hebe Imixáa ("Rootless Plant", Yuman:

Seri)¹⁴⁰; Jeeh Doot'izh [Ts'oh, Ts'ósi] <jé□dóy.is, □'e□ doʔ'is [coh, c'o's]> (Athapascan: Navajo)¹⁴⁰; Parish's Wire-lettuce (*S.p.* var. *parishii*); Piinga <pí:nga> (Uto-Aztecan: Hopi)¹⁴⁰; Pionilla ("Little Peonia" a name also applied to other species, Spanish: Mexico)¹⁴⁰; Posapátx Camoz ("What Thinks It's a Sweet-bush", Hokan: Seri)¹⁴⁰; Prairie Skeleton Plant; Prairie Skeleton-plant; Prairie Skeletonplant; Sanako'ogad□b□ (Uto-Aztecan: Paiute)¹⁴⁰; Skeleton Plant; Skeleton-weed (a name also applied to the genus *Stephanomeria*); Skeleton-weed (English)¹⁴⁰; Small-flowered Wirelettuce; Wire Lettuce (a name also applied to the genus *Stephanomeria*); Wire-lettuce (a name also applied to the genus *Stephanomeria*); Wirelettuce (a name also applied to the genus *Stephanomeria*). DESCRIPTION: Terrestrial perennial forb/herb or subshrub (stems 4 to 20 inches in height with some plants described as being up to 5 feet in height, plants up to 4 feet in width were reported; plants were observed and described as being 10 inches in height and 14 inches in width, plants were observed and described as being 20 inches in height and 28 inches in width); the foliage may be blue-green, gray-green, pale green or green; the flower heads may be bluish-white, cream, pale & dark gray, pale lavender, pale lavender-pink, lavender, lavender-pink, orange, pale pink, pink fading to tan-brown, pinkish, pink-lavender, pink-purple, pink-violet, pink-white, pale purple, purple, rose, pale red-lavender, tan, violet, white, dull white, off-white or white-pink; flowering generally takes between late February and late December (additional records: on for mid-January and one for early February). HABITAT: Within the range of this species it has been reported from mountains; cindery mountainsides; bases of mountains; clayey-loamy mesas; rock cliffs; rocky, sandy and sandy-loamy canyons; spurs; crevices in canyon walls; rocky, gravelly-sandy and sandy canyon bottoms; talus; crevices in rocks; sandy knolls; rocky ridges; bouldery ridgetops; rocky ridgelines; shortgrass meadows; tops of cinder cones; crater floors; rocky foothills; bouldery, rocky and clay hills; hilltops; rocky and gravelly hillsides; along bouldery, rocky, rocky-gravelly-loamy, cobbly, cobbly-sandy-clayey, cindery, gravelly, gravelly-loamy, sandy, sandy-silty, loamy and clayey slopes; gravelly bajadas; rocky outcrops; amongst rocks; stony mounds; sand hills; sand dunes; rocky-gravelly and sandy outwash fans; sandy prairies; stony, gravelly-sandy, sandy and clayey plains; rocky-sandy, gravelly, gravelly-loamy, sandy and sandy-silty flats; uplands; valley floors; gravelly valley bottoms; coastal sand dunes; coastal plains; coastal beaches; railroad right-of-ways; along gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey-loamy, sandy, sandy-silty and silty roadsides; sandy and clayey-loamy arroyos; gravelly-silty and sandy draws; gulches; within ravines; seeps; around springs; seeping streams; along streams; streambeds; along creeks; sandy creekbeds; bouldery-cobbly-sandy and sandy riverbeds; along and in rocky-sandy, cobbly-sandy, gravelly, gravelly-sandy and sandy washes; along rocky-sandy drainages; along drainage ways; around ponds; (gravelly) banks of rivers and washes; borders of washes; (sandy) edges of arroyos and washes; around fringes of playas; along margins of arroyos and washes; shores of rivers; gravel bars, rocky beaches; gravelly and sandy benches; rocky and sandy terraces; rocky-sandy bottomlands; floodplains; stock tanks; ditch banks; rocky-sandy, sandy and clayey-loamy riparian areas, and disturbed areas growing in moist, damp and dry desert pavement; bouldery, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, cobbly, cobbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy-clayey loam, sandy-clayey and clayey loam and loam ground; cobbly-sandy clay and clay ground, and gravelly silty, gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 8,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food (candy) crop; it was also noted as having been used as a ceremonial item and as a drug or medication. This plant has a milky sap. Butterflies visit the flowers for their nectar. *Stephanomeria pauciflora* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 726), 43 (121909), 44 (061211), 46 (Page 960), 58, 63 (041912 - color presentation), 77 (color photograph #70), **85** (061211 - color presentation), 115 (color presentation), 124 (061211), 127, 140 (Pages 84-86 & 286)*

Stephanomeria pauciflora var. *parishii* (see *Stephanomeria pauciflora*)

Stephanomeria pauciflora var. *pauciflora* (see *Stephanomeria pauciflora*)

***Stevia lemmonii* (A. Gray) A. Gray: Lemmon's Candyleaf**

COMMON NAMES: Lemmon Candyleaf; Lemmon's Candyleaf; Lemmon Stevia; Lemmon's Stevia. DESCRIPTION: Terrestrial perennial subshrub or shrub (decumbent and/or erect stems 12 to 40 inches in height); the stems are brownish; the leaves are grayish-green; the flower heads (to 2 inches in width) may be ivory or white; based on few records located, flowering generally takes place between late February and mid-May (flowering records: (one for late February, two for mid-March, four for mid-April, four for late April, three for mid-May) and one for late November; flowering in September had also been noted). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky cliffs; bases of cliffs; bouldery and rocky canyons; rocky canyonides; rocky hillsides; rocky slopes; rocky outcrops; amongst boulders; bases of rocks; roadcuts; ravines; rocky and sandy streambeds; bouldery-rocky edges of washes; and riparian areas growing in moist and dry bouldery, bouldery-rocky, rocky and sandy ground, occurring from 2,900 to 6,000 feet in elevation in the woodland and wetland ecological formations. NOTE: *Stevia lemmonii* is native to southwest-central and southern North America. *5, 6, **8**, 15, 28 (color photograph 236), 43 (041012 - *Stevia lemmonii* A. Gray), 46 (Page 843), 63 (041012), **85** (041012 - color presentation of dried material), 140 (Page 286)*

***Thymophylla pentachaeta* (A.P. de Candolle) J.K. Small: Fiveneedle Pricklyleaf**

COMMON NAMES: Common Dogweed; Dahlberg Daisy; Dogweed; Five-needle Fetid Marigold; Five-needle Pricklyleaf; Fiveneedle Pricklyleaf; Golden Dogweed; Golden Dyssodia; Golden Fleece; Parralena; Parvialena; Scale Glandbush.

DESCRIPTION: Terrestrial perennial forb/herb or subshrub (3 inches to 2 feet in height); the foliage is dark green; the disk flowers are orange, orange-yellow, yellow or yellow-orange; the ray flowers are orange, orange-yellow, yellow or yellow-orange; flowering generally takes place between mid-March and mid-December (additional records: two for early January, two for mid-January, two for mid-February and one for late February). HABITAT: Within the range of this species it has been reported from mountains; rocky-sandy and gravelly mesas; rocky rims of canyons; cliffs; bouldery and rocky canyons; rocky canyon walls; bouldery-gravelly-sandy and rocky canyon bottoms; gorges; rocky talus slopes; gravelly bases of cliffs; crevices in boulders; sandy bluffs; rocky knolls; rocky ledges; ridges; ridgetops; foothills; rocky, rocky-gravelly and sandy hills; rocky and gravelly hillsides; bouldery, bouldery-gravelly, rocky and gravelly slopes; rocky alluvial fans; bajadas; rocky outcrops; amongst boulders; sand dunes; rocky plains; gravelly flats; basins; rocky valley floors; along rocky, gravelly, gravelly-sandy and sandy roadsides; gulches; rocky gullies; rocky ravines; along and in gravelly streambeds; along and in bouldery, rocky-sandy, cobbly, gravelly and sandy washes; sandy drainages; swales; (sandy) banks of rivers; edges of washes; rocky and cobbly beaches; pebbly benches; shelves; gravelly terraces; sandy bottomlands; floodplains; ditches; riparian areas; waste places, and disturbed areas growing in dry desert pavement; bouldery, bouldery-gravelly, bouldery-gravelly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, cobbly, cindery, gravelly, gravelly-sandy, pebbly and sandy ground; gravelly loam, sandy-clayey loam and clayey loam ground; sandy-silty clay, silty-clay, chalky clay and clay ground, and sandy silty ground, occurring from 100 to 7,400 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant is a larval food plant of the Dainty Sulfur (*Nathalis iole*). *Thymophylla pentachaeta* is native to southwest-central and southern North America. *5, 6, 43 (122209 - *Thymophylla pentachaeta* Small), 46 (*Dyssodia pentachaeta* (DC.) Robins., Page 933 and *Dyssodia thurberi* (Gray) A. Nels., Page 933), 63 (122209 - color presentation), 82, 85 (122309 - color presentation), 115 (color presentation)*

***Thymophylla pentachaeta* (A.P. de Candolle) J.K. Small var. *pentachaeta*: Fiveneedle Pricklyleaf**

SYNONYMY: *Dyssodia pentachaeta* (A.P. de Candolle) B.L. Robinson. COMMON NAMES: Common Dogweed; Dogweed; Five-needle Fetid Marigold; Five-needle Pricklyleaf; Fiveneedle Pricklyleaf; Golden Dogweed; Golden *Dyssodia*; Parralena; Parvalena; Scale Glandbush. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (spreading and/or erect stems 4 inches to 2 feet in height); the foliage has been described as being grayish to green to dark green; the disk florets are yellow; the ray florets may be orange-yellow or yellow; flowering generally takes place between mid-March and mid-December (additional records: two for mid-January, one for mid-February and one for late February). HABITAT: Within the range of this species it has been reported from mountains; rocky-sandy and gravelly mesas; rims of canyons; canyons; rocky canyon bottoms; gorges; gravelly bases of cliffs; crevices in boulders; sandy bluffs; shelving sandstone; bouldery-rocky-sandy and rocky ledges; ridges; ridgetops; foothills; rocky and rocky-gravelly hills; cobbly hilltops; rocky and gravelly hillsides; rocky and rocky-sandy slopes; rocky alluvial fans; bajadas; rock outcrops; rocky and gravelly plains; rocky and gravelly flats; basins, rocky valley floors; along rocky, cindery, gravelly-sandy, sandy and sandy-loamy roadsides; rocky gullies; along creeks; along washes; sandy drainages; clayey swales; banks of rivers; edges of washes; beaches; benches; floodplains; riparian areas; waste places and disturbed areas growing in dry desert pavement; bouldery, bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, cobbly; cindery, gravelly, gravelly-sandy and sandy ground; sandy loam ground; sandy-silty clay, silty clay, chalky clay and clay ground, and sandy silty ground, occurring from 100 to 6,800 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant is a larval food plant of the Dainty Sulfur (*Nathalis iole*). *Thymophylla pentachaeta* var. *pentachaeta* is native to southwest-central and southern North America. *5, 6, 16 (recorded as *Dyssodia pentachaeta* (DC.) Robins.), 18, 28 (recorded as *Dyssodia pentachaeta*, color photograph 402), 43 (122209), 44 (050612 - no record of variety or species; genus record), 46 (recorded as *Dyssodia pentachaeta* (DC.) Robins., Page 933), 58 (recorded as *Dyssodia pentachaeta* (DC.) Robins.), 63 (050612 - this variety has not been mapped as being present in Arizona), 77 (recorded as *Dyssodia pentachaeta* (DC.) Rob., color photograph #16), 82, 85 (050612 - color presentation), 86 (recorded as *Dyssodia pentachaeta*, color photograph), 115 (color presentation of species), 124 (050612 - no record of variety, species or genus), 140 (Page 286 - recorded as *Thymophylla pentachaeta* (De Candolle) Small var. *pentachaeta* [*Dyssodia pentachaeta* (De Candolle) B.L. Robinson subsp. *pentachaeta*]), **HR***

***Trixis californica* A. Kellogg: American Threefold**

SYNONYMY: *Trixis californica* A. Kellogg var. *californica*. COMMON NAMES: American Threefold; American [California] *Trixis* (English)¹⁴⁰; Arizona Green Plant; Cachano (Spanish: New Mexico, Chiricahua, Coahuila)¹⁴⁰; California Threefold; California *Trixis*; Cocazn-ootizx ("Rattlesnake's Foreskin", Hoka: Seri)¹⁴⁰; Hebai Sa'igar <j'bai sa'igar> (Athapascan: Mountain Pima)¹⁴⁰; Hierba de Aire ("Air Herb", Spanish: Sonora)¹⁴⁰; Hierba de Pasma ("Herb for Pasma", Spanish: Sonora)¹⁴⁰; Ruina ("Ruin", Spanish: Sonora)¹⁴⁰; Santa Lucia (Spanish); *Trixis* (a name also applied to the genus *Trixis*). DESCRIPTION: Terrestrial perennial (leaves are cold and drought deciduous) subshrub or shrub (10 inches to 6 feet in height); the stems are gray, the leaves are green, dark green or yellow-green; the disk flowers may be yellow; the ray flowers are white or yellow; flowering generally takes place between mid-January and late December; the seeds have straw-colored bristles. HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; mountainsides; rocky mesas; rocky cliffs; cliff faces; bases of cliffs; along rocky canyons; canyon walls; canyon bottoms; rocky gorges; talus slopes; crevices in rocks; gravelly and sandy knolls; rocky ledges; bouldery and rocky ridges; bouldery ridgetops; bouldery and rocky foothills; rocky hills; rocky hilltops; rocky and gravelly hillsides; bedrock, bouldery, bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy-clayey, gravelly and loamy slopes; alluvial fans; sandy bajadas; bouldery and rocky outcrops; amongst boulders and

rocks; bases of boulders; sandy boulder fields; shady coves; plains; sandy and sandy-clayey-loamy flats; valley floors; along gravelly roadsides; within sandy arroyos; bottoms of arroyos; draws; bottoms of rocky gullies; within ravines; around springs; around seeping streams; along creeks; creekbeds; riverbeds; along and in bouldery, bouldery-gravelly-sandy, rocky, rocky-sandy, stony, gravelly, pebbly and sandy washes; within rocky-bedrock drainage ways; rocky bowls; along banks of arroyos, streams, creeks, rivers, washes and drainages; borders of washes; (rocky) edges of arroyos and washes; sandy beaches; floodplains; riparian areas, and disturbed areas growing in moist and dry bouldery, bouldery-rocky, bouldery-gravelly, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony, gravelly, gravelly-sandy, pebbly and sandy ground; sandy-clayey loam and loam ground, and rocky-sandy clay ground often in the shade of rocks and larger shrubs and trees, occurring from sea level to 7,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and may live to be 40 years of age. This plant is occasionally browsed by Mule Deer (*Odocoileus hemionus*). *Trixis californica* is native to southwest-central and southern North America. *5, 6, 13 (Page 356), 15, 16, 28 (color photograph 472), 43 (122309), 44 (061411 - color presentation), 46 (Page 958), 58, 63 (050612 - color presentation), 77, 85 (050712 - color presentation), 86 (color photograph), 91 (Pages 391-392), 106 (122309 - color presentation), 115 (color presentation), 124 (061211 - no record of species or genus), 140 (Pages 86-87 & 286)*

Trixis californica var. *californica* (see *Trixis californica*)

Uropappus lindleyi (see *Microseris lindleyi*)

Uropappus linearifolius (see *Microseris lindleyi*)

***Verbesina encelioides* (A.J. Cavanilles) G. Bentham & J.D. Hooker f. ex A. Gray (subsp. *exauriculata* (B.L. Robinson & J.M. Greenman) J.R. Coleman is the subspecies reported as occurring in Arizona): Golden Crownbeard**

SYNONYMY: (for subsp. *exauriculata*: *Verbesina encelioides* (A.J. Cavanilles) G. Bentham & J.D. Hooker f. ex A. Gray var. *exauriculata* B.L. Robinson & J.M. Greenman). COMMON NAMES: American Dogweed, Butter Daisy, Butter-daisy, Cow Pasture Daisy, Cowpen Daisy, Crown-beard, Crownbeard, Girasolillo, Golden Crown-beard, Golden Crownbeard, Hierba de la Bruja, South African Daisy. DESCRIPTION: Terrestrial annual forb/herb (4 inches to 6½ feet in height, plants 8 inches in height and 12 inches in width were reported); the foliage is bluish-green, gray, gray-green, green, silvery or silvery-green; the disk flowers are gold, deep orange, green-orange, orange-yellow or yellow; the ray flowers are gold, deep orange, orange-yellow, yellow or yellow-orange; flowering generally takes place between early March and mid-December (additional records: two for late January and one for mid-February). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky-gravelly and sandy mesas; escarpments; sandy canyons; gravelly canyon bottoms; bouldery knobs; sandy ridges; sandy ridgetops; meadows; stony and clayey hills; hilltops; rocky-sandy hillsides; rocky, cindery, sandy, sandy-loamy, loamy and silty-clayey slopes; gravelly alluvial fans; gravelly bajadas; rock outcrops; sand dunes; plains; cindery, gravelly, sandy and clayey flats; basin bottoms; valley floors; sandy coastal dunes; along bouldery-gravelly, cindery, gravelly, gravelly-sandy, gravelly-sandy-clayey-loamy, gravelly-loamy, gravelly-clayey-loamy, sandy, sandy-loamy and sandy-clayey-loamy roadsides; arroyos; along draws; sandy streambeds; along creeks; gravelly creekbeds; along gravelly-sandy rivers; along and in sandy and sandy-loamy riverbeds; along and in rocky-sandy, stony, gravelly-sandy, sandy and clayey washes; along drainages; within drainage ways; around ponds and lakes; cienegas; depressions; sandy swales; (sandy and silty) banks of rivers; along (rocky and gravelly-sandy) edges of washes and swales; around margins of playas; marshy areas; along sandy beaches; terraces; sandy bottomlands; lowlands; gravelly and sandy floodplains; mesquite bosques; along ditches; sandy riparian areas; waste places, and disturbed areas growing in moist and dry bouldery, bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam, sandy-clayey loam and loam ground; silty clay and clay ground, and sandy silty and silty ground, occurring from sea level to 10,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant has a rank odor. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop (*V.e.* subsp. *exauriculata*); it was also noted as having been used as a drug or medication, insecticide (*V.e.* subsp. *exauriculata*), protection (*V.e.* subsp. *exauriculata*), ceremonial items (*V.e.* subsp. *exauriculata*) and as a commodity used in personal hygiene (*V.e.* subsp. *exauriculata*). *Verbesina encelioides* is native to south-central and southern North America. *5, 6, 16, 28 (color photograph), 43 (062409), 46 (Page 907), 58, 63 (122409 - color presentation), 68 (*Verbesina encelioides* var. *exauriculata* is reported to be an exotic and native to the Old World; however, no other source used reported it as being an exotic.), 77, 80 (This plant is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. This annual forb has been reported to accumulate toxic levels of nitrate.), 85 (122409 - color presentation), 86 (color photograph), 115 (color presentation), 127*

Verbesina encelioides var. *exauriculata* (see *Verbesina encelioides* subsp. *exauriculata*)

Viguiera annua (see *Heliomeris longifolia* var. *annua*)

***Viguiera dentata* (A.J. Cavanilles) C.P. Sprengel var. *lancifolia* S.F. Blake: Toothleaf Goldeneye**

COMMON NAMES: Lanceleaf Goldeneye; Sunflower Golden-eye; Sunflower Goldeneye; Tooth-leaf Goldeneye; Toothleaf Goldeneye. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (24 to 54 inches in height); the disk florets are yellow; the ray florets may be golden, yellow or yellow-orange; based on few records examined flowering generally takes place between early September and mid-October (additional records: one for mid-April and one for late April). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky canyons; canyon bottoms; ridges; foothills; rocky hillsides; along rocky slopes; flats; roadsides; along arroyos; draws; bedrock rivulets; along streams; streambeds; rocky, gravelly-sandy and sandy washes; banks of drainages; along edges of arroyos; rocky floodplains; around and in stock tanks; ditch banks, and riparian areas growing in rocky, gravelly, gravelly-sandy and sandy ground, occurring from 3,000 to 7,000 feet in elevation in the woodland, grassland and desertscrub ecological formations. NOTE: *Viguiera dentata* var. *lancifolia* is native to southwest-central and southern North America. *5, 6, 15, 43 (062509), 46, 58, 63 (062509), 85 (062509), 140 (Pages 75 & 286)*

Xanthisma spinulosum (see *Machaeranthera pinnatifida*)

Xanthisma spinulosum var. *gooddingii* (see footnote 140 under *Machaeranthera pinnatifida*)

Xanthium canadense (see *Xanthium strumarium* var. *canadense*)

Xanthium commune (see *Xanthium strumarium* var. *canadense*)

Xanthium saccharatum (see *Xanthium strumarium* var. *canadense*)

***Xanthium strumarium* C. Linnaeus (var. *canadense* (P. Miller) J. Torrey & A. Gray is the variety reported as occurring in Arizona): Rough Cocklebur**

SYNONYMY: (for var. *canadense*: *Xanthium californicum* E.L. Greene; *Xanthium canadense* P. Miller; *Xanthium commune* N.L. Britton; *Xanthium saccharatum* C.F. Wallroth). COMMON NAMES: Abrojo ("Bur", Spanish: Arizona to Texas, Tabasco)¹⁴⁰; 'Alta'neets'ehii <'alxa'niits'ehiih, ta'neets'ehii> (Athapascan: Navajo)¹⁴⁰; American Cocklebur (var. *canadense* and *glabratum*); Atsiánwádova (Uto-Aztecan)¹⁴⁰; Atsiogopapa (Uto-Aztecan: Northern Paiute)¹⁴⁰; Bachapo'or (Uto-Aztecan: Mountain Pima)¹⁴⁰; Beach Clotbur (var. *canadense*); Beach Cocklebur (var. *canadense*); Broad Bur-weed; Broad Burweed; Broad Cocklebur; Bur Thistle Burdock; Burr Thistle; Bur Weed; Bur-weed (a name also applied to var. *canadense* and other species); Burweed (a name also applied to var. *canadense*, other species and the genus *Xanthium*); Button-bur (var. *canadense*); Buttonbur (English)¹⁴⁰; Cadio (var. *canadense*); Cadillo ("Bur", Spanish: Arizona, New Mexico, Sonora)¹⁴⁰; Cadillos (Hispanic); California Bur (a name also applied to var. *canadense* and other species); California Burr (var. *canadense*); California-bur (as *X. orientale*); Californian Burr (var. *canadense*); Canada Cocklebur (var. *canadense*); Canada Cockleburr (var. *canadense*); Canadian Canadian Bur (a name also applied to var. *canadense*); Cang Er (transcribed Chinese); Cocklebur (var. *canadense*); Carrapicho-de-carneiro (Portuguese: Brazil); Carrapicho-grande (Portuguese: Brazil); Chayotillo (Hispanic); Clot-bur (a name also applied to var. *canadense* and to other species); Clotbur (a name also applied to var. *canadense*, other species and the genus *Xanthium*); Clotbur [Clothbur] ("Ball-bur", English: England, Texas)¹⁴⁰; Clote-bur (a name also applied to the genus *Xanthium*); Clott Bur (a name also applied to other species); Clott-bur (a name also applied to other species); Cocklebur (a name also applied to var. *canadense*, other species and the genus *Xanthium*); Cockleburr; Common Clotbur; Common Cockle Bur; Common Cockle-bur (var. *canadense*); Common Cockle-burr; Common [Spiny] Cocklebur (a name also applied to other species (English)¹⁴⁰); Common Cocklebur (var. *canadense*); Common Cuckelbur; Common Cucklebur; Cözazni Caacöl ("Large Sandbur", Hoka: Seri)¹⁴⁰; Cucklebur (a name also applied to var. *canadense* and the genus *Xanthium*); Cuckle Bur (var. *canadense*); Cuckold Burs; Dike-but; Ditch Bur; Ditch-bur; Ditchbur (English)¹⁴⁰; Gewöhnliche Spitzklette (German); Glandular Clot-bur (var. *canadense*); Glandular Clotbur (var. *canadense*); Glandular Cocklebur (var. *canadense*); Great Clotbur (var. *canadense*); Great Cocklebur (a name also applied to var. *canadense* and other species); Gullfrö (Swedish); Heartleaf Cocklebur; Hedge-hog Bur-weed; Hedge-hog-bur-weed (var. *canadense*); Hedgehog Burweed (var. *canadense*); Hedgehog-burweed; Huichapole <güichapol, güichapori, guachapore, guacaporo, huichaori, huachapore> (Spanish: California, Sonora to Puebla)¹⁴⁰; Italian Cocklebur (var. *canadense*); Izee Inlwozh <izee inkozee> (Athapascan: Western Apache)¹⁴⁰; Kámuknívü (Uto-Aztecan: Ute)¹⁴⁰; Kmn'ya (Yuman: Cocopah)¹⁴⁰; Kankerros (Afrikaans); Kropfklette (German); Kwí'tcëmbogop ("Bison Fruit", Uto-Aztecan: Shoshoni)¹⁴⁰; Lampourde (French); Lampourde Glouteron (French); Large Cockle Bur; Large Cockle-bur; Large Cockle-burr; Large Cocklebur; Large-leaf Cocklebur; Lesser Burdock (var. *canadense*); Lesser Clot-bur; Lesser Clotbur; Louse-bur; Louse-burr; Lousebur; Mo'kiächipa (Language Isolate: Zuni)¹⁴⁰; Mo'kiyatchipba ("Round Stickers", Zuni); Mokoksh (Chumash: Ineseño Chumash)¹⁴⁰; Noogoora-bur (as *X. pungens*); □waejoka (Kiowa Tanoan: Tewa)¹⁴⁰; O-namomi (Japanese Rōmaji); Paatso <pá:taco, pa:tcóto> (Uto-Aztecan: Hopi)¹⁴⁰; Pennsylvania Clotbur (var. *canadense*); Petit Glouteron (French); Qum Nah (Yuman: Paipai)¹⁴⁰; Rough Cockle-bur; Rough Cocklebur; Rough Cockle-burr; Rough Cockleburr; Sea Burdock; Sea-burdock; Sea Cocklebur (var. *canadense*); Sea Cucklebur (var. *canadense*); Sheep-bur (a name also applied to other species); Sheepbur (a name also applied to other species); Sheepburr (a name also applied to other species); Sho'moy <shomoy> (Chumash: Barbareño Chumash)¹⁴⁰; Siberian Cocklebur (as *X. sibiricum*); Small Burdock (var. *canadense*); Small Cocklebur (var. *canadense*); Spitzklette (German); Strumarium; Ta'neets'ehii Ntsxaaz <□dtani-c'ehi □ca-gi> (Athapascan: Navajo)¹⁴⁰; Vaiwa <vaiva, váiva> (Uto-Aztecan: Akimel O'odham, Hiá Ce □ O'odham)¹⁴⁰; Waiwel <vaivul> (Uto-Aztecan: Tohono O'odham)¹⁴⁰; Wisapole (Yuman: Paipai)¹⁴⁰. DESCRIPTION: Terrestrial annual forb/herb (erect stems 4 inches

to 6½ feet in height; plants were observed and described as being 2 to 3 feet in height and 3 to 4 feet in width); the foliage is green, yellowish-green or yellow; the flower heads may be green, greenish-yellow or yellow-green; flowering generally takes place between early May and early November (additional record: one for early January, one for mid-February, one for early April and one for early December); the fruits are green, green-yellow or yellow-green with yellow spines turning to brown prickly burs. HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; cliffs; bases of cliffs; rocky canyons; rock walls of canyons; along sandy canyon bottoms; gorges; shaley bluffs; sandy knolls; clearings in woodlands; meadows; foothills; clayey hills; rocky hillsides; sandy-loamy and clayey slopes; bajadas; sand dunes; benches; shaley breaks; clayey prairies; plains; mud, gravelly, sandy, clayey and silty flats; uplands; basins; sandy and clayey valley floors; valley bottoms; in coastal saltwater marshes; railroad right-of-ways; abandoned roadbeds; sandy roadcuts; along rocky, shaley, gravelly-loamy, sandy, sandy-loamy, sandy-clayey and loamy roadsides; along rocky-sandy arroyos; gravelly and sandy bottoms of arroyos; within rocky, shaley-silty and silty draws; clayey bottoms of draws; gulches; gullies; rocky and sandy ravines; shaley bottoms of ravines; seeps; springs; along streams; along and in rocky and sandy streambeds; along creeks; along and in gravelly-sandy and sandy creekbeds; along rivers; along and in rocky, sandy, sandy-clayey and clayey riverbeds; along and in rocky, rocky-gravelly, gravelly and sandy washes; along and in clayey drainages; sandy-clayey drainage ways; around waterholes; vernal pools; in clayey-loamy poolbeds; around ponds; pondbeds; lakebeds; playas; sandy bogs; sandy areas around and in marshes; swamps; dried mud puddles; depressions; clayey-loamy swales; along (shaley, sandy, sandy-silty, clayey and silty) banks of springs, streams, creeks, creekbeds, rivers, riverbeds and washes; (sandy) edges of seeps, streams, clayey creeks, rivers, ponds, lakes, marshes and lagoons; (muddy) margins of streams, rivers, ponds and lakes; (rocky-sandy, sandy, sandy-loamy, sandy-clayey and clayey) shorelines of creeks, rivers, ponds and lakes; muddy areas of drawdown; rocky-sandy, gravelly, gravelly-sandy, sandy, sandy-clayey, sandy-silty and silty sand bars; gravelly-sandy and sandy beaches; cobbly-sandy and sandy benches; sandy terraces; sandy-loamy, loamy and clayey bottomlands; along stony, gravelly-sandy, gravelly-silty-clayey, sandy, sandy-silty and clayey floodplains; lowlands; sandy fencerows; stock ponds; dry beds of stock tanks; around and in sandy-silty, loamy, loamy-clayey, clayey and clayey-loamy reservoirs; sandy-clayey dry beds of reservoirs; along rocky, sandy and loamy-clayey banks and shores of reservoirs; around and in stock tanks; dams; levees; canals; canal banks; along sandy and loamy ditches; along ditch banks; along bouldery-cobbly-sandy, gravelly and sandy riparian areas; sandy waste places, and disturbed areas growing in mucky, muddy and wet, moist, damp and dry (most often vernal or seasonally wet) bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, clayey loam and loam ground; gravelly-clayey, gravelly-silty clay, sandy clay, loamy clay and clay ground, and shaley silty, sandy silty and silty ground, occurring from sea level to 8,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **Exotic?** *Xanthium commune* Britton was listed under Miscellaneous Introduced Species as a Long-lived Annual by J.J. Thornber in the “Vegetation Groups of the Desert Laboratory Domain. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food (*X.s.* var. *canadense*), as cooking tools (*X.s.* var. *canadense*), paint (seed powder used as a blue paint for the mask dancers (*X.s.* var. *canadense*)) and as a drug or medication. USDA Forest Service Fire Effects Information System reports that “Common Cocklebur seeds and cotyledon leaves are poisonous to all classes of livestock. Beyond the cotyledon stage, plants are not poisonous.” Elk (*Cervus elaphus*) browse the plants and Mourning Doves (*Zenaidura macroura*) feed on the seeds. *Xanthium strumarium* is native to eastern, middle and southern Europe including islands in the Mediterranean Sea; Asia and islands in the North Pacific Ocean; northwestern, central and southern North America, and northern South America. *5, 6, 15, 28 (color photograph 810) 30, 43 (062509), 44 (061411 - color presentation), 46 (recorded as *Xanthium saccharatum* Wallr., “The seeds and seedlings contain a glucoside, xanthostrumarin, that is poisonous to livestock, especially to swine and poultry.” If ingested, the spiny burs may cause the death of young animals by irritating or clogging the intestinal tract.), 63 (050912 - color presentation), 68, 77, 80 (This species (*Xanthium saccharatum*) is listed as a Major Poisonous Range Plant. “Although the toxic principle in cocklebur has been attributed to a glycoside isolated from seeds, the poisonous principle in *Xanthium strumarium* has been identified as hydroquinone. ... The seeds, enclosed in prickly burs, contain the toxic substance, but are rarely ever eaten. Upon germination, the toxic principle is distributed to the seedling and remains through the cotyledon stage. The concentration of the toxic substance drops rapidly as the first true leaves develop. ... Because cocklebur is an annual and a prolific seed producer, every effort should be made to prevent its producing seed.” See text for additional information.), 85 (0050912 - color presentation), 101 (color photograph), 115 (color presentation), 124 (012211), 127, 140 (Pages 87-88 & 286)*

***Zinnia acerosa* (A.P. de Candolle) A. Gray: Desert Zinnia**

SYNONYMY: *Zinnia pumila* A. Gray. COMMON NAMES: Cmajjic Ihásaquim (“What Women Brush Their Hair With”, Hokan: Seri)¹⁴⁰; Desert Zinnia; Desert [White] Zinnia (English)¹⁴⁰; Hierba del Burro (Spanish); Mojépe Ihásaquim Cmaam (“Female Saguaro Hairbrush”, Hokan: Seri)¹⁴⁰; Saapom Ipémt (“What Purple Prickly-pear is Rubbed With”, Hokan: Seri)¹⁴⁰; Spinyleaf Zinnia; White Zinnia; Wild Zinnia; Zinia (a name also applied to other species, Spanish); Zinia del Desierto (“Desert Zinnia”, Spanish: Sonora)¹⁴⁰. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (stems 3 to 20 inches in height and up to 2 feet in width with a flat or rounded crown); the stems may be gray or greenish; the leaves may be gray or gray-green; the disk florets may be green-yellow, yellow or yellow-orange; the ray florets may be cream, cream-white, white, white-cream, pale yellow, yellow or yellow-white; flowering generally takes place between early March and early November (additional records: three for early December). HABITAT: Within the range of this species it has been reported from mountains; sandy and sandy-loamy mesas; sandy-loamy plateaus; canyons; canyon bottoms; crevices in bedrock; along rocky and stony ridges; rocky ridgetops; foothills; rocky hills; rocky and gravelly hillsides; bedrock, bedrock, bouldery, rocky, rocky-gravelly-sandy, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy and loamy slopes; rocky, gravelly,

gravelly-sandy, sandy and clayey bajadas; rocky outcrops; stony and sand hills; sand dunes; plains; rocky-gravelly-sandy, rocky-sandy, gravelly and gravelly-sandy-clayey flats; rocky valley floors; gravelly-silty and gravelly-silty-loamy valley bottoms; along gravelly-sandy-clayey-loamy roadsides; arroyos; sandy bottoms of arroyos; washes; sandy drainages; along ponds; (gravelly-sandy) banks of washes; edges of swales; sandy benches; terraces; floodplains; lowlands; riparian areas; waste places, and disturbed areas growing in damp and dry desert pavement; bouldery, rocky, rocky-gravelly-sandy, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-silty loam, sandy loam and loam ground; gravelly-sandy clay and clay ground, gravelly silty ground, and chalky ground, occurring from 1,500 to 6,300 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Zinnia acerosa* is native to southwest-central and southern North America. *5, 6, 13 (Page 297), 15, 16, 18, 28 (color photograph 257), 43 (062609 - *Zinnia acerosa* A. Gray), 44 (050912 - no record of species or genus), 46 (recorded as *Zinnia pumila* Gray, Page 897), 48 (genus), 58, 63 (050912 - color presentation), 77 (color photograph #71), 85 (050912 - color presentation), 115 (color presentation), 124 (050912 - no record of species; genus record), 127, 140 (Pages 88-90 & 286)*

Zinnia pumila (see *Zinnia acerosa*)

Bignoniaceae: The Trumpet-creeper Family

***Chilopsis linearis* (A.J. Cavanilles) R. Sweet subsp. *arcuata* (F.R. Fosberg) J.S. Henrickson: Desert Willow**

SYNONYMY: *Chilopsis linearis* (A.J. Cavanilles) R. Sweet var. *arcuata* F.R. Fosberg. COMMON NAMES: Bow Willow (a name also applied to the species); Catalpa Willow (a name also applied to the species, Texas); Desert Catalpa (a name also applied to the species); Desert Willow (a name also applied to the species and to other species); Desert-willow (a name also applied to the species and the genus *Chilopsis*); Desertwillow (a name also applied to the species and the genus *Chilopsis*); False-willow (a name also applied to the species and to other species); Flor de Mimbres (a name also applied to the species and to other species); Flowering Willow (a name also applied to the species); Flowering-willow (a name also applied to the species); Jano (a name also applied to the species, Spanish); Mimbres (a name also applied to the species, Spanish); Texas Desert Willow (a name also applied to the species); Western Desert Willow; Western Desert-willow; Western Desertwillow; Willow-leaved Catalpa (a name also applied to the species); Willowleaf Catalpa (a name also applied to the species). DESCRIPTION: Terrestrial perennial (cold deciduous) shrub or tree (5 to 33 feet in height; one plant was observed and described as being 13 feet in height with a crown 13 feet in width); the leaves are curved and roughly 3 to 5½ in length and 1/8 to 1/4 inch in width; the flowers may be pale pink, pink, purple, violet with yellow markings, white, white with maroon-purple or yellow & magenta lines or whitish tinged with lavender and yellow; flowering generally takes place between mid-April and early October (additional record: one for late October); the seeds are dispersed from slender pods (4 to 12 inches in length). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; foothills; bedrock, rocky, rocky-sandy, gravelly-sandy and sandy-silty-loamy slopes; sandy bajadas; amongst rocks; breaks; plains; flats; valley floors; along sandy-loamy roadsides; arroyos; draws; along streams; along sandy streambeds; along rocky creeks, along and in rocky, gravelly, gravelly-sandy and sandy washes; drainages; (sandy) banks of water courses; margins of washes; sand bars; floodplains, and riparian areas growing in dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground and rocky-gravelly loam, sandy loam and sandy-silty loam ground, occurring from sea level to 6,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Chilopsis linearis*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial fiber crop. The Desert Willow may be useful in controlling erosion. The bee, *Bombus sonorus*, is a pollinator, and hummingbirds are attracted to the flowers and feed on the nectar. *Chilopsis linearis* subsp. *arcuata* is native to south-central and southern North America. *5, 6, 13 (Page 215, color photograph: Plate P.2., Page 402; “The desert willows have been used widely as ornamentals. They are prized for their graceful habit and large, attractive, sweet-scented flowers.”), 18 (species), 26 (species, color photographs of species), 28 (species, color photograph 55), 43 (062609), 44 (061411 - color photograph), 46 (Page 794), 48 (species), 52 (species, color photograph of species), 53, 58, 63 (050912 - color presentation), 74 (species), 85 (051012 - color presentation of dried material), 86 (species, color photograph of species), 91 (species, Pages 160-163), 115 (color presentation of species), 124 (061211 - no record of subspecies; species record), 127 (species), **WTK** (August 4, 2005)*

Chilopsis linearis var. *arcuata* (see *Chilopsis linearis* subsp. *arcuata*)

***Tecoma stans* (C. Linnaeus) A.L. de Jussieu ex K.S. Kunth: Yellow Trumpetbush**

SYNONYMY: *Tecoma stans* (C. Linnaeus) A.L. de Jussieu ex K.S. Kunth var. *angustatum* A. Rehder. COMMON NAMES: Bapsarukua (Hispanic); Bignonia-amarela (Portuguese: Brazil); Caballito (“Little Horse”, Spanish: Sonora)¹⁴⁰; Cameri (Purépecha); Corneta Amarilla (Dgo); Esperanza (“Hope”, Spanish: Texas)¹⁴⁰; Flor de Noche (Hispanic); Flor de San Pedro (Hispanic); Geelklokkies (Africans); Giabiche (Zapoteco); Gloria (Spanish: Sinaloa, Sonora)¹⁴⁰; Guarã-guarã (Portuguese: Brazil); Guibelchi o Tulasuchil (Oax); Guie-bichi (Oto-Manguanean: Zapotec)¹⁴⁰; Hierba de San Juan (Hispanic); Hierba de San Nicolás (Hispanic); Hierba de San Pedro (SLP); Hoja de Baño (Hispanic); Ipê-amarelo-de-jardim (Portuguese: Brazil); Ipezhinde-jardim (Portuguese: Brazil); Istamasúchil (Hispanic); Ixnotl (Pue); K’anlol (Maya); Kanló (Hispanic); Kanlol <kanló, k’anlol,

xkanlo> (Mayan: Maya)¹⁴⁰; Kusí Urákame (Hispanic); Kusí Urámake (Uto-Aztecan: Tarahumara)¹⁴⁰; Lluvia de Oro (“Golden Shower”, Spanish: Arizona, Sinaloa, Sonora)¹⁴⁰; Matilimi (Chis); Mazorca (Ver); Miñona (Spanish: Texas, Nuevo León)¹⁴⁰; Miñones; Miñona (NL); Nixtamalxochitl (Hispanic); Nixtamaxochitl <nextamalxochitl> (Spanish: Náhuatl)¹⁴⁰; Nixtamaxuchitl (Hispanic); Palo Amarillo (“Yellow Tree”, Spanish: Chihuahua)¹⁴⁰; Palo de Arco (“Bow Tree”, Spanish: Baja California, Chihuahua, Sonora, Oaxaca)¹⁴⁰; Retama (Hispanic); Retamo [Retama] (Spanish: Durango, Guerrero, Edo. México, Michoacán, Jalisco, San Luis Potosí)¹⁴⁰; Borla de, Flor de, Hierba de] San Pedro [San Nicolás] (“[St. Nicolas’s] St. Peter’s [Tassel, Flower, Herb], Spanish: Chiapas, Coahuila, Durango, Guanajuato, Edo. México, Michoacán, San Luis Potosí, Vera Cruz)¹⁴⁰; Sinos-amarelos (Portuguese: Brazil); Trompeta (“Top”, Spanish: Durango)¹⁴⁰; Trompetilla (Hispanic); Trompetillo (“Little Top”, Spanish: Hidalgo)¹⁴⁰; Tronador [Tronadora] (“Thunderstorm Plant”, Spanish: Texas, Chihuahua, Guanajuato, Edo. México, Sonora, Zacatecas)¹⁴⁰; Tronadora (Hispanic); [Yellow] Trumpet-bush [-flower] (English)¹⁴⁰; Trumpet Flower; Trumpet-flower; Tulasúchil (Uto-Aztecan: Náhuatl, Oaxaca)¹⁴⁰; Wasáro (Uto-Aztecan: Tarahumara)¹⁴⁰; Yellow Bells; Yellow-bells; Yellow Elder (English)¹⁴⁰; Yellow-elder; Yellow Trumpet; Yellow Trumpet Bush; Yellow Trumpet-bush; Yellow Trumpetbush; Yellow Trumpet Flower; Yuku-ñini (Hispanic). DESCRIPTION: Terrestrial perennial evergreen (drops leaves following frost) shrub, (sometimes a liana) or tree (erect stems 3 to 33 feet in height; one plant was observed and described as being 13 feet in height and 20 feet in width); the bark is grayish-brown; the leaves may be green, dark green or yellow-green; the flowers may be deep orange, salmon-pink, light red, yellow, yellow with orange markings in the throat or yellow-orange; flowering generally takes place between mid-February and late November; the slender pods (4 to 6 inches in length) are brown. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; bases of mountains; bases of cliffs; rocky canyons; canyonsides; canyon bottoms; rocky bluffs; ridges; hills; rocky and gravelly hillsides; bedrock, bouldery, rocky, stony and gravelly slopes; rocky bajadas; amongst boulders and rocks; bases of rocks; plains; flats; rocky bowls; roadsides; rocky arroyos; rocky gulches; along streambeds; along and in washes; within rocky drainages; drainage ways; margins of arroyos; floodplains, and disturbed areas growing in moist and dry bouldery, bouldery-rocky, rocky, stony and gravelly ground and clay ground, occurring from sea level to 6,600 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Yellow Trumpetbush is browsed by Bighorn Sheep (*Ovis canadensis*) and other animals. The Broad-billed Hummingbird (*Cyanthus latirostris*), Bumblebees (*Bombus*) and Carpenter Bees (*Xylocopa*) have been observed visiting the flowers. *Tecoma stans* is native to southwest-central and southern North America; Central America and coastal islands in the Caribbean Sea, and northern, western and southern South America. *5, 6, 13, 15, 18, 26 (color photograph), 28 (Page 238, color photograph), 30, 43 (082010 - *Tecoma stans* (L.) Kunth, *Tecoma stans* (L.) Kunth var. *angustatum* Rehder), 46 (Pages 794-795), 58, 63 (082010 - color presentation), 77 (color photograph #62), 85 (082010 - color presentation), 91, 115 (color presentation), 140 (Pages 90-91 & 286)*

Tecoma stans var. *angustatum* (see *Tecoma stans*)

Boraginaceae: The Borage Family

***Cryptantha barbiger* (A. Gray) E.L. Greene: Bearded Cryptantha**

COMMON NAMES: Bearded Cat’s Eye; Bearded Cat’s-eye; Bearded Catseye; Bearded Cryptanth; Bearded Cryptantha; Bearded Forget-me-not; Bearded Nievitas; Narrowleaf Nievitas (a name also applied to other species, Spanish); Peluda (a name also applied to other species, Spanish). DESCRIPTION: Terrestrial annual forb/herb (stems 4 to 16 inches in height; one plant was observed and described as being 4 inches in height and 20 inches in length, one plant was observed and described as being 5 inches in height and 12 inches in width, one plant was observed and described as being 12 inches in height and 10 inches in width); the foliage is deep green; the flowers may be cream, white or white with a yellow throat; flowering generally takes place between mid-January and mid-June (additional records: two for late November and one for late December). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; rim rock; cliffs; bases of cliffs; rocky canyons; bases of canyon walls; along rocky and sandy canyon bottoms; rocky spurs; scree; bouldery talus slopes; rocky ledges; ridges; ridgetops; sandy meadows; crater floors; gravelly, gravelly-sandy and sandy foothills; bouldery, rocky and rocky-gravelly hills; rocky hillsides; bedrock, bouldery, bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy, stony-sandy, cobbly-gravelly-sandy, cindery, gravelly, gravelly-loamy, sandy, sandy-loamy, clayey and clayey-loamy slopes; bases of slopes; rocky alluvial fans; bajadas; bouldery and rocky outcrops; amongst boulders and rocks; sand hills; sand dunes; sandy edges of dunes; blow-sand deposits; plains; rocky-gravelly, cindery, gravelly, sandy and clayey-loamy flats; basins; sandy valley floors; railroad right-of-ways; along gravelly, sandy and clayey roadsides; arroyos; bottoms of arroyos; draws; within rocky gullies; ravines; springs; along streams; rocky-sandy and gravelly streambeds; beside creeks; creekbeds; along rivers; sandy riverbeds; along and in bedrock, bouldery, bouldery-gravelly, rocky, rocky-sandy, cobbly-gravelly-sandy, gravelly, gravelly-sandy, sandy and silty washes; along gravelly drainages; sandy bottoms of waterholes; marshes; banks of rivers; (rocky) edges of arroyos and washes; margins of washes; mudflats; sandy benches; shelves; gravelly terraces; loamy bottomlands; sandy floodplains; riparian areas, and disturbed areas growing in moist and dry desert pavement; bouldery, bouldery-rocky-sandy, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly-sandy, cindery, cindery-sandy, gravelly, gravelly-sandy and sandy ground; bouldery-sandy-clayey loam, gravelly-sandy loam, gravelly loam, sandy loam, clayey loam and loam ground; gravelly clay and clay ground, and sandy silty and silty ground, occurring from sea level to 7,400 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: One record included an observation that the taproot contained a purplish dye. *Cryptantha barbiger* is native to southwest-central and southern North America. *5, 6, 15, 16, 43

(122809 - *Cryptantha barbiger* Greene), 44 (061611), 46 (Page 721), 58, 63 (051112 - color presentation), 77, 85 (051112 - color presentation), 124 (061611 - no record of species; genus record), 140 (Page 287)*

***Cryptantha pterocarya* (J. Torrey) E.L. Greene: Wingnut Cryptantha**

COMMON NAMES: Nievitas (a name also applied to other species, Spanish); Peluda (a name also applied to other species, Spanish); Wing Nut Cat's Eye; Wing Nut Cryptanth; Wing Nut Cryptantha; Wing-fruited Forget-me-not; Wing-nut Cat's-eye; Wing-nut Cryptanth; Wing-nut Cryptantha; Wing-nut Forget-me-not; Wing-seed Forget-me-not; Winged Pick-me-not; Winged-nut Cryptantha; Winged-nut Forget-me-not; Winged-seed Cryptantha; Wingnut Cat's-eye; Wingnut Catseye; Wingnut Cryptanth; Wingnut Cryptantha; Wingnut Nievitas; Wingseed Forget Me Not; Wingseed Forget-me-not. DESCRIPTION: Terrestrial annual forb/herb (erect stems 4 to 20 inches in height); the foliage may be pale grayish, dark green or yellow-green; the flowers may be cream, bright white or white (sometimes with a pink tinge) with a yellow throat; flowering generally takes place between early January and late June (additional records: one for late July and one for late November); the winged fruits are green. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mountainsides; rocky and rocky-sandy mountainsides; pebbly-sandy-silty and silty mesas; rocky plateaus; canyon rims; cliffs; rocky and sandy bases of cliffs and rock faces; sandy-clayey canyons; along canyon walls; along rocky-sandy, gravelly, gravelly-sandy and sandy canyon bottoms; talus slopes; protected clefts in boulders; sandy crevices in rocks; bluffs; rocky ledges; rocky-silty ridges; rocky ridgetops; sandy cinder cones; foothills; bouldery, rocky and sandy-clayey-loamy hills; hilltops; rocky, rocky-stony, stony, sandy and loamy hillsides; escarpments; bouldery, rocky, rocky-stony, rocky-gravelly, rocky-sandy, stony, cindery, gravelly, gravelly-sandy, gravelly-clayey, sandy and clayey slopes; gravelly-sandy and sandy alluvial fans; gravelly-sandy bajadas; cobbly pediments; rocky outcrops; amongst boulders and rocks; boulderfields; sandy lava flows; sand hills; sand dunes; sandy edges of sand hills and dunes; sand hummocks; sand sheets; blow-sand deposits; gravelly and silty outwash fans; alcoves; gravelly banks; benches; gravelly breaks; sandy plains; rocky, gravelly, sandy and sandy-clayey flats; valley floors; along rocky, gravelly, sandy and sandy-silty roadsides; rocky arroyos; along gravelly and sandy draws; gulches; rocky gullies; along springs; beside streams; along creeks; along rivers; sandy riverbeds; along and in rocky, rocky-gravelly-sandy, rocky-sandy, gravelly, gravelly-sandy and sandy washes; within drainage ways; (gravelly-sandy) banks of washes; (gravelly and sandy) edges of washes; (rocky-gravelly-sandy and cobbly-gravelly) margins of washes; gravelly-sand bars; sandy beaches; gravelly benches; shelves; sandy margins of reservoirs; gravelly-sandy and sandy riparian areas; recently burned areas in woodlands, chaparral and desertscrub, and disturbed areas growing in moist and dry cryptogamic; rimrock and desert pavements, and bouldery, bouldery-rocky, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-stony, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, stony, stony-sandy, cobbly, cobbly-gravelly, cobbly-sandy, cindery, cindery-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, sandy-clayey loam, silty loam and loam ground; gravelly-sandy clay, sandy clay, silty clay and clay ground, and rocky silty, pebbly-sandy silty, sandy silty and silty ground, occurring from 500 to 8,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Cryptantha pterocarya* is native to southwest-central and southern North America. *5, 6, 16, 43 (122909 - *Cryptantha pterocarya* Greene), 44 (051212 - color photograph), 46 (Page 720), 58, 63 (051212 - color presentation), 77, 85 (051312 - color presentation), 115 (color presentation), 124 (051212 - no record of species; genus record), 140 (Page 287)*

***Harpagonella palmeri* A. Gray: Palmer's Grapplinghook**

COMMON NAMES: Arizona Harpagonella (var. *arizonica*); Arizona Grapplinghook (var. *arizonica*); Grappling Hook (a name also applied to the genus *Harpagonella*); Palmer Grappling Hook; Palmer Grappling-hook; Palmer Grapplinghook; Palmer's Grappling Hook; Palmer's Grappling-hook; Palmer's Grapplinghook. DESCRIPTION: Terrestrial annual forb/herb (ascending and/or erect stems 1 to 12 inches in height); the foliage is gray-green; the flowers are white; flowering generally takes place between mid-January and early June. HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; bases of cliffs; canyons; sandy-loamy canyon bottoms; gravelly knolls; ledges; clayey ridges; clayey ridgetops; clayey patches in chaparral; clayey openings in scrub and grasslands; foothills; rocky, rocky-clayey, stony-clayey, cobbly-clayey and clayey hills; rocky and clayey hillsides; clayey escarpments; bouldery, rocky, rocky-loamy-clayey, stony-clayey, cobbly-clayey, gravelly and clayey slopes; gravelly bajadas; amongst rocks; clayey lenses; stony, gravelly and clayey flats; uplands; clayey valley floors; sea bluffs; coastal plains; along gravelly roadsides; along streams; creeks; creekbeds; along riverbeds; washes; drainage ways; clayey depressions; clayey benches; cobbly-clayey terraces, and disturbed areas growing in dry bouldery, rocky, rocky-sandy, stony and gravelly ground; rocky loam, sandy loam and loam ground, and rocky-loamy clay, rocky clay, stony clay, cobbly clay and clay ground, occurring from sea level to 4,700 feet in elevation in the scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Harpagonella palmeri* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (123009), 44 (051312 - color picture), 46 (Page 711), 63 (051312 - color presentation), 77, 85 (051312 - color presentation), 124 (051312 - no record of species or genus)*

***Heliotropium fruticosum* C. Linnaeus: Key West Heliotrope**

SYNONYMY: *Heliotropium phyllostachyum* J. Torrey. COMMON NAME: Key West Heliotrope. DESCRIPTION: Terrestrial annual or perennial forb/herb or subshrub (2 to 18 inches in height); the small flowers are white; flowering generally takes place between mid-August and mid-October (additional records: one for early July and two for mid-November). HABITAT: Within the range of this species it has been reported from mountains; canyons; shallow pockets of soil in rocks; sandy openings in forests; rocky hills; rocky hillsides; rocky-sandy and gravelly slopes; sandy bedrock outcrops; flats; basins; roadsides; along streams; along and in rocky and sandy washes; drainages; silty banks of creeks; bottomlands; riparian areas, and

disturbed areas in rocky, rocky-sandy, gravelly and sandy soils and silty soils, occurring from 4,000 to 5,500 feet in elevation in the woodland, scrub and grassland ecological formations. NOTE: *Heliotropium fruticosum* is native to south-central and southern North America; Central America, and northern South America. *5, 6, 43 (062709), 46 (*Heliotropium phyllostachyum* Torr.), 63 (062809), 80 (The genus *Heliotropium* (*Heliotropium* sp.) is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. A species of *Heliotrope* has caused extensive losses in sheep in Australia but no losses from these plants have been reported in the United States.), 85 (062709), 140 (Page 287)*

Heliotropium phyllostachyum (see *Heliotropium fruticosum*)

***Pectocarya recurvata* I.M. Johnston: Curvenut Combseed**

COMMON NAMES: Arch-nutted Comb Bur; Arch-nutted Comb-bur; Arch-nutted Combbur; Arched Bomb-bur (possibly a spelling error); Arched Comb-bur; Archnut Combbur; Bent Combseed; Combbur (a name also applied to the genus *Pectocarya*); Curve-nut Combseed; Curved Combseed; Curvenut Combseed; Curvenut Pectocarya; Desert Combbur; Recurve Combseed; Recurved Pectocarya. DESCRIPTION: Terrestrial annual forb/herb (ascending and/or erect stems 2 to 8¼ inches in height); the flowers are white (sometimes reported with a yellow throat); flowering generally takes place between mid-January and late May (additional record: one for late November). HABITAT: Within the range of this species it has been reported from mountains; clayey mountaintops; rocky mountainsides; rocky mesas; rocky canyons; sandy canyon bottoms; ledges; clayey ridgetops; rocky foothills; rocky hills; bouldery-rocky, rocky and gravelly hillsides; rocky, rocky-cobbly-sandy, rocky-gravelly, rocky-gravelly-sandy, rocky-gravelly-loamy, stony, stony-sandy, cobbly-gravelly, cobbly-gravelly-sandy, cobbly-sandy-loamy, gravelly, gravelly-sandy, sandy and clayey slopes; bouldery-gravelly and rocky-sandy alluvial fans; bajadas; bouldery and rocky outcrops; amongst boulders and rocks; sandy lava fields; dunes; plains; gravelly, sandy, sandy-clayey and clayey flats; valley bottoms; along sandy roadsides; arroyos; rocky gullies; sandy springs; along sandy streams; along creeks; along creekbeds; along and in bouldery-gravelly, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; drainages; rocky drainage ways; clayey depressions; (rocky-gravelly-sandy and gravelly) edges of rivers and washes; (rocky-gravelly-sandy) margins of washes; shores of lakes; gravelly and clayey benches; terraces; loamy bottomlands; sandy floodplains; mesquite woodlands; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-rocky, bouldery-gravelly, bouldery-sandy, rocky, rocky-cobbly-sandy, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, stony, stony-sandy, cobbly-gravelly, cobbly-gravelly-sandy, cindery-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, cobbly-sandy loam, cobbly-silty loam, gravelly-clayey loam, silty loam and loam ground, and sandy clay and clay ground, occurring from sea level to 5,300 feet (one record at 9,000 feet) in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Pectocarya recurvata* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (010210), 44 (061711), 46 (Page 712), 58, 63 (051512 - color presentation), 77, 85 (051512 - color presentation), 124 (061711 - no record of species or genus), 140 (Page 287)*

***Tiquilia canescens* (A.P. de Candolle) A.T. Richardson: Woody Crinklemat**

COMMON NAMES: Crinkle Mats (a name also applied to the genus *Tiquilia*); Gray Coldenia; Gray Tiquilia; Hierba de la Virgin; Oreja del Perro; Ratear Coldenia; Shrubby Coldenia; Woody Crinklemat; Woody Tiquilia; Woolly Crinklemat; Woolly Crinklemat. DESCRIPTION: Terrestrial perennial subshrub (4 to 8 inches in height; however, plants up to 2 feet in height were reported; plants were observed and recorded as being 4 inches in height and width); the leaves may be gray, grayish or gray-green; the flowers may be pale lavender, lavender, lavender-pink, lavender-whitish, light pink, pink, light pink-lavender, pale purple, purple, rose-lilac, violet or white with a yellow floral tube; flowering generally takes place between late March and mid-June (additional records: one for early March, two for early July, one for late July, two for early August, one for mid-August, one for early September, two for mid-September, and two for late September and two for early October). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; bases of mountains; mesas; cliffs; escarpments; bouldery and rocky and gravelly canyons; canyon bottoms; gorges; rocky talus slopes; crevices in rocks; gravelly-sandy bluffs; buttes; rocky ledges; along bedrock, rocky, gravelly and chalky ridges; ridgetops; openings in forests; rocky and gravelly-sandy hills; rocky hillsides; along bedrock, bouldery, rocky, rocky-gravelly, gravelly, gravelly-shaley and gravelly-sandy slopes; gravelly and gravelly-sandy bajadas; shaley and rocky outcrops; amongst boulders and rocks; sand dunes; gravelly-silty banks; benches; sandy plains; rocky, gravelly and sandy flats; valley floors; roadbeds; rocky-gravelly-loamy, gravelly and gravelly-loamy roadsides; arroyos; gullies; rocky ravines; along and in stony, gravelly, gravelly-sandy and sandy washes; rocky drainages; borders of washes; gravelly terraces; floodplains; along fence lines; sandy riparian areas; waste places, and disturbed areas growing in dry desert pavement; bouldery, rocky, rocky-shaley, rocky-gravelly, rocky-sandy, stony, shaley-gravelly, stony, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, gravelly loam and gravelly-sandy loam ground; rocky clay, shaley clay and clay ground; gravelly silty ground, and chalky ground, occurring from 100 to 8,300 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant is browsed by Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*). *Tiquilia canescens* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 611), 43 (010310), 44 (051512 - color picture of var. *canescens*), 46 (recorded as *Coldenia canescens* DC. including the typical plant and variety *pulchella* Johnst., Page 709), 63 (051512 - color presentation), 77, 85 (051612 - color presentation), 115 (color presentation), 124 (051512 - no record of species or genus), 140 (Page 287)*

Brassicaceae (Cruciferae): The Mustard Family

Arabis eremophila (see *Arabis perennans*)

***Arabis perennans* S. Watson: Perennial Rockcress**

SYNONYMY: *Arabis eremophila* E.L. Greene; *Boechea perennans* (S. Watson) W.A. Weber. COMMON NAMES: Arábide (Spanish: Mexico)¹⁴⁰; 'Atsé 'Áts'óózi <[□osce□] y'osce □a.lc'ozgi> ("Slender First One", Athapascan: Navajo)¹⁴⁰; 'Azee' Naneeshth'iizh <□azé□ na'ne'sdizi> (Athapascan: Navajo)¹⁴⁰; 'Iiníziin Ch'it' <'i'lyizin c'il> (Athapascan: Navajo)¹⁴⁰; Perennial Rockcress; Qta'komav (Uto-Aztecan: Ute)¹⁴⁰; Rock Cress (a name also applied to the genus *Arabis*); [Perennial] Rock Cress (English)¹⁴⁰; Stiff-arm Rock Cress; Stiffarm Rock Cress. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (ascending and/or erect stems 4 to 40 inches in height; plants were observed and described as being 8 to 12 inches in height and 6 to 17 inches in width); the leaves are gray-green; the flowers may be pale blue-lavender, bluish-purple, cream, lavender, pink, pink-lavender, pinkish-purple, dull mauve, pale purple, purple, purple-magenta, purplish, purplish-pink, purplish-rose, reddish-violet, rose-magenta, violet-lavender, white & lavender or white-purple; flowering generally takes place between early February and early July (additional records: one for early January, one for mid-January, one for early August, two for late August, one for early October and one for early December). HABITAT: Within the range of this species it has been reported from mountains; along shaley mountaintops; rocky mountainsides; sandy mesas; sandy plateaus; rocky cliffs; rock faces; rock walls; along sandy bases of cliffs and rock walls; bouldery, rocky, rocky-sandy and sandy canyons; rocky and shaley-sandy canyon walls; bedrock, rocky, gravelly-sandy and sandy canyon bottoms; bouldery-cobbly-humusy and rocky talus slopes; crevices in boulders and rocks; bluffs; rocky knobs; summits of laccoliths; rocky ledges; rocky and sandy ridges; ridgetops; rocky openings in forests and woodlands; meadows; rocky-gravelly foothills; rocky, stony and clayey hills; bouldery and rocky hillsides; escarpments; sandy bases of escarpments; bedrock, bouldery, bouldery-gravelly, bouldery-sandy, rocky, rocky-shaley, rocky-gravelly, rocky-sandy, rocky-loamy, cobbly-sandy, cobbly-loamy, cindery, gravelly, gravelly-silty, sandy, sandy-loamy, loamy and clayey-loamy slopes; bajadas; rocky outcrops; amongst boulders and rocks; bases of boulders; lava flows; sand dunes; rocky mounds; benchlands; flats; basins; along sandy valley floors; along roadbeds; along gravelly and sandy roadsides; two-tracks; rocky walls of arroyos; along and in draws; gulches; bouldery-sandy and rocky ravines; seeps; springs; along streams; bouldery and gravelly streambeds; along creeks; along rivers; along and in rocky, rocky-gravelly, gravelly and sandy washes; within drainages; bouldery-cobbly drainage ways; marshes; (rocky) banks of gullies, streams and washes; borders of washes; (rocky-loamy and gravelly) edges of arroyos, streams and washes; rocky beaches; benches; gravelly terraces; rocky and gravelly-sandy riparian areas, and disturbed areas growing in moist and dry cryptogamic; bouldery, bouldery-cobbly, bouldery-gravelly, bouldery-sandy, rocky, rocky-shaley, rocky-gravelly, rocky-sandy, shaley, shaley-sandy, stony, cobbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, cobbly loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; sandy clay and clay ground; gravelly silty and silty ground, and bouldery-cobbly humusy ground, occurring from 600 to 11,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Arabis perennans* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph), 43 (010310), 44 (051612 - no records listed under Common Names for species; genus record, color photograph), 46 (Page 353), 58, 63 (051612 - color presentation), 77, **85** (051612 - color presentation), 115 (color presentation), 124 (051612 - no record of species; genus record), 127, 140 (Pages 92-93 & 287 - recorded as *Boechea perennans* (S. Watson) W.A. Weber)*

Boechea perennans (see *Arabis perennans*)

***Brassica nigra* (C. Linnaeus) W.D. Koch: Black Mustard**

COMMON NAMES: Annual Black Mustard; Black Mustard (a name also applied to other species and the genus *Brassica*); Brauner Senf (German); Brown Mustard (a name also applied to other species); Cadlock (a name also applied to other species); Charlock (a name also applied to other species and the genus *Brassica*); Common Black Mustard; Common Mustard (a name also applied to other species); Hei Jie (transcribed Chinese); Kerlock; Kuro-garashi (Japanese Rōmaji); Khardal (Arabic); Mostarda-preta (Portuguese); Mostaza ("Mustard" a name applied to mustards, Spanish); Mostaza Negra (Spanish); Moutarde Noire (French); Red Mustard; Schwarz Senf (German); Schwarzer Senf (German); Scurvy; Scurvy Senvie; Scurvy Grass (a name also applied to other species); Scurvy-grass (a name also applied to other species); Senf-Kohl (German); Senore; Senors; Shortpod Mustard; Shortpod Mustard; Svartsenap (Swedish); Warlock (a name also applied to other species); Weedy Annual Black Mustard; Weedy Black Mustard; Wild Mustard (a name also applied to other species, Nebraska). DESCRIPTION: Terrestrial annual forb/herb (widely spreading stems 16 inches to 10 feet in height); the flowers may be golden yellow, pale yellow, yellow or deep yellow; flowering generally takes place between mid-February and mid-September (additional records: two for early January, one for late January, one for mid-October, one for mid-November and one for late December). HABITAT: Within the range of this species it has been reported from mountains; plateaus; clayey cliffs; canyons; canyon bottoms; bluffs; clayey ridgetops; clearings in woodlands; meadows; foothills; hills; hillsides; rocky, clayey-loamy and clayey slopes; clayey flats; valley bottoms; rolling coastal dunes; in roadbeds; along rocky-loamy roadsides; draws; springs; along streams; along rivers; riverbeds; sandy washes; edges of saltmarshes; (gravelly) shores of rivers; sand bars; clayey benches; deltas; clayey terraces; bottomlands; gravelly lowlands; along canals; along and in ditches; riparian areas; waste places, and disturbed areas growing in wet and dry rocky, gravelly and sandy ground; rocky loam and clayey loam ground, and clay ground, occurring from sea level to

8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formation. NOTES: **EXOTIC** Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, as a spice, as a fuel and as a drug or medication. Geese reportedly feed on this plant. *Brassica nigra* is native to northern, central, eastern and southern Europe and coastal islands in the North Atlantic Ocean and Mediterranean Sea; western, central, eastern and southern Asia, and northern Africa; however, the exact native range is obscure. *5, 6, 15 (listed as an excluded species), 43 (010410), 44 (061811), 46 (Page 338), 63 (052112 - color presentation), 68, 77, 80 (The genus *Brassica* is listed as both a Rarely Poisonous and Suspected Poisonous Range Plant “Mustards, both native and escaped, may cause several diseases including goiter and gastroenteritis.” and a Poisonous Cropland and Garden Plant “Cultivated mustards may cause numerous diseases including gastroenteritis, blindness, goiter, emphysema, redwater disease, nitrate poisoning, anemia, and photosensitization.”), 85 (052112 - color presentation), 101 (color photograph), 124 (061811), 127*

***Brassica tournefortii* A. Gouan: Asian Mustard**

COMMON NAMES: African Mustard (a name also applied to other species); Asian Mustard (a name also applied to other species); Desert Mustard (a name also applied to other species); Long Fruited Wild Turnip; Long-fruited Turnip; Long-fruited Wild Turnip; Mediterranean Mustard (a name also applied to other species); Mediterranean Turnip; Moroccan Mustard; Mostaza (“Mustard” a name applied to mustards, Spanish); Mostaza Africana; Mostaza del Desierto (Spanish); Mostaza del Sahara (Spanish); Mustard (a name applied to other species and the genus *Brassica*); Pale Cabbage; Prickly Turnip; Qarras (Arabic); Sahara Mustard; Saharan Mustard; Shiltam (Arabic); Tournefort Birdrape; Tournefort Mustard; Tournefort’s Birdrape; Tournefort’s Mustard; Turnip Weed (a name also applied to other species); Wild Turnip (a name also applied to other species). DESCRIPTION: Terrestrial annual forb/herb (stems 1 to 4 feet in height; one plant was observed and described as being 22 inches in height and 40 inches in width; plants were observed and described as being 24 to 30 inches in height and 18 inches in width at the base); the large and serrated green leaves form in a basal rosette clasping on the stem; the flowers may be green-white, ivory, white, pale yellow, yellow or yellow-cream; flowering generally takes place between mid-January and late May (additional records: one for mid-November, three for early December and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy mesas; bases of cliffs; clayey canyons; bouldery and rocky canyon bottoms; bluffs; rocky and rocky-clayey ridgetops; rocky hills; bouldery hillsides; bouldery, rocky, gravelly-sandy, gravelly-sandy-loamy, pebbly-sandy and sandy slopes; alluvial fans; gravelly bajadas; amongst boulders; volcanic dikes and plugs; lava flows; sand hills; sand shelves; sand dunes; sand hummocks; blow-sand deposits; sand sheets; rocky-sandy outwash fans; gravelly-sandy-loamy and silty plains; gravelly-sandy, sandy and silty flats; sandy and silty valley floors; along rocky-clayey, gravelly, gravelly-sandy-loamy and sandy roadsides; sandy arroyos; gullies; about springs; creekbeds; along rivers; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; along drainages; within sandy drainage ways; depressions; (gravelly-sandy) banks of rivers and washes; borders of washes; (sandy) edges of arroyos, rivers, washes and playas; (sandy) margins of washes and ponds; sandy beaches; benches; rocky strands; sandy terraces; loamy bottomlands; floodplains; sandy levees; canal banks; along ditches; recently burned areas of coastal sage scrub; bouldery-cobbly-sandy, gravelly-sandy and sandy riparian areas; waste places, and disturbed areas growing in dry desert pavement; bouldery, bouldery-cobbly-sandy, bouldery-sandy, rocky, rocky-sandy, shaley, cindery-sandy, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; gravelly-sandy loam, sandy loam and loam ground; rocky clay and clay ground, and silty ground, occurring from sea level to 6,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. Sahara Mustard is usually a very large and robust plant. This plant was first reported in Arizona in 1959. *Brassica tournefortii* is native to southern Europe; western, central and southern Asia, and northern Africa. *5, 6, 15, 16, 22, 28, 43 (010410), 44 (052212), 46 (Supplement Page 1051), 63 (052212 - color presentation), 77, 80 (The genus *Brassica* is listed as both a Rarely Poisonous and Suspected Poisonous Range Plant “Mustards, both native and escaped, may cause several diseases including goiter and gastroenteritis.” and a Poisonous Cropland and Garden Plant “Cultivated mustards may cause numerous diseases including gastroenteritis, blindness, goiter, emphysema, redwater disease, nitrate poisoning, anemia, and photosensitization.”), 85 (052212 - color presentation), 115 (color presentation), 124 (061811 - no record of species; genus record), **WTK** (July 13, 2005)*

***Capsella bursa-pastoris* (C. Linnaeus) F.K. Medikus: Shepherd’s Purse**

COMMON NAMES: Blind-weed; Bolsa de Pastor (Spanish); Bolsa-de-Pastor (Portuguese); Bourse à Pasteur (French); Capsella (a name also applied to the genus *Capsella*); Capselle à Pasteur (French); Case Weed; Case-weed; Caseweed; Casse Weed; Casse-weed; Clappedepouch; Clapper’s Pouch; Clapped-pouch; Clappedepouch; Cocowort; Common Shephardspurse; Common Shepherd’s Purse; Common Shepherds Purse; Common Shepherd’s-purse; Common Shepherds-purse; Common Shepherds-purse; English Shepherd’s Bag; Erva-do-bom-pastor (Portuguese); Fat-hen; Gäsekresse (German); Hen-pepper; Hirtentaschel (German); Hirtentäschel (German); Hirtentäschlein (German); I’ckode’wadji’bik (“Fire Root”, Chippewa); Kees Ar Rai (Arabic); Lady’s Purse; Lady’s-purse; Lomme (Swedish); Molette (French); Mother’s Heart; Morther’s-heart; Naeni (transcribed Korean); Nazuna (Japanese Rōmaji); Paniquesillo (Spanish); Pepper-and-shot; Pepper Grass; Pepper Plant; Pepper-grass; Pepper-plant; Pepper-weed; Pepperplant; Pepperweed; Permacety; Pick Pocket; Pick Purse; Pick Weed; Pick-pocket; Pick-purse; Pickpocket; Pickpurse; Poor Man’s Pharmacetie; Poor Man’s Pharmacetty; Poor-man’s Pharmacetty; Poor-man’s-pharmacetty; Qi (transcribed Chinese); Rattle Pouch; Rattle Pouches; Säckelkraut (German); Saint James’ Weed; Shephardspurse; Shepherd’s Bag; Shepherd’s Pouch; Shepherd’s Pounce; Shepherd’s Purse (a name also applied to the genus *Capsella*); Shepherd’s Script; Shepherd’s Sprout; Shepherd’s-bag; Shepherd’s Heart; Shepherd’s-pouch; Shepherd’s-purse (a name also applied to the genus *Capsella*); Shepherd’s-sprout; Shepherds-bag; Shepherds-pouch; Shepherds-purse (a name also

applied to the genus *Capsella*); Shepherdspurse (a name also applied to the genus *Capsella*); Shovel Weed; Shovel-weed; Shovelweed; St. James Weed; St. James' Weed; Toothwort; Toy Wort; Toy-weed; Toy-wort; Toywort; Ward-seed; Wardseed; Whoreman's Permacety; Wind Flower; Wind-flower; Windflower; Witch's Pouches; Witches Pouches; Witches' Pouches; Witches-pouches; Witches'-pouches; Withces'-puches; Zurrón de Pastor (Spanish). DESCRIPTION: Terrestrial annual forb/herb (erect stems 1 to 28 inches in height); the foliage is green; the flowers may be cream, lavender, pinkish-purple or white; flowering generally takes place year round from early January to late December. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mountainsides; plateaus; cliffs; cliff faces; bases of cliffs; rocky canyons; canyon walls; bouldery and silty canyon bottoms; talus slopes; buttes; knobs; grassy knolls; sandy ridges; rocky-sandy-loamy and loamy ridgetops; clearings and openings in forests; rocky, loamy, clayey and silty-loamy meadows; rocky foothills; hilltops; silty hillsides; rocky, rocky-sandy-loam, rocky-loamy, shaley, shaley-gravelly, shaley-sandy, stony, gravelly, gravelly-loamy, sandy, sandy-loamy, loamy and clayey-loamy slopes; rocky outcrops; bases of rock outcrops; sandy lava flows; gravelly banks; breaks; steppes; sandy prairies; plains; sandy-loamy bedgrounds; grassy fields; rocky, rocky-loamy, gravelly, gravelly-loamy, sandy, loamy and clayey flats; uplands; hollows; clayey valley floors; silty-loamy valley bottoms; along railroad right-of-ways; along rocky-sandy, gravelly, sandy, sandy-loamy and loamy roadsides; within arroyos; draws; bottoms of draws; grassy gulches; ravines; mossy seeps; along streams; streambeds; along creeks; sandy sandy-loamy creekbeds; along rivers; along riverbeds; along and in rocky and gravelly-sandy drainages; drainage ways; soggy mossy areas; clayey-loamy depressions; bottoms of sinks; silty-loamy swales; along (gravelly-sandy) banks of streams, creeks, rivers, washes, ponds and lakes; borders of creeks; edges of ponds; (silty-loamy) margins of streams, creeks, rivers and swales; shores of rivers and lakes; muddy areas of drawdown; cobbly-sand, gravel and sand bars; mudflats; cobbly beaches; rocky benches; sandy and loamy bottomlands; rocky-sandy and sandy-silty floodplains; lowlands; mesquite bosques; along fencelines; peaty beds of drained beaver ponds; around stock ponds; banks of stock ponds; in dry stock tanks; along reservoirs; dry beds of reservoirs; along canals; canal banks; along ditches; ditch banks; gravelly-sandy and sandy riparian areas; loamy waste places; recently burned areas of chaparral, and disturbed areas growing in muddy ground and wet, moist, damp and dry bouldery, rocky, rocky-gravelly, rocky-sandy, shaley, shaley, shaley-gravelly, shaley-sandy, stony, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, gravelly loam, gravelly-clayey loam, sandy loam, clayey loam, silty loam and loam ground; silty clay and clay ground; sandy silty and silty ground, and rocky humusy, gravelly humusy and humusy ground, occurring from sea level to 10,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, as a spice and as a drug or medication. *Capsella bursa-pastoris* is native to western and central Asia; Europe and islands in the North Atlantic Ocean and Mediterranean Sea, and northern Africa; however, its exact native range in Asia is obscure. *5, 6, 15, 43 (010410), 44 (052212), 46 (Page 344), 58, 63 (052212 - color presentation), 68, 77, **85** (052612 - color presentation), 86 (color photograph), 101 (color photograph), 115 (color presentation), 124 (052212), 127*

***Descurainia pinnata* (T. Walter) N.L. Britton: Western Tansymustard**

COMMON NAMES: Aasa <asa, a:sá, □asa> (Uto-Aztec: Hopi)¹⁴⁰; Aasam (Yaqui); Ai'yaho (Language Isolate: Zuni)¹⁴⁰; Akav (Yuman: Mohave)¹⁴⁰; Atsa' <acá> ("Red", Uto-Aztec: Paiute)¹⁴⁰; 'Atsé <□osce□> ("First One", Athapascan: Navajo)¹⁴⁰; 'Akav□ (Uto-Aztec: Kawaiisu)¹⁴⁰; 'Atsé 'Álts' Óózi <□osce□ 'a.lc'ozigi> ("Slender First One", Athapascan: Navajo)¹⁴⁰; 'Atsé Ts'oh <□osce□ coh> ("Big First One", Athapascan: Navajo)¹⁴⁰; 'Awae (Kiowa Tanoan: Hano Tewa)¹⁴⁰; Chooyñ 'Azee' <co'in □azé□> (Athapascan: Navajo)¹⁴⁰; Da:pk ("smooth/slippery", Uto-Aztec: Tohono O'odham)¹⁴⁰; □D□i-la <asil, asily> (Uto-Aztec: Cahuilla)¹⁴⁰; Green Tansy Mustard; Green Tansy-mustard; Green Tansymustard; Hahck (Uto-Aztec: Southern Paiute)¹⁴⁰; Hasá <jasá> (Uto-Aztec: Guarijio)¹⁴⁰; Huy Aasum (Yaqui); Ívagi (Uto-Aztec: Northern Tepehuan)¹⁴⁰; Ka SiB (Yuman: Paipai)¹⁴⁰; Kosen (Yuman: Cocopa)¹⁴⁰; Kse.v Ilokwak (Yuman: Maricopa)¹⁴⁰; Moutarde Tanaïsise (French); Northern Tansy-mustard; Palmita (Spanish); Pamita [Palmita, Pamitón] (Spanish: Baja California, Sonora)¹⁴⁰; Pamitón (Spanish); Pinnate Tansy Mustard; Pinnate Tansy-mustard; Pinnate Tansymustard; Shortfruit Tansymustard; Shuu'uvad <rú-u-what, show-ou-wat> (Uto-Aztec: Akimel O'odham, Arizona)¹⁴⁰; Sinapismo (Spanish)¹⁴⁰; Sirolitutilli; Su'uvad (Uto-Aztec: Hiá Ce□ O'odham)¹⁴⁰; □u:wa□ <shu'awat> (Uto-Aztec: Onavas Pima)¹⁴⁰; Suavoli (Uto-Aztec: Northern Tepehuan)¹⁴⁰; Tansy Mustard (a name also applied to the genus *Descurainia*); [Pinnate, Western, Yellow] Tansy Mustard (English)¹⁴⁰; Tansy-mustard (a name also applied to the genus *Descurainia*); Tansymustard (a name also applied to the genus *Descurainia*); Toloache (Mexico: Sonora); Western Tansy Mustard; Western Tansy-mustard; Western Tansymustard; Yellow Tansy Mustard; Yellow Tansy-mustard; Yellow Tansymustard. DESCRIPTION: Terrestrial annual, biennial or perennial forb/herb (erect stems 3/4 to 40 inches in height); the foliage may be gray-green, greenish, purplish or reddish; the flowers may be cream, greenish-white, greenish-yellow, purplish, white, white tinged with mauve, whitish, dull yellow, pale yellow, yellow, yellow-green or yellowish-green; flowering generally takes place between mid-January and mid-September (additional record: one for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; along sandy bases of mountains; sandy mesas; plateaus; along sandy rims of canyons; rocky cliffs; sandy bases of cliffs; rocky and sandy canyons; sandy canyon sides; along bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and silty canyon bottoms; scree; bluffs; buttes; hogbacks; rocky ledges; rocky ridges; rocky ridgetops; rocky-sandy meadows; cinder cones; rocky tops of cinder cones; rims of craters foothills; bouldery and rocky hills; rocky hilltops; bouldery-sandy, rocky, rocky-stony, rocky-loamy, clayey, gravelly-sandy and silty-loamy hillsides; sandy bases of escarpments; bedrock, rocky, rocky-stony, rocky-cobbly, rocky-cobbly-sandy, rocky-sandy, cobbly-gravelly-sandy, cobbly-loamy, cindery, gravelly, gravelly-sandy, gravelly-loamy, gravelly-silty-loamy, sandy, sandy-loamy, sandy-clayey, loamy, clayey-loamy and silty-clayey slopes; rocky-sandy alluvial fans; gravelly-sandy bajadas; rocky outcrops; sandy bases of rock outcrops; amongst boulders and rocks; sheltered rocky coves; volcanic dikes

and plugs; sand hills; sand dunes; sand sheets; blow-sand deposits; rocky outwash fans; banks; barrens; loamy steppes; sandy prairies; cobbly and sandy plains; gravelly, gravelly-sandy, gravelly-clayey-loamy, sandy, sandy-clayey, loamy and silty-loamy flats; basins; basin bottoms; shaley and sandy valley floors; gravelly-sandy valley bottoms; coastal plains; sandy coastal strands; along railroad right-of-way; along rocky, gravelly, gravelly-clayey, sandy and sandy-loamy roadsides; along sandy arroyos; draws; within sandy ravines; seeps; rocks areas around springs; along streams; along streambeds; in sand along creeks; along rivers; bouldery and bouldery-rocky-gravelly riverbeds; along and in bouldery, rocky, rocky-sandy, cobbly, cobbly-gravelly-sandy, gravelly, gravelly-sandy, sandy, sandy-loamy, sandy-clayey and clayey washes; within gravelly drainages; drainage ways; waterholes; depressions; banks of creeks and rivers; borders of washes; along edges of streams, creeks and washes; margins of marshy areas; (sandy) sides of rivers; shorelines of lakes; sand bars; beaches; sandy terraces; loamy bottomlands; clayey and silty floodplains; sandy lowlands; mesquite bosques; clayey catchments; in dry stock tanks; muddy and rocky shores of reservoirs; along canals; on top of and within ditches; sandy riparian areas; waste places; recently burned areas of woodland and desertscrub, and disturbed areas growing in mucky ground; muddy ground, and wet, moist, damp and dry desert pavement; bouldery, bouldery-rocky-gravelly, bouldery-sandy, rocky, rocky-stony, rocky-cobbly, rocky-cobbly-sandy, rocky-gravelly-sandy, rocky-sandy, shaley, cobbly, cobbly-gravelly-sandy, cindery, cindery-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-clayey loam, cobbly loam, cobbly-sandy loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, gravelly-silty loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; gravelly clay, sandy clay, silty clay and clay ground, and silty ground, occurring from sea level to 11,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or spice crop; it was also noted as having been used as a preservative (*D.p.* subsp. *halictorum*), fertilizer (*D.p.* subsp. *halictorum*), paint for pottery decoration (flowers mixed with dark iron pigment, *D.p.* subsp. *pinnata*) and as a drug or medication. This plant is a larval food plant of the Desert Orangetip Butterfly (*Anthocharis cethura*) and is sometimes planted in butterfly gardens to attract Orangetip, Checkered White and White Cabbage Butterflies. Black-tailed Jack Rabbits (*Lepus californicus*), Pronghorn (*Antilocapra americana*) and Rocky Mountain Mule Deer (*Odocoileus hemionus hemionus*) feed on this plant, and the Ord's Kangaroo Rat (*Dipodomys ordii*), Spotted Ground Squirrel (*Spermophilus spilosoma*), Townsend Ground Squirrel (*Spermophilus townsendii*) and Northern Grasshopper Mice (*Onychomys leucogaster*) feed on the seeds. *Descurainia pinnata* is native to northern, central and southern North America. *5, 6, 15, 16, 43 (010510), 44 (061811), 46 (Page 349), 63 (052712 - color presentation), 68, 77, 80 (This species is listed as a Secondary Poisonous Range Plant. "Symptoms of poisoning are similar to the "blind staggers" disease caused by selenium, but the principle is unknown. Large quantities of the plant must be eaten for a considerably long time before symptoms appear. Consumption of toxic amounts is most likely to occur during the blossoming period in the spring. Poisoned cattle become partially or completely blind and wander aimlessly about until exhausted, or stand pushing against some solid object for hours. Animals lose their ability to use their tongue in swallowing and cannot eat or drink. They eventually die if neglected. As a result a popular term for the disease is "paralyzed tongue". ... Analysis of plants in Arizona shows that tansy mustard also may accumulate toxic levels of nitrate. Poisoning may be prevented by deferring heavily infested pastures during the spring-growth period, or by providing more desirable forage to reduce mustard consumption." See text for additional information.), 85 (052712 - color presentation), 101 (note), 124 (061811), 127, 140 (Pages 94-95 & 287)*

***Dryopetalon runcinatum* A. Gray: Rockmustard**

COMMON NAMES: *Dryopetalon* (a name also applied to the genus *Dryopetalon*); Rock-mustard; Rockmustard. DESCRIPTION: Terrestrial biennial or perennial forb/herb (erect stems 8 to 32 inches in height); the foliage is dark green; the flowers are lavender, pink, pale violet, purplish, white or white with a purplish tinge; flowering generally takes place between early February and early June (additional records: one for early July and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; rock cliffs; cliff faces; bases of cliffs; rocky canyons; bouldery canyon bottoms; talus slopes; crevices in and under boulders and rocks; rocky ledges; rims of craters; foothills; hills; hillsides; bouldery, bouldery-gravelly and rocky slopes; rocky outcrops; amongst boulders and rocks; coastal plains; along sandy roadsides; within rocky and sandy arroyos; rocky draws; springs; in rocks along streams; along and in rocky streambeds; along creeks; along rivers; along washes; within drainages; (rocky) banks of arroyos and creeks, and riparian areas growing in moist, damp and dry bouldery, bouldery-gravelly, rocky and sandy ground often in shaded areas, occurring from 100 to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetlands ecological formations. NOTE: *Dryopetalon runcinatum* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 155), 43 (010910), 44 (052912 - no record of species or genus), 46 (Page 339), 58, 63 (052912 - color presentation), 77 (color photograph #73), 85 (052912 - color presentation), 115 (color presentation), 124 (052912 - no record of species or genus), 140 (Pages 96 & 287)*

***Lesquerella gordonii* (A. Gray) S. Watson (var. *gordonii* is the variety reported as occurring in Arizona): Gordon's Bladderpod**

SYNONYMY: (for var. *gordonii*: *Physaria gordonii* (A. Gray) S.L. O'Kane & I.A. Al-Shehbaz). COMMON NAMES: Arizona Bladderpod Mustard; Bead-pod; Bladder Pod; Bladder-pod; Bladderpod; Bladderpod Mustard; Gordon Bladder Pod; Gordon Bladder-pod; Gordon Bladderpod; Gordon's Bladder-pod; Gordon's Bladderpod; Yellow Bladderpod. DESCRIPTION: Terrestrial annual, biennial or perennial [short-lived] forb/herb (prostrate, decumbent and/or erect stems 3 inches to 2 feet in height); the foliage is green; the flowers are yellow; flowering generally takes place between early February and mid-May (additional records: one for mid-January, one for early June, two for early June, one for late June, one for early September and one for mid-September). HABITAT: Within the range of this species it has been reported from mountains;

mountainsides; gravelly mesas; plateaus; rocky canyons; rocky and gravelly canyon bottoms; ledges; rocky ridges; foothills; rocky hills; hilltops; rocky, rocky-gravelly and stony hillsides; rocky, rocky-gravelly, gravelly, gravelly-loamy and clayey-loamy slopes; bajadas; rocky outcrops; rocky-sandy alluvial fans; sandy bajadas; rocky, sandy, sandy-loamy, sandy-clayey and clayey-loamy plains; fields; rocky, gravelly, sandy and clayey-loamy flats; basins; valley floors; roadcuts; along rocky, gravelly, gravelly-loamy and sandy roadsides; bottoms of arroyos; draws; rocky ravines; streambeds; sandy creekbeds; along rivers; gravelly riverbeds; along and in bedrock-bouldery, gravelly, sandy and silty washes; along and in drainage ways; banks of creeks and washes; margins of washes; sandy beaches; benches; terraces; bottomlands; sandy floodplains; lowlands; mesquite bosques; along ditches; gravelly-sandy riparian areas; waste places, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam and clayey loam ground; sandy clay and clay ground; silty ground, and chalky ground, occurring from 100 to 7,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Lesquerella gordonii* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 327), 34 (genus), 43 (011310), 44 (062712 - no listings under Common Names for either species or genus), 46 (Page 343), 48 (genus), 58, 63 (062712 - color presentation), 68, 77, **85** (062712 - color presentation), 86 (note under Fendler's Bladderpod), 115 (color presentation), 124 (062712), 140 (recorded as *Physaria gordonii* (A. Gray) O'Kane & Al-Shehbaz [*Lesquerella gordonii* (A. Gray) S. Watson var. *gordonii*, *Lesquerella tenella* A. Nelson], Page 287)*

Matthiola bicornis (see *Matthiola longipetala*)

***Matthiola longipetala* (É.P. Ventenat) A.P. de Candolle: Night Scented Stock**

SYNONYMY: *Matthiola bicornis* (J.E. Smith) A.P. de Candolle; *Matthiola longipetala* (É.P. Ventenat) A.P. de Candolle subsp. *bicornis* (J.E. Smith) P.W. Ball. COMMON NAMES: Evening Scented Stock; Evening Stock; Evening-scented Stock; Evening-scented Stock; Eveningstock; Nacht-Levkoje (German); Night Scented Stock; Night-scent Stock; Night-scented Stock; Night Stock; Nightstock; Perfumeplant; Shaqaara (Arabic); Two-horn Stock. DESCRIPTION: Terrestrial annual or biennial forb/herb (decumbent, ascending and/or erect stems 4 inches to 2 feet in height); the foliage is gray-green; the flowers may be brown, lavender, lavender-pink, magenta-violet, pink, purple, purple-red, purple & white, purplish fading to white, white (rarely), violet or yellow; flowering generally takes place between early February and late May (additional records: flowering ending as late as June has been reported). HABITAT: Within the range of this species it has been reported from mesas; amongst cobbles; flats; along clayey roadsides; around streams; along rivers; sandy riverbeds; in rocky, gravelly and sandy washes; ponds; along (rocky-silty and cobbly) banks of rivers; floodplains; riparian areas; waste places, and disturbed areas growing in dry rocky, cobbly, gravelly and sandy ground; clay ground, and rocky-silty ground, occurring from 2,100 to 5,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant. *Matthiola longipetala* is native to southeastern Europe; western and southern Asia and islands in the Mediterranean Sea, and northern Africa. *5, 6, 16 (recorded as *Matthiola bicornis* (Sibth. & Smith) DC.), 43 (011310 - *Matthiola bicornis* (L.) DC., *Matthiola longipetala* subsp. *bicornis* Ball), 44 (062712 - no listings under Common Names for the species; genus record), 46 (recorded as *Matthiola bicornis* (Sibth. & Smith) DC., note on Page 354), 63 (062712 - color presentation of seed), 77 (recorded as *Matthiola longipetala* (Vent.) DC. var. *bicornis* Sibth. & Smith), **85** (062712 - color presentation), 115 (color presentation), 124 (062712 - no record of species or genus)*

Matthiola longipetala subsp. *bicornis* (see *Matthiola longipetala*)

Matthiola longipetala var. *bicornis* (see footnote 77 under *Matthiola longipetala*)

Physaria gordonii (see *Lesquerella gordonii* var. *gordonii*)

***Schoenocrambe linearifolia* (A. Gray) R.C. Rollins: Slimleaf Plainsmustard**

SYNONYMY: *Sisymbrium linearifolium* (A. Gray) E.B. Payson; *Thelypodiopsis linearifolia* (A. Gray) I.A. Al-Shehbaz. COMMON NAMES: Pink Windmills; Purple Mustard (New Mexico); Slim-leaf Plains-mustard; Slimleaf Plains Mustard; Slimleaf Plainsmustard; Thelypoda (New Mexico); Windmills. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (erect stems 10 inches to 6 feet in height); the leaves may be gray-green or light green; the flowers may be pale lavender, lavender, lavender-pink, lavender-violet, pink, pink-lavender sometimes reported with magenta veins; pinkish, light purple, purple, dark purple, purplish, purplish-pink, violet or white; the stamens are yellow; flowering generally takes place between early May and early November (additional records: three for early January, one for late February and one for early April). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mountainsides; cindery flanks of mountains; rocky mesas; plateaus; bouldery and rocky canyons; rocky canyonsides; rocky canyon bottoms; scree slopes; crevices in rocks; rock ledges; rocky ridges; openings in forests; meadows; foothills; hills; rocky and rocky-clayey hillsides; rocky, rocky-gravelly, gravelly, sandy, sandy-clayey-loamy and clayey slopes; loamy alluvial fans; in silt on rocky outcrops; amongst boulders and rocks; rocky lava flows; banks; plains; rocky flats; basins; along gravelly roadcuts; along rocky, gravelly and sandy-loamy roadsides; arroyos; along draws; within sandy ravines; along streams; along streambeds; along creeks; along and in creekbeds; along rivers; in rocky-cobbly and rocky-gravelly washes; within rocky drainages; bases of waterfalls; silty depressions; banks of creeks; (cindery) edges of creeks and drainages; shores of lakes; benches; sandy bottomlands; floodplains; ditches; rocky riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-cobbly, rocky-

gravelly, rocky-sandy, cindery, gravelly and sandy ground; sandy loam, sandy-clayey loam and loam ground; rocky clay and clay ground, and silty ground, occurring from 2,200 to 10,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Schoenocrambe linearifolia* is native to southwest-central and southern North America. *5, 6, 15, 28 (recorded as *Thelypodopsis linearifolia*, color photograph 683), 43 (030111), 44 (030111 - no record of species), 46 (recorded as *Sisymbrium linearifolium* (Gray) Payson, Page 336), 58 (recorded as *Thelypodopsis linearifolia* (Gray) Al-Shehbaz), 63 (030111 - color presentation), **85** (030211 - color presentation), 115 (030111 - color presentation), 124 (030111 - no record of species), 127, 140 (Page 287)*

***Sisymbrium altissimum* C. Linnaeus: Tall Tumblemustard**

COMMON NAMES: Hamnsenap (Swedish); Hedge Mustard (a name also applied to other species); Hohe Rauke (German); Jim Hill Mustard; Jim Hill-mustard; Jim Hill Tumble-mustard; Jim Hill's Tumblemustard; Jim Hill Tumblemustard; Jimhill Mustard; Tall Hedge Mustard (a name also applied to other species); Tall Hedge-mustard (a name also applied to other species); Tall Mustard (a name also applied to other species); Tall Mustard-weed; Tall Rocket; Tall *Sisymbrium*; Tall Tumble Mustard; Tall Tumble-mustard; Tall Tumblemustard; Tall Tumbleweed Mustard; Tall Tumbleweed-mustard; Tumble Mustard (a name also applied to other species); Tumble-mustard (a name also applied to other species); Tumblemustard (a name also applied to other species); Tumbleweed Mustard (a name also applied to the genus *Sisymbrium*); Tumbleweed-mustard (a name also applied to the genus *Sisymbrium*); Tumbling Mustard; Tumbling-mustard; Ungarische Rauke (German); Vol-Ke-Dova (Havasupai); Yellow Tumbling Mustard. DESCRIPTION: Terrestrial annual or biennial forb/herb (erect stems 8 inches to 5 feet in height); the flowers may be white, pale yellow, yellow, yellow-cream, yellow-white or yellowish-white; flowering generally takes place between mid-March and early October (additional records: one for late January and one for late October). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; sandy plateaus; rocky canyons; canyon walls; sandy canyon bottoms; talus slopes; along rocky ridges; gravelly ridgetops; openings in chaparral; meadows; sandy foothills; bouldery, rocky and cobbly-clayey hills; hilltops; rocky hillsides; bedrock-rocky-sandy, bouldery, rocky, rocky-gravelly-sandy-clayey-loamy, rocky-sandy-clayey, cobbly-loamy, cindery, gravelly, sandy-loamy and sandy-silty slopes; alluvial fans; rocky outcrops; amongst boulders and cobbles; sand hills; sandy dunes; gravelly outwash fans; rocky moraines; steppes; prairies; gravelly-sandy plains; gravelly-sandy, sandy, clayey and silty-loamy flats; basins; sandy valley floors; sandy railroad right-of-ways; roadbeds; along rocky, gravelly, gravelly-sandy-clayey-loamy, gravelly-loamy and sandy-loamy roadsides; rocky arroyos; sandy bottoms of arroyos; gulches; seeps; springs; gravelly-sandy streambeds; along creeks; creekbeds; in rocks along rivers; along and in rocky, gravelly, gravelly-sandy and sandy washes; sandy drainages; drainage ways; lakebeds; freshwater marshes; along (sandy) banks of streams, creeks and rivers; borders of washes; edges of washes and ponds; along (rocky-sandy) margins of rivers; (sandy) shores of rivers and lakes; mudflats; sandy beaches; benches; along gravelly and sandy terraces; loamy bottomlands; sandy floodplains; along fencelines; edges of stock tanks; within ditches; rocky, rocky-sandy, sandy and sandy-humusy riparian areas; waste places; recently burned areas in forests and chaparral, and disturbed areas growing in wet, moist and dry bouldery, rocky, rocky-sandy, shaley, cobbly, cindery, gravelly, gravelly-sandy, pebbly and sandy ground; rocky-gravelly-sandy-clayey loam, cobbly loam, gravelly loam, gravelly-sandy-clayey loam, sandy loam, clayey loam, silty loam and loam ground; rocky clay, rocky-sandy clay, cobbly clay, sandy clay and clay ground; sandy silty and silty ground, and sandy humus ground, occurring from sea level to 9,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food and possibly as a drug or medication. *Sisymbrium altissimum* is native to middle and eastern Europe and western, central and southern Asia. Tumblemustard is an alternative host plant for the Potato Leafroll Virus (PLRV, *Polerovirus* sp.). Maintaining a healthy native plant community with minimal disturbance of soils is one of the best ways to prevent an infestation of this plant. Small infestations can be controlled by the hand pulling of rosettes in fall through spring. *5, 6, 16, 28 (color photograph), 43 (011410), 44 (062812), 46 (Page 336), 63 (062812 - color presentation), **85** (062812 - color presentation, reduced recovery), 86 (note under *Sisymbrium officinale*), 101 (color photograph), 106 (011410 - Potato Leafroll Virus), 124 (062812), 127*

***Sisymbrium irio* C. Linnaeus: London Rocket**

COMMON NAMES: Ban Cenāñig (“Coyote’s Mouth”, Uto-Aztecan: Hiá Ce□ O’odham, Sonora)¹⁴⁰; Ban Cini□añ (“Coyote’s Mouth”, Uto-Aztecan: Tohono O’odham)¹⁴⁰; Cocóol (Hokan: Seri)¹⁴⁰; Glanz-Rauke (German); Haskahl’ <has kahl> (Yuman: Mohave)¹⁴⁰; London Mustard; London Rocket; London Rocket (English)¹⁴⁰; London-rocket; Londonrocket; Mostaza (Spanish)⁸⁵; Mostaza [Silvestre] (“[Wild] Mustard”, Spanish: Sonora)¹⁴⁰; Pamit (Uto-Aztecan: Ópata)¹⁴⁰; Pamita (Spanish)⁸⁵; Pamita (Spanish: Sonora)¹⁴⁰; Pamitón (Uto-Aztecan: Mayo)¹⁴⁰; Rocket Mustard (English)¹⁴⁰; Rocket-mustard; Rocketmustard; Shuu’uva□ (Uto-Aztecan: Akimel O’odham)¹⁴⁰; Tumble Mustard (a name also applied to other species and the genus *Sisymbrium*); Vallsenap (Swedish). DESCRIPTION: Terrestrial annual forb/herb (erect stems 4 inches to 5 feet in height); plants were observed and described as being 8 inches in height and 6 inches in width); the flowers may be golden-yellow, white, pale yellow or yellow; the anthers are cream; flowering generally takes place between mid-December and mid-June (additional records: one for early July, one for late July, one for early August, one for mid-August, two for late August, one for mid-September, one for late September, one for early October, one for mid-October, one for early November, one for mid-November and four for late November). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; sandy mesas; plateaus; rocky canyons; along bouldery-gravelly-sandy and sandy canyon bottoms; rocky buttes; rock ledges; ridges; ridgetops; clayey meadows; foothills; rocky hills; rocky hillsides; bouldery, rocky, rocky-sandy, gravelly-

sandy, sandy and sandy-loamy slopes; rocky alluvial fans; bajadas; rocky outcrops; amongst boulders and rocks; sandy lava flows; sand dunes; banks; berms; cobbly plains; rocky, gravelly, sandy and sandy-silty flats; basins; valley floors; loamy valley bottoms; railroad right-of-ways; gravelly-sandy roadbeds; cindery, gravelly, sandy and clayey roadsides; within rocky and sandy arroyos; along bottoms of arroyos; bottoms of ravines; seeps; springs; along streams; streambeds; along creeks; bouldery-rocky and rocky creekbeds; along rivers; rocky and rocky-cobbly-sandy riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and sandy-loamy washes; within sandy drainage ways; silty lakebeds; bogs; sandy-loamy and silty depressions; along (cobbly-sandy, gravelly-sandy and sandy) banks of streams, creeks, rivers and washes; borders of washes; (rocky) edges of springs, streams, creeks, washes and ponds; margins of washes; sandy beaches; sandy benches; terraces; sandy and loamy bottomlands; floodplains; mesquite bosques; margins of stock tanks; canal edges and walls; along ditches; riparian areas; waste places; recently burned areas of woodland and desertscrub, and disturbed areas growing in muddy and wet, moist, damp and dry bouldery, bouldery-gravelly-sandy, rocky, rocky-cobbly; rocky-cobbly-sandy, rocky-sandy, cobbly, cobbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly-sandy loam, sandy loam and loam ground; sandy clay and clay ground, and sandy silty ground, occurring from sea level to 10,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities, this plant was first reported as occurring in Arizona, in Phoenix, in 1909. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a food and beverage and as a drug or medication. *Sisymbrium irio* is native to central and southern Europe and islands in the Mediterranean Sea; western, central, eastern and southern Asia, and northern Africa. *5, 6, 15, 16, 22, 28 (color photograph), 43 (011410), 44 (033111), 46 (Page 336), 58, 63 (062812 - color presentation), 68, 77, 85 (062812 - color presentation), 101 (color photograph), 115 (color presentation), 124 (033111), 127, 140 (Pages 98-99 & 287), **WTK** (July 13, 2005)*

Sisymbrium linearifolium (see *Schoenocrambe linearifolia*)

Thelypodopsis linearifolia (see *Schoenocrambe linearifolia*)

Thysanocarpus amplexens (see *Thysanocarpus curvipes*)

***Thysanocarpus curvipes* W.J. Hooker: Sand Fringepod**

SYNONYMY: *Thysanocarpus amplexens* E.L. Greene; *Thysanocarpus curvipes* W.J. Hooker var. *elegans* (F.E. von Fischer & C.A. von Meyer) B.L. Robinson; *Thysanocarpus curvipes* W.J. Hooker var. *eradiatus* W.L. Jepson; *Thysanocarpus elegans* F.E. von Fischer & C.A. von Meyer. COMMON NAMES: Common Fringe Pod; Common Fringe-pod; Common Fringed-pod; Common Fringepod; [Common, Sand] Fringe [fringed]-pod (English)¹⁴⁰; Hairy Fringe Pod; Hairy Fringe-pod; Hairy Fringepod; Hairy Lace Pod; Hairy Lace-pod; Hairy Lacepod; [Hairy, Sand] Lace Pod [Lacepod, Lacepod Mustard] (English)¹⁴⁰; Lace Pod Mustard; Lace-pod (a name also applied to the genus *Thysanocarpus*); Lace-pod Mustard; Lacepod (a name also applied to the genus *Thysanocarpus*); Lacepod Mustard; Sand Fringe Pod; Sand Fringe-pod; Sand Fringepod (English)¹⁴⁰; Sand Fringed-pod; Sand Fringepod; Sand Lace Pod; Sand Lace-pod; Sand Lacepod. DESCRIPTION: Terrestrial annual forb/herb (erect stems 4 to 32 inches in height; one plant was observed and described as being 10 inches in height with a crown 2 inches in width, plants were observed and described as being 16 to 22 inches in height and 4 to 8 inches in width); the foliage is pale gray-green; the flowers may be cream, pale pink, pink, purple, purplish, white or white with green midribs; flowering generally takes place between early January and mid-June. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rocky cliffs; rock faces and walls; rocky canyons; canyon walls; bouldery, rocky and sandy canyon bottoms; talus; bases of cliffs; crevices in bedrock and boulders; buttes; ledges; ridges; rocky ridgetops; meadows; foothills; bouldery, rocky and sandy hills; hilltops; bouldery, rocky, rocky-cobbly-gravelly, stony and loamy hillsides; bases of hills; bouldery; bouldery-gravelly, rocky, rocky-gravelly, rocky-clayey-loamy, rocky-silty-loamy, cobbly, cobbly-clayey, gravelly, gravelly-loamy, sandy, sandy-loamy, loamy and clayey slopes; sandy bajadas; rocky outcrops; amongst boulders and rocks; bases of rocks; lava flows; sand dunes; rocky banks; breaks; rocky, shaley, gravelly and sandy flats; sandy valley floors; railroad right-of-ways; along roadsides; arroyos; draws; rocky chutes; gulches; seeps; along streams; edges of streambeds; along creeks; creekbeds; rocky riverbeds; along and in rocky-sandy, gravelly-sandy, sandy, sandy-loamy and loamy washes; along and in drainages; along and in sandy drainage ways; around pools; rocky and (sandy) banks of draws, creeks and rivers; (cobbly) edges of streambeds and washes; margins of washes; shores of lakes; bouldery and rocky benches; rocky-gravelly and sandy terraces; loamy bottomlands; floodplains; along sandy margins of reservoirs; ditches; rocky and sandy riparian areas; recently burned areas in woodlands and chaparral, and disturbed areas growing in moist and dry bouldery, bouldery-rocky-sandy, bouldery-gravelly, rocky, rocky-cobbly-gravelly, rocky-gravelly, rocky-sandy, shaley, stony, cobbly, cobbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, rocky-clayey loam, rocky-silty loam, cobbly-gravelly loam, gravelly loam, sandy loam and loam ground; rocky clay, stony clay, cobbly clay, gravelly clay, sandy clay and clay ground, and silty ground often having been reported as growing in shade and amongst grasses, occurring from sea level to 7,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication. *Thysanocarpus curvipes* is native to west-central and southern North America. *5, 6, 15 (recorded as *Thysanocarpus elegans* Fisch. & Mey.), 16, 43 (011610), 44 (062912 - color photograph), 46 (recorded as *Thysanocarpus amplexens* Greene, Page 348), 58 (recorded as *Thysanocarpus curvipes* Hook. var. *elegans* (Fisch. & Meyer) Robins.), 63 (062912 - color presentation), 77

(recorded as *Thysanocarpus curvipes* Hook. var. *elegans* (F. and M.) Robins.), 85 (063012 - color presentation), 115 (color presentation), 124 (062912 - no record of species or genus), 127, 140 (Pages 99-100 & 287)*

Thysanocarpus curvipes var. *elegans* (see *Thysanocarpus curvipes*)

Thysanocarpus curvipes var. *eradiatus* (see *Thysanocarpus curvipes*)

Thysanocarpus elegans (see *Thysanocarpus curvipes*)

Cactaceae: The Cactus Family

***Carnegiea gigantea* (G. Engelmann) N.L. Britton & J.N. Rose: Saguaro**

SYNONYMY: *Cereus giganteus* G. Engelmann. COMMON NAMES: □A:□á (Yuman: Cocopa)¹⁴⁰; A'a' (plant and fruit, Yuman: Maricopa)¹⁴⁰; A'á'íl'íla (Yuman: Walapai, fruit a'a')¹⁴⁰; Bahidaj (the fruit, Uto-Aztecan: Hiá Ce□ O'odham and Tohono O'odham, Arizona)¹⁴⁰; Giant Cactus; Giant Cereus; Giant Saguara; Giant Saguara Cactus; Giant Saguaro; Giant Saguaro Cactus; Giant Sahuara; Giant Sahuara Cactus; Giant Sahuaro; Giant Sahuaro Cactus; Giant Suwarro Cactus; Ha Shun (Pima); Ha:sañ (Uto-Aztecan: Hiá Ce□ O'odham, Sonora)¹⁴⁰; Ha:sañ (Uto-Aztecan: Tohono O'odham)¹⁴⁰; Haashan <ha:canyi, hahshani> (Uto-Aztecan: Akimel O'odham, Arizona)¹⁴⁰; Hosh 'Aditshaii <xwoctitshahiih> (Athapascan: Navajo)¹⁴⁰; Mashad (Tohono O'odham); Mojëpe <moxéppe> (Hokan: Seri)¹⁴⁰; Nanolzheegé [Nanolzheegi] (Athapascan: Western Apache)¹⁴⁰; Pitahaya (Spanish Conquistadors); Riesenkaktus (German); Sage of the Desert; Sage-of-the-desert; Saguara; Saguara Cactus; Saguaro (a name also applied to the genus *Carnegiea*); Saguaro (English)¹⁴⁰; Saguaro Cactus; Saguarakaktus (Swedish); Sagu <sauguo> (Uto-Aztecan: Mayo); Sahuara; Sahuara Cactus; Sahuaro (Spanish)¹⁴⁰; Sauwo (Uto-Aztecan: Yaqui)¹⁴⁰; Suwarro; Tudhua (Uto-Aztecan: Ópata)¹⁴⁰; Xucntsai ("Large Cactus", Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰. DESCRIPTION: Terrestrial perennial stem-succulent tree (erect stems 5 to 60 feet in height and 6 to 30 inches in diameter); the plants are green; the spines are yellow or reddish-brown aging to gray or gray-black; the flowers (2 to 3 inches in diameter) are a waxy creamy-white opening at about 8 p.m. and closing at about 5 p.m. the next day with around four blooms opening per day over a 30 day period; the anthers are cream-white; the stigma lobes are cream-white; flowering generally takes place between late April and mid-June (additional records: one for late March, one for early July, one for mid-July, two for early September and one for early October), the ripe fruits (2¼ to 3 inches in length and 1 to 1½ inches in diameter) split into 2 to 6 segments that curl back to reveal the red inner lining of the rinds which are sometimes mistakenly thought to be red flowers. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; cliffs; rocky canyons; canyon walls; rocky canyon bottoms; buttes; ridges; ridgelines; rocky foothills; rocky and gravelly hills; rocky hilltops; rocky hillsides; rocky, gravelly, gravelly-loamy and sandy-clayey-loamy slopes; rocky and gravelly bajadas; rocky outcrops; amongst and on boulders and rocks; stabilized sandy and sandy-powdery dunes; plains; cindery, gravelly, gravelly-sandy and sandy flats; valley floors; along and in rocky and sandy arroyos; rocky bottoms of arroyos; streambeds; along and in riverbeds; within sandy washes; borders of washes; drainages; bottomlands; floodplains; mesquite bosques, and on rocks in riparian areas growing in dry desert pavement; bouldery, rocky, cindery-sandy, gravelly, sandy and sandy-powdery ground, and gravelly loam and sandy-clayey loam ground, occurring from sea level to 5,100 feet in elevation in the scrub, grassland and deserts scrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder (seeds), beverage and/or fiber crop; it was also noted as having been used as tools, for ceremonial items and musical instruments, and as an indicator of the changing of the seasons (with the Saguaro harvest marking the beginning of a new year). Saguaro are very slow to establish, a 5 year old plant may be no more than ¼ to ½ inch in height. The growth rate of Saguaro is extremely variable. William G. McGinnies in his book "Discovering the Desert" reports that a plant 36 inches in height may be from 20 to 50 years of age, he also presents a table of typical growth rates reporting the following: 4 inches - 8.0 years, 8 inches - 12.5 years, 16 inches - 19.1 years, 32 inches - 27.3 years, 3.3 feet - 30.3 years, 6.6 feet - 40.5 years, 10 feet - 47.5 years, 13 feet - 54 years, 16 feet - 60.0 years, 18 feet - 74.0 years, 20 feet - 83.0 years, 25 feet - 107.0 years, 30 feet - 131.0 years, and 35 feet - 157.0 years. The growth rate of propagated and cultivated saguaros is much faster. One of the largest known saguaros, located in Saguaro National Monument, was reported to be 52 feet in height, had 52 arms, weighed an estimated 10 tons and was thought to be 235 years of age. Cristate forms have been reported. The Broad-billed Hummingbird (*Cynanthus latirostris*), Broad-tailed Hummingbird (*Selasphorus platycercus*), Costa's Hummingbird (*Calypte costae*), Curved-billed Thrasher (*Toxostoma curvirostre*), Lesser Long-nosed Bat (*Leptonycteris curasoae* subsp. *yerbabuena*), Rufous Hummingbird (*Selasphorus rufus*) and White-winged Dove (*Zenaida asiatica*) have been observed visiting the flowers. Coyotes (*Canis latrans*), Desert Mule Deer (*Odocoileus hemionus* subsp. *crooki*), Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*), Javelina (*Peccari tajacu*) and White-winged Doves (*Zenaida asiatica*) as well as other animals and birds feed on the saguaro fruit and seeds. the Gila Woodpecker (*Melanerpes uropygialis*) and Gilded Flicker (*Colaptes chrysoides*) make holes in this plant for their nests which are later utilized by the Ash-throated Flycatcher (*Myiarchus cinerascens*), Cactus Wren (*Campylorhynchus brunneicapillus*), Elf Owl (*Micrathene whitneyi*), House Finch (*Carpodacus mexicanus*), Lucy's Warbler (*Vermivora luciae*), Purple Martin (*Progne subis*) and Cactus Wren (*Campylorhynchus brunneicapillus*). Red-tailed Hawks (*Buteo jamaicensis*), White-winged Doves (*Zenaida asiatica*) and other birds nest on the arms of the plant. *Carnegiea gigantea* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Cereus giganteus* Engelm., Pages 108-111: Frontispiece (color photograph including habitat

with associated species), Page ii, Plate 2.1, Page 109 and Plate 2.5, Page 112), 13 (color photographs including habitat with associated species: Plates C.2., Page 391 and D.3, Page 392), 15 (color photograph including habitat and associated species, Page 7), 16, 18, 26 (color photograph), 27 (recorded as *Cereus giganteus*, Pages 64-65; color photographs: Plates 39, 39A & 39B, Page 102), 28 (recorded as *Cereus giganteus*, color photographs 109 A,B&C), 38 (color photograph), 43 (011610), 44 (040111), 45 (color photograph), 46 (Page 569), 48 (recorded as *Cereus giganteus*), 52 (recorded as *Cereus giganteus*, color photograph), 53 (recorded as *Cereus giganteus* Engelm.), 58 (recorded as *Cereus giganteus* Engelm.), 63 (070112 - color presentation), 77 (color photograph #63), **85** (070112 - color presentation, reduced recovery), 86 (recorded as *Cereus gigantea*, color photograph), 91 (Pages 146-149), 107, 115 (color presentation), 119, 124 (040111 - no record of species or genus), 127, 134, 140 (Pages 100-102 & 288), ADS (Friday, April 20, 2012, Page A1&4: Saguaros, emblems of the desert, now claim higher ground), **WTK** (July 13, 2005)*

Cereus giganteus (see *Carnegiea gigantea*)

Cereus greggii var. *transmontanus* (see *Peniocereus greggii* var. *transmontanus*)

***Cylindropuntia acanthocarpa* (G. Engelmann & J. Bigelow) F.M. Knuth: Buck-horn Cholla**

COMMON NAMES: Buck-horn Cholla; Buckhorn Cholla; Deer-horn Cactus; Major Cholla (*C.a. major*); Stag-horn Cholla; Wiyar□b□ (Uto-Aztec: Kawaiisu); Yellow Flowered Cane Cactus; Wiyar□b□ (Uto-Aztec: Kawaiisu)¹⁴⁰. DESCRIPTION: Terrestrial perennial stem-succulent shrub (16 inches to 15 feet in height; one plant was observed and described as being 20 inches in height with a crown 60 inches in width, one plant was observed and described as being 5 feet in height with a crown 10 feet in width, one plant was observed and described as being 67 inches in height with a crown 83 inches in width); the stems may be bluish-gray-green, gray-green, green or dark green; the spines may be golden, golden-yellow, gray, reddish-brown, tan or yellowish; the flowers (1 to 2¼ inches in diameter) may be bronze, bronze with a reddish mid-stripe, bronze-yellow, burnt-orange, copper-yellow, green-yellow, maroon, orange, purple, purplish, red, dark red, reddish-bronze, yellow, yellow-brown, yellow-magenta, yellow-red or variegated; the anthers are light yellow or yellow; flowering generally takes place between early March and late June (additional records: two for early January, one for mid-July, two for early August and one for mid-November); the mature spiny, dry fruits (1¼ inches in length and 5/8 to 3/4 inch in diameter) may be brown or tan. HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; sandy mountainsides; rocky-sandy and stony mesas; bouldery canyons; canyon bottoms; buttes; ridges; rocky foothills; rocky, gravelly and sandy hills; rocky hillsides; rocky, rocky-gravelly, gravelly and sandy slopes; rocky, gravelly and gravelly-loamy bajadas; rocky outcrops; amongst boulders, rocks and gravels; plains; gravelly and sandy flats; basins; sandy valley floors; along gravelly roadsides; gulches; creekbeds; along and in bouldery, bouldery-gravelly, stony-gravelly, gravelly; gravelly-sandy and sandy washes; banks of washes; along (rocky-sandy) edges of creeks; margins of washes; rocky benches; gravelly-silty terraces; loamy bottomlands, and sandy riparian areas growing in dry desert pavement; bouldery, bouldery-rocky-sandy, bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy, stony-gravelly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly-sandy loam, rocky-sandy loam, gravelly loam, sandy loam and loam ground; clay ground, and gravelly silty and silty ground, occurring from 500 to 5,200 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Cylindropuntia acanthocarpa* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia acanthocarpa* Engelm. & Bigelow, Pages 34-37), 26 (genus, recorded as *Opuntia*), 27 (Page 17), 28 (recorded as *Opuntia acanthocarpa*, color photograph 113), 43 (011710 - *Cylindropuntia acanthocarpa* (Engelm. & J.M. Bigelow) F.M. Knuth, *Opuntia acanthocarpa* Engelm. & J.M. Bigelow), 45 (color photograph), 46 (recorded as *Opuntia acanthocarpa* Engelm. & Bigel., Page 585), 48 (genus, recorded as *Opuntia*), 53 (recorded as *Opuntia acanthocarpa* Engelm. & Bigel.), 63 (011710), 77 (recorded as *Opuntia acanthocarpa* Engelm. & Bigel. var. *major* (Engelm. & Bigel.) L. Benson, color photograph labeled *Opuntia acanthocarpa* #66), **85** (011710 - color presentation), 115 (color presentation), 119 (recorded as *Opuntia acanthocarpa* Engelm.), 127, 140 (Pages 102 & 103)*

***Cylindropuntia acanthocarpa* (G. Engelmann & J. Bigelow) F.M. Knuth var. *acanthocarpa*: Buck-horn Cholla**

SYNONYMY: *Opuntia acanthocarpa* G. Engelmann & J. Bigelow; *Opuntia acanthocarpa* G. Engelmann & J. Bigelow var. *acanthocarpa*. COMMON NAMES: Buck-horn Cholla. DESCRIPTION: Terrestrial perennial stem-succulent shrub (40 inches to 10 feet in height, one plant was described as being 32 inches in height and 40 inches in width, one plant was described as being 4 feet in height and 40 inches in width, one plant was described as being 4 feet in height and width, one plant was described as being 78 inches in height and 10 feet in width); the stems are bluish-gray-green or green; the spines are brown, dark brown, golden-yellow, reddish-brown or tan turning gray with age; the glochids are yellow; the flowers (1 to 1¼ inches in diameter) are bronze, green-yellow, yellow or yellow-green sometimes tinged with brown-orange or reddish-orange; the anthers are yellow; based on just a few flowering records located flowering generally takes place between late March and late May (flowering records: one for late March, seven for mid-May and one for late May); the mature spiny, dry fruits (1¼ inches in length and 5/8 to 3/4 inch in diameter) are brown or tan. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; canyons; rocky hillsides; rocky and sandy slopes; along drainages, and mesquite bosques growing in dry rocky, gravelly and sandy ground, occurring from 1,300 to 4,700 feet in elevation in the woodland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant (*Opuntia acanthocarpa*)

was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Cylindropuntia acanthocarpa* var. *acanthocarpa* is native to southwest-central North America. *12 (recorded as *Opuntia acanthocarpa* Engelm. & Bigelow var. *acanthocarpa*, Pages 35 & 37), 26 (genus, recorded as *Opuntia*), 27 (recorded as *Cylindropuntia acanthocarpa* (Engelmann & Bigelow) F.M. Knuth, Page 17), 28 (recorded as *Opuntia acanthocarpa*, color photograph 113), 43 (011710 - *Cylindropuntia acanthocarpa* (Engelm. & J.M. Bigelow) F.M. Knuth, *Opuntia acanthocarpa* Engelm. & J.M. Bigelow), 45 (color photograph of species), 46 (recorded as *Opuntia acanthocarpa* Engelm. & Bigel., Page 585), 48 (genus, recorded as *Opuntia*), 53 (recorded as *Opuntia acanthocarpa* Engelm. & Bigel.), 63 (011810 - color presentation), 85 (011810), 115 (color presentation of species), 119 (recorded as *Opuntia acanthocarpa* Engelm.), 127*

***Cylindropuntia arbuscula* (G. Engelmann) F.M. Knuth: Arizona Pencil Cholla**

SYNONYMY: *Opuntia arbuscula* G. Engelmann. COMMON NAMES: Arizona Pencil Cholla; Bush Pencil Cholla; Clavellina (Spanish); Pencil Cholla; Siviri (Spanish); Wipnoi. DESCRIPTION: Terrestrial perennial stem-succulent shrub (erect stems 20 inches to 12 feet in height; one plant observed and described as being 5 feet in height with a crown 5 feet in width, one plant was observed and described as being 78 inches in height with a crown 102 inches in width, one plant was observed and described as being 7 feet in height with a crown 66 inches in width); the trunk may be dark gray; the stems may be blue-green, gray-green, dull green, green or yellow-green and sometimes tinged with purple; the spines may be pale yellow or red-brown turning black with age; the glochids are pale yellow; the flowers ($\frac{3}{4}$ to $1\frac{1}{2}$ inches in diameter) may be dark bronze, brown, green, greenish-yellow tinged with red, orange-bronze, orange-yellow, red, terra cotta, pale yellow-green or yellow-green; the anthers are yellow; the stigma lobes may be pale green or greenish; flowering generally takes place between early April and early June (additional record: one for late July); the spineless fleshy pear-shaped fruits ($\frac{1}{2}$ to $\frac{7}{8}$ inch in diameter and 1 to $1\frac{1}{4}$ inches in length) are green with a pink blush, green tinged with purple or red or yellow-green. HABITAT: Within the range of this species it has been reported from rocky canyon bottoms; hills; rocky hillsides; rocky, gravelly, sandy and silty-loamy slopes; rocky and gravelly bajadas; plains; gravelly, sandy, sandy-loamy and silty flats; basins; valley floors; coastal plains; coastal beaches; along gravelly roadsides; along arroyos; within gullies; riverbeds; along gravelly, gravelly-sandy and sandy washes; along drainages; borders of washes; floodplains; mesquite bosques; around represos, and disturbed areas growing in damp and dry desert pavement; rocky, gravelly, gravelly-sandy and sandy ground; sandy loam and silty loam ground, and silty ground, occurring from sea level to 5,600 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. The fruit is eaten by browsing animals including the Javelina (*Peccari tajacu* subsp. *sonoriensis*). *Cylindropuntia arbuscula* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia arbuscula* Engelm., Pages 58-59), 15 (recorded as *Opuntia arbuscula* Engelm.), 26 (genus, recorded as recorded as *Opuntia*), 27 (Page 3; color photograph: Plate 3, Page 94), 28 (recorded as *Opuntia arbuscula*, color photograph 114), 43 (011710), 44 (112910 - no record of species; genus record), 45 (color photograph), 46 (recorded as *Opuntia arbuscula* Engelm., Page 584), 48 (genus, recorded as recorded as *Opuntia*), 58 (recorded as *Opuntia arbuscula* Engelm.), 63 (070212 - color presentation), 77 (recorded as *Opuntia arbuscula* Engelm.), 85 (070212 - color presentation, reduced recovery), 91, 115 (color presentation), 119 (recorded as *Opuntia arbuscula* Engelm.), 124 (111210 - no record of species or genus; genus recorded as *Opuntia* includes the cholla), 127, 140 (Pages 103 & 288), HR*

***Cylindropuntia bigelovii* (G. Engelmann) F.M. Knuth: Teddybear Cholla**

SYNONYMY: *Opuntia bigelovii* G. Engelmann. COMMON NAMES: Arizona Jumping Cactus; "Ball" Cholla; Bigelow Cholla; Bigelow's Cholla; Bigelow Cholla Cactus; Bigelow's Cholla Cactus; Cholla Guera; Choya Guera; Golden-spined Jumping Cholla; Go'te (Seri); Jumping Cactus (a name also applied to other species); Jumping Cholla (a name also applied to other species); Jumping Teddy-bear Cholla; Jumping Teddybear Cholla; Jumping Teddybear Cholla Cactus; Silver Cholla (a name also applied to other species); Teddybear Cactus; Teddy Bear Cholla; Teddy-bear Cholla; Teddy-bear Cholla Cactus; Teddy-bear Jumping Cholla; Teddybear Cactus; Teddybear Cholla; Teddybear Cholla Cactus; Teddy-bear Jumping Cholla. DESCRIPTION: Terrestrial perennial stem-succulent subshrub or shrub (erect stem 20 inches to 10 feet in height; one plant was observed and described as being just over 8 feet in height and 40 inches in width with 2 to 3 main trunks); the central trunk may be black or dark brown; older branches are dark-brown; the stems (3 to 10 inches in length and $1\frac{1}{4}$ to $2\frac{1}{2}$ inches in diameter) may be bluish, light green, green or bluish-green; the spines may be golden, silvery, tan, pale yellow or yellow aging to dark brown; the glochids are yellow; the flowers (1 to $1\frac{1}{2}$ inches in diameter) may be chartreuse-yellow, cream tinged with rose, green, green-yellow, greenish-yellow, magenta, pink, white-yellow, yellow tinged with red-purple or white tinged with lavender; the anthers may be orange-yellow, yellow, deep yellow, yellow-orange or deep yellow-orange; the stigma lobes may be cream, dark chartreuse-green, green, dark green or olive green; flowering generally takes place between early March and mid-June (additional records: one for late January, one for early February, one for early September, one for mid-November, two for late November and one for early December); the ripe fruits ($\frac{1}{2}$ to $\frac{3}{4}$ inch in length and $\frac{1}{2}$ to $\frac{3}{4}$ inch in diameter) are fleshy, nearly spineless and may be greenish-yellow, yellow or yellow-green possibly tinged with purple-red. HABITAT: Within the range of this species it has been reported from mountains; rocky and sandy mountainsides; cliffs; canyons; canyon bottoms; talus slopes; bluffs; rocky ridges; rocky ridgetops; rocky foothills; rocky and sandy hills; rocky hillsides; rocky, rocky-gravelly, rocky-sandy, gravelly and sandy slopes; rocky alluvial fans; rocky-gravelly and gravelly-loamy bajadas; plains; cobbly-silty, gravelly, sandy and silty flats; basins; valley floors; along roadsides; arroyos; along and in rocky, gravelly and sandy washes; sandy drainages; benches; bouldery-rocky terraces; lowlands, and disturbed areas growing in dry desert pavement; bouldery-rocky, rocky, rocky-

gravelly, rocky-sandy, gravelly and sandy ground; gravelly loam and silty loam ground; clay ground, and cobbly-silty and silty ground, occurring from sea level to 4,400 feet in elevation in the scrub and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. This is the spiniest of the cholla cacti in Arizona. Thomas Kearney and Robert Peebles in their book *Arizona Flora* had this to say about the Teddybear Cholla: "The combination of barbed spines and densely armed, easily detached joints has earned profound respect for this formidable cholla." Teddy-bear Chollas may live to be 60 or more years of age. The Teddybear Cholla is a preferred nesting site of the Cactus Wren (*Campylorhynchus brunneicapillus*). Pack Rats (*Neotoma* sp.) use the joints of this plant in the construction of their nests. The change in nomenclature in USDA NRCS has not been recognized in BONAP, species remains as *Opuntia bigelovii* (accessed 041806). *Cylindropuntia bigelovii* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia bigelovii* Engelm., Pages 50, 52 & 54-55), 15 (recorded as *Opuntia bigelovii* Engelm., color photograph on Page 77 includes habitat and associated species), 18, 26 (genus, recorded as *Opuntia*), 27 (Page 5; color photographs including habitat: Plates 5 & 5A, Page 94), 28 (recorded as *Opuntia bigelovii*, color photograph 115 A&B), 43 (052110), 44 (061911), 45 (color photograph), 46 (recorded as *Opuntia bigelovii* Engelm., Page 584), 48, 63 (052110 - color presentation including habitat), 77 (recorded as *Opuntia bigelovii* Engelm., color photograph #13), 85 (062011 - color presentation), 86 (color photograph), 91 (recorded as *Opuntia bigelovii* Engelm.), 115 (color presentation), 119 (recorded as *Opuntia bigelovii* Engelm.), 124 (061911 - no record of species; genus record), 127, **WTK** (August 4, 2005)*

***Cylindropuntia fulgida* (G. Engelmann) F.M. Knuth var. *fulgida*: Jumping Cholla**

SYNONYMY: *Opuntia fulgida* G. Engelmann; *Opuntia fulgida* G. Engelmann var. *fulgida*. COMMON NAMES: Brincadora (Spanish: a name also applied to the species); Chain Cholla (a name also applied to the species); Chain-fruit Cholla (a name also applied to the species); Cholla (a name also applied to the species, other species and to the genus *Cylindropuntia*); Cholla Brincadora (a name also applied to the species); Choya (Spanish: a name also applied to the species, other species and to the genus *Cylindropuntia*); Jumping Chain-fruit Cholla (a name also applied to the species); Jumping Cholla (a name also applied to the species); Sonora Jumping Cholla (a name also applied to the species); Velas de Coyote (a name also applied to the species). DESCRIPTION: Terrestrial perennial stem-succulent shrub or tree (erect stems 3 to 15 feet in height; one plant was observed and described as being 4¼ feet in height with a crown 40 inches in width, one plant was observed and described as being 4¼ feet in height with a crown 8¼ feet in width, one plant was observed and described as being 6½ feet in height with a crown 5 feet in width, one plant was observed and described as being 10 feet in height with a crown 13 feet in width); the stems may be green or purple; the spines are golden-yellow, yellow or pale pinkish aging to brown; the glochids are yellow; the flowers (¾ to 1 inch in diameter) may be cream-yellow, pink, pink-purple, purple, purple-pink, red-purple, rose-pink or yellow tinged with pink; the anthers may be cream or white; the stigma lobes are whitish to pale yellow; flowering generally takes place between mid-April and mid-September (additional records: one for late March, one for early December); the smooth fleshy fruits (¾ to 2 inches in length and ¾ to 1 inch in diameter) may be gray-green, green or purple forming clusters or pendant "chains". HABITAT: Within the range of this species it has been reported from mountains; bases of mountains; mesas; canyons; ledges; ridges; hills; bases of hills; hillsides; rocky, gravelly-loamy and sandy slopes; gravelly bajadas; plains; rocky-gravelly, gravelly, sandy and sandy-silty flats; along valley floors; coastal plains; along rocky-gravelly and sandy roadsides; along creeks; along and in washes; banks of streams, creeks and washes; edges of washes; terraces, and floodplains growing in dry desert pavement; rocky, rocky-gravelly, gravelly and sandy ground; gravelly loam and silty-clayey loam ground; clay ground, and sandy silty ground, occurring from 600 to 4,100 feet in elevation in the grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Each year, following flowering, additional fruits are added to the end of the chains. Chain-fruit Chollas may live to be from 40 to 80 years of age. The Chain-fruit Cholla is a preferred nesting site of the Cactus Wren (*Campylorhynchus brunneicapillus*). The Costa's Hummingbird (*Calypte costae*) has been observed visiting the flowers. Deer and Javelina feed on the fruits. *Cylindropuntia fulgida* var. *fulgida* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia fulgida* Engelm. var. *fulgida*, Pages 49-52), 15 (recorded as *Opuntia fulgida* Engelm. var. *fulgida*), 16 (recorded as *Opuntia fulgida* Engelm.), 26 (genus, recorded as *Opuntia*), 27 (species, Pages 10-11; color photograph: Plate 10, Page 96), 28 (recorded as *Opuntia fulgida*, color photographs 116 A&B), 43 (011810), 44 (070312 - no record of variety or species; genus record), 45 (species, color photograph of species), 46 (recorded as *Opuntia fulgida* Engelm., Page 585), 48 (genus, recorded as *Opuntia*), 52 (recorded as *Opuntia fulgida*, color photograph), 53 (recorded as *Opuntia fulgida* Engelm.), 63 (070312 - color presentation), 77 (recorded as *Opuntia fulgida* Engelm. var. *fulgida*), **85** (070312 - color presentation, reduced recovery), 91 (recorded as *Opuntia fulgida* Engelm. var. *fulgida*, Pages 293-294), 115 (color presentation of species), 119 (recorded as *Opuntia fulgida* Engelm.; genus record: the chollas are included under the genus *Opuntia*), 124 (070312 - no record of species or genus; record found under *Opuntia fulgida*), 127, 140 (Page 288)*

***Cylindropuntia fulgida* (G. Engelmann) F.M. Knuth var. *mamillata* (A.C. Schott ex G. Engelmann) C. Backeberg: Jumping Cholla**

SYNONYMY: *Opuntia fulgida* G. Engelmann var. *mamillata* (A.C. Schott ex G. Engelmann) J.M. Coulter; *Opuntia fulgida* G. Engelmann var. *mamillata* (A.C. Schott ex G. Engelmann) J.M. Coulter forma *monstrosa* J.M. Coulter; *Opuntia mamillata* A.C. Schott ex G. Engelmann. COMMON NAMES: Boxing-glove Cactus (forma *monstrosa*); Boxing-glove Cholla (forma *monstrosa*); Brincadora (Spanish: a name also applied to the species); Chain [-fruit] Cholla¹⁴⁰; Chain-fruit Cholla (a name

also applied to the species); Cholla Brincadora (a name also applied to the species); Cholla (a name also applied to the species, other species and to the genus *Cylindropuntia*); Choya (Spanish: a name also applied to the species, other species and to the genus *Cylindropuntia*); Club Cactus (a name also applied to the species); Jumping Cholla (a name also applied to the species); Smooth Chain-fruit Cholla; Velas de Coyote (a name also applied to the species). DESCRIPTION: Terrestrial perennial stem-succulent shrub or tree (erect stems 2 to 9 feet in height; one plant was observed and described as being 6 feet in height with a crown 4 feet in width, one plant was observed and described as being 8 feet in height with a crown 8 feet in width); the stems may be drab green or green; the flowers (¾ to 1 inch in diameter) may be cream tinged with magenta, light pink, pink, pink-purple, rose-pink or violet; the anthers may be cream or white; the stigma lobes are whitish to pale yellow; flowering generally takes place between late May and mid-September (additional records: one for mid-April and one for late April; flowering as late as October has been reported); the smooth fleshy fruits (¾ to 2 inches in length and ¾ to 1 inch in diameter) may be gray-green or green forming pendulant "chains". HABITAT: Within the range of this species it has been reported from mountains; mesas; ledges; ridges; rocky ridgetops; foothills; hills; rocky hillsides; rocky slopes; bajadas; lava plains; sand dunes; plains; gravelly and sandy flats; roadsides; sandy arroyos; along washes; rocky-sandy benches; floodplains, and disturbed areas growing in dry rocky, rocky-sandy, gravelly and sandy ground, occurring from sea level to 3,900 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The plant, *Opuntia fulgida*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Each year, following flowering, additional fruits may be added to the end of the chains. Chain-fruit Cholla may live to be from 40 to 80 years of age. Cristate forms (forma *monstrosa* J.M. Coulter) have been reported. The Chain-fruit Cholla is a preferred nesting site of the Cactus Wren (*Campylorhynchus brunneicapillus*). The Costa's Hummingbird (*Calypte costae*) has been observed visiting the flowers. Deer and Javelina feed on the fruits. *Cylindropuntia fulgida* var. *mamillata* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia fulgida* Engelm. var. *mamillata* (Schott) Coulter, Pages 50 & 52), 15 (recorded as *Opuntia fulgida* var. *mamillata* (Schott) Coult.), 26 (genus, recorded as *Opuntia*), 27 (Pages 12 & 13 (forma *monstrosa*); color photograph: Plate 11, Page 96), 43 (011810 - recorded as *Opuntia fulgida* Engelm. var. *mamillata* (A. Schott) J.M. Coult., no record for *Opuntia fulgida* var. *mamillata* forma *monstrosa*), 44 (070312 - no record of variety or species; genus record), 45 (species, color photograph of species), 46 (recorded as *Opuntia fulgida* Engelm. var. *mamillata* (Schott) Coult., Page 585), 48 (genus, recorded as *Opuntia*), 53 (recorded as *Opuntia fulgida* Engelm. var. *mamillata* (Schott) Coult.), 58 (recorded as *Opuntia fulgida* Engelm. var. *mamillata* (Schott) Coult.), 63 (070312), 77 (recorded as *Opuntia fulgida* Engelm. var. *mamillata* (Schott) Coult.), 85 (062011 - color presentation, reduced recovery), 91 (recorded as *Opuntia fulgida* Engelm. var. *mamillata* (Schott) Coult., Pages 293-294), 115 (color presentation of species), 124 (070312 - no record of species or genus; species record found under *Opuntia fulgida*), 127, 140 (Pages 103, 105 & 288), **HR***

Cylindropuntia fulgida var. *mamillata* forma *monstrosa* (see NOTES under *Cylindropuntia fulgida* var. *mamillata*)

***Cylindropuntia leptocaulis* (A.P. de Candolle) F.M. Knuth: Christmas Cactus**

SYNONYMY: *Opuntia leptocaulis* A.P. de Candolle. COMMON NAMES: Agujilla; Alfilerillo (Spanish); Catalinera (Spanish); Christmas Cactus; Christmas Cholla; Darning Needle Cactus; Desert Christmas Cactus; Desert Christmas Cholla; Diamond Cactus; Holycross Cholla; Naf (or Nav?, Gila River Pima); Pencil Cactus (a name also applied to other species); Pencil Cholla (a name also applied to other species); Pencil-joint Cholla; Pennopuntia (Swedish); Pipestem Cactus; Rat-tail Cactus; Rattail Cactus; Slender-stem Cactus; Tajasilla; Tasajilla (Hispanic); Tasajillo¹⁴⁰; Tasajillo (Spanish, Texas); Tasajo (Spanish); Tesajo (Hispanic); Tesajo Cactus (Christmastree Cacti); Tassajilla (Oklahoma); Tassijilla; Wipnoi¹⁴⁰. DESCRIPTION: Terrestrial perennial stem-succulent shrub (trailing (rarely), sub-erect (rarely) and/or erect stems 1 to 6 feet in height (sometimes becoming vine-like and growing upwards 8 to 15 feet in height with support); plants were observed and described as being 20 inches in height with crowns 20 inches in width, one plant was observed and described as being 20 inches in height with a crown 40 inches in width, one plant was observed and described as being 20 inches in height with a crown 6½ feet in width, one plant was observed and described as being 2 feet in height with a crown 2 feet in width, one plant was observed and described as being 30 inches in height with a crown 5 feet in width, plants were observed and described as being to 40 inches in height with crowns 40 inches in width, one plant was observed and described as being 40 inches in height with a crown 5 feet in width, one plant was observed and described as being 4 feet in height with a crown 8 feet in width, one plant was observed and described as being 5 feet in height with a crown 8¼ feet in width); the stems may be gray-green, dark gray-green, green, purplish or yellow-green; the spines gray-brown, purple-brown, red-brown or yellow-brown often being paler toward the tip; the glochids may be reddish-brown or yellow; the anthers are yellow; the stigma lobes are greenish-yellow; the flowers (3/8 to 3/4 inch in diameter) are bronze, cream, light green-cream, cream-yellow, green, green-yellow, greenish-cream, greenish-yellow, pale yellow, yellow or whitish; flowering generally takes place between late March and late June (additional records: two for mid-July, one for late July, one for early August, one for early October, one for mid-October and one for late October); the spineless (with glochids) fleshy fruits (1/2 to 3/4 inch in length and 1/4 to 7/16 inch in diameter) may be coral, green (rarely, sometimes tinged with scarlet), pale green-yellow, orange, orange-red, red, reddish-orange, scarlet, scarlet-red or yellow (rarely) when mature. HABITAT: Within the range of this species it has been reported from mountains; sandy mountainsides; rocky-sandy, gravelly and silty mesas; along cliffs; rocky canyons; bases of canyon walls; rocky canyon bottoms; rocky talus slopes; rocky ledges; bedrock and gravelly ridges; foothills; rocky and rocky-gravelly hills; hilltops; rocky hillsides; bedrock, rocky, gravelly, gravelly-sandy-loamy, sandy and silty-loamy slopes; clayey-loamy alluvial fans; rocky, gravelly, gravelly-silty and sandy bajadas; rocky and gypsum outcrops; amongst cobbles; sandy lava flows; lava beds; sand hills; sand dunes; breaks; sandy and clayey-loamy plains; rocky-sandy,

gravelly, gravelly-sandy and sandy flats; basins; rocky-gravelly valley floors; gravelly and gravelly-sandy roadsides; within gravelly and sandy arroyos; bottoms of arroyos; along ravines; along rivers; riverbeds; along and in rocky, gravelly and sandy washes; along sandy drainages; along (cobble-sandy) banks of rivers and drainages; borders of washes; edges of arroyos, ravines and washes; rocky and sandy benches; terraces; bottomlands; floodplains; along fencelines; along ditches; riparian areas, and disturbed areas growing in dry desert pavement; rocky, rocky-gravelly, rocky-sandy, cobble-sandy, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, clayey loam, silty loam and loam ground; rocky-sandy clay and loamy clay ground, and gravelly silty and silty ground often found growing within grasses, shrubs or trees, occurring from sea level to 6,200 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. The Desert Christmas Cactus is believed to have a life span of about 50 years. A high mortality rate is to be expected with plants coming into contact with fire. Hummingbirds have been observed visiting the flowers; the fruits are eaten by birds and small mammals, and Cochineal Scale (*Dactylopius coccus*) has been observed growing on this plant. *Cylindropuntia leptocaulis* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia leptocaulis* DC., Pages 56-58), 15 (recorded as *Opuntia leptocaulis* DC.), 16 (recorded as *Opuntia leptocaulis* DC.), 18, 26 (genus, recorded as *Opuntia*), 27 (Page 2; color photograph: Plate 2, Page 94), 28 (recorded as *Opuntia leptocaulis*, color photograph 129), 43 (011910), 44 (070312 - no record of species; genus record), 45 (color photograph), 46 (recorded as *Opuntia leptocaulis* DC., Page), 48 (genus, recorded as *Opuntia*), 58 (recorded as *Opuntia leptocaulis* DC.), 63 (070412 - color presentation), 77 (recorded as *Opuntia leptocaulis* DC.), 85 (070312 - color presentation, reduced recovery), 86 (recorded as *Opuntia leptocaulis*, color photograph), 91 (recorded as *Opuntia leptocaulis* DC.), 115 (color presentation), 119 (recorded as *Opuntia leptocaulis* DC.), 124 (070312 - no record of species or genus, recorded as *Opuntia leptocaulis*), 127, 140 (Pages 103 & 288), **HR***

***Cylindropuntia spinosior* (G. Engelmann) F.M. Knuth: Walkingstick Cactus**

SYNONYMY: *Opuntia spinosior* (G. Engelmann) J.W. Toumey. COMMON NAMES: Atáta (Yuman: Havasupai); Atót (Yuman: Maricopa); Cac Q□□i:š (Yuman: Cocopa); Cane Cholla; Cane [Handlegrip] Cholla <choya> (“Cholla” is Spanish for “skull” or “head” in allusion to the fruits ..., English)¹⁴⁰; Cardenche; Ceolim <ciolim, cialim, tci’orim> (Uto-Aztecan: Tohono O’odham)¹⁴⁰; ‘Chi’odima’ (Uto-Aztecan: Hiá Ce□ O’odham)¹⁴⁰; Choa (Uto-Aztecan: Yaqui)¹⁴⁰; □aqwi:s (Yuman: Walapai); Hanam <hánam> (Uto-Aztecan: Tohono O’odham)¹⁴⁰; Handgrip Cholla; Handlegrip Cholla; Hosh ‘Aditsahiitsoh <hosh ‘aditsahii, xwoctítshahiih> (Athapascan: Navajo)¹⁴⁰; Hosh N’chaagi <k’ints□□ze> (Athapascan: Western Apache)¹⁴⁰; Spiny Cholla; Ösö <□öso, □s□’> (Uto-Aztecan: Hopi)¹⁴⁰; Siviri <sivili> (Uto-Aztecan: Cahita)¹⁴⁰; Tasajo (Spanish: Arizona, New Mexico, Chihuahua, Sonora)¹⁴⁰; Tourney-cane Cholla (Arizona); Ušil <□usi-l> (Uto-Aztecan: Tübatulabal)¹⁴⁰; Ünvat (Uto-Aztecan: Luiseño, Juaneño dialect)¹⁴⁰; Walking-stick Cactus (English: New Mexico)¹⁴⁰; Walkingstick Cactus; Walking Stick Cholla; Wehcábori [Wehcápó] (Uto-Aztecan: Guarijio)¹⁴⁰; Wiyattampü (Uto-Aztecan: Panamint)¹⁴⁰. DESCRIPTION: Terrestrial perennial stem-succulent shrub (16 inches to 10 feet in height; one plant was observed and described as being 6½ feet in height with a crown 5 to 6½ feet in width, one plant was observed and described as being 6½ feet in height with a crown 10 feet in width); the stems may be brown-green, dark gray-green, grayish-maroon, grayish-purple, green, dark green, purple or purplish-green; the spines may be brown, gray, pale pink, pink, pinkish, purplish-gray, red-brown, reddish-gray, pale tan, tan or yellowish; the glochids may be tan, yellow or yellowish-white aging to gray; the flowers (1¾ to 2 inches in diameter) may be bronze-purple, brown, greenish-yellow, magenta, magenta-red, maroon, orange, pink, dark pink, light purple, purple, purple-pink, red, dark red, red-purple, red & yellow, saffron, salmon-pink, terra-cotta, white or yellow; the anthers are yellow; the stigma lobes are cream to white; flowering generally takes place between early April and early August (additional records: three for early January, two for early February and one for late September); the fleshy ripe fruits (1 to 1¾ inches in length and ¾ to 1 inch in diameter) are bright lemon-yellow, red, pale yellow, yellow, yellow-green, yellowish-green or yellow sometimes with a purple-brown, red, reddish or purple cast and remain on the plant for some time. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mountainsides; mesas; rocky canyons; rocky canyon bottoms; talus, bedrock ridges; rocky ridgetops; ridgelines; foothills; rocky hills; rocky hillsides; along bedrock, rocky, rocky-sandy and sandy slopes; bajadas; rock outcrops; amongst rocks; plains; gravelly, gravelly-sandy and silty flats; silty valley floors; roadsides; arroyos; bottoms of arroyos; rocky draws; springs; along creeks; creekbeds; along sandy washes; drainages; along drainage ways; banks of washes; sandy flood channels; terraces; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; silty-clayey loam, silty loam and loam ground, and silty ground, occurring from 900 to 7,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. The Cactus Wren (*Campylorhynchus brunneicapillus*) nests in the branches. The change in nomenclature in USDA NRCS has not been recognized in BONAP, species remains as *Opuntia spinosior* (accessed 041806). *Cylindropuntia spinosior* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia spinosior* (Engelm.) Toumey, Pages 39-43; color photograph: Plate 1.17, Page 43), 15 (recorded as *Opuntia spinosior* (Engelm.) Toumey), 16 (recorded as *Opuntia spinosior* (Engelm.) Toumey), 26 (genus, recorded as *Opuntia*), 27 (Page 14, color photograph: Plate 12, Page 96), 28 (color photograph 117), 43 (063009), 44 (040111 - no record of species; genus record), 45 (color photographs), 46 (recorded as *Opuntia spinosior* (Engelm. & Bigel.) Toumey, Page 585), 48 (genus, recorded as *Opuntia*), 53, 58 (recorded as *Opuntia spinosior* (Engelm.) Toumey), 63 (011910 - color presentation), 77 (recorded as *Opuntia spinosior* (Engelm.) Toumey), 85 (062111 - color presentation), 115 (color

presentation), 119, 124 (040111 - no record of species; genus record: the chollas are included under the genus *Opuntia*), 127, 140 (Pages 102-103 & 288), **HR***

***Cylindropuntia versicolor* (G. Engelmann ex J.M. Coulter) F.M. Knuth: Staghorn Cholla**

SYNONYMY: *Opuntia versicolor* G. Engelmann ex J.M. Coulter. COMMON NAMES: Deer Horn Cactus; Deer Horn Cholla; Deerhorn Cholla; Morada Cholla (Spanish); Staghorn Cholla¹⁴⁰; Tree Cholla. DESCRIPTION: Terrestrial perennial stem-succulent shrub (3 to 15 feet in height; one plant was observed and described as being 40 inches in height with a crown 40 inches in width, one plant was observed and described as being 40 inches in height with a crown 6½ feet in width, one plant was observed and described as being 50 inches in height with a crown 40 inches in width, one plant was observed and described as being 51 inches in height with a crown 6½ feet in width, one plant was observed and described as being 63 inches in height with a crown 87 inches in width, one plant was observed and described as being 75 inches in height with a crown 87 inches in width); the stems are green, green-purple, greenish-red, maroon, purple, purple-green or dark purple-red; the spines are dark brown, gray, pinkish, purple-brown, dark reddish-brown or whitish; the spines are whitish, pinkish or red-brown; the glochids are yellow or dark yellow; the flowers (1¼ to 2¼ inches in diameter) are bronze, bronze-red, brown, burnt orange, gold, green, lavender, magenta, orange, orange-brown, orange-red, orange-rust, pink-red, purple, red, rose, rose-purple, yellow, yellow-green or yellow-green-bronze; the anthers are yellow; the stigma lobes are whitish; flowering generally takes place between early April and mid-June (additional records: one for early January, one for early March, one for mid-August, one for late August and one for mid-September); the fleshy, spineless or nearly spineless pear-shaped fruits (¾ to 1¾ inches in length and ¾ inch in diameter) are green tinged with lavender, purple, straw-yellow, red, bright yellow or yellowish-green sometimes tinged with purple or red, sometimes forming chains of 2 to 4 fruits. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rocky and sandy canyons; rocky canyon bottoms; ridges; rocky ridgetops; foothills; rocky and rocky-gravelly hills; rocky hillsides; rocky slopes; gravelly-sandy alluvial fans; rocky and gravelly-sandy bajadas; sand dunes; plains; gravelly and gravelly-sandy flats; sandy valley floors; along roadsides; along sandy arroyos; gravelly and sandy bottoms of arroyos; ravines; along sandy streambeds; along sandy washes; playas; sandy gravel bars; strands; riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground, occurring from sea level to 5,000 feet in elevation in the woodland, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Varied flower colors between plants, the cascading branches of the larger plants, along with pendulous fruits make this an attractive plant. The change in nomenclature in USDA NRCS has not been recognized in BONAP, species remains as *Opuntia versicolor* (accessed 041806). *Cylindropuntia versicolor* is native to southwest-central and southern North America. *5, 6, 8, 12 (recorded as *Opuntia versicolor*, Pages 43 & 45-46; color photograph: Plate 1.17, Page 43), 15 (recorded as *Opuntia versicolor* Engelm.), 16 (recorded as *Opuntia versicolor* Engelm.), 26 (genus, recorded as *Opuntia*), 27 (Page 6; color photographs: Plates 6, 6A & 6B, Page 95), 28 (color photograph 118), 43 (012110 - *Cylindropuntia versicolor* (Engelm.) F.M. Knuth), 44 (062111 - no record of species; genus record), 45 (color photograph), 46 (recorded as *Opuntia versicolor* Engelm., Page 585), 48 (genus, recorded as *Opuntia*), 58 (recorded as *Opuntia versicolor* Engelm.), 63 (012110 - color presentation), 77 (recorded as *Opuntia versicolor* Engelm., color photograph #15), 85 (012110 - color presentation), 115 (color presentation), 119 (recorded as *Opuntia versicolor* Engelm.), 124 (021611 - no record of species; genus record, recorded as *Opuntia* P. Mill. includes the chollas), 127, 140 (Pages 102, 103 & 288), **WTK** (July 13, 2005)*

Echinocactus wislizeni (see *Ferocactus wislizeni*)

***Echinocereus fasciculatus* (G. Engelmann ex B.D. Jackson) L.D. Benson: Pinkflower Hedgehog Cactus**

SYNONYMY: *Echinocereus fasciculatus* (G. Engelmann) L.D. Benson var. *fasciculatus*, *Echinocereus fendleri* (G. Engelmann) F. Sencke ex J.N. Haage var. *fasciculatus* (G. Engelmann ex B.D. Jackson) N.P. Taylor, *Echinocereus fendleri* (G. Engelmann) F. Sencke ex J.N. Haage var. *robustus* (R.H. Peebles) L.D. Benson, *Mammillaria fasciculata* G. Engelmann ex B.D. Jackson (possibly incorrectly applied). COMMON NAMES: Bundle Hedgehog; Bundle Hedgehog Cactus; Bundle-spine Hedgehog; Magenta-flower Hedgehog Cactus; Pinkflower Hedgehog Cactus; Robust Hedgehog; Robust Hedgehog Cactus; Short-spine Strawberry Cactus; Strawberry Cactus. DESCRIPTION: Terrestrial perennial stem-succulent shrub (ascending to erect stems 2 to 18 inches in height and 1½ to 3 inches in width; either single or in clusters of up to 30 stems; one plant was reported to have 150 stems); the stems are green or dark green; the spines often with zones of differing colors including black, gray, grayish-black-purplish, reddish-brown, whitish or yellowish turning gray with age; the flowers (2 to 3 inches in diameter) are cerise, lavender-pink, pale magenta, magenta, magenta-maroon, magenta-pink, magenta-purple, magenta-red, pink, pink-purple, purple, reddish-purple, rose-pink or white; the anthers are yellow; the stigma lobes may be green, dark green or olive green; flowering generally takes place between late March and late June (additional records: one for early October, one for mid-October, one for late October, two for early November and one for early December); the mature fruits (¾ to 1¼ inches in length and ½ to 1 inch in diameter) are orange-red or bright red. HABITAT: Within the range of this species it has been reported from mountains; mesas; cliffs; bases of cliffs; canyons; canyon sides; buttes; knolls; ledges; ridges; along rocky and stony ridgetops; foothills; rocky, gravelly and sandy hills; rocky hilltops; rocky and sandy hillsides; rocky, stony and gravelly slopes; bajadas; rocky outcrops; amongst rocks and gravels; rocky and sandy banks; plains; gravelly flats; valley floors; along cobbly creeks; along and in washes, and floodplains growing in dry rocky, rocky-gravelly, stony, cobbly, gravelly and sandy ground, occurring from 1,800 to 6,300 feet in elevation in the woodland, scrub, grassland and desertscrub ecological formations. NOTES: This

plant may be an attractive component of a restored native habitat. The species, *Echinocereus fendleri*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. The fruits are eaten by birds and other animals. *Echinocereus fasciculatus* is native to southwest-central and southern North America. *5, 6, 8, 12 (color photograph - recorded as *Echinocereus fasciculatus* (Engelm.) L. Benson var. *fasciculatus*, Pages 132-135), 15 (recorded as *Echinocereus fasciculatus* (Engelm.) L. Benson var. *fasciculatus*), 16 (recorded as *Echinocereus fasciculatus* (Engelm.) L. Benson), 27 (Page 81; color photograph: Plate 50, Page 104), 43 (101510 - *Echinocereus fendleri* var. *fasciculatus* (Engelm. ex B.D. Jacks.) N.P. Taylor, *Echinocereus fendleri* var. *robustus* (Peebles) L.D. Benson), 44 (061911 - no record of species; genus record), 45 (color photograph), 46 (recorded as *Echinocereus fendleri* (Engelm.) Rümpler var. *robustus* (Peebles) L. Benson, Page 572 and *Echinocereus fendleri* (Engelm.) Rümpler var. *robustus* (Peebles) L. Benson, Page 572), 48 (genus), 58 (recorded as *Echinocereus fasciculatus* (Engelm.) L. Benson var. *fasciculatus*), 63 (012110), 77 (recorded as *Echinocereus fasciculatus* (Engelm.) L. Benson, color photograph #64), **85** (061911 - color presentation), 115 (color presentation), 119 (species, recorded as *Echinocereus fendleri* (Engelm.) Rümpler), 124 (110110 - no record of species; genus record), 127, 140 (Page 288 - recorded as *Echinocereus fendleri* (Engelmann) F. Seitz var. *fasciculatus* (Engelmann ex B.D. Jackson) N.P. Taylor), **WTK** (August 4, 2005)*

Echinocereus fasciculatus var. *fasciculatus* (see *Echinocereus fasciculatus*)

***Echinocereus fendleri* (G. Engelmann) F. Sencke ex J.N. Haage: Pinkflower Hedgehog Cactus**

COMMON NAMES: Fendler Hedgehog Cactus; Fendler's Hedgehog Cactus; Fendler's Needle-spine Hedgehog; Pinkflower Hedgehog Cactus; Strawberry Cactus. DESCRIPTION: Terrestrial perennial stem-succulent shrub (ascending to erect stems 1½ to 14 inches in height and 1½ to 4 inches in width either single or in clusters of up to 5 stems); the stems are dark green; the spines are black, brown, pale gray or white aging to gray; the flowers (2 to 4 inches in diameter) are lavender-pink, magenta, pink, pink-cerise, pink-lavender, pink-magenta, pink-purple, purple, purplish-maroon, rose magenta or rose-purple; flowering generally takes place between early March and early July; the mature fruits (¾ to 1¼ inch in length and ½ to 1 inch in diameter) are a dull carmine, orange-tan, purplish-maroon, purplish-orange, bright red, red or red-purple. HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; canyons; cobbly-sandy canyon bottoms; gravelly ridges; foothills; rocky and gravelly hills; rocky, gravelly and sandy hillsides; rocky, gravelly and gravelly-sandy slopes; gravelly bajadas; rocky outcrops; sand hills; blow-sand; prairies; cindery, gravelly and gravelly-silty flats; along arroyos; ravines, and cobbly-sandy floodplains growing in dry rocky, cobbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground and gravelly silty ground, occurring from 2,300 to 8,000 feet in elevation in the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted that the dried fruits were used as a sweetener. *Echinocereus fendleri* is native to southwest-central and southern North America. *5, 6, 12 (Page 129-131), 16, 27 (Page 79), 43 (012210 - *Echinocereus fendleri* Sencke ex Haage), 45 (color photograph), 46 (Page 572), 48 (genus), 63 (012210 - color presentation), **85** (012210 - color presentation), 119 (recorded as *Echinocereus fendleri* (Engelm.) Rümpler), 127*

Echinocereus fendleri var. *fasciculatus* (see *Echinocereus fasciculatus*)

Echinocereus fendleri var. *robustus* (see *Echinocereus fasciculatus*)

***Ferocactus wislizeni* (G. Engelmann) N.L. Britton & J.N. Rose: Candy Barrelcactus**

SYNONYMY: *Echinocactus wislizeni* G. Engelmann. COMMON NAMES: Arizona [Fish-hook, Candy] Barrel Cactus (English)¹⁴⁰; Barrel Cactus (a name also applied to other species and the genus *Ferocactus*); Bisnaga, Biznaga; Biznaga [de Agua, Gigantesca, Hembra] (“[Water, Giant, Female] Barrel Cactus”, Spanish)¹⁴⁰; Biznagre; Candy Barrel; Candy Barrel Cactus; Candy Barrelcactus; Chiávil (Uto-Aztec: Akimel O’odham)¹⁴⁰; Compass Barrel; Compass Plant; Fish-hook Barrel; Fishhook Barrel Cactus; Fishhook Cactus; Hisil <hisely> (“Cholla”, Uto-Aztec: Mountain Pima)¹⁴⁰; Hosh Tsáł <hosh chaal> (Athapascan: Western Apache)¹⁴⁰; Hosh Sidáhi (Athapascan: Navajo)¹⁴⁰; Ibávoli (Uto-Aztec: Northern Tepehuan)¹⁴⁰; Jiavul (Uto-Aztec: Hiá Ce□ O’odham)¹⁴⁰; Jiavuli <jiauwul, tciaur, tjedvoli> (Uto-Aztec: Tohono O’odham)¹⁴⁰; Kíče’apil (Uto-Aztec: Tübatulabal)¹⁴⁰; Miltát <mil□a□> (Yuman: Walapai)¹⁴⁰; Miltót (Yuman: Maricopa)¹⁴⁰; Multát (Yuman: Havasupai)¹⁴⁰; Muł’cáac (Yuman: Cocopa)¹⁴⁰; Nookwi’a(pi) (Uto-Aztec: Panamint)¹⁴⁰; Ono’ē (Uto-Aztec: Yaqui)¹⁴⁰; Siml <simláa> (“True Barrel Cactus”, Hokan: Seri)¹⁴⁰; Southwest Barrel Cactus; Southwestern Barrel Cactus; Táci (Uto-Aztec: Southern Paiute)¹⁴⁰; Te□iwe (Uto-Aztec: Guarijio)¹⁴⁰; Visnaga; Vznaga Hembra (Spanish); Wislizenus Barrel; Yellow-spined Barrel Cactus. DESCRIPTION: Terrestrial perennial stem-succulent shrub or tree (erect stems 8 inches to 11 feet [one record at 20 feet] in height and 8 to 40 inches in diameter); the stem is green or blue-gray-green; the central spines and larger radial spines are ash gray, gray, dull pink, reddish or tan; the smaller radial spines are white; the flowers (1½ to 2½ inches in diameter) are orange, orange-yellow, orange-red, orange-yellow, parchment, pinkish-red, reddish, red-orange, yellow or yellow-orange; the stigma lobes are orange, red or yellow; flowering generally takes place between mid-July and mid-October (additional records: one for early January, three for early March, five for mid-March, two for late March, two for early April, one for mid-April, one for late April and two for early June); the mature fruits (1¼ to 2 inches in length and 1 to 1½ inches in diameter) are greenish-brown, yellow or yellow-green and may remain on the plant until the next flowering period. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rocky, gravelly and sandy canyons; canyon walls; rocky and

sandy canyon bottoms; bluffs; foothills; bouldery, rocky, gravelly and sandy hills; hillsides; rocky, cobbly, gravelly and clayey-loamy slopes; rocky, gravelly and sandy alluvial fans; bajadas; rocky outcrops; plains; rocky, gravelly and sandy flats; valley floors; along roadsides; arroyos; sandy bottoms of arroyos; along washes; (rocky, gravelly and sandy) margins of washes; floodplains; mesquite bosques, and riparian areas growing in dry desert pavement; bouldery, rocky, cobbly, gravelly and sandy ground, and sandy-clayey loam and clayey loam ground, occurring from 300 to 5,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or beverage crop; it was also noted as having been used as a tool (the spines were heated and used to make fishing hooks). Fishhook Barrel Cacti are very slow to establish. A 4 year old plant may be no more than 1½ inches in height and 2 inches in width, and an 8 year old plant may be no more than 4¼ inches in height and 4¾ inches in width. The growth rate of propagated and cultivated barrel cacti may be much faster. The life-span of Fishhook Barrel Cacti is reported to be from 50 to over 130 years of age. Some plants tend to lean to the south with age. Cristate forms have been reported. The Cactus Beetle (*Moneilema gigas*) feeds on this plant, the flowers are pollinated by Cactus Bees of the genus *Lithurge*; the fruits are eaten by Javelina (*Peccari tajacu*), Mule Deer (*Odocoileus hemionus*), Rock Squirrels (*Spermophilus variegatus*) and other animals, and the seeds are eaten by birds and rodents. *Ferocactus wislizeni* is native to southwest-central and southern North America. *5, 6, 12 (Pages 166-170; color photograph: Plate 5.5, Page 169), 15, 16, 18, 26 (genus, color photograph of genus), 27 (Page 120; color photographs: Plates 60, 60A, 60B & 60C Pages 106), 28 (color photograph 125), 43 (063009 - *Ferocactus wislizeni* Britton & Rose), 44 (040111 - no record of species; genus record), 45 (color photograph), 46 (Page 573), 48 (genus), 58, 63 (012210 - color presentation), 77 (color photograph #10), 85 (062311 - color presentation, also recorded as *Ferocactus wislizeni* var. *wislizeni*), 91 (Pages 215-216), 106 (110110), 115 (color presentation), 119, 124 (040111 - no record of genus or species), 127, 135 (110110 - *Moneilema gigas*), 140 (Pages 103-105 & 288), **WTK** (August 4, 2005)

Ferocactus wislizeni var. *wislizeni* (see footnote 85 under *Ferocactus wislizeni*)

Mammillaria fasciculata (see *Echinocereus fasciculatus* and/or *Mammillaria thornberi*)

***Mammillaria grahamii* G. Engelm.: Graham's Nipple Cactus**

SYNONYMY: *Mammillaria grahamii* G. Engelm. var. *grahamii* G. Engelm.; *Mammillaria grahamii* G. Engelm. var. *oliviae* (C.R. Orcutt) L.D. Benson; *Mammillaria microcarpa* G. Engelm.; *Mammillaria milleri* (N.L. Britton & J.N. Rose) F. Boedeker; *Mammillaria oliviae* C.R. Orcutt; *Neomammillaria microcarpa* (G. Engelm.) N.L. Britton & J.N. Rose; *Neomammillaria milleri* N.L. Britton & J.N. Rose; *Neomammillaria oliviae* (C.R. Orcutt) N.L. Britton & J.N. Rose. COMMON NAMES: Arimo' o <urimo'o> (Uto-Aztec: Onavas Pima)¹⁴⁰; Arizona Fishhook (a name also applied to other species); Arizona Fishhook Cactus; Ba:ban Ha-'is:wig ("Coyotes' Hedgehog-cactus", Uto-Aztec: Hiá Ce□ O'odham)¹⁴⁰; Ba:ban Ha-i:swigi <bahban ha-ihswig, baaban ha-iiswikga> ("Coyotes' Hedgehog-cactus", Uto-Aztec: Tohono O'odham)¹⁴⁰; Ban Cekida ("Coyote Vaccination", Uto-Aztec: Hiá Ce□ O'odham and O'odham and Tohono O'odham)¹⁴⁰; Ban Cepla (Uto-Aztec: Tohono O'odham)¹⁴⁰; Ban Cesani (Uto-Aztec: Hiá Ce□ O'odham)¹⁴⁰; Ban Ha 'Iswig ("Coyotes' Hedgehog-cactus", Uto-Aztec: Tohono O'odham)¹⁴⁰; Ban Mauppa <baaban makuppa> ("Coyotes' Paws", Uto-Aztec: Akimel O'odham)¹⁴⁰; Ban Maupai ("Like Coyote Paws", Uto-Aztec: Akimel O'odham)¹⁴⁰; Biznaguita ("Little Barrel Cactus", Spanish: Sonora)¹⁴⁰; Black-spined Pincushion; Cabeza de Viejo ("Old Man's Head", Spanish: Sonora)¹⁴⁰; Cekida Cactus; Chi-kul Hu'i (Uto-Aztec: Yaqui)¹⁴⁰; Chicul Ónore (Uto-Aztec: Mayo, Sonora)¹⁴⁰; Chilitos de Viznaga ("Little Cactus Chiles", Spanish: San Luis Potosí)¹⁴⁰; Choyita (Spanish: Sonora)¹⁴⁰; Churruto (Spanish: Sonora)¹⁴⁰; Corkseed Cactus; Fish-hook Cactus (a name also applied to other species); Fish-hook Cactus [Pincushion] (English: Arizona, Sonora)¹⁴⁰; Fishhook Cactus; Fishhook Mammillaria (a name also applied to other species); Fishhook Pincushion (a name also applied to other species); Graham Fishhook; Graham Fishhook Cactus; Graham Nipple Cactus; Graham Nipple-cactus; Graham Pincushion Cactus; Graham's Fishhook; Graham's Fishhook Cactus; Graham's Fishhook Pincushion; Graham's Nipple Cactus (English)¹⁴⁰; Graham's Nipple-cactus; Graham's Pincushion Cactus; Hant lipzx Itéja ("Bladder of the Arroyo", Hokan: Seri)¹⁴⁰; Hi-i:swigī; Híkuri (Uto-Aztec: Tarahumara)¹⁴⁰; Hue Tchuri <we□cúri, wehcúri> (Uto-Aztec: Guarijío)¹⁴⁰; Lizard Catcher; Miller's Fishhook Cactus; Miller's Fish-hook Cactus; Miller's Pincushion; Miller's Pincushion Cactus; Mu'tsa (for pincushions in general, Uto-Aztec: Shoshoni)¹⁴⁰; Nipple Cactus (a name also applied to other species and the genus *Mammillaria*); Noog^wiyav□ (Uto-Aztec: Kawaiisu)¹⁴⁰; Olive Pincushion; Olive's Pincushion; Pin-cushion Cactus (a name also applied to other species); Pitahayita <pitaiaya, pitajaya, pitahaya> ("Little Cactus Fruit", (Spanish: Sonora)¹⁴⁰; Strawberry Cactus (English)¹⁴⁰; Sunset Cactus; ^aTat (Yuman: Walapai)¹⁴⁰; Tori Bichu (Uto-Aztec: Mayo, Sonora)¹⁴⁰; Tuur Soigai <tu'i shogi> (Uto-Aztec: Mountain Pima)¹⁴⁰; Uvayu'u^s (Uto-Aztec: Southern Paiute)¹⁴⁰; Xuebi (Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰. DESCRIPTION: Terrestrial perennial stem-succulent shrub (ascending to erect stems 1 to 12 inches in height and 1 to 3 inches in diameter; one plant was observed and described as being 1¼ inches in height and 1½ inches in width); the stems are gray-green or green; the central spines may be black, golden-brown, purplish-brown or reddish; the radial spines are whitish or whitish-yellow; the flowers (½ to 1½ inches in diameter) may be lavender, pink, pink with a darker mid-stripe, pink-lavender, rose-pink, rose-purple or white, the anthers are yellow; the stigma lobes are green to yellow-green; flowering generally takes place between mid-May and early August (additional records: flowering has also been described as taking place one week after heavy rains that occur between mid-March and late September); the mature club-shaped fruits (1/2 to 1 1/8 inches in length and 3/16 to 1/2 inch in diameter) are carmine, orange, orange-red, red, bright red, scarlet, yellow or yellowish (rarely). HABITAT: Within the range of this species it has been reported from rocky

mountains; gravelly mesas; rocky canyons; rocky canyon walls; canyon bottoms; crevices in boulders and rocks; knobs; bedrock and cobbly ridges; rocky ridgetops; ridgelines; foothills; rocky and gravelly hills; rocky hillsides; bedrock, rocky and sandy slopes; bajadas; rocky outcrops; amongst boulders and rocks; bases of boulders; protected clefts; plains; gravelly and sandy flats; valley floors; sandy arroyos; bottoms of arroyos; rocky ravines; streambeds; riverbeds; along and in bouldery and sandy washes; edges of streams; margins of arroyos; terraces; bottomlands; floodplains, and riparian areas growing in dry bouldery, rocky, cobbly, cindery-sandy, gravelly and sandy ground; gravelly loam ground; clay ground; silty ground, and humusy ground often in the shade of other plants, occurring from sea level to 5,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication. Birds and rodents feed on the fruits. *Mammillaria grahamii* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Mammillaria grahamii* Engelm., Pages 156 & 159-161, *Mammillaria grahamii* Engelm. var. *grahamii*, Pages 159-160, *Mammillaria grahamii* Engelm. var. *oliviae* (Orcutt) L. Benson, Pages 160-161 and *Mammillaria microcarpa* Engelm., Pages 152-153 & 156; color photographs: Plate 4.8, Page 156), 15 (recorded as *Mammillaria grahamii* Engelm. var. *grahamii*, *Mammillaria grahamii* Engelm. var. *oliviae* (Orcutt) L. Benson and *Mammillaria microcarpa* Engelm.), 16 (recorded as *Mammillaria microcarpa* Engelm.), 18 (genus), 27 (recorded as *Mammillaria grahamii*, Page 172, *Mammillaria grahamii* Engelm. var. *oliviae* (Orcutt) L. Benson, Page 173 and as *Mammillaria microcarpa* Engelm., Page 179; color photographs: Plate 94, Page 113, Plate 95, Page 113 and Plate 99, Page 114), 28 (recorded as *Mammillaria microcarpa*, color photograph 126), 43 (070712), 44 (112910), 45 (color photograph), 46 (recorded as *Mammillaria microcarpa* Engelm., Page 578 and as *Mammillaria oliviae* Orcutt, Page 578), 48 (genus), 58 (recorded as *Mammillaria microcarpa* Engelm.), 63 (070712 - color presentation), 77 (color photograph #11), 85 (070712 - color presentation, reduced recovery), 86 (recorded as *Mammillaria microcarpa*, color photograph), 115 (color presentation), 119 (recorded as *Neomammillaria microcarpa* (Engelm.) B. & R., *Neomammillaria milleri* B. & R.), 124 (062311 - no record of species; genus record), 127, 140 (Pages 106-107 & 288 - recorded as *Mammillaria grahamii* Engelm. var. *grahamii*), **WTK** (July 13, 2005)*

Mammillaria grahamii var. *grahamii* (see *Mammillaria grahamii*)

Mammillaria grahamii var. *oliviae* (see *Mammillaria grahamii*)

Mammillaria gummifera var. *macdougalii* (see *Mammillaria heyderi* var. *macdougalii*)

***Mammillaria heyderi* F. Muehlenpfordt var. *macdougalii* (J.N. Rose) L.D. Benson: MacDougal's Nipple Cactus**

SYNONYMY: *Mammillaria gummifera* G. Engelm. var. *macdougalii* (J.N. Rose) L.D. Benson; *Mammillaria macdougalii* J.N. Rose. COMMON NAMES: Biznaga de Chilitos (Spanish); Biznagueta (Spanish); Cabeza de Viejo (Spanish); Cream Cactus; MacDougal Nipple Cactus; MacDougal's Nipple Cactus; MacDougal Pincushion Cactus; Pincushion Cactus (a name also applied to other species). DESCRIPTION: Terrestrial perennial stem-succulent shrub (2 to 8 inches in height and up to 4 to 12 inches in diameter); the stems are deep green; the central spines may be whitish, yellowish or yellowish-tan sometimes reported with brown tips; the radial spines may be straw yellow, white or yellowish; the flowers (1 to 1¼ inches in diameter) may be cream, pale green, greenish-white or greenish-yellow; the stigma lobes may be pale green, yellow or yellow-green; based on few records located, flowering generally takes place between mid- and late March (flowering records: (three for mid-March and two for late March), one for late July and two for mid-August, flowering ending as late as May has been reported); the fruits (1 to 1 1/8 inches in length and ½ inch in diameter) may be pale green, red or rose-purple. HABITAT: Within the range of this species it has been reported from mountains; mountain valleys; ridges; hillsides; rocky slopes; plains; flats, and amongst grasses and under small shrubs growing in dry rocky and gravelly ground, occurring from 3,000 to 6,000 feet in elevation in the grassland and ecotones with the woodland, scrub and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant has a milky sap. The fruits are fed on by birds and rodents. *Mammillaria heyderi* var. *macdougalii* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Mammillaria gummifera* var. *macdougalii*, Pages 150-151), 15 (color photograph Page 93), 18 (genus), 27 (recorded as *Mammillaria gummifera* var. *macdougalii*, Page 170, color photograph: Plate #93), 43 (041112), 44 (041112 - no record of variety of species; genus record), 45 (color photograph), 46 (recorded as *Mammillaria macdougalii* Rose, Page 578), 48 (genus), 58, 63 (041112), 85 (041112 - color presentation), 115 (color presentation), 124 (041112 - no record of variety; genus and species records), 140 (recorded as *Mammillaria macdougalii* Rose, Page 288), **WTK** (July 13, 2005), **MBJ/WTK** (September 12, 2005)*

Mammillaria grahamii var. *grahamii* (see *Mammillaria grahamii*)

Mammillaria grahamii var. *oliviae* (see *Mammillaria grahamii*)

Mammillaria microcarpa (see *Mammillaria grahamii*)

Mammillaria milleri (see *Mammillaria grahamii*)

Mammillaria oliviae (see *Mammillaria grahamii*)

***Mammillaria viridiflora* (N.L. Britton & J.N. Rose) F. Böedeker: Greenflower Nipple Cactus**

SYNONYMY: *Mammillaria orestera* L.D. Benson; *Mammillaria wrightii* G. Engelman var. *viridiflora* (N.L. Britton & J.N. Rose) W.T. Marshall. COMMON NAMES: Fishhook Pincushion (a name also applied to other species); Green Fishhook; Green-flower Nipple Cactus; Green-flowered Pincushion Cactus; Greenflower Nipple Cactus; Greenish Flower Pincushion; Varied Fishhook Cactus. DESCRIPTION: Terrestrial perennial stem-succulent shrub (3 to 4 inches in height and 2 to 3 inches in diameter); the stems are green; the central spines may be brown or reddish-brown; the radial spines are pale tan or dark white with brown tips; the flowers (5/8 to 1 inch in diameter) may be cream, green, green tinged with pink, pale pink with white margins, greenish-yellow, pale pink or pale yellowish-white; the anthers are yellow; the stigma lobes may be green or yellow-green; flowering generally takes place between mid- to late May (flowering records: one for early February, one for early April, (one for mid-May, three for late May), one for mid-July, two for late August and one for mid-September); the fleshy fruits (3/8 to 3/4 inch in length and 3/16 to 1/4 inch in diameter) may be green, greenish & reddish, maroon, purple or red. HABITAT: Within the range of this species it has been reported from sandy mountainsides; rocky hillsides; rocky slopes; rocky outcrops; amongst rocks, and silty uplands growing in dry bouldery, rocky, gravelly and sandy ground and silty ground, occurring from 2,500 to 6,600 feet in elevation in the woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Javelina reportedly feed on this plant. *Mammillaria viridiflora* is native to southwest-central North America. *5, 6, 12 (recorded as *Mammillaria orestera*, Pages 155 & 159), 15, 18 (genus), 27 (recorded as *Mammillaria wrightii* Engelman var. *viridiflora* (Britton & Rose) Boedeker, Page 177; color photograph: Plate 97, Page 114 labeled *Mammillaria wrightii* var. *viridiflora*), 43 (041112 - *Mammillaria wrightii* Engelm. var. *viridiflora* (Britton & Rose) W.T. Marshall), 44 (041112 - no record of species; genus record), 45 (color photograph), 46 (no record of species), 48 (genus), 63 (041112), 77 (color photograph #12), 85 (041112 - color presentation), 124 (041112 - no record of species; genus record), **HR***

Mammillaria wrightii var. *viridiflora* (see *Mammillaria viridiflora*)

Neomammillaria microcarpa (see *Mammillaria grahamii*)

Neomammillaria milleri (see *Mammillaria grahamii*)

Neomammillaria oliviae (see *Mammillaria grahamii*)

Opuntia acanthocarpa (see *Cylindropuntia acanthocarpa* var. *acanthocarpa*)

Opuntia acanthocarpa var. *acanthocarpa* (see *Cylindropuntia acanthocarpa* var. *acanthocarpa*)

Opuntia arbuscula (see *Cylindropuntia arbuscula*)

Opuntia bigelovii (see *Cylindropuntia bigelovii*)

***Opuntia chlorotica* G. Engelman & J. Bigelow: Dollarjoint Pricklypear**

COMMON NAMES: Clock Face Prickly-pear; Clock Face Prickly Pear; Clock-face Prickly-pear; Clock-face Pricklypear; Clock-face Pricklypear Cactus; Clockface Prickly-pear; Clockface Pricklypear; Dollar-joint Prickly-pear; Dollarjoint Prickly Pear; Dollarjoint Pricklypear; Flap Jack Prickly Pear; Flapjack Prickly Pear; Flapjack Prickly-pear; Nopal (a name also applied to other species and the genus *Opuntia*); Nopal Rastrera; Pancake Pear; Pancake Pear Cactus; Pancake-pear; Pancake Prickly Pear; Pancake Prickly Pear Cactus; Pancake Prickly-pear; Pancake Pricklypear; Pancake Pricklypear Cactus; Silver-dollar Cactus (a name also applied to other species); Smooth Clock-face Pricklypear; Verdoso. DESCRIPTION: Terrestrial perennial stem-succulent shrub (erect stems 2 to 10 feet in height with a definite trunk to 12 inches in height and 3 to 8 inches in width); the orbicular paddle-shaped stems (4 to 8 inches in diameter) may be blue-green, bluish-green, green or gray-green; the glochids and spines may be golden, straw, light yellow, yellow (aging blackish, brown, grayish and/or reddish-brown), or pale yellow-brown; the flowers (1½ to 2½ inches in diameter) are pale yellow, pale yellow-green, yellow-green, yellow-orange or yellow with a reddish flush; the anthers may be pale green, white or yellow-green; the stigma lobes may be pale green, white or yellow-green; flowering generally takes place between early April and mid-July (additional records: one for late August and one for mid-September); the ripe barrel-shaped fruits (1½ to 2½ inches in length and ¾ to 1½ inches in diameter) are purple or red aging bluish or grayish tinged with purple or red. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky mountainsides; mesas; cliffs; bases of cliffs; rocky canyons; canyon bottoms; ledges; bedrock and rocky ridges; rocky ridgetops; foothills; bouldery-rocky and rocky hills; hilltops; rocky hillsides; bouldery, bouldery-rocky-gravelly and rocky slopes; cobbly-sandy alluvial fans; bajadas; rocky outcrops; amongst rocks; lava flows; sandy flats; valley floors; along rocky and gravelly roadsides; arroyos; draws; rocky ravines; seeps; springs; streambeds; creekbeds; along rivers; drainages; edges of washes; bottomlands; sandy floodplains, and riparian areas growing in dry bouldery, bouldery-rocky, bouldery-rocky-gravelly, rocky, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; clayey loam ground, and silty ground, occurring from 900 to 9,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and is occasionally grown as an

ornamental. Solitary bees and Sap Beetles have been observed visiting the flowers. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Opuntia chlorotica* is native to southwest-central and southern North America. *5, 6, 12 (Pages 103&105-106), 15, 26 (genus), 27 (Page 69; color photograph: Plate 35, Page 101), 43 (011710 - *Opuntia chlorotica* Engelm. & J.M. Bigelow), 44 (062311 - color photograph), 45 (color photograph), 46 (Page 582), 48 (genus - *Opuntia*), 63 (062610 - color presentation), 77, **85** (062311 - color presentation including habitat), 91 (Pages 286-287), 119, 124 (062311 - no record of species; genus record), 127, 140 (Pages 106 & 288)*

Opuntia discata (see *Opuntia engelmannii* var. *engelmannii*)

***Opuntia engelmannii* J.F. Salm-Reifferscheid-Dyck ex G. Engelmann: Cactus Apple**

COMMON NAMES: Á'láv^a <alav> (Yuman: Walapai)¹⁴⁰; Abrojo; Ai'gwobi (Uto-Aztecan: Shoshoni)¹⁴⁰; Āláva (Yuman: Havasupai)¹⁴⁰; Cacanapo (Spanish: for var. *lindheimeri*); Cactus Apple; Cactus-apple; Cow-tongue Cactus (var. *linguiformis*); Cowtongue Cactus (var. *linguiformis*); Cow-tongue Prickly-pear (var. *linguiformis*); Cowtongue Prickly-pear (var. *linguiformis*); Coyonoxtle <joconostle> (Spanish: Náhuatl)¹⁴⁰; Cuija (Spanish)¹⁴⁰; Desert Prickly-pear; Desert Pricklypear; Desert Pricklypear Cactus; Discus Prickly Pear; Discus Prickly-pear; Ekupittsi (Uto-Aztecan: Panamint)¹⁴⁰; Engelmann Prickly Pear; Engelmann Prickly Pear Cactus; Engelmann Prickly-pear; Engelmann Pricklypear; Engelmann's Prickly Pear; Engelmann's Prickly Pear Cactus; Engelmann's Prickly-pear; Engelmann's Prickly-pear Cactus; Engelmann's Pricklypear; Few-spine Marble-fruit Prickly-pear; Flaming Pricklypear; Goitcide <gultcide> (Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Heel Hayéen Ipáii ("Prickly-pear Used for Face Painting", Hokan: Seri)¹⁴⁰; Hosh Nteelí <h'wos> (Athapascan: Navajo)¹⁴⁰; Hosh Nteelí [ts'osé] (Athapascan: Western Apache)¹⁴⁰; Huichacame <huichanabo> (Spanish: Sonora)¹⁴⁰; I:bai <Ibai> (Uto-Aztecan: Onavas Pima)¹⁴⁰; 'I:bhai <iibhai> ("Fruit", Uto-Aztecan: Akimel O'odham and Hiá Ce□ O'odham)¹⁴⁰; I:bhai ("Fruit", Uto-Aztecan: Tohono O'odham)¹⁴⁰; Ila' (Uto-Aztecan: Guarijío)¹⁴⁰; Indian Fig; Irá [Ira-ka, Rihuirí] (Uto-Aztecan: Tarahumara)¹⁴⁰; Íyal <i'ya'l> (Uto-Aztecan: Tübatulabal)¹⁴⁰; Joconostle; Kal Yap (Yuman: Maricopa)¹⁴⁰; Klein Rondeblaarturksvy (Afrikaans: for var. *lindheimeri*); Lindheimer Prickly-pear (var. *lindheimeri*); Naavo (Uto-Aztecan: Yaqui)¹⁴⁰; Náavut (Uto-Aztecan: Luiseño)¹⁴⁰; Nabo <nacoo> (Uto-Aztecan: Cahita)¹⁴⁰; Nabu (Uto-Aztecan: Northern Paiute)¹⁴⁰; Napó (Uto-Aztecan: Tarahumara)¹⁴⁰; Nav (Uto-Aztecan: Hiá Ce□ O'odham)¹⁴⁰; Nava (Uto-Aztecan: Mountain Pima)¹⁴⁰; Navet <náve-t, navit> (Uto-Aztecan: Cahuilla)¹⁴⁰; Naví <naf, naw, nohwi> ("the Plant", Uto-Aztecan: Akimel O'odham and Tohono O'odham)¹⁴⁰; Návoi (Uto-Aztecan: Northern Tepehuan)¹⁴⁰; Návu ("the Plant", Uto-Aztecan: Hopi)¹⁴⁰; Navú-c (Uto-Aztecan - Eudeve)¹⁴⁰; Návūt (Uto-Aztecan: Cupeño, Luiseño)¹⁴⁰; Nopal (Mexico: Sonora); Nopal [Cuixo] ("[Lizard] Prickly-pear", Spanish: Sonora)¹⁴⁰; Nopal de Engelmann; Nopal Prickly-pear (var. *lindheimeri*); Prickly Pear (a name also applied to the species, to other species and to the genus *Opuntia*); Prickly Pear Cactus (a name also applied to other species and the genus *Opuntia*); Prickly-pear (English)¹⁴⁰; Prickly-pear Cactus; Pricklypear (a name also applied to other species and the genus *Opuntia*); Sae (Kiowa Tanoan: Tewa)¹⁴⁰; Small Round-leaf Prickly-pear (var. *lindheimeri*); Tach Pa (Yuman: Yuma)¹⁴⁰; Texas Prickly-pear (var. *lindheimeri*); Tuna; Tuna [Cuija] ("[Lizard] Prickly-pear", Spanish: Sonora)¹⁴⁰; Vela de Coyote ("Coyote's Candle", Spanish)¹⁴⁰; Xpa: (Yuman: Cocopa)¹⁴⁰; Xté (Yuman: Paipai)¹⁴⁰; Yöngö <yüñü, y□:ngu> ("the Fruit", Uto-Aztecan: Hopi)¹⁴⁰. DESCRIPTION: Terrestrial perennial stem-succulent shrub (forms clumps with ascending and/or decumbent stems 1 to 8 feet in height and 40 inches to 10 feet or more in width, one plant was reported as being 12 inches in height and 55 inches in width; plants were observed and described as being 40 inches in height and width, one plant was observed and described as being 40 inches in height and 6½ feet in width, one plant was observed and described as being 4 feet in height and 6 feet in width); the paddle-shaped stems (6 to 16 inches in length and 4 to 12 inches in width, except in var. *linguiformis* where the stems are 6 inches to 4 feet in length and 4 to 16 inches in width) are blue-gray, blue-green, green, dark green or yellow-green; the spines are dark brown, brown-red, rust, white with red tips, yellow or pale yellow-brown aging to gray; the glochids are light brown, golden, red-brown, reddish or yellow aging to blackish or gray; the flowers (2¼ to 3½ in diameter) may be lemon-yellow, pink, pink-red, red-magenta, red-pink, reddish-rose, rose-red, salmon, whitish, yellow or yellow-orange turning to orange, orange-yellow or pink-orange with age; the anthers may be cream, whitish or yellow; the stigma lobes may be green, lime green or yellow-green; flowering generally takes place between early March and late June with the individual flowers lasting one or two days (additional records: two for mid-February, one for mid-July, one for mid-August, one for late August, one for early September, two for mid-September, one for late October and one for late December); the mature fruits (also known as tunas are 1½ to 3½ in length and ¾ to 1½ inches in diameter) are maroon, purple, dark red, red-maroon, red-purple or wine-red. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; sandy mountainsides; rocky mesas; bedrock, bouldery and rocky mesas; rocky canyons; rocky canyon bottoms; talus slopes; rocky ledges; bedrock ridges; rocky ridgetops; ridgelines; foothills; rocky and rocky-sandy-loamy hills; bouldery, rocky and gravelly hillsides; bases of hills; bouldery, rocky, gravelly-sandy and sandy slopes; gravelly-sandy bajadas; rocky outcrops; amongst boulders and rocks; lava beds; rocky, gravelly and sandy flats; rocky valleys; along roadsides; along gravelly-humusy arroyos; gullies; along streams; along streambeds; along creeks; creekbeds; riverbeds; along washes; along and in drainage ways; ciénegas; banks of creeks and rivers; borders of washes; beaches; benches; shelves; terraces; loamy bottomlands; sandy floodplains; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-sandy, shaley, stony, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly loam and loam ground; silty ground, and gravelly humus ground, occurring from sea level to 7,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage, cooking agent or paint

crop; it was also noted as having been used as a tool, as a lubricant (var. *engelmannii*) and as a drug or medication. This plant provides cover for many desert animals. *Opuntia engelmannii* is native to south-central and southern North America. *5, 6, 26, 28 (color photograph 135 A&B, 43 (063009), 44 (121210), 45 (color photograph), 46 (Page 583), 48 (genus), 63 (070712 - color presentation), 77, 85 (071112 - color presentation, reduced recovery), 91 (recorded *Opuntia phaeacantha* var. *discata* (Griffiths) Benson & Walkington together with *Opuntia phaeacantha* var. *major* Engelm., “Both species are sympatric throughout much of their range and often can be found together.”, Pages 291-293), 115 (color presentation), 119, 124 (110210), 127, 140 (Pages 105-106 & 288 - reported as *Opuntia engelmannii* Salm-Dyck [*Opuntia phaeacantha* var. *discata* (Griffiths) Benson & Walkington])*

***Opuntia engelmannii* J.F. Salm-Reifferscheid-Dyck ex G. Engelmann var. *engelmannii*: Cactus Apple**

SYNONYMY: *Opuntia discata* D. Griffiths; *Opuntia phaeacantha* G. Engelmann var. *discata* (D. Griffiths) L.D. Benson & D.L. Walkington. COMMON NAMES: Á'láv^a <alav> (Yuman: Walapai)¹⁴⁰; Abrojo; Ai'gwobi (Uto-Aztecan: Shoshoni)¹⁴⁰; Áláva (Yuman: Havasupai)¹⁴⁰; Cactus Apple (a name also applied to other species and to other species); Cactus-apple (a name also applied to the species and to other species); Coyonoxtle <joconostle> (Spanish: Náhuatl)¹⁴⁰; Cuija (Spanish)¹⁴⁰; Desert Pricklypear Cactus (a name also applied to the species and to other species); Discus Prickly Pear; Ekupittsi (Uto-Aztecan: Panamint)¹⁴⁰; Engelmann Prickly Pear; Engelmann Prickly Pear Cactus; Engelmann Prickly-pear; Engelmann Pricklypear; Engelmann's Prickly Pear; Engelmann's Prickly Pear Cactus; Engelmann's Prickly-pear; Engelmann's Prickly-pear Cactus; Engelmann's Pricklypear; Flaming Prickly-pear; Goltcide <gultcide> (Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Heel Hayéen Ipáii (“Prickly-pear Used for Face Painting”, Hoka: Seri)¹⁴⁰; Hosh Nteelí <h'wos> (Athapascan: Navajo)¹⁴⁰; Hosh Nteelí [ts'osé] (Athapascan: Western Apache)¹⁴⁰; Huichacame <huichanabo> (Spanish: Sonora)¹⁴⁰; I:bai <Ibai> (Uto-Aztecan: Onavas Pima)¹⁴⁰; I:bbhai <i:bbhai> (“Fruit”, Uto-Aztecan: Akimel O'odham and Hiá Ce□ O'odham)¹⁴⁰; I:bbhai (“Fruit”, Uto-Aztecan: Tohono O'odham)¹⁴⁰; Ila' (Uto-Aztecan: Guarijío)¹⁴⁰; Irá [Ira-ka, Rihuirí] (Uto-Aztecan: Tarahumara)¹⁴⁰; İyal <i'yal> (Uto-Aztecan: Tübatulabal)¹⁴⁰; Joconostle; Kal Yap (Yuman: Maricopa)¹⁴⁰; Naavo (Uto-Aztecan: Yaqui)¹⁴⁰; Náavut (Uto-Aztecan: Luiseño)¹⁴⁰; Nabo <nacoó> (Uto-Aztecan: Cahita)¹⁴⁰; Nabu (Uto-Aztecan: Northern Paiute)¹⁴⁰; Napó (Uto-Aztecan: Tarahumara)¹⁴⁰; Nav (Uto-Aztecan: Hiá Ce□ O'odham)¹⁴⁰; Nava (Uto-Aztecan: Mountain Pima)¹⁴⁰; Navet <náve-t, navit> (Uto-Aztecan: Cahuilla)¹⁴⁰; Naví <naf, naw, nohwi> (“the Plant”, Uto-Aztecan: Akimel O'odham and Tohono O'odham)¹⁴⁰; Návoi (Uto-Aztecan: Northern Tepehuan)¹⁴⁰; Návu (“the Plant”, Uto-Aztecan: Hopi)¹⁴⁰; Navú-c (Uto-Aztecan - Eudeve)¹⁴⁰; Návüt (Uto-Aztecan: Cupeño, Luiseño)¹⁴⁰; Nopal [Cuixo] (“[Lizard] Prickly-pear”, Spanish: Sonora)¹⁴⁰; Nopal de Engelmänn; Prickly Pear (a name also applied to this species, to other species and to the genus *Opuntia*); Prickly Pear Cactus (a name also applied to the species, to other species and to the genus *Opuntia*); Prickly-pear (a name also applied to the species, to other species and to the genus *Opuntia*); Prickly-pear (English)¹⁴⁰; Pricklypear (a name also applied to the species, to other species and to the genus *Opuntia*); Sae (Kiowa Tanoan: Tewa)¹⁴⁰; Tach Pa (Yuman: Yuma)¹⁴⁰; Tuna [Cuija] (“[Lizard] Prickly-pear”, Spanish: Sonora)¹⁴⁰; Vela de Coyote (“Coyote's Candle”, Spanish)¹⁴⁰; Xpa: (Yuman: Cocopa)¹⁴⁰; Xté (Yuman: Paipai)¹⁴⁰; Yöngö <yüñü, y□:ngu> (“the Fruit”, Uto-Aztecan: Hopi)¹⁴⁰. DESCRIPTION: Terrestrial perennial stem-succulent shrub (forms clumps with ascending and/or decumbent stems 20 inches to 8 feet in height and 20 inches to 10 feet or more in width; one plant was observed and described as being 20 inches in height and 8¼ feet in width, one plant was observed and described as being 3 feet in height and 4½ feet in width, one plant was observed and described as being 3 feet in height and 6 to 12 feet in width, one plant was observed and described as being 3 feet in height and 8 feet in width, one plant was observed and described as being 40 inches in height and 79 inches in width, one plant was observed and described as being 40 inches in height and 10 feet in width); the paddle-shaped stems (8 to 16 inches in length and 6½ to 12 inches in width) may be bluish-green, gray-green, green, dark green or yellow-green; the spines may be brown-red, chalky-white, pale straw or pale yellow-brown usually with red or red-brown bases aging to black or gray; the glochids are reddish or yellow; the flowers (2¼ to 3½ in diameter) may be lemon-yellow, pink, pink-red, red-pink, rose-red, salmon, tannish-yellow, yellow, light yellow-orange, yellow-orange or yellow-peach turning to orange, orange-yellow or pink-orange with age; the anthers are yellow; the stigma lobes are lime green; flowering generally takes place between mid-March and mid-July (additional records: one for early January, two for mid-February, two for mid-August, one for early September, six for mid-September, four for early October and one for late December); the mature fruits (also known as tunas are 2½ to 3¼ in length and 1¼ inches in diameter) are magenta-rose, purple, red or reddish-purple. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; sandy mountainsides; bedrock mesas; edges of cliffs; canyons; canyon bottoms; talus slopes; ledges; ridges; rocky ridgetops; rocky hills; bouldery, rocky and gravelly hillsides; bouldery, rocky, rocky-gravelly and sandy slopes; bajadas; rocky outcrops; amongst boulders and rocks; lava beds; breaks; steppes; plains; rocky, gravelly and sandy and silty flats; basins; valley floors; along roadsides; along and in gravelly and gravelly-humusy arroyos; gullies; along streams; along creeks; creekbeds; along and in washes; along and in rocky-sandy and gravelly-sandy drainages; banks of rivers; beaches; benches; shelves; terraces; sandy floodplains; amongst mesquites; ditches, and gravelly-sandy and sandy riparian areas growing in dry bouldery, rocky, rocky-gravelly, rocky-sandy, shaley, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam ground; clay ground; silty ground, and gravelly humusy ground, occurring from 100 to 7,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Opuntia engelmannii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage, cooking agent or paint crop; it was also noted as having been used as a tool, as a lubricant (var. *engelmannii*) and as a drug or medication. The flowers open around 8 AM and remaining open for one or two days, and may live to be 30 or more years of age. The juicy fruits (tunas) with edible pulp are fed on by many browsing animals, including Black Bear (*Ursus americanus ambyceps*), Coyote (*Canis latrans mearnsi*), Javelina (*Peccari tajacu sonoriensis*) and Desert Tortoise

(*Gopherus agassizi*) among others, and birds. The plant provides cover for many desert animals. *Opuntia engelmannii* var. *engelmannii* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) Benson & Walkington “This is the largest and, in especially southern Arizona, one of the best-known native prickly pears of the Southwestern Deserts of the United States. It is variable in habit of growth, shape and size of joints, and size and distribution of spines. It is almost always found growing with var. *major*, which has longer brown spines restricted largely to the upper part of the narrower joint. Almost everywhere there are intergrading forms with many character recombinations. Var. *discata* is rarely stable but apparently a fringe-population extreme tied in closely with the more abundant and wide-ranging var. *major*.”, Pages 99 & 101-103; color photograph: Plate 1.74, Page 102), 15 (recorded as *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) Benson & Walkington), 16 (recorded as *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) L. Benson - “Rocky slopes and gravelly flats; common; intergrading with *O. p.* var. *major*.”), 26 (species), 27 (recorded as *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) L. Benson, Pages 53 & 99-100; color photographs: Plates 30 & 30A, Pages 99 & 100), 28 (recorded as *Opuntia phaeacantha* var. *discata*, color photograph 135 A&B), 43 (063009), 44 (062311), 45 (species, color photograph), 46 (species, Page 583), 48 (genus), 58 (recorded as *Opuntia phaeacantha* Engelm. var. *discata* (Griffiths) Benson & Walk.), 63 (070812 - color presentation), 77 (recorded as *Opuntia phaeacantha* var. *discata* (Griffiths) Benson & Walkington, color photograph #14 labeled as *Opuntia phaeacantha*), 85 (071112 - color presentation, reduced recovery), 91 (recorded together with *Opuntia engelmannii* Salm-Dyck. *Opuntia phaeacantha* var. *discata* (Griffiths) L.D. Benson & Walkington / *Opuntia phaeacantha* var. *major* Engelm.: “Both species are sympatric throughout much of their range and often can be found together.”, Pages 291-293), 115 (color presentation of the species), 119 (recorded as *Opuntia discata* Griffiths), 124 (062311 - no record of variety; genus and species record), 127 (variety *engelmannii* and species), 140 (Pages 105-106 & 288 - reported as *Opuntia engelmannii* Salm-Dyck [*Opuntia phaeacantha* var. *discata* (Griffiths) Benson & Walkington]), **WTK** (July 13, 2005)*

***Opuntia engelmannii* J.F. Salm-Reifferscheid-Dyck ex G. Engelmann var. *flavispina* (L.D. Benson) B.D. Parfitt & D.J. Pinkava: Cactus Apple**

SYNONYMY: *Opuntia phaeacantha* G. Engelmann var. *flavispina* L.D. Benson. COMMON NAMES: Cactus Apple; Yellow-spined Pricklypear. DESCRIPTION: Terrestrial perennial stem-succulent shrub (stems form clumps to 3 feet in height and 3 feet in width, one plant was reported to be 40 inches in height and 40 inches in width, one plant was reported to be 5 feet in height and 6½ feet in width); the paddle-shaped stems (6 to 9 inches in length and 4 to 7¼ inches in width) are yellow-green; the spines are golden-yellow, yellow or yellow-brown aging to black or deep red; the flowers (2½ inches in diameter) are yellow; the anthers are yellow; the stigma lobes are green; flowering generally takes place between early April and early May (additional record: one for late August); the mature fruits (also known as tunas are 2¼ to 3 in length and 1 inch in diameter) may be maroon, purple-red, red-brown or red-purple. HABITAT: Within the range of this species it has been reported from mountains; foothills; hills; hilltops; slopes; sandy bajadas; plains; flats; valley floors; along washes; sandy drainage ways, and borders of washes growing in dry rocky and sandy ground and sandy loam ground, occurring from 1,200 to 4,100 feet in elevation in the woodland, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Opuntia engelmannii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage, cooking agent or paint crop; it was also noted as having been used as a tool, as a lubricant (var. *engelmannii*) and as a drug or medication. This plant provides cover for many desert animals. *Opuntia engelmannii* var. *flavispina* is native to southwest-central and southern North America. *5, 6, 8, 26 (species), 27 (recorded as *Opuntia phaeacantha* Engelm. var. *flavispina* L. Benson, Page 55), 43 (063009), 45 (species, color photograph), 46 (species, Page 583), 48 (genus), 63 (070812), 85 (071112 - color presentation of dried material), 119, 127 (species)*

Opuntia fulgida (see *Cylindropuntia fulgida* var. *fulgida*)

Opuntia fulgida var. *fulgida* (see *Cylindropuntia fulgida* var. *fulgida*)

Opuntia fulgida var. *mamillata* (see *Cylindropuntia fulgida* var. *mamillata*)

Opuntia fulgida var. *mamillata* forma *monstrosa* (see NOTES under *Cylindropuntia fulgida* var. *mamillata*)

Opuntia gilvescens (see *Opuntia phaeacantha*)

Opuntia mamillata (see *Cylindropuntia fulgida* var. *mamillata*)

Opuntia leptocaulis (see *Cylindropuntia leptocaulis*)

***Opuntia phaeacantha* G. Engelmann: Tulip Pricklypear**

SYNONYMY: *Opuntia arizonica* D. Griffiths; *Opuntia gilvescens* D. Griffiths; *Opuntia phaeacantha* G. Engelmann var. *major* G. Engelmann; *Opuntia phaeacantha* G. Engelmann var. *phaeacantha*; *Opuntia phaeacantha* G. Engelmann var. *superbospina* (D. Griffiths) L.D. Benson. COMMON NAMES: Abrojo; Berry Prickly Pear; Berry Prickly Pear Cactus; Berry Pricklypear; Blåopuntia (Swedish); Brown Spine Prickly-pear Cactus; Brown Spined Prickly Pear; Brown Spined Prickly Pear

Cactus; Brown-spine Prickly-pear; Brown-spine Prickly-pear Cactus; Brown-spine Pricklypear; Brown-spined Prickly Pear; Brown-spined Prickly Pear Cactus; Brown-spined Prickly-pear; Brown-spined Pricklypear; Brownspine Prickly Pear; Brownspine Prickly-pear; Brownspine Pricklypear; Brownspined Prickly Pear; Brownspined Prickly-pear; Brownspined Pricklypear; Dense-spine Prickly-pear; Densely Spined Prickly Pear; Desert Prickly-pear (a name also applied to other species); Figuier de Barbarie à Fruits Violets (French); Great Pricklypear; Great Pricklypear Cactus; Joconostle; Major Prickly Pear; Major Prickly-pear; Major Pricklypear; Major Pricklypear Cactus; Mojave Prickly-pear (a name also applied to other species); Mojave Pricklypear (a name also applied to other species); Mojave Tuna; New Mexico Prickly-pear (a name also applied to other species); Nopal (a name also applied to other species and the genus *Opuntia*, Spanish); Nopal Pardo; Plains Pricky-pear¹⁴⁰; Prickly Pear (a name also applied to other species and the genus *Opuntia*); Prickly-pear (a name also applied to other species and the genus *Opuntia*); Pricklypear (a name also applied to other species and the genus *Opuntia*); Purple-fruit Prickly-pear (a name also applied to other species); Sprawling Prickly Pear (a name also applied to other species); Tulip Prickly Pear; Tulip Prickly Pear Cactus; Tulip Prickly-pear; Tulip Pricklypear; Vela de Coyote; Yellow Pricklypear; Yellow-spine Prickly-pear (a name also applied to other species). DESCRIPTION: Terrestrial perennial stem-succulent shrub (trailing and/or decumbent stems 10 inches to 7 feet in height and 3 to 10 feet in width sometimes forming clumps up to 75 feet in width; one plant was observed and described as being 10 inches in height and 40 inches in width, one plant was observed and described as being 1 foot in height and 3 feet in width, one plant was observed and described as being 14 inches in height and 52 inches in width, plants were observed and described as being 16 inches in height and 40 inches in width, one plant was observed and described as being 16 inches in height and 48 inches in width, one plant was observed and described as being 16 inches in height and 60 inches in width, one plant was observed and described as being 18 inches in height and 8 to 10 feet in width, one plant was observed and described as being 20 inches in height and 13 feet in width, one plant was observed and described as being 2 feet in height and 5 to 6 feet in width, one plant was observed and described as being 30 inches in height and 5 feet in width, plants were observed and described as being 3 feet in height and 4 to 10 feet in width); may develop a trunk; the paddle-shaped stems (4 to 10 inches in length and 3 to 8 inches in width) may be bluish-green, gray-brown, gray-green, green, dark green, dull green, greenish-yellow, purple, reddish or yellow-gray-green; the spines may be blackish, brown, charcoal, gray, reddish, red-brown, white or yellow; the glochids may be golden, red-brown, reddish-brown or tan; the flowers (1½ to 3 inches in diameter) may be golden-apricot (with yellow-green mid-stripes), orange, orange-yellow, pink, pink-purple, red, red-pink, pale yellow, yellow (with an orange or red center or brown, greenish, greenish-brown or red mid-stripes) or yellow-orange aging to red-orange; the anthers are yellow; the stigma lobes are green to yellow-green; flowering generally takes place between mid-March to late July (additional records: one for early January, one for late January, one for early February, three for mid-August, two for late August, one for late September and one for early October); the mature pear-shaped fruits (¼ to 3½ inches in length and 1 to 1¼ inches in width) may be maroon, purple, purple-red, red, dark red, red-brown or wine-red. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; plateaus; cliffs; bases of cliffs; rocky canyons; bedrock canyon rims; rocky and sandy-silty canyon bottoms; rocky rincons; talus slopes; bluffs; rocky-gravelly-sandy buttes; knolls; rocky ledges; bedrock ridges; rocky and sandy-loamy ridgetops; meadows; foothills; rocky and gravelly hills; cobbly and sandy hilltops; bouldery, rocky, gravelly and gravelly-sandy-loamy hillsides; bedrock, bouldery, rocky, rocky-gravelly, gravelly, gravelly-clayey, sandy, sandy-loamy and silty slopes; gravelly bajadas; rocky outcrops, amongst rocks; on boulders and rocks; lava beds; blow-sand; prairies; plains; sandy llanos; plains; rocky, shaley, cindery and sandy flats; sandy uplands; valley floors; along sandy roadsides; within rocky and sandy arroyos; bottoms of arroyos; draws; springs; sandy streambeds; along creeks; along creekbeds; along and in sandy riverbeds; along and in bedrock-bouldery-sandy, gravelly and sandy washes; sandy drainages; silty-loamy and silty-clayey-loamy dry lakebeds; along (sandy) banks of rivers; borders of washes; cobbly-sandy-silty and gravelly-sandy terraces; sandy-loamy bottomlands; sandy floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry cryptogammic soil; rimrock pavement; bouldery, sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and silty-clayey loam ground; gravelly-sandy clay and gravelly clay ground; cobbly-sandy silty, sandy silty and silty ground, and humusy ground, occurring from 600 to 8,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or cooking agent crop; it was also noted as having been used for tools, in pottery making and as a drug or medication. This plant provides cover for many desert animals. Deer, Javelina (*Peccari tajacu sonoriensis*) and rodents feed on the stems, and the fruits are eaten by deer, grasshoppers, Javelina and other desert animals (including grasshoppers). Cristate forms have been reported. The change in nomenclature in USDA NRCS has not been recognized in BONAP, varieties remain as varieties of *Opuntia phaeacantha* (accessed 041806). *Opuntia phaeacantha* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia phaeacantha* Engelm., Pages 95-101, *Opuntia phaeacantha* Engelm. var. *major* Engelm., Pages 99-101 and *Opuntia phaeacantha* Engelm. var. *phaeacantha*, Pages 97-98), 15 (recorded as *Opuntia phaeacantha* var. *major* Engelm., color photograph which includes habitat and associated species, Page 77), 16 (recorded as *Opuntia phaeacantha* Engelm. var. *major* Engelm.), 26 (color photograph), 27 (recorded as *Opuntia phaeacantha* Engelm., Page 50, *Opuntia phaeacantha* Engelm. var. *major* Engelm., Page 51 and *Opuntia phaeacantha* Engelm. var. *superbospina* (Griffith) L. Benson, Page 54; color photographs: Plate 28, Page 99, Plate 29, Page 99 and Plate 31, Page 100), 43 (071212), 44 (062411 - color photograph), 45 (color photograph), 46 (recorded as *Opuntia phaeacantha* Engelm., Page 583 and *Opuntia gilvescens* Griffiths, Page 583), 48 (genus - recorded as *Opuntia*), 58 (recorded as *Opuntia phaeacantha* Engelm. var. *major* Engelm.), 63 (071212 - color presentation), 77 (recorded as *Opuntia phaeacantha* Engelm. var. *major* Engelm., color photograph #14 labeled as *Opuntia phaeacantha*), 85 (071212 - color presentation, reduced recovery), 91 (recorded together with

Opuntia engelmannii Salm-Dyck. (*Opuntia phaeacantha* var. *discata* (Griffiths) Benson & Walkington) / *Opuntia phaeacantha* var. *major* Engelm - "Both species are sympatric throughout much of their range and often can be found together.", Pages 291-293), 119, 124 (062411), 127, 140 (Pages 105, 106 & 288 - recorded as *Opuntia phaeacantha* Engelm var. *major* Engelm), **WTK** (August 4, 2005, recorded as *Opuntia phaeacantha* var. *major*)

Opuntia phaeacantha var. *discata* (see *Opuntia engelmannii* var. *engelmannii*)

Opuntia phaeacantha var. *flavispina* (see *Opuntia engelmannii* var. *flavispina*)

Opuntia phaeacantha var. *major* (see *Opuntia phaeacantha*)

Opuntia phaeacantha var. *phaeacantha* (see *Opuntia phaeacantha*)

Opuntia phaeacantha var. *superbospina* (see *Opuntia phaeacantha*)

***Opuntia santa-rita* (D. Griffiths & R.F. Hare) J.N. Rose: Santa Rita Pricklypear**

SYNONYMY: *Opuntia violacea* G. Engelm var. *santa-rita* (D. Griffiths & R.F. Hare) L.D. Benson. COMMON NAMES: Blue Blade; Blue-blade; Dollar Cactus; Duraznilla (spanish); Nopal Morado (Spanish); Purple Prickly Pear; Purple Pricklypear; Red Blade Pricklypear; Santa Rita Cactus; Santa Rita Prickly Pear; Santa Rita Prickly-pear; Santa Rita Pricklypear; Santa-Rita Cactus. DESCRIPTION: Terrestrial perennial stem-succulent shrub or tree (erect stems 2 to 6½ feet in height); the paddle-shaped stems (4 to 8 inches in length) may be azure-purple (warmer months), bluish-green, gray-green with a red tinge on the edge, green, greenish-blue, lavender, pink, red-purple, reddish-purple (cooler months), rose or pale violet-purple; the spines may be golden, pale yellow or pale yellow-gray aging to reddish-brown; the glochids may be golden, tan or yellow aging to brown or reddish-brown; the flowers (3 to 3½ inches in diameter) may be lemon-yellow, orange-yellow, pale yellow or yellow; the anthers are pale yellow or yellow; the stigma lobes may be light chartreuse, light green, green or light yellow; flowering generally takes place between early March and early June (additional record: one for early January and one for early August); the ripe fruits (1 to 1½ inches in length and ¼ inch in diameter) may be maroon, purple, purplish or reddish aging to gray. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; canyons; canyon bottoms; ridges; rocky hills; rocky hillsides; rocky and gravelly-sandy-loamy slopes; bajadas; rocky outcrops; sandy dunes; terraces; gravelly and sandy plains; flats; valley floors; along roadsides; creekbeds, and disturbed areas growing in dry rocky, rocky-sandy, gravelly and sandy ground and gravelly-sandy loam ground, occurring from 2,000 to 5,600 feet in elevation in the woodland, grassland and desertscrub ecological formations. NOTES: This plant was observed as being an escaped and naturalized ornamental. This plant may be an attractive component of a restored native habitat. *Opuntia santa-rita* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Opuntia violacea* Engelm. var. *santa-rita* (Griffiths & Hare) L. Benson, Pages 92 & 95-96), 26 (recorded as *Opuntia violacea* var. *santa-rita*, color photograph), 27 (recorded as *Opuntia violacea* Engelm var. *santa-rita* (Griffiths & Hare) L. Benson, Page 58; color photographs: Plates 34 & 34A, Pages 100-101), 28 (recorded as *Opuntia violacea* var. *santa-rita*, color photograph 136), 43 (071810 - *Opuntia violacea* G. Engelm in Emory var. *santa-rita* (Griffiths & Hare) L.D. Benson), 44 (062411 - no record of species; genus record), 45 (color photograph), 46 (Page 582), 48 (genus), 58 (recorded as *Opuntia violacea* Engelm. var. *santa-rita* (Griff. & Hare) L. Benson), 63 (071212), 77, 85 (071212 - color presentation), 91 (Pages 294-295), 115 (color presentation), 124 (062411 - no record of species; genus record), 140 (Pages 106 & 288), **HR***

Opuntia spinosior (see *Cylindropuntia spinosior*)

Opuntia versicolor (see *Cylindropuntia versicolor*)

Opuntia violacea var. *santa-rita* (see *Opuntia santa-rita*)

***Peniocereus greggii* (G. Engelm) N.L. Britton & J.N. Rose var. *transmontanus* (G. Engelm) C. Backeberg; Nightblooming Cereus**

SYNONYMY: *Cereus greggii* G. Engelm var. *transmontanus* G. Engelm. COMMON NAMES: Arizona Night-blooming Cereus; Arizona Queen-of-the-night (a name also applied to the species); Chaparral Cactus (a name also applied to the species); Deer-horn Cactus (a name also applied to the species); Desert Night-blooming Cereus (a name also applied to the species); Desert Threadcereus (a name also applied to the species); Nightblooming Cereus (a name also applied to the species); Queen of the Night (a name also applied to the species); Queen-of-the-night (a name also applied to the species); Reina-de-la-noche (a name also applied to the species). DESCRIPTION: Terrestrial perennial root- and stem-succulent shrub (erect stems 1 to 8 feet in height and ¼ to ½ inch in width); the large white flowers (2 to 5 inches in diameter and 6 to 8½ inches in length) open after dusk and last only one night; flowering generally takes place between late May and early July (additional records: one for early January, two for mid-March and one for early December); the ripe fruits (1¼ to 4 inches in length and ¾ to 2 inches in diameter) are orange red or bright red. HABITAT: Within the range of this species it has been reported from mountains; mesas; ridges; ridge crests; hills; rocky hillsides; rocky and gravelly slopes; gravelly bajadas; sand dunes; gravelly-sandy plains; gravelly flats; valley floors; arroyos; along sandy washes; drainages; edges of washes, and bottomlands growing in dry desert pavement;

rocky, gravelly and sandy ground, and gravelly loam, gravelly-sandy loam, sandy loam and clayey loam ground, occurring from 800 to 3,500 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers are fragrant. The plant, *Peniocereus greggii* var. *greggii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or beverage crop; it was also noted as having been used as a drug or medication. Plant with other desert shrubs and trees, such as the Creosote Bush (*Larrea tridentata* var. *tridentata*), Foothill Paloverde (*Parkinsonia microphylla*) and Velvet Mesquite (*Prosopis velutina*), that will provide support and protection. Birds feed on the fruit and seeds. *Peniocereus greggii* var. *transmontanus* is native to southwest-central and southern North America. *5, 6, 12 (recorded as *Cereus greggii* Engelm. var. *transmontanus* Engelm., Pages 116 & 118; color photograph Fig. 2.5, Page 112), 15, 27 (species, recorded as *Cereus greggii* Engelm., Pages 61; color photographs of species: Plates 36 & 36A, Page 101), 28 (recorded as *Peniocereus greggii*, color photographs 112 A&B), 43 (012310), 44 (040111 - no record of genus, species or variety), 45 (color photograph of species), 46 (species, Page 568), 48, 63 (012310), 85 (062511 - color presentation of dried material), 86, 115 (color presentation of the species), 119 (species), 124 (040111 - no record of genus, species or variety), 127 (records found under *Peniocereus greggii* var. *greggii*), **HR***

Capparaceae (Capparidaceae): The Caper Family

***Polanisia dodecandra* (C. Linnaeus) A.P. de Candolle subsp. *trachysperma* (J. Torrey & A. Gray) H.H. Iltis: Sandysseed Clammyweed**

SYNONYMY: *Polanisia dodecandra* (C. Linnaeus) A.P. de Candolle var. *trachysperma* (J. Torrey & A. Gray) H.H. Iltis; *Polanisia trachysperma* J. Torrey & A. Gray. COMMON NAMES: Clammy Weed (a name also applied to the genus *Polanisia*); Clammy-weed (a name also applied to the genus *Polanisia*); Clammyweed (a name also applied to the genus *Polanisia*); Common Clammy Weed (a name also applied to the species); Common Clammy-weed (a name also applied to the species); Large Clammy Weed; Large Clammy-weed; Large Clammyweed; Large-flower Clammyweed; Large-flowered Clammy Weed; Large-flowered Clammy Weed; Large-flowered Clammy-weed; Large-flowered Clammyweed; Polansia (a name also applied to the genus *Polanisia*, Iowa); Red-whisker Clammyweed (a name also applied to the species); Red-whisker Clammy-weed (a name also applied to the species); Red-whisker Clammyweed (a name also applied to the species); Redwhisker Clammyweed (a name also applied to the species); Rough-seed Clammy-weed (a name also applied to the species); Rough-seed Clammyweed (a name also applied to the species); Roughseed Clammyweed (a name also applied to the species); Sandy-seed Clammy-weed; Sandysseed Clammyweed; Stinking Clammy-weed (a name also applied to the species); Stinking Clammyweed (a name also applied to the species); Stinkweed (Iowa, a name also applied to other species); Western Clammy-weed; Western Clammyweed; Western *Trachysperma* Clammyweed. DESCRIPTION: Terrestrial annual forb/herb (erect stems 4 to 40 inches in height); the stems are hairy and sticky; the leaves are dark green; the flowers may be cream, lavender, light pink, pink-purple, purple, white, white tinged with purple, white-yellow or yellowish; the anthers are red; flowering generally takes place between early May and late November (additional record: one for early January). HABITAT: Within the range of this species it has been reported from mountains; gravelly and sandy mesas; plateaus; rocky canyons; canyon sides; along gravelly and sandy canyon bottoms; talus slopes; bluffs; cindery buttes; ledges; shaley ridgetops; meadows; foothills; bouldery-cindery, stony, cindery, cindery-clayey, gravelly and sandy hills; gravelly-sandy hilltops; rocky and cindery hillsides; bouldery, rocky, rocky-sandy, shaley, stony-sandy, cindery, gravelly, gravelly-loamy, sandy, clayey and clayey-loamy slopes; bajadas; rocky outcrops; amongst rocks; sand hills; sand dunes; around and in ant hills; sandy terraces; prairies; gravelly and sandy plains; rocky-sandy uplands; gravelly and sandy flats; basins; gravelly-sandy valley floors; valley bottoms; along railroad right-of-ways; roadbanks; along rocky, rocky-sandy-loamy, gravelly and sandy roadsides; within sandy arroyos; along sandy and sandy-silty bottoms of arroyos; silty draws; gravelly-sandy and sandy bottoms of draws; gulches; gullies; ravines; springs; along sandy streams; along and in rocky, cobbly-gravelly and gravelly-sandy streambeds; along creeks; along and in stony-cobbly-gravelly, gravelly-sandy and sandy creekbeds; in sand along rivers; along and in rocky, gravelly-sandy and sandy riverbeds; along and in rocky, rocky-gravelly-sandy, gravelly, gravelly-sandy, sandy and clayey washes; drainage ways; sandy bowls; along (muddy, rocky, gravelly and sandy) banks of streams, creeks and rivers; (gravelly and sandy) edges of arroyos and streams; margins of rivers; (sandy) sides of brooks and streams; mudflats; rocky-sand, shaley, stony-cobbly-gravel, stony-sand, gravel, gravelly-sand and sand bars; sandy beaches; sandy-clayey benches; terraces; bottomlands; rocky-sandy-clayey and sandy floodplains; lowlands; fencerows; banks of reservoirs; in sandy ditches; bouldery-cobbly-sandy, cobbly-sandy and sandy riparian areas; waste places, and disturbed areas growing in mucky, muddy and wet, moist and dry bouldery, bouldery-cobbly-sandy, bouldery-cindery, rocky, rocky-cindery, rocky-gravelly-sandy, rocky-sandy, stony, stony-cobbly-gravelly, stony-sandy, cobbly-gravelly, cobbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly loam, clayey loam and loam ground; rocky-sandy clay, cindery clay, sandy clay and clay ground, and sandy silty and silty ground, occurring from 300 to 7,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the crushed or bruised stems give off an odor that may be objectionable. *Polanisia dodecandra* subsp. *trachysperma* is native to central and southern North America. *5, 6, 15, 16 (recorded as *Polanisia dodecandra* (L.) DC. var. *trachysperma* (Torr. & Gray) Iltis, placed in the Cleomaceae), 28 (recorded as *Polanisia dodecandra*, color photograph 162), 43 (070209), 44 (062511 - color picture), 46 (recorded as *Polanisia trachysperma* J. Torrey & A. Gray - placed in the Capparidaceae: The Caper Family, Page 358), 58, 63 (071412 - color presentation), 68 (recorded as *Polanisia trachysperma* Torr. & Gray), 77, **85** (071512 - color presentation), 86

(recorded as *Polanisia dodecandra*, color photograph), 115 (color presentation of the species), 124 (062511), **WTK** (August 4, 2005)*

Polanisia dodecandra var. *trachysperma* (see *Polanisia dodecandra* subsp. *trachysperma*)

Polanisia trachysperma (see *Polanisia dodecandra* subsp. *trachysperma*)

Wislizenia refracta var. *melilotoides* (see *Wislizenia refracta* subsp. *refracta*)

***Wislizenia refracta* G. Engelmann subsp. *refracta*: Spectacle Fruit**

SYNONYMY: *Wislizenia refracta* G. Engelmann var. *melilotoides* (E.L. Greene) I.M. Johnston. COMMON NAMES: Jack-ass Clover (a name also applied to the species); Jackass Clover (a name also applied to the species and genus *Wislizenia*); Jackass-clover (a name also applied to the species and genus *Wislizenia*); Rocky Mountain Bee Plant; Spectacle Fruit (a name also applied to the species); Spectacle Pod (a name also applied to other species); Spectacle-fruit (a name also applied to other species); Spectaclefruit (a name also applied to other species); Yellow Bee Weed. DESCRIPTION: Terrestrial annual forb/herb (erect stems 16 inches to 4 feet in height); the flowers are yellow; flowering generally takes place between mid-April and mid-October (additional record: one for early March). HABITAT: Within the range of this species it has been reported from crevices in rocks; foothills; sandy hills; sand dunes; sandy-loamy flats; sandy valley floors; along rocky, gravelly and sandy roadsides; rocky arroyos; bottoms of arroyos; within gullies; springs; streambeds; in sandy and sandy-silty washes; lakebeds; playas; depressions; sandy swales; edges of ponds and playas; bottomlands, and sandy floodplains growing in wet and dry rocky, gravelly and sandy ground; sandy loam ground; clay ground, and sandy silty and silty ground, occurring from sea level to 6,500 feet in elevation in the desertscrub ecological formation. NOTES: The Rufous Hummingbird (*Selasphorus rufus*) has been observed visiting the flowers. *Wislizenia refracta* subsp. *refracta* is native to southwest-central and southern North America. *5, 6, 28 (species, color photograph of species 332), 43 (062611), 44 (071512 - color picture), 46 (recorded as *Wislizenia refracta* Engelm. var. *melilotoides* (Greene) Johnst., placed in the Capparidaceae: The Caper Family, Page 357), 63 (071512), **80** (The species is listed as a Rarely Poisonous and Suspected Poisonous Range Plants. "Feeding experiments have shown this annual forb to be highly toxic but the plant is not very palatable."), **85** (071512 - color presentation), 86 (species, color photograph of species), 115 (color presentation of the species), 124 (071512 - no record of subspecies, species or genus)*

Caryophyllaceae: The Pink Family

***Silene antirrhina* C. Linnaeus: Sleepy Silene**

COMMON NAMES: Alfinetes-da-terra-miúdo (Portuguese: Brazil); Annual Catchfly; Campion (a name also applied to other species and the genus *Silene*); Campion (English)¹⁴⁰; Catchfly (a name also applied to other species and the genus *Silene*); Desert Sleepy Catchfly; Gartner-pink (English: South)¹⁴⁰; Oi'tcuyo (Uto-Aztecan: Shoshoni)¹⁴⁰; Silene (a name also applied to the genus *Silene*); Silene (Spanish)¹⁴⁰; Silène Muflier (French); Sleepy Campion; Sleepy Cat; Sleepy Catch-fly; Sleepy Catchfly; Sleepy Silene; Sleepy [Silene] Catchfly [Silene] (English)¹⁴⁰; Snapdragon Campion; Snapdragon Catchfly; Snapdragon Catchfly (English: Massachusetts)¹⁴⁰; Tarry Cockle; Tjårglim (Swedish). DESCRIPTION: Terrestrial annual forb/herb (ascending and/or erect stems 4¼ inches to 3 feet in height); the stems may be purple; the flowers may be lavender, magenta, magenta-pink, pink, pinkish-whitish, purple, purple-pink, purplish, red, rose, white, white with pink or dark purple-tipped lobes or white fading to deep pink; flowering generally takes place between mid-February and early August (additional records: one for late August, three for mid-September and one for early November). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; cliffs; rims of canyons; rocky canyons; sandy canyon bottoms; gorges; talus slopes; crevices in rocks; bluffs; buttes; bouldery and rocky ledges; shaley ridges; cobbly-sandy-loamy ridgetops; granite balds; clearings and openings in forests and woodlands; rocky and sandy meadows; foothills; rocky hills; rocky hillsides; along bedrock, bouldery-silty-clayey, rocky, cobbly, gravelly, sandy-loamy, loamy, loamy-clayey and clayey slopes; rocky-sandy alluvial fans; gravelly bajadas; rocky and cindery outcrops; bases of rocky outcrops; amongst rocks; rock beds; volcanic flows; loamy and loamy-clayey banks; loamy, loamy-clayey, silty-loamy-clayey prairies; plains; rocky, gravelly and sandy flats; rocky, gravelly-silty-loamy, loamy and loamy-clayey, uplands; basins; roadcuts; along gravelly and gravelly-loamy roadsides; rocky arroyos; rocky and rocky-sandy draws; clayey gulches; ravines; seeps; in sand along streams; along rocky, rocky-sandy and sandy streambeds; in sand along creeks; along and in creekbeds; along rivers; along and in rocky, gravelly-sandy and sandy washes; along and in drainages; swales; (gravelly-sandy and sandy) banks of washes; (rocky and rocky-gravelly) edges of streams, streambeds, rivers and ponds; (sandy-loamy) margins of streambeds and rivers; gravelly-sand bars; benches; shelves; terraces; sandy and loamy bottomlands; floodplains; mesquite bosques; clayey catchments; along ditches; gravelly-sandy, gravelly-sandy-loamy and sandy riparian areas; waste places, and recently burned areas in forests, woodlands and chaparral growing in wet, moist and dry rimrock pavement; cryptogamic soil; bouldery, rocky, rocky-gravelly, rocky-sandy, cobbly, shaley, cindery, gravelly, gravelly-sandy and sandy ground; cobbly-sandy loam, gravelly loam, gravelly-sandy loam, gravelly-silty loam, sandy loam, clayey loam and loam ground; bouldery-silty clay, loamy clay, silty-loamy clay and clay ground, and gravelly-sandy silty and silty ground, occurring from sea level to 8,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Silene antirrhina* is native to central and southern North America. *5, 6, 15, 16, 28

(color photograph 587), 43 (012610), 44 (072412), 46 (Page 302), 58, 63 (072412 - color presentation), 77, **85** (072512 - color presentation), 101 (note under *Silene alba*), 115 (color presentation), 124 (072412), 140 (Pages 109-110 & 289)*

Chenopodiaceae: The Goosefoot Family

***Atriplex canescens* (F.T. Pursh) T. Nuttall: Fourwing Saltbush**

COMMON NAMES: Atahi'xp (Seri); Buckwheat Shrub (English)¹⁴⁰; Bushy Atriplex; Bushy Salt-sage; Bushy Saltsage; Ceniso <cenizo> ("Ashy One", Spanish: Baja California, Chihuahua, Sonora)¹⁴⁰; Cenizo (Spanish); Chamere (Spanish); Chamiso <chamiza> (preferred over Chamise, a name also applied to other species, Spanish: Baja California, Chihuahua, Sonora, New Mexico)¹⁴⁰; Chamiso Cenizo [Blanco] ("Ashy [White] Chamiso", Spanish: Mexico)¹⁴⁰; Chamiza; Chamizo (Spanish); Cīw'wībīl (Uto-Aztec: Tūbatulabal)¹⁴⁰; Costilla de Vaca ("Cow's Rib", Spanish: Zacatecas)¹⁴⁰; □asilk (Yuman: Walapai)¹⁴⁰; Diwoozhii Ibehi (Navajo); Diwózhiiłbeii <dóy'óžilbá□i, tiwójiłpáih> ("Grey Greasewood", Athapascan: Navajo)¹⁴⁰; Dzi'cūp (Uto-Aztec: Shoshoni)¹⁴⁰; Four Wing Saltbush; Four Winged Salt Bush; Four Winged Shadscale; Four-wing Salt Bush; Four-wing Salt-bush; Four-wing Saltbush; Four-wing Shadscale; Four-wing Shad-scale; Four-winged Salt Bush; Four-winged Salt-bush (English)¹⁴⁰; Four-winged Saltbush; Four-winged Shadscale; Fourwing Saltbush; Fourwing Shadscale; Fourwinged Saltbush; Grease-wood (a name also applied to other species); Greasewood; Grey Grease Winter Chamiso; Grease-wood (English)¹⁴⁰; Grey Sage Brush; Hataj-isijc ("Immature Vulva", Hokan: Seri)¹⁴⁰; Hataj-ixp ("White Vulva", Hokan: Seri)¹⁴⁰; Hoary Saltbush; Hoary Wingscale; Ke'ma:we (Zuni - "salt weed" refers to the salty taste of the flowers); Ke'mwe (Language Isolate: Zuni)¹⁴⁰; Koksvul Sha'i ("Cocoon Bush", Uto-Aztec: Akimel O'odham)¹⁴⁰; Mu'kwapt (Yuman: Paipai)¹⁴⁰; Murunav□ (Uto-Aztec: Kawaiisu)¹⁴⁰; Narrow-leaf Saltbush; Narrowleaf Wingscale; 'Onk 'I:vagi, 'Onk 'I:vakī ("Salty Greens", Uto-Aztec: Hiá Ce□ O'odham)¹⁴⁰; 'Onk 'I:wagi <teu'ari> ("Salty Greens", Uto-Aztec: Tohono O'odham)¹⁴⁰; Orache (a name also applied to the genus *Atriplex*); [Salt, Wafer]-sage (English)¹⁴⁰; Sage Brush; Sagebrush; Saladillo ("Little Salty One", Spanish: Baja California, Chihuahua)¹⁴⁰; Sha'ashkackh Iibatkam (River Pima); Sha'ashkack Iibadkam ("It Has Rough Fruit", Uto-Aztec: Akimel O'odham)¹⁴⁰; Shad Scale; Shad-scale (English)¹⁴⁰; Shadscale; Suwvi <cüovi, süovi> (Uto-Aztec: Hopi)¹⁴⁰; Ta□ibi [tónova] (Uto-Aztec: Northern Paiute)¹⁴⁰; Ta'ñaæj (Kiow Tanoan: Tewa)¹⁴⁰; Thinleaf Fourwing Saltbush; Wheel-scale; White Greasewood; Wing-scale; [Wheel-] Wing-scale (English)¹⁴⁰; Wngscale; Wingscale Saltbush; Yup (Seri); 4-Winged Salt-bush. DESCRIPTION: Terrestrial perennial evergreen (winter-deciduous in cold climates) shrub (erect stems 1 to 10 feet in height; one plant was observed and described as being 4½ feet in height and 4½ feet in width, one plant was observed and described as being 40 inches in height and 5 feet in width, one plant was observed and described as being 5 feet in height and width, one plant was observed and described as being 5 feet in height and 6½ feet in width, plants were observed and described as being 6½ feet in height and width, one plant was observed and described as being 7 feet in height and 13 feet in width, plants were observed and described as being 8 feet in height and 15 feet in width); the branches are gray; the leaves are gray, gray-green, light green or green; the flowers (male and female flowers are usually borne on separate plants; however, this plant has been known to change sexes if stressed) are brown (rarely), cream, green, greenish, greenish-white, greenish-yellow, white-brown, pale yellow, yellow or yellowish; flowering generally takes place between early February and late October (additional records: one for mid-January, four for mid-November, one for late November and one for early December); the mature four-winged fruits (0.4 to 1 inch square bracts) are green or yellow-green drying to pale brown or tan. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; rocky plateaus; along rocky, rocky-sandy and sandy rims; cliffs; rocky, sandy and clayey canyons; sandy canyon walls; sandy and clayey canyon bottoms; gorges; rocky scree; talus slopes; along gravelly-sandy bluffs; knolls; rocky ledges; rocky and gravelly ridges; rocky-sandy, rocky-loamy and sandy ridgetops; meadows; foothills; rocky, gravelly-sandy, clayey and silty-loamy hills; rocky-gravelly hilltops; bouldery, rocky, gravelly and clayey hillsides; bedrock, bouldery, rocky, rocky-sandy, rocky-loamy, shaley, stony-loamy, cindery, gravelly, gravelly-sandy-loamy, sandy, sandy-loamy, sandy-loamy-silty-powdery, sandy-clayey, sandy-silty, clayey, clayey-loamy and silty-loamy slopes; alluvial fans; sandy bajadas; rocky and gypsum outcrops; amongst rocks; sandy lava flows; sand hills; sand dunes; blow-sand deposits; bouldery debris flows; sandy and sandy-loamy plains; rocky, gravelly, gravelly-loamy, sandy, sandy-loamy and clayey flats; basins; gravelly-sandy, sandy and sandy-loamy valley floors; coastal dunes; sandy coastal plains; coastal flats; coastal saltmarshes; along rocky, gravelly, gravelly-sandy, sandy and sandy-loamy roadsides; arroyos; bottoms of arroyos; draws; gulches; ravines; seeps; around springs; streambeds; along creeks; along sandy creekbeds; in sand along rivers; sandy riverbeds; along rocky, gravelly, gravelly-sandy and sandy washes; along and in drainages; lakebeds; playas; freshwater and saltwater marshes; around and in swamps; depressions; clayey pans; sinks; swales; along (gravelly-sandy, sandy and clayey) banks of arroyos, rivers and drainages; (cindery) edges of washes, ponds, lakes and salt marshes; margins of drainages; gravel bars; beaches; sandy and clayey benches; sandy-loamy terraces; sandy bottomlands; gravelly, gravelly-sandy and sandy floodplains; (Galleta) lowlands; mesquite bosques; ditches; sandy riparian areas; waste places, and disturbed areas growing in muddy and moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, shaley, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, stony loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam, silty loam and loam ground; sandy clay and clay ground; rocky silty, sandy silty and silty ground, and sandy-loamy-silty powdery ground, occurring from sea level to 8,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder, cooking agent (ashes used in place of baking soda and also to give a greenish-blue color to dough), spice and/or dye crop; it was also noted as having been used as tools, as a drug or medication, to make ceremonial items (including prayer sticks - pahos) and as a

commodity used in personal hygiene. The life span of the Fourwing Saltbush has been reported to be from 29 to over 100 years of age. Fourwing Saltbush may be useful in controlling erosion. Mule Deer (*Odocoileus hemionus*), White-tailed Deer (*Odocoileus virginianus*), Elk (*Cervus elaphus*), Black-tailed Jackrabbits (*Lepus californicus*), Pronghorn (*Antilocapra americana*) and Bighorn Sheep (*Ovis canadensis*) and other small mammals browse this plant, and Masked Bobwhite (*Colinus virginianus* subsp. *ridgwayi*), Deer, Grouse, Gray Partridge (*Perdix perdix*), Pronghorn (*Antilocapra americana*), Gambel's Quail (*Callipepla gambelii*), Scaled Quail (*Callipepla squamata*) and other birds as well as Kangaroo Rats, Pocket Mice and other small rodents feed on the fruits and seeds. This plant is a larval food plant for the Pygmy Blue (*Brefidium exile*). Possible predation was reported by the exotic Puncturevine Seed Weevil (*Microlarinus lareynii*). The keying out of Four-wing Saltbushes may be difficult due to intraspecific variation and introgression with other saltbush species. *Atriplex canescens* is native to west-central and southern North America. *5, 6, 13 (Pages 164-166), 15, 16, 18, 26 (color photograph), 28 (color photograph 490), 43 (012710), 44 (062811 - color photograph), 46 (Page 259), 48, 63 (012710 - color presentation), 77, 82, **85** (062911 - color presentation including habitat), **91** ("As a secondary or facultative absorber of selenium, *Atriplex canescens* can be mildly poisonous to livestock where selenium occurs in the soil.", Pages 100-103), 115 (color presentation), 124 (062811), 127, 140 (Pages 111-112 & 289), **WTK** (August 4, 2005)*

***Chenopodium fremontii* S. Watson: Fremont's Goosefoot**

COMMON NAMES: Fremont Goosefoot, Fremont's Goosefoot, Goose-foot. DESCRIPTION: Terrestrial annual forb/herb (4 to 64 inches in height); the stems are often purple or red; the foliage is grayish, green or yellow-green; the inconspicuous flowers may be green, greenish, greenish-white, greenish-yellow or white; flowering generally takes place between mid-May and mid-October (additional record: one for mid-April). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky mountainsides; sandy mesas; rocky plateaus; cliffs; along sandy canyons; along sandy canyon bottoms; bases of cliffs; scree; talus slopes; crevices in rocks; ridges; loamy ridgetops; sandy openings in forests; meadows; foothills; hills; hillsides; along bouldery-sandy, rocky, rocky-sandy, cindery, gravelly, sandy and sandy-loamy slopes; bajadas; rocky outcrops; amongst boulders and rocks; rocky lava flows; plains; gravelly and sandy flats; basins; stony-loamy hollows; along rocky, gravelly-sandy and sandy roadsides; within rocky arroyos; sandy, sandy-silty and clayey bottoms of arroyos; sandy draws; gulches; gullies; rocky ravines; springs; along streams; along and in bouldery-rocky and sandy streambeds; along creeks; sandy creekbeds; along rivers; along riverbeds; along and in gravelly, sandy and clayey washes; drainages; rocky drainage ways; boggy areas; along (sandy) banks of streams, creeks and rivers; (sandy) edges of streams, creeks, washes, loamy drainages; drainage ways and swales; gravelly-sandy and sandy terraces; silty floodplains; mesquite bosques; along ditches; sandy-humusy riparian areas, and disturbed areas growing in wet, moist and dry bouldery, bouldery-rocky, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly-pebbly-sandy, cindery, gravelly, gravelly-sandy and sandy ground; stony loam, gravelly loam, gravelly-silty loam, sandy loam, clayey loam and loam ground; clay ground; bouldery-silty, sandy-silty and silty ground, and sandy humusy ground, occurring from 2,100 to 10,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or spice crop; it was also noted as having been used as a cooking agent. *Chenopodium fremontii* is native to west-central and southern North America. *5, 6, 15, 16, 43 (070209), 46 (Page 253-254), 63 (012910), **85** (012910 - color presentation), 124 (110310), 127, 140 (Page 289)*

Salsola australis (see *Salsola tragus*)

Salsola iberica (see *Salsola tragus*)

Salsola kali (see *Salsola tragus*)

Salsola kali subsp. *tenuifolia* (see *Salsola tragus*)

Salsola kali var. *tenuifolia* (see *Salsola tragus*)

Salsola kali subsp. *tragus* (see *Salsola tragus*)

***Salsola tragus* C. Linnaeus: Prickly Russian Thistle**

SYNONYMY: *Salsola australis* R. Brown; *Salsola iberica* (f. Sennen & C. Pau) V.P. Botschantzev ex S.K. Czerepanov; *Salsola kali* C. Linnaeus; *Salsola kali* C. Linnaeus subsp. *tenuifolia* C.H. Moquis-Tandon; *Salsola kali* C. Linnaeus var. *tenuifolia* I.F. Tausch; *Salsola kali* C. Linnaeus subsp. *tragus* (C. Linnaeus) L.J. Čelakovský. COMMON NAMES: Cardo Ruso; Chamiso; Chamiso Valador; Ci Sha Peng (transcribed Chinese); Coast Saltwort; Common Russian Thistle (a name also applied to other species); Common Russian Thistle Tumbleweed; Hari Hijikii (transcribed Japanese); Leap the Field; Prickly Russian Thistle (a name also applied to other species); Russian Cactus (a name also applied to other species); Russian-cactus; Russian Thistle (a name also applied to the genus *Salsola*); Russian-thistle (a name also applied to the genus *Salsola*); Russian Tumble Weed; Russian Tumble-weed; Russian Tumbleweed (a name also applied to the genus *Salsola*); Soude Epineuse (French); Soude Roulante (French); Spineless Saltwort; Tumbleweed (a name also applied to other species); Tumbling Thistle; Ukraine Salzkraut (German); Volador; Wind Witch; Wind-witch; Windwitch. DESCRIPTION: Terrestrial annual forb/herb (ascending and/or erect stems 2 inches to 7 feet in height; plants were observed and described as being 4 feet in height and 3 feet

in width); the foliage may be blue-green, gray-green, grayish-green, green, purple or red striped, reddish-purple or yellow-green; the inconspicuous flowers (without petals) are brown, pale green, green, green-red, pink, white, whitish, whitish-green, white-pink, white-yellow or yellowish-green; flowering generally takes place between early April and mid-November (additional records: one for early February, one for mid-March and one for early December); the fruit is a reddish top-shaped pod with papery wings. HABITAT: Within the range of this species it has been reported from mountains; gravelly mountainsides; sandy bases of mountains; sandy mesas; plateaus; canyon rims; chalky cliffs; bases of cliffs; rocky and sandy canyons; bouldery-gravelly-sandy, rocky and sandy canyon bottoms; bluffs; cindery (scoria) buttes; rocky- rocky, sandy and sandy-loamy ridges; sandy rims of craters; rocky-clayey foothills; rocky, sandy and clayey hills; rocky, gravelly and sandy hillsides; sandy bases of escarpments; bouldery, rocky, rocky-gravelly, rocky-sandy-loamy, shaley, cindery, gravelly, gravelly-loamy, gravelly-sandy-loamy, sandy, sandy-loamy, loamy, clayey, clayey-loamy and silty slopes; alluvial fans; bajadas; rocky and shaley outcrops; sand hills; sand dunes; sandy berms; sandy-clayey breaks; clayey prairie dog towns; steppes; prairies; sandy plains; sandy uplands; gravelly, gravelly-clayey, sandy, sandy-loamy, sandy-silty, clayey and silty flats; basins; gravelly, gravelly-sandy and sandy valley floors; valley bottoms; coastal dunes; sandy coastal beaches; coastal salt marshes; clayey prairie dog towns; along gravelly-clayey railroad right-of-ways; gravelly roadbeds; sandy roadcuts; along rocky-sandy, shaley-clayey-loamy, gravelly, gravelly-sandy, gravelly-clayey, sandy, sandy-loamy, sandy-clayey and clayey roadsides; sandy arroyos; bottoms of arroyos; rocky-sandy, sandy, loamy and loamy-clayey draws; bottoms of draws; gravelly gullies; seeps; along streams; along sandy streambeds; along cobbly-loamy, sandy and sandy-silty creekbeds; along rivers; along rocky, rocky-sandy, sandy, sandy-clayey and clayey riverbeds; along bouldery, sandy, sandy-loamy and sandy-clayey washes; within gravelly-clayey, sandy and clayey drainages; pondbeds; around lakes; lakebeds; sandy-loamy playas; ciénegas; marshes; depressions; gravelly and gravelly-sandy swales; (sandy, clayey and clayey-loamy) banks of springs, streams, rivers and washes; (sandy) edges of creeks and marshes; margins of streams and rivers; (sandy and clayey-loamy) shores of lakes; mudflats; cobble, sand and silt bars; sandy and sandy-clayey beaches; sandy and clayey benches; cobbly-gravelly and gravelly terraces; sandy-clayey bottomlands; along sandy, sandy-clayey and clayey floodplains; mesquite bosques; along fencelines; around and in (dry) stock tanks; along banks and shores of reservoirs; along canals; along sandy ditches; along sandy ditch banks; bouldery-cobbly-sandy, gravelly, sandy and silty-loamy riparian areas; sandy waste places, and disturbed areas growing in wet and dry desert pavement; bouldery, bouldery-cobbly-sandy, bouldery-gravelly-sandy, rocky, rocky-sandy, stony, cobbly-gravelly, cindery, gravelly, gravelly-pebbly, gravelly-sandy and sandy ground; rocky-sandy loam, shaley-clayey loam, cobbly loam, gravelly loam, gravelly-sandy loam, sandy loam, sandy-clayey loam, clayey loam, silty loam and loam ground; rocky clay, gravelly clay, gravelly-sandy clay, sandy clay, loamy clay and clay ground; sandy silty and silty ground, and chalky ground, occurring from sea level to 9,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, fodder and as a drug or medication. Russian Thistle is a host plant of the Beet Leafhopper which transmits the Curly Top Virus to Sugarbeets *Salsola tragus* is native to northern, central, eastern and southern Europe; Asia, and northern Africa. *5, 6, 15 (recorded as *Salsola iberica* Sennen & Pau), 16 (recorded as *Salsola iberica* Sennen & Pau), 28 (recorded as *Salsola iberica*, color photograph), 43 (070309), 44 (070611), 46 (recorded as *Salsola kali* L. and *Salsola kali* L. var. *tenuifolia* Tausch, Page 264), 58 (recorded as *Salsola iberica* Sennen & Pau), 63 (013010 - color presentation), 68 (of *Salsola kali* L. var. *tenuifolia* Tausch, “It is a host plant for the sugarbeet leafhopper which carries the virus causing curly top in beets. It is also the source of “blight” in other crop plants such as tomatoes, spinach and beans. ... May store toxic amounts of nitrates after periods of fast growth.”), 77 (recorded as *Salsola australis* R. Br.), 80 (*Salsola kali* L. var. *tenuifolia* is listed as a Major Poisonous Range Plant. “Russian thistle is capable of storing up toxic quantities of nitrate, particularly during the flush period of growth. *Salsola* has also been suspected of causing oxalate poisoning in Australia. ... Large-scale control can best be accomplished through range improvement to replace the thistle with grass.” See text for additional information.), 85 (070711 - color presentation, J.J. Thorner reported on August 8, 1913, that Russian Thistle (*Salsola kali* L.) was recently introduced and rapidly spreading at a population observed in the Rillito bottomlands east of Tucson,), 101 (recorded as *Salsola iberica* Sennen, color photograph), 115 (color presentation), 124 (070611), 127, 140 (Page 289), **WTK** (August 4, 2005)*

Convolvulaceae: The Morning-glory Family

***Evolvulus alsinoides* (C. Linnaeus) C. Linnaeus (var. *angustifolius* J. Torrey is the variety reported as occurring in Arizona): Slender Dwarf Morning-glory**

SYNONYMY: (for *E.a.* var. var. *angustifolius*: *Evolvulus alsinoides* (C. Linnaeus) C. Linnaeus var. *acapulcensis* (C.L. von Willdenow) S.J. van Ooststroom). COMMON NAMES: Acapulco Evolvulus; Arizona Blue Eyes; Blue Eyes (English)¹⁴⁰; Cenicito (“Little Ashy One”, Spanish: El Salvadore)¹⁴⁰; Dio de Vibora; Dwarf Morning-glory (English: Arizona, New Mexico)¹⁴⁰; Ojitos Azules (“Little Blue-eyes”, Spanish: Yucatán)¹⁴⁰; Ojo de Vibora (“Snake’s Eye”, Spanish: Mexico and adjacent Texas)¹⁴⁰; Oreja de Ratón (“Mouse’s Ear”, Spanish: Sonora, El Salvadore)¹⁴⁰; Pata de Paloma [Pate Paloma] (“Dove’s Foot”, Spanish: Honduras)¹⁴⁰; Quiebra-cajete (“Box-breaker”, Spanish: Guatemala)¹⁴⁰; Sian-xiw <sia-siu, xia-xiu, xiatiu> (Mayan: Maya)¹⁴⁰; Slender Dwarf Morning-glory (Arizona, New Mexico); Slender Dwarf Morningglory; Tsoots Ts’ul (“Spaniard’s Hair”, Mayan: Maya)¹⁴⁰; X-havay <x-haway> (Mayan: Maya)¹⁴⁰. DESCRIPTION: Terrestrial perennial forb/herb (prostrate, ascending or erect stems 2¼ to 28 inches in height); the leaves are green or dark green; the flowers are azure blue, pale blue, blue, bluish, blue-purple, blue-violet, lavender, lavender-blue, dark lavender, purple, rose, sky-blue, light violet, violet or white; the stigmas are white; flowering generally takes place between late February and mid-November (additional records: one

for early February, three for mid-December and two for late December). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky cliffs; rocky canyons; canyon bottoms; rocky buttes; ridges; foothills; hills; rocky-gravelly hilltops; bouldery and rocky hillsides; bedrock, bouldery-gravelly, rocky and gravelly slopes; rocky outcrops; on rocks; amongst rocks and stones; plains; gravelly-sandy flats; in roadbeds; along bouldery-rocky, gravelly and sandy-loamy roadsides; stony arroyos; springs; gravelly streambeds; creeks; along and in rocky, stony, gravelly and sandy washes; rocky drainages; (rocky) banks of springs and streams; margins of rivers; floodplains; riparian areas; waste places, and disturbed areas growing in dry bouldery, bouldery-rocky, bouldery-gravelly, rocky, rocky-gravelly, stony, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam and sandy loam ground, and clay ground, occurring from sea level to 7,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub, and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Evolvulus alsinoides* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and northern, western, central and eastern South America. *5, 6, 15, 43 (071810 - *Evolvulus alsinoides* L., *Evolvulus alsinoides* L. var. *acapulcensis* Ooststr., *Evolvulus alsinoides* L. var. *angustifolius* Torr. in Emory), 46 (Page 672), 58, 63 (071810), 77 (color photograph #72 labeled *Evolvulus alsinoides*), 85 (101410 - color presentation), 124 (110310 - no record), 140 (Page 118-119 & 289)*

Evolvulus alsinoides var. *acapulcensis* (see *Evolvulus alsinoides* var. *angustifolius*)

***Evolvulus arizonicus* A. Gray: Wild Dwarf Morning-glory**

SYNONYMY: *Evolvulus arizonicus* Gray var. *arizonicus*; *Evolvulus arizonicus* Gray var. *laetus* (Gray) S.J. van Oostroom. COMMON NAMES: Arizona Blue Eyes; Arizona Blue-eyes; Arizona Evolvulus; Evolvulus; Wild Dwarf Morning-glory; Wild Morning Glory; Wild Morning-glory. DESCRIPTION: Terrestrial perennial forb/herb (decumbent, ascending or erect stems 4 to 18 inches in height); the leaves are grayish-green, green or greenish-gray; the flowers (½ to ¾ inch in diameter) may be light blue, blue, deep blue, blue with white stripes, blue with white throats, blue-purple, deep sky-blue, lavender with white throats, purple, purple and cream or white; flowering generally takes place between mid-April and late October (additional record: one for mid-March). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky cliffs; rocky canyons; crevices in rocks; pockets of soil; rocky ridges; meadows; foothills; rocky hills; bouldery-rocky, rocky and sandy-loamy hillsides; rocky, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy and sandy slopes; gravelly pediment fans; rocky outcrops; amongst rocks; stony prairies; plains; sandy-clayey flats; basins; valley floors; along gravelly and sandy roadsides; springs; along streams; along and in rocky streambeds; along creeks; cobbly-sandy creekbeds; riverbeds; along and in gravelly and sandy washes; rocky and rocky-gravelly-sandy drainages; (gravelly) edges of streams and lakes; benches; terraces; around and in stock tanks; sandy riparian areas, and disturbed areas growing in dry bouldery-rocky, rocky, rocky-gravelly-sandy, stony, cobbly-sandy, gravelly and sandy ground; gravelly loam, gravelly-sandy loam and sandy loam ground, and gravelly clay and sandy clay ground, occurring from 2,700 to 6,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, and is considered to be one of Arizona's most beautiful wild flowers. *Evolvulus arizonicus* is native to southwest-central and southern North America and southeastern South America. *5, 6, 15 (recorded as *Evolvulus arizonicus* Gray var. *arizonicus* and *Evolvulus arizonicus* Gray var. *laetus* (Gray) van Ooststr.), 28 (color photograph 691), 43 (070309), 44 (112910 - no record of species), 46 (Page 673), 48, 58, 63 (111810 - color presentation), 85 (111810 - color presentation), 86 (color photograph), 115 (color presentation), 124 (111810 - no record of species, genus), 140 (Pages 119 & 289), **WTK** (August 4, 2005), **MBJ/WTK** (September 12, 2005)*

Evolvulus arizonicus var. *arizonicus* (see *Evolvulus arizonicus*)

Evolvulus arizonicus var. *laetus* (see *Evolvulus arizonicus*)

Ipomoea C. Linnaeus: Morning-glory

COMMON NAMES: Bindweed; Campanilla; Christmas Bells; Cypress Vine; Ipomoea; Moonflower; Morning Glory; Morning-glory; Morningglory; Red Morning Glory; Red Morning-glory; Star Glory; Star-glory. *43 (052010), 44 (011011 - no records listed under Common Names), 46 (Pages 675-678), 63 (080409), 124 (111910), **MBJ/WTK** (September 12, 2005, purple flowered)*

***Ipomoea barbatisejala* A. Gray: Canyon Morning-glory**

COMMON NAME: Bristlecup Morning Glory; Canyon Morning-glory; Morning Glory. DESCRIPTION: Terrestrial annual forb/herb or vine (climbing and twining stems to 2 feet (probably more) in length); the flowers (¾ inch in diameter) may be blue, dark blue, pink, purple, purplish-pink, rosy-purple, pale sky blue or white; flowering generally takes place between late August and mid-September (additional record: one for early October, flowering beginning as early as July and ending as late as December has been reported). HABITAT: Within the range of this species it has been reported from mountains; cliffs; rocky canyons; sandy canyon bottoms; chasms; along bases of cliffs; foothills; hills; rocky, gravelly and loamy slopes; sandy bajadas; rocky outcrops; amongst boulders; along railroad right-of-ways; along roadsides; along bouldery arroyos; rocky draws; along rocky ravines; springs; along and in rocky streams; along sandy streambeds; creeks; along and in gravelly and sandy washes, within rocky drainages; gravelly riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, gravelly and sandy ground and rocky loam and loam ground, occurring from 1,800 to 9,100 feet in elevation in the woodland, scrub, grassland,

desertscrub and wetland ecological formations. NOTE: *Ipomoea barbatisepala* is native to southwest-central and southern North America. *5, 6, 15, 16, 18 (genus), 43 (013110), 46 (Page 677), 48 (genus), 63 (013110), 77, **85** (013110 - color presentation of dried material), 115 (color presentation), 140 (Page 289)*

***Ipomoea costellata* J. Torrey: Crestrib Morning-glory**

COMMON NAME: Crestrib Morning-glory. DESCRIPTION: Terrestrial annual forb/herb or vine (clambering, twining, procumbent, spreading-ascending and/or erect stems 4 to 30 inches in length); the flowers (½ inch in diameter) may be light blue-lavender-pink, blue, blue-violet, bluish-purple, cream with lavender margins, pale lavender, lavender, light pink, pink, pink-lavender, pink-purple, pink-violet, pinkish-purple, purple, purple & white, reddish-purple or white lavender; the anthers are cream; flowering generally takes place between late July and late October. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky mesas; rocky canyons; along sandy and loamy canyon bottoms; ridges; gravelly ridgetops; shaley and gravelly openings in woodlands; meadows; foothills; rocky hills; rocky and rocky-gravelly-loamy hillsides; rocky, rocky-gravelly, rocky-loamy, gravelly, sandy, loamy and clayey-loamy slopes; bajadas; bedrock and rocky outcrops; sandy lava flows; amongst rocks; plains; rocky, gravelly and sandy flats; basins; valley floors; along rocky, rocky-gravelly, gravelly and gravelly-sandy-clayey-loamy roadsides; within arroyos; sandy bottoms of arroyos; within draws; seeps; springs; along streams; along rocky-sandy streambeds; along rivers; within gravelly and sandy washes; along drainages; along lakes; lakebeds; (sandy) banks of arroyos, streams and drainages; (gravelly-sandy) edges of drainages; benches; rock shelves; sandy terraces; floodplains; mesquite bosques; stock tanks; rocky riparian areas, and disturbed areas growing in wet, moist, damp and dry rocky, rocky-gravelly, rocky-sandy, shaley, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, gravelly-sandy-clayey loam, clay loam and loam ground, and clay ground, occurring from (one record for 656 feet) 1,900 to 7,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Ipomoea costellata* is native to southwest-central and southern North America and Central America. *5, 6, 15, 18 (genus), 43 (082110), 44 (020311 - no record of species), 46 (Page 677), 48 (genus), 58, 63 (082110), 77, **85** (012711 - color presentation), 115 (color presentation), 124 (020311 - no record of species; genus record), 140 (Page 289)*

***Ipomoea cristulata* H.G. Hallier: Trans-Pecos Morning-glory**

COMMON NAMES: Bi:bhiag (Uto-Aztecan: Tohono O'odham)¹⁴⁰; Heguerilla (a name also applied to other species, Spanish)¹⁴⁰; Kusárupu (Uto-Aztecan: Ute)¹⁴⁰; Redadera ("Twiner", Spanish: Mountain Pima)¹⁴⁰; Scarlet Creeper; Scarlet Creeper [Morning-glory] (English)¹⁴⁰; Scarlet Morning Glory; Scarlet Morning-glory; Situlyi <shiitulyi> (Uto-Aztecan: Mountain Pima)¹⁴⁰; Star Glory Morning-glory; T'é' Godigáhá (Athapascan: Western Apache)¹⁴⁰; Trans Pecos Morning-glory; Trans Pecos Morningglory; Trans-Pecos Morning-glory; Transpecos Morning Glory (English: New Mexico)¹⁴⁰; Transpecos Morningglory. DESCRIPTION: Terrestrial annual forb/herb or vine (climbing and/or twining stems 8 inches to 11½ feet in length); the entire, 3 to 5 parted or palmately-lobed leaves are green or dark green; the trumpet-shaped flowers (to ¾ inch in width) may be bright orange, orange-red, dark pink, bright red, red, dark red, red-orange, reddish-orange or scarlet; the pistils are white; the stamens are yellow; flowering generally takes place between early August and late October (additional records: one for mid-November and two for late December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; rocky canyons; canyon bottoms; chasms; crevices in rock; foothills; rocky hills; rocky, rocky-gravelly-loamy and rocky-clayey hillsides; rocky, gravelly, gravelly-loamy, sandy and clayey-loamy slopes; bajadas; amongst rocks; sandy lava flows; clayey-loamy flats; valley floors; along rocky and gravelly-loamy roadsides; sandy arroyos; bottoms of arroyos; sandy draws; within gullies; along and in rocky and rocky-sandy streambeds; along creeks; along and in rocky and sandy creekbeds; sandy soils along rivers; along and in sandy washes; within drainages; ciénegas; swampy areas; (sandy and silty) banks of creeks, rivers and washes; amongst creek bank shrubs; edges of washes; margins of arroyos; sandy terraces; bottomlands; floodplains; mesquite bosques; along ditches; along rocky, gravelly and sandy riparian areas, and disturbed areas growing in moist, damp and dry rocky, rocky-sandy, gravelly and sandy ground; rocky-gravelly loam, gravelly loam, gravelly-clayey loam and clayey loam ground; rocky clay ground, and silty ground, occurring from 100 to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The flowers open about 10 AM. Butterflies and hummingbirds may visit the flowers. *Ipomoea cristulata* is native to southwest-central and southern North America. *5, 6, 18 (genus), 43 (071910 - no record of species), 44 (070911 - no record of genus (under Common Names listing) or species), 46 (no record of species), 48 (genus), 63 (071910), 77, **85** (070911 - color presentation), 86 (color photograph), 115 (color presentation), 124 (111910), 140 (Pages 119-120 & 289), **MBJ/WTK** (September 12, 2005)*

Ipomoea desertorum (see *Ipomoea hederacea*)

***Ipomoea hederacea* N.J. von Jacquin: Ivyleaf Morning-glory**

SYNONYMY: *Ipomoea desertorum* H.D. House; *Ipomoea hirsutula* auct. non J.F. von Jacquin f.; *Ipomoea nil* auct. non (C. Linnaeus) A.W. Roth. COMMON NAMES: Bi:bhiag (Uto-Aztecan: Hiá Ce' O'odham and Tohono O'odham)¹⁴⁰; Blue Filed Morning Glory (Iowa); Blue-filed Morning-glory (Iowa); Blue Morning Glory (southwest Missouri); Blue Morning-glory (southwest Missouri); Desert Morning-glory; Enredadera de Campanilla ("Bell Twiner", Spanish: Mexico)¹⁴⁰; Entireleaf Morningglory; Flor de Verano ("Summer Flower", Spanish: Mexico)¹⁴⁰; Ivy-leaf Morning Glory; Ivy-leaf Morning-glory; Ivy-leaved Morning Glory; Ivy-leaved Morning-glory; Ivyleaf Morning Glory; Ivyleaf Morning-glory; Ivyleaf Morningglory;

Kaladana; Kengashi; Kusárupu (Uto-Aztec: Ute)¹⁴⁰; Manto [de la Virgen, Mexicano] (“[Virgin’s, Mexican] Mantle”, Spanish: Mexico)¹⁴⁰; Mexican Morningglory; Morning Glory; Redadera (“Twiner”, Spanish: Mountain Pima)¹⁴⁰; T’é’godigáhá (Athapaskan: Western Apache)¹⁴⁰; Trompillo; Trompillo [Morado] (“[Purple] Little Top”, Spanish: Arizona, New Mexico, Sinaloa, Sonora)¹⁴⁰; Wild Blue Morning Glory (Iowa); Wild Blue Morning-glory (Iowa); Woolly Ivyleaf Morning-glory; [Ivy-leaf] Woolly Morning Glory (English)¹⁴⁰; Woolly Morning-glory; Woolly Morningglory. DESCRIPTION: Terrestrial annual forb/herb or vine (twining stems 16 inches to 8 feet in length); the flowers (to 2 inches in diameter) may be light blue, blue, blue-purple, blue with white or pale yellow throat, lavender, mauve-blue, purple, purplish, violet, white & purple or whitish; flowering generally takes place between mid-August and mid-December (additional records: one for late June and one for mid-July). HABITAT: Within the range of this species it has been reported from mountains; mesas; along rocky canyons; rocky and sandy canyon bottoms; bouldery bases of cliffs; gravelly ridgetops; foothills; hills; rocky hilltops; rocky hillsides; rocky, gravelly, gravelly-loamy and sandy-clayey slopes; bajadas; amongst boulders; plains; gravelly, sandy, sandy clayey and sandy-silty flats; valley floors; sandy, sandy-silty and loamy valley bottoms; along rocky and sandy-loamy roadsides; stony arroyos; rocky-sandy bottoms of arroyos; gulches; along streams; streambeds; sandy riverbeds; along and in gravelly, gravelly-silty and gravelly-sandy-silty washes; drainages; cienegas; (silty) banks of creeks, rivers and drainage ways; benches; terraces; sandy floodplains; mesquite bosques; ditches; ditch banks; riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam and loam ground; sandy clay ground, and gravelly silty, gravelly-sandy-silty, sandy silty and silty ground, occurring from sea level to 8,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Ipomoea hederacea* is easily and often confused with *Ipomoea nil* (a widely cultivated species that is not native to Arizona). Two records stated that the flowers close by 11:00/11:30 AM. *Ipomoea hederacea* is native to southern North America, Central America and northwestern South America. *5, 6, 18 (genus), 28 (note under *Ipomoea purpurea*), 43 (070409), 44 (112910 - no record of species), 46 (recorded as *Ipomoea hirsutula* Jacq f. (*Ipomoea desertorum* House), Page 678), 48 (genus), 63 (013110 - color presentation), 68, 77, **85** (013110 - color presentation), 101 (color photograph), 115 (color presentation), 124 (110310), 134, 140 (Pages 120-122 & 289)*

Ipomoea hirsutula auct. non N.J. von Jacquin f. (see *Ipomoea hederacea*)

Ipomoea leptotoma (see *Ipomoea ternifolia* var. *leptotoma*)

Ipomoea leptotoma var. *wootonii* (see *Ipomoea ternifolia* var. *leptotoma*)

Ipomoea nil auct. non (C. Linnaeus) A.W. Roth (see *Ipomoea hederacea* and associated NOTES)

***Ipomoea ternifolia* A.J. Cavanilles var. *leptotoma* (J. Torrey) J.A. McDonald: Tripleleaf Morning-glory**

SYNONYMY: *Ipomoea leptotoma* J. Torrey; *Ipomoea leptotoma* J. Torrey var. *wootonii* E.H. Kelso. COMMON NAMES: Bird’s Foot Morning-glory; Morning-glory; Tripleleaf Morning-glory. DESCRIPTION: Terrestrial annual forb/herb (sprawling, spreading and/or twining stems to 3 feet in length); the leaves are dark green; the flowers are blue, bluish, bluish-purple, pink, lavender, pinkish-lavender, purple, purplish-blue or white (rarely); flowering generally, takes place between late August and late October (additional records: one for early January, one for mid-January and one for mid-December, flowering beginning as early as June and ending as late as November has been reported). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; rocky canyons; rolling hills; rocky hillsides; rocky, rocky-sandy, rocky-loamy, sandy-loamy and sandy-clayey slopes; rocky outcrops; amongst rocks; plains; sandy flats; valley floors; rocky roadsides; arroyos; along and in bouldery and sandy washes; (sandy) banks of creeks and rivers; in Sacaton zone along margins of cienegas; sandy bottomlands; terraces; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-sandy and sandy ground; rocky loam and sandy loam ground, and sandy clay ground, occurring from 100 to 4,800 feet in elevation in the scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The flowers are visited by Skippers. *Ipomoea ternifolia* var. *leptotoma* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Ipomoea leptotoma* Torr.), 18 (genus), 28 (recorded as *Ipomoea leptotoma*, color photograph 605), 43 (101510), 44 (112910 - no record), 46 (recorded as *Ipomoea leptotoma* Torr., Page 677 and *Ipomoea leptotoma* Torr. var. *wootoni* Kelso, Page 677), 48 (genus), 58 (recorded as *Ipomoea leptotoma* Torr.), 65 (101510), **85** (101510 - color presentation), 115 (color presentation of species), 124 (110310 - no record, genus), 140 (Page 289)*

***Jacquemontia pringlei* A. Gray: Pringle’s Clustervine**

COMMON NAMES: Pringle Clustervine; Pringle’s Clustervine. DESCRIPTION: Terrestrial perennial vine or shrub (to 3 feet in height as a shrub and/or with stems up to 5 to10 feet in length as twining vines); stems woody towards the base; the leaves are green; the flowers may be pale lavender, lavender, pale pink-white or white; flowering generally takes place between late July and late September (additional records: one for mid-February, one for late February, two for late March, one for late April, one for mid-May, two for mid-October and one for late October). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky peaks; rocky cliffs; rocky walls; bases of cliffs; rocky canyons; canyon bottoms; crevices in rocks; rocky ridgetops; foothills; rocky hills; bedrock and rocky slopes; rocky outcrops; amongst rocks; banks; beach dunes; roadcuts; roadsides; draws; along streams; (sandy) margins of watercourses, and riparian areas growing in dry rocky and sandy ground, occurring from sea level to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and

wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Jacquemontia pringlei* is native to southwest-central and southern North America and Central America. *5, 6, 8, 13, 15, 43 (041112), 44 (041112 - no record of species or genus), 46 (Page 673), 63 (041112), 85 (041112 - color presentation), 106 (041112 - no record of species), 115 (color presentation), 124 (041112 - no record of species or genus), 140 (Page 290), **MBJ/WTK** (September 12, 2005)*

Crassulaceae: The Stonecrop Family

***Crassula connata* (H. Ruiz Lopez & J.A. Pavon) A. Berger: Sand Pygmyweed**

COMMON NAMES: Pygmy Stonecrop; Pygmy Weed; Pygmy-weed; Sand Pygmyweed. DESCRIPTION: Terrestrial annual forb/herb ($\frac{3}{4}$ to 4 inches in height); the plants are green, reddish, reddish-yellow or yellow-green; the inconspicuous flowers are greenish-white or reddish; flowering generally takes place between mid-January and early May (additional records: one for early June and one for early July). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; sandy mesas; plateaus; rocky canyons; gravelly-sandy, sandy and sandy-loamy canyon bottoms; buttes; loamy-clayey ledges; clayey-loamy ridgetops; sandy meadows; rocky foothills; rocky and clayey hills; bouldery, rocky and gravelly-sandy hillsides; rocky, rocky-loamy, cobbly-sandy, gravelly-sandy and clayey slopes; rocky-sandy-loamy alluvial fans; bajadas; amongst rocks; shaded banks; gravelly, gravelly-sandy, gravelly-sandy-loamy, sandy and loamy flats; rocky valley floors; coastal bluffs; along sandy and sandy-loamy roadsides; gullies; seeps; along streams; along sandy streambeds; along creeks; along and in rocky, gravelly, gravelly-sandy and sandy washes; drainages; around pools; vernal pools; poolbeds; sandy depressions; gravelly swales; rocky, sandy and silty banks of arroyos, creeks and rivers; along edges of washes and lakes; margins of pools; benches; terraces; loamy bottomlands; floodplains; beds of dried ditches; recently burned areas in woodlands and chaparral, and disturbed areas growing in standing water and wet, moist, damp and dry bouldery, rocky, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, gravelly-sandy loam, sandy loam, clayey loam and loam ground; loamy clay and clay ground, and silty ground, occurring from sea level to 4,700 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Crassula connata* is native to southwest-central and southern North America; Central America, and western and southern South America. *5, 6, 43 (013110), 46 (*Tillaea erecta* Hook. & Arn., Page 361), 63 (013110 - color presentation), 85 (013110 - color presentation)*

***Crassula connata* (H. Ruiz Lopez & J.A. Pavon) A. Berger var. *connata*: Sand Pygmyweed**

SYNONYMY: *Crassula erecta* (W.J. Hooker & G.A. Arnott) A. Berger; *Tillaea erecta* W.J. Hooker & G.A. Arnott. COMMON NAMES: Pygmy Stonecrop; Pygmy Weed; Pygmy-weed; Sand Pygmyweed. DESCRIPTION: Terrestrial annual forb/herb ($\frac{3}{4}$ to 4 inches in height); the plant is reddish; the minute flowers are green and reddish; flowering for the species generally takes place between mid-January and early May (flowering records: one for late February, one for late March, two for mid-April and one for late April). HABITAT: Within the range of this species it has been reported from plateaus; openings in chaparral; rocky hills; rocky, sandy and clayey slopes; gravelly and sandy flats; coastal foothills; coastal bluffs; clayey roadsides; seeps; streambeds; washes; around vernal pools; sandy depressions; sandy terraces; and recently burned areas of chaparral, and disturbed areas growing in moist, damp and dry rocky, gravelly and sandy ground; clay loam ground, and clay ground, occurring from sea level to 4,700 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Crassula connata* var. *connata* is native to southwest-central and southern North America and western South America. *5, 6, 15 (*Crassula erecta* (Hook. & Arn.) Berger), 16 (*Tillaea erecta* Hook. & Arn.), 43 (013110), 46 (*Tillaea erecta* Hook. & Arn., Page 361), 58 (*Tillaea erecta* Hook. & Arn.), 63 (013110 - color presentation, *Crassula connata* var. *connata* is shown in the mapping as not being present in Arizona), 77 (*Tillaea erecta* H. & A.), 85 (020110 - information is restricted), 140 (Page 290 - recorded as *Crassula connata* (Ruiz & Pavon) Berger [*Tillaea erecta* Hooker & Arnott])*

Crassula erecta (see *Crassula connata* var. *connata*)

Tillaea erecta (see *Crassula connata* var. *connata*)

Cucurbitaceae: The Cucumber Family

***Apodanthera undulata* A. Gray: Melon Loco**

COMMON NAMES: Calabaza de Coyote (Spanish); Crazy Melon; Melon de Coyote; Loco-melon; Melon Loco; Melon-loco. DESCRIPTION: Terrestrial perennial forb/herb or vine (creeping, sprawling or trailing stems 2 to 10 feet in length, one plant was described as being 12 inches in height and 6½ feet in width); the leaves (8 to 12 inches in height) are grayish or dark green; the flowers (to 1½ inches in diameter) are greenish-yellow, yellow, yellowish-cream, yellowish-green or white; flowering generally takes place between mid-May and mid-October (additional record: one for late December); the oval, ribbed fruit (2½ to 4 inches in length) is green. HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; canyon walls; ridges; ridgetops; foothills; hills; rocky hillsides; rocky slopes; clayey bajadas; sand dunes; plains; bouldery-sandy, gravelly and sandy-silty flats; valley floors; valley bottoms; along rocky, gravelly-loamy, gravelly-sandy-clayey-loamy and gravelly-sandy-silty roadsides; rocky arroyos; along washes; sandy depressions; along swales; edges of arroyos; along

margins of arroyos; terraces; floodplains; ditches, and disturbed areas growing in dry bouldery-sandy, rocky, gravelly and sandy ground; gravelly loam, gravelly-sandy loam and gravelly-sandy-clayey loam ground; clay ground, and gravelly-sandy silty and sandy-silty ground, occurring from 1,500 to 6,000 feet in elevation in the woodland, scrub, grassland and desertscrub ecological formations. NOTES: Melon Loco has a rank odor. *Apodanthera undulata* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (070409), 44 (112910 - no record), 46 (Page 821), 58, 63 (013110 - color presentation), 77, 85 (013110 - color presentation), 86 (color photograph), 115 (color presentation), 124 (111510 - no record), 140 (Pages 124 & 290)*

***Cucurbita digitata* A. Gray: Fingerleaf Gourd**

COMMON NAMES: A:□ (Uto-Aztec: Tohono O'odham)¹⁴⁰; 'Ad (Uto-Aztec: Hiá Ce□ O'odham, Arizona, Sonora)¹⁴⁰; 'Adavī (Uto-Aztec: Akimel O'odham, Arizona)¹⁴⁰; Adawī (Uto-Aztec: Hiá Ce□ O'odham)¹⁴⁰; A□awī (Uto-Aztec: Tohono O'odham)¹⁴⁰; Aláwe (Uto-Aztec: Guarijío)¹⁴⁰; Ara (Uto-Aztec: Mountain Pima)¹⁴⁰; Be'ihkan Dee'é [Joollé] (Athapascan: Western Apache)¹⁴⁰; Calabacilla ("Little Gourd", Spanish: Arizona, Sonora)¹⁴⁰; Calabaza Amarga ("Bitter Gourd", Spanish: Arizona, Sonora)¹⁴⁰; Chichi Coyota; Chichicoyote <chichicoyote, chichi coyota> ("Coyote's Breasts", Spanish: Sonora)¹⁴⁰; Chichicoyotli (a word that refers to a practice used to discourage breast feeding, Uto-Aztec: Náhuatl, Mexico); Coyote Gourd (a name also applied to other species); Coyote Gourd (English)¹⁴⁰; Coyote Melon (a name also applied to other species); Finger Leaf Gourd; Finger-leaf Gourd; Finger Leafed Gourd; Finger Leaved Gourd; Finger-leaf Gourd; Finger-leafed Gourd (English: New Mexico)¹⁴⁰; Finger-leaved Gourd; Fingerleaf Gourd; Melon de Coyote ("Coyote Melon", Spanish: Arizona, Sonora)¹⁴⁰; Meloncillo ("Little Melon", Spanish: Arizona)¹⁴⁰; Mösipatnga (Uto-Aztec: Hopi)¹⁴⁰; Naadołkal <nat dil kaali> ("Gourd", Athapascan: Western Apache)¹⁴⁰; Ndilkal (Athapascan: Navajo for *Cucurbita*)¹⁴⁰; Nekhish <nekish> (Uto-Aztec: Cahuilla)¹⁴⁰; Patnga (Uto-Aztec: Hopi)¹⁴⁰; Teta'ahao (Uto-Aztec: Yaqui)¹⁴⁰; Whsáraaganápu (Uto-Aztec: Ute)¹⁴⁰; Xa:más (Yuman: Cocopa)¹⁴⁰; Xamach (Yuman: Paipai)¹⁴⁰; Ziix Is Cmasol ("Yellow-fruited Thing", Hoka: Seri)¹⁴⁰. DESCRIPTION: Terrestrial perennial forb/herb or vine (climbing, sprawling or trailing stems 3 to 40 feet in length); the palmate leaves are dark blue-green, gray-green, grayish-green or green; the large funnel-shaped flowers (2¾ to 4 inches in diameter and 1½ to 2 inches in length) are greenish-yellow, orange or yellow; flowering generally takes place between mid-May and mid-October (additional records: one for mid-February and one for mid-November); the striped gourd-like fruits (2 to 3¾ inches in diameter) are green aging to pale yellow or yellowish-green. HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; canyon bottoms; foothills; hills; sandy hilltops; rocky slopes; banks; plains; gravelly and sandy flats; basins; gravelly-sandy valley floors; along gravelly, gravelly-sandy-silty and sandy roadsides; within sandy arroyos; bottoms of arroyos; gulches; along streambeds; sandy creekbeds; along rivers; sandy riverbeds; along and in gravelly-sandy, gravelly-loamy, sandy and silty washes; (sandy) banks of arroyos, rivers and washes; sandy benches; floodplains; along canal banks; riparian areas; waste places, and disturbed areas growing in dry rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; gravelly loam ground, and gravelly-sandy silty and silty ground, occurring from 100 to 5,700 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. One record reported that the flowers opened at dawn and closed in the afternoon, another reported that the flowers were closed by 10:00 a.m. The flowers are pollinated by "Digger-bees" and Gourd-bees" in the genera *Peponapis* and *Xenoglossa*. The Coyote (*Canis latrans*) feeds on the fruit pulp and seeds of this plant. *Cucurbita digitata* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 371), 43 (070409), 44 (120310), 46 (Page 822), 48 (genus), 58, 63 (020110 - color presentation of seed), 68, 77, 85 (020110 - color presentation), 115 (color presentation), 124 (110410 - no record of species; genus record), 127,140 (Pages 123-124 & 290), **HR***

***Marah gilensis* E.L. Greene: Gila Manroot**

COMMON NAMES: Big Root; Gila Manroot; Wild Cucumber. DESCRIPTION: Terrestrial perennial forb/herb or vine (slender, long clambering or climbing stems to over 6 feet in length); the leaves are dark green; the flowers (3/8 inch in diameter) are cream, greenish-white, white or yellowish-white; flowering generally takes place between February and April; the spiny fruits (to 2 inches in diameter) are green drying to brown. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; canyons; gorges; buttes; foothills; rocky slopes; amongst boulders; along roads; gulches; seeps; springs; along streams; along washes, and bosques and thickets along streams and washes growing in dry silty ground sometimes reported as climbing over shrubs and small trees, occurring below 5,000 feet in elevation in the woodland, scrub, desertscrub and wetland ecological formations. NOTE: This plant may be an attractive component of a restored native habitat. *Marah gilensis* is native to southwest-central North America. *5, 6, 15, 28 (color photograph), 43 (062610), 46 (Pages 823-824), 58, 63 (062610), 85 (062610 - color presentation, unable to access species information), 106 (062610 - genus), 115 (color presentation), 140 (Pages 125 & 290), **HR***

***Tumamoca macdougallii* J.N. Rose: Tumamoc Globeberry**

COMMON NAMES: Globeberry; MacDougal Tumamoc Globe-berry; Tumamoc Globeberry. DESCRIPTION: Terrestrial perennial forb/herb or vine (clambering stem 28 inches to 5 feet in length); the leaves are dark green; the flowers (one-eighth inch in diameter) are greenish, greenish-yellow, white or yellow; flowering generally takes place between late July and late September; the mature berry-like fruit (½ to ¾ inch in diameter) is orange-red, bright red or yellow. HABITAT: Within the range of this species it has been reported from mountains; rocky hills; rocky hillsides; rocky slopes; rocky bajadas; amongst rocks; gravelly flats; valley floors; sandy valley bottoms; coastal plains; valley floors; along arroyos; along gullies; along sandy washes; along stony drainages; along edges of arroyos, poolbeds and swales; along margins of washes; terraces, and mesquite

bosques growing in dry rocky, stony, gravelly and sandy ground and sandy-silty ground usually with the support of and/or in the shade of shrubs and trees, occurring from sea level to 3,000 feet in elevation in the scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, plants remains dormant during winter and early spring, vines die back after fruiting or are killed by frost, consider planting beneath shrubs and low growing trees that will give support to the vines. The flowers are pollinated by moths. Cardinals, thrashers, Gambel Quail (*Callipepla gambelii*) and Gila Woodpeckers (*Melanerpes uropygialis*) feed on the fruits and seeds, and Javelinas (*Peccari tajacu*) feed on the tuberous roots. *Tumamoca macdougali* is native to southwest-central and southern North America. *5, 6, 8, 9, 16 (recorded in the 1909 Thornber Listing as *Maximowiczia tripartita* Cogni. var. *tenuisecta* Wats.), 43 (020110), 46 (Pages 821-822), 63 (020110), 77, 85 (020110 - color presentation), 91 (Pages 392-393), 124 (111210 - no record)*

Ericaceae: The Heath Family

Arctostaphylos M. Adanson: Manzanita

COMMON NAMES: *Arctostaphylos*; Bear-berry (a name also applied to other taxa); Bearberry (a name also applied to other taxa); Kinnikinnick; Manzanita. *43 (041112), 44 (041112), 46 (Pages 633-634), 63 (032307), 85 (041112), 124 (041112), **WTK** (August 6, 2005)*

Arctostaphylos pungens K.S. Kunth: Pointleaf Manzanita

COMMON NAMES: Bear-berry (a name also applied to the genus *Arctostaphylos*); Bearberry (a name also applied to the genus *Arctostaphylos*); Kinnikinnick (a name also applied to the genus *Arctostaphylos*); Madreselva (Hispanic); Madroño (Hispanic); Madroño Colorado (Hispanic); Manzana (Hispanic); Manzanilla (Hispanic); Manzanita (a name also applied to the genus *Arctostaphylos*, Hispanic); Mexican Manzanita; Palo de Pingüica; Pingüica; Point-leaf Manzanita; Pointleaf Manzanita; Pungent Manzanita; Sharp-pointed Bearberry; Tepesquis-uchil (Nahuatl); Tepesquite (Hispanic); Tepezquilt (Hispanic); Tomazquilt (Hispanic); Uitzara (Rarámuri); Uji (Son); Uví (Tarahumara); Wichari (Tarahumara). DESCRIPTION: Terrestrial perennial evergreen subshrub or shrub (spreading or sprawling prostrate, decumbent or erect stems 8 inches to 16½ feet in height with a rounded crown; one plant was observed and described as being 3 feet in height and 15 feet in width, one plant was observed and described as being 4 feet in height and 10 feet in width, one plant was observed and described as being 5 feet in height and 8 feet in width, one plant was observed and described as being 5 feet in height and 10 feet in width, plants were observed and described as being 6½ feet in height and 6½ feet in width, one plant was observed and described as being 10 feet in height and 10 feet in width, one plant was observed and described as being 13 feet in height and 26¼ feet in width, one “tree” was observed and described as being 16½ feet in height); the bark is mahogany, maroon, red-orange, dark red, reddish or reddish-brown with older bark turning light gray; the leaves may be dark green or yellow-green; the flowers may be cream-pink, cream-white, light pink, pink, pink with white tips, pinkish-white, pinkish-yellow, white, white with a pinkish tinge, white-pink or whitish; flowering generally takes place between late January and mid-October (additional records: one for early January and one for late December); the fruits may be orange, red, dark red, dark red-brown or reddish-bronze. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; bases of mountains; rocky and sandy mesas; along rocky rims of canyons; hanging gardens; bases of cliffs; rocky canyons; sandy canyon bottoms; rocky bluffs; rocky ridges; ridgetops; amongst trees and shrubs; meadows; foothills; across rocky hills; gravelly hilltops; rocky, rocky-gravelly and rocky-gravelly-loamy hillsides; rocky declivities; bouldery-sandy, rocky, rocky-sandy, rocky-clayey, gravelly, gravelly-sandy, gravelly-loamy, sandy, loamy and clayey-loamy slopes; sandy alluvial fans; amongst boulders; banks; breaks; plains; rocky-sandy-clayey and gravelly flats; along rocky, gravelly-loamy and sandy roadsides; rocky arroyos; draws; gulches; along gravelly-sandy-loamy ravines; springs; along streams; bouldery, rocky and rocky-gravelly-sandy streambeds; along and in washes; drainages; banks of streams and creeks; benches; terraces; gravelly floodplains; stock tanks; riparian areas; recently burned areas (seedlings may achieve 14 to 16 inches of growth within two years following the fire), and disturbed areas growing in dry bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, clayey loam and loam ground; rocky clay, rocky-sandy clay and clay ground, and silty ground, occurring from 2,400 to 10,100 feet in elevation in the forest, woodland, scrub, grassland and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, it has a tendency to form dense thickets with the shrubs often forming in a “fairy-ring” pattern with the older growth dying out in the center and the newer growth extending the outer periphery. Pointleaf Manzanita is killed by fire. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food (the berries are eaten dried or fresh), beverage, and/or fiber (building material); it was also noted as having been used as a fuel (used for firewood), in the making of tools, as a drug or medication and the plant provides food for wild game thereby offering increased hunting opportunities. This plant provides food and cover for wildlife; the Broad-tailed Hummingbird (*Selasphorus platycercus*) and White-eared Hummingbird (*Hylocharis leucotis*) have been observed visiting the flowers, and the fruits are eaten by bears, birds including the Blue Grouse (*Dendragapus obscurus*), Gambel’s Quail (*Callipepla gambelii* subsp. *gambelii*), Montezuma Quail (*Cyrtonyx montezumae*) and turkeys others and other animals including the American Black Bear (*Ursus americanus*), Coyotes (*Canis latrans*), Mule Deer (*Odocoileus hemionus*), White-tailed Deer (*Odocoileus virginianus*), Collard Peccaries (*Peccari tajacu*) and Hooded Skunks (*Mephitis macroura*). *Arctostaphylos pungens* is native to southwest-central and southern North America. *5, 6, 10, 15, 18 (genus), 28 (color photograph), 30, 43 (030311), 44 (030311), 46 (Page

634), 48 (genus), 115 (color presentation), 63 (030311 - color presentation), **85** (030711 - color presentation), 124 (030311 - no record of species, genus record), 127*

Euphorbiaceae: The Spurge Family

***Acalypha neomexicana* J. Müller Argoviensis: New Mexico Copperleaf**

COMMON NAMES: Hierba de Cáncer (Spanish: Mexico)¹⁴⁰; New Mexican Copper-leaf (English)¹⁴⁰; New Mexican Copperleaf; New Mexico Copperleaf; Three-seeded Mercury (English)¹⁴⁰. DESCRIPTION: Terrestrial annual forb/herb (ascending to erect stems 3 to 28 inches in height); the foliage is green; the staminate and pistillate flower spikes may be green, greenish, pale pink-purple, purplish or reddish; flowering generally takes place between late July and mid-November (additional records: one for early March, one for late June and one for early July). HABITAT: Within the range of this species it has been reported from mountains; mesas; along rocky canyons; canyon bottoms; along bases of cliffs; gravelly pockets of soil; rocky knolls; meadows; foothills; rocky-gravelly hills; bouldery and rocky hillsides; rocky, rocky-gravelly, cindery, gravelly, gravelly-loamy, sandy and sandy-loamy slopes; alluvial fans; bajadas; rocky outcrops; amongst rocks; gravelly and sandy flats; sandy valley floors; along roadsides; arroyos; springs; sandy soils along streams; along streambeds; sandy soils along creeks; creekbeds; along rivers; along and in gravelly and sandy washes; gravelly-sandy-loamy and sandy drainages; cienegas; swales; rocky-gravelly and silty banks of arroyos and creeks; edges of washes; margins of ponds; sandy terraces; floodplains; mesquite bosques; bouldery and sandy riparian areas; waste places, and disturbed areas growing in wet, moist and dry bouldery, rocky, rocky-gravelly, stony, gravelly and sandy ground; gravelly loam, gravelly-sandy loam and sandy loam ground, and silty ground often reported growing in shaded areas, occurring from 2,100 to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Acalypha neomexicana* is native to southwest-central and southern North America. *5, 6, 15, 43 (070509), 46 (Page 507), 58, 63 (081110), 68, 77, **85** (081110 - color presentation), 140 (Page 131-133 & 291)*

***Argythamnia neomexicana* J. Müller Argoviensis: New Mexico Silverbush**

SYNONYMY: *Ditaxis neomexicana* (J. Müller Argoviensis) A.A. Heller. COMMON NAMES: Common Ditaxis; Common Silverbush; Ditaxis; New Mexico Ditaxis; New Mexico Silverbush; New Mexico Wild Mercury; Silverbush. DESCRIPTION: Terrestrial annual or perennial forb/herb (2 to 32 inches in height; clumps were observed and described as being 4 inches in height and 12 inches in width); the leaves are gray-green or green; the small flowers may be cream, cream-yellow, green, white, whitish, white-pale yellow, white-yellowish, white with a yellow center or yellowish; flowering generally takes place between early January and late December. HABITAT: Within the range of this species it has been reported from rocky mountains; rocky and gravelly mesas; rocky-loamy canyons; bouldery canyon walls; canyon bottoms; talus slopes; rocky ridges; rocky ridgetops; cinder cones; foothills; rocky, rocky-sandy, cindery and gravelly-sandy hills; rocky and rocky-sandy hillsides; rocky, rocky-loamy, gravelly-sandy, sandy and sandy-silty slopes; bouldery-rocky-cobbly and rocky alluvial fans; gravelly, gravelly-sandy and sandy bajadas; rocky outcrops; amongst boulders and rocks; sand dunes; sandy plains; rocky, gravelly, sandy, clayey and silty flats; gravelly-sandy and sandy valley floors; coastal sand dunes; coastal terraces; coastal flats; bouldery-cobbly coastal beaches; along clayey roadsides; within rocky and sandy arroyos; along rocky and sandy bottoms of arroyos; rivulets; along creeks; along and in creekbeds, riverbeds; along and in bouldery, rocky, gravelly-sandy, gravelly-sandy-silty, sandy and silty washes; sandy drainage ways; depressions; banks of arroyos and washes; (sandy) edges of arroyos and washes; along (sandy) margins of washes; mudflats; beaches; along rocky benches; rocky terraces; sandy floodplains; ditches; gravelly, gravelly-sandy and sandy riparian areas, and disturbed areas growing in dry desert pavement; bedrock, bouldery, bouldery-rocky-cobbly, bouldery-cobbly, rocky, rocky-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly-sandy loam and clayey loam ground; clay ground, and gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 5,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Argythamnia neomexicana* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (020210), 44 (021511 - no records under Common Names), 46 (recorded as *Ditaxis neomexicana* (Müll.Arg.) Heller, Page 506), 58, 63 (020210), 77 (recorded as *Ditaxis neomexicana* (Müll.Arg.) Heller), **85** (020210 - color presentation), 124 (021511 - no record of species; genus record)*

***Chamaesyce capitellata* (G. Engelmann) C.F. Millspaugh: Head Sandmat**

SYNONYMY: *Euphorbia capitellata* G. Engelmann. COMMON NAMES: Galondrina (a name also applied to other species); Golondrinia; Head Euphorbia; Head Sandmat; Head Spurge; Koapaim (Yaqui); Spurge (a name also applied to other species, the genus *Euphorbia* and to the Euphorbiaceae). DESCRIPTION: Terrestrial perennial forb/herb (prostrate to ascending stems 3 to 8 inches in height); the leaves are green; the flower-like cups have brown-maroon or red glands and white petaloid appendages; flowering generally takes place between mid-February and late October (additional records: one for early January, one for mid-November, two for late November, one for mid-November and two for late November). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; bouldery and clayey mesas; rocky canyons; gravelly-sandy canyon bottoms; rocky-sandy rims of craters; rocky ridgetops; rocky ridgelines; foothills; rocky and cobbly-gravelly-loamy hills; rocky hilltops; bouldery and rocky hillsides; rocky, gravelly and sandy slopes; bajadas; boulder fields; cobbly plains; rocky, gravelly, sandy and clayey flats; along rocky roadbeds; along rocky, rocky-clayey, gravelly, sandy-clayey roadsides; sandy arroyos; gravelly bottoms of arroyos; gravelly-silty bottoms of draws; gullies; along and in stony streambeds; along creeks; sandy creekbeds; riverbeds; along and in rocky, gravelly and sandy washes; drainages; banks of arroyos and lakes;

(sandy) edges of poolbeds, ponds; bays, lagoons and marshes; along margins of pools; floodplains; fencelines; dry stock tank (charco) bottoms; gravelly-sandy riparian areas, and disturbed areas growing in wet and dry desert pavement; bouldery, rocky, stony, cobbly, gravelly, gravelly-sandy and sandy ground; cobbly-gravelly loam and gravelly loam ground; bouldery clay, rocky clay, sandy clay and clay ground, and bouldery-silty and gravelly silty ground, occurring from sea level to 7,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The stems have a milky sap. *Chamaesyce capitellata* is native to southwest-central and southern North America. *5, 6, 15, 16 (recorded as *Euphorbia capitellata* Engelm.), 18 (“All euphorbias have milky white sap that is irritating on contact or toxic, if ingested, (degree of irritation or toxicity varies, depending on the species).”), 43 (020310), 44 (021511 - no record of species), 46 (recorded as *Euphorbia capitellata* Engelm., Page 518), 58, 63 (020310), 68 (see: Poisonous Properties of Spurges, Page 202), 77 (recorded as *Euphorbia capitellata* Engelm.), 80 (**Species of the genus *Euphorbia* are considered to be Secondary Poisonous Range Plants.** “The milky juice of Spurge is considered poisonous. Plants may cause skin irritation, diarrhea, photosensitization, and cyanogenetic poisoning. Cattle, horses, sheep, and humans may be affected. The green plants are generally unpalatable but the dried plants in hay are more palatable and remain toxic. ... Poisoning may be prevented by keeping animals off areas heavily infested with spurge when other desirable feed is unavailable, and by not feeding contaminated hay. Range improvement will both reduce spurge infestations through grass competition, and decrease consumption by making more desirable forage available.” See text for additional information.), 85 (020310 - color presentation), 86 (“Most members of the family (Euphorbiaceae) are poisonous, and their milky sap will irritate the membranes of the eyes and mouth.”), 124 (110410 - no record of species; genus record), 140 (Page 291)*

***Chamaesyce florida* (G. Engelmann) C.F. Millspaugh: Chiricahua Mountain Sandmat**

SYNONYMY: *Euphorbia florida* G. Engelmann. COMMON NAMES: Chiricahua Mountain Sandmat; Florida Spurge; Golondrina (a name also applied to other species), Spurge (a name also applied to other species, the genus *Euphorbia* and to the Euphorbiaceae). DESCRIPTION: Terrestrial annual forb/herb (ascending stems 1 to 18 inches in height); the stems are pink-tan; the leaves are green; the flower-like cups have green glands (centers) and white (aging rose), white-pink or white with pinkish tips petaloid appendages; flowering generally takes place between mid-July and early November (additional records: two for early January, one for late June and two for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky canyons; canyon walls; sandy canyon bottoms; chasms; sandy ridgetops; rocky foothills; rocky and sandy hills; rocky hillsides; rocky, rocky-gravelly, rocky-sandy, gravelly-loamy and sandy-loamy slopes; bajadas; dunes; plains; gravelly and sandy flats; basins; valley floors; coastal dunes; along rocky-sandy, gravelly-clayey and sandy roadsides; arroyos; along and in streambeds; along and in gravelly and sandy washes; gravelly-clayey depressions; along (sandy) banks of arroyos, rivers and washes; bottomlands; floodplains; edges of stock tanks; sandy riparian areas, and disturbed areas growing in wet, moist and dry rocky, rocky-gravelly, rocky-sandy, gravelly and sandy ground; gravelly loam, gravelly-clayey loam and sandy loam ground, and gravelly clay ground, occurring from sea level to 5,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The stems have a milky sap. *Chamaesyce florida* is native to southwest-central and southern North America. *5, 6, 15, 16 (recorded as *Euphorbia florida* Engelm.), 18 (“All euphorbias have milky white sap that is irritating on contact or toxic, if ingested, (degree of irritation or toxicity varies, depending on the species).”), 43 (020310), 44 (021511 - no record of species), 46 (recorded as *Euphorbia florida* Engelm., Page 518), 58, 63 (020310), 68 (see: Poisonous Properties of Spurges, Page 202), 77 (recorded as *Euphorbia florida* Engelm.), 80 (**Species of the genus *Euphorbia* are considered to be Secondary Poisonous Range Plants.** “The milky juice of Spurge is considered poisonous. Plants may cause skin irritation, diarrhea, photosensitization, and cyanogenetic poisoning. Cattle, horses, sheep, and humans may be affected. The green plants are generally unpalatable but the dried plants in hay are more palatable and remain toxic. ... Poisoning may be prevented by keeping animals off areas heavily infested with spurge when other desirable feed is unavailable, and by not feeding contaminated hay. Range improvement will both reduce spurge infestations through grass competition, and decrease consumption by making more desirable forage available.” See text for additional information.), 85 (020310 - color presentation), 86 (“Most members of the family (Euphorbiaceae) are poisonous, and their milky sap will irritate the membranes of the eyes and mouth.”), 115 (color presentation), 124 (110410 - no record of species; genus record), 140 (Page 291)*

***Chamaesyce hyssopifolia* (C. Linnaeus) J.K. Small: Hyssopleaf Sandmat**

SYNONYMY: *Euphorbia hyssopifolia* C. Linnaeus. COMMON NAMES: Burra Leitera (“Donkey’s Milk”, Portuguese: Brazil)¹⁴⁰; Erva de Leite (“Milk Herb”, Portuguese: Brazil)¹⁴⁰; Erva de Santa Luzia (“St. Lucia’s Herb”, Portuguese: Brazil)¹⁴⁰; Golondrina (“Swallow”, Spanish: Mexico)¹⁴⁰; Hyssop Spurge (English)¹⁴⁰; Hyssopleaf Euphorbia; Hyssopleaf Sandmat; Hyssopleaf Spurge; Leafy Spurge (a name also applied to other species); Pau de Leite (“Milk Tree”, Portuguese: Brazil)¹⁴⁰; [Hyssop-leaf] Sandmat (English: Arizona, Florida, New Mexico)¹⁴⁰; Vipgam (“It Has Much Milk”, Uto-Aztec: Onavas Pima)¹⁴⁰; Wi:bkam (“It Has Much Milk”, Uto-Aztec: Tohono O’odham)¹⁴⁰. DESCRIPTION: Terrestrial annual or perennial forb/herb (prostrate, ascending and/or erect stems 4 inches to 2 feet in height/length); the stems are red or reddish; the leaves are green; the inconspicuous flower-like cups have pink glands with pink, purplish reddish, white or white-pink petaloid appendages; flowering generally takes place between early July and mid-November (additional records: one for early January, one for mid-January, one for late January, one for mid-March, one for mid-April, one for early May, one for early June, one for mid-December and three for late December). HABITAT: Within the range of this species it has been reported from bouldery mountains; bases of mountains; rocky mesas; cliffs; rocky canyons; rocky canyon bottoms; gorges; pockets of soil in bedrock; ridges; rocky ridge crests; sandy-loamy meadows; rocky foothills; rocky hills; rocky hillsides; bouldery, rocky, gravelly, sandy,

sandy-loamy and clayey slopes; alluvial fans; gravelly bajadas; bedrock and rocky outcrops; amongst boulders and rocks; bouldery-sandy, gravelly, sandy and clayey flats; sandy valley floors; along railroad right-of-ways; roadcuts; along rocky-sandy, gravelly, gravelly-sandy-loamy and gravelly-sandy-clayey-loamy roadsides; sandy soils along and in rocky-gravelly and sandy arroyos; sandy bottoms of arroyos; draws; gulches; gullies; ravines; gravelly seeps; springs; rocky soils along streams; along and in rocky, cobbly and gravelly-silty-loamy streambeds; in rocks along and in creeks; creekbeds; sandy-clayey soils along rivers; gravelly-sandy and sandy-clayey riverbeds; along and in rocky, stony, gravelly, gravelly-sandy, sandy and clayey washes; within drainages; along sandy drainage ways; playas; bogs; ciénegas; clayey swales; along (sandy and silty) banks of arroyos, streams, creeks, rivers and lakes; edges of washes; margins of streams; sand and sandy-clayey bars; rocky-sandy benches; rocky shelves; terraces; bottomlands; floodplains; bosques; bottoms of dry stock tanks (charcos); along and in sandy ditches; sandy-clayey ditch banks; gravelly and sandy riparian areas; waste places, and disturbed areas growing in wet, moist and dry (seasonally wet, reportedly this plant will soon wither and die as the soil dries out) bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-silty loam and sandy loam ground, and sandy clay and clay ground, occurring from sea level to 7,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The stems have a milky sap. *Chamaesyce hyssopifolia* is native to south-central (many sources report this plant as being native to areas outside of southern Florida in the continental United States) and southern North America and coastal islands in the Atlantic Ocean; Central America and coastal islands in the Caribbean Sea and North Atlantic Ocean, and northern, western, central and eastern South America. *5, 6, 15, 16 (recorded as *Euphorbia hyssopifolia* L.), 18 (“All euphorbias have milky white sap that is irritating on contact or toxic, if ingested, (degree of irritation or toxicity varies, depending on the species).”), 43 (070509), 44 (071111 - no record of species; genus record), 46 (recorded as *Euphorbia hyssopifolia* L., Page 518), 58, 63 (012811 - color presentation), 68 (recorded as *Euphorbia hyssopifolia* L. - see: Poisonous Properties of Spurges, Page 202), 77 (recorded as *Euphorbia hyssopifolia* L.), 80 (**Species of the genus *Euphorbia* are considered to be Secondary Poisonous Range Plants.** “The milky juice of Spurge is considered poisonous. Plants may cause skin irritation, diarrhea, photosensitization, and cyanogenetic poisoning. Cattle, horses, sheep, and humans may be affected. The green plants are generally unpalatable but the dried plants in hay are more palatable and remain toxic. ... Poisoning may be prevented by keeping animals off areas heavily infested with spurge when other desirable feed is unavailable, and by not feeding contaminated hay. Range improvement will both reduce spurge infestations through grass competition, and decrease consumption by making more desirable forage available.” See text for additional information.), 85 (020410 - color presentation), 86 (“Most members of the family (Euphorbiaceae) are poisonous, and their milky sap will irritate the membranes of the eyes and mouth.”), 115 (color presentation), 124 (071111 - redirected to *Chamaesyce nutans* (Lag.) Small, common names not included in this listing), 140 (Pages 134-135 & 291)*

***Chamaesyce melanadenia* (J. Torrey) C.F. Millspaugh: Red-gland Spurge**

SYNONYMY: *Euphorbia melanadenia* J. Torrey. COMMON NAMES: Red-gland Spurge; Spurge (a name also applied to other species, the genus *Euphorbia* and to the Euphorbiaceae); Squaw Spurge; Squaw Sandmat. DESCRIPTION: Terrestrial perennial forb/herb (prostrate, decumbent, ascending to erect stems 2¼ to 8 inches in height); the stems may be red or reddish; the leaves are green turning reddish with age; the flower-like cups have white petaloid appendages each having a dark purple gland; flowering generally takes place between early January and mid-November. HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; along bases of cliffs; rocky canyons; sandy canyon bottoms; talus; rocky and gravelly-loamy ridgetops; rocky ridgelines; foothills; rocky hills; bouldery, rocky, cobbly and sandy hillsides; bouldery-rocky, bouldery-gravelly-loamy, rocky, stony, gravelly, gravelly-loamy and sandy slopes; rocky outcrops; bases of rock outcrops; amongst boulders and rocks; gravelly-loamy and sandy flats; basins; along silty-clayey roadsides; arroyos; sandy bottoms of arroyos; springs; along streams; along creeks; in rocky and sandy creekbeds; along and in rocky, rocky-sandy, gravelly and sandy washes; along and in gravelly-sandy and sandy drainages; along (sandy) banks of creeks, rivers and drainages; terraces; sandy bottomlands; sandy-loamy floodplains; bouldery-sandy, gravelly-sandy and sandy riparian areas, and disturbed areas growing in moist and dry bouldery, bouldery-rocky, bouldery-sandy, rocky, stony, cobbly, gravelly, gravelly-sandy, pebbly and sandy ground; bouldery-gravelly loam, rocky-sandy loam, rocky-clayey loam, gravelly loam and sandy loam ground; loamy clay and silty clay ground, and gravelly-sandy humusy ground often found amongst shrubs, occurring from 500 to 5,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. The stems have a milky sap. *Chamaesyce melanadenia* is native to southwest-central and southern North America. *5, 6, 15, 18 (“All euphorbias have milky white sap that is irritating on contact or toxic, if ingested, (degree of irritation or toxicity varies, depending on the species).”), 43 (071910), 46 (recorded as *Euphorbia melanadenia* Torr., Page 519), 63 (071910 - color presentation), 68 (see: Poisonous Properties of Spurges, Page 202), 77, 80 (**Species of the genus *Euphorbia* are considered to be Secondary Poisonous Range Plants.** “The milky juice of Spurge is considered poisonous. Plants may cause skin irritation, diarrhea, photosensitization, and cyanogenetic poisoning. Cattle, horses, sheep, and humans may be affected. The green plants are generally unpalatable but the dried plants in hay are more palatable and remain toxic. ... Poisoning may be prevented by keeping animals off areas heavily infested with spurge when other desirable feed is unavailable, and by not feeding contaminated hay. Range improvement will both reduce spurge infestations through grass competition, and decrease consumption by making more desirable forage available.” See text for additional information.), 85 (080110 - color presentation), 86 (“Most members of the family (Euphorbiaceae) are poisonous, and their milky sap will irritate the membranes of the eyes and mouth.”), 127, 140 (Pages 134 & 291)*

Ditaxis neomexicana (see *Argythamnia neomexicana*)

Euphorbia capitellata (see *Chamaesyce capitellata*)

Euphorbia florida (see *Chamaesyce florida*)

***Euphorbia heterophylla* C. Linnaeus: Mexican Fireplant**

SYNONYMY: *Poinsettia heterophylla* (C. Linnaeus) J.F. Klotzsch & C.A. Garcke. COMMON NAMES: Adeus-Brazil (Portuguese: Brazil); Amendoim-Bravo (Portuguese: Brazil); Caca Poule (French); Café-do-diabo (Portuguese: Brazil); Catalina; Fiddler's Spurge; Flor-do-poeta (Portuguese); Hierba de Leche (Spanish); Japanese Poinsettia; Leiteira (Portuguese: Brazil); Mexican Fireplant; Mexican-fireplant; Milkweed; Painted Euphorbia; Painted Leaf; Painted Spurge; Painted-leaf; Paintedleaf; Picachalih; Summer Poinsettia; Wild Poinsettia. DESCRIPTION: Terrestrial annual or perennial forb/herb (ascending and/or erect stems 8 inches to 5 feet in height); the stems are green; the leaves are green; the flowers are cream, light green, green, white or white & green; the glands are yellow without petaloid appendages; the floral bracts (below the flowering cluster) may be partly colored light green, pink, red, white or yellow; flowering generally takes place between early August and late October (additional records: one for early January, one for mid-January, one for mid-March and two for mid-July); the ripe fruits are reddish. HABITAT: Within the range of this species it has been reported from rocky mountains; mountainsides; rocky canyons; sandy canyon bottoms; ridges; bouldery-rocky and sandy-clayey meadows; foothills; hillsides; rocky, gravelly, sandy-clayey and clayey slopes; along rocky outcrops; amongst rocks and cobbles, bases of rocks; grassy plains; gravelly and clayey flats; valley floors; along roadsides; within sandy arroyos; bottoms of arroyos; gulches; ravines; along streams; cobbly and sandy streambeds; along creeks; sandy creekbeds; riverbeds; along and in washes; within drainage ways; cienegas; marshes; (sandy) banks of rivers and washes; edges of washes; margins of arroyos; terraces; bottomlands; floodplains; mesquite bosques; ditches; grassy riparian areas, and disturbed areas growing in wet, moist and dry bouldery-rocky, rocky, stony, cobbly, gravelly and sandy ground and sandy clay and clay ground, occurring from sea level to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant has a milky sap. *Euphorbia heterophylla* is native to south-central and southern North America and coastal islands in the Atlantic Ocean; Central America and coastal islands in the Caribbean Sea, and South America; however, the exact native range in the neotropics is obscure. *5, 6, 15, 16, 18 ("All euphorbias have milky white sap that is irritating on contact or toxic, if ingested, (degree of irritation or toxicity varies, depending on the species)."), 43 (012811 - *Poinsettia heterophylla* Klotzsch & Garcke), 44 (071311 - no records under Common Names; genus record), 46 (Page 519), 58, 63 (020510 - color presentation), 68 (see: Poisonous Properties of Spurges, Page 202), 77, 80 (Species of the genus *Euphorbia* are considered to be Secondary Poisonous Range Plants. "The milky juice of Spurge is considered poisonous. Plants may cause skin irritation, diarrhea, photosensitization, and cyanogenetic poisoning. Cattle, horses, sheep, and humans may be affected. The green plants are generally unpalatable but the dried plants in hay are more palatable and remain toxic. ... Poisoning may be prevented by keeping animals off areas heavily infested with spurge when other desirable feed is unavailable, and by not feeding contaminated hay. Range improvement will both reduce spurge infestations through grass competition, and decrease consumption by making more desirable forage available." See text for additional information.), 85 (071311 - color presentation), 86 ("Most members of the family (Euphorbiaceae) are poisonous, and their milky sap will irritate the membranes of the eyes and mouth."), 124 (071311 - redirected to *Euphorbia cyathophora* Murray), 140 (Page 291 - recorded as *Poinsettia heterophylla* (Linnaeus) Klotzsch & Garcke)*

Euphorbia hyssopifolia (see *Chamaesyce hyssopifolia*)

Euphorbia melanadenia (see *Chamaesyce melanadenia*)

***Jatropha cardiophylla* (J. Torrey) J. Müller Argoviensis: Sangre de Cristo**

COMMON NAMES: Limberbush; Matacora; Nettlespurge; Sangre de Cristo; Sangre-de-Cristo; Sangre-de-drago; Sangregrado; Sangregado; Sangringada; Torote. DESCRIPTION: Terrestrial perennial deciduous, semi-succulent shrub (erect stems 1 to 7 feet in height); the flexible stems are basally branches; the bark is reddish; the leaves shiny green; the small bell-shaped flowers may be cream-white, pink, white or yellow; flowering generally takes place between mid-July and late September. HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky canyons; canyon bottoms; foothills; rocky hills; rocky hillsides; rocky slopes; rocky and gravelly bajadas; boulderfields; gravelly plains; gravelly-sandy flats; basins; valley floors; rocky roadsides; within sandy arroyos; bottoms of arroyos; cobbly and cobbly-gravelly-loamy draws; along and in sandy washes; margins of washes; floodplains; riparian areas, and disturbed areas growing in dry bouldery, rocky, cobbly, gravelly, gravelly-sandy and sandy ground and cobbly-gravelly loam and gravelly loam ground, occurring from 100 to 4,800 feet in elevation in the scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial fiber crop, the stems were used in the making of baskets. The shiny heart-shaped emerald green leaves appear around the time of the first rains and then provide color when the leaves turn gold in the fall. *Jatropha cardiophylla* is native to southwest-central and southern North America. *5, 6, 13 (Pages 113-114, color photograph: Plate M.1., Page 400), 15, 16, 43 (020510), 44 (071311 - no record of genus or species), 45 (color photograph), 46 (Page 509), 48, 58, 63 (020510), 77, 80 (Species of the genus *Jatropha* are considered to be Rarely

Poisonous and Suspected Poisonous Range Plants. "Seeds of several species of *Jatropha* are toxic to humans and livestock but no poisoning has been reported from Arizona.", 85 (071311 - color presentation), 91 (Pages 244-245), 115 (color presentation), 124 (071311 - no record of genus or species), 127, 140 (Page 291), **WTK** (July 13, 2005)*

***Manihot davisiae* L.C. Croizat: Arizona Manihot**

COMMON NAMES: Arizona Cassava; Arizona Manihot. DESCRIPTION: Terrestrial perennial subshrub (erect stems 20 inches to 8 feet in height); the flowers may be white, yellow, yellow-green or yellowish; based on few records located, flowering generally takes place between mid-July and mid-August (flowering records: one for mid-June, [two for mid-July, one for late July, two for early August, four for mid-August], one for early September and one for late September). HABITAT: Within the range of this species it has been reported from mountains; canyons; crevices in boulders; bouldery-rocky hilltops; rocky hillsides; stony slopes; bouldery outcrops; amongst rocks; gullies; around ponds, and depressions growing in dry bouldery, bouldery-rocky, rocky and stony ground, occurring from 300 to 4,900 feet in elevation in the woodland, scrub, grassland and desertscrub ecological formations. NOTE: *Manihot davisiae* is native to southwest-central and southern North America. *5, 6, 8, 9, 13, 43 (041112), 44 (041112 - no record of species or genus), 46 (Page 510), 63 (100306), 80 (Species of the genus *Manihot* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. The raw roots of these rare forbs may contain concentrations of hydrocyanic acid lethal to livestock and man.), 85 (041112 - color presentation), 124 (041112 - no record of species or genus), 140 (Pages 136 & 291)*

Poinsettia heterophylla (see *Euphorbia heterophylla*)

***Tragia nepetifolia* A.J. Cavanilles: Catnip Noseburn**

COMMON NAMES: Catnip Noseburn; Catnip *Tragia*; Noseburn; Ortiguilla (Hispanic); Ra'oke (Purépecha); Ra'uli (Purépecha). DESCRIPTION: Terrestrial perennial forb/herb (6 to 18 inches in height/length); often has twining stems; the foliage is reddish; the flowers are maroon, reddish, yellow or yellowish; flowering generally takes place between early March and mid-December. HABITAT: Within the range of this species it has been reported from mountains; forested mountainsides; mesas; rocky cliffs; along rocky canyons; canyon walls; rocky and sandy canyon bottoms; talus slopes; crevices; rocky buttes; rocky ridges; ridge crests; clearings in forests; foothills; hills; rocky hillsides; rocky, cobbly-gravelly-loamy, gravelly, sandy and loamy slopes; gravelly bajadas; bases of rock outcrops; amongst boulders, rocks and cobbles; lava beds; rocky banks; plains; rocky flats; valley floors; along rocky and rocky-gravelly-sandy-clayey-loamy roadsides; along and in arroyos; along rocky ravines; along rocky and rocky-gravelly streams; streambeds; along creeks; creekbeds; along and in gravelly and sandy washes; drainages; along in drainage ways; (rocky) banks of washes; edges of washes; around lakes; benches; terraces; bottomlands; riparian areas, and disturbed areas growing in dry rocky desert pavement; bouldery, rocky, rocky-gravelly, rocky-sandy, stony, cobbly, gravelly and sandy ground and rocky-gravelly-sandy-clayey loam, cobbly-gravelly loam, gravelly loam, gravelly-clayey loam, sandy loam and loam ground, occurring from 100 to 9,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. This vining or semi-vining herb has stinging hairs on the leaves; Richard S. Felger (SEINet record 02 Dec 2000) reported that the pain, from the mildly stinging hairs of variety *dissecta*, lasted for about 10 minutes. *Tragia nepetifolia* is native to southwest-central and southern North America. *5, 6, 15, 16, 30, 43 (020610), 44 (012811 - no record of species), 46 (Page 508), 58, 63 (020610), 77, 85 (012911 - color presentation of dried material), 124 (012811 - redirected to *Tragia betonicifolia* Nutt.), 127, 140 (Page 291)*

Fabaceae (Leguminosae): The Pea Family

***Acacia angustissima* (P. Miller) C.E. Kuntze: Prairie Acacia**

SYNONYMY: *Acaciella angustissima* (P. Miller) N.L. Britton & J.N. Rose. COMMON NAMES: Barbus de Chivo; Cantemó; Dai (Mexico, Sinaloa: Ocurahui, Sierra Surotato); Fern Acacia; Guajillo; Lemmon's Acacia [Lemmons Acacia]; Palo de Pulque (Hispanic); Prairie Acacia; Prairie Guajillo (Texas); Siraku K'amataraku (Purépecha); Texas Prairie Acacia; Timbe (Hispanic); Timben (Hispanic); Timbre (Hispanic); Tu Ntoo (N. Mixteco); White Ball Acacia, White-ball Acacia; Whiteball Acacia. DESCRIPTION: Terrestrial perennial deciduous forb/herb or subshrub (6 inches to 10 feet, or a small tree 6½ to 26½ feet in height); the bark is light brown, gray or green-white with white stripes; the leaflets are bluish-green or dark green; the ball-shaped flowers (to ½ inch in diameter forming in clusters) may be cream, cream-white, pink, white, white-cream, white tinged with lavender or pink, or pale yellow; flowering generally takes place between early May and early January (additional records: one for late January, one for late February and two for late March); the fruits (seedpods 1¼ to 3 inches in length and ¼ to ½ inch in width) are dark reddish-brown. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky mesas; plateaus; rocky cliffs; rocky canyons; bouldery and rocky canyon bottoms; rocky talus; along crevices in boulders; ledges; along rocky, rocky-sandy and gravelly-clayey ridges; along ridgetops; ridgelines; clearings in woodlands; clayey-loamy meadows; rocky and rocky-sandy foothills; rocky and stony hills; rocky, rocky-gravelly-loamy, gravelly-sandy-loamy and sandy-loamy hillsides; bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy-clayey, rocky-clayey-loamy and gravelly slopes; bouldery bajadas; piedmonts; rocky outcrops; amongst boulders and rocks; stabilized sand dunes; rocky and clayey flats; silty valley floors; coastal flats; along rocky, gravelly-loamy and gravelly-clayey-loamy roadsides; rocky draws; ravines; along streams; gravelly creeks; along and in rocky-sandy and sandy washes; along watercourses; within

rocky drainage ways; depressions; (gravelly-loamy) banks of washes; (sandy) edges of streams and washes; sandy-loamy benches; rocky terraces; bottomlands; floodplains; bosques; along ditches; riparian areas, and disturbed areas growing in damp and dry bouldery, bouldery-rocky-sandy, rocky, rocky-stony-sandy, rocky-gravelly, rocky-sandy, shaley, stony, gravelly and sandy ground; rocky-gravelly loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; rocky-sandy clay, gravelly clay and clay ground, and silty ground, occurring from 100 to 8,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the leaves are fernlike. Quail feed on the seeds of this plant. *Acacia angustissima* is native to south-central and southern North America and Central America. *5, 6, 13 (Pages 235-236), 28 (color photograph 295), 30, 43 (070709), 44 (112910 - no record), 46 (Pages 398-399), 48, 58, 63 (020610 - color presentation), 77, **85** (020610 - color presentation), 91 (Pages 11-12), 115 (color presentation), 124 (111210), 140 (Pages 138 & 291)*

***Acacia angustissima* (P. Miller) C.E. Kuntze var. *filicioides* (A.J. Cavanilles) C.E. Kuntze: Prairie Acacia**

SYNONYMY: *Mimosa filicioides* A.J. Cavanilles. COMMON NAME: Dai (Ocurahui, Sierra Surotato, Sinaloa, Mexico); Prairie Acacia; Tu Ntoo (N. Mixteco). DESCRIPTION: Terrestrial perennial deciduous forb/herb or subshrub (20 inches to 26 feet in height); the smooth bark is gray; the stems are reddish; the flowers are cream, green, rose, dull white or white; flowering generally takes place between early July and early December (additional records: one for late January, one for late February, two for late March, two for early May, one for mid-May, one for late May and one for mid-June). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; barrancas; canyons; along rocky ridges; along ridgetops; clearings in woodlands; foothills; hills; hilltops; hillsides; rocky slopes; plains; rocky flats; sandy basins; valley floors; along grassy roadsides; rocky draws; ravines; along streams; riverbeds; in sandy washes; within rocky drainages; along watercourses; rocky terraces; floodplains; lowlands, and disturbed areas growing in damp and dry rocky, rocky-sandy and sandy ground and sandy loam ground, occurring from 100 to 8,200 feet in elevation in the in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the leaves are fernlike. *Acacia angustissima* var. *filicioides* is native to southwest-central and southern North America. *13 (species, Pages 235-236), 28 (species, color photograph of species 295), 30 (species), 43 (020610), 46 (species, Pages 398-399), 48 (species), 63 (020610 - no record of this variety), **85** (020610), 91 (species, Pages 11-12), 115 (color presentation of the species), 124 (110410 - no record, genus)*

***Acacia angustissima* (P. Miller) C.E. Kuntze var. *suffrutescens* (J.N. Rose) D. Isely: Prairie Acacia**

SYNONYMY: *Acacia angustissima* (P. Miller) C.E. Kuntze var. *cuspidata* (D.F. von Schlechtendal) L.D. Benson; *Acacia cuspidata* D.F. von Schlechtendal. COMMON NAMES: Barbus de Chivo; Cantemo; Fern Acacia; Guajillo; Palo de Pulque (Hispanic); Prairie Acacia; Siraku K'amataraku (Purépecha); Timbe (Hispanic); Timben (Hispanic); Timbre (Hispanic); White-ball Acacia; Whiteball Acacia. DESCRIPTION: Terrestrial perennial deciduous forb/herb or subshrub (8 inches to 14 feet in height, plants were reported that were 16 inches in height and 32 inches in width); the leaves are dark green; the flowers are cream-white, white or white-cream; flowering generally takes place between late May and mid-October. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; plateaus; mesas; rocky cliffs; rocky canyons; bouldery and rocky canyon bottoms; rocky talus; ledges; rocky and gravelly-clayey ridges; foothills; rocky hills; rocky and gravelly-sandy-loamy hillsides; rocky, rocky-gravelly, rocky-clayey-loamy and gravelly slopes; bajadas; rocky outcrops; amongst boulders and rocks; plains; clayey flats; silty valley floors; along rocky roadsides; along streams; gravelly creeks; along and in rocky-sandy washes; drainage ways; (gravelly-loamy and sandy) banks of washes; edges of streams and washes; sandy-loamy benches; bottomlands; along ditches; riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly, rocky-sandy, gravelly and sandy ground; rocky-clayey loam, gravelly loam, gravelly-sandy loam and sandy loam ground; gravelly clay and clay ground, and silty ground, occurring from 2,200 to 6,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the leaves are fernlike. Quail feed on the seeds. *Acacia angustissima* var. *suffrutescens* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Acacia angustissima* (Miller) Kuntze var. *cuspidata* L. Benson, Page 236), 15, 28 (species, color photograph of species 295), 30 (species), 43 (070709), 46 (Pages 398-399), 48 (species), 63 (020710), **85** (020610), 91 (species, Pages 11-12), 115 (color presentation of the species), 124 - 110410 - no record, genus), 140 (Page 291)*

Acacia angustissima var. *cuspidata* (see *Acacia angustissima* var. *suffrutescens*)

***Acacia constricta* G. Bentham: Whitethorn Acacia**

SYNONYMY: *Vachellia constricta* (G. Bentham) D.S. Seigler & J.E. Ebinger. COMMON NAMES: All-thorn Acacia; Chaparo Prieta; Chaparro Prieto; Common Whitethorn; Garabato; Gidag (Tohono O'odham); Gigantillo; Huisache; Largoncillo; Mescat Acacia; Twinthorn Acacia; Vara Prieta; Vinorama; White Thorn; White-thorn Acacia; Whitethorn Acacia; Yellow Cat Claw. DESCRIPTION: Terrestrial perennial cold- and drought-deciduous shrub or tree (1 to 20 feet in height with crowns to about the same in width; one plant was observed and described as being 8 feet in height with a crown 8 feet in width); the bark may be light gray, mahogany or nearly black; the stems may be red; the spines on the branches and stems are gray or white; the small pinnate leaves are green; the small flowers have been described as being golden, golden-yellow, orange-yellow, light yellow, yellow or yellowish-orange; flowering generally takes place between late March and late October (additional records: two for early March and one for late December); the seedpods are brown, purple-red, reddish or rusty-brown.

HABITAT: Within the range of this species it has been reported from mountains; mesas; cliffs; canyons; canyon sides; sandy canyon bottoms; sandy ridges; foothills; rocky and gravelly hills; bouldery hilltops; rocky and gravelly hillsides; escarpments; rocky, rocky-clayey-loamy and clayey-loamy slopes; gravelly bajadas; rocky outcrops; amongst boulders; sandy-loamy plains; gravelly flats; valley floors; coastal plains; along rocky, rocky-gravelly-loamy, rocky-gravelly-clayey loam, rocky-clayey-loamy, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-sandy-clayey-loamy, gravelly-loamy, gravelly-clayey loam and sandy roadsides; along and in rocky arroyos; bottoms of arroyos; rocky gulches; along streambeds; creeks; along and in sandy creekbeds; along rivers; along and in gravelly, gravelly-sandy, sandy and silty-clayey washes; drainages; swales; along (gravelly-sandy and sandy) banks of streams, creeks, rivers and washes; along edges of washes; (rocky) margins of arroyos and washes; mudflats; benches; alluvial terraces; sandy bottomlands; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-gravelly-clayey loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam and loam ground, and silty clay ground, occurring from 1,100 to 6,500 feet (infrequently as low as 500 feet and as high as 9,200 feet) in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, plants may live to be more than 72 years of age and the flowers may be fragrant. Whitethorn Acacia is used for food (but not extensively) by the Desert Mule Deer (*Odocoileus hemionus*) and Scaled Quail (*Callipepla squamata*), Merriam's Kangaroo Rats (*Dipodomys merriami*), Bailey's Pocket Mice (*Chaetodipus baileyi*) and Rock Pocket Mice (*Chaetodipus intermedius*) as well as a variety of other birds and mammals feed on the seeds. *Acacia constricta* is native to southwest-central and southern North America. *5, 6, 13 (Pages 226-228; color photograph: Plate R-1, Page 403), 15, 16, 18, 26 (color photograph), 28 (color photograph 83), 43 (080409), 44 (040211 - no record of species; genus record), 46 (Page 399), 48, 53 (note under *Acacia farnesiana*), 63 (020710 - color presentation), 68, 77, 80 (This species is listed as a Major Poisonous Range Plant. "The plants are high in cyanide forming-compounds and have been reported to cause death of cattle in Arizona. In general, the plants are not palatable to livestock although the pods are grazed. However, in the fall of the year at or near frost time, when the range grasses become less palatable, cattle may eat heavily of these plants and death is likely to result. ... Animals should be removed from heavily infested areas during the early frost period or considerable death losses may occur." See text for additional information.), 85 (071311 - color presentation), 91 (Pages 15-16), 115 (color presentation), 124 (040211 - no record of species; genus record), 134, 140 (Page 138), **WTK** (August 6, 2005)*

Acacia cuspidata (see *Acacia angustissima* var. *suffrutescens*)

Mimosa filicioides (see *Acacia angustissima* var. *filicioides*)

***Acacia greggii* A. Gray (var. *greggii* is the variety reported as occurring in Arizona): Catclaw Acacia**

SYNONYMY: (for *A.g.* var. *greggii*: *Acacia greggii* A. Gray var. *arizonica* D. Isely). COMMON NAMES: Acacia (a name also applied to the genus *Acacia*); Algarroba (Spanish)¹⁴⁰; Arizona Acacia (for *A.g.* var. *greggii*); Cat Claw; Cat Claw Acacia; Catclaw; Cat Claw Acacia; Cat-claw Acacia; Catclaw Acacia; Cat's Claw (a name also applied to other species); Cat's Claw Acacia; Cat's-claw (a name also applied to other species); [Long-flower] Catclaw Acacia (English)¹⁴⁰; Catsclaw Acacia; Devil's Catclaw; Ch'il Yijish <ch'il gotiza> (Athapascan: Western Apache)¹⁴⁰; Devil's Claw (a name also applied to other species); Devil's Claw (English)¹⁴⁰; Devil's Claw Acacia; Devil's-claw (a name also applied to other species); Devil's-claw Acacia; Devil'sclaw Acacia; Devilsclaw (a name also applied to other species); Di:s (Seri); Gatuño ("Cat Claw", Spanish: Chihuahua)¹⁴⁰; Gregg Acacia; Gregg Cat-claw; Gregg Catclaw; Gregg Catclaw Acacia; Gregg's Acacia; Gregg's Cat-claw; Gregg's Catclaw; Gregg's Catclaw Acacia; Hu□upa Kek□ala (Uto-Aztecan: Yaqui)¹⁴⁰; Ka'djása (Yuman: Havasupai)¹⁴⁰; Kitchás^a <gijes> (Yuman: Walapai)¹⁴⁰; Long-flower Catclaw; Long-flower Catclaw Acacia; Long-flowered Catclaw; Patitos ("Little Feet", Spanish: New Mexico)¹⁴⁰; Sichingily <sichingal, sichingil> (Uto-Aztecan: Cahuilla)¹⁴⁰; Tear-blanket (English: California)¹⁴⁰; Tearblanket; Tepame (Spanish: Mexico)¹⁴⁰; Teso (Uto-Aztecan: Cahita)¹⁴⁰; Tesota (a name also applied to other species); Tésoto [Tesota, Tésota] (Spanish: Sonora)¹⁴⁰; Texas Catclaw; Texas Mimosa (a name also applied to other species); Texas-mimosa; Tis (Hokan: Seri)¹⁴⁰; Tümippüh (Uto-Aztecan: Panamint)¹⁴⁰; 'U:pa□ <'u:padh, uupat> (Uto-Aztecan: Hiá Ce□ O'odham and Tohono O'odham)¹⁴⁰; 'Uupa□ (Uto-Aztecan: Akimel O'odham)¹⁴⁰; Uña de Gato ("Cat's Claw", Spanish: New Mexico, Chihuahua)¹⁴⁰; Wait-a-minute (a name also applied to other species); Wait-a-minute Bush (a name also applied to other species); Wright Acacia (for *A.g.* var. *wrightii*). DESCRIPTION: Terrestrial perennial winter-deciduous shrub or tree (40 inches to 35 feet in height with a broad crown, one plant was reported as being 6½ feet in height with a crown 10 feet in width, one plant was reported as being 13 feet in height with a crown 16½ feet in width); the bark is gray-black or red-brown; the leaves are gray-green or green; the flowers may be cream, cream-white, cream-yellow, green, greenish-yellow, lemon-yellow, dull white, white, pale yellow, yellow, yellow-cream or yellow-green in catkins; flowering generally takes place between early March and early August (additional records: two for late August, one for mid-September, two for late September, one for early October, three for mid-October, one for early November, one for mid-November, one for early December and one for late December); the mature fruits (straight or twisted pods) are brown or brownish-red. HABITAT: Within the range of this species it has been reported from rocky mountains; mountainsides; gravelly mesas; rocky canyons; rocky and sandy canyon bottoms; gorges; rocky bluffs; rocky and sandy ridges; ridgetops; foothills; rocky hills; gravelly hilltops; rocky, gravelly and gravelly-loamy hillsides; bedrock, rocky, rocky-gravelly-loamy, gravelly, gravelly-sandy and sandy slopes; alluvial fans; bajadas; amongst boulders; debris flows; plains; sandy flats; basins; valley floors; loamy valley bottoms; coastal plains; along gravelly-sandy, gravelly-sandy-clayey-loamy and sandy roadsides; along and in arroyos; bottoms of arroyos; draws; ravines; seeps; springs; along streams; along creeks; along

sandy and sandy-silty creekbeds; in sand along rivers; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; within drainages; along drainage ways; bases of waterfalls; along (rocky, gravelly-sandy, gravelly-silty, sandy and sandy-silty) banks of arroyos, streams, creeks, rivers and washes; along (sandy) edges of arroyos, creeks and washes; margins of washes; shorelines; sand bars; shelves; gravelly-sandy and sandy terraces; sandy bottomlands; lowlands; sandy-loamy floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, gravelly-sandy-clayey loam, gravelly loam, sandy loam, clayey loam and loam ground; gravelly clay, sandy clay and clay ground, and gravelly silty and sandy silty ground, occurring from slightly above sea level to 6,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat; the flowers are fragrant, it may live to be up to 120 years of age. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder and/or fiber crop; it was also noted as having been used as a fuel, tool and in the making of perfumed sachets. The Catclaw Acacia provides food, shelter, protection, shade, nesting sites, roosting sites and nesting material for a wide variety of species of wildlife. It is a favored nesting site of the Verdin (*Auriparus flaviceps*). *Acacia greggii* is native to southwest-central and southern North America. *5, 6, 13 (Pages 223-224; color photograph: Plate R-1, Page 403), 15, 18, 26 (color photograph), 28 (color photograph 84), 43 (020710), 44 (071311), 46 (“This is probably the most heartily disliked plant in the state, the sharp, strong prickles tearing the cloths and lacerating the flesh.”, Page 398), 48 (“A good honey plant but a poisonous weed on range lands.”), 52, 53, 58, 63 (020710 - color presentation), 77, 80 (This species is listed as a Secondary Poisonous Range Plant. “Plants contain cyanide-forming compounds and symptoms are typical of cyanide poisoning. The new foliage is relished by cattle in the early spring. It also may be grazed considerably during dry seasons or drouth periods when other feed is short. Plants are most dangerous in the fall during first frosts. Cattle are most often poisoned, but losses in Arizona are not heavy. Poisoning may be prevented by deferring heavily infested areas during the early frost periods.” See text for additional information.), 85 (071311 - color presentation), 91 (Pages 21-22), 115 (color presentation), 124 (071311 - no record of species; genus record), 140 (Pages 136-138 & 291)*

Acacia greggii var. *arizonica* (see *Acacia greggii* var. *greggii*)

***Acacia greggii* A. Gray var. *greggii*: Catclaw Acacia**

SYNONYMY: *Acacia greggii* A. Gray var. *arizonica* D. Isely. COMMON NAMES: Acacia (a name also applied to the species and the genus *Acacia*); Algarroba (a name also applied to the species, Spanish); Arizona Acacia; Cat Claw (a name also applied to the species); Cat Claw Acacia (a name also applied to the species); Catclaw (a name also applied to the species); Catclaw Acacia (a name also applied to the species); Cat's-claw (a name also applied to the species); Devil's Catclaw (a name also applied to the species); Ch'il Yijish <ch'il gotiza> (a name also applied to the species, Athapascan: Western Apache); Devil's Claw (a name also applied to the species); Devil's-claw (a name also applied to the species); Devil's-claw Acacia (a name also applied to the species); Devilsclaw (a name also applied to the species); Di:s (a name also applied to the species, Seri); Gatuño (“Cat Claw” a name also applied to the species, Spanish: Chihuahua); Gregg Catclaw (a name also applied to the species); Gregg's Acacia (a name also applied to the species); Hu□upa Kek□ala (a name also applied to the species, Uto-Aztecan: Yaqui); Ka'djása (a name also applied to the species, Yuman: Havasupai); Kitcás□ <gijes> (a name also applied to the species, Yuman: Walapai); Long-flower Catclaw Acacia (a name also applied to the species); Patitos (“Little Feet” a name also applied to the species, Spanish: New Mexico); Sichingily <sichingal, sichingil> (a name also applied to the species, Uto-Aztecan: Cahuilla); Tear-blanket (a name also applied to the species, California); Tearblanket (a name also applied to the species); Tepame (a name also applied to the species, Spanish: Mexico); Teso (a name also applied to the species, Uto-Aztecan: Cahita); Tesota (a name also applied to the species and to other species); Tesoto [Tesota, Tésota] (a name also applied to the species, Spanish: Sonora); Texas Catclaw (a name also applied to the species); Texas Mimosa (a name also applied to the species and to other species); Texas-mimosa (a name also applied to the species); Tis (a name also applied to the species, Hokan: Seri); Tümpüh (a name also applied to the species, Uto-Aztecan: Panamint); 'U:pa□ <'u:padh, uapat> (a name also applied to the species, Uto-Aztecan: Hiá Ce□ O'odham and Tohono O'odham); 'Uupa□ (a name also applied to the species, Uto-Aztecan: Akimel O'odham); Uña de Gato (“Cat's Claw” a name also applied to the species, Spanish: New Mexico, Chihuahua); Wait-a-minute (a name also applied to the species and to other species); Wait-a-minute Bush (a name also applied to the species and to other species). DESCRIPTION: Terrestrial perennial winter-deciduous shrub or tree (40 inches in height with a broad crown); the bark is gray-black or red-brown; the leaves are gray-green or green; the flowers may be cream, cream-white, cream-yellow, green, greenish-yellow, lemon-yellow, white, yellow, yellow-cream or yellow-green in catkins; flowering generally takes place between early March and mid-July (additional record: one for mid-October); the mature fruits (straight or twisted pods) are brown or brownish-red. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; canyons; rocky and sandy canyon bottoms; rocky bluffs; rocky and sandy ridges; ridgetops; hillsides; rocky, rocky-clayey-loamy, sandy and loamy slopes; amongst boulders; alluvial fans; sandy flats; valley floors; gravelly-sandy-clayey-loamy and sandy roadsides; sandy edges of arroyos; draws; ravines; along streams; along creeks; along rivers; along gravelly and sandy washes; within drainages; along banks of rivers and washes; along edges of washes; margins of arroyos; floodplains; mesquite bosques, and riparian areas growing in dry bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-clayey loam, gravelly-sandy-clayey loam, sandy loam and clayey loam ground, and gravelly clay ground, occurring from slightly above sea level to 5,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat; the flowers are fragrant, it may live to be up to 120 years of age. The species, *Acacia greggii*, was reported to have been utilized by native peoples of North America

and could be investigated to determine its value as a home garden or commercial food, fodder and/or fiber crop; it was also noted as having been used as a fuel, tool and in the making of perfumed sachets. The Catclaw Acacia provides food, shelter, protection, shade, nesting sites, roosting sites and nesting material for a wide variety of species of wildlife. It is a favored nesting site of the Verdin (*Auriparus flaviceps*). *Acacia greggii* var. *greggii* is native to southwest-central and southern North America. *5, 6, 13 (species, Pages 223-224; color photograph of species: Plate R-1, Page 403), 16 (recorded as *Acacia greggii* Gray var. *arizonica* Isely), 18 (species), 26 (species, color photograph of species), 28 (species, color photograph of species 84), 43 (020710), 44 (071311 - no listing provided under Common Names), 46 (species, “This is probably the most heartily disliked plant in the state, the sharp, strong prickles tearing the clothes and lacerating the flesh.”, Page 398), 48 (species, “A good honey plant but a poisonous weed on range lands.”), 52 (species) 53, (species), 63 (020710), 80 (The species is listed as a Secondary Poisonous Range Plant. “Plants contain cyanide-forming compounds and symptoms are typical of cyanide poisoning. The new foliage is relished by cattle in the early spring. It also may be grazed considerably during dry seasons or drought periods when other feed is short. Plants are most dangerous in the fall during first frosts. Cattle are most often poisoned, but losses in Arizona are not heavy. Poisoning may be prevented by deferring heavily infested areas during the early frost periods.” See text for additional information.), 85 (071311), 91 (species, Pages 21-22), 115 (color presentation of the species) 124 (071311 - no record of species/variety; genus record), 127 (species), 140 (species, Pages 136-138 & 291), WTK (July 13, 2005)*

Acaciella angustissima (see *Acacia angustissima*)

***Astragalus nuttallianus* A.P. de Candolle var. *imperfectus* (P.A. Rydberg) R.C. Barneby: Turkeypeas**

COMMON NAMES: Locoweed (a name also applied to other species); Milk-vetch; Nuttall Locoweed; Nuttall Milkvetch; Smallflowered Milkvetch; Turkeypeas. DESCRIPTION: Terrestrial annual or perennial forb/herb (4 to 6 inches in height); the foliage is grayish; the flowers may be blue, blue-violet, lavender & white, purple, white or whitish; flowering generally takes place between late January and late May (additional records: one for early October, two for late October and one for late November). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; gravelly mesas; volcanic cones; rock cliffs; gravelly-sandy canyons; gravelly canyon bottoms; gorges; talus slopes; bases of cliffs; knobs; ledges; foothills; rocky and stony-gravelly hills; rocky hillsides; rocky and gravelly slopes; gravelly bajadas; rock outcrops; amongst boulders and rocks; lava fields; rocky, cindery and gravelly flats; stony and sandy valley floors; along gravelly-sandy-silty roadsides; gravelly arroyos; gravelly bottoms of arroyos; along creeks; creekbeds; along rivers; along gravelly and sandy washes; sandy beaches; terraces; sandy riparian areas growing in dry desert pavement; bouldery, rocky, stony, stony-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, sandy loam and clayey loam ground, and gravelly-sandy silty ground, occurring from 600 to 9,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Astragalus nuttallianus* var. *imperfectus* is native to southwest-central and southern North America. *5, 6, 43 (070709), 46 (Page 468), 63 (020810), 68 (species), 85 (020810 - color presentation of dried material)*

***Caesalpinia gilliesii* (N. Wallich ex W.J. Hooker) N. Wallich ex D.N. Dietrich: Bird-of-paradise Shrub**

SYNONYMY: *Poinciana gilliesii* N. Wallich ex W.J. Hooker. COMMON NAMES: Bird of Paradise; Bird-of-paradise; Bird of Paradise Flower; Bird-of-paradise Flower; Bird-of-paradise-flower; Bird of Paradise Shrub; Bird-of-paradise Shrub; Cat's-claw; Desert Bird-of-paradise; Mexican Bird of Paradise; Mexican Bird-of-paradise; Mysorethorn; Paradise Caesalpinia; Paradise Poinciana; Poinciana; Yellow Bird of Paradise; Yellow Bird-of-paradise. DESCRIPTION: Terrestrial perennial deciduous or evergreen vine, shrub or tree (30 inches to 13 feet in height with a crown to 8 feet in width); the leaves are pale gray-green; the flowers are pale yellow, yellow or yellow-green with purplish-red, dark purple-red, red or rose-red filaments and pale orange-red anthers; flowering generally takes place between early April and late September (additional records: 2 for early February, two for late October and one for late November). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; canyons; canyon bottoms; foothills; hillsides; rocky slopes; valley floors; along railroad right-of-ways; along rocky and rocky-gravelly-sandy-loamy, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy roadsides; within arroyos; gulches; rocky and sandy streambeds; along creeks; riverbeds; along and in rocky and sandy washes; clayey depressions; banks of rivers; edges of vernal pools; alluvial terraces; sandy bottomlands; lowlands; sandy floodplains; bosques; stock tanks; catchments; along ditches; riparian areas; waste places, and disturbed areas growing in dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy loam, gravelly loam and gravelly-sandy loam ground; clay ground, and humus ground, occurring from sea level to 8,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: EXOTIC Invasive Plant. The pods and seeds of this plant are reported to be poisonous. *Caesalpinia gilliesii* is native to western and southern South America. *5, 6, 13, 18, 26 (color photograph), 28, 43 (080409), 46 (Page 409), 63 (020910 - color presentation), 77, 80 (This species is listed as a Poisonous Cropland and Garden Plant. “The pods of this showy shrub cause severe gastritis in humans and animals but both usually recover.”), 85 (020910 - color presentation), 97*

***Calliandra eriophylla* G. Bentham: Fairyduster**

SYNONYMY: *Calliandra eriophylla* G. Bentham var. *erriophylla*. COMMON NAMES: Bastard Catclaw; Bastard Mesquite; Brasilillo (“Little Brazil-wood”, Spanish: New Mexico, Chihuahua)¹⁴⁰; Cabellito [Cabellos, Pelo de Ángel] (“Little [Angel] Hair”, Spanish: Mexico)¹⁴⁰; Cabeza [de] Ángel (“Angel Head”, Spanish: Baja California)¹⁴⁰; Cabelleto de Angel; Charresquillo (“Little Thicket”, Spanish: San Louis Potosí)¹⁴⁰; Cósahui [del Norte] (Spanish: Sonora)¹⁴⁰; Cu:wī Wuipo <cu:wī wu:pui> (“Jack-rabbit Eyes”, Uto-Aztecan: Tohono O’odham)¹⁴⁰; Desert Fairy Duster; Desert Fairy-duster; Desert Fairyduster;

Fairy Duster (a name also applied to the genus *Calliandra*); Fairy Duster [Fairy-duster] (English)¹⁴⁰; Fairy Duster False Mesquite; Fairy-duster (a name also applied to the genus *Calliandra*); Fairy-duster False-mesquite; Fairy-duster Mesquitilla; Fairyduster (a name also applied to the genus *Calliandra*); Fairyduster Mesquitilla; False Catclaw; False Mesquite; False [Bastard, Mock] Mesquite [Catclaw] (English)¹⁴⁰; False Mesquite *Calliandra* (a name also applied to other species); False-mesquite *Calliandra*; Guajillo; Hairy-leafed *Calliandra*; Hairy-leafed *Calliandra*; Haxz Iztim (“Dog’s Hipbone”, Hokan: Seri)¹⁴⁰; Huajillo <guajillo> (Spanish: Mexico)¹⁴⁰; Mautillo; Mesquitella (Spanish); Mesquitilla (a name also applied to other species); Mezquitilla (“Little Mesquite”, Spanish: Mexico)¹⁴⁰; Mock Catclaw; Mock Mesquite (a name also applied to the genus *Calliandra*); Pink Fairy Duster; Pink Fairy-duster; Pink Fairyduster; Pink False Mesquite; Plumita (“Little Plume”, Spanish: Mexico)¹⁴⁰; Taaseyueylalá <ta-a-sey-ueylalá> (Uto-Aztecan: Guarijío)¹⁴⁰. DESCRIPTION: Terrestrial perennial deciduous subshrub or shrub (4 inches to 5 feet in height; one plant was observed and described as being 40 inches in height with a crown 80 inches in width); the stems may be bluish, light gray, gray, whitish or white-gray; the leaves may be grayish, dark green or red; the flowers are cream-white, pink, pink-red, pink-white, pinkish, purple, red, red and white, reddish-purple, rose, violet-red or white; flowering generally takes place between early February and mid-June (additional records: two for mid-January, one for early July, four for mid-August, three for late August, one for early September, one for mid-September, one for early October, four for mid-October, four for late October, two for early November, one for mid-November, three for late November, one for early December, one for mid-December and two for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky peaks; mesas; plateaus; rocky canyons; along rocky canyon bottoms; buttes; knolls; bedrock and sandy ridges; rocky ridgetops; rocky, shaley-sandy and gravelly-clayey-loamy foothills; rocky hills; hilltops; rocky hillsides; along bedrock, bouldery, rocky, rocky-loamy, rocky-clayey, gravelly, gravelly-sandy, gravelly-sandy-loamy and gravelly-loamy slopes; gravelly bajadas; rocky outcrops; amongst boulders and rocks; boulderfields; lava hills; interior dunes; stony banks; plains; rocky, gravelly, sandy and clayey-loamy flats; basins; valley floors; along rocky, gravelly-sandy and sandy roadsides; along rocky-sandy and sandy arroyos; within gullies; around seeps; around springs; around seeping streams; streambeds; along and in gravelly and sandy washes; drainages; within bouldery drainage ways; along watercourses; (rocky) banks of arroyos and lakes; edges of washes and drainage ways; shores of lakes; gravelly terraces; bottomlands; ditches; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, rocky, rocky-sandy, shaley-sandy, stony, gravelly and sandy ground; rocky loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, pebbly-clayey loam, sandy loam and clayey loam ground, and rocky clay ground, occurring from sea level to 6,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and is sold as an ornamental; it is considered to be a soil binder. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. Hummingbirds and White-lined Sphinx Moths (*Hyles lineata*) have been observed visiting the flowers, the plant is browsed by wildlife with Mule Deer (*Odocoileus hemionus*) and White-tailed Deer (*Odocoileus virginianus*) finding it highly palatable, and birds may feed on the seeds. *Calliandra eriophylla* is native to southwest-central and southern North America. *5, 6, 13 (Pages 230-231), 15, 16, 18, 28 (color photograph 653), 43 (080409), 44 (071611 - color photograph), 46 (Page 397), 48, 58, 63 (020910 - color presentation), 77 (color photograph #32), 85 (071611 - color presentation), 86 (color photograph), 91 (Pages 142-143), 115 (color presentation), 124 (071611 - no record of genus or species), 127, 140 (Pages 138-139 & 292), **WTK** (July 13, 2005)*

Calliandra eriophylla var. *erriophylla* (see *Calliandra eriophylla*)

Calliandra schottii (see *Zapoteca formosa* subsp. *schottii*)

Cassia covesii (see *Senna covesii*)

Cercidium floridum (see *Parkinsonia florida*)

Cercidium floridum subsp. *floridum* (see *Parkinsonia florida*)

Cercidium microphyllum (see *Parkinsonia microphylla*)

***Cologania angustifolia* K.S. Kunth: Longleaf Cologania**

SYNONYMY: *Cologania longifolia* A. Gray. COMMON NAME: Longleaf Cologania. DESCRIPTION: Terrestrial perennial trailing to nearly erect forb/herb (8 inches to 4 feet in length); the leaves are dark green; the flowers (1 inch in length and ¾ inch in diameter) may be fuchsia-pink, magenta, bright pink pink-lavender, pink-magenta, purple, deep purple, purple-magenta, purple-pink, dark red, red-magenta, reddish-purple, deep red-purple, red-violet, deep rose-pink, rose-purple or violet-purple; flowering generally takes place between mid-June and mid-September (additional record: one for early May). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; plateaus; cliff faces; bedrock and rocky canyons; along canyon sides; along canyon bottoms; loamy-clayey ridges; ridgetops; rocky spurs; meadows; hills; bouldery hillsides; rocky and gravelly slopes; rocky outcrops; amongst rocks; bases of boulders; bouldery-gravelly-sandy flats; rocky-gravelly roadsides; bottoms of arroyos; draws; along creeks; along rivers; in pebbly drainages; marshes; along banks of streams; along fencelines; around and in stock tanks, and rocky, rocky-cobbly and gravelly-sandy-loamy riparian areas in bouldery, bouldery-gravelly-sandy, rocky, rocky-cobbly, rocky-gravelly, gravelly and pebbly soils; rocky-gravelly-sandy-clayey loam, gravelly-sandy loam and sandy loam soils, and loamy clay soils, occurring from 4,000 to 9,000 feet in elevation in the

forest, woodland, scrub, grassland and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Cologania angustifolia* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photographs 742 A&B), 43 (071409), 46 (recorded as *Cologania longifolia* Gray, Page 480), 63 (071409), **85** (071409), 140 (Page 292)*

Cologania longifolia (see *Cologania angustifolia*)

***Coursetia glandulosa* A. Gray: Rosary Babybonnets**

SYNONYMY: *Coursetia microphylla* A. Gray. COMMON NAMES: Arí (Hispanic); Baby Bonnets; Chino; Chipile; Chipilillo; Coursetia; Cousamo; Lac Bush; Rosary Babybonnets; Samo (Tarahumara); Samo Prieto; Samota; Samotum (Samodum or úsapdum - usap is the word used for the sap of this plant, Pima Bajo); Sámu (Hispanic); Tepechipile; Zamota (Hispanic). DESCRIPTION: Terrestrial perennial (winter-deciduous in Arizona) shrub (3 to 20 feet in height); the bark on the slender branches is light gray, grayish, gray or tan; the leaves are grayish-green or green; the flowers may be cream & yellow, lavender & cream, lemon-yellow, pink, white, white-yellow, pale yellow, yellowish or yellow & white often tinged with lavender, pink, purple or red; flowering generally takes place between early December and late May (additional records: two for late June and one for mid-November); the mature seed pods (1 to 2 inches in length) are brown. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky canyons; rocky sides of canyons; bouldery and rocky canyon bottoms; bases of cliffs; ridges; foothills; rocky hills; rocky hilltops; rocky and gravelly hillsides; bedrock, rocky and sandy-loamy slopes; gravelly alluvial fans; bajadas; rock outcrops; amongst boulders and rocks; cobbly and sandy-loamy plains; flats; basins; sandy valley floors; coastal flats; roadsides; rocky arroyos; rocky and sandy bottoms of arroyos; along bottoms of ravines; springs; along rocky streams; along and in rocky, gravelly-sandy, sandy and sandy-loamy washes; drainages; (rocky) edges of streambeds and washes; (rocky) margins of arroyos, and riparian areas growing in dry bouldery, rocky, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground and sandy loam ground, occurring from sea level to 4,300 (one record for 7,500) feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial sealant crop (the transparent yellowish-brown gum was mixed with adobe to make jars of syrup air tight). An orange-colored lac may be observed on the stems of the plant that is produced by the feeding of an insect in the genus *Tachardiella*. The Broad-billed Hummingbird (*Cyanthis latirostris*) has been observed visiting the flowers. *Coursetia glandulosa* is native to southwest-central and southern North America. *5, 6, 10, 13 (Page 256), 15, 28 (recorded as *Coursetia microphylla*, color photograph), 30, 43 (020910), 44 (112910 - no record), 46 (recorded as *Coursetia microphylla* Gray, Page 443), 63 (020910 - color presentation of seed), 77 (color photograph #33), **85** (112910 - color presentation), 91 (Pages 171-172), 115 (color presentation), 124 (112910 - no record), 127, 140 (Page 292)*

Coursetia microphylla (see *Coursetia glandulosa*)

***Dalea albiflora* A. Gray: Whiteflower Prairie Clover**

COMMON NAMES: Pea Bush; Scruffy Prairie Clover; White Dalea; Whiteflower Prairie Clover. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (16 to 40 inches in height); the stems and leaves are hairy; the stems may be a dull red; the leaves are dark gray-green or grayish-green; the flowers have been described as being cream, cream-white, white, white-cream or whitish in dense terminal spikes (1½ inches in length and ½ inch in diameter); the anthers are pale yellow or yellow; flowering generally takes place between late April and early November. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; bases of cliffs; canyons; canyon bottoms; clearings in forests; rocky and gravelly ridges; bouldery ridgetops; foothills; rocky and stony hills; rocky, rocky-gravelly-loamy, rocky-clayey and gravelly-loamy hillsides; piedmonts; bouldery, rocky, gravelly, gravelly-sandy, gravelly-loamy and sandy slopes; amongst boulders and rocks; sandy-loamy plains; flats; grassy valleys; roadbeds; along rocky, rocky-gravelly-sandy-loamy, rocky-gravelly-loamy, rocky-gravelly-clayey-loamy, gravelly, gravelly-sandy-loamy, gravelly-sandy-clayey-loamy, gravelly-loamy and sandy roadsides; sandy draws; seeps; springs; along streams; streambeds; gravelly-sandy soils along creeks; in rocky-gravelly-loamy, cobbly and sandy washes; sandy drainages; sphagnum bogs; rocky-cindery edges of drainages; sandy benches; sandy floodplains; riparian areas, and disturbed areas in bouldery, rocky, rocky-cindery, stony, cobbly, gravelly, gravelly-sandy and sandy soils; rocky-gravelly loam, rocky-gravelly-sandy loam, rocky-gravelly-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, humusy loam and loam soils; rocky clay and clay soils, and humus soils, occurring from 3,500 to 8,000 feet in elevation in the forest, woodland, scrub, grassland and wetland ecological formations. NOTES: The flowers may be fragrant. *Dalea albiflora* is native to southwest-central and southern North America. *5, 6, 15, 18 (genus), 28 (color photograph 300), 43 (070809), 46 (Page 439), 63 (070809), **85** (070909), 86 (note under White Prairie Clover), 115 (color presentation), 140 (Page 272)*

***Dalea greggii* A. Gray: Gregg's Prairie Clover**

COMMON NAMES: Gregg Dalea; Gregg Prairie Clover; Gregg's Prairie Clover; Gregg's Prairieclover; Orégano Cimarrón (Spanish); Trailing Indigo Bush; Trailing Smoke Bush. DESCRIPTION: Terrestrial perennial subshrub (prostrate, procumbent and/or decumbent stems 4 inches to 5 feet in height and spreading to 40 inches to 10 feet in diameter); the leaves are grayish-green; the flowers may be lavender, pink, pink-purple, purple, purple&white&yellow-green, rose-purple, violet, light yellow&lavender or yellow&lavender&white; based on few records located, flowering generally takes place between mid-

January and early December (flowering records: one for mid-January, one for early February, one for mid-February, one for late February, two for mid-March, seven for late March, two for early April, three for mid-April, one for late April, two for early May, one for late May, two for early June, one for mid-June, one for early July, two for mid-August, two for late September, four for early October, two for mid-October, seven for early November, one for mid-November and one for early December). HABITAT: Within the range of this species it has been reported from mountains; mountain summits; mesas; canyons; glades; foothills; hills; rocky hillsides; rocky and gravelly slopes; amongst boulders; sand dunes; stony flats; along roadsides; riverbeds, and margins of arroyos growing in damp and dry bouldery, rocky, stony, gravelly and sandy ground, occurring from 1,800 to 11,800 feet in elevation in the tundra, woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Dalea greggii* is native to southwest-central and southern North America. *5, 6, 18, 28 (color photograph 745), 43 (041112), 44 (041112 - no record of species; genus record), 46 (Page 438), 63 (041112 - color presentation), **85** (041112 - color presentation), 124 (041112 - no record of species; genus record)*

***Dalea pulchra* H.S. Gentry: Santa Catalina Prairie Clover**

COMMON NAMES: Bush Dalea; Gregg Dalea; Santa Catalina Prairie-clover; Gregg Dalea; Indigo Bush; Indigo Dalea; Pea Bush; Santa Catalina Prairie Clover; Santa Catalina Prairie-clover; Santa Catalina Prairie-clover. DESCRIPTION: Terrestrial perennial subshrub or shrub (20 to 40 inches or to possibly 8 feet in height); the leaves are grayish-green or silvery; the flowers (¼ inch in diameter) are pale lavender with a pink-purple tinge, lavender, lavender-pink, pink-purple, pink-purple & white, pale pinkish-white, light purple, purple, purple & yellow, rose-purple & whitish or violet; based on few records located, flowering generally takes place between late January and late May (flowering records: three for early January, one for late January, two for early February, one for mid-February, early March thru early May, five for late May, one for mid-June, one for early November and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky mesas; rocky canyons; rocky canyon bottoms; rocky knolls; rocky ridges; rocky ridgetops; gravelly-sandy foothills; rocky hills; hillsides; bedrock, rocky and gravelly slopes; along roadsides; rocky roadbanks; sandy arroyos; along streams; streambeds; along and in washes; drainages; bottomlands, and riparian areas growing in dry rocky, gravelly, pebbly and gravelly-sandy ground, occurring from 100 to 5,400 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant is a larval food plant for the Southern Dogface (*Colias cesonia*). *Dalea pulchra* is native to southwest-central and southern North America. *5, 6, 13 (Page 266), 15, 18, 28 (color photograph 746), 43 (082510), 44 (030711 - no record of species), 46 (note, Page 439), 58, 63 (082510), 82, **85** (082610 - color presentation), 91 (Page 175-177), 115 (color presentation), 124 (030711 - no record of species; genus record), 140 (Page 292)*

***Desmodium procumbens* (P. Miller) A.S. Hitchcock: Western Trailing Ticktrefoil**

COMMON NAMES: Beggar Ticks; Tick Clover; Western Trailing Ticktrefoil. DESCRIPTION: Terrestrial annual forb/herb (sprawling or twining with prostrate, decumbent or erect stems to 2 feet in height); the flowers may be pale blue, pale bluish-green, bluish-purple, cream-white, green & white, pale lavender, lavender, light pink, pink, pink-purple, pinkish-purple, purple, rose-pink, rose-violet, white, pale yellowish-cream or yellowish; based on few records located, flowering generally takes place between late August and late November (additional records: one for mid-March, one for mid-May, one for mid-June, one for mid-July, two for early August and one for late December). HABITAT: Within the range of this species it has been reported from mountains; gravelly mesas; rocky canyons; along gravelly-sandy canyon bottoms; bases of cliffs; ridges; rocky hills; rocky hilltops; rocky-gravelly-clayey hillsides; rocky, rocky-loamy and gravelly slopes; rocky outcrops; amongst boulders; llanos; cobbly plains; bouldery valley floors; along roadsides; within arroyos; bottoms of arroyos; ravines; along and in sandy washes; drainages; bases of waterfalls; depressions; (sandy and silty) banks of arroyos, creeks and rivers; (sandy) margins of watercourses; rocky shelves; gravelly, gravelly-sandy and sandy riparian areas, and disturbed areas growing in dry bouldery, rocky, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam ground; rocky-gravelly-clayey ground, and silty ground, occurring from sea level to 6,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Desmodium procumbens* is native to southwest-central and southern North America; Central America and coastal islands, and northern South America. *5, 6, 43 (080210), 46 (Page 475), 63 (080210), **85** (080210 - color presentation of dried material), 140 (Page 292)*

***Erythrina flabelliformis* T.H. Kearney: Coralbean**

COMMON NAMES: Ba:wui (“Bean”, Uto-Aztec: Tohono O’odham)¹⁴⁰, Baowi <bavul, bawi> (“Bean”, Uto-Aztec: Onavas Pima)¹⁴⁰, Bawui (Uto-Aztec: Akimel O’odham)¹⁴⁰, Caposí (Uto-Aztec: Tarahumara)¹⁴⁰, Chijol (Spanish)¹⁴⁰, Chilicoot (Pima: Sonora), Chilicote (Spanish: Chihuahua, Durango, Sonora)¹⁴⁰, Chiloko’ot (Uto-Aztec: Mountain Pima)¹⁴⁰, Chirikote (Uto-Aztec: Yaqui)¹⁴⁰, Coral Bean; Coral Tree; Coral-tree (English)¹⁴⁰, Coralbean; Colorín (“Red One”, Spanish: Chihuahua, Durango, Sonora, south)¹⁴⁰, Coralina (“Little Red One”, Spanish: Baja California)¹⁴⁰, Corcho (“Cork”, Spanish: Sonora)¹⁴⁰, Frijolillo (“Little Bean”, Spanish: Chihuahua)¹⁴⁰, Guaposi (Spanish: Mexico)¹⁴⁰, Indian Bean (English)¹⁴⁰, Indian-bean; Jévero (Uto-Aztec: Mayo); Kaposi <apoši, apošiki> (Uto-Aztec: Tarahumara)¹⁴⁰, Peonia [Pieoneo] (a word also applied to other species, Spanish: Chihuahua, Sonora)¹⁴⁰, Pionilla (“Little Peony”, Spanish)¹⁴⁰, Southwestern Coral Bean; Southwestern Coralbean (English)¹⁴⁰, Tristesá (“Sadness”, Spanish: Chihuahua)¹⁴⁰, Tzinacancuáhuil (Uto-Aztec: Náhuatl)¹⁴⁰, Waspósi (Uto-Aztec: Guarijío)¹⁴⁰, Western Coral Bean; Western Coral-bean; Xloolcö (Hokan: Seri)¹⁴⁰, Xoloco (Uto-Aztec: Náhuatl)¹⁴⁰; Zompantle <zompantle, zumpanilla> (Spanish)¹⁴⁰; Zumpantla. DESCRIPTION: Terrestrial perennial deciduous to nearly evergreen shrub or tree (2 to 30 feet in height); the stems are light gray, gray-green or light tan; the leaves are light green;

the flowers (1 to 2 inches in length and ¼ inch in diameter) are orange-red, dark orange-red, red or scarlet; flowering generally takes place between early May and early August (additional records: two for early April; flowering beginning as early as February has been reported). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky mountainsides; bases of mountains; rocky mesas; rock cliffs; along rock walls; rocky and stony canyons; rocky canyon walls; canyon bottoms; crevices in boulders; bouldery ridges; ridgetops; foothills; rocky hills; rocky hilltops; rocky and rocky-gravelly-loamy hillsides; rocky, rocky-gravelly-loamy and rocky-clayey slopes; rocky outcrops; on rocks; amongst boulders and rocks; bases of boulders; bouldery and rocky banks; on volcanic ash; sandy plains; rocky roadsides; along and in rocky arroyos; along and in bouldery streambeds; creekbeds; in bouldery-rocky washes; banks of arroyos and streams; rocky shelves; around and in stock tanks, and riparian areas growing in dry bouldery, rocky, rocky-sandy, stony and gravelly ground; rocky-gravelly loam, rocky-clayey loam and gravelly-sandy-clayey loam ground, and rocky clay ground, occurring from sea level to 6,400 feet (one record at 8,400 feet) in elevation in forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, but is very sensitive to frosts and its presence on slopes in large numbers serves as an indicator of a warm belt. The flowers are visited by Hummingbirds. The seeds of this plant are potentially toxic. *Erythrina flabelliformis* is native to southwest-central and southern North America. *5, 6, 13 (Page 253, color photograph: Plate U.1., Page 406), 15 (color photograph Page 93), 28, 43 (100810), 44 (010311 - no record), 46 (Page 480), 48, 53, 58, 63 (010311 - color presentation), 80 (This species is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "This thorny, colorful shrub has terminal clusters of brilliant red flowers and pods filled with bright red beans that are frequently used as beads. The beans contain alkaloids poisonous to both humans and livestock. The stems also have been reported poisonous."), 85 (010311 - color presentation), 86, 91 (Pages 199-201), 115 (color presentation), 124 (010311 - no record), 134, 140 (Pages 140-142 & 292), **WTK** (August 6, 2005)*

***Galactia wrightii* A. Gray: Wright's Milkpea**

COMMON NAMES: Cliff Bean; Wright Milkpea; Wright's Milkpea. DESCRIPTION: Terrestrial perennial forb/herb or vine (prostrate, climbing, scrambling, trailing or twining stems 20 inches to 2 feet in height); the leaves are dark green above and gray-green below; the flowers may be pale blue, cream-yellow, greenish-yellow, light lavender & yellowish-cream, lavender, lavender-purple, magenta-rose, pink, pink-lavender, pink & white, pink with yellow markings, pale purple, purple, purplish, purplish-pink, red-purple, rose, rose-pink, rose-purple, white, yellow-orange and yellow-purple; flowering generally takes place between early June and late October (additional records: one for late January, one for mid-February and one for late April). HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; cliffsides; bases of cliffs; rocky canyons; along rocky canyon bottoms; crevices in boulders; stony ledges; along rocky ridges; rocky ridgetops; rocky crests of ridges; rocky-sandy meadows; rocky hilltops; rocky, rocky-gravelly-loamy and rocky-clayey hillsides; bouldery-rocky, rocky, rocky-gravelly, rocky-silty, shaley, stony and clayey-loamy slopes; rocky-sandy bases of slopes; rocky outcrops; amongst boulders and rocks; along rocky banks; plains; open flats; rocky-gravelly-loamy and gravelly roadsides; bottoms of ravines; along and in streams; in rocky streambeds; along creeks; along and in rocky washes; along and in drainages; (bouldery-cobbly-sandy and rocky) banks of gullies, creeks, rivers and drainages, and riparian areas growing in moist and dry bouldery, bouldery-rocky, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley and gravelly ground; rocky-gravelly loam, gravelly-sandy-clayey loam and clayey loam ground; rocky clay ground, rocky-silty and sandy silty ground, occurring from 100 to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Galactia wrightii* is native to southwest-central and southern North America. *5, 6, 15, 43 (071910), 46 (Page 480), 58, 63 (071910), 77, 85 (080210 - color presentation of dried material), 124 (111210 - no record), 140 (Page 292)*

Hosackia brachycarpa (see *Lotus humistratus*)

Hosackia rigida (see *Lotus rigidus*)

***Lotus greenii* A.M. Ottley ex T.H. Kearney & R.H. Peebles: Greene's Bird's-foot Trefoil**

COMMON NAMES: Greene Bird's-foot Trefoil; Greene's Bird's-foot Trefoil; Deer Vetch (a name also applied to other species and the genus); Deer-vetch (a name also applied to other species and the genus); Deervetch (a name also applied to other species and the genus); Green's Lotus. DESCRIPTION: Terrestrial perennial forb/herb (sprawling, spreading or trailing prostrate, decumbent and/or erect stems 3 to 6 inches in height); the leaves are grayish-green; the flowers may be orange & yellow, dark orange-dark yellow, pink & yellow, reddish-yellow, pale yellow, yellow, yellow-orange, yellow with orange or pinkish-orange on the banner, yellow & pink, yellow & red, yellow with red on bottom, yellow tinged with red, yellow & rose, yellow with a rose tint or yellowish-orange; flowering generally takes place between early March and late June (additional records: one for mid-February, one for late July, one for early August, two for mid-August, one for late August, two for mid-September and one for late November). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; bases of mountains; mesas; canyons; pockets of soil; rocky ledges; ridgetops; amongst oaks and grasses; foothills; rocky hills; hilltops; rocky, rocky-gravelly and rocky-clayey hillsides; bouldery, rocky, rocky-gravelly, rocky-gravelly-loamy, stony-silty, cindery, gravelly, gravelly-loamy, gravelly-clayey, sandy and sandy-loamy slopes; bases of slopes; rocky outcrops; amongst boulders; sandy banks; prairies; plains; oak flats; along rocky-gravelly, stony, gravelly and gravelly-sandy roadsides; rocky draws; gulches; gullies; along streams; along streambeds; sandy washes; along watercourses; along (gravelly-sandy, gravelly-loamy and sandy) banks of arroyos, streambeds, rivers and washes; edges of streams; margins of lakes; (sandy) shores of creeks; bottomlands; floodplains; stony ditches; riparian areas, and disturbed areas growing in bouldery, rocky, rocky-gravelly,

stony, cindery, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-sandy loam, gravelly loam and sandy loam ground; rocky clay and gravelly clay ground, and stony silty ground, occurring from 2,800 to 8,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The seeds of this plant are used as food by Mule Deer (*Odocoileus hemionus*), quail and Bighorn Sheep (*Ovis canadensis*). *Lotus greenei* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph 503), 43 (030811 - *Lotus greenei* (Wootton & Standl.) Ottley in Kearney & Peebles), 44 (030811 - no record of species), 46 (Page 428), 48 (genus), 58, 63 (030811 - color presentation), 77, **85** (030911 - color presentation of dried material), 124 (030811 - no record of species; genus record)*

***Lotus humistratus* E.L. Greene: Foothill Deervetch**

SYNONYMY: *Hosackia brachycarpa* G. Bentham. COMMON NAMES: Bird's Foot Lotus; Colchita; Deer Vetch; Deer-vetch; Foothill Deervetch; Hill Deervetch; Hill Lotus; Foothill Deervetch; Maresfat; Short Podded Lotus. DESCRIPTION: Terrestrial annual forb/herb (4 to 18 inches in height or length); the leaves are gray-green or green; the small flowers are orange, orange-yellow, yellow, yellow-orange, yellow & orange-red and yellow & red; flowering generally takes place between late January and mid-June (additional records: one for late August and one for early October); the mature pods are brown. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; sandy mesas; plateaus; cliffs; rocky, rocky-gravelly and stony canyons; sandy-loamy canyon bottoms; scree; bluffs; rocky and clayey-loamy ridges; rocky and clayey ridgetops; ridgelines; rocky-sandy meadows; foothills; bases of foothills; bedrock, rocky and clayey hills; clayey hilltops; rocky, rocky-gravelly-loamy, rocky-pebbly-sandy-silty, stony, cobbly-sandy-loamy, gravelly and clayey hillsides; rocky, rocky-gravelly, rocky-sandy, rocky-clayey-loamy, cobbly-sandy-loamy, gravelly, clayey and clayey-loamy slopes; rocky-sandy and sandy alluvial fans; gravelly bajadas; rocky outcrops; amongst rocks; clay lenses; plains; rocky-sandy, gravelly, gravelly-sandy, sandy and clayey flats; benchlands; clayey basins; gravelly-sandy-loamy, sandy and clayey valley floors; along rocky, gravelly and silty roadsides; along and in rocky and sandy arroyos; bottoms of arroyos; within draws; gulches; gullies; along seeping washes; springs; along streams; sandy soils along creeks; bouldery-rocky, stony, cobbly, gravelly, gravelly-sandy and sandy creekbeds; sandy soils along rivers; sandy riverbeds; along and in gravelly, gravelly-sandy, gravelly-loamy, sandy and clayey washes; within drainage ways; along (rocky-silty, gravelly-loamy and sandy) banks of streams, streambeds, rivers and washes; gravel bars; clayey benches; terraces; sandy and loamy bottomlands; cobbly-sandy and sandy floodplains; along canals; gravelly-sandy and sandy riparian areas, and disturbed areas growing in wet and dry bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-sandy loam, rocky-clayey loam, cobbly-sandy loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; clay ground, and rocky-pebbly-sandy silty, rocky-silty and silty ground, occurring from sea level to 6,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Lotus humistratus* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (071009), 46 (Page 427), 48 (genus), 58, 63 (021010 - color presentation of seeds), 77, **85** (021010 - color presentation), 86 (color photograph), 115 (color presentation), 127, 140 (Page 292)*

***Lotus rigidus* (G. Bentham) E.L. Greene: Shrubby Deervetch**

SYNONYMY: *Hosackia rigida* G. Bentham. COMMON NAMES: Desert Rock-pea; Shrubby Deervetch; Wiry Lotus. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (erect stems 1 to 5 feet in height, one plant was observed and described as being 20 inches in height and 2 feet in width, one plant was observed and described as being 40 inches in height and width); the foliage is gray-green, grayish-green or green; the flowers may be amber, bright orange, orange-red, orange-yellow, yellow, yellow tinged with orange, yellow-orange or yellow & red; flowering generally takes place between early January and late June (additional records: one for early August, one for mid-August, one for early September, two for mid-October, two for early November, one for mid-November and three for early December); the mature pods are brown. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; plateaus; rocky canyons; bouldery, bouldery-sandy and sandy canyon bottoms; crevices in boulders and rocks; ledges; ridges; ridgetops; foothills; rocky hills; rocky hillsides; rocky, rocky-gravelly, rocky-loamy, gravelly, sandy and sandy-loamy slopes; bajadas; rocky outcrops; amongst boulders, rocks and cobbles; boulderfields; lava hills; sandy flats; along gravelly and sandy roadsides; arroyos; rocky and sandy arroyo bottoms; draws; ravines; around streams; rocky streambeds; along creeks; sandy creekbeds; along and in bouldery, bouldery-sandy, rocky, rocky-sandy and sandy washes; along rocky drainages; (rocky-gravelly) edges of washes and drainages; riparian areas, and disturbed areas growing in dry bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground and rocky loam and sandy loam ground, occurring from 600 to 8,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This is the most drought-tolerant Lotus in Arizona. *Lotus rigidus* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph 504), 43 (081810), 46 (Page 427), 48 (genus), 63 (081810 - color presentation), 77 (color photograph #79), **85** (081810 - color presentation), 91 (Page 262-263), 115 (color presentation), 124 (110510 - no record), 140 (Page 292)*

Lupinus C. Linnaeus: Lupine

COMMON NAMES: Blue Bonnet; Fingerleaf; Lupin; Lupine; Monkey Faces (Sulfur Grove Ohio); Monkey-faces (Sulfur Grove Ohio); Old-maid's-bonnets; Old-maid's-sunbonnets; Quaker Bonnet; Quaker's-bonnets; Sun Dial; Sun Dial Plant; Sun-dial (Sulfur Grove Ohio); Sun-dial Plant; Sundial (Sulfur Grove Ohio); Sundial Plant; Wild Lupine; Wolf's Bean; Wolf's-bean. *43 (071110), 44 (041212), 46 (Pages 414-420), 63 (071110 - color presentation), 124 (041212), **HR***

***Lupinus concinnus* J.G. Agardh: Bajada Lupine**

COMMON NAMES: Annual Lupine; Bajada Lupine; Bluebonnet; Elegant Lupine; Lupine; Scarlet Lupine. DESCRIPTION: Terrestrial annual forb/herb (3 to 18 inches in height); the woolly herbage is grayish or gray-green; the flowers may be blue, blue-magenta, blue-purple, blue & white, blue & light yellow, deep blue-purple & white, cream & purple, cream & rose-purple, pale lavender, dark lavender, lavender-pink, lavender-purple, lavender-rose, lavender & white, magenta-lavender, pink, pinkish-blue, pink-lavender, pink-purple & white-cream, pink-purple & white tinged with lavender, pink & white, light purple & yellow, purple, purplish, purple-lavender, purple-magenta, purple-magenta & white, purple-pink, purple & white, purple & yellow, red-purple, reddish-purple, violet, white rimed with pink, yellow & pink or yellowish-purplish; flowering generally takes place between late February and late June. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; gravelly, sandy and sandy-clayey-loamy mesas; bases of cliffs; rocky canyons; rocky and sandy canyon bottoms; chasms; clayey ridges; sandy ridgetops; ridgelines; openings in forests; sandy foothills; rocky hills; sandy hillsides; along bouldery, rocky, rocky-gravelly-sandy, gravelly, clayey-loamy and clayey slopes; rocky-sandy alluvial fans; bajadas; amongst boulders and rocks; blow-sand deposits; sandy banks; sandy and sandy-silty plains; gravelly and sandy flats; basins; sandy-silty valley floors; along gravelly, gravelly-sandy and sandy roadsides; within arroyos; gulches; around streams; rocky streambeds; along creeks; along and in gravelly-sandy and gravelly-silty creekbeds; along rivers; sandy riverbeds; along and in rocky-sandy, gravelly, gravelly-sandy and sandy washes; within rocky drainage ways; (sandy) banks of arroyos, creeks, rivers and washes; along (cobble) edges of rivers and washes; along margins of washes; gravelly and sandy benches; sandy terraces; gravelly and loamy bottomlands; rocky-sandy, cobble-sandy, gravelly and sandy floodplains; along ditches; along gravelly-clayey-loamy banks of ditches; rocky-sandy, gravelly-sandy and sandy riparian areas; recently burned areas in woodlands, and disturbed areas growing in dry bouldery, rocky, rocky-gravelly-sandy, rocky-sandy, cobble, cobble-sandy, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky clay, cobble clay, loamy clay and clay ground, and gravelly silty and sandy silty ground, occurring from 200 to 7,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Lupinus concinnus* is native to southwest-central and southern North America. *5, 6, 16, 18 (genus), 28 (color photograph 765), 43 (021110), 46 (Page 417), 48 (genus), 58, 63 (021110 - color presentation), 77 (color photograph #80), 80 (Some, but not all, species of the genus *Lupinus* are considered to be Secondary Poisonous Range Plants. "The lupines contain numerous poisonous alkaloids. They are mostly dangerous to sheep but cattle, goats, horses, hogs and deer have also been poisoned. The seeds and pods are most poisonous but both young and dried plants may be dangerous. However, not all species are poisonous and some may furnish moderately palatable and nutritious forage for sheep. ... Animals will seldom eat a toxic dose if desirable forage is available. Losses can generally be avoided by good range management to improve forage, by keeping animals away from dense lupine patches (particularly in late summer or on the trail), or by grazing with cattle." See text for additional information.), 85 (021210 - color presentation), 115 (color presentation), 140 (Page 292)*

***Lupinus concinnus* J.G. Agardh subsp. *orcuttii* (S. Watson) D.B. Dunn: Orcutt's Lupine**

SYNONYMY: *Lupinus concinnus* J.G. Agardh var. *orcuttii* (S. Watson) C.P. Smith; *Lupinus orcuttii* S. Watson. COMMON NAMES: Orcutt Lupine; Orcutt's Lupine. DESCRIPTION: Terrestrial annual forb/herb (6 to 10 inches in height); the woolly stems and leaves are grayish; the flowers are blue-white, lavender, purple, purple & yellow, red-violet, reddish-violet, violet, white & maroon-pink or yellow with violet tips; flowering generally takes place between late February and mid-May (additional record: one for mid-September). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; canyons; buttes; rocky hills; rocky hillsides; rocky and sandy slopes; rocky alluvial fans; sandy bajadas; sandy dunes; gravelly and sandy flats; sandy valley floors; along sandy roadsides; along creeks; along rivers; riverbeds; along and in sandy and sandy-loamy washes; within drainages; banks of creeks; sandy terraces; floodplains; riparian areas, and disturbed areas growing in dry rocky, gravelly and sandy ground; gravelly-sandy loam, sandy loam and clayey loam ground, and rocky clay ground, occurring from 1,500 to 7,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Lupinus concinnus* subsp. *orcuttii* is native to southwest-central and southern North America. *5, 6, 15, 18 (genus), 28 (color photograph of species 765), 43 (021110), 44 (120810 - treated as a synonym of *Lupinus concinnus* J. Agardh), 46 (*Lupinus concinnus* Agardh var. *orcuttii* (Wats.) C.P. Smith, Page 417), 48 (genus), 63 (021110), 80 (Some, but not all, species of the genus *Lupinus* are considered to be Secondary Poisonous Range Plants. "The lupines contain numerous poisonous alkaloids. They are mostly dangerous to sheep but cattle, goats, horses, hogs and deer have also been poisoned. The seeds and pods are most poisonous but both young and dried plants may be dangerous. However, not all species are poisonous and some may furnish moderately palatable and nutritious forage for sheep. ... Animals will seldom eat a toxic dose if desirable forage is available. Losses can generally be avoided by good range management to improve forage, by keeping animals away from dense lupine patches (particularly in late summer or on the trail), or by grazing with cattle." See text for additional information.), 85 (021210 - color presentation of dried material), 115 (color presentation of the species), 124 (120810 - no record, genus)*

Lupinus concinnus var. *orcuttii* (see *Lupinus concinnus* subsp. *orcuttii*)

Lupinus orcuttii (see *Lupinus concinnus* subsp. *orcuttii*)

***Lupinus sparsiflorus* G. Bentham: Coulter's Lupine**

COMMON NAMES: Arizona Lupine; Coulter Lupin; Coulter Lupine; Coulter's Lupin; Coulter's Lupine; Desert Lupine (a name also applied to other species); Few-flowered Lupine; Loose-flowered Lupine (a name also applied to other species); Loose-flowered Annual Lupine; Loosely-flowered Annual Lupine; Lupine (a name also applied to other species and the genus *Lupinus*); Mojave Lupine (a name also applied to other species); Tash Mahad (or possibly Tash Mahot - River Pima); Sparse-flowered Lupine. DESCRIPTION: Terrestrial annual forb/herb (6 to 32 inches in height; one plant was observed and described as being 11 inches in height and 12 inches in width); the leaves are dark green; the flowers may be light blue-lavender-white, blue, dark blue, blue-lavender, blue-lavender-reddish, blue-lilac, blue-purple, blue-violet, blue & white, magenta-pink, magenta-pink with a yellow spot on the banner, magenta & purple, pinkish, pinkish-lavender, light purple, purple, purplish-blue, violet, deep violet, violet-blue or white; flowering generally takes place between early January and late June (additional records: three for early September, one for early October and one for early November). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; sandy rims of canyons; cliffs; rocky, rocky-gravelly and stony canyons; along sandy-loamy canyon bottoms; scree; talus slopes; buttes; rocky and sandy ridges; ridgetops; clearings in forests; sandy meadows; gravelly-sandy and sandy foothills; rocky hills; bases of hills; rocky hilltops; rocky and sandy hillsides; rocky, rocky-clayey-loamy, stony, cobbly-sandy-loamy, gravelly, gravelly-loamy, sandy, sandy-loamy and sandy-clayey slopes; rocky alluvial fans; gravelly bajadas; gravel slides; rocky outcrops; amongst rocks; shelves; gravelly plains; gravelly and sandy flats; basins; sandy hollows; sandy valley floors; along railroad right-of-ways; along rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and clayey roadsides; within arroyos; in gravelly-silty draws; along gravelly-loamy ravines; springs; along streams; rocky-sandy streambeds; along creeks; along and in gravelly-sandy creekbeds; along rivers; sandy riverbeds; along and in bouldery-sandy, rocky, cobbly, gravelly, gravelly-sandy and sandy washes; drainages; within cobbly, gravelly, sandy and sandy-loamy drainage ways; along (sandy and sandy-clayey) banks of arroyos, streams, rivers and drainage ways; (rocky) edges of rivulets, rivers and washes; margins of washes; sand bars; gravelly benches; gravelly and sandy terraces; sandy and loamy bottomlands; cobbly and cobbly-sandy floodplains; ditches; bouldery, rocky-clayey, gravelly-sandy and sandy riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, cobbly-sandy loam, gravelly loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; rocky clay, sandy clay and clay ground, and gravelly-sandy silty and gravelly silty ground, occurring from 100 to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Lupinus sparsiflorus* is native to southwest-central and southern North America. *5, 6, 16, 18 (genus), 28 (color photograph 767), 43 (071409), 44 (071711 - color photograph), 46 (Page 416), 48 (genus), 58, 63 (021210 - color presentation), 77 (color photograph #81), 80 (This species is listed as a Secondary Poisonous Range Plant. "The lupines contain numerous poisonous alkaloids. They are mostly dangerous to sheep but cattle, goats, horses, hogs and deer have also been poisoned. The seeds and pods are most poisonous but both young and dried plants may be dangerous. However, not all species are poisonous and some may furnish moderately palatable and nutritious forage for sheep. ... Animals will seldom eat a toxic dose if desirable forage is available. Losses can generally be avoided by good range management to improve forage, by keeping animals away from dense lupine patches (particularly in late summer or on the trail), or by grazing with cattle." See text for additional information.), 85 (071711 - color presentation), 86 (color photograph), 115 (color presentation), 124 (071711 - no record of species; genus record), 140 (Page 293)*

***Macroptilium gibbosifolium* (C.G. de Ortega) A. Delgado Salinas: Variableleaf Bushbean**

SYNONYMY: *Phaseolus heterophyllus* C.L. von Willdenow; *Phaseolus heterophyllus* C.L. von Willdenow var. *rotundifolius* (A. Gray) C.V. Piper. COMMON NAMES: Cuchtire (Purépecha); Frijolillo (Hispanic); Frijolillo Cimarrón (Hispanic); Jicamilla (Hispanic); Nawarari (Tarahumara); Tatsini Sapichu (Purépecha); Uarhasi Simarroni (Purépecha); Variableleaf Bushbean; Wild Bean; Wild Bushbean. DESCRIPTION: Terrestrial perennial trailing or twining forb/herb (to 40 inches in length); the flowers may be brick-red, maroon, orange, dull orange, orange-brick-red; dull orange-red, orange-rose, orange & yellow, pink, deep pink-salmon, light purple, purple, red, dull red, red with green center, red-orange, dull red-orange, red-orange-yellow, reddish-pink, reddish-yellow, salmon, bright salmon-orange, salmon-orange, salmon-pink, salmon-pinkish-orange, salmon-red or yellow; flowering generally takes place between late June and late October. HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; pockets of gravelly-sandy soil in bedrock and boulders; rocky ledges; rocky ridges; rocky ridgetops; rocky and gravelly openings in forests and woodlands; rocky meadows; foothills; rocky and stony hills; rocky, rocky-gravelly-loamy, gravelly-clayey and sandy-loamy hillsides; rocky, rocky-gravelly, cindery, gravelly, sandy, sandy-loamy and clayey slopes; bedrock and rocky outcrops; amongst boulders and rocks; rocky scablands; plains; rocky-gravelly basins; bouldery-gravelly-sandy and clayey flats; valleys; along rocky-gravelly-loamy, rocky-gravelly-clayey-loamy, gravelly-sandy-loamy, gravelly-loamy and gravelly-clayey-loamy roadsides; along bedrock arroyos; bottoms of arroyos; draws; along streams; rocky-gravelly-sandy-loamy and rocky-sandy streambeds; along creeks; along sandy washes; along and in bedrock drainages; depressions; gravelly-loamy and clayey-loamy swales; banks of washes; edges of washes; gravel bars; sandy-loamy benches; rocky bottomlands; floodplains, and bouldery and sandy riparian areas in bouldery, bouldery-gravelly-sandy, rocky, rocky-gravelly, rocky-sandy, stony, cindery, gravelly and sandy soils; rocky-gravelly-sandy loam, rocky-gravelly loam, rocky-gravelly-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam and clayey loam soils, and gravelly clay and clay soils, occurring from 2,100 to 8,000 feet in elevation in the forest, woodland, scrub, grassland and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Macroptilium gibbosifolium* is native to southwest-central and southern North America; Central America, and southern and western South America. *5, 6, 15, 30, 43 (071509), 46 (*Phaseolus heterophyllus* Willd., *Phaseolus heterophyllus*

Wild. var. *rotundifolius* (Gray) Piper), 48 (genus - *Phaseolus*), 58, 63 (071509 - recorded as introduced into the area of the lower 48 states in the United States), 85 (071509), 140 (Page 293)*

***Mimosa aculeaticarpa* C.G. de Ortega var. *biuncifera* (G. Bentham) R.C. Barneby: Catclaw Mimosa**

SYNONYMY: *Mimosa biuncifera* G. Bentham. COMMON NAMES: Brenales (Spanish: Mexico)¹⁴⁰; Cat Claw; Cat-claw; Catclaw Mimosa; Cat's Claw (English)¹⁴⁰; Cat's-claw (Texas); Cats Claw; Catsclaw; Catsclaw Mimosa; Ch'il Yijish <ch'il gojiza> (Athapascan: Western Apache)¹⁴⁰; Chaparro ("Thicket", Spanish: Oaxaca; for other species)¹⁴⁰; Garabatillo [Garavatillo] ("Little Hook", Spanish: Aguascalientes; for other species)¹⁴⁰; Garruno, Gato ("Cat", Spanish: Sonora)¹⁴⁰; Gatuño [Garroño] ("Cat Claw", Spanish: Chihuahua)¹⁴⁰; Mimosa (English: New Mexico)¹⁴⁰; Raspillas ("Scratcher", Spanish: Tamaulipas; for other species)¹⁴⁰; Uña de Gato ("Cat's Claw", Spanish: Arizona, New Mexico, Chihuahua)¹⁴⁰; Wait a Bit; Wait-a-bit [minute] (English)¹⁴⁰; Wait-a-minute; Wait-a-Minute Bush. DESCRIPTION: Terrestrial perennial deciduous shrub or tree (1 to 10 feet in height with a somewhat rounded crown; one plant was observed and described as being 1 foot in height and 40 inches in width, one plant was observed and described as being 6½ feet in height and 5 feet in width); the bark is red-gray-brown; the small leaflets are dark green or yellow-green; the flowers (in button-like clusters of about ½ inch in diameter) are cream-white, cream-yellow, green-yellow, green-white, lavender, pale pink, pinkish, pinkish-white, whitish, whitish-cream or light yellow; the anthers are pale yellow; flowering generally takes place between early May and mid-September (additional records: one for mid-March, one for late March and two for mid-April); the seedpods (1 ¼ to 1 5/8 inches in length and 1/6 to 1/8 inches in width) are brown or reddish-brown. HABITAT: Within the range of this species it has been reported from mountains; mesas; along rocky canyons; along rocky canyon bottoms; rocky ledges; stony ridges; meadows; rocky-gravelly-loamy foothills; rocky and gravelly hills; bouldery, rocky, rocky-gravelly, rocky-clayey, rocky-clayey-loamy and gravelly-sandy-loamy hillsides; rocky, rocky-gravelly, rocky-sandy-loamy, rocky-loamy, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey, sandy and clayey-loamy slopes; bajadas; rocky outcrops; amongst boulders; bases of rocks; sandy steppes; rocky-sandy, gravelly, gravelly-sandy, sandy and clayey-loamy flats; basins; rocky-sandy valley floors; along rocky-gravelly, rocky-gravelly-loamy, gravelly-sandy-loamy, gravelly-sandy-clayey-loamy, gravelly-loamy, gravelly-clayey-loamy and sandy roadsides; rocky and gravelly arroyos; bottoms of arroyos; draws; gullies; springs; along streams; rocky-gravelly-sandy-loamy and gravelly-sandy streambeds; along bouldery creeks; creekbeds; along rivers; along rocky, gravelly, gravelly-clayey and sandy washes; sandy-clayey drainages; along (bouldery-sandy, gravelly-sandy and sandy) banks of arroyos, springs, streams, streambeds, creeks and washes; (cobble) edges of rivers and riverbeds and lakes; grassy terraces; sandy floodplains; mesquite bosques; along canals; gravelly riparian areas, and disturbed areas growing in dry bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobble, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-gravelly-sandy loam, rocky-sandy loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam and clayey loam ground, and bouldery clay, rocky clay, gravelly clay and sandy clay ground, occurring from 2,600 to 6,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, and it may be useful in controlling erosion. Catclaw Mimosa is truly a very nasty little shrubbery that has recurved thorns or prickles (sometimes paired) on the stems, branches, leaves and margins of the seedpods many of which are very capable of tearing flesh, it often forms dense thickets. The flowers are reported to be fragrant. This plant provides food and cover for wildlife, food for quail and forage for Mule Deer (*Odocoileus hemionus*) and White-tailed Deer (*Odocoileus virginianus*). *Mimosa aculeaticarpa* var. *biuncifera* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Mimosa biuncifera* Bentham, Pages 232-233), 15 (recorded as *Mimosa biuncifera* (Benth.) Britt. & Rose), 28 (recorded as *Mimosa biuncifera*, color photographs 297 A & B), 43 (071509), 44 (112910 - no record of species), 46 (recorded as *Mimosa biuncifera* Benth., Page 400), 48 (recorded as *Mimosa biuncifera*), 58 (recorded as *Mimosa biuncifera* (Benth.) Britt. & Rose), 63 (071509), 77, 85 (112010), 91 (recorded as *Mimosa aculeaticarpa* (Gomez) Ort., Pages 271-272), 115 (color presentation), 124 (112010), 140 (Pages 143-144 & 293), **WTK** (August 6, 2005)*

Mimosa biuncifera (see *Mimosa aculeaticarpa* var. *biuncifera*)

Mimosa filicioides (see *Acacia angustissima* var. *filicioides*)

***Parkinsonia aculeata* C. Linnaeus: Jerusalem Thorn**

COMMON NAMES: Acacia de los MASONES; Arrêtenègre (French); Bacapore; Bagota; Bagote; Barbados Flowerfence (a name also applied to other species); Cina-cina (a name also applied to other species, Portuguese: Brazil); Espinheiro-de-Jerusalém (Portuguese); Espinho-de-jerusalém (Portuguese: Brazil); Espinillo (Spanish); Guacóporo; Horse Bean (a name also applied to other species); Horse-bean (a name also applied to other species); Horsebean (a name also applied to other species); Jelly Bean Tree; Jellybean Tree; Jerusalem Thorn (a name also applied to other species); Jerusalem-thorn (a name also applied to other species); Jerusalem-dorn (German); Junco; Long-leaf Paloverde; Mexican Palo Verde; Mexican Palo-verde; Mexican Paloverde; Mezquite Verde; Palo de Rayo (Spanish); Palo Verde Mejicano (Spanish); Palo Verde Mexicano; Ratama; Retaima; Retama (a name also applied to other species); Rosa-da-turquia (Portuguese: Brazil); Sessaban (transliterated Arabic); Turco (Portuguese: Brazil). DESCRIPTION: Terrestrial perennial drought- and possibly cold-deciduous shrub or tree (10 to 40 feet in height); the older bark is brown or gray; the younger bark, branches and twigs are green or yellow-green; the leaves are green; the flowers (¾ to 1 inch in width) are golden-yellow, orange, yellow, yellow with orange or red spots or golden-yellow; flowering generally takes place between mid-February and early July (additional records: two for late July, four for early August, one for mid-August, two for late August, one for mid-September, two for late September, one for mid-October, three for late October,

one for mid-September, one for early October, one for late October, one for early November, one for mid-November and one for late November) with the bloom generally lasting 3 to 4 weeks; the mature seedpods (2 to 4 inches in length) are brown. HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky and gravelly canyons; canyon bottoms; foothills; bouldery hills; rocky hillsides; rocky, rocky-gravelly-sandy-clayey-loamy slopes; bajadas; gravelly and sandy alluvial fans; sand hummocks; sandy plains; gravelly uplands; sandy flats; basin bottoms; sandy valley floors; coastal flats; railroad right-of-ways; along rocky-gravelly, gravelly and sandy-loamy roadsides; along sandy-silty arroyos; gravelly bottoms of arroyos; along streams; along rocky streambeds; along rivers; along rocky-cobbly-sandy and sandy riverbeds; along and in sandy and silty washes; along watercourses; clayey pondbeds; banks of creeks and rivers; (sandy) edges of rivers, ponds and lakes; shores of rivers; beaches; terraces; bottomlands; gravelly-sandy and sandy-silty-clayey floodplains; mesquite bosques; along canals; along canal banks; along ditches; riparian areas; waste places, and disturbed areas growing in moist and dry bouldery, rocky-cobbly, rocky-cobbly-sandy, rocky-gravelly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy-clayey loam, rocky-sandy loam and sandy loam ground; sandy-silty clay and clay ground, and sandy silty and silty ground, occurring from sea level to 4,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was observed as an escaped and naturalized ornamental. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. This plant may be an attractive component of a restored native habitat; however, outside of its native range it may become weedy, especially so in riparian areas and along roadsides. In Arizona, the Jerusalem Thorn is native to the Castle Dome Mountains in Yuma County and the foothills of the Baboquivari, Coyote and Quinlan Mountains in Pima County. The foliage and pods are browsed by wildlife. *Parkinsonia aculeata* is native to southwest-central and southern North America. *5, 6, 13 (Pages 245-246), 16, 18, 26 (color photograph), 28 (color photograph 93), 43 (021310), 44 (071711 - color photograph), 46 (Page 407), 48, 52 (color photograph), 53, 58, 63 (021310 - color presentation), 77, 80 (This species is listed as a Poisonous Cropland and Garden Plant. "This ornamental shrub or small tree has been reported to accumulate toxic levels of nitrate."), 85 (071711 - color presentation), 91 (Pages 309-311), 115 (color presentation), 124 (071711 - no record of genus or species), 127, 140 (Page 293), **WTK** (August 4, 2005)

***Parkinsonia florida* (G. Bentham ex A. Gray) S. Watson: Blue Paloverde**

SYNONYMY: *Cercidium floridum* G. Bentham; *Cercidium floridum* G. Bentham var. *floridum*. COMMON NAMES: Blue Palo Verde; Blue Palo-verde; Blue Paloverde; Caro (Mayo); Palo Verde (a name also applied to other species and the genus *Parkinsonia*, Spanish for Green Pole, Green Stick or Green Tree); Paloverde (a name also applied to other species and the genus *Parkinsonia*); Stedak U'us (Pima); Studuk U'us (Bajo Pima). DESCRIPTION: Terrestrial perennial deciduous shrub or tree (40 inches to 40 feet in height); the bark may be blue-green, green, yellow or yellow-green, and gray on the older trunks; the leaves are blue-green; the flowers (¾ to 1 inch in width) are yellow or white (rarely); flowering generally takes place between early March and mid-June (additional records: two for early February, one for late July, two for mid-August, two for early September, one for late September, one for early October, two for mid-October, one for late October, two for early November, one for mid-November and one for early December); the mature fruits (1½ to 4 inches in length) are light brown. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; along rocky canyons; canyon walls; rocky and sandy canyon bottoms; buttes; gravelly-clayey ridges; rocky ridgetops; foothills; rocky, rocky-sandy, gravelly, gravelly-loamy and sandy hills; rocky, rocky-sandy, gravelly-clayey-loamy, sandy, sandy-loamy and clayey slopes; bajadas; sand hills; sand dunes; benchlands; plains; rocky-sandy, cindery, sandy and sandy-silty flats; valley floors; valley bottoms; coastal slopes; along rocky-gravelly-sandy, gravelly-sandy and sandy roadsides; along gravelly arroyos; along gravelly and sandy bottoms of arroyos; rocky draws; seeps; streambeds; creekbeds; along rivers; along riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; drainages; watercourses; around ponds; playas; along (rocky and sandy) banks of arroyos, rivers and washes; edges of draws and washes; margins of rivers and washes; gravelly-sand bars; benches; gravelly terraces; loamy bottomlands; sandy-loamy floodplains; clayey lowlands; mesquite bosques; fencerows; catchments; stock tanks; along canals; along canal banks; gravelly-sandy riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly-sandy, rocky-sandy, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-clayey loam, sandy loam and loam ground; gravelly clay and clay ground, and sandy silty ground, occurring from sea level to 5,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, it has a very showy display of yellow flowers in very showy in late March and April. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used for shelter and for tools. The Blue Paloverde may be useful in controlling erosion. Bighorn Sheep (*Ovis canadensis*), Mule Deer (*Odocoileus hemionus*) and other wildlife browse the fruits, leaves and twigs and the seeds are eaten by birds and rodents and used by Bruchid Beetles. *Parkinsonia florida* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Cercidium floridum* Bentham, Pages 246-247, color photograph including habitat: Plate S.2., Page 404), 15, 16 (recorded as *Cercidium floridum* Benth.), 18, 26 (recorded as *Cercidium floridum*, color photograph), 28 (recorded as *Cercidium floridum*, color photograph 91), 43 (021310 - *Cercidium floridum* Benth. ex A. Gray, *Parkinsonia florida* S. Watson), 44 (071711 - color photograph), 46 (recorded as *Cercidium floridum* Benth., Page 407), 48, 52 (recorded as *Cercidium floridum* Benth. ex Gray, color photograph), 53 (recorded as *Cercidium floridum* Benth.), 58, 63 (021310 - color presentation), 77 (recorded as *Cercidium floridum* Benth.), 85 (071811 - color presentation including habitat), 86 (recorded as *Cercidium floridum*, color photograph), 91 (recorded as *Cercidium floridum* Benth., Pages 156-157), 115 (color presentation), 124 (071711 - no record of genus or species), 127, 140 (Page 293), **WTK** (August 4, 2005)*

***Parkinsonia microphylla* J. Torrey: Yellow Paloverde**

SYNONYMY: *Cercidium microphyllum* (J. Torrey) J.N. Rose & I.M. Johnston. COMMON NAMES: Dipua; Foothill Palo Verde; Foothill Palo-verde; Foothill Paloverde; Foothills Palo Verde; Foothills Palo-verde; Foothills Paloverde; Hillside Palo Verde; Hillside Palo-verde; Hillside Paloverde; Horsebean (a name also applied to other species); Kuk Cehedagi (Tohono O'odham); Little Horsebean; Little Leaf Paloverde; Little-leaf Horse-bean; Little-leaf Horsebean; Little-leaf Palo Verde; Little-leaf Palo-verde; Little-leaf Paloverde; Little-leaved Palo Verde (a name also applied to other species and the genus *Parkinsonia*); Littleleaf Horsebean; Littleleaf Palo Verde; Littleleaf Paloverde; Male Palo Verde; Mesa Palo Verde; Mesa Palo-verde; Mesa Paloverde; Palo Verde (Spanish for Green Pole, Green Stick or Green Tree); Palo-verde; Paloverde; Small-leaf Palo Verde; Small-leaf Paloverde; Small-leaved Palo Verde; Smallleaf Palo Verde; Yellow Palo Verde; Yellow Palo-verde; Yellow Paloverde. DESCRIPTION: Terrestrial perennial drought deciduous shrub or tree (40 inches to 26 feet in height; one plant was observed and described as being 6 feet in height and 7 feet in width, one plant was observed and described as being 9 feet in height and width, one plant was observed and described as being 16 feet in height and width); the bark is green, olive-green or yellow-green, and gray on older trunks; the ends of the leafy branchlets are spine-like; the small leaflets are green, greenish-gray or yellow-green; the flowers (½ inch in width) are lemon-yellow, whitish & yellow, yellow, yellow-green or yellow & white; the styles are pale yellow or pale yellow-green; the filaments are pale yellow or pale yellow-green; the anthers are orange; flowering generally takes place between mid-March and mid-June (additional records: one for mid-August and one for mid-October); the mature seedpods (2 to 3 inches in length) are light brown or tan. HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; mesas; cliffs; rocky walls; rocky canyons; canyon walls; canyon bottoms; bluffs; buttes; ledges; ridges; rocky ridgetops; bouldery and rocky foothills; bases of foothills; rocky hills; rocky hillsides; rocky, gravelly and sandy slopes; alluvial fans; rocky, gravelly and gravelly-silty bajadas; boulder fields; bouldery and rocky outcrops; plains; gravelly and sandy flats; valley floors; sandy valley bottoms; along rocky and gravelly roadsides; along and in gravelly-sandy and sandy arroyos; sandy bottoms of arroyos; along and in rocky, gravelly, gravelly-sandy and sandy washes; drainages; (rocky-sandy) banks of arroyos and rivers; along edges of washes; margins of arroyos and washes; rocky sand bars; coves; gravelly terraces; floodplains; ditches; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, rocky, gravelly, gravelly-sandy and sandy ground; sandy loam, clay loam and loam ground; clay ground, and gravelly silty ground, occurring from sea level to 4,000 feet in elevation in the grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and may live to be more than 400 years of age. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. To reduce water loss during extended periods of drought a tree may undergo a natural drought-pruning process where entire branches die back. The Foothill Paloverde is a common "nurse plant" of the Saguaro or Giant Cactus (*Carnegiea gigantea*) and provides a sheltered microhabitat in which other desert plants are able to become established. Bighorn Sheep (*Ovis canadensis*), Mule Deer (*Odocoileus hemionus*), jackrabbits and other small mammals browse the fruits, leaves and twigs; the Collard Peccary (*Peccari tajacu*) feed on the fruit, and the seeds are used by Bruchid Beetles. The Foothill Paloverde is considered a significant foraging site for birds; it is used as a nesting site by the Black-tailed Gnatcatcher (*Poliophtila melanura*) and Verdins, and as a roosting site by Gambel's Quail (*Callipepla gambelii* subsp. *gambelii*). The Costa's Hummingbird (*Calypte costae*) has been observed visiting the flowers. *Parkinsonia microphylla* is native to southwest-central and southern North America. *5, 6, 10, 13 (recorded as *Cercidium microphyllum* (Torrey) Rose & Johnston, Pages 247-248, color photograph including habitat: Plate T.1., Page 405), 15, 16 (recorded as *Cercidium microphyllum* (Torr.) Rose & Johnst.), 18, 26 (recorded as *Cercidium microphyllum*, color photograph), 28 (recorded as *Cercidium microphyllum*, color photograph 92), 43 (021410 - *Cercidium microphyllum* Rose & I.M. Johnst.), 44 (071811 - color photograph), 46 (recorded as *Cercidium microphyllum* (Torr.) Rose & Johnston, Page 407), 48, 52 (recorded as *Cercidium microphyllum* (Torr.) Rose & I.M. Johnst., color photograph), 53 (recorded as *Cercidium microphyllum* (Torr.) Rose & Johnst.), 63 (021410 - color presentation), 77 (recorded as *Cercidium microphyllum* (Torr.) Rose & Johnst.), **85** (071811 - color presentation including habitat), 86 (note under *Cercidium floridum*), 91 (recorded as *Cercidium microphyllum* (Torr.) Rose & I.M. Johnston, Pages 157-159), 115 (color presentation), 124 (071811 - no record of genus or species), 127, 134, 140 (Page 293), **WTK** (July 13, 2005)*

Phaseolus heterophyllus (see *Macroptilium gibbosifolium*)

Phaseolus heterophyllus var. *rotundifolius* (see *Macroptilium gibbosifolium*)

***Phaseolus maculatus* G.H. Scheele subsp. *maculatus*: Spotted Bean**

SYNONYMY: *Phaseolus metcalfei* E.O. Wooten & P.C. Standley. COMMON NAMES: Metcalf Bean, Spotted Bean. DESCRIPTION: Terrestrial perennial forb/herb or vine (stems 2 to 23 feet in length); the flowers may be pink-lavender & white, purple or rose-lavender; based on few records located flowering generally takes place between early August and early September (additional record: one for mid-May (cultivated plants); flowering beginning as early as July has been reported). HABITAT: Within the range of this species it has been reported from mountains; sandstone cliffs; canyons; rocky knolls; ridges; foothills; rocky hillsides; bouldery-rocky-gravelly-silty and rocky slopes; rocky outcrops; on rocks; rolling plains; along roadsides; bases of waterfalls, and (rocky) banks of creeks growing in rocky ground and bouldery-rocky-gravelly-silty ground, occurring from 4,700 to 8,000 feet in elevation in the forest, woodland, scrub, grassland and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Phaseolus maculatus* subsp. *maculatus* is native to southwest-central and southern North America. *5, 6, 43 (102911 - no record of subspecies), 44 (102911 - no record of species or

subspecies; genus record), 46 (“All of the native beans (*Phaseolus* spp.) improve the soil, make a good ground cover, and provide excellent forage for livestock.”, recorded as *Phaseolus metcalfei* Woot. & Standl., Page 483), 48 (genus), 63 (102911 - color presentation of seed), **85** (102911 - color presentation of *Phaseolus maculatus* Scheele, the dry material is *P.m.* subsp. *ritensis*), 124 (102911 - no record of species or subspecies; genus record), 133 (102911 - recognizes *Phaseolus maculatus* Scheele subsp. *maculatus* and subsp. *ritensis* (M.E. Jones) Freytag), 140 (Page 293)*

Phaseolus metcalfei (see *Phaseolus maculatus* subsp. *maculatus*)

Poinciana gilliesii (see *Caesalpinia gilliesii*)

***Prosopis glandulosa* J. Torrey: Honey Mesquite**

COMMON NAMES: Common Mesquite; Honey Mesquite; \square Íly <ily, il> (Uto-Aztec: Cahuilla)¹⁴⁰; Mesquite; Mizquitl (Aztec). DESCRIPTION: Terrestrial perennial deciduous shrub or tree (14 inches to 30 feet in height, shrubs (more than 30 in one population) were described as being 14 inches in height with crowns 12 inches in width, one plant was described as being 3½ feet in height with a crown 6 feet in width, one shrub was described as being 6 feet in height with a crown 20 feet in width, one tree was described as being 6½ feet in height and a crown 13 feet in diameter, one tree was described as being 15 feet in height and a crown 25 feet in diameter with a trunk 8 inches in diameter); the leaves are yellow-green; the flowers are cream, cream-yellow, greenish, greenish-yellow, light yellow, yellow, yellowish, or yellow-green; flowering generally takes place between early March and early August (additional records: one for early January and one record for early February); the mature seed pods are straw colored. HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; canyons; gravelly canyon bottoms; rocky ridges; hills; rocky and rocky-gravelly hillsides; bedrock, rocky, rocky-gravelly, gravelly, gravelly-sandy, sandy and sandy-loamy slopes; bajadas; rocky outcrops; amongst boulders; sand hills; sand dunes; blow-sand deposits; sandy plains; rocky-gravelly, sandy and clayey flats; rocky, rocky-gravelly and sandy valley floors; sandy railroad right-of-ways; along gravelly and sandy roadsides; bottoms of arroyos; within draws; seeps; around springs; along streams; sandy streambeds; along rivers; riverbeds; along and in rocky and rocky-sandy washes; along and in drainages; waterholes; marshes; depressions; rocky and sandy banks of rivers and washes; sandy margins of creeks and playas; beaches; benches; sandy bottomlands; sandy floodplains; mesquite bosques; stock tanks; reservoirs; along canals; riparian areas, and disturbed areas growing in moist and dry rocky desert pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, sandy loam and clayey loam ground, and sandy clay and clay ground, occurring from below sea level (- 200) to 6,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, maturity may be reached at three years of age with established plants possibly reaching 100 years of age. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder, beverage, sweetener, and/or spice crop; it was also noted as having been used as a drug or medication. The flowers may have a sweet fragrance. On windswept beaches this plant has been observed growing as a low, dense mat-forming shrub, growing 2 to 7 feet in height. This plant provides food and shelter for many species of wildlife, the Costa's hummingbird (*Calypte costae*) and Rufous Hummingbird (*Selasphorus rufus*) have been observed visiting the flowers. *Prosopis glandulosa* is native to south-central and southern North America. *5, 6, 10, 13, 18 (species), 26 (genus), 28 (color photograph), 43 (021410), 46 (genus and *Prosopis juliflora* (Swartz) DC., Pages 401-402), 52 (color photograph), 53 (recorded as *Prosopis juliflora* (Sw.) DC.), 63 (021410 - color presentation), **80** (The Western Honey Mesquite (*Prosopis juliflora* var. *torreyana*) is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. “Heavy, long-continued consumption of pods and leaves of these common desert shrubs may cause rumen impaction and poisoning.”), **85** (021510), 91, 101 (color photograph), 127, 140 (Page 146)*

***Prosopis glandulosa* J. Torrey var. *glandulosa*: Honey Mesquite**

SYNONYMY: *Prosopis juliflora* (O. Swartz) A.P. de Candolle var. *glandulosa* (J. Torrey) T.D. Cockerell. COMMON NAMES: Common Mesquite; Honey Mesquite; Mesquite; Mizquitl (Aztec). DESCRIPTION: Terrestrial perennial deciduous shrub or tree (4 to 30 feet in height); the flowers are cream-yellow; flowering generally takes place between late March and late June (additional records: two for mid-July and one for early August). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyon bottoms; bluffs; rocky ridges; hills; rocky hillsides; alluvial fans; clayey breaks; plains; sandy flats; valley floors; along gravelly-loamy and clayey roadsides; seeps; springs; along streams; along rivers; sandy riverbeds; along and in washes; benches; sandy bottomlands; floodplains, and stock tanks growing in dry desert pavement; rocky, gravelly-sandy and sandy ground; gravelly loam, clayey loam and loam ground, and sandy clay and clay ground, occurring from 100 to 6,600 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTE: Possibly an **EXOTIC** Plant. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder, beverage and/or fiber crop; it was also noted as having been used as a fuel and for tools. *Prosopis glandulosa* var. *glandulosa* is native to southwest-central and southern North America (an area ranging from southeastern Colorado to Kansas, Texas and eastern Mexico). *5, 6, 10, 13, 18 (species), 26 (color photograph), 28 (color photograph), 43 (021410), 46 (genus and *Prosopis juliflora* (Swartz) DC., Pages 401-402), 52 (color photograph of species, species), 53 (*Prosopis juliflora* (Sw.) DC.), 63 (021410), **85** (021510), 101 (color photograph of species, species), 127*

Prosopis juliflora var. *glandulosa* (see *Prosopis glandulosa* var. *glandulosa*)

Prosopis juliflora var. *velutina* (see *Prosopis velutina*)

***Prosopis velutina* E.O. Wooton: Velvet Mesquite**

SYNONYMY: *Prosopis juliflora* (O. Swartz) A.P. de Candolle var. *velutina* (E.O. Wooton) C.S. Sargent. COMMON NAMES: Algarroba <algoroba> (Spanish: Texas, Colima)¹⁴⁰; Ana'ly (Yuman: Maricopa)¹⁴⁰; Anáhl (Yuman: Kumiai)¹⁴⁰; ^aNāl^l <anāl^e, na:l> (Yuman: Walapai)¹⁴⁰; Arizona Mesquite; Arizona Velvet Mesquite; Ava (Yuman: Mohave)¹⁴⁰; Chachaca; Chachaka <chúcata> (Spanish: Michoacán)¹⁴⁰; □É:-la (Uto-Aztecan: Luiseño)¹⁴⁰; Eva^c (Yuman: Yuma)¹⁴⁰; Fluweelprosopis (Afrikaans); Haas <□aas> (Hokan: Seri)¹⁴⁰; Hu'upa (Uto-Aztecan: Yaqui)¹⁴⁰; Iyáa (Yuman: Havasupai)¹⁴⁰; Iyah <iiyáa> ("The Pod", Athapascan: Western Apache)¹⁴⁰; Kui (Uto-Aztecan: Akimel O'odham, Hiá Ce□ O'odham, Tohono O'odham)¹⁴⁰; Kui <k'ui> (Uto-Aztecan: Onavas Pima)¹⁴⁰; Kwayúly <anya> (Yuman: Cocopa)¹⁴⁰; Meskít (Uto-Aztecan: Mountain Pima)¹⁴⁰; Mesquite (a name also applied to other species and the genus *Prosopis*); Mesquite (English)¹⁴⁰; Mezquite (a name also applied to other species and the genus *Prosopis*); Mezquite (Spanish: Sonora)¹⁴⁰; Mizquitl; Nastane <natase> ("That Which Lies About", Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Ohpimpü (Uto-Aztecan: Panamint)¹⁴⁰; Opi(m)□ (Uto-Aztecan: Kawaiisu)¹⁴⁰; Péchita (Spanish: Arizona, Chihuahua, Sonora)¹⁴⁰; Quiot (Uto-Aztecan: Ópata, Sonora)¹⁴⁰; Sako (Uto-Aztecan: Mountain Pima)¹⁴⁰; Taji (Oto-Manguan: Otomí)¹⁴⁰; Tziritezcuá (Tarascan: Purépecha)¹⁴⁰; Uhpalá (Uto-Aztecan: Guarijío)¹⁴⁰; Upárai (Uto-Aztecan: Northern Tephuan)¹⁴⁰; Velvet Mesquite. DESCRIPTION: Terrestrial perennial deciduous shrub or tree (2 to 56 feet in height; one plant was observed and described as being 6½ feet in height with a canopy 6½ feet in width, one plant was observed and described as being 13 feet in height with a canopy 16½ feet in width, one tree was observed and described as being 20 feet in height with a crown 40 feet in width); the bark on the trunk and older branches is dark brown, dark brownish-green or dark gray; the leaves are gray-green; the flowers (cylindrical spikes 2 to 5 inches in length) may be cream, cream-white, cream-yellow, green-yellow, greenish-white, pale yellow, yellow, yellow-green, pale yellowish or yellowish-green; flowering generally takes place between mid-March and early September (additional records: one for early October and one for early November); the mature seedpods (3 to 8 inches in length) are red, tan, yellow or mottled. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; plateaus; rocky canyons; along rocky and sandy canyon bottoms; rocky bases of cliffs; buttes; bedrock, rocky and sandy ridges; rocky ridgetops; foothills; rocky hills; rocky hillsides; rocky, rocky-loamy, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey-loamy, sandy, sandy-loamy and clayey slopes; alluvial fans; gravelly bajadas; rocky outcrops; rocky and cobbly plains; gravelly, gravelly-sandy, sandy and sandy-loamy flats; sandy valley floors; valley bottoms; along rocky-gravelly-loamy, gravelly-clayey-sandy-loamy and silty-clayey roadsides; along and in rocky, gravelly and sandy arroyos; rocky and sandy bottoms of arroyos; rocky-gravelly-loamy draws; seeps; springs; around seeping streams; along streams; along rocky streambeds; along creeks; creekbeds; along rivers; along rocky-sandy riverbeds; along and in rocky, cobbly, gravelly-sandy and sandy washes; along drainages; within drainage ways; around ponds; playas; ciénegas; (sandy) banks of streams, creeks, rivers and washes; (gravelly and sandy) edges of rivers, washes and ponds; sandy-loamy benches; gravelly and gravelly-sandy terraces; bottomlands; rocky-gravelly floodplains; mesquite bosques; along fencelines; around stock tanks (repesos); around reservoirs; along canals; canal banks; ditches; along ditch banks; riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, gravelly loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; silty clay and clay ground, and sandy silty, clayey silty and silty ground, occurring from sea level to 6,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, it may live to be more than several hundred years of age. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage, fiber and/or dye or paint (boiled resin used as a pottery paint) crop; it was also noted as having been used as fuel, as a tool, as toys, as a drug or medication and as a guide for determining a planting season. The Velvet Mesquite is a common "nurse plant" of the Saguaro or Giant Cactus (*Carnegiea gigantea*). The flowers are pollinated by native bees. The Velvet Mesquite provides food and shelter for many species of wildlife. The plant is a food source for quail, Desert Mule Deer (*Odocoileus hemionus crooki*) and Desert Bighorn Sheep (*Ovis canadensis mexicana*). The Giant Mesquite Bug (*Thassus acutangulus*) feeds on the sap. Coyotes (*Canis latrans*), Desert Cottontails (*Sylvilagus audubonii*), Round-tailed Ground Squirrels (*Spermophilus tereticaudus*) and many other wild animals feed on the seed pods. Velvet Mesquite is the host for a Drywood Termite (*Incisitermes banksi*). Bruchid Beetles feed on the fruits and seeds. Much of the mesquite forest (bosques) originally found along the desert water courses have been lost to fuel wood cutting and clearing for agricultural fields and commercial and residential development. Velvet Mesquite Bosques were small, open, park-like woodlands with the Velvet Mesquite often occurring in nearly pure stands and interspersed with other common species such as the Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Mexican Elder (*Sambucus nigra* subsp. *canadensis*), Desert Hackberry (*Celtis ehrenbergiana*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Wolfberry (*Lycium* spp.), Four-wing Salt-bush (*Atriplex canescens*) and Vine Mesquite Grass (*Panicum obtusum*). *Prosopis velutina* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Prosopis juliflora* (Swartz) DC. var. *velutina* (Wooton) Sarg., Pages 238-240, color photograph: Plate R.2., Page 403), 15, 16, 18, 26 (color photograph), 28 (color photograph 90), 43 (071609), 44 (040211), 46 (recorded as *Prosopis juliflora* (Swartz) DC. var. *velutina* (Wooton) Sarg., Page 402), 48, 52 (color photograph), 53 (species: recorded as *Prosopis juliflora* (Sw.) DC.), 58, 63 (021610), 68, 77, 80 (This species is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "Heavy, long-continued consumption of pods and leaves of these common desert shrubs may cause rumen impaction and poisoning."), 85 (071911 - color presentation including habitat), 91 (Pages 330-333), 115 (color

presentation), 124 (040211 - no record of genus or species), 127, 134, 140 (Pages 146-147 & 293), ADS (Arizona Daily Star, Sunday, July 26, 2009, Tucson & Region, B1: Mesquite Pods are of Consuming Interest), **WTK** (August 4, 2005)*

***Senna covesii* (A. Gray) H.S. Irwin & R.C. Barneby: Coues' Cassia**

SYNONYMY: *Cassia covesii* A. Gray. COMMON NAMES: Coues Cassia; Coues Senna; Coues' Cassia; Coues' Senna; Coues's Cassia; Coues's Senna; Coves (error) Cassia; Coves' (error) Cassia; Cove (error) Senna; Coves (error) Senna; Coves' (error) Senna; ; Coves's (error) Senna; Dais; Daisillo; Desert Senna (a name also applied to other species); Hojasen; Kau Ohasen (Yaqui); Rosemaria; Rattlebox; Rattlebox Senna; Rattleweed; Senna (a name applied to other species and the genus *Senna*). DESCRIPTION: Terrestrial perennial forb/herb or subshrub (10 to 32 inches in height); the leaves are gray or gray-green; the flowers (½ to 1 inch in width) golden, orange-yellow, rusty-yellow, pale yellow, yellow, yellow-orange or yellow with reddish veins; flowering generally takes place between early March and early December (additional records: one for early February and two for mid-February); the mature seedpods (1 to 2 inches in length) are brown. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; canyons; canyonsides; rocky and gravelly canyon bottoms; along rocky and rocky-sandy ridges; rocky ridgetops; foothills; rocky hills; rocky and sandy hillsides; along rocky, rocky-gravelly, rocky-clayey and gravelly slopes; alluvial fans; gravelly bajadas; amongst grasses; sandy-loamy plains; gravelly, sandy and silty flats; basins; valley floors; along rocky, gravelly, gravelly-sandy and sandy roadsides; rocky and gravelly arroyos; sandy bottoms of arroyos; gulches; along streams; within streambeds; creeks; sandy creekbeds; along rivers; sandy riverbeds; along and in bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; gravelly drainage ways; waterholes; around ponds; (gravelly and gravelly-sandy) banks of rivers, washes and lakes; margins of washes; (gravelly) shores of lakes; gravel bars; sandy beaches; sandy loamy benches; gravelly terraces; sandy, sandy-loamy, loamy and silty floodplains; mesquite bosques; gravelly and sandy riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, sandy loam, sandy-clayey loam and loam ground; rocky clay ground, and silty ground, occurring from sea level to 6,700 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Cove Cassia is a larval food plant of the Cloudless Sulfur (*Phoebis sennae*) and Sleepy Orange (*Eurema nicippe*) and is used for food by Gambel's Quail (*Callipepla gambelii gambelii*). *Senna covesii* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (recorded as *Cassia covesii*, color photograph 501), 43 (021710), 44 (071911), 46 (recorded as *Cassia covesii* Gray, Page 406), 63 (021710), 68, 77, 82, **85** (071911 - color presentation), 115 (color presentation), 124 (071911 - no record of species; genus record)*

Vachellia constricta (see *Acacia constricta*)

Vicia exigua (see *Vicia ludoviciana* var. *ludoviciana*)

***Vicia ludoviciana* T. Nuttall subsp. *ludoviciana*: Louisiana Vetch**

SYNONYMY: *Vicia exigua* T. Nuttall. COMMON NAMES: Deer-pea Vetch; Deerpea Vetch; Leavenworth's Vetch; Louisiana Vetch; Slender Vetch; Slim Vetch; Texas Vetch; Vetch (a name applied to the species, other species and to the genus *Vicia*); White Vetch. DESCRIPTION: Terrestrial annual forb/herb or vine (sprawling or twining stems 4 inches to 3 feet in height/length); the flowers may be pale blue, pale blue & white, blue, bluish-purple, bluish-white, blue & white, cream, cream & purple, light lavender, lavender, lavender-white, pink, pinkish; pinkish-purple, pinkish, pinkish-white, pale purple, purplish-blue, sky blue, violet, violet & white, white, white & blue-lavender or white-lavender; flowering generally takes place between early March and late May (additional records: one for early February, one for early July, two for mid-July, one for mid-August and one for mid- September). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; rock cliffs; bases of cliffs; canyons; bouldery, rocky and gravelly-sandy canyon bottoms; talus slopes; crevices in lava flows; grassy bluffs; buttes; knolls; ledges; rocky ridgetops; foothills; rocky hills; bouldery, rocky, rocky-gravelly and rocky-clayey hillsides; rocky escarpments; rocky, rocky-gravelly, rocky-gravelly-loamy, rocky-loamy, rocky-clayey, stony, gravelly, gravelly-loamy, sandy, loamy and clayey slopes; rocky outcrops; amongst boulders and rocks; sandy lava flows; lava fields; gravelly-sandy prairies; loamy and clayey flats; basins; valley floors; railroad right-of-ways; along rocky-gravelly-loamy, rocky-loamy, rocky-sandy, gravelly, sandy-loamy and clayey-loamy roadsides; within rocky and sandy arroyos; gullies; seeps; along sandy streams; along and in streambeds; along creeks; along rivers; along sandy-loamy riverbeds; along and in rocky, rocky-gravelly, rocky-loamy, gravelly-loamy and sandy washes; within sandy drainage ways; in rocks around ponds; swampy areas; sandy-silty and silty depressions; banks of streams and washes; edges of washes; bottomlands; loamy floodplains; mesquite bosques; sandy riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, stony, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, sandy loam, clayey loam and loam ground; rocky clay and clay ground, and sandy silty and silty ground, occurring from 300 to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Vicia ludoviciana* subsp. *ludoviciana* is native to south-central and southern North America. *5, 6, 15, 43 (021810), 44 (071911 - Common Names recorded under *Vicia ludoviciana* var. *ludoviciana*), 46 (*Vicia exigua* Nutt., Page 477), 48 (genus), 58 (recorded as *Vicia ludoviciana* Nutt. [*V. exigua* Nutt. in "Arizona Flora"]), 63 (021810 - color presentation of seed), 77 (recorded as *Vicia ludoviciana* Nutt. [*V. exigua* Nutt.]), **80** (Species of the genus *Vicia* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Cultivated species of Vetch may cause liver damage, cyanide poisoning, and photosensitization, but native species have not been incriminated." and also Poisonous Cropland and Garden Plants. "Species of Vetch occasionally develop lethal concentrations of cyanogenetic

glycosides or produce photosensitization but are rarely responsible for deaths.”), **85** (071911 - color presentation), 124 (071911), 140 (recorded as *Vicia exigua* Nuttall, Page 293)*

Zapoteca formosa (K.S. Kunth) H.M. Hernández subsp. schottii (J. Torrey ex S. Watson) H.M. Hernández: Schott's Stickpea

SYNONYMY: *Calliandra schottii* J. Torrey ex S. Watson. COMMON NAMES: Schott Calliandra; Schott Stickpea; Schott's Stickpea. DESCRIPTION: Terrestrial perennial deciduous (drought and cold) subshrub (erect stems 20 inches to 10 feet in height); the stems are straw-colored; the flowers (3/8 inch in diameter) are pinkish, white with pink tips, whitish or yellowish; the anthers are yellow; flowering generally takes place between late May and late August (flowering records: one for late May, one for late June and one for late August, flowering in April has also been reported, and flowering as late as September and October has also been reported). HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; canyon bottoms; foothills; rocky hilltops; rocky hillsides; rocky slopes; amongst boulders; rocky draws, and along streams growing in dry rocky ground, occurring from 800 to 5,200 feet in elevation in the woodland, grassland and desertscrub ecological formations. NOTE: *Zapoteca formosa* subsp. *schottii* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Calliandra schottii* Torrey), 43 (083010), 46 (recorded as *Calliandra schottii* Torr., Page 397), 63 (083010 - color presentation of seed and pod), 77 (recorded as *Calliandra schottii* Torr. subsp. *schottii* (Torr. ex S. Wats.) H. Hern.), **85** (083010 - color presentation of dried material), 91, 140 (Page 293)*

Fagaceae: The Beech Family

***Quercus arizonica* C.S. Sargent: Arizona White Oak**

COMMON NAMES: Arizona Oak; Arizona White Oak; Encino (a name applied to the genus *Quercus*, Hispanic); Napaco (Tarahumara); Napoco (Hispanic); Roble (a name applied to the genus *Quercus*, Hispanic); Rojaca (Hispanic); Toa (a name applied to the genus *Quercus*, Tohono O'odham). DESCRIPTION: Terrestrial perennial evergreen shrub or tree (10 to 66 feet in height (one flowering record for a plant 20 inches in height) with an irregular, spreading rounded crown, one plant was described as being 5 feet in height with a crown 5 feet in width); the bark is light gray or whitish; the twigs are yellowish; the oval leaves are a dull blue-green or dark green above and brownish and fuzzy beneath; the flowers are yellowish; flowering generally takes place between early April and early June (additional records: one for late February, one for mid-March, two for early August, two for mid-August, one for late August, two for mid-September and one for early November); the acorns (3/4 to 1 inch in length) are light brown. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; clayey mountainsides; mesas; clefts in rock faces; rocky canyons; rocky canyonsides; along canyon bottoms; rocky ridges; ridgetops; meadows; foothills; rocky hills; rocky and clayey hillsides; rocky, rocky-sandy-clayey-loamy, gravelly and gravelly-sandy slopes; bajadas; rocky outcrops; amongst rocks; flats; bouldery-silty valleys; arroyos; bottoms of arroyos; draws; sandy ravines; springs; along streambeds; along creeks; creekbeds; along sandy drainages; banks of draws; benches; terraces, and gravelly riparian areas in bouldery, rocky, gravelly, gravelly-sandy and sandy soils; rocky-sandy-clayey loam, cobbly loam and gravelly-clayey loam soils; clay soils, and bouldery silty soils, occurring from 3,400 to 7,600 feet in elevation in the forest, woodland, scrub, grassland and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Arizona White Oak is one of the largest of the southwestern oaks. This plant is browsed by Mule Deer (*Odocoileus hemionus*) and White-tailed Deer (*Odocoileus virginianus*) and the acorns are eaten by White-tailed Deer and other wildlife. *Quercus arizonica* is native to southwest-central and southern North America. *5, 6, 15, 18 (genus), 28 (color photograph), 30, 43 (072009), **46**, 48, 52 (color photograph), 53, 63 (072009), **68** (genus), 85 (072109, *Quercus arizonica* Sarg. has been recorded as a synonym of *Quercus grisea* F.M. Liebm.), 134, 140 (Pages 151, 152 & 293), **WTK** (August 6, 2005)

***Quercus emoryi* J. Torrey: Emory Oak**

COMMON NAMES: Bellota (“Acorn”, Spanish)¹⁴⁰; Black Oak (English)¹⁴⁰; Blackjack Oak (English)¹⁴⁰; Chéché'il <chéchi'il, tséch'il> (Athapascan: Navajo)¹⁴⁰; Chích'il [Nteelí, Lich'él] (Athapascan: Western Apache)¹⁴⁰; Doha <roha, rojuá> (Uto-Aztecan: Tarahumara)¹⁴⁰; Emory Oak (English)¹⁴⁰; Emory's Oak; Encino [Bellotero, Colorado, Duraz-nillo, Negro, Prieto] (“[Acorn, Red-colored, Little Peach, Black, Black] Evergreen Oaks”, Spanish: Chihuahua, Sonora)¹⁴⁰; Gray Oak (a name also applied to other species); Has (Yuki: Yuki)¹⁴⁰; Héhat (Uto-Aztecan: Luiseño)¹⁴⁰; Híhat (Uto-Aztecan: Cupeño)¹⁴⁰; Iśhó (Yuman: Kumiai)¹⁴⁰; Koowi (Uto-Aztecan: Yaqui)¹⁴⁰; Kwae (Kiowa Tanoan: Tewa)¹⁴⁰; Kwíavq <kwi'úv> (Uto-Aztecan: Ute; T□□mápu, for the acorn)¹⁴⁰; Kwingvi <kwí:ngvi> (Uto-Aztecan: Hopi)¹⁴⁰; Kwi'niúp [Ku'niúp] (Uto-Aztecan: Shoshoni; Ku'niroúmp, for the acorn)¹⁴⁰; Mállūj (Hokan: Washo)¹⁴⁰; Natókatsé (Athapascan: Jicarilla Apache)¹⁴⁰; Qwiya (Uto-Aztecan: Southern Paiute)¹⁴⁰; Qwinyal <kwinyil> (Uto-Aztecan: Cahuilla)¹⁴⁰; Roble Negro (“Black [Deciduous] Oak”, Spanish)¹⁴⁰; Sñaiw (Yuman: Paipai)¹⁴⁰; □n^ya: <senya, sn^ya:> (for the acorn or plant, Yuman: Cocopa; for genus or *Q. turbinella*)¹⁴⁰; Tciticile <tcintcile> (Athapascan: Chiricahua and Mescalero Apache); Tinyík <□inyik□a> (Yuman: Walapai Sñaiw (Yuman: Paipai)¹⁴⁰; Toa [Doa] (Uto-Aztecan: Akimel and Tohono O'odham, altered to “Toji in Sonoran Spanish)¹⁴⁰; Tohá (Uto-Aztecan: Eudeve)¹⁴⁰; Tohé <tohá, tohi> (Uto-Aztecan: Guarijio)¹⁴⁰; Tua <toha> (Uto-Aztecan: Mountain Pima)¹⁴⁰; □úva (Uto-Aztecan: Cupeño)¹⁴⁰; Umíçari (Uto-Aztecan: Tarahumara)¹⁴⁰; Veyotam (Uto-Aztecan: Yaqui)¹⁴⁰; Viyóōdi <viyóōdi> (Uto-Aztecan: Akimel O'odham)¹⁴⁰; Wíat (Uto-Aztecan: Cupeño)¹⁴⁰; Wíya (Uto-Aztecan: Mono)¹⁴⁰; Wiyampippūh (Uto-Aztecan: Panamint; Wiyan(pi), for the acorn)¹⁴⁰; Wiyodi <wi:yoda> (Uto-Aztecan: Tohono O'odham)¹⁴⁰; Xilojo (Oto-Manguan: Mazahua; for *Quercus*)¹⁴⁰. DESCRIPTION: Terrestrial perennial evergreen shrub or tree (5 to 66 feet in height with a spreading and rounded crown to 40 feet in width); the bark may be

black, blackish, blackish-gray, dark blackish-gray, dark brown, gray, dark gray or dark gray-brown; the young twigs are a dark reddish-brown; the older twigs are gray; the shiny leaves may be green, dark green or yellowish-green above and dull pale green beneath; the flowers may be cream, greenish (staminate noted) or yellowish; flowering generally takes place between late March and late June (additional records: three for late July, one for mid-August, one for early September and one for mid-September); the acorns ($\frac{1}{2}$ to $\frac{3}{4}$ in length) are brownish. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; plateaus; barrancas; rocky canyons; rocky and rocky-clayey canyon bottoms; ridges; ridgetops; foothills; rocky and rocky-gravelly hills; rocky hillsides; rocky piedmonts; bedrock, rocky, rocky-gravelly-sandy, rocky-loamy, rocky-clayey, rocky-clayey-loamy, gravelly, gravelly-loamy, sandy, sandy-loamy, loamy and clayey slopes; alluvial fans; bajadas; rocky outcrops; amongst boulders and rocks; plains; rocky flats; basins; valley floors; valley bottoms; along rocky arroyos; draws; gullies; springs; along streams; streambeds; along creekbeds; along and in cobbly-sandy, gravelly and gravelly-sandy washes; along drainages; along watercourses; swales; banks of creeks; bottomlands, and sandy riparian areas; growing in dry bouldery, rocky, rocky-gravelly, rocky-gravelly-sandy, shaley, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam and loam ground, and rocky clay and clay ground, occurring from 1,900 to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. The acorns are nearly tannin free. Mule Deer (*Odocoileus hemionus*), Pronghorn (*Antilocapra americana*) and White-tailed Deer (*Odocoileus virginianus*) browse this plant, and the acorns (bellotas) are eaten by Band-tailed Pigeons (*Columba fasciata*), Collared Peccary (*Peccari tajacu*), Mule Deer (*Odocoileus hemionus*), White-tailed Deer (*Odocoileus virginianus*), Wild Turkey (*Meleagris gallopavo*), and other wildlife. *Quercus emoryi* is native to southwest-central and southern North America. *5, 6, 15, 18, 28 (color photograph 65), 30, 43 (072009), 44 (031111 - no record of species; genus record), 46 (Page 219), 48, 52 (color photograph), 53, 58, 63 (031011 - color presentation), 68 (genus), 85 (031011 - color presentation), 124 (030911 - no record of species; genus record), 127, 134, 140 (Pages 149-151 & 293), WTK (August 6, 2005)*

***Quercus grisea* F.M. Liebmann: Gray Oak**

COMMON NAMES: Arizona Live Oak; Arizona Oak (Arizona); Arizona White Oak; Encino (a name applied to the species and also the genus *Quercus*, Hispanic); Encino Blanco (Spanish: Sonora); Gray Oak; Scrub Oak; Shin Oak; Toa (a name applied to the genus *Quercus*, Tohono O'odham). DESCRIPTION: Terrestrial perennial deciduous or evergreen shrub or tree (40 inches to 65 feet in height with a rounded spreading crown; one plant was described as being 8 feet in height and 10 feet in width, one plant was described as being 13 feet in height and 10 feet in width); the bark may be light gray, gray, dark gray, pale gray-brown, gray-black or whitish; the twigs are yellowish becoming gray with age; the elliptic to ovate leaves ($\frac{3}{4}$ to 2 inches in length) may be dull or glossy blue-green, gray-green, green or dark green above and a finely-hairy pale gray-green, dull gray-yellow-green or dull yellow-green beneath; the flowers may be cream-white, greenish (staminate flowers noted) or yellow; flowering generally takes place between early April and early August (additional records: two for late August, one for early September, one for mid-October and one for late October); the egg-shaped acorns are $\frac{1}{2}$ to $\frac{5}{8}$ inch in length. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; bedrock and bouldery peaks; mountainsides; rocky mesas; bases of cliffs; along bouldery and rocky canyons; rocky gorges; rocky and gravelly-clayey canyon bottoms; along crevices in boulders; rock bluffs; hogbacks; rocky ridges; ridgetops; clearings in woodlands; sandy areas in oak thickets; rocky foothills; bouldery and gravelly hills; hilltops; rocky, gravelly and gravelly-sandy hillsides; bouldery, rocky, rocky-gravelly, rocky-sandy, rocky-loamy, rocky-clayey-loamy, shaley, stony, gravelly, gravelly-sandy, gravelly-loamy and sandy slopes; rocky outcrops; amongst rocks; boulder fields; stabilized sand dunes; prairies; gravelly plains; bouldery-gravelly-sandy, rocky, gravelly-loamy and sandy flats; basins; valley bottoms; rocky-sandy roadsides; along bouldery-rocky-loamy arroyos; sandy-loamy draws; sandy bottoms of draws; along ravines; bottoms of ravines; seeps; springs; along streams; along and in rocky streambeds; along creeks; along and in creekbeds; along and in bedrock, bouldery-sandy and sandy washes; within rocky-sandy drainages; along banks of streams, creeks and creekbeds; (sandy) edges of draws, creekbeds and rivers; terraces; bottomlands; floodplains, and riparian areas growing in moist and dry bouldery, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, gravelly, gravelly-sandy and sandy ground; bouldery-rocky loam, rocky loam, rocky-clayey loam, gravelly loam and sandy loam ground, and gravelly clay and clay ground, occurring from 3,500 to 9,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a flavoring (shaved root chips were used to flavor drinks) and as a ceremonial item. *Quercus grisea* is native to southwest-central and southern North America. *5, 6, 18 (genus), 30, 43 (072309), 44 (031111 - no record of species; genus record), 46 (Page 219), 52 (color photograph), 53 ("As this species intergrades both with Arizona White Oak and Shrub Live Oak, some forms are not readily distinguished."), 63 (072309), 68 (genus), 85 (031111 - color presentation), 124 (021011 - no record of species; genus record), 127, 134, 140 (Pages 151, 152 & 293)*

***Quercus oblongifolia* J. Torrey: Mexican Blue Oak**

COMMON NAME: Bellota [de Cochi] ("[Pigs] Acorn", Spanish)¹⁴⁰; [Mexican] Blue Oak (English)¹⁴⁰; Chích'il Libayé (Athapascan: Western Apache)¹⁴⁰; Encino Azul (Spanish: Sonora)¹⁴⁰; Héhat (Uto-Aztecan: Luiseño)¹⁴⁰; Híhat (Uto-Aztecan: Cupeño)¹⁴⁰; Kwae (Kiowa Tanoan: Tewa)¹⁴⁰; Kwiávuq <kwi'ûv> (Uto-Aztecan: Ute; T□□mó□gpū, for the acorn)¹⁴⁰; Kwingvi <kwi:ngvi> (Uto-Aztecan: Hopi)¹⁴⁰; Mexican Blue Oak; Qwinyal <qwinyil> (Uto-Aztecan: Cahuilla)¹⁴⁰; Toa (Uto-Aztecan:

Akimel O'odham, Tohono O'odham)¹⁴⁰; Tua <tu'a, toha> (Uto-Aztec: Mountain Pima)¹⁴⁰; White Live Oak (English)¹⁴⁰; Wiyampippüh (Uto-Aztec: Panamint; Wiyan(pi), for the acorn)¹⁴⁰; Wiyodi <wi:yoda> (Uto-Aztec: Tohono O'odham)¹⁴⁰; Xilojo (Oto-Manguan: Mazahua; for *Quercus*)¹⁴⁰. DESCRIPTION: Terrestrial perennial evergreen shrub or tree (6 to 33 feet in height with a broadly spreading rounded crown, one tree was observed and described as being 20 feet in height with a crown 50 feet in width); the checkered bark is light gray, gray or whitish; the twigs are light brown, gray or reddish-brown; the small oblong, toothless and hairless leaves (1 to 2 inches in length and ½ to ¾ inch in width) are a shiny blue-green above and paler beneath; the flowers are yellowish; flowering generally takes place between late March and late May (additional records: one for early January, one for mid-June, one for late July, one for late October and one for late November); the acorns are ½ to ¾ inch in length. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mesas; rocky canyons; rocky canyon bottoms; foothills; rocky, stony and gravelly hills; hilltops; rocky and rocky-clayey hillsides; rocky slopes; bajadas; rocky outcrops; rocky basins; within arroyos; rocky draws; within ravines; along streams; bouldery-sandy and sandy streambeds; along creeks; creekbeds; drainages; along watercourses; edges of streams and washes; silty-loamy terraces, and rocky riparian areas in bouldery-sandy, rocky, stony, gravelly and sandy soils; gravelly loam and silty loam soils, and rocky clay soils, occurring from 2,800 to 6,000 feet in elevation in the woodland, scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop when grown on a limited basis. The plant is browsed by deer; the dead limbs are used by the Acorn Woodpecker (*Melanerpes formicivorus*) for the storage of acorns, and the caterpillars of the Cecrops Eyed Silkmoth (*Automeris cecrops*) feed on the leaves. *Quercus oblongifolia* is native to southwest-central and southern North America. *5, 6, 15, 18 (genus), 28 (color photograph 43), 43 (072109), 46 (Pages 217-218) 48, 52 (color photograph), 53, 58, 63 (072109), 68 (genus.), 85 (072109), 127, 134, 140 (Pages 149, 150-152 & 293), **WTK** (August 6, 2005)*

Quercus reticulata (see *Quercus rugosa*)

***Quercus rugosa* L. Née: Netleaf Oak**

SYNONYMY: *Quercus reticulata* F.W. von Humbolt & A.J. Bonpland. COMMON NAMES: Alvellana (Hispanic), Avellana (Hispanic); Encino Blanco Liso (Hispanic); Encino Cuero (Hispanic); Encino de Asta (Hispanic); Encino de Miel (Hispanic); Encino Negro (Hispanic); Encino Prieto (Hispanic); Encino Quebra Hacha (Hispanic); Encino Roble (Hispanic); Hazel Leaf Oak (Arizona); Net-leaf Oak; Netleaf Oak;; Sharari (Hispanic); Toa (a name applied to the genus *Quercus*, Tohono O'odham); Tocus (Hispanic). DESCRIPTION: Terrestrial perennial evergreen shrub or tree (5 to 83 feet in height with a broad rounded crown; one plant was observed and described as being 10 feet in height with a crown 5 feet wide); the bark may be light brown, dark brown, gray or dark gray; the young twigs are brown or reddish-brown; the older twigs are gray; the leaves may be dark green or yellow-green above and brownish, golden-yellow, pale green, orange or yellowish pubescent below; the flowers are green or greenish (staminate noted); flowering generally takes place between mid-April and early July (additional records: two for mid-March, one for late July, two for mid-August, one for mid-September, one for late September, two for early October, one for mid-October and one for mid-November). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mesas; bases of cliffs; bouldery, rocky and sandy canyons; canyon walls; bouldery-loamy canyon bottoms; amongst hoodoos; along bedrock and rocky ridges; ridgetops; ridgelines; foothills; rocky hills; rocky hillsides; bedrock, bouldery, rocky, rocky-gravelly, rocky-loamy, stony, gravelly and sandy-loamy slopes; rocky outcrops; amongst boulders; bases of boulders; flats; sandy valley floors; along roadsides; rocky arroyos; gulches; ravines; bottoms of ravines; along streambeds; along creeks; within washes; drainages; in loam along watercourses, and rocky riparian areas growing in moist and dry bouldery, bouldery-gravelly, rocky, rocky-gravelly, stony, gravelly, gravelly-sandy and sandy ground and bouldery loam, rocky loam, sandy loam and loam ground, occurring from 4,000 to 9,900 feet in elevation in the forest, woodland, scrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Wildlife feed on the acorns. *Quercus rugosa* is native to southwest-central and southern North America and Central America. *5, 6, 15, 18 (genus), 28 (color photograph 66), 30, 43 (031111), 44 (031111 - no record of species; genus record), 46 (recorded as *Quercus reticulata* Humb. & Bonpl., Page 217), 52, 53, 63 (031111), 68 (genus), 85 (031211 - color presentation), 124 (031111 - no record of species; genus record)*

Fouquieriaceae: The Ocotillo Family

***Fouquieria splendens* G. Engelmann: Ocotillo**

SYNONYMY: *Fouquieria splendens* G. Engelmann subsp. *splendens* G. Engelmann. COMMON NAMES: Albarda <barda> (“Pack Saddle”, Spanish: Coahuila, Sonora, Zacatecas)¹⁴⁰, Apache Whipping Stick (English)¹⁴⁰, Barba (“Beard”, Spanish: Coahuila)¹⁴⁰, Barda; Candle Bush (English)¹⁴⁰; Candlewood (English: Texas)¹⁴⁰; Chimuchi Chuwara <simuchi chuware> (Uto-Aztec: Tarahumara)¹⁴⁰; Chumari (Spanish: Sonora)¹⁴⁰, Chunari (Uto-Aztec: Cahita); Cirio (“Wax Candle”, Spanish: Baja California)¹⁴⁰; Coach Whip (a name also applied to the genus *Fouquieria*); Coach-whip (a name also applied to the genus *Fouquieria*); Coach-whip (English: Arizona)¹⁴⁰; Coach-whip Cactus; Coach-whip Ocotillo; Coachwhip (a name also applied to the genus *Fouquieria*); Coachwhip Cactus; Coachwhip Ocotillo; Colorín Cimmarón (“Wild Red One”, Spanish: Mexico)¹⁴⁰; Cunuri (Uto-Aztec: Guarijío)¹⁴⁰; Flamingsword; Í'i'qimie <igame> (Yuman: Walapai)¹⁴⁰; I'ikumadhí (Yuman: Maricopa)¹⁴⁰; □I:n'yáy (Yuman: Cocopa)¹⁴⁰; Jacob's Staff [Wand] (English)¹⁴⁰; Jacob's Wand; Melhog <mírok, míro'k> (Uto-

Aztec: Hiá Ce□ O'odham, Tohono O'odham)¹⁴⁰; Merihog <nuri'og> (Uto-Aztec: Onavas Pima; probably for *Fouquieria macdougalii*)¹⁴⁰; Monkey-tail; Mureo (Uto-Aztec: Yaqui)¹⁴⁰; Ocotillo (a name also applied to the genus *Fouquieria*); Ocotillo [de Corral] (“[Corral] Little Torch”, Spanish: New Mexico, Texas, Baja California, Chihuahua, Coahuila, Sonora, Zacatecas)¹⁴⁰; Ocotillo del Corral; Palo de Adán (“Adam’s Tree”, Spanish: Baja California)¹⁴⁰; Saar (Uto-Aztec: Mountain Pima)¹⁴⁰; Slimwood (English: Arizona)¹⁴⁰; Tarákovara (Uto-Aztec: Northern Tepehuan)¹⁴⁰; T’iis Ts’□z <ges choze> (Athapascan: Western Apache)¹⁴⁰; Utush <otosh> (Uto-Aztec: Cahuilla)¹⁴⁰; Vine Cactus; Vine-cactus (English)¹⁴⁰; Xomxéziz <xeshish> (Hokan: Seri)¹⁴⁰; Wolf’s Candles; Xong (Hokan: Seri)¹⁴⁰. DESCRIPTION: Terrestrial perennial cold- and drought-deciduous semi- and stem-succulent shrub (sinuously-ascending or erect stems 5 to 33 feet in height with a crown width of 5 to 15 feet); the stems (wand-like and branching from the base in clusters of up to 5 to 100) are gray, gray & dark gray, gray-green or green; the leaves are green; the flowers (in 2 to 10 inch long clusters at the tips of the stems) may be coral-red, cream, cream-white, orange, orange-red, pinkish-purple, red, reddish-orange, red & yellow, salmon, scarlet, scarlet-coral, white or yellow; flowering generally takes place over a period of 50 to 60 days between early February and early August (additional records: two for late August, two for mid-September, one for late September, one for mid-October, two for late October, two for early November and two for early December); the mature fruits are capsules containing winged seeds. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky, gravelly-sandy and sandy mesas; crags; canyon rims; cliffs; bouldery and rocky canyons; rocky canyon bottoms; crevices in rocks; bedrock and gravelly ridges; rocky ridgetops; ridgelines; rocky foothills; rocky and rocky-sandy hills; rocky hilltops; rocky and gravelly hillsides; bedrock, bouldery-cobbly, rocky, rocky-gravelly, shaley-sandy, stony, gravelly, gravelly-sandy and gravelly-loamy slopes; alluvial fans; rocky and sandy bajadas; rocky outcrops; amongst boulders; lava flows; sand hills; sand dunes; dune swales; gravelly outwash fans; gravelly and sandy plains; gravelly and gravelly-sandy flats; basins; rocky and sandy valley floors; valley bottoms; along gravelly roadsides; within rocky arroyos; gullies; along rivers; riverbeds; along cobbly and sandy washes; within gravelly drainages; (bedrock, bouldery-cobbly and sandy) banks of rivers and washes; (rocky-sandy) shores of lakes; benches; along floodplains and riparian areas growing in dry desert pavement; bouldery, bouldery-cobbly, rocky, rocky-gravelly, rocky-sandy, shaley-sandy, stony, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam ground, and clay ground, occurring from sea level to 8,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or fiber crop; it was also noted as having been used as a fuel, tool, drug or medication, ceremonial item and as an ornamental landscape plant. Older plants may be 150 to 200 years of age. This “vase-shaped” plant has been described by Benson and Darrow as being “one of the most distinctive shrubs in the Southwestern Deserts, and it is one of the plants giving outstanding character to the flora of the region”. Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*), Mule Deer (*Odocoileus hemionus*) and White-tailed Deer (*Odocoileus virginianus* subsp. *couesi*) browse this plant. Solitary Bees, Butterflies, Carpenter Bees (*Xylocopa californica*), House Finches (*Carpodacus mexicanus*), Lesser Goldfinches (*Carduelis psaltria*), Syrphid Flies, Broad-billed Hummingbirds (*Cynanthus latirostris*), Costa’s Hummingbirds (*Calypte costae*), Rufous Hummingbirds (*Selasphorus rufus*), Hooded Orioles (*Icterus cucullatus*), Scott’s Orioles (*Icterus parisorum*), Pyrrhuloxias (*Cardinalis sinuatus*), Verdins (*Auriparus flaviceps*), and Warblers have been observed visiting the flowers. The Ocotillo is a preferred food plant of the Costa’s Hummingbird. *Fouquieria splendens* is native to southwest-central and southern North America. *5, 6, 10, 13 (Pages 178-179, color photograph: Plate N., Page 401), 15, 16, 18, 26 (color photograph), 28 (color photograph 553 A&B), 43 (080309), 44 (071911 - color photograph), 45 (color photograph), 46 (Page 640), 48, 58, 63 (021810 - color presentation), 77 (color photograph #27), **85** (021810 - color presentation), 86 (color photograph), 91 (Pages 224-226), 106 (021810 - color presentation), 107, 115 (color presentation), 124 (071911 - no record of genus or species), 127, 140 (Pages 152-153 & 293 recorded as *Fouquieria splendens* Engelmann subsp. *splendens*), **WTK** (August 4, 2005)*

Fouquieria splendens subsp. *splendens* (see *Fouquieria splendens*)

Fumariaceae: The Fumitory Family

***Corydalis aurea* C.L. von Willdenow: Scrambled Eggs**

COMMON NAMES: Corydalis Dorée, Dutchman’s Breeches, Fitweed, Fumitory, Golden Corydalis, Golden Smoke, Mountain Corydalis, Scrambled Eggs. DESCRIPTION: Terrestrial annual or biennial forb/herb (4 inches to 2 feet in height and as it ages may become prostrate); the leaves are bluish-green, gray-green, light green or silvery-bluish-green; the flowers (3/8 to 3/4 inch in length) are golden, golden-yellow, pale yellow, yellow, dark yellow tinged with dark red, yellow fringed with red or yellowish-orange; flowering generally takes place between early February and mid-September (additional records: one for mid-October, one for mid-December and two for late December); the seedpods (½ to 1 inch in length) are bluish-green. HABITAT: Within the range of this species it has been reported from mountains; bouldery mountaintops; gravelly-loamy mountainsides; sandy mesas; gravelly-loamy plateaus; canyon rims; cliffs; along rocky canyons; canyon sides; along rocky-clayey, sandy and clayey canyon bottoms; chasms; shaley scree; talus; bases of cliffs; crevices in rocks; rocky and gravelly bluffs; rocky ledges; rocky ridges; meadows; rocky foothills; hills; rocky and gravelly hillsides; bouldery, rocky, rocky-loamy, stony, gravelly, gravelly-sandy, sandy, sandy-loamy, loamy and clayey slopes; rocky outcrops; amongst boulders and rocks, bases of rocks; sandy lava flows; sand hills; stabilized sand dunes; rocky, sandy, sandy-clayey and clayey prairies; rocky, cindery, sandy-loamy and sandy flats, clayey basins; valley floors; valley bottoms; along railroad right-of-ways, along rocky, rocky-sandy, gravelly, sandy,

sandy-clayey and loamy roadsides, within rocky and sandy arroyos; draws, gulches; gullies; within ravines; seeps; springs; along streams; along and in rocky-gravelly-sandy and sandy streambeds; in sandy along creeks; creekbeds; in sand along rivers; riverbeds; along and in rocky, cobbly and sandy washes; within drainages; watercourses; lakebeds; bouldery cienegas; rocky-gravelly-sandy-clayey and sandy depressions; swales; along rocky and sandy banks of gullies, streams, creeks, rivers and washes; along margins of creeks and lakes; rocky and sandy shores; terraces; sandy bottomlands; sandy and silty floodplains; rocky mesquite bosques; ditches; along clayey-loamy banks of canals; gravelly-sandy and sandy riparian areas, and disturbed areas growing in wet, moist and dry bouldery, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, stony, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; bouldery-sandy-clayey loam, rocky loam, rocky-sandy loam, gravelly loam, sandy loam, clayey loam and loam ground; rocky clay, rocky-gravelly-sandy clay, sandy clay, silty clay and clay ground, and silty ground, occurring from 1,500 to 11,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was also noted as having been used as a drug or medication and as a fertilizer (cold infusion used to soak watermelon seeds in, in order to increase production). *Corydalis aurea* is native to northwestern, northern, central and southern North America. *5, 6, 16, 28 (color photograph), 43 (072109), 46 (placed in the Papaveraceae, Page 325), 58, 63 (021810 - color presentation), 68 (placed in the Papaveraceae), 77, 80 (This species is listed as a Secondary Poisonous Range Plant. "Golden Corydalis has been reported to contain up to 10 alkaloids. The plant is relished by sheep and as little as 2% of the animal's weight will cause symptoms, and less than 5% can be fatal. Cattle and horses also may be poisoned. This plant probably causes some losses in Arizona to both livestock and game." See text for additional information.), 85 (021810 - color presentation, also recorded as *Corydalis aurea* subsp. *aurea*), 86 (color photograph), 115 (color presentation), 127*

Corydalis aurea subsp. *aurea* (see footnote 85 under *Corydalis aurea*)

Garryaceae: The Silktassel Family

***Garrya wrightii* J. Torrey: Wright's Silktassel**

COMMON NAMES: Bearberry; Chichicahuile (Náhuatl: Mexico)¹⁴⁰; Coffee Berry; Coffee-berry Bush (English)¹⁴⁰; Coffeeberry-bush; Fever-bush (English)¹⁴⁰; Feverbush; Grayleaf Dogwood; Gray-leaved Dogwood; Quinine-bush (English)¹⁴⁰; Káninkwap (Uto-Aztecan: Southern Paiute)¹⁴⁰; Silk Tassel (a name applied to the genus *Garrya*); Silk-tassel (a name applied to the genus *Garrya*); Silk-tassel (English)¹⁴⁰; Silktassel (a name applied to the genus *Garrya*); Wright Silktassel; Wright's Silktassel. DESCRIPTION: Terrestrial perennial evergreen shrub or tree (3 to 15 feet in height with a rounded crown; one plant was observed and described as being 5 feet in height and width, one plant was observed and described as being 6½ feet in height and width, plants were observed and described as being 6½ feet in height and 5 feet in width); the bark is gray; the thick, leathery leaves are light green, dark green, light greenish-gray, yellowish or yellowish-green; the flowers are cream-white occurring in grayish-green catkin-like tassels; flowering generally takes place between late May and late August (additional records: one for early May, two for mid-September, one for late September and two for mid-October, flowering beginning as early as has been reported); the berries are dark blue, blue-black, dark bluish-purple, purple or whitish-gray. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky and sandy mesas; rocky bases of mountains; rocky canyons; canyonsides; rocky canyon bottoms; chasms; crevices in rocks; bluffs; rocky ledges; clayey ridges; foothills; hills; rocky hillsides; rocky, rocky-gravelly-clayey, rocky-sandy-loamy, rocky-clayey, rocky-loamy, rocky-clayey-loamy, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey, sandy, sandy-loamy, clayey and clayey-loamy slopes; gravelly outcrops; amongst boulders and rocks; banks; flats; along rocky and gravelly roadsides; along rocky arroyos; shaded bottoms of arroyos; rocky draws; along streams; along rocky streambeds; creekbeds; along gravelly riverbeds; within drainages; banks of streams; terraces; sandy floodplains, and riparian areas growing in moist and dry bouldery-rocky, rocky, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, rocky-clayey loam, gravelly loam, sandy loam, clayey loam and loam ground, and rocky clay, rocky-gravelly clay, gravelly clay and clay ground, occurring from 2,900 to 8,800 feet in elevation in the forest, woodland, scrub, grassland and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant is browsed by Mule Deer (*Odocoileus hemionus*), White-tailed Deer (*Odocoileus virginianus*), Elk (*Cervus elaphus*) and Bighorn Sheep (*Ovis canadensis*). *Garrya wrightii* is native to southwest-central and southern North America. *5, 6, 13 (Page 367, note under *G. flavescens*), 15, 18 (genus), 28 (color photograph 50), 30, 43 (101810), 44 (031211 - no record of species; genus record), 46 (Page 625), 48 (genus), 63 (101810 - color presentation), 85 (031211 - color presentation), 124 (110610 - no record of species), 140 (Pages 122-123 & 294)*

Gentianaceae: The Gentian Family

***Centaurium arizonicum* (A. Gray) A.A. Heller: Arizona Centaury**

SYNONYMY: *Centaurium calycosum* (S.B. Buckley) M.L. Fernald (var. *arizonicum* (A. Gray) I. Tidestrom is the variety reported as occurring in Arizona). COMMON NAMES: Arizona Centaury; Buckley's Centaury; Canchalagua; Centaury (a name also applied to the genus *Centaurium*); Rosita. DESCRIPTION: Terrestrial annual or biennial forb/herb (5 to 32 inches in height, plants 12 inches in height and 8 inches in width were observed and recorded); the leaves are light green or yellow-green; the flowers (to 1 inch in diameter) may be cerise-pink, lavender, magenta, magenta-purple with a white throat, orangish-

dark pink, pink, pink-purple, pink & white, pink & yellow, pinkish-purple, purple-pink, rose-pink, rose-purple & yellow, scarlet, violet or white (rarely), the anthers are yellow; flowering generally takes place between late March and late October (additional records: one for early January, one for mid-February, one for mid-November and one for mid-December, flowering year-round in favorable locations has also been reported). HABITAT: Within the range of this species it has been reported from mountains; bases of cliffs; rocky canyons; canyon bottoms; ridges; meadows; hills; hillsides; slopes; bases of slopes; amongst rocks; prairies; flats; along rocky-sandy-loamy roadsides; sandy draws; within gulches; silty ravines; bottoms of ravines; within seeps; around and in springs; in sand along streams; along and in sandy streambeds; in gravel along creeks; within rocky-gravelly creekbeds; along rivers; riverbeds; along and in gravelly and sandy washes; along sandy drainages; around pools; ciénegas; within marshy areas; along (sandy-loamy) banks of streams, streambeds and rivers; along edges of seeps, creeks, rivers and ponds; margins of creeks; shores of rivers; sand bars; mud banks; rocky beaches; grassy bottomlands; sandy floodplains; along ditches; stock tanks; riparian areas, and disturbed areas growing in muddy and wet, moist, damp and dry rocky, rocky-gravelly, gravelly and sandy ground; rocky-sandy loam, sandy loam and loam ground; silty clay ground, and silty ground, occurring from 150 to 8,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Variety *arizonicum* is the variety of *Centaurium calycosum* reported as occurring in Arizona. *Centaurium arizonicum* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Centaurium calycosum* (Buckl.) Fern.), 28 (recorded as *Centaurium calycosum*, color photograph 602), 43 (081810 - *Centaurium calycosum* Fernald), 44 (072011 - no record of species; genus record), 46 (recorded as *Centaurium calycosum* (Buckl.) Fern., Page 646), 63 (081810), 77 (recorded as *Centaurium calycosum* (Buckl.) Fern., color photograph #28), 85 (072011 - color presentation), 86, 124 (072011 - no record of species; genus record), 140 (Page 294 - recorded *Centaurium calycosum* (Buckley) Fernald as occurring in the Baboquivari and Coyote Mountains)*

Centaurium calycosum (see NOTES and footnote 140 under *Centaurium arizonicum*)

Centaurium calycosum var. *arizonicum* (see *Centaurium arizonicum*)

Hydrophyllaceae: The Waterleaf Family

Phacelia ambigua (see *Phacelia crenulata* var. *ambigua*)

Phacelia ambigua var. *ambigua* (see footnote 85 under *Phacelia crenulata* var. *ambigua*)

***Phacelia crenulata* J. Torrey ex S. Watson: Cleftleaf Wildheliotrope**

COMMON NAMES: Caterpillar Plant; Caterpillar Weed (a name also applied to other species); Caterpillar-weed; Cleft Leaf Wild Heliotrope; Cleft-leaf Caterpillar-weed; Cleft-leaf Caterpillarweed; Cleft-leaf Phacelia; Cleft-leaf Scorpion-weed; Cleft-leaf Scorpionweed; Cleft-leaf Wild Heliotrope; Cleft-leaf Wild-heliotrope; Cleftleaf Phacelia; Cleftleaf Scorpion-weed; Cleftleaf Scorpionweed; Cleftleaf Wild Heliotrope; Cleftleaf Wildheliotrope; Common Phacelia; Crenate Phacelia; Crenulate Phacelia; Crenulate-leaved Phacelia; Desert Heliotrope; Heliotrope Phacelia; Notch Leaf Scorpion Weed; Notch-leaf Caterpillar Weed; Notch-leaf Phacelia; Notch-leaf Scorpion-weed; Notch-leaved Phacelia; Notchleaf Phacelia; Notch-leaf Scorpionweed; Phacelia (a name applied to other species and the genus *Phacelia*); Purplestem Phacelia; Purplestem Scorpionweed; Scalloped Phacelia, Scorpion-weed (Scorpion Weed is a name applied to other species and the genus *Phacelia*); Wild Heliotrope; Wild-heliotrope; Violet Caterpillar Weed; Ytamoosh-oohit (Desert Tortoise Food). DESCRIPTION: Terrestrial annual forb/herb (3 to 18 inches in height); the leaves are dark green; the bell-shaped flowers may be blue, blue-lavender, blue-magenta, blue-purple, dark blue-violet, cream-white, indigo-purple, lavender-blue-purple, lavender-purple, magenta-lavender, pink-purple, purple, purple-blue, purple-white, rose-purple, pale violet, violet, violet-purple, violet-white or white; flowering generally takes place between early January and early July (additional records: one for early August, one for early September, one for mid-October and two for mid-December). HABITAT: Within the range of this species it has been reported from mountains; gravelly-clayey mountainsides; rocky mesas; plateaus; gravelly rims of canyons; cliffs; canyons; scree; talus slopes; bases of cliffs; buttes; bouldery-gravelly knolls; ledges; bouldery-gravelly, rocky and clayey ridges; ridgetops; cinder cones; foothills; rocky hills; rocky-gravelly hilltops; rocky, rocky-gravelly and gravelly hillsides; along sandy escarpments; bouldery, rocky, rocky-sandy-loamy, shaley, shaley-stony, cindery, gravelly, gravelly-sandy, sandy and clayey slopes; rocky alluvial fans; gravelly and gravelly-sandy bajadas; rocky outcrops; amongst boulders and rocks; lava flows; lava fields; sand dunes; sandy outwash fans; barren breaks; plains; gravelly, gravelly-sandy, sandy, loamy and silty flats; basins; sandy valley floors; railroad right-of-ways; along rocky, gravelly, gravelly-sandy, sandy and sandy-loamy roadsides; arroyos; draws; gulches; gullies; along creeks; creekbeds; along rivers; sandy riverbeds; along and in bouldery, bouldery-gravelly, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; drainages; silty lakebeds; depressions; (gravelly and sandy) banks of rivers and washes; shores of lakes; sandy beaches; benches; gravelly and gravelly-sandy terraces; floodplains; gravelly-sandy riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-stony, shaley-sandy, stony, cindery, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, cobbly-silty loam, gravelly loam, sandy loam, clayey loam and loam ground; gravelly clay, sandy clay and clay ground, and sandy silty ground, occurring from sea level to 7,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North

America; it was noted that it was used as a veterinary aid. *Phacelia crenulata* is native to southwest-central and southern North America. *5, 6, 16, 28 (color photograph 712), 43 (022410), 44 (072411), 46 (Page 704), 63 (022410 - color presentation), 77, 80 (*Phacelia* (*Phacelia crenulata* and *Phacelia pedicellata*) is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "These annual forbs have caused liver damage in horses, hogs and cattle. Also their glandular hairs may cause severe dermatitis to susceptible persons."), 85 (022410 - color presentation), 115 (color presentation), 127*

***Phacelia crenulata* J. Torrey ex S. Watson var. *ambigua* (M.E. Jones) J.F. Macbride: Purplestem Phacelia**

SYNONYMY: *Phacelia ambigua* M.E. Jones. COMMON NAMES: Caterpillar Plant; Caterpillar Weed (a name also applied to this species and other species); Caterpillar-weed (a name also applied to this species and other species); Jone's (error) Phacelia; Jones' Phacelia; Notch-leaf Phacelia; Notch-leaved Phacelia; Phacelia (a name applied to the species, other species and to the genus *Phacelia*); Purple-stem Caterpillar-weed; Purple-stem Phacelia; Purple-stem Scorpion-weed; Purple-stem Scorpionweed; Purplestem Caterpillarweed; Purplestem Phacelia; Purplestem Scorpionweed; Scorpion-weed (a name applied to this species and the genus *Phacelia*); Wild Heliotrope (a name also applied to this species and other species); Wild-heliotrope (a name also applied to this species and other species); Ytamoosh-oohit (Desert Tortoise Food). DESCRIPTION: Terrestrial annual forb/herb (4 to 40 inches in height); the foliage may be yellow-green; the flowers may be blue, blue-lavender, blue-purple, blue-violet, lavender, lavender-blue, purple or violet; flowering generally takes place between early January and early June (additional records: one for early September, one for late November, one for early December and three for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky and gravelly mesas; bases of cliffs; canyons; along gravelly canyon bottoms; crevices in rocks; ledges; ridges; craters; foothills; silty hills; rocky, rocky-gravelly and gravelly hillsides; rocky, rocky-gravelly-sandy, rocky-loamy and gravelly slopes; rocky and sandy alluvial fans; bajadas, gravelly-sandy pediments; amongst rocks; sandy lava fields; sand dunes; breaks; plains; rocky-gravelly-sandy, gravelly, sandy and loamy flats; basins; stony valley floors; along rocky, gravelly, gravelly-sandy and sandy roadsides; arroyos; rocky draws; gulches; gravelly springs; along creeks; sandy riverbeds; along and in rocky, gravelly, gravelly-sandy and sandy washes; drainages; (gravelly, gravelly-sandy and sandy) banks of rivers and washes; edges of washes; along shores of lakes; gravelly sand bars; benches; rocky shelves; along edges and banks of canals; riparian areas, and disturbed areas growing in dry desert pavement; rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, stony, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, clayey loam ground; sandy clay ground, and sandy silty and silty ground, occurring from sea level to 7,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Phacelia crenulata*, was reported to have been utilized by native peoples of North America; it was also noted as having been used as a veterinary aid. *Phacelia crenulata* var. *ambigua* is native to southwest-central and southern North America. *5, 6, 28 (color photograph of the species 712), 43 (022410), 44 (072411), 46 (Page 704), 63 (022410 - color presentation), 80 (*Phacelia* (*Phacelia crenulata* and *Phacelia pedicellata*) is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "These annual forbs have caused liver damage in horses, hogs and cattle. Also their glandular hairs may cause severe dermatitis to susceptible persons."), 85 (072411 - color presentation), 115 (color presentation of the species), 124 (072411 - no record of species; genus record), 127 (species)*

***Phacelia cryptantha* E.L. Greene: Hiddenflower Phacelia**

COMMON NAMES: Hiddenflower Phacelia; Hidden-lower Scorpion-weed; Limestone Phacelia; Smallflower Phacelia. DESCRIPTION: Terrestrial annual forb/herb (erect stems 6 to 20 inches in height); the flowers may be light blue, light blue-lavender, pale blue-purple, blue, blue-lavender, bluish, bluish-purple-lavender, light lavender, lavender, lavender-white, white, white-lavender or yellow; flowering generally takes place between mid-March and mid-June (additional records: one for mid-February and two for early July). HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; rocky bases of cliffs; rocky canyons; rocky and sandy canyon bottoms; bouldery and rocky talus slopes; amongst crevices in rocks; rocky hills; rocky hillsides; rocky, rocky-sandy and gravelly slopes; bajadas; around rocky outcrops; amongst boulders and rocks; against and around boulders and rocks; plains; flats; roadsides; springs; along streams; along creekbeds; along and in gravelly-sandy and sandy washes; gravelly-sandy benches; gravelly-sandy riparian areas; recently burned areas of chaparral, and disturbed areas growing in moist and dry bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground, occurring from 100 to 6,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Phacelia cryptantha* is native to southwest-central and southern North America. *5, 6, 15, 43 (072010), 46 (Page 703), 63 (080610), 85 (080610 - color presentation)*

***Phacelia distans* G. Bentham: Distant Phacelia**

SYNONYMY: *Phacelia distans* G. Bentham var. *australis* A. Brand. COMMON NAMES: Blue Phacelia; Blue-eyed Phacelia; Blue-eyed Scorpionweed; Caterpillar Phacelia; Caterpillar Weed (a name also applied to other species); Distant Phacelia; Distant Scorpion Weed; Distant Scorpion-weed; Distant Scorpionweed; Fern Phacelia; Fern-leaf Phacelia; Fern-phacelia; Scorpion-weed (a name also applied to other species and the genus *Phacelia*); Wild Heliotrope (a name also applied to other species). DESCRIPTION: Terrestrial annual or perennial forb/herb (decumbent to erect stems 3 to 40 inches in height; one plant was observed and described as being 20 inches in height and width); the fern-like leaves are green, the flowers may be light blue, light blue-purple, blue, blue-lavender, blue-lavender-purple, blue-pink, blue-purple, blue-violet, bluish-lavender, bluish-white, pale lavender, lavender, lavender-blue, lavender-pink, light purple, purple, purple-blue, purplish-blue, dark purplish-blue, pale violet, violet-blue, white or whitish; flowering generally takes place between mid-January and late June (additional records: one for mid-July, one for late July, one for early August, one for early September, two for early November, one for mid-

November and two for late November). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; bases of mountains; gravelly-loamy mesas; sandy plateaus; bases of cliffs; rocky and rocky-silty canyons; bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy canyon bottoms; chasms; scree; rocky knobs; rocky ridges; sandy ridgetops; meadows; foothills; bouldery and rocky hills; hilltops; bouldery and rocky hillsides; bouldery, rocky, rocky-gravelly, rocky-sandy, rocky-clayey-loamy, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy, clayey and silty-clayey slopes; rocky, rocky-gravelly, rocky-sandy and rocky-sandy-loamy alluvial fans; rocky, gravelly, gravelly-sandy and sandy bajadas; bouldery and rocky outcrops; amongst boulders and rocks; bases of rocks; sand dunes; sandy-loamy plains; gravelly, gravelly-sandy, sandy and clayey flats; basins; rocky, gravelly and sandy valley floors; coastal plains; sandy coastal strands; sandy railroad right-of-ways; along gravelly and sandy roadsides; along sandy arroyos; along bottoms of arroyos; rocky draws; ravines; seeps; springs; along streams; sandy streambeds; along creeks; creekbeds; along and in bouldery-gravelly-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy washes; in gravelly-sandy and sandy drainages; sandy lakebeds; ponds; bogs; rocky-sandy depressions; (sandy) banks of arroyos, streams, creeks, rivers and washes; along (gravelly-sandy) edges of streams and washes; margins of washes; along rocky-sandy and rocky-loamy benches; sandy and silty-loamy terraces; loamy bottomlands; sandy floodplains; along canals; bouldery-sandy and sandy riparian areas; recently burned areas of woodland, chamise chaparral and sage scrub, and disturbed areas growing in moist and dry desert pavement; bouldery, bouldery-gravelly-sandy bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, sandy loam, silty loam and loam ground; silty clay and clay ground, and rocky silty ground often in the shade of boulders, shrubs and trees, occurring from sea level to 7,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Phacelia distans* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 713), 43 (022410 - *Phacelia distans* var. *australis* Brand), 44 (072411), 46 (Page 703), 58, 63 (022410 - color presentation), 77 (color photograph 29), 85 (072411 - color presentation), 86 (color photograph), 115 (color presentation), 124 (072411 - no record of species; genus record), 127, 140 (Page 294)*

Phacelia distans var. *australis* (see *Phacelia distans*)

Juglandaceae: The Walnut Family

Juglans major (J. Torrey) A.A. Heller: Arizona Walnut

SYNONYMY: *Juglans microcarpa* J.L. Berlandier var. *major* (J. Torrey) L.D. Benson; *Juglans rupestris* G. Engelman ex J. Torrey var. *major* J. Torrey. COMMON NAMES: Arizona Black Walnut; Arizona Walnut; Ch'ildiiyé [Ch'ihniiyé] <ch'il niyé> (Athapascan: Western Apache)¹⁴⁰; Ha'altsédii <xa'altsyétiih> ("That Which is Cracked", Athapascan: Navajo)¹⁴⁰; Hålsede <håtsede> ("That Which is Cracked", Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; İpivi <İpokai> (Uto-Aztecan: Northern Tepehuan)¹⁴⁰; İpivi <uupi> (Uto-Aztecan: Onavas Pima; probably Epeve or Upuv□)¹⁴⁰; Kemcutek^a <gamjudk> (Yuman: Walapai)¹⁴⁰; Lači (Uto-Aztecan: Tarahumara)¹⁴⁰; Mıřukátuyúáci (Uto-Aztecan: Ute)¹⁴⁰; New Mexico Walnut; Noga'al U'sh (Uto-Aztecan: Mountain Pima)¹⁴⁰; Nogal (a name also applied to the genus *Juglans*, the small nut is known in Spanish as "nogales"); Nogal (Spanish: Chihuahua, Sonora)¹⁴⁰; Nogal Cimarrón (Hispanic); Nogal Encarcelado (Hispanic); Nogal Silvestre ("Wild Walnut", Spanish: Chihuahua, Sonora, Texas)¹⁴⁰; Sühüvi (Uto-Aztecan: Comanche)¹⁴⁰; U:pio (Uto-Aztecan: Tohono O'odham)¹⁴⁰; Uup [Uupio] (Uto-Aztecan: Mountain Pima)¹⁴⁰; Uupai (Uto-Aztecan: Northern Tepehuan)¹⁴⁰; Uupio (Uto-Aztecan: Akimel O'odham)¹⁴⁰; Walnut (a name also applied to the genus *Juglans* and the Juglandaceae); [Arizona] Walnut (English)¹⁴⁰. DESCRIPTION: Terrestrial perennial deciduous tree (5 to 66 feet in height with a rounded crown that may be of about the same width as the height of the tree; one tree was observed and described as being 5 feet in height with a crown 4 feet in width, one tree was observed and described as being 7 feet in height with a crown 5 feet in width, one tree was observed and described as being 23 feet in height with a crown 26 feet in width); the trunk may be up to 4 feet in diameter; the older bark is gray, dark gray, grayish-brown or dark gray-brown; the young stems may be light to dark brown; the pinnately compound leaves (7 to 14 inches in length) are green or yellow-green; the flowers (male and female flowers born on separate catkins or spikes) are greenish or yellowish; flowering generally takes place between mid-March and late June (additional records: one for mid-July, one for late July, one for early September and one for mid-September); the mature fruits (1 to 1½ inches in diameter) are rusty-green or yellow-green and ripen between July and September. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; plateaus; cliffs; sandy bases of cliffs; along and in bouldery, rocky and gravelly-sandy canyons; rocky canyon sides; along bouldery and cobbly canyon bottoms; ledges; rocky ridges; foothills; hills; hilltops; rocky hillsides; rocky escarpments; bouldery, bouldery-loamy, rocky, gravelly-loamy, loamy and silty slopes; amongst boulders and rocks; flats; glens; along valley bottoms; along rocky, rocky-sandy and gravelly roadsides; rocky and sandy arroyos; sandy bottoms of arroyos; within draws; gulches; ravines; springs; along streams; bouldery, bouldery-loamy and rocky streambeds; along creeks; along and in sandy creekbeds; along rivers; along riverbeds; along rocky, stony and sandy washes; drainages; along watercourses; ciénegas; (silty) banks of streams, creeks and rivers; (gravelly) edges of streambeds, washes and drainage ways; shores of lakes; sand bars; sandy benches; terraces; rocky bottomlands; along gravelly-sandy floodplains; mesquite bosques; along ditches; bouldery, gravelly, gravelly-sandy and sandy riparian areas, and disturbed areas growing in well drained moist and dry bouldery, rocky, stony, cobbly, cindery, gravelly, gravelly-sandy and sandy ground;

bouldery loam, cobbly-sandy loam, gravelly loam and loam ground; silty ground, and humusy ground, occurring from 900 to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and is considered to be a valuable shade tree. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage, fiber (building materials) and/or dye (brown) and paint (black) crop. Consider using the Arizona Walnut as a specimen plant in a large area and in the re-vegetation of riparian areas. Once past the seedling stage the Arizona Walnut has a growth rate of about one foot per year and may live to be 400 years of age. Note that the Arizona Walnut requires deep soil and moderate water but not as much water as other riparian trees such as the Alder, Ash, Cottonwood, Sycamore and Willow Trees. Walnut trees are susceptible to aphid infestations that produce considerable amounts of honeydew. Birds, squirrels and other wildlife eat the fruits and the tree provides habitat for wildlife including cavities that are used by the Acorn Woodpecker (*Melanerpes formicivorus*). When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphia obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Juglans major* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Juglans microcarpa* Berlandier var. *major* (Torrey) L. Benson), 15, 18, 28 (color photograph 94), 30, 43 (080409), 44 (072411 - no record of species; genus record), 46, 48, 52 (color photograph), 53, 58, 63 (022610 - color presentation), 85 (072411 - color presentation), 124 (072411 - no record of species; genus record), 127, 140 (Pages 156-157 & 294), HR*

Krameriaceae: The Ratany Family

***Krameria erecta* C.L. von Willdenow ex J.A. Schultes: Littleleaf Ratany**

SYNONYMY: *Krameria parvifolia* G. Benth; *Krameria parvifolia* G. Benth var. *imparata* J.F. Macbride. COMMON NAMES: Chacate (Uto-Aztec: Tohono O'odham)¹⁴⁰; Chacate (Yuman: Maricopa)¹⁴⁰; Coashui, Cósahui (Uto-Aztec: Hiá Ce□ O'odham, Yaqui)¹⁴⁰; Desert Ratany; Desert Rhatany; 'E□ho, He:□ (Uto-Aztec: Hiá Ce□ O'odham)¹⁴⁰; E□ho <'edho, e'e□ho> (Uto-Aztec: Tohono O'odham)¹⁴⁰; Ee□ho (Uto-Aztec: Akimel O'odham)¹⁴⁰; Glandular Ratany; Glandular Rhatany; Haxz Iztim ("Dog's Hipbone", Hokan: Seri)¹⁴⁰; Kosawi <cosawi> (Uto-Aztec: Onavas Pima)¹⁴⁰; Little Leaf Ratany; Little Leaved Ratany; Little-leaf Kramaria; Little-leaf Ratany; Little-leaf Rhatany; Little-leaved Ratany; Little-leaved Rhatany; Littleleaf Kramaria; Littleleaf Ratany; Littleleaf Rhatany; Littleleaved Ratany; Mezquitillo ("Little Mesquite", Spanish: Mexico)¹⁴⁰; Pima; Pima [Little-leaved, Little-leaf, Range] Ratany (English)¹⁴⁰; Pima Rhatany; Purple Heather (a name also applied to other species); Purple Heather (English)¹⁴⁰; Range Ratany (a name also applied to other species); Range Rhatany (a name also applied to other species); Ratany (a name applied to the genus *Krameria*); Small-flower Ratany; Spiny Little-leaf Kramaria; Sticky Little-leaf Kramaria; Sticky Range Ratany; Tahué <tajué, tajuí> (Uto-Aztec: Guarijío)¹⁴⁰; Tajimsi ("Sun Beard", Uto-Aztec: Mayo)¹⁴⁰; Tamichil (Uto-Aztec: Sonora)¹⁴⁰; Wetahúpatci (Uto-Aztec: Tarahumara)¹⁴⁰; Wood Ratany; Zarsaparilla ("Thorny Vine", Spanish: San Luis Potosí)¹⁴⁰. DESCRIPTION: Terrestrial perennial subshrub or shrub (2 to 40 inches (or possibly to 79 inches) in height, one plant was observed and described as being 8 to 10 inches in height and 3 feet in width, one plant was observed and described as being 12 inches in height and 16 inches in width, one plant was observed and described as being 20 inches in height and 6½ feet in width); the older stems may be gray or greenish; the leaves are blue-gray-green, gray, gray-green, gray-red or greenish; the flowers may be burgundy, lavender-purple, magenta, maroon, maroon-magenta, maroon-purple, maroon-red, pink, pink-purple, purple, dark purple, purple-magenta, purple-pink, purple-red, reddish, red-purple, reddish-violet, rose-pink, rose-purple, scarlet-purple, violet-red and white turning pink; flowering generally takes place between early March and late November (additional record: one for early January). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky, sandy and sandy-loamy mesas; along cliffs; bouldery and rocky canyons; canyon sides; rocky canyon bottoms; buttes; sandy and clayey knolls; sandy ledges; rocky and rocky-gravelly ridges; bouldery and rocky ridgetops; rocky-gravelly ridgelines; foothills; rocky, gravelly and sandy hills; rocky-gravelly hilltops; rocky, rocky-sandy, rocky-sandy-loamy, gravelly and sandy hillsides; bedrock, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy-clayey-loamy, sandy and sandy-clayey-loamy slopes; gravelly bajadas; rocky outcrops; amongst boulders and rocks; boulder fields; lava slopes; lava flows; sand dunes; gravelly, gravelly-sandy-loamy, gravelly-loamy and sandy plains; rocky, gravelly,

pebbly-sandy and sandy flats; basins; valley floors; along gravelly-loamy and sandy roadsides; arroyos; along bottoms of arroyos; rocky draws; gulches; along creeks; along rivers; along and in rocky-gravelly, gravelly and sandy washes; along and in rocky drainages; playas; depressions; sandy-clayey-loamy swales; banks of rivers and washes; (sandy) edges of washes and drainage ways; benches, and riparian areas growing in dry bouldery, bouldery-rocky-sandy, rocky, rocky-gravelly, rocky-sandy, cindery, gravelly, pebbly-sandy and sandy ground; rocky-sandy loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam and sandy-clayey loam ground; rocky clay, silty clay and clay ground; sandy silty ground, and chalky ground, occurring from sea level to 6,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial dye crop; it was also noted as having been used as a drug or medication. The roots of this plant form grafts (haustoria) on the roots of other Littleleaf Ratany plants and a broad range of other species. This plant is browsed by Mule Deer (*Odocoileus hemionus crooki*) and Whitetail Deer (*Odocoileus virginianus couesi*) and a bee(s) in the genus *Centris* visits the flowers. Pocket mice, rattlesnakes, whiptails and other animals use the plant for cover. *Krameria erecta* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Krameria parvifolia* Benth., Pages 126-127), 15 (recorded as *Krameria parvifolia* Benth.), 16 (recorded as *Krameria parvifolia* Benth.), 28 (recorded as *Krameria parvifolia*, color photograph 662), 43 (022610 - *Krameria parvifolia* var. *imparata* J.F. Macbr.), 44 (031211), 46 (recorded as *Krameria parvifolia* Benth., Page 404), 48 (genus), 58 (recorded as *Krameria parvifolia* Benth. var. *imparata* Macbr.), 63 (022610 - color presentation), 77 (color photograph #30), 85 (111310 - color presentation), 115 (color presentation), 124 (031211 - no record of species; genus record), 127, 140 (Pages 143, 157-159 & 294)*

Krameria parvifolia (see *Krameria erecta*)

Krameria parvifolia var. *imparata* (see *Krameria erecta*)

Lamiaceae (Labiatae): The Mint Family

***Hedeoma dentata* J. Torrey: Dentate False Pennyroyal**

SYNONYMY: *Hedeoma dentatum* J. Torrey. COMMON NAMES: Arizona False Pennyroyal; Dentate False Pennyroyal; Dentate Falsepennyroyal; Huachuca Pennyroyal; Mock-pennyroyal (Mock Pennyroyal is a name that is applied to the genus *Hedeoma*). DESCRIPTION: Terrestrial perennial forb/herb (to 20 inches in height); flowering generally takes place between August and October. HABITAT: Within the range of this species it has been reported from canyons, gravelly slopes, rocky outcrops, among rocks and cobbly and sandy loam soils, occurring from 3,800 to 8,200 feet in elevation in the forest, woodland and grassland ecological formations. NOTE: *Hedeoma dentata* is native to southwest-central and southern North America. *5, 6, 8, 15, 43 (041212 - no record of *Hedeoma dentatum*), 44 (041212 - no record of species; genus record), 46 (recorded as *Hedeoma dentatum* Torr., Page 745), 63 (041212), 85 (color presentation), 124 (041212 - no record of species; genus record), 140 (Page 294 - recorded as *Hedeoma dentatum* Torrey)*

Hedeoma dentatum (see *Hedeoma dentata*)

***Hedeoma nana* (J. Torrey) J.I. Briquet subsp. *macrocalyx* W.S. Stewart: Dwarf False Pennyroyal**

COMMON NAMES: Dwarf False Pennyroyal; False Pennyroyal; Low Hedeoma; Mock-pennyroyal; Oregano; Penny Royal. DESCRIPTION: Terrestrial annual or perennial forb/herb (6 to 16 inches in height, one plant was reported to be 9 inches in height and 12 inches in width); the leaves are gray-green or purple; the flowers are blue, lavender, lavender-purple, pink or purple; flowering generally takes place between late February and mid-October. HABITAT: Within the range of this species it has been reported from mountains; canyons; gravelly canyon bottoms; buttes; foothills; hills; rocky hillsides; bouldery slopes; bouldery and rocky; rocky outcrops; amongst rocks; flats; valley floors; arroyos; springs; along creeks; in rocky-sandy and sandy washes; in bouldery drainages, and riparian areas growing in dry bouldery, rocky, rocky-sandy, stony, gravelly, pebbly and sandy ground, occurring from 1,800 to 7,300 feet in elevation in the forest, woodland, scrub, desertscrub and wetland ecological formations. NOTES: The species, *Hedeoma nana*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or spice crop; it was also noted as having been used as a drug or medication and as a commodity used in personal hygiene. *Hedeoma nana* subsp. *macrocalyx* is native to southwestern and southern North America. *5, 6, 43 (022710), 46 (*Hedeoma nanum* (Torr.) Briq. subsp. *macrocalyx* Stewart, Page 745), 63 (022710), 85 (022710 - color presentation of dried material), 127 (species)*

Hedeoma nanum subsp. *macrocalyx* (see footnote 46 under *Hedeoma nana* subsp. *macrocalyx*)

***Hedeoma oblongifolia* (A. Gray) A.A. Heller: Oblongleaf False Pennyroyal**

COMMON NAMES: False Pennyroyal; Falsepennyroyal; Mock-pennyroyal; Oblongleaf False Pennyroyal; Pennyroyal. DESCRIPTION: Terrestrial perennial forb/herb (sprawling to erect stems 3 to 40 inches in height); the leaves are green; the flowers may be light lavender, lavender, lavender-pink, light-pink, pink, pale pinkish, pale pinkish-purple, pale purple, purple, purplish-pink with white markings, rose-purple, light violet or white & purple, flowering generally takes place between

early June and late October (additional records: three for late March, one for early April, two for late April and three for early May; flowering has also been described as beginning as early as March or April). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky canyon rims; bases of cliffs; along canyons; gravelly and sandy canyon bottoms; talus slopes; crevices in rocks; ledges; rocky ridges; rocky ridgetops; rocky-sandy meadows; foothills; hillsides; rocky, rocky-gravelly, gravelly and gravelly-loamy slopes; rocky alluvial fans; bajadas; amongst boulders and rocks; gravelly flats; valley floors; roadcuts; along rocky, gravelly and gravelly-sandy-clayey-loamy roadsides; rocky bottoms of arroyos; along and in rocky draws; gravelly-loamy streambeds; along creeks; bouldery-cobbly-sandy and sandy creekbeds; ravines; along and in bouldery-rocky-cobbly, rocky and sandy washes; within rocky drainages; (sandy) banks of streams; (gravelly) edges of arroyos, streambeds and washes; margins of streambeds; rocky benches; rocky riparian areas, and disturbed areas growing in moist, damp and dry bouldery, bouldery-rocky-cobbly, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, gravelly and sandy ground; gravelly loam and gravelly-sandy-clayey loam ground, and rocky clay and clay ground, occurring from 1,200 to 9,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Hedeoma oblongifolia* is native to southwest-central and southern North America. *5, 6, 28 (color photograph 772), 43 (012911), 44 (012911 - no record of species), 46 (Page 745), 63 (012911 - color presentation), **85** (013011 - color presentation), 124 (012911 - no record of species, genus), 140 (Page 294 - recorded as *Hedeoma oblongifolium* (A. Gray) Heller)*

***Hyptis emoryi* J. Torrey: Desert Lavender**

COMMON NAMES: Bee Sage (a name also applied to other species); Bee-sage (Bee Sage is a name that is also applied to other species); "Chia" (a name given to the seeds of this plant, and also to the seeds and plants of several species of *Salvia*); Desert Lavender; Desert-lavender; Deserlavender; Emory Bee Sage; Emory Bee-sage; Emory's Bee Sage; Emory's Bee-sage; Lavender; Mariola (Yaqui, a name also applied to other species); *Salvia* (a name also applied to other species). DESCRIPTION: Terrestrial perennial evergreen shrub (8 inches to 15 feet in height; one plant was observed and described as being 8 feet in height and 8 feet in width); the leaves are gray, gray-green, grayish-white or green-gray; the flowers may be blue, blue-lavender, blue-purple, blue-violet, dark blue, lavender, pink-purple, purple, purple-indigo, violet, violet-blue or white; the styles are purple; the filaments are white; the anthers are purple; flowering generally takes place between mid-January and mid-June and between early September and mid-June (additional records: one for early July, one for mid-July and two for mid-August). HABITAT: Within the range of this species it has been reported from rocky mountains; rocky mountainsides; bouldery-clayey-loamy mesas; bases of cliffs; along and in bouldery, rocky and rocky-sandy canyons; along rocky, gravelly and sandy canyon bottoms; rocky talus slopes; crevices in rocks; buttes; ledges; rocky and gravelly ridges; bouldery ridgetops; rocky foothills; bases of foothills; rocky hills; bouldery, rocky, rocky-gravelly and gravelly hillsides; bouldery, bouldery-rocky, rocky, rocky-gravelly-loamy, stony and sandy slopes; rocky alluvial fans, bajadas; rocky outcrops; amongst boulders and rocks; sand dunes; tablelands; rocky-gravelly and sandy plains; gravelly flats; coastal plains; coast lines; along roadsides; rocky and rocky-gravelly arroyos; along rocky and gravelly bottoms of arroyos; troughs; along seepage streams; along streambeds; bouldery-rocky-sandy creekbeds; along and in bouldery, bouldery-gravelly, bouldery-gravelly-sandy, rocky, gravelly, gravelly-sandy and sandy washes; within rocky and rocky-gravelly drainages; (rocky) banks of streams and washes; along (sandy) edges of washes; along margins of washes and drainage ways; (gravelly) shores; floodplains; bouldery-cobbly-sandy riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-rocky-sandy, bouldery-cobbly-sandy, bouldery-gravelly, bouldery-gravelly-sandy, rocky, rocky-gravelly, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; bouldery-clayey loam, rocky-gravelly loam, rocky-sandy loam, sandy loam and clayey loam ground, and rocky clay and clay ground, occurring from sea level to 6,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, but is sensitive to frosts. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. The foliage is fragrant, having the odor of lavender or turpentine. Native bees and hummingbirds visit the flowers and the seeds provide food for wildlife. *Hyptis emoryi* is native to southwest-central and southern North America. *5, 6, 13 (Pages 211-212), 16, 18, 28 (color photograph 773), 43 (022710), 44 (072511), 46 (Page 748), 48, 63 (113010 - color presentation), 77 (color photograph #31), **85** (072511 - color presentation), 91 (Pages 239-241), 115 (color presentation), 124 (072611 - no record of genus or species), 127, 140 (Page 294)*

***Marrubium vulgare* C. Linnaeus: Horehound**

COMMON NAMES: Andorn (German); Common Horehound; Horehound; K'ameri (Purépecha); Malcubio (Hispanic); Malva del Sapo (Hispanic); Malvarrubina (Hispanic); Manrrubio (Hispanic); Manrubio Blanco (Hispanic); Marroio (Portuguese); Marribieu (Purépecha); Marrube Blanc (French); Marrube Vulgaire (French); Marrubio (Hispanic); Marrubio Común (Spanish); Mastranto (Hispanic); Mata Ceniza (Hispanic); Rouwaka (Tarahumara); Vitsacua (Purépecha); Vitzacua (Purépecha); White Horehound. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (4 to 40 inches in height, one plant was reported to be 40 inches in height and 40 inches in width); the tiny flowers may be cream, cream-yellow, white, white-cream, white-green or yellowish-white; flowering generally takes place between mid-March and late October (additional records: one for mid-November, one for early December and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; cliffs; rocky, gravelly and sandy canyons; rocky canyon walls; rocky and clayey canyon bottoms; bases of cliffs; crevices in rocks; rocky-clayey ledges; meadows; rocky-gravelly-loamy foothills; rocky hills; rocky hillsides; bouldery, gravelly, sandy-loamy, sandy-humusy, loamy and clayey-loamy slopes; rocky outcrops; sand hills; berms; prairies; plains; rocky-silty-clayey, sandy, sandy-loamy, clayey and clayey-loamy flats; valley floors; gravelly-loamy roadbeds; along rocky-gravelly, rocky-loamy, gravelly-loamy, rocky-clayey, gravelly, sandy and silty roadsides; bottoms of arroyos; along

draws; seeps; springs; along streams; rocky streambeds; along creeks; creekbeds; along rivers; sandy-loamy riverbeds; along and in gravelly and sandy washes; along and in rocky and gravelly drainages; marshes; gravelly depressions; along silty banks of arroyos, creeks, rivers and drainage ways; edges of marshes; bouldery, rocky-loamy and loamy benches; terraces; sandy bottomlands; sandy floodplains; mesquite bosques (woodlands); stock tanks; ditches; sandy and sandy-silty riparian areas; silty waste places, and disturbed areas (goat and sheep bedding grounds and corrals were among those noted) growing in wet, moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, stony-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, gravelly loam, gravelly-silty loam, sandy loam, clayey loam and loam ground; rocky clay, rocky-silty clay and clay ground; sandy silty, clayey-silty and silty ground, and sandy humusy ground, occurring from 1,000 to 8,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used in making candy and as a drug or medication. *Marrubium vulgare* is native to northern, central, eastern and southern Europe; western, central, eastern and southern Asia, and northern Africa. *5, 6, 15, 18, 28 (color photograph), 30, 43 (022710), 46 (Pages 735-736), 58, 63 (022710 - color presentation), 68, **85** (022710 - color presentation of dried material), 101 (color photograph), 115 (color presentation), 127*

***Stachys coccinea* C.G. de Ortega: Scarlet Hedge-nettle**

COMMON NAMES: Betónica (Spanish)¹⁴⁰; Betony (a name also applied to the genus *Stachys*); [Scarlet, Texas] Betony (English)¹⁴⁰; Bishish Hióskem <bispshi hioshgama> (Uto-Aztecan: Mountain Pima)¹⁴⁰; Flor de Chuparosa (“Hummingbird Flower”, Spanish: Mountain Pima)¹⁴⁰; Hedge Nettle (a name also applied to the genus *Stachys*); [Scarlet] Hedge Nettle (English)¹⁴⁰; Mbarejnatr’eje (Oto-Manguean: Mazahua)¹⁴⁰; Mirto (Hispanic); Red Mint; Scarlet Hedge-nettle; Scarlet Sage; Texas Betony. DESCRIPTION: Terrestrial perennial forb/herb (prostrate or erect stems 12 to over 40 inches in height/length; plants were observed and recorded as being 12 to 18 inches in height and width, one plant was observed and recorded as being 1½ feet in height and 2½ feet in width); the leaves are grayish-green or dark green; the tubular flowers (¾ to 1¼ inch in length) may be orange, orange-red, pink, pinkish-white, purple, light red, red, deep red, red-orange, rose, salmon with whitish markings, scarlet, deep scarlet, scarlet-red or tomato-red; flowering generally takes place between early March and late November (additional records: one for early January, one for late January, one for early February, one for mid-February, two for mid-December and one for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky cliffs; bases of cliffs; rock walls; along bouldery-rocky and rocky canyons; rocky and humusy canyon walls; rocky canyon bottoms; rocky spurs; talus slopes; shaded crevices in rocks; rocky bluffs; rocky ledges; rocky ridges; meadows; foothills; rocky and gravelly hills; rocky hillsides; bouldery, bouldery-rocky, rocky, rocky-gravelly, stony, gravelly, gravelly-sandy, loamy, clayey and silty-loamy slopes; rocky outcrops; amongst boulders and rocks; bases of boulders and slabs of rock; along banks; gravelly plains; clayey flats; gravelly valley floors; along roadsides; arroyos; bottoms of arroyos; within bouldery and rocky ravines; seeps; springs; along bouldery streams; within bouldery-sandy, rocky and gravelly streambeds; along bouldery creeks; along and in rocky and rocky-sandy creekbeds; riverbeds; along and in bouldery-sandy, rocky, rocky-sandy and gravelly washes; along and in drainages; bases of waterfalls; gravelly bedrock plunge pools; boggy areas; ciénegas; banks of arroyos and creeks; along (rocky) margins of streambeds; silty-loamy terraces; floodplains; dense thickets; ditches; sandy riparian areas, and disturbed areas growing in wet, moist and dry bouldery, bouldery-rocky, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy loam, rocky-clayey loam, gravelly-sandy-clayey loam, silty loam and loam ground; clay ground, and humusy ground often reported in moist shaded areas, occurring from 200 to 8,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Hummingbirds, including the Broad-billed Hummingbird (*Cyanthus latirostris*), have been observed visiting the flowers. *Stachys coccinea* is native to southwest-central and southern North America and Central America. *5, 6, 15, 18, 28 (color photographs 557 A&B), 30, 43 (080610), 44 (072511 - no record of species; genus record), 46 (Page 740), 48, 58, 63 (080610 - color presentation), **85** (072511 - color presentation), 86 (color photograph), 115 (color presentation), 124 (072511 - no record of species; genus record), 140 (Pages 163-164 & 295)*

Loasaceae: The Blazingstar Family

***Mentzelia jonesii* (I. Urban & E.F. Gilg) H.J. Thompson & J.E. Roberts: Jones’ Blazingstar**

SYNONYMY: *Mentzelia nitens* E.L. Greene var. *jonesii* (I. Urban & E.F. Gilg) J. Darlington; *Mentzelia nitens* E.L. Greene var. *leptocaulis* J. Darlington. COMMON NAMES: Blazing Star, Blazingstar, Jones Blazingstar, Jones’ Blazingstar, Jones Stickleaf. DESCRIPTION: Terrestrial annual forb/herb or vine (4 inches to 2 feet in height/length); the stems are gray, pinkish-white or silvery-white; the flowers are lemon-yellow, white & yellow, yellow or yellow-orange; flowering generally takes place between mid-February and mid-June (additional records: one for mid-January and one for early July). HABITAT: Within the range of this species it has been reported from rocky mountains; rocky mountainsides; rocky canyons; canyon bottoms; talus slopes; bases of cliffs; rocky and gravelly hills; bouldery and rocky hillsides; rocky, rocky-sandy and gravelly slopes; sandy alluvial fans; bajadas; rocky outcrops; amongst boulders; flats; basins; rocky and sandy valley floors; along sandy roadsides; along streams; along creeks; riverbeds; along and in rocky, gravelly, gravelly-sandy and sandy washes; rocky drainages; sandy sloughs; rocky and sandy banks of streams and rivers; along sandy edges of washes; terraces, and riparian areas growing in dry bouldery, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground and sandy loam ground, occurring from 600 to 5,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE:

Mentzelia jonesii is native to southwest-central and southern North America. *5, 6, 18 (genus), 43 (030210 - *Mentzelia nitens* Greene var. *jonesii* (Urban & Gilg) Darl.), 46 (*Mentzelia nitens* Greene var. *jonesii* (Urban & Gilg) J. Darl., Page 566 and *Mentzelia nitens* Greene var. *leptocaulis* J. Darl., Page 566), 48 (genus), 63 (030210), 77 (color photograph #82), **85** (030210 - color presentation), 115 (color presentation)*

Mentzelia nitens var. *jonesii* (see *Mentzelia jonesii*)

Mentzelia nitens var. *leptocaulis* (see *Mentzelia jonesii*)

***Mentzelia pumila* T. Nuttall ex J. Torrey & A. Gray var. *pumila*: Dwarf Mentzelia**

COMMON NAMES: Blazing Star; Bullet Stickleaf; Desert Blazingstar; Dwarf Mentzelia; Evening Star; Golden Blazingstar; Moonflower; Stick Leaf; Yellow Mentzelia. DESCRIPTION: Terrestrial biennial forb/herb (18 inches to 3 feet in height); the flowers may be cream, light yellow or yellow; based on few records located, flowering generally takes place between late May and late September (flowering records: one for late May, one for mid-June, one for early July, one for mid-August, one for late August and three for late September). HABITAT: Within the range of this species it has been reported from mountains; canyons; canyon bottoms; meadows; flats; roadsides; along streambeds; along washes, and riparian areas growing in moist and dry rocky and sandy ground and rocky-gravelly loam and gravelly loam ground, occurring from 400 to 8,000 feet in elevation in the forest, woodland and grassland ecological formations. NOTE: *Mentzelia pumila* var. *pumila* is native to southwest-central and southern North America. *5, 6, 18 (genus), 28 (species, color photograph 363), 46 (Page 566), 48 (genus), 58, 63 (041212, 85 (041212), **HR** (ID?))

Malpighiaceae: The Barbados-cherry Family

Cottisia gracilis (see footnote 140 under *Janusia gracilis*)

***Janusia gracilis* A. Gray: Slender Janusia**

COMMON NAMES: Desert Vine; Fermina; Slender Janusia. DESCRIPTION: Terrestrial perennial deciduous forb/herb or vine (clambering, climbing, scrambling or twining stems 16 inches to 10 feet in length; one plant was observed and described as being 16 inches in height with a crown 10 inches in diameter); the leaves are grayish-green or reddish; the flowers (to ½ inch in width) are orange-yellow or yellow; flowering generally takes place between early March and mid-November (additional records: two for early January, one for late January, one for early December, one for mid-December and one for late December); the winged fruits (paired samaras) are pink, purple-red, red, red-green or reddish. HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; rocky mountainsides; mesas; cliffs; rocky canyons; sandy canyon bottoms; gravelly-sandy bases of cliffs; amongst crevices; rocky buttes; rocky knolls; rocky and gravelly ridges; rocky ridgetops; foothills; rocky hills; rocky hillsides; along bouldery-rocky, rocky, rocky-gravelly, rocky-clayey-loamy and gravelly slopes; alluvial fans; gravelly bajadas; volcanic plugs; bouldery and rocky outcrops; amongst rocks; plains; gravelly flats; basins; valley floors; rocky-gravelly roadsides; along rocky arroyos; bottoms of arroyos; draws; within gullies; ravines; along streams; along rocky streambeds; along creeks; bouldery-rocky-sandy creekbeds; along and in gravelly and sandy washes; along drainages; waterholes; palm oases; (rocky) banks of streams; edges of washes; benches; floodplains, and riparian areas growing in dry bouldery, bouldery-rocky, bouldery-rocky-sandy, rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground and rocky-clayey loam and clayey loam ground, occurring from sea level to 7,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. It is small woody vine often reported as scrambling over rocks, twining among shrubs or forming small tangled shrublets. Slender Janusia is browsed by the Sonoran Desert Tortoise (*Gopherus agassizi*), Desert Mule Deer (*Odocoileus hemionus* subsp. *crooki*) and Whitetail Deer (*Odocoileus virginianus* subsp. *couesi*). *Janusia gracilis* is native to southwest-central and southern North America. *5, 6, 13 (Page 124), 15, 16, 28 (color photograph 356), 43 (030310), 44 (031211 - no record of genus or species), 46 (Page 497), 48, 58, 63 (030310 - color presentation), 77 (color photograph #83), **85** (030310 - color presentation), 115 (color presentation), 124 (031211 - no record of genus or species), 140 (Page 295 - recorded as *Cottisia gracilis* (A. Gray) W.R. Anderson & C. Davis), **WTK** (August 4, 2005)*

Malvaceae: The Mallow Family

***Abutilon abutiloides* (N.J. von Jacquin) C.A. Garcke ex B.P. Hochreutiner: Shrubby Indian Mallow**

COMMON NAMES: Amantillo (Spanish); Berlandier Abutilon; Indian Mallow (a name also applied to other species and the genus *Abutilon*); Malva Rasposa (Spanish); Shrubby Indian Mallow. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (1 to 6½ feet in height, one plant was reported to be 32 inches in height with a crown 40 inches in width); the leaves are yellow-green; the flowers are orange, orange-yellow, orangish, yellow, yellow-copper or yellow-orange; flowering generally takes place between early March and early November (additional records: two for late November, four for mid-December and three for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky canyons; along canyon bottoms; bases of cliffs; ridges; foothills, rocky and stony hills; bouldery hilltops; rocky and rocky-

sandy-loamy hillsides; bouldery and rocky slopes; bajadas; amongst boulders and rocks; sandy flats; valley floors; sandy coastal flats; coastal beaches; along rocky, stony and sandy roadsides; within arroyos; gulches; streambeds; along and in rocky-sandy, rocky-silty and sandy washes; bouldery drainages; waterholes; along (rocky) banks of washes; edges of arroyos; bottomlands; riparian areas; waste places, and disturbed areas growing in dry bouldery, rocky, stony, gravelly and sandy ground; rocky-sandy loam and sandy loam ground, and rocky silty ground, occurring between sea level and 6,200 feet in elevation in the forest, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers open in the evening. The Shrubby Indian Mallow is a food and nesting plant of the caterpillar of the Arizona Powdered-skipper (*Systaceae zampa*). *Abutilon abutiloides* is native to southwest-central and southern North America and coastal islands in the Caribbean Sea. *5, 6, 18 (genus), 43 (030310), 46 (recorded as *Abutilon californicum* Benth., Page 539), 63 (030310 - color presentation of seeds), 77, 85 (030310 - color presentation), 115 (color presentation), 124 (110610 - no record, genus), 140 (Pages 168 & 295)*

Abutilon californicum (see footnote 46 under *Abutilon abutiloides*)

Abutilon crispum (see *Herissantia crispata*)

***Abutilon incanum* (J.H. Link) R. Sweet: Pelotazo**

SYNONYMY: *Abutilon incanum* (J.H. Link) R. Sweet subsp. *incanum* (J.H. Link) R. Sweet; *Abutilon incanum* (J.H. Link) R. Sweet subsp. *pringlei* (B.P. Hochreutiner) R.S. Felger & R.T. Lowe; *Abutilon pringlei* B.P. Hochreutiner. COMMON NAMES: Caatc Ipápl (“What Grasshoppers Are Strung With”, Hokan: Seri)¹⁴⁰; Escoba Malva (“Broom Mallow”, Spanish: Sonora)¹⁴⁰; Hasla an Ihoon (“Ear Is Its Place”, Hokan: Seri)¹⁴⁰; Hoary Abutilon; Hoary Indian Mallow; Indian Mallow (a name also applied to other species and the genus *Abutilon*, Texas); Indian Mallow (English)¹⁴⁰; Indianmallow Abutilon; Jichiquia To’ora Cojuya (“Ash Broom”, Uto-Aztec: Mayo)¹⁴⁰; Malva (“Mallow”, Spanish: Sonora)¹⁴⁰; Pelotazo [Chico] (“[Little] Hairy One”, Spanish: Sinaloa)¹⁴⁰; Pelotazo Chico; Pringle Abutilon; Pringle’s Abutilon; Pringle Indian Mallow; Shrubby Indian Mallow; Tosaporo (Uto-Aztec: Guarijío)¹⁴⁰; Tronadora (Spanish: northern Mexico to Oaxaca)¹⁴⁰. DESCRIPTION: Terrestrial perennial evergreen forb/herb or subshrub (stems usually 8 inches to 7 feet in height, rarely to 13 feet in height; one plant was observed and described as being 8 inches in height with a crown 8 inches in width, one plant was observed and described as being 12 inches in height with a crown 16 inches in width, one plant was observed and described as being 30 inches in height with a crown 30 inches in width); the stems are gray, the leaves are grayish or gray-green; the flowers may be cream, cream & red, lavender, pale orange, orange, orange spotted with maroon, orange-red, orange-yellow, orange-yellowish, peach & maroon, light pink, pink, pink with a red center, dark red, salmon, white, white & pink, yellow-orange, yellowish-pink, yellow, yellow-gold or yellow-salmon sometimes with dark crimson, maroon, deep maroon, purple, red dark red centers (basal spots); flowering is generally described as taking place throughout the year (between early January and late December) with the principal flowering period reported as being October through November. HABITAT: Within the range of this species it has been reported from bouldery and rocky mountains; mountaintops; bases and lower slopes of mountains; rocky crags; rocky mesas; rocky cliffs; rocky canyons; along bouldery, bouldery-sandy and rocky canyon bottoms; rocky and clayey-loamy talus slopes; crevices in rocks; buttes; knolls; rocky ridgetops; rocky ridgelines; openings in desertscrub; foothills; rocky and stony hills; rocky and gravelly hillsides; bouldery-rocky-sandy, rocky, rocky-sandy, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey and loamy slopes; rocky bajadas; rocky outcrops; amongst boulders; volcanic plugs; cobbly and gravelly plains; gravelly and sandy flats; basins; valley floors; coastal plains; along gravelly and loamy roadsides; along rocky and sandy arroyos; rocky bottoms of arroyos; around seeping streams; along and in rocky streambeds; along and in gravelly, sandy and clayey-loamy washes; within drainages; swales; banks of lakes; beaches; benches; mesquite bosques; around represos; riparian areas, and disturbed areas growing in wet and dry bouldery, bouldery-rocky-sandy, bouldery-sandy, rocky, rocky-sandy, stony, cobbly, gravelly, pebbly, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, clayey loam and loam ground, and rocky clay, gravelly clay and clay ground, occurring from sea level to 6,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Abutilon incanum* is native to southwest-central and southern North America and North-central Pacific Islands. *5, 6, 13 (recorded as *Abutilon pringlei* Hochreutiner, Pages 100-101), 15, 16 (recorded as *Abutilon incanum* (Link.) Sweet subsp. *pringlei* (Hochr.) Felger & Lowe), 18 (genus), 28 (color photograph 534), 43 (030410 - *Abutilon incanum* subsp. *pringlei* (Hochr.) Felger), 44 (072711 - no record of species; genus record), 46 (recorded as *Abutilon pringlei* Hochr., Page 539 and *Abutilon incanum* (Link) Sweet, Page 539), 63 (030410 - color presentation), 77 (recorded as *Abutilon incanum* (Link.) Sweet ssp. *pringlei* (Hochr.) Felger & Lowe), 85 (072711 - color presentation), 91 (Page 11), 115 (color presentation), 124 (072711), 127, 140 (Pages (167-168 & 295)*)

Abutilon incanum subsp. *incanum* (see *Abutilon incanum*)

Abutilon incanum subsp. *pringlei* (see *Abutilon incanum*)

***Abutilon parishii* S. Watson: Parish’s Indian Mallow**

COMMON NAMES: Indian Mallow (a name also applied to other species and the genus *Abutilon*); Parish Indian Mallow; Parish’s Abutilon; Parish’s Indian Mallow; Pima Indian Mallow; Tucson Indian Mallow. DESCRIPTION: Terrestrial

perennial forb/herb, subshrub or shrub (erect stems 8 to 75 inches in height), the leaves are dark green or yellow-green with a paler underside; the flowers may be golden, light orange, pale orange-yellow, orange-yellow, yellow or yellow-orange; flowering generally takes place between early April and early May and between early August and late September (additional records: one for early January, one for late January, one for early March, one for late May, three for mid-October, two for late October, two for early November, one for mid-November, one for early December and one for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky bases of cliffs; bouldery and rocky canyons; bouldery canyon walls; canyon bottoms; talus slopes; ledges; rocky ridges; bouldery-rocky and rocky hillsides; rocky slopes; bajadas; amongst boulders and rocks; bases of rocks; drainage ways; shores of lakes; terraces and riparian areas growing in dry bouldery, bouldery-rocky and rocky ground, occurring from 300 to 4,900 feet in elevation in the scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. It has been reported that the Parish Indian-mallow may live up to 5 to 10 years of age, the flowers open between mid- to late-afternoon. Deer and rabbits may browse this plant. *Abutilon parishii* is native to southwest-central and southern North America. *5, 6, 8, 9, 18 (genus), 43 (062610), 44 (072711 - no record of species; genus record), 46 (incorrectly shown as being a synonym of *Abutilon palmeri* Gray, Page 539, Supplement Page 1060), 63 (062610), 77 (color photograph #84), 85 (072711 - color presentation of dried material), 124 (072711 - no record of species; genus record), 140 (Page 295)*

Abutilon pringlei (see *Abutilon incanum*)

***Abutilon reventum* S. Watson: Yellowflower Indian Mallow**

COMMON NAME: Indian Mallow (not recommended, a name also applied to other species and the genus *Abutilon*); Yellowflower Indian Mallow. DESCRIPTION: Terrestrial perennial subshrub or shrub (erect stems 28 inches to 10 feet in height); the stems are reddish; the flowers may be pale yellow, bright yellow or yellow-orange; based on few records located, flowering generally takes place between mid-August and late December (flowering records: one for late March, two for late April, (one for mid-August, two for late August, six for early September, one for mid-September, two for late September, four for early October, one for mid-October, one for late October, three for early December, one for mid-December and two for late December). HABITAT: Within the range of this species it has been reported from mountains; bouldery edges of cliffs; cliffs; rocky bases of cliffs; rocky canyons; canyon bottoms; ledges; bedrock ridges; foothills; hillsides; rocky slopes; amongst boulders; gravelly banks; arroyos; bottoms of arroyos; ravines; streambeds; riverbeds; washes; along waterways; ciénegas; bottomlands, and riparian areas growing in dry bouldery, rocky, stony and gravelly ground, occurring from 700 to 6,000 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTE: *Abutilon reventum* is native to southwest-central and southern North America. *5, 6, 8, 15, 18 (genus), 43 (041212), 44 (041212 - no record of species; genus record), 46 (Page 540), 63 (041212), 85 (041212 - color presentation), 124 (041212 - no record of species; genus record), 140 (Pages 168 & 295)*

***Anoda cristata* (C. Linnaeus) D.F. von Schlechtendal: Crested Anoda**

COMMON NAMES: Aguatosa (Spanish: Oaxaca)¹⁴⁰; Alache (Spanish); Alachi (Oto-Manguan: Mixtec, Distrito, Federal, to Guerrero, Puebla)¹⁴⁰; Altea (Spanish: Puebla)¹⁴⁰; Amapola [Amapolita] [del Campo, Morada] (“[Little, Wild, Purple] Poppy”, Spanish: Chiapas, Veracruz, Distrito, Federal, Edo, México, Jalisco, Puebla)¹⁴⁰; Amapolita Morada (Hispanic); Anoda Weed; Crested [Spurred] Anoda (English: Arizona, New Mexico)¹⁴⁰; Balanche (Mayan: Maya)¹⁴⁰; Halache <halanche> (Spanish: Puebla)¹⁴⁰; Huinarillo (Hispanic); Itsucua Tzipata (Purépecha); Malva [Chica, de Castilla] (“[Little, Spanish] Mallow”, Spanish: Aguascalientes, Guanajuato, Guerrero, Michoacán, Morelos, Jalisco, Sonora)¹⁴⁰; Malva Chica (Hispanic); Malva de Castilla (Spanish); Malva Morada (Hispanic); Malvavisco (Hispanic); Pax’tamac (Totonac: Totonac)¹⁴⁰; Pie de Gallo (Spanish); Pax’tamac (Totonac: Totonac); Pintapán (Spanish: Sonora)¹⁴⁰; Quesitos (“Little Cheese”, Spanish: Hidalgo, Sonora)¹⁴⁰; Rehué (Uto-Aztecan: Tarahumara)¹⁴⁰; Requesón (Hispanic); Rewé (Hispanic); Reweque (Hispanic); Shiipugi (Uto-Aztecan: Mountain Pima)¹⁴⁰; Sinianoda; Snowcup; Spurred Anoda; Tlachpahuatla (Uto-Aztecan: Náhuatl, San Luis Potosí)¹⁴⁰; Tsayaltsay <tzalyaltzai> (Spanish: Yucatán)¹⁴⁰; Tsitsiki Uekutini (Purépecha); Tusi (Uto-Aztecan: Mountain Pima)¹⁴⁰; Violeta [del Campo] (“[Wild] Violet”, Spanish: Edo, México, Veracruz to Oaxaca)¹⁴⁰; Violeta de Campo (Hispanic); Violeta del País (Hispanic); Violeta Silvestre (“Wild Violet”, Spanish: Sinaloa)¹⁴⁰; Violettas; Violetilla; Wild Cotton (a name also applied to other species); Xihuitl (“Herb”, Uto-Aztecan: Náhuatl, Mexico)¹⁴⁰; Yiwa Tio (Mixteco). DESCRIPTION: Terrestrial annual forb/herb (decumbent, suberect and/or erect stems 3 to 42 inches in height or length); the leaves are green; the flowers may be blue, blue-purple, blue-violet, lavender, lavender-blue, lavender-pink, lavender-white, lilac, pink, light purple, purple, purplish-blue, purplish-pink, purplish-red, violet or white (rarely); the anthers are white; flowering generally takes place between early August and early November (additional records: one for early January, one for early February, two for mid-March, one for early May, one for mid-May, one for late May, two for mid-July and two for early December). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; bouldery-rocky, rocky and sandy-loamy canyons; canyon bottoms; sandy meadows; foothills; rocky hills; rocky and gravelly-clayey hillsides; rocky-sandy, sandy-loamy, clayey and clayey-loamy slopes; alluvial fans; bajadas; rock outcrops; breaks; clayey and clayey-loamy flats; basins; valley floors; along gravelly-loamy and sandy roadsides; arroyos; gulches; seeps; along streams; along streambeds; along creeks; creekbeds; along rivers; along and in gravelly-sandy sandy washes; drainage ways; along lakes; ciénegas; marshes; (silty) banks of creeks; along edges of creeks; gravelly benches; terraces; floodplains; mesquite bosques; along fencelines; along and in ditches; along canal banks; riparian areas; waste places, and disturbed areas growing in moist and dry bouldery-rocky, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam and clayey loam ground; gravelly clay, silty clay and clay ground, and silty ground,

occurring from 600 to 8,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Anoda cristata* is native to southwest-central and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 15, 30, 43 (072409), 44 (072811), 46 (Pages 551-552), 58, 63 (030410 - color presentation of seed), 68, **85** (030410 - color presentation), 101 (color photograph), 124 (072811), 140 (Pages 165-167 & 296)*

Gayoides crispum (see *Herissantia crispa*)

***Gossypium thurberi* A. Todaro: Thurber's Cotton**

COMMON NAMES: Algodoncillo [del Campo, del Monte] ("Little Cotton [of the Countryside, Wild]", Spanish: Sonora)¹⁴⁰; Atc'w <xlitco, xotc'w> (Yuman: Maricopa); Ban Tokiga ("Coyote's Cotton", Uto-Aztecan: Tohono O'odham; Toki <to'ki, tokih> is cultivated cotton)¹⁴⁰; Canyon [Desert, Thurber's] Cotton (English)¹⁴⁰; Desert Cotton; Hedj'awa (Yuman: Havasupai)¹⁴⁰; Ichoghaq (Athapascan: Western Apache)¹⁴⁰; Ndik'a' (Athapascan: Navajo)¹⁴⁰; Thurber Cotton; Thurber Wild Cotton; Thurber's Cotton; Thurberia; Tok (Uto-Aztecan: Onavas Pima; for cultivated cottons)¹⁴⁰; Toki (Uto-Aztecan: Akimel O'odham; for cultivated cottons)¹⁴⁰; To□sá (Uto-Aztecan: Guarijio)¹⁴⁰; Wild Cotton; Wild Desert Cotton; Xsaw [Xsa:w] (Yuman: Cocopa)¹⁴⁰. DESCRIPTION: Terrestrial perennial deciduous shrub or tree (ascending to erect stems 3 to 14 feet in height; one plant was observed and described as being 6½ feet in height and width); the younger stems are purple; the leaves are dark green (sometimes tinged with purple) with a paler underside; the flowers (to 1½ inches in diameter) may be cream, creamy-white, pale pink, pink-cream, white (aging pink, purple, purple-red or rose-pink), pale yellow, yellow or yellow tinged with pink sometimes with a crimson, lavender, pale pink or purple basal spot on the petals; flowering generally takes place between mid-August and mid-November (additional records: one for early May, one for mid-May, two for early June, one for mid-June, three for late June, two for early July, one for late July and one for early December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; cliffs; rocky canyons; along canyonsides; rocky canyon bottoms; crevices in rocks; ridgetops; foothills; hills; rocky hillsides; rocky, rocky-loamy, gravelly, sandy and loamy slopes; bottoms of slopes; bajadas; rocky outcrops; amongst boulders; along rocky roadcuts; along rocky and sandy roadsides; arroyos; bottoms of arroyos; within ravines; along streams; along and in streambeds; in creekbeds; along and in rocky and cobbly washes; drainages; cienegas; (sandy) banks of arroyos and streams; bottomlands; floodplains; within ditches; riparian areas, and disturbed areas growing in dry bouldery, rocky, cobbly, gravelly and sandy ground and rocky loam and loam ground, occurring from 2,100 to 8,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the leaves turn red in the fall. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial fiber crop. Thurber Wild Cotton is a host plant of the Thurberia Weevil (*Anthonomus grandis* subsp. *thurberiae*) which feeds on the immature cotton bolls. *Gossypium thurberi* is native to southwest-central and southern North America. *5, 6, 13, 15, 28 (color photograph 194), 43 (031211 - *Gossypium thurberi* Tod.), 44 (031211 - no record of genus or species), 46 (Page 553), 58, 63 (031211), **80, 85** (031211), 115 (color presentation), 124 (031211 - no record of genus or species), 127, 140 (Pages 168-169 & 296), **WTK** (August 6, 2005)*

***Herissantia crispa* (C. Linnaeus) G.K. Brizicky: Bladder mallow**

SYNONYMY: *Abutilon crispum* (C. Linnaeus) F.K. Medikus; *Gayoides crispum* (C. Linnaeus) J.K. Small. COMMON NAMES: Bladder Mallow; Bladder-mallow; Bladder mallow; Curly Abutilon; False Indian Mallow; Netvein Herissantia. DESCRIPTION: Terrestrial annual or perennial forb/herb or subshrub (prostrate, sprawling or trailing stems 8 inches to 4 feet in height/length); the leaves are light green; the flowers are cream, pale orange-cream, orange, orange-cream, orange-yellow, pink-orange, pale peach, salmon, white, light yellow, light yellow-orange, yellow or yellowish; the anthers are yellow; flowering generally takes place between mid-January and mid-May and again between early August and late December (additional records: one for late June, two for early July and one for mid-July); the fruit is green. HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; rocky cliffs; bases of cliffs; rocky canyons; along gravelly canyon bottoms; rocky talus slopes; crevices in rocks; rocky ledges; ridgetops; rocky and stony hills; bouldery-rocky and rocky hillsides; bouldery and rocky slopes; rocky and sandy alluvial fans; bajadas; rocky outcrops; amongst boulders and rocks; sandy bases of boulders and rocks; sand dunes; plains; gravelly flats; valley bottoms; coastal beaches; along roadsides; gravelly streambeds; sandy creekbeds; along and in rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy washes; bouldery drainages; edges of arroyos; sandy beaches; benches; floodplains; riparian areas, and disturbed areas growing in dry bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground and clayey loam ground, occurring from sea level to 4,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Bladder mallow is a food and nesting plant of the caterpillar of the Erichson's White-skipper (*Heliopetes domicella*). *Herissantia crispa* is native to south-central and southern North America and coastal islands in the Caribbean Sea. *5, 6, 15, 16, 28 (color photograph), 43 (030410), 46 (recorded as *Gayoides crispum* (L.) Small, Page 540), 48 (genus), 58, 63 (030410 - color presentation), 77 (color photograph #37), **85** (030410 - color presentation), 115 (color presentation), 140 (Page 296)*

***Hibiscus biseptus* S. Watson: Arizona Rose mallow**

COMMON NAMES: Arizona Rose mallow; Malvita; Sonoran Rose Mallow. DESCRIPTION: Terrestrial perennial forb/herb, subshrub or shrub (erect stems 18 to 40 inches in height, one plant was described as being 18 inches in height and 14

inches in diameter); the leaves may turn red-green before falling; the flowers are cream with a purple basal spot, cream-yellow, lavender, white with red centers; light yellow, yellow with a purplish or violet basal spot or yellowish-white with a purple center; flowering generally takes place between early August and mid-October (additional records: one for early April, one for early May, one for mid-December and one for late December). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky canyons; canyon bottoms; bases of cliffs; crevices in rocks; ledges; rocky hills; hilltops; hillsides; rocky and gravelly slopes; rocky bajadas; amongst boulders; sandy-silty plains; flats; along roadsides; within gravelly-sandy arroyos; bottoms of arroyos; along washes; at waterholes; edges of ponds; floodplains, and riparian areas growing in wet and dry bouldery, rocky, gravelly and gravelly-sandy ground; gravelly-sandy loam ground, and sandy silty ground, occurring from sea level to 5,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Hibiscus biseptus* is native to southwest-central and southern North America. *5, 6, 13 (Page 104), 15, 43 (072010), 46 (Page 553), 48 (genus), 58, 63 (072010), 77 (color photograph #38), **85** (080810 - color presentation of dried material), 124 (110610 - no record), 140 (Page 296)*

***Hibiscus coulteri* W.H. Harvey ex A. Gray: Desert Rosemallow**

COMMON NAMES: Coulter Hibiscus; Desert Hibiscus; Desert Rose Mallow; Desert Rose-mallow; Desert Rosemallow; Pelotazo. DESCRIPTION: Terrestrial perennial subshrub or shrub (3 inches to 7 feet in height; one plant was reported to be 18 inches in height with a crown 6 inches in width); the foliage may be green, dark green with reddish margins or green-purple; the flowers are pale lemon, lemon, lemon-yellow, peach, yellow, yellowish-purple or white-pink with or without a blackish, purplish or red basal spot (area at base of the petal); flowering generally takes place between early March and late May and between late July and late December (additional records: one for mid-January, one for mid-February and one for early July, it has been reported that flowering may take place throughout the year; however, the flower buds may be killed by frost). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; bouldery, bouldery-gravelly-loamy and rocky canyons; canyon walls; rocky canyon bottoms; bases of cliffs; crevices in rocks; ridges; rocky ridgetops; foothills; rocky hills; rocky hillsides; along bedrock, rocky, rocky-clayey-loamy, gravelly and gravelly-loamy slopes; gravelly bajadas; rocky outcrops; amongst boulders; flats; along rocky and sandy arroyos; gulches; gullies; ravines; along rocky, gravelly, sandy and humus-loamy washes; within bouldery and cobbly drainages; banks of lakes, and riparian areas growing in dry bouldery, rocky, cobbly, gravelly and sandy ground and bouldery-gravelly loam, rocky-clayey loam, gravelly loam and humusy loam ground, occurring from 400 to 5,000 feet in elevation in the scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Hibiscus coulteri* is native to southwest-central and southern North America. *5, 6, 13 (Page 104), 16, 28 (color photograph 358), 43 (030510 - *Hibiscus coulteri* Harv. ex A. Gray), 46 (Page 553), 48 (genus), 63 (030510), 58, 77, **85** (030510 - color presentation), 86 (color photograph), 115 (color presentation), 124 (111310 - no record, genus), 140 (Page 296), **MBJ/WTK** (September 12, 2005)*

***Sphaeralcea laxa* E.O. Wooton & P.C. Standley: Caliche Globemallow**

COMMON NAMES: Caliche Globe Mallow; Caliche Globemallow; Globemallow (a name also applied to the genus *Sphaeralcea*); Mal de Ojo. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (12 to 28 inches in height); the leaves may be gray, gray-green, green or dark green; the flowers may be bluish-pink, grenadine, orange, orange-pink, peach-orange, pink-orange, red, red-orange or deep salmon; the anthers are dark purple; flowering generally takes place between early February and late November (additional record: one for mid-December). HABITAT: Within the range of this species it has been reported from rocky mountains; rocky-gravelly mesas; cliffs; rocky canyons; sandy canyon bottoms; talus slopes; ledges; rocky-sandy ridges; rocky-gravelly ridgelines; rocky-sandy rims of craters; foothills; hills; rocky-gravelly hilltops; rocky, gravelly-sandy-loamy and sandy hillsides; bases of hills; rocky, gravelly and silty-clayey slopes; alluvial fans; rocky and gravelly bajadas; rocky outcrops; amongst boulders, rocks and gravels; sandy and sandy-loamy plains; gravelly and sandy flats; basins; valley floors; along railroad right-of-ways; roadcuts; roadsides; sandy arroyos; clayey bottoms of arroyos; draws; springs; riverbeds; along and in gravelly and sandy washes; along drainages; along (sandy-silty) banks of rivers; along (gravelly) edges of streambeds and washes; margins of rivers and washes; gravel bars; bottomlands; floodplains; sandy lowlands; mesquite bosques; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly, pebbly and sandy ground; gravelly-sandy loam and sandy loam ground, and silty clay ground, occurring from 1,200 to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Sphaeralcea laxa* is native to southwest-central and southern North America. *5, 6, 15, 16, 18 (genus), 43 (030810), 44 (072811 - no record of species; genus record), 46 (Page 543), 48 (genus), 63 (030810 - color presentation), 68, 77 (color photograph #40), **85** (072811 - color presentation), 115 (color presentation), 124 (072811 - no record of species; genus record)*

Meliaceae: The Mahogany Family

***Melia azedarach* C. Linnaeus: Chinaberrytree**

COMMON NAMES: Amargoseira-do-Himalaio (Portuguese); Arbre à Chapelets (French); Bead-tree; Bessieboom Syringa (Afrikaans); China Berry; China-berry; Chinaberry; Chinaberrytree; China Tree; China-tree; Chuan Liang Zi (transcribed Chinese); Cinamomo (Portuguese); Indian Lilac; Indischer Zedrachbaum (German); Lelah, Maksering (Afrikaans); Lilas des Indes (French); Melia (Spanish); Paraiso (Spanish); Persian Lilac; Persischer Flieder (German); Pride of India; Pride-of-India;

Sabonete-de-soldado (Portuguese); Sendan (transcribed Japanese); Sichuan Pagoda-tree; S-u'ukuk (Pima); Syringa Berrytree; Umbrella Tree; White Cedar. DESCRIPTION: Terrestrial perennial deciduous shrub or tree (10 to 50 feet in height); the flowers are pale lavender, lavender, pinkish-lavender, purple-pink, purplish, purplish-white, white-lavender or white tinged with violet; flowering generally takes place between late March and mid-May (additional records: one for mid-January and one for mid-July); the mature fruit is whitish or yellowish turning brown and wrinkled with age. HABITAT: Within the range of this species it has been reported from mountains; canyons; bases of cliffs; along ridgetops; bouldery, bouldery-rocky and rocky slopes; alluvial fans; amongst boulders; valley floors; rocky-gravelly-loamy roadsides; arroyos; springs; along creeks; creekbeds; along rivers; rocky, rocky-sandy and sandy riverbeds; along and in sandy washes; along margins of washes; gravelly floodplains; rocky riparian areas, and disturbed areas growing in moist and dry bouldery, bouldery-rocky, rocky, rocky-sandy, gravelly and sandy ground and rocky-gravelly loam ground, occurring from sea level to 5,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formation. NOTES: **EXOTIC** Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a food (chewed leaves for pleasing flavor), spice, as jewelry, as a drug or medication and as a commodity used in personal hygiene. The fruits are poisonous. *Melia azedarach* is native to eastern and southern Asia; Australia, and southwestern Pacific islands. *5, 6, 16, 18, 26 (color photograph), 28 (color photograph), 43 (030910), 46 (Supplement Page 1059), 52 (color photograph), 63 (030910 - color presentation), 77, 80 (This species is listed as a Poisonous Cropland and Garden Plant. "All parts of this tree may be lethal, causing complete paralysis and suffocation, but berries cause most poisoning of livestock (especially hogs) and children."), 85 (030910 - color presentation), 97, 127

Molluginaceae: The Carpetweed Family (the genus Mollugo was formerly placed in the Aizoaceae)

***Mollugo verticillata* C. Linnaeus: Green Carpetweed**

COMMON NAMES: Carpet-weed; Carpetweed; Devil's Grip (Maine); Devil's-grip (Maine); Green Carpet-weed; Green Carpetweed; Espuelita; Indian Chick Weed; Indian Chickweed; Indian-chickweed; Mollugine; Mollugo Verticillé; Zhong Leng Su Mi Cao (transcribed Chinese). DESCRIPTION: Terrestrial annual forb/herb (prostrate to ascending stems 1 to 18 inches in height/length); the leaves are pale green; the inconspicuous flowers (1/8 inch in diameter) are white; flowering generally takes place between late July and early November (additional records: two for mid-January, two for mid-March, one for early May, one for mid-June, one for late June, one for early July and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mesas; cliffs; bouldery and rocky canyons; gravelly and gravelly-sandy canyon bottoms; shallow pockets of soil in rocks; rocky and gravelly buttes; ridges; rocky ridgetops; foothills; hills; rocky hillsides; rocky, gravelly, gravelly-loamy, sandy, sandy-loamy and clayey slopes; bajadas; rocky outcrops; amongst boulders; sandy-loamy plains; gravelly, sandy and clayey flats; valley floors; sandy coastal dunes; coastal salt marshes; along railroad right-of-ways; roadbeds; along gravelly-sandy and sandy roadsides; along arroyos; draws; along streams; along gravelly-sandy streambeds; along creeks; creekbeds; along rivers; riverbeds; along and in rocky, stony, gravelly, gravelly-sandy, sandy and clayey washes; clayey lakebeds; (gravelly-sandy and silty) banks of creeks and rivers; (sandy) edges of ponds and marshes; margins of lakes; shores of lakes; mudflats; sandy benches; rocky shelves; terraces; bottomlands; floodplains; gravelly and gravelly-sandy riparian areas; waste places, and disturbed areas growing in moist and dry bouldery, rocky, stony, gravelly, gravelly-sandy and sandy ground; gravelly loam and sandy loam ground; gravelly clay and clay ground, and silty ground, occurring from sea level to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Mollugo verticillata* is considered by some authors to be a native of the New World Tropics or pan-tropic which has naturalized in subtropical and temperate regions. *5, 6, 15, 43 (072409), 46 (Page 280), 58, 63 (030910 - color presentation), 77, 85 (030910 - color presentation), 124 (111310), 140 (Page 296)*

Moraceae: The Mulberry Family

***Morus microphylla* S.B. Buckley: Texas Mulberry**

COMMON NAMES: Apuri (Tarahumara?); Dwarf Mulberry; Littleleaf Mulberry; Mexican Mulberry; Mountain Mulberry; Small-leaved Mulberry; Texas Mulberry; Western Mulberry. DESCRIPTION: Terrestrial perennial deciduous shrub or tree (6½ to 25 feet (rarely to 50 feet) in height, one shrub was observed and recorded as being 6½ feet in height and 10 feet in width); the bark is pale gray; the twigs are brown or greenish; the leaves are green, dark green or yellow-green; the flowers (in ¾ inch long green or yellowish catkins) are green, the green to reddish staminate flowers and dark green pistillate flowers are borne on different plants (dioecious); flowering generally takes place between late March and early June (additional records: one for early August and three for late August); the mature fruit (½ inch in length) is black, purple or red. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; canyon rims; rock cliffs; bases of cliffs; bouldery and rocky canyons; along rocky and sandy canyon bottoms; scree slopes; rocky talus slopes; crevices in rocks; rocky-sandy bluffs; bouldery ledges; ridges; foothills; rocky hills; rocky hillsides; along bases of hills; bouldery-gravelly, rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy-loamy slopes; bases of slopes; bajadas; rocky outcrops; amongst boulders; bases of boulders; bases of rock slides; sandy lava flows; lava beds; banks; stream valleys; along rocky-gravelly-sandy and gravelly roadsides; along arroyos; within draws; bouldery and rocky ravines (barrancas); seeps; springs; along streams; streambeds; along and in

creeks; along gravelly-sandy and sandy creekbeds; along and in sandy washes; rocky drainages; sinks; (rocky) banks of seeps, streams, creeks and washes; along (cobble) edges of streams and creeks; margins of creeks; silty-loamy terraces; floodplains; mesquite bosques, and bouldery, rocky and gravelly-sandy riparian areas growing in shallow water and wet, moist, damp and dry bouldery, bouldery-rocky-sandy, bouldery-gravelly, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground and sandy loam, clayey loam and silty loam ground, occurring from 600 to 7,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop; it was also noted that the wood was used in the making of bows. The fruits are eaten birds and other wildlife. *Morus microphylla* is native to southwest-central and southern North America. *5, 6, 15, 18 (genus), 28 (color photograph), 43 (082210), 46 (Page 221), 52 (color photograph), 53, 58, 63 (082210), 77, 85 (082210 - color presentation), 127, 140 (Page 296)*

Nyctaginaceae: The Four-o'clock Family

Allionia incarnata C. Linnaeus: Trailing Windmills

COMMON NAMES: *Allionia* (a name also applied to the genus *Allionia*); Crested Windmills; Guapile (Spanish: Sonora)¹⁴⁰; Hamíp Cmaam (“Female Spiderling”, Hokan: Seri)¹⁴⁰; Hierba de la Golpe (“Bruise Herb”, Spanish: Sonora)¹⁴⁰; Hierba de la Hormiga [Mosca] (“Ant [Fly] Herb”, Spanish: Durango, Nuevo León, Zacatecas)¹⁴⁰; ‘Ilt’aa’ <□ilt’a□í> (“Leaves Like Rock Tea”, Athapascan: Navajo)¹⁴⁰; Juan Ematilli (Spanish: Onavas Pima)¹⁴⁰; ‘Okup’e (Kiowa Tanoan: Tewa)¹⁴⁰; Pink Three-flower (English: Arizona)¹⁴⁰; Pink Three-flower *Allionia*; Pink Windmills (a name also applied to other species); Totopwuváapi <totópwuvápi> (Uto-Aztecan: Hopi)¹⁴⁰; Trailing *Allionia*; Trailing Four O’clock (a name also applied to the genus *Allionia*); Trailing Four O’clock (English)¹⁴⁰; Trailing Four-o’clock (a name also applied to the genus *Allionia*); Trailing Umbrella-wort; Trailing Windmills; Tsét’aa’ Ts’ósi <cedide.h c’o’s> (“Leaves Like Rock Tea”, Athapascan: Navajo)¹⁴⁰; Umbrella Wort (a name also applied to other species and the genus *Allionia*); Umbrella-wort (a name also applied to other species and the genus *Allionia*); Umbrella-wort (English)¹⁴⁰; [Trailing] Wind-mills (English: Arizona, New Mexico)¹⁴⁰; Windmills (a name also applied to the genus *Allionia*). DESCRIPTION: Terrestrial annual or perennial forb/herb (prostrate, trailing stems 4 to 14 inches in height and 4 inches to 10 feet in length; one plant was observed and described as being 4 inches in height and 12 by 20 inches in width); the stems may be reddish; the sticky foliage has been described as being gray-green or green above and silvery beneath; the flowers may be blue, fuchsia; lavender, lavender-pink, lavender-rose, magenta, deep magenta, magenta-pink, magenta-rose, pink, deep pink, pink-lavender, pink-purple, pink-violet, purple, purple-blue, purplish-pink, red-violet, reddish-purple, rose, rose-pink, rose-purple, violet, violet-magenta, violet-pink or white (rarely); flowering generally takes place between mid-January and mid-December. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky and rocky-sandy mesas; rims of canyons; cliffs; rocky and shaley canyons; along gravelly canyon bottoms; lava flow talus; buttes; knolls; shaley ridges; rocky ridgetops; sandy foothills; rocky, rocky-sandy, gravelly and sandy hills; rocky-gravelly hilltops; rocky and gravelly hillsides; along bedrock, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, rocky-loamy, shaley, gravelly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, sandy-silty and silty slopes; rocky alluvial fans; rocky and gravelly-sandy bajadas; clayey outcrops; amongst boulders and rocks; lava hills; sandy lava flows; sand hills; sand dunes; sand hummocks; debris fans; banks; llanos; sandy and clayey-loamy plains; rocky-sandy, rocky-loamy, gravelly, gravelly-sandy and sandy flats; silty basin floors; gravelly-sandy valley floors; sandy roadbeds; along rocky, rocky-gravelly-sandy, rocky-gravelly-loamy, stony, gravelly, gravelly-sandy-loamy, sandy and sandy-loamy roadsides; within rocky, rocky-gravelly-sandy and sandy arroyos; rocky bottoms of arroyos; within draws; within rocky ravines; streambeds; along and in rocky and gravelly-sandy creekbeds; along rivers; along and in riverbeds; along and in bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly-gravelly-sandy, cobbly-pebbly, gravelly and sandy washes; silty lakebeds; marshy areas; ciénegas; sandy-silty depressions; along (clayey) banks of arroyos, rivers and washes; edges of rivers and washes; (rocky) margins of arroyos; sandy benches; shelves; gravelly terraces; sandy bottomlands; sandy floodplains; lowlands; sandy mesquite bosques; edges of levees; along canals; canal banks; around stock tanks (represos); gravelly-sandy and sandy riparian areas; waste places, and disturbed areas growing in dry sandy desert pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, stony, cobbly-gravelly-sandy, cobbly-pebbly, cindery; gravelly, gravelly-sandy, pebbly and sandy ground; rocky loam, rocky-gravelly loam, gravelly loam, gravelly-sandy loam, sandy loam and clay loam ground; rocky clay, sandy clay and clay ground, and gravelly-sandy silty, sandy silty and silty ground, occurring from sea level to 8,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. Merriam’s Kangaroo Rat (*Dipodomys merriami*), Arizona Pocket Mouse (*Perognathus amplus*), Bailey’s Pocket Mouse (*Chaetodipus baileyi*) and the Rock Pocket Mouse (*Chaetodipus intermedius*) collect the seed of this plant. *Allionia incarnata* is native to southwest-central and southern North America; Central America; South America, and coastal islands in the Caribbean Sea. *5, 6, 15, 16, 28 (color photograph 652), 43 (031010), 44 (073011 - color photograph), 46 (Page 274), 58, 63 (031010 - color presentation), 68, 77 (color photographs #41 and #86), 85 (073011 - color presentation), 86 (color photograph), 115 (color presentation), 124 (073011), 127, 140 (Pages 175-176 & 296 - recorded as *Allionia incarnata* Linnaeus [*Allionia incarnata* Linnaeus var. *nudata* (Standley) Munz, *Allionia incarnata* Linnaeus var. *villosa* (Standley) B.L. Turner]), **WTK** (August 6, 2005)*

***Allionia incarnata* C. Linnaeus var. *villosa* (P.C. Standley) B.L. Turner: Trailing Windmills**

COMMON NAMES: Allionia (a name also applied to the species and the genus *Allionia*); Trailing Allionia (a name also applied to the species); Trailing Four O'clock (a name also applied to the species and the genus *Allionia*); Trailing Four-o'clock (a name also applied to the species and the genus *Allionia*); Trailing Windmills (a name also applied to the species); Windmills (a name also applied to the species and the genus *Allionia*). DESCRIPTION: Terrestrial annual or perennial forb/herb (prostrate with trailing stems 4 to 14 inches in height and 4 inches to 10 feet in length); the flowers are magenta, pink, pinkish-purple, rd-violet, rose-pink or white; flowering generally takes place between mid-March and early October (flowering year-round has also been reported). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; hills; hillsides; rocky, rocky-gravelly, gravelly and gravelly-loamy slopes; basins; valley floors; along rocky-gravelly-loamy and gravelly roadsides; gravelly arroyos; ravines; sandy riverbeds; along washes; drainages; sandy floodplains; mesquite bosques; gravelly-clayey banks of levees, and disturbed areas growing in dry rocky, rocky-gravelly, cindery; gravelly and sandy ground; rocky-gravelly loam and gravelly loam ground, and gravelly clay and sandy clay ground, occurring from 100 to 5,200 feet in elevation in the scrub, grassland and desertscrub ecological formations. NOTES: The species, *Allionia incarnata*, was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Allionia incarnata* var. *villosa* is native to southwest-central and southern North America. *5, 6, 28 (species, color photograph of the species 652), 43 (031010), 44 (073011), 46 (species, Page 274), 63 (011109), 68 (species), 85 (073011), 86 (species, color photograph of the species), 115 (color presentation of the species), 124 (073011 - no record of this variety; genus and species records), 127 (species)*

***Boerhavia scandens* C. Linnaeus: Climbing Wartclub**

SYNONYMY: *Commicarpus scandens* (C. Linnaeus) P.C. Standley. COMMON NAMES: Bush Spiderling; Climbing Wartclub; Miona (Mayo)¹⁴⁰; Pega-polla; Sonorita (Spanish)¹⁴⁰. DESCRIPTION: Terrestrial perennial forb/herb or vine (1 to 8 feet in height); the small flowers are cream, cream-white, pale green, green, greenish, greenish-white, greenish-yellow, white, whitish-green or yellow-pink; flowering generally takes place between mid-April and mid-November (additional record: one for early January, two for mid-March, one for mid-December and one for late December). HABITAT: Within the range of this species it has been reported from mountains; mesas; bouldery and rocky canyons; canyon walls; canyon bottoms; rocky talus; bases of cliffs; buttes; rocky ledges; foothills; rocky hills; rocky hilltops; rocky hillsides; bouldery-gravelly, rocky and gravelly slopes; gravelly alluvial fans; bajadas; rocky outcrops; amongst boulders; sand dunes; sandy flats; basins; valley floors; beach dunes; coastal plains; amongst sea-worn boulders; along gravelly-sandy and sandy roadsides; in arroyos; rocky bottoms of arroyos; draws; along streambeds; along creeks; along and in gravelly washes; within rocky drainages; within drainage ways; edges of washes; along margins of washes; sandy beaches; benches; sandy floodplains; mesquite bosques; fencerows; rocky riparian areas, and disturbed areas growing in damp and dry bouldery, bouldery-gravelly, rocky, gravelly, gravelly-sandy and sandy ground and gravelly loam ground, occurring from sea level to 5,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Often reported as growing up through and supported by shrubs. *Boerhavia scandens* is native to southwest-central and southern North America; Central America; South America, and coastal islands in the Caribbean Sea. *5, 6, 15, 16, 43 (031110), 44 (011111), 46 (recorded as *Commicarpus scandens* (L.) Standl., Page 277), 58 (recorded as *Commicarpus scandens* L.), 63 (031110 - color presentation), 77 (recorded as *Commicarpus scandens* (L.) Standl., color photograph #43 labeled *Commicarpus scandens*), 85 (031210 - color presentation), 115 (color presentation), 124 (110710 - no record, genus), 140 (Pages 176 & 297 - recorded as *Commicarpus scandens* (Linnaeus) Standley)*

Commicarpus scandens (see *Boerhavia scandens*)

Mirabilis bigelovii (see *Mirabilis laevis* var. *villosa*)

Mirabilis bigelovii var. *bigelovii* (see *Mirabilis laevis* var. *villosa*)

***Mirabilis coccinea* (J. Torrey) G. Bentham & J.D. Hooker: Scarlet Four O'clock**

SYNONYMY: *Oxybaphus coccineus* J. Torrey. COMMON NAMES: Red Four O'clock; Scarlet Four O'clock; Scarlet Four-o'clock. DESCRIPTION: Terrestrial perennial forb/herb (ascending to erect stems 6 inches to 3½ feet in height); the leaves are gray-green, grayish-green or dark grayish-green; the flowers may be carmine-red, cerise-pink, coral-red, crimson, fuchsia, deep lavender-pink; magenta, magenta-purple, orange-red, pink, dark pink, pink-cerise, pink-purple, purple-pink, purplish, red, deep red, red-magenta, red-purple, red-violet, rose, rose-pink, rose-red-pink, dark rose-purple, salmon or scarlet; flowering generally takes place between late April and mid-October (additional records: one for early April, flowering ending as late as November has been reported). HABITAT: Within the range of this species it has been reported from mountains; cobbly mountainsides; mesas; cliffs; rocky bases of cliffs; along canyon walls; canyon bottoms; talus; pockets of soil; clearings in forests; foothills; hills; rocky hillsides; rocky, rocky-sandy-clayey-loamy, gravelly, gravelly-sandy-loamy and gravelly-clayey slopes; amongst boulders and rocks; bases of rocks; rocky and rocky-sandy-clayey flats; basins; along rocky roadsides; springs; along streams; along and in bouldery and rocky streambeds; along bouldery creeks; sandy-silty creekbeds; along and in rocky and sandy washes; banks of draws and washes; (sandy) edges of rivers; rocky benches; sandy terraces; ditches, and riparian areas growing in dry bouldery, rocky, rocky-gravelly, cobbly, gravelly and sandy ground; gravelly-sandy loam ground; rocky-sandy clay and gravelly clay ground, and sandy silty ground, occurring from 2,800 to 8,700 feet in elevation in the forest, woodland,

scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. The brilliant carmine-red flowers reportedly open in the late afternoon and close the following morning. *Mirabilis coccinea* is native to southwest-central and southern North America. *5, 6, 15, 18 (genus), 28 (recorded as *Oxybaphus coccineus*, color photograph), 43 (082310 - *Mirabilis coccinea* Benth. & Hook. f.), 46 (recorded as *Oxybaphus coccineus* Torr., Page 274), 63 (082210 - color presentation), 77 (color photograph #45), 85 (082310 - color presentation), 86 (color photograph), 127*

***Mirabilis laevis* (G. Bentham) M.C. Curran var. *villosa* (A. Kellogg) R.W. Spellenberg: Wishbone-bush**

SYNONYMY: *Mirabilis bigelovii* A. Gray; *Mirabilis bigelovii* A. Gray var. *bigelovii* A. Gray. COMMON NAMES: Bigelow Four O'clock; Desert Wishbone Bush; Pi□agab□ (Uto-Aztecan: Kawaiisu; for *M. laevis*)¹⁴⁰; Wishbone-bush; Wishbonebush. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (clumping or sprawling decumbent to erect stems 6 to 32 inches in height); the kidney-shaped leaves are dark green, the flowers are cream-white, lavender, magenta, pale pink, pink, white or whitish-cream; flowering generally takes place between late January and mid-May (additional records: one for early June, one for late June, one for mid-August, one for late August, one for early September, one for mid-September, one for late September, one for early October, two for mid-October, seven for late October, two for mid-November, three for late November and two for early December; flowering has been reported as occurring throughout the year with the heaviest show of flowers in the spring). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; cliffs; along rocky canyons; canyon bottoms; scree; bases of cliffs; crevices in rocks; buttes; rocky ridges; rocky ridgetops; meadows; rocky hills; hilltops; bouldery-rocky, rocky and gravelly hillsides; rocky slopes; gravelly bases of slopes; bajadas; bouldery outcrops; amongst boulders and rocks; plains; flats; gravelly-sandy valley floors; along roadsides; along arroyos; draws; springs; rocky-sandy streambeds; along and in gravelly-sandy and sandy washes; drainages; rocky drainage ways; shores of lakes; riparian areas and disturbed areas growing in dry bouldery, bouldery-rocky, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy soils and rocky loam and gravelly loam soils, occurring from below sea level to 7,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The herbage is reportedly very sticky. *Mirabilis laevis* var. *villosa* is native to southwest-central and southern North America. *5, 6, 18 (genus), 28 (recorded as *Mirabilis bigelovii*, color photograph), 43 (071010), 46 (recorded as *Mirabilis bigelovii* Gray, Page 272), 63 (071010 - color presentation), 77 recorded as *Mirabilis bigelovii*, (color photograph #44), 85 (071010 - color presentation, unable to access species information), 115 (color presentation of the species), 140 (Page 297)*

***Mirabilis longiflora* C. Linnaeus: Sweet Four O'clock**

COMMON NAMES: Acsoyatic <acsoyate, atzayatl> (Uto-Aztecan: Náhuatl)¹⁴⁰; Four-o'clock (a name also applied to the genus *Mirabilis* and the family Nyctaginaceae); [Sweet] Four-o'clock [O'clock] (English)¹⁴⁰; Long-flowered Four O'clock; Longtube Four O'clock; Maravii (Uto-Aztecan: Mountain Pima)¹⁴⁰; Maravilla [de Jardín, del Cerro] ("Garden, Wild) Marvel, Wonderful", Spanish: Mexico)¹⁴⁰; Pebete ("Little Child", Spanish: Oaxaca)¹⁴⁰; Puhu (Kiowa Tanoan: Tewa)¹⁴⁰; Suspiro ("Sigh", Spanish: Jalisco)¹⁴⁰; Sweet Four O'clock; Ta□ Ma:had [Tash Mahhad] ("Raised by Hand", Uto-Aztecan: Tohono O'odham)¹⁴⁰; Tlé'iigáhi <y'e-□gahi> ("White at Night", Athapaskan: Navajo)¹⁴⁰; Xpak-u-pa ("Sticks a Little", Mayan: Maya)¹⁴⁰. DESCRIPTION: Terrestrial perennial forb/herb (erect stems 16 inches to 6½ feet in height; one plant was observed and described as being 2 to 3 feet in height and 3 feet in width); the stems may be red; the leaves are green; the trumpet-shaped flowers (3 to 7 inches in length) may be magenta (less often), pale pink (less often), pink (less often), pinkish (less often), pale violet (less often), white or yellow (less often) with a long and slender perianth tube that is possibly blushed with green or purple); flowering generally takes place between early July and early October (additional record: one for late October). HABITAT: Within the range of this species it has been reported from mountains; rocky cliffs; along bases of cliffs; rocky canyons; rocky canyon walls; canyon sides; canyon bottoms; crevices in boulders; rocky knolls; clearings in forests; open woodlands; meadows; foothills; rocky hillsides; bouldery-rocky, rocky, rocky-gravelly, gravelly, loamy and clayey-loamy slopes; amongst boulders; grassy plains; clayey-loamy flats; gravelly-sandy and loamy valley floors; along rocky, gravelly and gravelly-loamy roadsides; bottoms of arroyos; ravines; seeps; springs; within sandy streambeds; along creeks; along and in creekbeds; along rivers; within riverbeds; along washes; along lakes; ciénegas; swampy areas; banks of creeks; (sandy) edges of streams and washes; benches; bottomlands; sandy floodplains; mesquite bosques; along ditches, and gravelly-sandy-silty-loamy riparian areas growing in wet and moist bouldery, rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground and gravelly loam, gravelly-sandy-silty loam, clayey loam and loam ground, occurring from 2,300 to 8,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers are fragrant. The leaves are eaten by a Forrester-moth (*Alypiodes geronimo*), the flowers may possibly attract moths including the Sphinx Moths. *Mirabilis longiflora* is native to southwest-central and southern North America and Central America. *5, 6, 15, 18 (genus), 43 (073009), 44 (073111 - no listing of Common Names under species), 46 (Pages 272-273), 58, 63 (073009), 85 (073111 - color presentation), 86 (color photograph), 115 (color presentation), 124 (073111 - no record of species; genus record), 140 (Pages 178-179 & 297)*

Oxybaphus coccineus (see *Mirabilis coccinea*)

Fraxinus pennsylvanica var. *velutina* (see *Fraxinus velutina*)

***Fraxinus velutina* J. Torrey: Velvet Ash**

SYNONYMY: *Fraxinus pennsylvanica* H. Marshall var. *velutina* (J. Torrey) G.S. Miller; *Fraxinus velutina* J. Torrey var. *coriacea* (S. Watson) A. Rehder; *Fraxinus velutina* J. Torrey var. *glabra* A. Rehder; *Fraxinus velutina* J. Torrey var. *toumeyii* (N.L. Britton) A. Rehder. COMMON NAMES: Arizona [Desert, Toumey, Velvet] Ash (English)¹⁴⁰; Arizona Velvet Ash; Arizona-esche (German); Bitoi <pitoi> (Uto-Aztec: Akimel O'odham, Hiá Ce□ O'odham, Tohono O'odham); Botavaras (Spanish: Sonora)¹⁴⁰; Dahba' <dabba□> (Athapaskan: Navajo)¹⁴⁰; Desert Ash (a name also applied to other species); Fresno; Fresno ("Ash" a name also applied to the genus *Fraxinus*, Spanish); Fresno [Terciopelo] ("[Velvet] Ash", Spanish: Arizona, New Mexico, Texas, Mexico)¹⁴⁰; Im'val (Yuman: Walapai)¹⁴⁰; Leather Leaf Ash; Leather-leaf Ash; Leather-leaved Ash; Leatherleaf Ash; MøRc (Yuman: Maricopa)¹⁴⁰; Pávlas (Uto-Aztec: Luiseño)¹⁴⁰; Piichai (Uto-Aztec: Mountain Pima)¹⁴⁰; Pimaráákará (Uto-Aztec: Comanche)¹⁴⁰; Pitai <potoi> (Uto-Aztec: Nevome); Pitai <petai> (Uto-Aztec: Northern Tepehuan)¹⁴⁰; Smooth Ash; Terciopelo Fresno ("Velvet Ash", Spanish: Arizona, New Mexico, Texas, Mexico); Toumey Ash; Uré (Uto-Aztec: Tarahumara)¹⁴⁰; Velvet Arizona Ash; Velvet Ash; Western Ash. DESCRIPTION: Terrestrial perennial deciduous tree (40 inches to 65 feet in height with a rounded crown of up to 30 to 40 feet in width, one plant was reported to be 40 inches in height with a crown about 40 inches in width, one plant was reported to be 8 feet in height with a crown 8 feet in width, one plant was reported to be 26 feet in height with a crown 26 feet in width); the bark is pale gray or gray; the leaves are green or yellow-green turning yellow in the fall; female (green or greenish) and male (yellow) flower parts are born on separate trees and appear before the leaves; flowering generally takes place between late February and early June (additional records: one for early July, two for mid-July, one for early August, one for mid-August, two for early October and two for early November); the oblong-ovate fruits (¾ to 1¼ inch in length) are winged samaras. HABITAT: Within the range of this species it has been reported from reported from mountains; rocky mountainsides; hanging gardens; rocky, sandy and loamy canyons; rocky, gravelly and sandy canyon bottoms; chasms; gorges; clayey and silty-clayey soils on talus slopes; rockslides; rocky ledges; ridges; gravelly-loamy meadows; clayey-loamy foothills; rocky hills; along hillsides; rocky, rocky-gravelly, rocky-loamy, rocky-clayey-loamy, gravelly, gravelly-sandy, gravelly-loamy and loamy slopes; amongst rocks; flats; basins; valley floors; gravelly-loamy roadsides; within rocky arroyos; along arroyo bottoms; draws; rocky gulches; within bouldery ravines; bottoms of ravines; seeps; around and in springs; sandy soils along streams; along and in rocky-sandy-loamy, gravelly-sandy and sandy-loamy streambeds; along creeks; along and in rocky and gravelly-sandy creekbeds; along rivers; along bouldery-cobbly-sandy and sandy riverbeds; along and in cobbly, gravelly and sandy washes; along and in drainages; along and in drainage ways; along watercourses; around pools; ciénegas; along (bouldery, rocky, gravelly-loamy and sandy) banks of streams, creeks, rivers and drainages; edges of streams, creeks, creekbeds, rivers, washes and drainage ways; shores of rivers; sandy benches; terraces; rocky-sandy-loamy and sandy bottomlands; sandy floodplains; edges of reservoirs; bouldery-cobbly-sandy, gravelly-sandy and sandy riparian areas, and disturbed areas growing in moist, damp and dry (seasonally wet) bouldery, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, rocky-clayey loam, gravelly loam, sandy loam, clayey loam and loam ground, and silty clay and clay ground, occurring from 400 to 9,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used in the making of tools and bows. The Yggdrasil is an evergreen ash tree which is believed to be the "world tree" of the Norse. Use as a specimen plant in a large area and as a re-vegetation plant for the areas immediately adjacent to the main channel of streams, creeks and rivers, requires regular watering. Birds and other wildlife feed on the seeds. Native Velvet Ash trees are indicators of permanent near surface water or areas of historical near surface water. **When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koerberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Fraxinus velutina* is native to southwest-central and southern North America. *5, 6, 13, 15, 18, 26 (color photograph), 28 (recorded as *Fraxinus pennsylvanica* ssp. *velutina*, color photograph), 30, 43 (072609), 44 (090211), 46 (recorded as *Fraxinus velutina* Torr. var. *coriacea* (Wats.) A. Rehder, Page 642; *Fraxinus velutina* Torr. var. *glabra* Rehder, Page 642, and *Fraxinus velutina* Torr. var. *toumeyii* (Britton) Rehder, Page 642), 48, 52 (color photograph), 53, 58, 63 (031210 - color**

presentation), **85** (090211 - color presentation), 115 (color presentation), 124 (090211 - no record of species; genus record), 127, 140 (Pages 180-181 & 297), **WTK** (August 4, 2005)*

Fraxinus velutina var. *coriacea* (see *Fraxinus velutina*)

Fraxinus velutina var. *glabra* (see *Fraxinus velutina*)

Fraxinus velutina var. *toumeyii* (see *Fraxinus velutina*)

Menodora scabra A. Gray: **Rough Menodora**

SYNONYMY: *Menodora scoparia* G. Engelmann ex A. Gray. COMMON NAMES: Broom Menodora; Rough Desert Olive; Rough Desert-olive; Rough Menodora; Rough Twinberry; Scabrous Menodora; Twinberry (a name also applied to other species); Twinfruit; Yellow Menodora. DESCRIPTION: Terrestrial perennial deciduous forb/herb or subshrub (6 inches to 4 feet in height; one plant was observed and described as being 12 inches in height with a crown 16 inches in width, one plant was described as being 12 to 16 inches in height with a crown 8 to 12 inches in width); the older bark is dark gray; the stems are green or green-yellow; the leaves are grayish-green, green or green-yellow; the flowers are white or yellow; flowering generally takes place between mid-March and late November (additional record: one for mid-February). HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; rocky and stony mountainsides; bouldery crags; bouldery mesas; rocky canyons; along rocky and gravelly canyon bottoms; gorges; talus slopes; rocky buttes, rocky-sandy and sandy ridges; rocky ridgetops; meadows; foothills; talus hills; rocky, sandy and clayey hills; rocky and gravelly hilltops; rocky and gravelly-clayey hillsides; sandy edges of escarpments; bedrock, bouldery, rocky, rocky-gravelly, rocky-sandy, rocky-clayey-loamy, cindery, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy, clayey and clayey-loamy slopes; gravelly and sandy bajadas; rocky outcrops; amongst rocks; sandy plains; rocky, cindery, gravelly, sandy, clayey and clayey-loamy flats; cindery valley floors; along rocky-gravelly-sandy-clayey-loamy, rocky-sandy-loamy, gravelly, gravelly-sandy and gravelly-sandy loamy roadsides; sandy arroyos; bottoms of arroyos; gullies; springs; creekbeds; along gravelly, sandy and humusy-loamy washes; drainages; (clayey) edges of washes and drainage ways; along margins of washes; benches; rocky-sandy terraces; floodplains; bouldery-cobbly-sandy riparian areas, and disturbed areas growing in dry rocky desert pavement; bouldery, bouldery-cobbly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-sandy, stony, cindery, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy-clayey loam, rocky-sandy loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, sandy-clayey loam, clayey loam and humusy loam ground, and gravelly clay, silty clay and clay ground, occurring from 1,100 to 8,000 feet in elevation in the forest, woodland scrub, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. Rough Menodora is an important browse plant for wildlife. *Menodora scabra* is native to southwest-central and southern North America. *5, 6, 13, 15, 16, 28 (color photograph 364), 43 (031310), 44 (011111), 46 (recorded as *Menodora scabra* Gray, Page 644 and *Menodora scoparia* Engelm., Page 644), 48, 63 (031310 - color presentation), 77, **85** (031310 - color presentation), 86 (color photograph), 115 (color presentation), 124 (110710 - no record), 127, **HR***

Menodora scoparia (see *Menodora scabra*)

Onagraceae: The Evening-primrose Family

Camissonia californica (T. Nuttall ex J. Torrey & A. Gray) P.H. Raven: **California Suncup**

SYNONYMY: *Eulobus californicus* T. Nuttall ex J. Torrey & A. Gray; *Oenothera leptocarpa* E.L. Greene. COMMON NAMES: California Evening Primrose; California Eveningprimrose; California Primrose; California Suncup; Mustard Camissonia; Mustard Evening Primrose; Mustard Evening-primrose; Sun-drops. DESCRIPTION: Terrestrial annual or perennial forb/herb (2 to 69 inches in height); the foliage is gray-green; the flowers are golden-yellow, orange-yellow, pink-yellow, reddish-orange, rust-orange, yellow or yellow-orange ageing to orange, pink or reddish; flowering generally takes place between late January and mid-July. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; stony mountain passes; rocky mesas; plateaus; rocky cliffs; rocky chutes; rocky-silty canyons; along canyon walls; rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and sandy-loamy canyon bottoms; talus slopes; bouldery, rocky, rocky-sandy, shaley, stony, gravelly-sandy, sandy, clayey-loamy and loamy ridges; silty ridgetops; foothills; bouldery, rocky and sandy hills; rocky hillsides; along bouldery, bouldery-gravelly, bouldery-gravelly-sandy, rocky, rocky-sandy, rocky-loamy-clayey, gravelly, gravelly-sandy, sandy, loamy-clayey, clayey and silty slopes; bouldery-stony-gravelly-sandy and rocky alluvial fans; bajadas; bouldery and rocky outcrops; amongst boulders and rocks; sandy lava flows; sand dunes; gravelly and gravelly-sandy plains; gravelly-sandy and sandy flats; valley floors; coastal shorelines; along rocky-sandy-clayey, gravelly and sandy roadsides; arroyos; along bottoms of arroyos; sandy draws; around seeping streams; along streams; gravelly-sandy streambeds; in gravel and sand along creeks; along and in gravelly-sandy creekbeds; in sand along rivers; along and in rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy washes; drainages; waterholes; gravelly and sandy banks of arroyos, creeks, rivers and washes; edges of rivers and washes; margins of washes; sand bars; rocky-sandy benches; sandy terraces; sandy floodplains; gravelly-sandy stock tanks; within ditches; gravelly-sandy riparian areas, and disturbed areas growing in dry

bouldery, bouldery-rocky-gravelly, bouldery-stony-gravelly-sandy, bouldery-gravelly, bouldery-gravelly-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, gravelly, gravelly-sandy and sandy ground; sandy loam, clayey loam and loam ground; rocky-sandy clay, rocky-loamy clay, loamy clay and clay ground, and rocky-silty and silty ground, occurring from 100 to 4,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Camissonia californica* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph), 43 (031310), 46 (*Oenothera leptocarpa* Greene, Page 599), 48 (genus, *Oenothera* spp.), 58, 63 (031310 - color presentation), 77 (color photograph #46), 85 (031310 - color presentation of dried material), 115 (color presentation), 140 (Page 297)*

***Epilobium canum* (E.L. Greene) P.H. Raven subsp. *latifolium* (W.J.Hooker) P.H. Raven: Hummingbird Trumpet**

SYNONYMY: *Zauschneria californica* C.B. Presl subsp. *latifolia* (W.J. Hooker) D.D. Keck; *Zauschneria latifolia* (W.J. Hooker) E.L. Greene; *Zauschneria latifolia* (W.J. Hooker) E.L. Greene var. *arizonica* (A. Davidson) M.L. Hilend). COMMON NAMES: Arizona Fire Chalice; Arizona Fuchsia; Arizona Hummingbird Trumpet; Arizona Trumpet; Arizona Zauschneria; Broad Leaved California Fuchsia; Broad-leaved California Fuchsia; California False Fuchsia (a name applied to the species); California Fire Chalice (a name applied to the species); California Firechalice (a name applied to the species); California Fuchsia (a name applied to the species); California Fuschia (a name applied to the species, fuschia is an error); California Hummingbird Trumpet (a name applied to the species); California Wild Fuchsia (a name applied to the species); California-fuchsia (a name applied to the species); California Zauschneria (a name applied to the species); Californian-fuchsia; Californian Zauschneria (a name applied to the species); Desert Fuchsia; Fire-engine-red California Fuchsia; Fire-red California Fuchsia; Firechalice (a name applied to the species); Hardy Hummingbird Trumpet; Hoary California Fuchsia; Humming Bird Trumpet; Hummingbird Fuchsia (a name applied to the species); Hummingbird Trumpet (a name applied to the species); Hummingbird Trumpet Bush (a name applied to the species); Hummingbird Trumpets (a name applied to the species); Hummingbird-trumpet (a name applied to the species); Hummingbird's Trumpet (a name applied to the species); Mexican Balsamea (a name applied to the species); Mountain Balsamea; Mountain California Fuchsia; Red California Fuchsia (a name applied to the species). DESCRIPTION: Terrestrial perennial forb/herb or subshrub (1 to 5 feet in height; one plant was observed and described as being 1 foot in height and 8 inches in width, one plant was observed and described as being 2 feet in height and 4 feet in width); the leaves are green or dark green; the fuchsia-like flowers (1½ inches in length, hanging in clusters) may be orange-red, pale pink-red, red, reddish-orange, pale scarlet or scarlet; flowering generally takes place between mid-June and early December (additional records: two for early January, two for early April and one for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; rocky mountainsides; bases of mountains; rock cliffs; bases of cliffs; rock walls; rocky canyons; canyonettes; rocky canyon sides; rocky canyon bottoms; crevices in boulders and rocks; rocky ledges; ridges; meadows; gravelly and clayey-loamy hills; hillsides; rocky, gravelly-loamy and sandy slopes; amongst boulders and rocks; rocky banks; rock shelves; flats; along sandy roadsides; within arroyos; bouldery-sandy draws; within gullies; seeps; around and in springs; along streams; along and in bouldery-sandy and rocky streambeds; along creeks; in rocky creekbeds; rocky riverbeds; along and in rocky and sandy washes; within drainages; (sandy) banks of streams, creeks and washes; along edges of creekbeds, washes and creekbeds; around and in stock tanks; riparian areas, and disturbed areas growing in shallow water and wet, moist, damp and dry (seasonally wet) bouldery, bouldery-sandy, rocky, gravelly and sandy ground and gravelly loam ground, occurring from 800 to 7,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The flowers produce nectar which serves as an important food source for hummingbirds. *Epilobium canum* subsp. *latifolium* is native to southwest-central and southern North America. *5, 6, 15, 18, 28 (recoded as *Zauschneria californica* subsp. *latifolia* (Hook.) D.D. Keck, *Zauschneria latifolia* var. *arizonica* Hilend), 44 (020311 - color presentation), 46 (recorded as *Zauschneria latifolia* (Hook.) Greene var. *arizonica* (Davidson) Hilend, Page 590), 58 (recoded as *Zauschneria californica* Presl subsp. *latifolia* (Hook.) Keck), 63 (013011 - color presentation), 85 (013111 - color presentation), 86 (*Zauschneria californica*, color photograph), 115 (color presentation), 124 (013011 - no record of species, genus record), 140 (Page 297)*

Eulobus californicus (see *Camissonia californica*)

***Gaura coccinea*: T. Nuttall ex F.T. Pursh: Scarlet Beeblossum**

SYNONYMY: *Gaura coccinea* T. Nuttall ex F.T. Pursh var. *arizonica* P.A. Munz; *Gaura coccinea* T. Nuttall ex F.T. Pursh var. *glabra* (J.G. Lehmann) P.A. Munz; *Gaura coccinea* T. Nuttall ex F.T. Pursh var. *parvifolia* (J. Torrey) W.H. Rickett; *Gaura coccinea* T. Nuttall ex F.T. Pursh var. *typica* P.A. Munz; *Gaura coccinea* T. Nuttall ex F.T. Pursh var. *epilobioides* (K.S. Kunth) P.A. Munz. COMMON NAMES: Bee Blossom (a name also applied to the genus *Gaura*, Texas); Beeblossum (a name also applied to the genus *Gaura*, Texas); Butterfly Weed (a name also applied to the genus *Gaura*); Butterfly-weed (a name also applied to the genus *Gaura*); Butterflyweed; Duftende Prachtkerze (German); Gaura (a name also applied to the genus *Gaura*, North Dakota); Gaura-escarlata (Portuguese: Brazil); Linda Tarde (Spanish); O'sunkoju Spapi (Lakota); Plains Gaura; Ragged Lady; Ragged-lady; Red Gaura; Scarlet Beeblossum; Scarlet Gaura; Tatawabluška Tacangxlogang ("Horsefly Weed", Lakota); Waving Butterfly (North Dakota); Wild Buckwheat (Texas); Wild Honeysuckle (a name misapplied to the genus *Gaura*). DESCRIPTION: Terrestrial perennial forb/herb or subshrub (prostrate (rarely reported) ascending and/or erect stems 7 inches to 2 feet in height; plants were observed and described as being 12 inches in height and 2 inches in width; plants were observed and described as being 12 inches in height and 8 inches in width; plants were observed and described as being 18 inches in height and

8 to 12 inches in width); may be woody at base; the stems may be pale tan; the leaves may be bluish-green, gray, grayish or light green; the flowers (½ inch in diameter) may be cream, cream-red/orange, lavender, maroon, light orange, pale orange-pink, orange-red, light pink, pink, pink (changing to dark pink to red as the day progresses), dark pink, pink-red, pink-white, pinkish-white, purple, purple-white, pale red-pink, red, red-pink, red & white, reddish, reddish-orange, reddish-pink, reddish-purple, reddish-white, salmon-pink, scarlet, white, white (fading to pink, red, rose or scarlet), white & pink, whitish-pink or yellow (rarely reported); the anthers may be brownish-red, purple, red, red-purple or violet-red; flowering generally takes place between late March and early October. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; footslopes; grassy mesas; sandy plateaus; canyon rims; canyons; rocky and gravelly canyon bottoms; crevices; bases of bluffs; rocky knolls; rocky, gravelly, sandy and clayey ridges; clearings in scrub; meadows; gravelly foothills; sandy and clayey hills; sandy hilltops; rocky and gravelly hillsides; rocky, rocky-gravelly-sandy-clayey-loamy, rocky-clayey, gravelly, gravelly-clayey-loamy, sandy, sandy-loamy, loamy, clayey and clayey-loamy slopes; bases of slopes; bajadas; gravelly-sandy pediments; rocky outcrops; amongst boulders; sandy lava flows; edges of sand dunes; sandy steppes; prairies; sandy plains; grassy uplands; rocky, gravelly, gravelly-loamy, sandy-loamy, loamy, clayey and clayey-loamy flats; valley floors; along railroad right-of-ways; along rocky-clayey, cindery, gravelly, gravelly-sandy-loamy, gravelly-clayey-loamy, gravelly-loamy, sandy, sandy-loamy, clayey and silty-clayey roadsides; along sandy arroyos; draws; riverbeds; in gravelly, sandy and sandy-loamy washes; along drainages; lakebeds; depressions; along (sandy and clayey) banks of arroyos, rivers and washes; around edges of washes; along margins of rivers; shores of lakes; sandy beaches; terraces; sandy bottomlands; lowlands; ditches; sandy riparian areas; waste places; recently burned areas of grassland, and disturbed areas growing in wet, moist, damp and dry cryptogamic and rocky, stony, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-gravelly-sandy-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; rocky clay, sandy clay, silty clay and clay ground, and sandy-silty and clayey silty ground, occurring from 2,000 to 9,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used in the catching of horses and as a drug or medication. The flowers may be sweet scented and are pollinated by moths. *Gaura coccinea* is native to northwest central, south central and southern North America. *15, 28 (color photograph 581), 43 (061511 - *Gaura coccinea*: Nutt., *Gaura coccinea* var. *arizonica* Munz, *Gaura coccinea* var. *epilobioides* (Kunth) Munz, *Gaura coccinea* var. *glabra* (Lehm.) Torr. & A. Gray ex Munz, *Gaura coccinea* var. *parvifolia* (Torr.) Rickett, *Gaura coccinea* var. *typica* Munz), 44 (061511 - no listing under Common Names), 46 (Pages 603-604), 58 (recorded as *Gaura coccinea* Nutt. var. *arizonica* Munz), 63 (061011 - color presentation), **85** (061511 - color photograph), 124 (061211), 127*

Gaura coccinea var. *arizonica* (see *Gaura coccinea*)

Gaura coccinea var. *epilobioides* (see *Gaura coccinea*)

Gaura coccinea var. *glabra* (see *Gaura coccinea*)

Gaura coccinea var. *parvifolia* (see *Gaura coccinea*)

Gaura coccinea var. *typica* (see *Gaura coccinea*)

***Oenothera caespitosa* T. Nuttall subsp. *marginata* (T. Nuttall ex W.J. Hooker & G.W. Arnott) P.A. Munz:
Tufted Evening Primrose**

SYNONYMY: *Oenothera caespitosa* T. Nuttall var. *marginata* (T. Nuttall ex W.J. Hooker & G.W. Arnott) P.A. Munz; *Oenothera caespitosa* T. Nuttall subsp. *marginata* (T. Nuttall ex W.J. Hooker & G.W. Arnott) P.A. Munz orth. var.; *Oenothera caespitosa* T. Nuttall var. *marginata* (T. Nuttall ex W.J. Hooker & G.W. Arnott) P.A. Munz orth. var. COMMON NAMES: Large White Desert Primrose; Tufted Evening Primrose; Tufted Evening-primrose. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (4 to 8 inches in height and spreading to 40 inches in width, one plant was reported as being 8 inches in height and 16 inches in width); the leaves are gray-green, green or red-green; the flowers are cream, white or yellow aging pink, pink-rose or purple; flowering generally takes place between early March and early October (additional records: one for early January, one for late September and one for mid-October). HABITAT: Within the range of this species it has been reported from mountains; cindery mountaintops; mountainsides; mesas; plateaus; rocky cliffs; loamy bases of cliffs; canyons; sandy canyon walls; along sandy canyon bottoms; shaley and gravelly talus slopes; crevices in rocks; rocky bluffs; rocky ridges; ridgetops; meadows; foothills; rocky, shaley and sandy hills; rocky and gravelly-sandy-clayey-loamy hillsides; bouldery, rocky, shaley, shaley-sandy, stony, gravelly, sandy, sandy-loamy and clayey slopes; rocky outcrops; amongst boulders; lava flows; clayey banks; flats; basins; valley floors; along rocky, rocky-sandy, gravelly, gravelly-loamy and sandy roadsides; along gravelly arroyos; along streams; along creeks; creekbeds; riverbeds; along and in bouldery-rocky and sandy washes; within drainages; around lakes; (clayey) banks of arroyos, streams and creeks; shores of ponds; rocky beaches; gravelly benches; terraces; sandy bottomlands; sandy ditches; riparian areas, and disturbed areas growing in dry bouldery, bouldery-rocky, rocky, shaley, shaley-sandy, stony, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy-clayey loam, sandy loam and loam ground, and gravelly clay, gravelly-sandy clay and clay ground, occurring from 2,500 to 9,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or

medication and the flowers were used as a ceremonial item. White-lined Sphinx Moths (*Hyles lineata*) have been observed visiting the flowers. *Oenothera caespitosa* subsp. *marginata* is native to southwest-central and southern North America. *18 (species), 28 (species, color photograph of the species), 43 (031410 - *Oenothera caespitosa* Nutt. var. *marginata* Munz; no record of *Oenothera caespitosa* var. *marginata* or *Oenothera caespitosa* subsp. *marginata*), 46 (Page 598), 48 (genus, recorded as *Oenothera* spp.), 63 (031410 - color presentation), 85 (031510 - color presentation), 115 (color presentation of the species), 127*

Oenothera caespitosa var. *marginata* (see *Oenothera caespitosa* subsp. *marginata*)

Oenothera caespitosa subsp. *marginata* (see *Oenothera caespitosa* subsp. *marginata*)

Oenothera caespitosa var. *marginata* (see *Oenothera caespitosa* subsp. *marginata*)

Oenothera leptocarpa (see *Camissonia californica*)

Zauschneria californica subsp. *latifolia* (see *Epilobium canum* subsp. *latifolium*)

Zauschneria latifolia (see *Epilobium canum* subsp. *latifolium*)

Zauschneria latifolia var. *arizonica* (see *Epilobium canum* subsp. *latifolium*)

Papaveraceae: The Poppy Family

***Argemone pleiakantha* E.L. Greene: Southwestern Pricklypoppy**

COMMON NAMES: Bluestem Pricklepoppy; Cardo (a name also applied to other species, Spanish); Cardo (Spanish: Sonora)¹⁴⁰; Chicalote (a name also applied to other species and the genus *Argemone*, Spanish), Chicalote <chilazotl, chichilotl, xicolotl> (Spanish: Sonora)¹⁴⁰; Chicolote; Cowboy's [Fried] Eggs (English: Arizona)¹⁴⁰; Cowboys' Fried Eggs; Hipigdum (Uto-Aztec: Onavas Pima)¹⁴⁰; Prickly Poppy (a name also applied to the genus *Argemone*); [Southwestern] Prickly [Thistle] Poppy (English)¹⁴⁰; Southwestern Pricklepoppy; Thistle Poppy (a name also applied to the genus *Argemone*); To:ta Heosig (Uto-Aztec: Tohono O'odham)¹⁴⁰; Xazácoz (Hokan: Seri)¹⁴⁰. DESCRIPTION: Terrestrial perennial forb/herb (erect stem 5 inches to 4 feet in height); the leaves and stems are blue-green, gray or grayish-green; the flowers (4 to 6 inches in width) are white with a bright orange center; flowering generally takes place between mid-April and mid-October. HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; bases of cliffs; meadows; foothills; hills; rocky hillsides; gravelly, gravelly-clayey-loamy and sandy slopes; gravelly prairies; gravelly plains; gravelly and gravelly-loamy flats; basins; valley floors; railroad right-of-ways; along cindery, gravelly and gravelly-sandy-clayey-loamy roadsides; along arroyos; seeps; along and in gravelly-sandy creekbeds; along gravelly washes; drainages; drainage ways; along (sandy) banks of rivers; edges of washes; terraces; sandy bottomlands; sandy floodplains; mesquite bosques; ditches; gravelly and sandy riparian areas; waste places, and disturbed areas growing in dry rocky, cindery, gravelly, gravelly-sandy and sandy ground; gravelly-sandy-clayey loam, gravelly loam, gravelly-clay loam and loam ground, and silty ground, occurring from 1,700 to 8,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers are reported to be fragrant. The flowers are visited by Sphinx Moths, including the Five-lined Sphinx Moth (*Hyles lineata*), and Mourning Doves (*Zenaida macroura*) feed on the seed. *Argemone pleiakantha* is native to southwest-central and southern North America. *5, 6, 18 (genus), 28 (color photograph), 43 (072509), 44 (031211 - no record of species; genus record), 46 (*Argemone pleiakantha* Greene subsp. *ambigua* G.B. Ownbey and *Argemone pleiakantha* Greene subsp. *pleiakantha*, Supplement Page 1050), 48 (genus), 63 (031610 - color presentation), 68 (genus), 80 (Species of the genus *Argemone* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants, "These distasteful, spiny, perennial forbs contain alkaloids that could prove toxic if eaten in sufficient amounts."), 85 (031610 - color presentation), 115 (color presentation), 124 (031211 - no record of species; genus record), 140 (Pages 184-185 & 297 - recorded as *Argemone pleiakantha* Greene subsp. *pleiakantha*), **HR***

***Platystemon californicus* G. Bentham: Creamcups**

COMMON NAMES: California Creamcups; Cream Cups; Cream-cups; Creamcups. DESCRIPTION: Terrestrial annual forb/herb (2 to 14 inches in height); the leaves are grayish-green; the flowers are cream, cream-yellow, creamy-white, gold, pale yellow, yellow-cream, yellow & white, white or white-cream; flowering generally takes place between mid-February and early July (additional record: one for mid-September). HABITAT: Within the range of this species it has been reported from mountains, rocky mountainsides; plateaus; sandy canyons; sandy canyon bottoms; ridges; sandy meadows; foothills; rocky and sandy hills; rocky and rocky-sandy hillsides; bouldery, rocky, rocky-gravelly-clayey, gravelly, sandy and loamy slopes; sandy alluvial fans; bajadas; rocky outcrops; sand dunes; sandy and loamy flats; valley floors; sandy valley bottoms; along rocky and sandy roadsides; arroyos; ravines; along streams; streambeds; along creeks; riverbeds; along and in sandy washes; dried vernal pools; clayey-loamy depressions; along (gravelly) banks of streams and rivers; along (sandy) edges of streams and washes; terraces; sandy bottomlands; floodplains; mesquite bosques, and gravelly riparian areas growing in moist and dry bouldery, rocky, rocky-sandy, gravelly and sandy ground; clayey loam and loam ground, and rocky-gravelly clay ground, occurring from

sea level to 8,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Platystemon californicus* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph 388), 43 (031610), 46 (Page 322), 63 (031610 - color presentation), **85** (031710 - color presentation), 86 (color photograph), 115 (color presentation), 124 (110710 - no record), 127, 140 (Page 297)*

Phytolaccaceae: Pokeweed Family

***Rivina humilis* C. Linnaeus: Rougeplant**

COMMON NAMES: Achiotillo (“Little Achiot”, Spanish: Honduras)¹⁴⁰; Akan T’ele’ (“Baby Foot”, Mayan: Huastec, San Luis Potosí)¹⁴⁰; Bacot Mútica (“Snake’s Pillow”, Uto-Aztecan: Mayo)¹⁴⁰; Bloedbessie (Afrikaans); Bloodberry; Bloodberry Rougeplant; Chilpantlaçolli (Uto-Aztecan: Náhuatl)¹⁴⁰; Chilpanxuitl <chilpanxochitl> (Uto-Aztecan: Náhuatl, San Luis Potosí)¹⁴⁰; Coral (“Red One”, Spanish: Mexico)¹⁴⁰; Coralberry; Coralillo Cimarrón (“Wild Little Red One”, Spanish: Sonora)¹⁴⁰; Coralito (“Little Red One”, Spanish: Texas, Durango, Cuba)¹⁴⁰; Hierba del Cáncer (a name also applied to other species, Hispanic); Hierba del Zorrillo (“Skunk Herb”, Spanish: Mexico)¹⁴⁰; Kuxubcan <coxubcan, cusucan, cuxuban> (Mayan: Maya, Belize)¹⁴⁰; Pigeon Berry (English: Arizona, Texas, Sonora)¹⁴⁰; Pigeonberry; Rouge Plant; “Rouge-berry” (English: Florida)¹⁴⁰; Rouge-plant (English: Arizona)¹⁴⁰; Rougeplant; Shu Zhu Shan Hu (transcribed Chinese); Skwam Butz Snya (Oto-Manguean: Zapotec)¹⁴⁰; Sminkbär (Swedish); [Tsakam] Taa’ T’ele’ ([Little] Baby Excrement”, Maya: Huastec, San Luis Potosí)¹⁴⁰; Teihuist (Spanish: Sonora)¹⁴⁰; Tejocote (Uto-Aztecan: Tarahumara)¹⁴⁰; Teywesi (Uto-Aztecan: Guarijío)¹⁴⁰; Turkeyberry; Ucusuiro (Spanish: Sonora)¹⁴⁰; Uruquiro (Uto-Aztecan: Guarijío)¹⁴⁰; Wild Ruby (English)¹⁴⁰; Wild Tomato (English)¹⁴⁰. DESCRIPTION: Terrestrial perennial forb/herb or shrub (erect, straggling and/or vine-like stems 4 inches to 6½ feet in height), the leaves may be bright green, dark green or reddish, the flowers may be pink, purple, red-pink, white or whitish-pink, flowering generally takes place between early July and mid-October (additional records: one for late April and two for late May; flowering in November has also been reported, flowering year-round has also been reported), the ripe fruits (juicy berries) may be magenta-rose, orange, bright red, red or scarlet. HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; shaded canyon slopes; canyon bottoms; bases of cliffs; ledges; ridges; meadows; rocky hillsides; rocky and gravelly slopes; rocky outcrops; amongst boulders and rocks; hammocks; shell ridges; roadsides; ravines; along streams; along streambeds; along creeks; along washes; around ponds; margins of streams; benches; mesquite bosques; fencerows; riparian areas and disturbed areas often growing in shaded areas in wet and dry (seasonally wet) bouldery, rocky and gravelly ground; loam ground, and silty ground, occurring from sea level to 5,900 feet in elevation in the woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Gray Catbirds (*Dumetella carolinensis*), Mourning Doves (*Zenaida macroura*), White-winged Doves (*Zenaida asiatica*), Northern Mockingbirds (*Mimus polyglottos*), Plain Chachalacas (*Ortalis vetula*), American Robins (*Turdus migratorius*) and Wild Turkey (*Meleagris gallopavo*) feed on the ripe berries. *Rivina humilis* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 15, 30, 43 (041212), 46 (Page 279), 58, 63 (060707 - color presentation), **85** (031108 - color presentation), 115 (color presentation), 140 (Page 189-191 (placed in the Petiveriaceae) & 298)*

Plantaginaceae: The Plantain Family

***Plantago patagonica* N.J. von Jacquin: Woolly Plantain**

SYNONYMY: *Plantago patagonica* N.J. von Jacquin var. *gnaphalioides* (T. Nuttall) A. Gray; *Plantago purshii* J.J. Roemer & J.A. Schultes. COMMON NAMES: Bristle Bract Plantain; Buckhorn; Hierba del Pastor (Hispanic); Indian Wheat (Montana); Large-bract Plantain (Oklahoma); Large-bracted Plantain (Oklahoma); Muumsh (River Pima); Pastora; Patagonian Indian Wheat; Patagonian Indianwheat; Plantain; Prairie Plantain; Pursh Indian Wheat; Pursh Plantain; Pursh’s Plantain; Rabbit’s Foot Plantain; Rabbit’s-foot Plantain; Salt-and-pepper Plant; Salt-and-pepper-plant; Western Plantain; Woolly Indian Wheat; Woolly Indianwheat; Woolly Plantain; Woolly Indianwheat; Woolly Plantain. DESCRIPTION: Terrestrial annual forb/herb (1 to 12 inches in height, plants were observed and described that were 2 to 4 inches in height and 2 inches in width, plants were observed and described that were 4 to 6 inches in height and 2 inches in width); the leaves are gray-green or green; the tiny flowers are buff with a brownish tinge toward the center, cream, cream-white, green, purple-gray, straw, white, whitish, whitish-green, yellow, yellowish-white or translucent; flowering generally takes place between mid-February and late July (additional records: one for late August and one for late October). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky bases of mountains; rocky-clayey, gravelly, pebbly-sandy, sandy and clayey mesas; plateaus; cliffs; bases of cliffs; along canyon rims; rocky, gravelly-loamy, sandy and clayey canyons; rocky canyon walls; sandy and sandy-loamy canyon bottoms; chasms; gorges; talus slopes; crevices in rocks; buttes; gravelly knolls; rocky ledges; clayey ridges; rocky ridgetops; ridgelines; foothills; rocky and sandy hills; sandy hilltops; rocky, rocky-gravelly and gravelly-sandy hillsides; bouldery, rocky, rocky-gravelly, rocky-gravelly-loamy, rocky-sandy, rocky-clayey, shaley-sandy, stony, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-clayey, sandy, sandy-loamy, clayey-loamy and loamy slopes; rocky-sandy and sandy alluvial fans; gravelly and sandy bajadas; pediments; rocky outcrops; amongst boulders; sandy lava flows; sand dunes;

steppes; sandy prairies; sandy, sandy-loamy and loamy plains; gravelly, gravelly-sandy, sandy and clayey flats; clayey catch basins; stony and clayey valley floors; gravelly-sandy-clayey valley bottoms; railroad right-of-ways; along rocky, gravelly, gravelly-loamy, sandy and sandy-silty roadsides; rocky arroyos; along sandy draws; bottoms of draws; gulches; rocky ravines; seeps; around springs; around seeping streams; along streams; streambeds; along creeks; creekbeds; along rivers; riverbeds; along and in bedrock, bouldery-sandy, rocky, gravelly, gravelly-sandy and sandy washes; sandy drainages; sandy drainage ways; along watercourses; silty swales; sandy banks of rivers; edges of brooks; sandy margins of creeks and rivers; rocky-gravelly bars; beaches; along bouldery and sandy benches; gravelly and sandy terraces; loamy bottomlands; lowlands; bouldery floodplains; mesquite woodlands; along fencelines; ditches; gravelly, gravelly-sandy, sandy and sandy-silty riparian areas; waste places, and disturbed areas growing in wet and dry bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley-sandy, stony, gravelly, gravelly-sandy, pebbly-sandy and sandy ground; rocky loam, rocky-gravelly loam, gravelly loam, gravelly-sandy loam, sandy loam, clayey loam and loam ground; rocky clay, gravelly clay, gravelly-sandy clay, sandy clay and clay ground, and sandy silty and silty ground, occurring from 400 to 8,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication and as a ceremonial item. *Plantago patagonica* is native to central and southern North America and southern South America. *5, 6, 16, 28 (recorded as *Plantago purshii*, color photograph 284), 30, 43 (031810 - *Plantago patagonica* var. *gnaphalioides* (Nutt.) A. Gray), 46 (recorded as *Plantago purshii* Roem. & Schult., Page 804), 48 (genus), 58, 63 (031810 - color presentation), 77 (color photograph #89), 85 (031810 - color presentation), 101 (color photograph), 115 (color presentation), 124 (110710), 127, 140 (Pages 195 & 298)*

Plantago patagonica var. *gnaphalioides* (see *Plantago patagonica*)

Plantago purshii (see *Plantago patagonica*)

Platanaceae: The Planetree Family

Platanus racemosa var. *wrightii* (see *Platanus wrightii*)

***Platanus wrightii* S. Watson: Arizona Sycamore**

SYNONYMY: *Platanus racemosa* T. Nuttall var. *wrightii* (S. Watson) L.D. Benson. COMMON NAMES: Álamo [Blanco] (Spanish: Chihuahua, Sonora)¹⁴⁰; Aliso (Spanish); Arizona Plane Tree; Arizona Planetree; Arizona Sycamore; Arizona [White] Sycamore (English)¹⁴⁰; Button-wood (Buttonwood is a name that is applied to the genus *Platanus*); Ciclamor (Spanish, for "sycamore")¹⁴⁰; Gashdla'é <gaastlae, k'ashdla'a> (Athapascan: Western Apache)¹⁴⁰; Havat□b□a (Uto-Aztecan: Kawaiisu)¹⁴⁰; Plane Tree (a name that is also applied to the genus *Platanus* and the Platanaceae); Řepogá (Uto-Aztecan: Tarahumara)¹⁴⁰; Sá, Sá' Aka (Hispanic); Saa (Tarahumara); Sáoko (Uto-Aztecan: Hopi)¹⁴⁰; Sicomoro (Spanish); Sivé:-la <savé:-la, sevél> (Uto-Aztecan: Luiseño)¹⁴⁰; Sivíl (Uto-Aztecan: Cupeño)¹⁴⁰; Sivily <sivel, sivi-l> (Uto-Aztecan: Cahuilla)¹⁴⁰; □ohárat <□ojárat> (Uto-Aztecan: Northern Tepehuan)¹⁴⁰; □ua'har <shua'jar> (Uto-Aztecan: Mountain Pima)¹⁴⁰; Ūhpúhl (Yuman: Kumiai)¹⁴⁰; Ušako <sako> (Uto-Aztecan: Tarahumara)¹⁴⁰; Ushako (Tarahumara). DESCRIPTION: Terrestrial perennial deciduous tree (13 to 83 feet in height with a spreading broad and open crown, one tree was described as being 50 feet in height and 100 feet in width); the bark on the oldest of trunks is roughly fissured and dark gray or nearly black; the bark on trunks and older branches is whitish peeling off in brownish flakes; the bark on the branches is white; the twigs are light brown; the star-shaped leaves (6 to 10 inches in length and width) are dark light green above and paler beneath and turn golden before dropping in late fall or early winter; the pistillate flower heads (to ½ inch in diameter) are green and red or purple; the staminate flower heads (to 1 inch in diameter) are reddish or yellowish-red; flowering generally takes place between late March and early June (additional records: one for late February, two for late June, two for early July, one for mid-July, two for late July, four for early August, two for mid-August, one for early September, one for mid-September, two for mid-October, one for late October and one for early November); the fruits (¾ to 1 inch in diameter) are light brown. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; escarpments; along rocky canyons; along bouldery and rocky canyon bottoms; foothills; rocky slopes; bajadas; amongst boulders; flats; valleys; rocky roadsides; along rocky arroyos; bottoms of arroyos; draws; rocky seeps; rocky springs; along streams; along bouldery, rocky-gravelly-clayey-loamy, gravelly and gravelly-sandy streambeds; along creeks; rocky and sandy creekbeds; rocky soils along rivers; riverbeds; along and in gravelly and sandy washes; drainages; along gravelly watercourses; along rocky-cobbly banks of streams and creeks; edges of springs, streams and creekbeds; floodplains, and rocky, cobbly, gravelly-sandy and sandy riparian areas growing in moist bouldery, rocky, cobbly, gravelly, gravelly-sandy and sandy ground and rocky-gravelly-clayey loam ground, occurring from 1,000 to 8,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Arizona sycamore is perhaps the most massive of our native Arizona trees and is reported to be fast growing. The Arizona Sycamore is valuable in preventing erosion along stream banks. Small owls, woodpeckers and other birds nest in the hollows of trunks and in the branches. **When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp.**

brachiata), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquini*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Platanus wrightii* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Platanus racemosa* Nutt. var. *wrightii* (S. Wats.) L. Benson), 15 (color photograph with habitat Page 77), 18, 26 (recorded as *Platanus racemosa*, note and color photograph - species), 28 (color photograph 79), 30, 43 (072509), 44 (041212 - no listings under Common Names for the species; genus record), 46 (Page 371), 48, 52 (color photograph), 53, 63 (072509 - color presentation), **85** (072509 - color presentation), 115 (color presentation), 124 (041212 - no record of species; genus record), 140 (Pages 52, 195-196 & 298), **WTK** (August 4, 2005)*

Polemoniaceae: The Phlox Family

***Gilia flavocincta* A. Nelson subsp. *australis* (A.D. Grant & V.E. Grant) A.G. Day & V.E. Grant: Lesser Yellowthroat Gilia**

SYNONYMY: *Gilia ophthalmoides* A. Brand subsp. *australis* A.D. Grant & V.E. Grant. COMMON NAMES: Gilia; Gily-flower; Lesser Yellowthroat Gilia; Yellowthroat Gily-flower. DESCRIPTION: Terrestrial annual forb/herb (6 inches to 2 feet in height); the flowers are blue, blue-lavender, bluish-purple, gray-white, dark grayish-blue, pale lavender, pink, pink-blue, pink-lavender, light purple, purple, white or white tinged with violet; the anthers are bluish or pale blue-violet; flowering generally takes place between late February and mid-June (additional record: two for late January). HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; rocky-sandy meadows; rocky and sandy hills; hilltops; rocky hillsides; rocky and rocky-loamy slopes; gravelly bajadas; rocky outcrops; sandy flats; gravelly roadsides; along gravelly draws; along streams; cobbly-sandy riverbeds; along bouldery and sandy washes; along and in gravelly-sandy drainages; channel bars; terraces; sandy floodplains; riparian areas, and disturbed areas growing in dry rocky, rocky-sandy, shaley-sandy, cobbly-sandy, gravelly, gravelly-sandy and sandy ground and rocky loam and sandy loam ground, occurring from 2,200 to 7,300 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTE: *Gilia flavocincta* subsp. *australis* is native to southwest-central and southern North America. *5, 6, 18 (genus), 43 (031810 - *Gilia flavocincta* A. Nelson subsp. *australis* (V.E. Grant) A.G. Day & V.E. Grant, *Gilia ophthalmoides* Brand subsp. *australis* V.E. Grant), 44 (120910 - no record), 46 (Supplement Page 1066), 58 (*Gilia ophthalmoides* Brand ssp. *australis* A. & V. Grant), 63 (031810), 77, **85** (031910 - color presentation of dried material), 124 (120910 - no record)*

Gilia multiflora (see *Ipomopsis multiflora*)

Gilia ophthalmoides subsp. *australis* (see *Gilia flavocincta* subsp. *australis*)

***Ipomopsis multiflora* (T. Nuttall) V.E. Grant: Manyflowered Ipomopsis**

SYNONYMY: *Gilia multiflora* T. Nuttall. COMMON NAMES: Bluestar Flower; Gilia, Many-flower Gilia; Gily Flower; Many Flowered Skyrocket; Many-flower Gilia; Many-flowered Gilia; Many-flowered Skyrocket; Manyflowered Gilia; Manyflowered Ipomopsis. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (6 to 28 inches in height, one plant was described as being 8 inches in height and 12 inches in width, plants were described that were 8 inches in height and 18 inches in width); many-stemmed; the leaves are gray-green or dark green; the flowers may be light blue-violet, blue, blue-purple, blue-violet, pale lavender, light lavender-blue, lavender-blue, lavender, pink, light purple, purple, purple-blue, pale violet, pale violet & purple, violet, violet-blue or white & Lavender; flowering generally takes place between late May and early November. HABITAT: Within the range of this species it has been reported from mountains; sandy-silty mesas; gravelly-loamy plateaus; bouldery and rocky canyons; rocky canyon walls; rocky and stony-sandy canyon bottoms, talus; rocky-clayey ridges; ridgetops; loamy-clayey openings in woodlands; rocky meadows; rocky foothills; gravelly-sandy hills; rocky and sandy hillsides; rocky, rocky-sandy, gravelly, gravelly-sandy, gravelly-clayey, sandy-loamy, sandy-clayey-loamy and silty slopes; rocky outcrops; amongst boulders and rocks; sandy and clay dunes; sandy prairies; sandy-loamy plains; rocky, sandy and sandy-clayey-loamy flats; along rocky, rocky-sandy, rocky-gravelly-loamy, cindery, gravelly, gravelly-loamy and sandy-loamy roadsides; along rocky arroyos; gulches; ravines; seeps; along streams; along streambeds; along sandy creekbeds; along rivers; along gravelly, sandy sandy-silty and loamy-clayey washes; along rocky and sandy drainages; rocky drainage ways; lakebeds; edges of creeks and washes; sandy margins of washes; sandy benches; terraces; ditches; riparian areas and disturbed areas growing in dry bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly

loam, gravelly loam, gravelly-sandy loam, sandy loam, sandy-clayey loam and loam ground; rocky clay, gravelly clay, sandy clay, loamy clay and clay ground, and sandy silty and silty ground, occurring from 3,200 to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, and/or beverage, and/or spice, and/or fiber, and/or dye crop; it was noted as having been used as a drug or medication. This plant may be browsed by deer. *Ipomopsis multiflora* is native to southwest-central and southern North America. *5, 6, 15, 18 (genus), 28 (color photograph), 43 (072609), 46 (recorded as *Gilia multiflora* Nutt., Page 692), 48 (genus - recorded as *Gilia*), 63 (072210 - color presentation), 85 (072210 - color presentation), 127, 129, 140 (Page 302)*

***Leptosiphon aureus* (T. Nuttall) J.M. Porter & L.A. Johnson subsp. *aureus*: Golden Linanthus**

SYNONYMY: *Linanthus aureus* (T. Nuttall) E.L. Greene; *Linanthus aureus* (T. Nuttall) E.L. Greene subsp. *aureus*. COMMON NAMES: Desert Gold (a name also applied to other species); Golden Desert-trumpets; Golden Deserttrumpets; Golden Linanthus (a name also applied to the species); Yellow Linanthus (a name also applied to other species). DESCRIPTION: Terrestrial annual forb/herb (2 to 7 inches in height); the stems may be red, reddish-brown or tan; the leaves are green; the flowers (to ½ inch in diameter) may be golden, golden-yellow, orangish-yellow, pale yellow, yellow-gold or yellow with an orange center; the anthers are orange; the stigma lobes are yellow; flowering generally takes place between mid-March and late June (additional records: one for early January and one for early November). HABITAT: Within the range of this species it has been reported from mountains; bases of mountains; gravelly and sandy mesas; sandy canyon bottoms; bouldery ridges; cobbly-loamy ridgetops; ridgelines; sandy openings in forests; gravelly-sandy-clayey-loamy meadows; foothills; rocky and sandy hills; rocky and sandy hillsides; rocky, stony, gravelly, gravelly-sandy, sandy and sandy-loamy slopes; alluvial fans; sandy bajadas; bedrock outcrops; amongst boulders and rocks; sandy plains; gravelly, sandy and sandy-loamy flats; rocky basins; gravelly and sandy valley floors; gravelly and sandy roadsides; along streams; along creeks; along rivers; sandy riverbeds; along and in gravelly, gravelly-sandy-silty and sandy washes; along watercourses; (gravelly) banks of arroyos and washes; (sandy-silty) margins of playas; sandy benches; lowlands; sandy riparian areas, and disturbed areas growing in moist and dry bouldery, rocky, rocky-sandy, stony, gravelly, gravelly-sandy, pebbly and sandy ground; cobbly loam, gravelly-sandy-clayey loam, gravelly-clayey loam and sandy loam ground; gravelly clay ground, and rocky-silty, gravelly-sandy silty and silty ground, occurring from 1,200 to 6,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Leptosiphon aureus* subsp. *aureus* is native to southwest-central and southern (Baja California) North America. *5, 6, 15, 28 (color photograph 365), 43 (031311), 44 (031311), 46 (Page 687), 58, 63 (031311 - color presentation), 77, 85 (031311 - color presentation), 86, 124 (031311 - no record of genus or species), 140 (Page 302)*

Linanthus aureus (see *Leptosiphon aureus* subsp. *aureus*)

Linanthus aureus subsp. *aureus* (see *Leptosiphon aureus* subsp. *aureus*)

Polygalaceae: The Milkwort Family

***Polygala obscura* G. Bentham: Velvetseed Milkwort**

SYNONYMY: *Polygala obscura* G. Bentham var. *puberula* (A. Gray) R.A. Denham; *Polygala orthotricha* S.F. Blake, *Polygala puberula* A. Gray. COMMON NAMES: Milkwort; Veiledseed Milkwort; Velvetseed Milkwort. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (spreading, trailing and/or erect stems 4 inches to 1 foot in height/length); the leaves are gray-green; the flowers may have pale blue-lavender, blue, lavender, pink, pale purple, purple, dark purple or violet wing petals and a dark blue-purple & white, greenish-yellow, orange-yellow, white-lavender, yellow or yellowish banners; flowering generally takes place between mid-April and early October (additional record: one for early January). HABITAT: Within the range of this species it has been reported from mountains; mountainsides; cliffs; rocky canyons; rocky canyon walls; canyon bottoms; crevices in rocks; rock ledges; ridges; rocky ridgecrests; meadows; rocky hills; rocky hillsides; along rocky, stony, gravelly, gravelly-loamy and sandy-clayey-loamy slopes; gravelly bajadas; bouldery and rocky outcrops; amongst boulders and rocks; clayey banks; flats; along rocky-gravelly-sandy-loamy, gravelly-sandy-loamy, gravelly-loamy and gravelly-sandy-clayey-loamy roadsides; within rocky arroyos; within draws; ravines; along streams; along and in rocky streambeds; along washes; rocky drainages; along banks of streams; gravel bars; terraces; gravelly floodplains; bouldery riparian areas, and disturbed areas growing in moist desert pavement; bouldery, rocky, stony and gravelly ground; rocky-gravelly-sandy loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, sandy loam and sandy-clayey loam ground, and sandy clay and clay ground, occurring from 2,800 to 7,400 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Quail feed on the seeds. *Polygala obscura* is native to southwest-central and southern North America. *5, 6, 15, 43 (020211 - no record of *Polygala obscura* var. *puberula*), 44 (020211 - no record of species), 46 (Page 500, also included as *Polygala orthotricha* Blake), 63 (020211 - color presentation), 85 (020311 - color presentation), 115 (color presentation), 124 (020211 - no record of species; genus record), 140 (Page 302)*

Polygala obscura var. *puberula* (see *Polygala obscura*)

Polygala orthotricha (see *Polygala obscura*)

Polygala puberula (see *Polygala obscura*)

Polygonaceae: The Buckwheat Family

***Eriogonum abertianum* J. Torrey: Abert's Buckwheat**

SYNONYMY: *Eriogonum abertianum* J. Torrey var. *abertianum*; *Eriogonum abertianum* J. Torrey var. *cyclosepalum* (E.L. Greene) F.R. Fosberg; *Eriogonum abertianum* J. Torrey var. *villosum* F.R. Fosberg. COMMON NAMES: [Abert's] Buckwheat (English)¹⁴⁰; Abert Wild Buckwheat; Abert's Wild Buckwheat; Buckwheat; Hulaqal (Uto-Aztecan: Cahuilla)¹⁴⁰; Le'azee' (Athapascan: Navajo)¹⁴⁰; Powáwi (Uto-Aztecan: Hopi)¹⁴⁰; Skeleton Weed; Tunabol (a name also applied to other species, Uto-Aztecan: Tübatulabal)¹⁴⁰; Wild Buckwheat. DESCRIPTION: Terrestrial annual forb/herb (spreading to erect stems 2 to 32 inches in height, plants were observed and described as being 8 to 10 inches in height and up to 6 inches in width); the foliage may be gray, gray-green, or greenish; the flowers are cream, creamy-peach, cream & red, greenish-yellow tinged with red, pale pink, pink, pink-cream, pink-red, pinkish, pinkish-red, pinkish-white, red, reddish, reddish-pink, reddish-yellow, white, white & pink, white with green or purple stripes or with a pink or red tinge, whitish-pink, white-yellow with red tips, light yellow, pale yellow & red, yellow with red tints, yellowish or yellowish-pinkish; flowering generally takes place between mid-February and late November (additional records: three for mid-January and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mesas; cliffs; rocky canyons; along gravelly, gravelly-sandy and sandy canyon bottoms; talus slopes; bases of cliffs; crevices in rocks; pockets of sandy soil in rock; buttes; ledges; ridges; ridgetops; bouldery foothills; gravelly hills; hilltops; rocky and gravelly hillsides; escarpments; rocky, rocky-sandy, stony, gravelly, sandy-loamy, sandy-clayey-loamy and clayey-loamy slopes; sandy alluvial fans; rocky-sandy and gravelly bajadas; gravelly pediment fans; rock outcrops; amongst boulders, rocks and stones; sandy lava flows; sandy-loamy plains; rocky, gravelly, sandy, sandy-clayey, sandy-clayey-loamy and clayey flats; basin bottoms; valley floors; along rocky, gravelly, gravelly-sandy-clayey-loamy, sandy and sandy-loamy roadsides; rocky arroyos; bottoms of arroyos; gulches; bouldery-rocky and rocky gullies; along streams; along streambeds; along creeks; along rivers; along and in rocky, gravelly, gravelly-sandy, sandy and clayey washes; within gravelly and sandy drainages; around lakes; marshes; banks of streams; sand bars; benches; terraces; sandy bottomlands; sandy-clayey floodplains; mesquite bosques; gravelly levees; riparian areas, and disturbed areas growing in wet, moist, damp and dry rocky desert pavement; bouldery, bouldery-rocky, rocky, rocky-sandy, shaley, stony, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky clay, gravelly-sandy clay, sandy clay and clay ground, and gravelly silty and gravelly-sandy silty ground, occurring from 1,300 to 8,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, the flowers are reported to be attractive. The flowers, leaves, seeds and stems are used for food by White-tailed Deer (*Odocoileus virginianus couesi*) and quail, White-tailed Deer and Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*) feed on the seeds. *Eriogonum abertianum* is native to southwest-central and southern North America. *5, 6, 15, 16, 18 (genus), 43 (032210), 46 (Page 237), 48 (genus), 58, 63 (032210 - color presentation), 77 (color photograph #50), 85 (032210 - color presentation), 124 (110710 - no record, genus), 140 (Pages 220-221 & 302)*

Eriogonum abertianum var. *abertianum* (see *Eriogonum abertianum*)

Eriogonum abertianum var. *cyclosepalum* (see *Eriogonum abertianum*)

Eriogonum abertianum var. *villosum* (see *Eriogonum abertianum*)

Eriogonum clutei (see *Eriogonum deflexum* var. *deflexum*)

Eriogonum clutei (see *Eriogonum deflexum* var. *deflexum*)

***Eriogonum deflexum* J. Torrey var. *deflexum*: Flatcrown Buckwheat**

SYNONYMY: *Eriogonum clutei* P.A. Rydberg; *Eriogonum deflexum* J. Torrey var. *turbinatum* (J.K. Small) J.L. Reveal. COMMON NAMES: Flatcrown Buckwheat; Flatcrowned Wild Buckwheat; Flat-topped Buckwheat; Skeleton Weed; Skeleton-weed; Skeletonweed; Skeleton Weed *Eriogonum*. DESCRIPTION: Terrestrial annual forb/herb (2 inches to 2 feet in height); the stems are blue-gray, gray-green, green or purple-red; the basal rosette of leaves is blue-gray, gray-green or green; the small flowers are cream, pink, pink-white, rose-white or white; flowering generally takes place between mid-January and late December; the fruits may be bright pink. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; gravelly mesas; plateaus; rocky cliffs; bouldery canyons; rocky and sandy canyon bottoms; shaley talus slopes; bluffs; rocky sides of buttes; rocky ridges; ridgelines; rocky foothills; talus hills; rocky and gravelly hillsides; rocky, rocky-sandy, shaley, cindery, gravelly, gravelly-loamy, sandy and clayey slopes; rocky-gravelly bajadas; amongst boulders; sand dunes; cobbly and sandy debris fans; gravelly, sandy and sandy-silty flats; basins; valley bottoms; roadbeds; along gravelly, gravelly-

loamy and sandy roadsides; sandy arroyos; sandy draws; gullies; gravelly ravines; around seeping streams; along creeks; along gravelly-sandy creekbeds; along rivers; gravelly riverbeds; along and in bouldery, rocky-sandy, rocky-loamy, gravelly, gravelly-sandy, sandy and sandy-clayey washes; drainages; depressions; swales; banks of rivers; sand bars; sandy bottomlands; banks of reservoirs; along canal banks; along ditches; sandy riparian areas; waste places, and disturbed areas growing in dry desert pavement; bouldery, rocky, rocky-gravelly, rocky-sandy, shaley, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam and gravelly-clayey loam ground; sandy clay and clay ground, and sandy silty ground, occurring from sea level to 7,200 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Eriogonum deflexum* var. *deflexum* is native to southwest-central and southern North America. *5, 6, 15 (*Eriogonum deflexum* Torrey var. *turbinatum* (Small) Reveal), 18 (genus), 43 (032310 - *Eriogonum deflexum* var. *turbinatum* (Small) Reveal), 46 (*Eriogonum clutei* Rydb. and *Eriogonum deflexum* Torr., Page 239), 48 (genus), 58 (*Eriogonum deflexum* Torrey var. *turbinatum* (Small) Reveal), 63 (032310), 68, **85** (032310 - color presentation of dried material)*

Eriogonum deflexum var. *turbinatum* (see *Eriogonum deflexum* var. *deflexum*)

Eriogonum densum (see *Eriogonum polycladon*)

***Eriogonum polycladon* G. Bentham: Sorrel Buckwheat**

SYNONYMY: *Eriogonum densum* E.L. Greene. COMMON NAMES: Buckwheat (a name also applied to other species and the genus *Eriogonum*); Redroot Buckwheat; Skeleton Weed (a name also applied to other species); Sorrel Buckwheat; Sorrel Eriogonum; Sorrel Wild Buckwheat; Wild Buckwheat (a name also applied to other species and the genus *Eriogonum*). DESCRIPTION: Terrestrial annual forb/herb (erect stems 2 inches to 4 feet in height; plants were observed and described as being 2 to 28 inches in height and 10 inches in width); the stems are bluish-green, gray, gray-green, grayish or whitish; the flowers may be cream, cream-pink, cream-white, pale pink, pink, pinkish-white, red, reddish-pink, reddish-white, russet, white, white becoming pink or red, white-green-yellow or white tinged pink; flowering generally takes place between late July and mid-November (additional records: one for mid-February, one for late May and one for late June; flowering has also been reported as possibly occurring year-round). HABITAT: Within the range of this species it has been reported from rocky mountains; rocky and gravelly-sandy-clayey-loamy mesas; rocky canyons; rocky knolls; ridges; cindery and sandy clearings in forests and woodlands; meadows; foothills; sandy hills; hillsides; rocky, gravelly, gravelly-sandy, gravelly-loamy and sandy slopes; gravelly-sandy bajadas; cindery lava flows; prairies; cindery, gravelly, gravelly-sandy and sandy flats; basins; gravelly-sandy valley floors; cobbly-gravelly, gravelly, gravelly-sandy, gravelly-loamy, sandy and clayey roadsides; along sandy arroyos; sandy bottoms of arroyos; within sandy-loamy draws; bottoms of gullies; within sandy ravines; springs; along streambeds; along creeks; along and in rocky-sandy creekbeds; bouldery-cobbly-sandy riverbeds; along and in gravelly, gravelly-sandy, sandy and clayey washes; sandy drainages; gravelly drainage ways; ciénegas; (sandy) banks of arroyos, creeks and washes; (rocky-sandy) shores of lakes; sand bars; sandy benches; gravelly-sandy and sandy terraces; gravelly and sandy bottomlands; sandy and silty floodplains; around stock tanks; ditches; sandy riparian areas, and disturbed areas growing in dry bouldery-cobbly-sandy, rocky, rocky-sandy, cobbly-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; gravelly-sandy-clayey loam, gravelly loam and sandy loam ground; bouldery clay and clay ground, and silty ground, occurring from 600 to 8,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Eriogonum polycladon* is native to southwest-central and southern North America. *5, 6, 15, 16, 18 (genus), 43 (072609), 44 (080711 - no species records listed under Common Names; genus records), 46 (*Eriogonum densum* Greene, Page 236 and *Eriogonum polycladon* Benth., Page 236), 48 (genus), 58, 63 (032310), 77, **85** (080711 - color presentation), 115 (color presentation), 124 (080711), 140 (Page 302)*

***Eriogonum wrightii* J. Torrey ex G. Bentham: Bastardsage**

COMMON NAMES: Bastardsage; Short-stem Bastard-sage (*E.w.* var. *subscaposum*); Wright Buckwheat; Wright Buckwheat Brush; Wright's Bastard-sage (*E.w.* var. *wrightii*). DESCRIPTION: Terrestrial perennial forb/herb, subshrub or shrub (prostrate to erect stems 4 inches to 3 feet in height/length, plants 12 inches in height and 16 inches in width were observed and described); the leaves are gray-green, grayish, greenish, reddish or white; the flowers may be cream-white, pale lavender, pale lavender-pinkish, orange, pink, pink & white, pinkish, rose, white, white-orange, white & pink or whitish-pink; flowering generally takes place between early June and mid-January (additional records: one for mid-February, one for late March, two for early April and two for mid-April). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mountainsides; sandy mesas; plateaus; rocky crags; rocky cliffs; rocky rims of canyons; rocky canyons; along rocky canyon bottoms; rocky talus, bases of cliffs; crevices in boulders and rocks; buttes; rocky knolls; ledges; along rocky ridges; bouldery ridgetops; sandy meadows; foothills; rocky, stony and sandy hills; rocky and clayey hillsides; rocky, gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey, sandy, sandy-loamy, loamy, clayey and clayey-loamy slopes; alluvial fans; bajadas; boulder and rock outcrops; amongst boulders and rocks; sandy lava flows; rocky banks; sandy prairies; rocky, sandy and clayey flats; valley floors; embankments; rocky, gravelly, gravelly-loamy and sandy-loamy roadsides; sandy arroyos; bottoms of arroyos; gullies; within ravines; streambeds; along sandy creekbeds; along and in rocky washes; gravelly and pebbly drainage ways; terraces; recently burned areas of Joshua Tree woodland, and disturbed areas growing in damp and dry bouldery, bouldery-rocky, rocky, shaley, stony, cobbly-sandy, gravelly, gravelly-sandy, pebbly and sandy ground; gravelly loam, gravelly-sandy loam, sandy loam, sandy-clayey loam, clayey loam and loam ground, and gravelly clay, sandy clay and clay ground, occurring from sea level to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations.

NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food or beverage crop; it was also noted as having been used as a drug or medication. *Eriogonum wrightii* is native to southwest-central and southern North America. *5, 6, 13, 18 (genus), 43 (081810), 46 (Page 241, about the species: "... according to Nichol, the most important deer-browse plant in the state."), 48 (genus), 63 (081810 - color presentation110107), 85 (081910 - color presentation), 127*

Eriogonum wrightii subsp. *glomerulum* (see *Eriogonum wrightii* var. *wrightii*)

***Eriogonum wrightii* J. Torrey ex G. Benth. var. *wrightii*: Bastardsage**

SYNONYMY: *Eriogonum wrightii* J. Torrey ex G. Benth. subsp. *glomerulum* S. Stokes. COMMON NAMES: Bastardsage; Buckwheat Brush; Wild Buckwheat; Wright Buckwheat; Wright Buckwheat Brush; Wright's Bastard-sage. DESCRIPTION: Terrestrial perennial subshrub (4 to 30 inches in height with a crown 4 inches to 6 feet in width); the leaves are gray-green; the flowers are cream-white, pale lavender, pink, pinkish, tan-cream or white; flowering generally takes place between late June and late December (additional records: one for mid-January, one for mid-February, one for late March and one for early June). HABITAT: Within the range of this species it has been reported from mountains; sandy mesas; rocky rims of canyons; rocky canyons; along canyon bottoms; bases of cliffs; crevices in boulders and rocks; rocky knolls; ledges; rocky ridges; hills, rocky hillsides; bedrock, rocky, rocky-gravelly, gravelly and gravelly-loamy slopes; alluvial fans; amongst boulders; sandy lava flows; rocky banks; embankments; sandy prairies; sandy flats; glens; valley floors; along sandy-loamy roadsides; within sandy ravines; along creekbeds; , and within rocky washes growing in dry rocky, rocky-gravelly, gravelly and sandy ground; gravelly-sandy loam, sandy loam, sandy-clayey loam and loam ground, and clay ground, occurring from 900 to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Eriogonum wrightii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food or beverage crop; it was also noted as having been used as a drug or medication. *Eriogonum wrightii* var. *wrightii* is native to southwest-central and southern North America. *5, 6, 13, 15, 18, 43 (072310 - *Eriogonum wrightii* subsp. *glomerulum* S. Stokes), 46 (Page 241, about the species: "... according to Nichol, the most important deer-browse plant in the state."), 48 (genus), 63 (072310), 77, 85 (072310 - color presentation of dried material), 127 (species), 140 (Page 302)*

***Rumex crispus* C. Linnaeus (subsp. *crispus* is the subspecies reported as occurring in Arizona): Curly Dock**

COMMON NAMES: Aingappawaia (Uto-Aztecan: Shoshoni)¹⁴⁰; Coffee-weed (a name also applied to other species); Coffeeweed (a name also applied to other species); Common Curled Dock; Curl Dock; Curl Leaved Dock; Curled Dock; Curled Leaf Dock; Curled Leafed Dock; Curled Leaved Dock; Curley Dock; Curly Dock; Curly Leaf Dock; Curly Leafed Dock; Curly Leafed Dock Sorrel; Curly Leaved Dock; Curl-leaf Dock; Curl-leafed Dock; Curled-leafed Dock; Curley-leaf Dock; Curly-leaf Dock; Curled-leafed Dock; Curly-leafed Dock; Curly-leafed Dock; Curly-leafed Dock Sorrel; Curl-leafed Dock; Curly-leaf Dock; Curly-leafed Dock; Curly-leafed Dock; Dock (a name also applied to other species and to the genus *Rumex*); Eviloriva (Tarahumara); Garden Patience (a name also applied to other species); Ginoje'wükün ("Pike Plant", Chippewa); Indian Tobacco; □tsākān□□ (Uto-Aztecan: Northern Paiute)¹⁴⁰; Ketamba Aukasiri (Purépecha); Krauser Ampfer (German); Krultongblaar (Afrikaans); Kwimi Shipba ("Root Sour", Zuni); Labaça-crespa (Portuguese: Brazil); Labaça-selvagem (Portuguese: Brazil); Lengua de Vaca (Hispanic); Lingua-de-vaca (Portuguese: Brazil); Narrow Dock; Narrowdock; Narrowleaf Dock (a name also applied to other species); Out-sting; Oza'widji'bik ("Yellow Root", Chippewa); Paciência (Portuguese: Brazil); Patience Crépue (French); Patience Friséé (French); Reguette (French); Rumex (a name also applied to other species and to the genus *Rumex*); Rumex Crépu; Sharp Pointed Dock; Sharp-point Dock; Sharp-pointed Dock; Shiakipi (Dakota); Sour Dock (misapplied, a name also applied to other species and to the genus *Rumex*); Weebelaar (Afrikaans); Winter Dock; Yaller Dock; Yellow Dock (a name also applied to other species); Yellowed Tail; Zhou Ye Suan Mo (transcribed Chinese). DESCRIPTION: Terrestrial (or semi-aquatic) perennial forb/herb (erect stems 14 inches to 6 feet in height); the flowers are green, green-yellow or yellowish-green becoming rosy to reddish-brown; flowering generally takes place between early February and mid-October (additional record: one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; gravelly-loamy mesas; cliffs; bases of cliffs; rocky canyons; bouldery-gravelly-sandy and rocky canyon bottoms; talus slopes; bluffs; knolls; ledges; shaly ridges; gravelly ridgetops; stony, sandy-loamy, loamy and clayey meadows; foothills; clayey-loamy hills; rocky hillsides; rocky, rocky-sandy, rocky-loamy, rocky-loamy-clayey, gravelly, gravelly-silty-loamy, sandy, sandy-loamy, sandy-clayey-loamy, sandy-silty, loamy, clayey and clayey-loamy slopes; rocky outcrops; amongst rocks; bases of boulders; sand dunes; clayey shelves; prairies; sandy plains; uplands; rocky, cobbly-loam, gravelly, sandy, sandy-loamy, sandy-clayey, sandy-clayey-loamy, clayey, clayey-loamy and loamy flats; basins; valley floors; valley bottoms; coastal plains; along sandy railroad right-of-ways; roadcuts; sandy roadbeds; along rocky-sandy, gravelly and gravelly-sandy roadsides; arroyos; within loamy and loamy-clayey draws; bottoms of draws; gulches; gullies; within ravines; seeps; seepbeds; around springs; rocky and sandy soils along and in streams; along rocky and sandy streambeds; rocks, sand and clay along and in creeks; along and in muddy and rocky-sandy creekbeds; in sand along rivers; rocky-cobbly-sandy riverbeds; along and in rocky, gravelly and sandy washes; along and in rocky, sandy-loamy and clayey-loamy drainages; along waterways; around and in pools; vernal pools; around and in ponds; vernal ponds; around and in lakes; silty lakebeds; sandy-loamy playas; boggy areas; ciénegas; freshwater and saltwater marshes; swamps; depressions; sloughs; along (muddy, rocky, gravelly, gravelly-sandy, sandy and loamy) banks of springs, streams, creeks, rivers, drainages and ponds; along (rocky and clayey) edges of streams, creeks, rivers, vernal pools, ponds, lakes

and marshes; along (rocky and sandy) margins of creeks, creekbeds, pools, ponds and lakes; (muddy, muddy-rocky, gravelly-sandy and sandy) shorelines of rivers, ponds and lakes; gravel, gravelly-sand and sand bars; rocky, gravelly-sandy and sandy beaches; cobbly-sandy and sandy benches; coves; moist hummock fields; gravelly-sandy and sandy-loamy terraces; bottomlands; mucky-clayey, rocky-sandy-clayey, stony, cobbly, gravelly-sandy, clayey and silty floodplains; sandy-clayey lowlands; along fencelines; dams; around stock tanks; shores of reservoirs; along canals; along and in ditches; along ditch banks; muddy, rocky, gravelly and sandy riparian areas; waste places, and disturbed areas growing in shallow water; mucky; muddy, and wet, moist, damp and dry (usually seasonally wet) rimrock pavement; bouldery-gravelly-sandy, rocky, rocky-stony-sandy, rocky-cobbly-sandy, rocky-sandy, shaley, shaley-sandy, stony, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, cobbly loam, gravelly loam, gravelly-silty loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky-sandy clay, rocky-loamy clay, gravelly-sandy clay, sandy clay, loamy clay, silty clay and clay ground, and sandy silty and silty ground, occurring from sea level to 10,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, as a dye (yellow) and widely used as a drug or medication. *Rumex crispus* is native to Europe; Asia, and northern Africa and coastal islands in the North Atlantic Ocean. *5, 6, 15, 28 (color photograph), 30, 43 (032410), 44 (080911), 46 (Page 245), 58, 63 (032410 - color presentation), 68, **80** (Species of the genus *Rumex* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Poisoning by oxalates in these forbs has been reported in other countries but not in the United States. Plants also accumulate toxic levels of nitrate."), **85** (081211 - color presentation), 101 (color photograph), 124 (080911), 127, 140 (Page 224)*

Portulacaceae: The Purslane Family

***Calandrinia ciliata* (H.R. López & J.A. Pavón) A.P. de Candolle: Fringed Redmaids**

SYNONYMY: *Calandrinia ciliata* (H.R. López & J.A. Pavón) A.P. de Candolle var. *menziesii* (W.J. Hooker) J.F. Macbride. COMMON NAMES: Desert Rock Purslane; Desert Rockpurslane; Fringed Redmaids; Red Maids; Red-maids; Redmaids; Rock Purslane. DESCRIPTION: Terrestrial annual forb/herb (prostrate to ascending and spreading stems 1 to 18 inches in length); the leaves are green; the flowers (to ½ inch in width) may be blue-purple, magenta, magenta-pink, magenta-purple, pink, deep pink, pink-magenta, pink-maroon, pink-purple, pink-red, purple, purplish-pink, red, deep red, deep red-purple, red-pink, reddish-pink, reddish-purple, reddish-violet, rose, rose-red, violet, white or white-purple; flowering generally takes place between mid-January and late May. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; sandy mesas; plateaus; along rocky canyons; chasms; rocky and sandy-loamy canyon bottoms; crevices in rocks; bouldery knobs; ridges; rocky-sandy and sandy meadows; sandy and clayey foothills; bouldery and rocky hills; hilltops; rocky and clayey hillsides; bouldery, bouldery-rocky-clayey, bouldery-gravelly, rocky, rocky-clayey, stony, gravelly, gravelly-loamy, gravelly-clayey, sandy, clayey and clayey-loamy slopes; bajadas; amongst rocks; sandy alluvial fans; sand dunes; sandy plains; gravelly, sandy and clayey flats; basins; hollows; valley floors; loamy valley bottoms; along clayey-loamy roadsides; bedrock and sandy arroyos; along sandy bottoms of arroyos; along draws; gulches; gullies; seeps; around seeping streams; in sand along streams; streambeds; along creeks; bouldery-rocky, rocky-sandy and sandy creekbeds; sandy riverbeds; along and in rocky, gravelly, gravelly-sandy and sandy washes; drainages; around clayey pools; silty-clayey poolbeds; loamy-clayey depressions; (rocky) banks of streams, creeks and rivers; along (clayey) edges of streams; margins of vernal marshes and pools; terraces; sandy bottomlands; sandy-silty floodplains; sandy riparian areas, and disturbed areas growing in shallow water and wet, moist, damp and dry bouldery, bouldery-rocky, bouldery-gravelly, rocky, rocky-sandy, stony, gravelly and sandy ground; gravelly loam, sandy loam, clayey loam and loam ground; bouldery clay, bouldery-rocky clay, rocky clay, gravelly clay and clay ground, and sandy-silty ground, occurring from sea level to 6,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. *Calandrinia ciliata* is native to west-central and southern North America, Central America and northwestern South America. *5, 6, 15, 28 (color photographs 176 & 585), 43 (072609), 46 (Page 288), 58, 63 (032510 - color presentation), 77, **85** (032510 - color presentation), 86 (color photograph), 101 (color photograph), 115 (color presentation), 124 (110710 - no record), 127, 140 (Page 302)*

Calandrinia ciliata var. *menziesii* (see *Calandrinia ciliata*)

***Phemeranthus aurantiacus* (G. Engelmann) R.W. Kiger: Orange Flameflower**

SYNONYMY: *Talinum angustissimum* (A. Gray) E.O. Wootton & P.C. Standley; *Talinum aurantiacum* G. Engelmann. COMMON NAMES: Flame Flower; Flame-flower; Flameflower (Texas); Orange Flame Flower; Orange Flameflower; Talinum; Yellow Flame Flower; Yellow Flameflower. DESCRIPTION: Terrestrial perennial forb/herb or shrub (erect stems 6 to 20 inches in height); the flowers (to 1 inch in width) may be apricot-orange, orange, orange-yellow, peach-orange, pinkish (rarely), pinkish-orange, reddish, reddish-orange, rosy-pink, pale yellow, pale yellow-orange, yellow or yellow-orange; flowering generally takes place between early June and late September (flowering beginning as early as April and ending as late as November has been reported). HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; canyons; cobbly and gravelly canyon bottoms; pockets of soil on cliffs; bluffs; ledges; along shaley ridges; ridgetops; meadows; foothills; gravelly-loamy and sandy hills; rocky hilltops; rocky, rocky-gravelly-loamy, rocky-clayey and gravelly hillsides; rocky, rocky-gravelly, stony, cobbly-clayey rocky-sandy, gravelly, gravelly-sandy, gravelly-clayey-loamy, sandy, sandy-loamy and

sandy-clayey-loamy slopes; sandy bajadas; rocky outcrops; amongst boulders and rocks; sandy lava flows; dunes; blow-sand deposits; prairies; sandy-loamy plains; gravelly, gravelly-sandy, sandy, sandy-loamy and sandy-clayey-loamy flats; valley floors; sandy-silty valley bottoms; along gravelly-sandy, gravelly-sandy-loamy, gravelly-sandy-clayey-loamy and gravelly-loamy roadsides; arroyos; draws; ravines; streambeds; along creeks; along washes; along edges of lakes and playas; rocky benches; terraces; floodplains; sandy-loamy lowlands, and disturbed areas growing in dry bouldery, rocky, rocky-gravelly, rocky-sandy, shaley, stony, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam and sandy-clayey loam ground; rocky clay, cobbly clay and clay ground, and sandy silty ground, occurring from sea level to 7,000 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. Kearney and Peebles' reported in Arizona Flora that *Talinum aurantiacum* Engelm. is "Arizona's largest flowered and showiest species. Indians in Arizona cooked and ate the roots, which often become very large and more or less woody." This plant could be investigated to determine its value as a home garden or commercial food crop. *PheMERanthus aurantiacus* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Talinum aurantiacum* Engelm.), 43 (072709), 44 (011111 - no record), 46 (recorded as *Talinum angustissimum* (Gray) Woot. & Standl., Page 287, and *Talinum aurantiacum* Engelm., Page 287), 58 (*Talinum aurantiacum* Engelm.), 63 (032510), 77 (recorded as *Talinum aurantiacum* Engelm., color photograph #51 labeled *Talinum aurantiacum*), **85** (011111 - color presentation), 86 (recorded as *Talinum aurantiacum* color photograph), 115 (color presentation), 124 (110710 - recorded as *Talinum aurantiacum* Engelm.), 140 (Page 302)*

***Portulaca suffrutescens* G. Engelmann: Shrubby Purslane**

COMMON NAME: Shrubby Purslane. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (3 to 12 inches in height); the stems may be pink; the flowers (½ to 1¼ inch in diameter) may be brick red, bronze, brown-orange, copper, copper-orange, pale orange, orange, dull orange-copper, orange-yellow, pale pink-orange, peach, pink-purple, purple, purple & red-orange, red, reddish-purple, salmon or salmon-pink; flowering generally takes place between early July and late October. HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; rocky-sandy-loamy canyon bottoms; talus; rocky knolls; ridges; ridgetops; rocky hills; hillsides; rocky, stony and gravelly slopes; alluvial fans; sandy bajadas; rocky outcrops; amongst rocks; plains; gravelly flats; sandy-silty valleys; along rocky, gravelly-sandy-loamy and gravelly-sandy-clayey-loamy roadsides; gravelly-sandy and sandy bottoms of arroyos; springs; in gravelly or sandy soils along streams; along sandy washes; drainages; (silty) banks of streams; creeks and pools; benches; terraces; sandy bottomlands; floodplains; sandy riparian areas, and waste places growing in dry rocky, stony, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam, rocky-sandy loam, rocky-clayey loam, gravelly-sandy loam and gravelly-sandy-clayey-loamy ground; clay soils, and sandy-silty and silty ground, occurring from 2,900 to 6,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Portulaca suffrutescens* is native to southwest-central and southern North America. *5, 6, 15, 43 (072709), 46, 58, 63 (072709), 77, **85** (072709), 115 (color presentation), 124 (110710 - no record, genus), 140 (Pages 227 & 302)*

Talinum angustissimum (see *PheMERanthus aurantiacus*)

Talinum aurantiacum (see *PheMERanthus aurantiacus*)

Primulaceae: The Primrose Family

***Androsace occidentalis* F.T. Pursh: Western Rockjasmine**

SYNONYMY: *Androsace occidentalis* F.T. Pursh var. *arizonica* (A. Gray) H. St. John. COMMON NAMES: Rock Jasmine; Rock-jasmine; Western Fairy Candelabra; Western Androsace; Western Rock Jasmine; Western Rock-jasmine; Western Rockjasmine. DESCRIPTION: Terrestrial annual forb/herb (1 to 5 inches in height); the basal rosette leaves may be reddish; the minute flowers (1/8 inch in diameter) may be pink, purple, red, white or white with a pink or red tinge; flowering generally takes place between early February and mid-May. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; cliffs; bases of cliffs; sandy canyons; along bedrock and sandy-loamy canyon bottoms; crevices in rock; gravelly ledges; ridges; ridgetops; shaded rock niches; meadows; rocky foothills; rocky hills; rocky hillsides; rocky, rocky-gravelly-loamy, rocky-sandy, rocky-loamy, gravelly, gravelly-sandy, gravelly-loamy and sandy slopes; rocky-sandy alluvial fans; bajadas; rocky outcrops; amongst boulders and rocks; rock niches; rocky and silty flats; basins; sandy valley floors; along roadsides; within bedrock arroyos; along rocky draws; seeps; springs; around seeping streams; along rocky and sandy streams; sandy streambeds; along creeks; along and in sandy creekbeds; along rivers; riverbeds; along and in rocky, rocky-sandy, gravelly and sandy washes; drainages; depressions; (rocky and gravelly) banks of rivers and washes; channel bars in rivers; terraces; sandy bottomlands; floodplains; rocky mesquite bosques; banks of stock tanks; gravelly-sandy riparian areas, and disturbed areas growing in muddy and wet, moist, damp and dry rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam gravelly loam and sandy loam ground; sandy clay ground, and silty ground, occurring from 1,000 to 11,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Androsace occidentalis* is native to central and southern North America. *5, 6, 15, 16, 43 (072809), 46 (Page 636), 58, 63 (032710 - color presentation), 77, **85** (032710 - color presentation of dried material), 127, 140 (Page 302)*

Androsace occidentalis var. *arizonica* (see *Androsace occidentalis*)

Ranunculaceae: The Buttercup Family

***Anemone tuberosa* P.A. Rydberg (var. *tuberosa* is the variety reported as occurring in Arizona): Tuber Anemone**

COMMON NAMES: Desert Anemone [Windflower] (English)¹⁴⁰; Desert Pasque Flower; Desert Thimble-weed; Desert Thimbleweed; Desert Wind-flower; Desert Windflower; Tuber Anemone (English: New Mexico)¹⁴⁰; Windflower (a name also applied to other species and the genus *Anemone*). DESCRIPTION: Terrestrial (tuberous) perennial forb/herb (3 to 20 inches in height); the stems may be purplish; the flowers may be cream & pink, creamy-white, pink, pinkish, pinkish-purple, pinkish-white, purple, rose-pink, white (aging to pink or rose), white-blue, white-lavender, white-pink, white-purple and whitish-yellow; flowering generally takes place between early January and late May. HABITAT: Within the range of this species it has been reported from reported from mountains; rocky mountainsides; rocky mesas; cliffs; bases of cliffs; rocky canyons; rocky canyon walls; rocky canyon bottoms; gorges; talus slopes; crevices in rocks; buttes; rocky promontories; along bouldery and rocky ridges; rocky ridgetops; rocky barrens; rocky foothills; bouldery-rocky and rocky hills; rocky hilltops; bouldery and rocky hillsides; rocky, rocky-gravelly-sandy, rocky-gravelly-loamy, rocky-clayey, gravelly and gravelly-loamy slopes; bajadas; rocky outcrops; amongst rocks; volcanic dikes and plugs; sandy lava flows; rocky and sandy flats; rocky basins; along rocky roadsides; along rocky draws; seeps; springs; along creeks; creekbeds; along and in gravelly washes; within bouldery-cobbly and cobbly drainage ways; along banks of streams and washes; rocky benches; terraces, and riparian areas growing in dry bouldery, bouldery-rocky, bouldery-cobbly, rocky, rocky-gravelly, rocky-gravelly-sandy, cobbly, cindery, gravelly and sandy ground; rocky-gravelly loam, gravelly loam, gravelly-clayey loam and sandy loam ground, and rocky clay and clay ground, occurring from 1,400 to 8,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Anemone tuberosa* is native to southwest-central and southern North America. *5, 6, 15, 16, 18 (genus), 28 (color photograph 246), 43 (072309), 44 (031411 - color photograph), 46 (Page 311), 58, 63 (032810 - color presentation), 77 (color photograph #90), 80 (Species in the genus *Anemone* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "These perennial forbs have been suspected of causing poisoning of livestock and have caused hairballs in the digestive tract of sheep."), 85 (042010 - color presentation), 86 (color photograph), 115 (color presentation), 124 (031411 - no record of species; genus record), 140 (Page 234-235 & 303)*

Delphinium amabile (see *Delphinium parishii* subsp. *parishii*)

Delphinium amabile subsp. *apachense* (see *Delphinium parishii* subsp. *parishii*)

***Delphinium parishii* A. Gray (subsp. *parishii* is the variety reported as occurring in Arizona): Desert Larkspur**

SYNONYMY: (for *D.p.* subsp. *parishii*: *Delphinium amabile* I. Tidestrom; *Delphinium amabile* I. Tidestrom subsp. *apachense* (A. Eastwood) J.A. Ewan). COMMON NAMES: Chiinō Hiitpa (Uto-Aztecan: Akimel O'odham)¹⁴⁰; Desert Larkspur; Larkspur; Ocean-blue Larkspur; Paleface Delphinium; Paleface Larkspur; Parish Desert Larkspur; Parish Larkspur; Parish's Larkspur. DESCRIPTION: Terrestrial perennial forb/herb (6½ inches to 4 feet in height); the stems may be brownish-purple; the basal rosette of leaves is dark green; the flowers may be azure-blue, light blue, blue, dark blue, blue-indigo, blue-lavender, blue-violet, bluish-purple, pale lavender, lavender, lavender-blue-violet, pink, pinkish-violet-purple, pale purple, purple, purple-blue, sky-blue, violet-blue or white; flowering generally takes place between early February and early July (additional records: one for early January, one for late August and one for early September). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; gravelly-sandy-loamy mountainsides; mesas; plateaus; cliffs; rocky rims of canyons; rocky canyons; rocky-gravelly-sandy canyon walls; sandy canyon bottoms; scree; talus slopes; buttes; rocky knolls; ledges; rocky and sandy ridges; along bouldery ridgetops; meadows; rocky and gravelly foothills; rocky and gravelly hills; rocky, gravelly, sandy and clayey hillsides; along bedrock, bouldery-rocky, bouldery-rocky-gravelly-sandy, bouldery-gravelly, rocky, rocky-sandy, rocky-clayey, gravelly-sandy, gravelly-sandy-loamy and sandy slopes; alluvial fans; gravelly-sandy bajadas; bedrock, bouldery and rocky outcrops; amongst boulders and rocks; lava fields; sandy plains; sandy flats; basins; valley floors; along cindery and sandy roadsides; arroyos; clayey gulches; gullies; along ravines; springs; around seeping streams; along streams; streambeds; along creeks; creekbeds; rivers; along and in rocky, rocky-sandy and sandy washes; within rocky drainages; marshes; rocky, rocky-gravelly-sandy and sandy banks of streams and washes; rocky edges of arroyos and washes; benches; gravelly terraces, and riparian areas growing in dry bouldery, bouldery-rocky, bouldery-rocky-gravelly-sandy, bouldery-gravelly, rocky, rocky-gravelly-sandy, rocky-sandy, shaley, cindery, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam and gravelly loam, gravelly-sandy loam, gravelly-clayey loam and loam ground, and rocky clay and clay ground, occurring from 600 to 12,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This is the most drought tolerant of the North American Larkspurs. *Delphinium parishii* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph), 43 (042010 - *Delphinium amabile* Tidestr. subsp. *apachense* Ewan), 46 (*Delphinium amabile* Tidestrom, Page 309 and *Delphinium amabile* Tidestrom subsp. *apachense* (Eastw.) Ewan, Page 309), 48 (genus), 63 (042010 - color presentation), 80 (Four species of

Larkspur are listed as Major Poisonous Range Plants; however, “All species of Larkspur in Arizona should be considered potentially dangerous. ... The most toxic period of growth is when the plant is young and prior to flowering” - May and June for Low Larkspur (*Delphinium nelsoni*, *Delphinium scaposum* and *Delphinium virescens*) and May through July for Tall Larkspur (*Delphinium scopulorum*). “Plants remain dangerous throughout their life. Cattle are the principle livestock poisoned by larkspur. Sheep apparently graze larkspur without harm. ... Since cattle will graze on larkspur even though other forage is available, management to keep them away from heavily infested areas during this period is the best control technique.” See text for additional information.), **85** (042110 - color presentation), 140 (Page 237 & 303 - recorded as *Delphinium parishii* A. Gray subsp. *parishii*)*

***Delphinium parishii* A. Gray subsp. *parishii*: Parish’s Larkspur**

SYNONYMY: *Delphinium amabile* I. Tidestrom; *Delphinium amabile* I. Tidestrom subsp. *apachense* (A. Eastwood) J.A. Ewan. COMMON NAMES: Chiinō Hiitpa (Uto-Aztec: Akimel O’odham)¹⁴⁰; Desert Larkspur; Ocean-blue Larkspur; Paleface Delphinium; Paleface Larkspur; Parish Desert Larkspur; Parish Larkspur; Parish’s Larkspur. DESCRIPTION: Terrestrial perennial forb/herb (6½ inches to 4 feet in height); the stems may be brownish-purple; the basal rosette of leaves is dark green; the flowers may be azure-blue, light blue, blue, dark blue, blue-violet, bluish-purple, lavender, lavender-blue-violet, pinkish-violet-purple, purple, purple-blue, sky-blue or violet-blue; flowering generally takes place between mid-February and early June (additional records: one for early January, one for late June and one for late August). HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; rocky canyons; rocky-gravelly-sandy canyon walls; sandy canyon bottoms; talus slopes; rocky knolls; ridges; along bouldery ridgetops; rocky foothills; rocky hills; rocky and gravelly hillsides; bouldery-rocky, bouldery-rocky-gravelly-sandy, rocky, rocky-sandy, rocky-clayey, gravelly-sandy and sandy slopes; gravelly-sandy bajadas; bedrock and rocky outcrops; amongst boulders and rocks; lava fields; sandy plains; sandy flats; valley floors; along roadsides; arroyos; clayey gulches; gullies; ravines; springs; around seeping streams; along streams; streambeds; along creeks; creekbeds; rivers; along and in rocky, rocky-sandy and sandy washes; drainages; high ground in marshes; (rocky, rocky-gravelly-sandy and sandy) banks of streams and washes; edges of arroyos; benches; gravelly terraces, and riparian areas growing in dry bouldery, bouldery-rocky, bouldery-rocky-gravelly-sandy, rocky, rocky-gravelly-sandy, rocky-sandy, shaley, cindery, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly loam, gravelly-clayey loam and loam ground, and rocky clay and clay ground, occurring from 600 to 12,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This is the most drought tolerant of the North American Larkspurs. *Delphinium parishii* subsp. *parishii* is native to southwest-central and southern North America. *5, 6, 15, 28 (species, color photograph), 43 (042010 - *Delphinium amabile* Tidestr. subsp. *apachense* Ewan), **46** (recorded as *Delphinium amabile* Tidestrom, Page 309 and *Delphinium amabile* Tidestrom subsp. *apachense* (Eastw.) Ewan, Page 309), **48** (genus), 63 (042010 - color presentation), **80** (Four species of Larkspur are listed as Major Poisonous Range Plants; however, “All species of Larkspur in Arizona should be considered potentially dangerous. ... The most toxic period of growth is when the plant is young and prior to flowering” - May and June for Low Larkspur (*Delphinium nelsoni*, *Delphinium scaposum* and *Delphinium virescens*) and May through July for Tall Larkspur (*Delphinium scopulorum*). “Plants remain dangerous throughout their life. Cattle are the principle livestock poisoned by larkspur. Sheep apparently graze larkspur without harm. ... Since cattle will graze on larkspur even though other forage is available, management to keep them away from heavily infested areas during this period is the best control technique.” See text for additional information.), **85** (042110), 140 (Pages 237 (species) & 303)*

***Delphinium scaposum* E.L. Greene: Tall Mountain Larkspur**

COMMON NAMES: ‘Akee’ ‘Aq <k’ey ahi’> (Athapascan: Navajo)¹⁴⁰; Bare-stem Larkspur; Barestem Larkspur; Bik’ihoochijih Nteel <k’ixwootxyeelih> (Athapascan: Navajo)¹⁴⁰; Cucul P’ispul <cu:cul, chuchul-i’ispul, cuculi i’ispul, kuksho-wuuplim> (Uto-Aztec: Tohono O’odham)¹⁴⁰; Desert Larkspur; Espuelita; Espuelita Cimarrona (“Wild Little Spurs”, Spanish: Arizona, Sonora)¹⁴⁰; Kuk□o Wu:pulim <kuk□o wu:pulim> (Uto-Aztec: Tohono O’odham)¹⁴⁰; [Tall Mountain, Bare-stem] Larkspur (English)¹⁴⁰; Low Larkspur; Naked Delphinium; Tall Mountain Larkspur; Tcoro’si (Hopi); [Bika’] Tādidjīn Doot’izh <tādidin doʔ i’s, tādidin doot’izhii, [bika’] tididi’n do’y’is, txatitjioot’ij> (Athapascan: Navajo)¹⁴⁰; Teoro’si <teorosi> (Uto-Aztec: Hopi)¹⁴⁰; Tl’izi’Azee’ <ʔ’izi □aze□> (Athapascan: Navajo)¹⁴⁰; Tu’kubagūmp [Pa’gasauwinoūp] (Uto-Aztec: Shoshoni)¹⁴⁰; Tukymisi <tukyāmsi> (Uto-Aztec: Hopi)¹⁴⁰; Wild Delphinium. DESCRIPTION: Terrestrial perennial forb/herb (erect stems 6 inches to 4 feet in height); the leafless stems may be reddish; the basal leaves are gray-green, dark green or yellow-green; the flowers (to 1 inch in width) may be blue, blue & cream-white, blue-purple, blue-purple-white, blue-violet, blue-white, dark blue, lavender-blue-purple, purple, dark purple-blue, dark purple-blue & white, purple-blue, royal blue-white, deep royal blue, violet, violet-blue or white; flowering generally takes place between early March and early July (additional record: one for early January). HABITAT: Within the range of this species it has been reported from mountains; bouldery, gravelly and sandy mesas; plateaus; along rocky rims of canyons and gorges; rocky, rocky-sandy and sandy canyons; sandy canyon bottoms; gorges; talus slopes; bases of cliffs; bluffs; buttes; knolls; rocky ledges; ridges; clearings in forests; meadows; rocky foothills; rocky and sandy hills; rocky and sandy-loamy hillsides; bouldery-rocky-gravelly, rocky, gravelly, gravelly-loamy, gravelly-sandy-loamy, gravelly-clayey-loamy, loamy and clayey slopes; bajadas; bouldery outcrops; sand dunes; gravelly and clayey flats, basins; valley floors; along rocky, gravelly-sandy and sandy roadsides; arroyos; gravelly gullies; along seeping washes; along streams; streambeds; along rivers; along washes; drainages; along water courses; gravelly-silty-clayey and gravelly-clayey depressions; (rocky) banks of washes; (rocky) edges of washes; shores of lakes; sandy beaches; benches; gravelly-sandy terraces; sandy bottomlands, and riparian areas growing in dry bouldery, bouldery-rocky-gravelly, rocky, rocky-sandy, cindery, gravelly,

gravelly-sandy and sandy ground; gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam and loam ground, and rocky clay, gravelly clay, gravelly-silty clay and clay ground, occurring from 1,900 to 8,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial dye crop; it was also noted as having been used in ceremonies; as a toy or in games, and as a drug or medication. The Tall Mountain Larkspur is reportedly visited by butterflies. *Delphinium scaposum* is native to southwest-central and southern North America. *5, 6, 15, 16, 18 (genus), 28 (color photograph), 43 (042110), 46 (Pages 308-309), 48 (genus), 58, 63 (042110 - color presentation including habitat), 68, 77 (color photograph #91), 80 (This species is listed as a Major Poisonous Range Plant; however, "All species of Larkspur in Arizona should be considered potentially dangerous. ... The most toxic period of growth is when the plant is young and prior to flowering" - May and June for Low Larkspur (*Delphinium nelsoni*, *Delphinium scaposum* and *Delphinium virescens*) and May through July for Tall Larkspur (*Delphinium scopulorum*). "Plants remain dangerous throughout their life. Cattle are the principle livestock poisoned by larkspur. Sheep apparently graze larkspur without harm. ... Since cattle will graze on larkspur even though other forage is available, management to keep them away from heavily infested areas during this period is the best control technique." See text for additional information.), 85 (042210 - color presentation), 115 (color presentation), 127, 140 (Pages 236-238 & 303)*

***Myosurus cupulatus* S. Watson: Arizona Mousetail**

COMMON NAME: Arizona Mousetail. DESCRIPTION: Terrestrial annual forb/herb (1¼ to 6¼ inches in height); the foliage is yellow-green; the flowers may be greenish, pale lavender, lavender, dark lavender, white or whitish-green; the anthers are pale blue, flowering generally takes place between late February and early May (additional record: one for late June). HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; cliffs, canyons; along canyon bottoms; bases of cliffs; crevices in rocks; rocky ledges; rocky ridgetops; foothills; rocky hills; rocky and rocky-sandy hillsides; rocky, rocky-gravelly-loamy, rocky loamy and gravelly slopes; bedrock outcrops; amongst rocks; areas beneath boulders; bases of rocks; rocky basins; along rocky and sandy roadsides; bedrock arroyos; along draws; gulches; rocky ravines; seeps; springs; along streams; rocky and sandy streambeds; along creeks; creekbeds; along rivers; riverbeds; along and in rocky-gravelly and sandy washes; drainages; shallow depressions; in oak leaf litter on rocky banks of ravines; bottomlands; floodplains; edges of stock tanks; riparian areas, and disturbed areas growing in soggy and wet, moist, damp and dry bouldery, rocky, rocky-gravelly, rocky-sandy, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-sandy loam and gravelly loam ground; rocky clay ground, and humusy ground often in shaded areas, occurring from 1,100 to 7,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Myosurus cupulatus* is native to southwest-central and southern North America. *5, 6, 15, 43 (071510), 46 (Page 313), 63 (071510), 77, 85 (071510 - color presentation of dried material), 127, 140 (Page 303)*

Rhamnaceae: The Buckthorn Family

Condalia spathulata (see footnote 46 under *Condalia warnockii* var. *kearneyana*)

***Condalia warnockii* M.C. Johnston var. *kearneyana* M.C. Johnston: Kearney's Snakewood**

COMMON NAMES: <balchata> (Uto-Aztec: Onavas Pima)¹⁴⁰; Bindó (Spanish: San Luis Potosí)¹⁴⁰; [Mexican] Buck-thorn (English)¹⁴⁰; Buckthorn (a name also applied to the Rhamnaceae); Crucillo (a name also applied to the species); Guichutilla (Spanish: Sonora)¹⁴⁰; Kearney Condalia; Kearney Snakewood; Kearney's Snakewood; Lote-bush (a name also applied to other species); Mexican Buckthorn; Mexican Crucillo (English)¹⁴⁰; [Warnock's] Snakewood (English: New Mexico)¹⁴⁰; Squaw-bush (English: Arizona, New Mexico)¹⁴⁰; Squawbush (a name also applied to the species); Tecomblate [Tecomblate] (Spanish: New Mexico)¹⁴⁰; U:sba□ <'u:padh, u'usba□, u:spa't> (Uto-Aztec: Tohono O'odham)¹⁴⁰; Warnock's Snakewood (a name also applied to the species). DESCRIPTION: Terrestrial perennial deciduous (considered evergreen except during periods of severe drought) shrub (20 inches to 13 feet in height; one plant was observed and described as being 6½ feet in height with a crown 10 feet in width, one plant was observed and described as being 10 feet in height with a crown 10 feet width); the leaves are dark green; the minute flowers may be yellow-green or are yellowish; based on few records located, flowering generally takes place between mid-February and mid-September (flowering records: one for mid-February, one for early August, one for mid-August, one for late August and one for mid-September; however, flowering taking place throughout the year has also been reported); the fruits are black, dark purple, red or reddish-black. HABITAT: Within the range of this species it has been reported from mountains; gravelly and sandy mesas; cliff faces; canyons; canyon bottoms; rocky ledges; ridges; edges of meadows; foothills; hills; rocky, gravelly and sandy slopes; rocky and gravelly bajadas; amongst boulders; gravelly and sandy flats; basins; valley floors; rocky arroyos; gulches; along rocky washes; along and in drainages; banks of creeks; (gravelly) edges of washes and drainages; terraces; floodplains, and around gravelly-sandy stock tanks growing in dry bouldery, rocky, gravelly, gravelly-sandy and sandy ground, occurring from 200 to 5,600 feet in elevation in the grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Condalia warnockii* var. *kearneyana* is native to southwest-central and southern North America. *5, 6, 13 (Page 149), 15, 16, 28 (color photograph 843), 43 (042210), 44 (081211 - no record of species; genus record), 46 (recorded as *Condalia spathulata* A.

Gray, Page 530), 58, 63 (042210), 77, 85 (081211 - color presentation of dried material), 91 (Pages 166-167), 124 (081211 - no record of genus or species), 140 (Pages 239-240 & 304 - recorded as *Condalia warnockii* M.C. Johnston [*Condalia spatulata* of authors, not A. Gray]), **HR***

***Ziziphus obtusifolia* (W.J. Hooker ex J. Torrey & A. Gray) A. Gray: Lotebush**

COMMON NAMES: Abrojo (Spanish: Mexico)¹⁴⁰; Bachata (Spanish: Sonora)¹⁴⁰; Barabachatas (“Dearest Bearded One”, Spanish: Sonora)¹⁴⁰; Bluebush; Buchthorn; Ch’il Nǎdzig <chi gatoiljit> (Athapascan: Western Apache)¹⁴⁰; Chaparro (a name also applied to other species); Chaparro Prieto (“Black Thicket”, Spanish: Tamaulipas)¹⁴⁰; Ciruela de Monte (“Wild Cherry”, Spanish: Sonora)¹⁴⁰; Clepe; Crucillo Blanco (“Little White Cross”, Spanish: Sonora)¹⁴⁰; Garambullo (“Spiny Plant”, Spanish: Mayo, Sonora)¹⁴⁰; Garrapata (“Tick”, Spanish: Mexico)¹⁴⁰; Gray-leaved Abrojo; Gray-leaved Abrojo; Gray Thorn; Gray-thorn; Graythorn; Graythorn Abrojo; Graythorn Aborojo; Graythorn Lotebush; Grey Thorn; Grey-thorn; Greythorn; Gumdrop Tree (English: Texas)¹⁴⁰; Huichilame (Uto-Aztecan: Mayo)¹⁴⁰; Hutki <jutuqui> (Uto-Aztecan: Mayo)¹⁴⁰; Jewe□ba□u:s <duwastba□ uus> (“Tall, Dead-looking Bush”, Uto-Aztecan: Onavas Pima)¹⁴⁰; Jó’otoro (Uto-Aztecan: Mayo)¹⁴⁰; Lote Bush; Lote-bush; Lotebush (English)¹⁴⁰; Lotebrush; Lotibush; Oschuvapat (Pima); Palo Blanco (“White Tree”, Spanish: Mexico)¹⁴⁰; Southwestern Condalia; Texas Buckthorn; Thorn (English: Arizona)¹⁴⁰; U:s Jewe□ba□ <‘us jewedhpadh, u:s tcui’tpa’> (Uto-Aztecan: Tohono O’odham)¹⁴⁰; U:spa□ <‘uspa□> (Uto-Aztecan: Tohono O’odham)¹⁴⁰; U’us Cheva□ba□ <ositc u’wutpat, u-us dji-wuht-paht> (Uto-Aztecan: Akimel O’odham)¹⁴⁰; ‘U:spa□ <u:supa□> (Uto-Aztecan: Hiá Ce□ O’odham)¹⁴⁰; ‘Us Jev□pa□ (Uto-Aztecan: Hiá Ce□ O’odham)¹⁴⁰; Uwé (Yuman: Maricopa)¹⁴⁰; White Crucillo (English)¹⁴⁰; Whitethorn (a name also applied to other species). DESCRIPTION: Terrestrial perennial drought deciduous shrub or tree (3 to 13 feet in height, one plant was reported to be 40 inches in height with a crown 18 inches in width, one plant 7 feet in height with a crown 7 feet in width, one plant was reported to be 10 feet in height with a crown 10 feet in width, one plant was reported to be 10 feet in height with a crown 13 feet in width, one plant was reported to be 13 feet in height with a crown 13 feet in width, one plant was reported to be 13 feet in height with a crown 20 feet in width); the stems may be bluish, brown, gray, gray-green, green or whitish with the twigs ending in stout thorns; the leaves are gray-green, pale green, green or yellow-green; the inconspicuous flowers are cream, light green, green, greenish-white, greenish-yellow, yellow-green, white or whitish-green; flowering generally takes place between mid-May and late November (additional records: one for mid-January, one for late January, one for early March, two for mid-March, three for late March, two for mid-April and one for late April); the ripe fruits are black, blue, dark blue or purple. HABITAT: Within range of this species it has been reported from mountains; gravelly mesas; rocky cliffs; rocky and gravelly canyons; sandy-clayey canyon sides; along canyon bottoms; scree; talus slopes; bases of cliffs; crevices in rocks; buttes; gravelly-clayey-loamy ridges; rocky ridgetops; ridgelines; foothills; rocky, cobbly and cobbly-gravelly-loamy hills; hilltops; rocky hillsides; bedrock, rocky, rocky-gravelly-sandy, rocky-sandy, gravelly, gravelly-loamy and gravelly-clayey-loamy slopes; rocky alluvial fans; gravelly bajadas; rocky outcrops; amongst boulders, rocks and gravels; sandy dunes; breaks; prairies; gravelly, gravelly-silty, sandy-silty and silty plains; rocky, gravelly and sandy-loamy flats; basin bottoms; rocky valley floors; along gravelly, gravelly-sandy-clayey-loamy, gravelly-loamy and sandy-clayey-loamy roadsides; gravelly-sandy and sandy arroyos; along rocky and sandy bottoms of arroyos; draws; gulches; ravines; bouldery bottoms of ravines; seeps; in clay around springs; along streams; along rocky streambeds; along creeks; along gravelly-sandy creekbeds; in gravels along rivers; along gravelly and gravelly-sandy rivers; riverbeds; along and in rocky, sandy and sandy-clayey washes; along drainages; marshes; swales; along (bouldery-sandy, rocky, gravelly-sandy and sandy) banks of streams, creeks, rivers and washes; (gravelly-sandy) edges of arroyos and creeks; margins of springs; beaches; sandy benches; terraces; bottomlands; floodplains; mesquite bosques; thickets of Soapberry (*Sapindus saponaria*); along fencerows; along canals; gravelly-sandy and sandy riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; cobbly-gravelly loam, gravelly loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam and sandy-clayey loam ground; sandy clay and clay ground, and gravelly silty, sandy silty and silty ground, occurring from sea level to 7,000 feet in elevation in the woodland, scrub, grassland, desert scrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder and/or beverage crop; it was also noted as having been used as a tool, as a drug or medication and as a commodity used in personal hygiene. The heartwood may be red-brown and may be honey-scented. The flowers are visited by orange-winged Spider Wasps. Gray Foxes (*Urocyon cinereoargenteus*), Raccoons (*Procyon lotor*), Ringtails (*Bassariscus astutus*), Gambel’s Quail (*Callipepla gambelii*), Scaled Quail (*Callipepla squamata*), Mockingbirds (*Mimus polyglottos*), Northern Orioles (*Icterus bullockii*), Phainopeplas (*Phainopepla nitens*), Band-tailed Pigeons (*Columba fasciata*), White-necked Ravens (*Corvus cryptoleucus*), Curved-billed Thrashers (*Toxostoma curvirostre*), Golden-fronted Woodpeckers (*Melanerpes aurifrons*), White-winged Doves (*Zenaida asiatica*) and other birds feed on the fruit. The plants numerous spines provide an impenetrable refuge for birds and many species of birds make use of the Lotebush as a preferred nesting site. *Ziziphus obtusifolia* is native to southwest-central and southern North America. *5, 6, 13 (Pages 146-147, color photograph of *Z.o.* var. *canescens*: Plate M.2., Page 400), 28 (color photograph 848), 43 (042210), 44 (121310), 46 (recorded as *Condalia lycioides* (Gray) Weberb., Page 530), 63 (042210), **85** (042310 - color presentation), 91 (Pages 421-422), 124 (110710), 127, 140 (Pages 243-244 & 304 - reported as *Ziziphus obtusifolia* (Hooker ex Torrey & A. Gray) A. Gray var. *canescens* (A. Gray) M.C. Johnston [*Condalia lycioides* (A. Gray) Weberbauer var. *canescens* (A. Gray) Trelease])*

***Ziziphus obtusifolia* (W.J. Hooker ex J. Torrey & A. Gray) A. Gray var. *canescens* (A. Gray) M.C. Johnston: Lotebush**

SYNONYMY: *Condalia lycioides* (A. Gray) A. Weberbauer var. *canescens* (A. Gray) W. Trelease. COMMON NAMES: Abrojo (Spanish: Mexico)¹⁴⁰; Bachata (Spanish: Sonora)¹⁴⁰; Barabachatas (“Dearest Bearded One”, Spanish: Sonora)¹⁴⁰; Buchthorn; Ch’il Nldzig <chi gatoiilit> (Athapaskan: Western Apache)¹⁴⁰; Chaparro (a name also applied to other species); Chaparro Prieto (“Black Thicket”, Spanish: Tamaulipas)¹⁴⁰; Ciruela de Monte (“Wild Cherry”, Spanish: Sonora)¹⁴⁰; Clepe (a name also applied to the species); Crucillo Blanco (“Little White Cross”, Spanish: Sonora)¹⁴⁰; Garambullo (“Spiny Plant”, Spanish: Mayo, Sonora)¹⁴⁰; Garrapata (“Tick”, Spanish: Mexico)¹⁴⁰; Gray Crucillo; Gray Thorn (a name also applied to the species); Gray-leaf Condalia; Gray-leafed Abrojo (a name also applied to the species); Gray-leaved Abrojo (a name also applied to the species); Grayleaf Condalia; Gray-thorn (a name also applied to the species); Graythorn (a name also applied to the species); Graythorn Abrojo (a name also applied to the species); Graythorn Aborojo (a name also applied to the species); Graythorn Lotebush (a name also applied to the species); Grey Thorn (a name also applied to the species); Grey-leaved Abrojo; Grey-thorn (a name also applied to the species); Greythorn (a name also applied to the species); Gumdrop Tree (a name also applied to the species, Texas); Gumdrop Tree (English: Texas)¹⁴⁰; Huichilame (Uto-Aztecan: Mayo)¹⁴⁰; Hutki <jutuqui> (Uto-Aztecan: Mayo)¹⁴⁰; Jewe□ba□u:s <duwastba□uus> (“Tall, Dead-looking Bush”, Uto-Aztecan: Onavas Pima)¹⁴⁰; Jó’otero (Uto-Aztecan: Mayo)¹⁴⁰; Lote Bush (a name also applied to the species and to the genus *Ziziphus*); Lote-bush (a name also applied to the species and to the genus *Ziziphus*); Lotebush (a name also applied to the species and to the genus *Ziziphus*); Lotebush (English)¹⁴⁰; Lotebush (a name also applied to the species); Lotibush (a name also applied to the species); Oschuvapat (Pima); Palo Blanco (“White Tree”, Spanish: Mexico)¹⁴⁰; Southwestern Condalia (a name also applied to the species); Thorn (English: Arizona)¹⁴⁰; U:s Jewe□ba□ <‘us jewedhpadh, u:s tcui’tpa’t> (Uto-Aztecan: Tohono O’odham)¹⁴⁰; U:spa□ <‘uspa□> (Uto-Aztecan: Tohono O’odham)¹⁴⁰; U’us Cheva□ba□ <osite u’wutpat, u-us dji-wuht-paht> (Uto-Aztecan: Akimel O’odham)¹⁴⁰; ‘U:spa□ <u:supa□> (Uto-Aztecan: Hiá Ce□ O’odham)¹⁴⁰; ‘Us Jeve□pa□ (Uto-Aztecan: Hiá Ce□ O’odham)¹⁴⁰; Uwé (Yuman: Maricopa)¹⁴⁰; White Crucillo (English)¹⁴⁰; White Crucillo (a name also applied to the species). DESCRIPTION: Terrestrial perennial drought deciduous shrub or tree (3 to 13 feet in height; one plant was observed and described as being 40 inches in height with a crown 18 inches in width, one plant was observed and described as being 7 feet in height with a crown 7 feet in width, one plant was observed and described as being 10 feet in height with a crown 10 feet in width, one plant was observed and described as being 13 feet in height with a crown 13 feet in width); the stems are bluish, gray, gray-green, green or whitish with the twigs ending in stout thorns; the leaves are gray-green, green or yellow-green, the inconspicuous flowers are cream, green, greenish-white, yellow, yellow-green or whitish-green; flowering generally takes place between mid-May and late November (additional records: one for late January, one for mid-March, one for late March, one for mid-April and one for late April); the ripe fruits are black, blue-purple, dark blue or purple. HABITAT: Within range of this species it has been reported from mountains; mesas; rocky canyons; along canyon bottoms; scree; talus slopes; bases of cliffs; crevices in rocks; buttes; ridges; ridgelines; foothills; rocky hills; hilltops; rocky hillsides; rocky and gravelly slopes; rocky alluvial fans; gravelly bajadas; amongst boulders, rocks and gravels; sandy-silty plains; rocky and gravelly flats; basins; rocky valley floors; gravelly and gravelly-loamy roadsides; arroyos; bottoms of arroyos; gulches; ravines; bouldery bottoms of ravines; seeps; in clay around springs; rivulets; along streams; along rocky streambeds; along creeks; along gravelly-sandy creekbeds; along gravelly and gravelly-sandy rivers; riverbeds; along and in rocky and sandy washes; drainages; marshes; along (rocky) banks of streams, creeks, rivers and washes; (gravelly-sandy) edges of arroyos and creeks; beaches; sandy benches; terraces; bottomlands; floodplains; mesquite bosques; along fencerows; along canals; gravelly-sandy riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-gravelly-sandy, gravelly, gravelly-sandy and sandy ground; cobbly-gravelly loam, gravelly loam and gravelly-clayey loam ground; sandy clay and clay ground, and sandy silty ground, occurring from sea level to 5,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fodder and/or beverage (*Ziziphus obtusifolia*) crop; it was also noted as having been used as a tool, as a drug or medication and as a commodity used in personal hygiene. The flowers are visited by orange-winged Spider Wasps. Gray Foxes (*Urocyon cinereoargenteus*), Raccoons (*Procyon lotor*), Ringtails (*Bassariscus astutus*), Gambel’s Quail (*Callipepla gambelii*), Scaled Quail (*Callipepla squamata*), Mockingbirds (*Mimus polyglottos*), Northern Orioles (*Icterus bullockii*), Phainopeplas (*Phainopepla nitens*), Band-tailed Pigeons (*Columba fasciata*), White-necked Ravens (*Corvus cryptoleucus*), Curved-billed Thrashers (*Toxostoma curvirostre*), Golden-fronted Woodpeckers (*Melanerpes aurifrons*), White-winged Doves (*Zenaida asiatica*) and other birds feed on the fruit. The plants numerous spines provide an impenetrable refuge for birds and many species of birds make use of the Lotebush as a preferred nesting site. *Ziziphus obtusifolia* var. *canescens* is native to southwest-central and southern North America. *5, 6, 13 (Page 147, color photograph: Plate M.2., Page 400), 15, 16, 28 (species, color photograph of species 848), 43 (042210), 44 (040211), 46 (recorded as *Condalia lycioides* (Gray) Weberb. var. *canescens* (Gray) Trel., Page 530), 58, 63 (042210), 77, 85 (081211 - color presentation), 91 (species, Pages 421-422), 124 (040211 - no record of variety; genus and species records), 127, 140 (Pages 243-244 & 304 - reported as *Ziziphus obtusifolia* (Hooker ex Torrey & A. Gray) A. Gray var. *canescens* (A. Gray) M.C. Johnston [*Condalia lycioides* (A. Gray) Weberbauer var. *canescens* (A. Gray) Trelease]), **WTK** (August 4, 2005)

Rosaceae: The Rose Family

Vauquelinia californica (J. Torrey) C.S. Sargent: Arizona Rosewood

COMMON NAMES: Árbol [Palo] Prieto (“Black Tree”, Spanish: Durango)¹⁴⁰; Arizona Rose-wood (English)¹⁴⁰; Arizona Rosewood; Arizona Sonoran Rosewood (*V.c.* subsp. *sonorensis*); California Rosewood; Few-flower Vauquelinia (English)¹⁴⁰; Few-flowered Vauquelinia; Guayul [Guayule] (Spanish: Coahuila)¹⁴⁰; Palo Verde (Spanish: Durango)¹⁴⁰; Sonora Rosewood (*V.c.* subsp. *sonorensis*); Sonoran Mountain Rosewood (*V.c.* subsp. *sonorensis*); Sonoran Rosewood (*V.c.* subsp. *sonorensis*); Torrey Vauquelinia (English)¹⁴⁰; Ucas (Unknown: Mexico)¹⁴⁰. DESCRIPTION: Terrestrial perennial evergreen shrub or tree (ascending and or erect stems 5 to 30 feet in height; one plant was observed and described as being 18 feet in height with a crown 16½ feet in width); the bark is gray, grayish or reddish-brown; branches are silver-gray; the twigs are reddish-brown; the long narrow leaves are bright green or yellow-green above and aluminum-colored or white below; the small flowers (3/8 inch in diameter) are white and born in clusters (2 to 3 inches in diameter); flowering generally takes place between mid-May and mid-October (additional records: one for late January, one for late February, one for mid-March, one for late March, two for late April, one for early November and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; cliffs; rocky canyons; canyon bottoms; crevices in rocks; buttes; ridges; ridgetops; hills; hillsides; bouldery and rocky slopes; amongst bouldery and rocks; basins; along roadsides; within creekbeds; along washes; along rocky drainages; banks of streams, and rocky riparian areas growing in dry bouldery and rocky ground and clay ground, occurring from 500 to 5,300 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Vauquelinia californica* is native to southwest-central and southern North America. *5, 6, 13 (Pages 269-269), 15, 18, 26 (color photograph), 28 (color photograph 76), 43 (082310), 44 (041312 - no record of species or genus), 46 (Page 375), 48, 52 (color photograph), 53, 63 (041312 - color presentation), 77, 85 (082408 - color presentation including habitat), 91 (Pages 395-396), 115 (color presentation), 124 (041312 - no record of species or genus), 140 (Pages 248-249 & 304 - recorded as *Vauquelinia californica* (Torrey) Sargent subsp. *sonorensis* W.J. Hess & Henrickson)*

***Vauquelinia californica* (J. Torrey) C.S. Sargent subsp. *californica*: Arizona Rosewood**

COMMON NAMES: Árbol [Palo] Prieto (“Black Tree”, Spanish: Durango)¹⁴⁰; Arizona Rose-wood (English)¹⁴⁰; Arizona Rosewood (a name also applied to the species); California Rosewood (a name also applied to the species); Few-flower Vauquelinia (English)¹⁴⁰; Few-flowered Vauquelinia (a name also applied to the species); Guayul [Guayule] (Spanish: Coahuila)¹⁴⁰; Palo Verde (Spanish: Durango)¹⁴⁰; Torrey Vauquelinia (English)¹⁴⁰; Ucas (Unknown: Mexico)¹⁴⁰. DESCRIPTION: Terrestrial perennial evergreen shrub or tree (ascending and or erect stems 6 to 20 feet in height); the branches are silver-gray; the flowers are white; flowering generally takes place between late February and mid-October (flowering records: one for late February, two for late April, one for late May, three for early June, one for mid-June, two for late June, three for mid-July, one for late July, one for mid-August, one for late September, one for early October and one for mid-October). HABITAT: Within the range of this species it has been reported from mountains; canyons; hillsides; bouldery and rocky slopes; amongst boulders and rocks; along roadsides, and creekbeds growing in dry bouldery and rocky ground, occurring from 1,800 to 5,000 feet in elevation in the woodland, grassland and desertscrub ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Vauquelinia californica* subsp. *californica* is native to southwest-central North America. *5, 6, 13 (species), 15 (species), 18 (species), 26 (species, color photograph of the species), 28 (species, color photograph [of the species] 76), 43 (041212 - species), 44 (041312 - no record of subspecies, species or genus), 46 (species, Page 375), 52 (species), 53 (species), 63 (041312), 85 (041312 - color presentation of dried material), 91, 115 (color presentation of the species), 124 (041312 - no record of subspecies, species or genus), 140 (Pages 248-249 & 304 - recorded as *Vauquelinia californica* (Torrey) Sargent subsp. *sonorensis* W.J. Hess & Henrickson)*

Rubiaceae: The Madder Family

Bouvardia glaberrima (see *Bouvardia ternifolia*)

***Bouvardia ternifolia* (A.J. Cavanilles) D.F. von Schlechtendal: Firecrackerbush**

SYNONYMY: *Bouvardia glaberrima* G. Engelm. COMMON NAMES: Akuitsi Uarhiraku (Purépecha); Cántaris (Hispanic); Cerillito (Hispanic); Chilito (Hispanic); Chuparroza (“Rose-sucker” a name also applied to other species, Spanish: Sonora)¹⁴⁰; Cigarrillo (Hispanic); Cigarrito; Clavillo (“Little Carnation” a name also applied to other species, Spanish: Arizona)¹⁴⁰; Contrahierba [Colorado] ([Red] Counter-poison, Antidote”, Spanish: Edo. México)¹⁴⁰; Corneta (Hispanic); Doncellita (“Little Lady”, Spanish: Oaxaca)¹⁴⁰; Erisipela (Hispanic); Escobilla (Hispanic); Expatli (Uto-Aztec: Náhuatl)¹⁴⁰; Firecrackerbush; Firecracker Bush (English: New Mexico)¹⁴⁰; Flor de Valleta (Hispanic); Hierba de Burro (Hispanic); Hierba del Indio (“Indian’s Herb”, Spanish: Sinaloa, Sonora)¹⁴⁰; Hierba del Pasma (“Herb for Pasma”, Spanish: Sonora)¹⁴⁰; Indita (“Little Indian Girl”, Spanish: Chihuahua)¹⁴⁰; Lengua de Vibora (Hispanic); Mirto [del Campo] (“[Wild] Myrtle”, Spanish: Coahuila, Durango)¹⁴⁰; Pasto (Hispanic); Rnanta (Oto-Manguean: Mazahua)¹⁴⁰; Rurikuchi (Hispanic); Rurikuçi (Uto-Aztec: Tarahumara)¹⁴⁰; Scarlet Bouvardia (English)¹⁴⁰; Smooth Bouvardia; Sombra de la Virgen (Hispanic); Tabaquillo (“Little Tobacco”, Spanish: Michoacán)¹⁴⁰; Tlacoxiuil (Uto-Aztec: Náhuatl)¹⁴⁰; Tlacoxóchitl <tlacosúchil> (Uto-Aztec: Náhuatl)¹⁴⁰; Tonati-sochit (Language Family Unknown: Hidalgo)¹⁴⁰; Trompetilla [Rosa] (“Little [Red] Trumpet”, Spanish: Hildago, Edo. México, Oaxaca, Sonora, Vera-cruz)¹⁴⁰; Trompetillo (Hispanic); Trumpetflower; Wipismal Je:j <wipismal jehj> (“Humming-bird’s Mother”, Uto-Aztec: Tohono O’odham)¹⁴⁰; Yerba de Zorrillo (“Little Skunk’s Herb”, Spanish: Mountain Pima)¹⁴⁰; Yita Ticuay (Mixteco en Guerrero). DESCRIPTION: Terrestrial perennial subshrub or shrub (ascending to erect stems 1 to 5 feet in

height); the leaves may be gray, pale green, green or dark green; the tubular flowers (1¼ inches in length with the petal lobes flaring to 5/16 inch in diameter) may be coral, orange, orange-red, pink (rarely), red, red-orange, reddish-orange, scarlet or white (rarely); flowering generally takes place between early May and early November (additional records: two for late December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; rocky canyons; canyonsides; rocky canyonsides; rocky canyon bottoms; sandy and humusy-loamy meadows; foothills; bouldery, rocky and gravelly hillsides; rocky, rocky-loamy, rocky-silty-loamy, gravelly, sandy-loamy and loamy slopes; rocky outcrops; amongst boulders and rocks; bases of boulders; banks; sandy flats; along rocky roadsides; within arroyos; bottoms of draws; bouldery ravines; along streams; in rocky streambeds; in sandy loam along creeks; in rocky riverbeds; along stony washes; drainages; along watercourses; bases of waterfalls; banks of creeks; edges of washes; rocky bottomlands, and rocky riparian areas preferring partial shade growing in moist and dry bouldery, rocky, rocky-sandy, stony, gravelly and sandy ground and rocky loam, rocky-silty loam, sandy loam, humusy loam and loam ground, occurring from 2,400 to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: This plant may be an attractive component of a restored native habitat. This plant attracts and provides nectar for hummingbirds, the Broad-billed Hummingbird (*Cyananthus latirostris*), Rufous Hummingbird (*Selasphorus rufus*) and Violet-crowned Hummingbird (*Amazilia violiceps*) have been observed visiting the flowers. *Bouvardia ternifolia* is native to southwest-central and southern North America. *5, 6, 10, 15 (recorded as *Bouvardia ternifolia* (Cav.) Schlecht.), 18, 28 (recorded as *Bouvardia glaberrima*, color photograph 566), 30, 43 (031411 - *Bouvardia ternifolia* Schltdl.), 44 (031411 - no record of genus or species), 46 (recorded as *Bouvardia glaberrima* Engelm., Page 807), 48, 63 (031411 - color presentation), 85 (031511 - color presentation), 86, 115 (color presentation), 124 (031411 - no record of genus or species), 140 (Pages 250-251 & 304)*

***Cephalanthus occidentalis* C. Linnaeus: Common Buttonbush**

SYNONYMY: *Cephalanthus occidentalis* C. Linnaeus var. *californicus* G. Bentham. COMMON NAMES: Americansiche Weissball (German); Bois Bouton (a name also applied to the genus *Cephalanthus*, French); Bois de Marais (French: Louisiana); Bois de Plomb (French); Box (a name also applied to other species, misapplied); Buck Brush (misapplied); Buckbrush (misapplied); Button Bush (a name also applied to other species and the genus *Cephalanthus*); Button Tree (a name also applied to other species and the genus *Cephalanthus*, misapplied); Button Willow; Button Wood (a name also applied to other species); Button-bush (a name also applied to other species and the genus *Cephalanthus*); Button-tree (a name also applied to other species, misapplied); Button-willow; Button-wood Shrub (a name also applied to other species); Buttonball (a name also applied to other species); Buttonbush (a name also applied to other species and the genus *Cephalanthus*); Buttonwillow; Buttonwood (a name also applied to other species); Buttonwood Shrub (a name also applied to other species); California Button Bush (for *C.o.* var. *californicus*); California Button Willow (for *C.o.* var. *californicus*); California Button-bush (for *C.o.* var. *californicus*); California Button-willow (for *C.o.* var. *californicus*); California Buttonbush (for *C.o.* var. *californicus*); California Buttonwillow (for *C.o.* var. *californicus*); Céphalante d'Occident (French); Cephalanthe d'Amerique (French); Cephalanthus Cortex; Common Button Bush; Common Button-bush; Common Buttonbush; Common Cottonbush; Crane Willow; Crane-willow; Crooked-wood (a name also applied to other species); Crookedwood (a name also applied to other species); Crouper; Crouper Brush; Crouper Bush (Ferrisburgh, Vermont); Crouper-brush; Crouper-bush (Ferrisburgh, Vermont); Crouperbrush; Eastern Buttonbush; Elbow-bush (a name also applied to other species); Elbowbush (a name also applied to other species); Globe Flower (a name also applied to other species); Globe-flower; Globe-flowers; Globeflower (a name also applied to other species); Honey-ball; Honey-balls (a name also applied to other species); Honey-bells (a name also applied to other species); Honeyballs; Knopfbusch (German); Little Snow-ball; Little Snowball; Mountain Globe Flower (a name also applied to other species); Mountain Globe-flower (a name also applied to other species); Mountain Globeflower (a name also applied to other species); Pin Ball; Pin-ball; Pinball (a name also applied to other species); Pond Buttonwood (Ferrisburgh, Vermont); Pond Dog Wood; Pond Dog-wood; Pond Dogwood; Pond-dogwood; River Bush (a name also applied to other species); River-bush (a name also applied to other species); Riverbush; Rosa de Juan; Snowball; Southern Buttonbush; Spanish Pin-cushion; Spanish Pincushion; Swamp Dogwood; Swamp Wood (a name also applied to other species); Swamp-wood (a name also applied to other species); Swampwood (a name also applied to other species); Western Buttonbush; White Ball (a name also applied to other species); Whiteball (a name also applied to other species). DESCRIPTION: Terrestrial perennial deciduous shrub or tree (3 to 33 feet in height and width); the bark is brown, gray or gray-brown; the twigs are reddish-brown; the leaves are bright green or yellow-green; the tiny flowers (clustered in balls 1 to 1½ inches in diameter) may be cream, creamy-white, white, white fading to rust, whitish or yellowish; flowering generally takes place between early June and early October; the mature button-like balls fruit (¾ to 1 inch in diameter) are made up of many brown or reddish-brown nutlets (¼ inch in length). HABITAT: Within the range of this species it has been reported from mountains; stony canyons; along rocky and sandy canyon bottoms; foothills; hillsides; amongst boulders and rocks; basins; valley floors; along roadsides; along streams; along and in bouldery and rocky streambeds; along creeks; along and in rocky and clayey creekbeds; riverbeds; along and in sandy washes; around lakes; along bogs; ciénegas; along marshes; along swamps; sloughs; along banks of creeks, rivers, drainage ways and lakes; along edges of rivulets, creeks, rivers and lakes; margins of lakes; along shores of lakes; terraces; bottomlands; stony and cobbly floodplains; along ditches, and sandy riparian areas growing in wet, moist or damp bouldery, rocky, stony, cobbly and sandy ground; sandy loam and loam ground; clay ground, and silty ground, occurring from sea level to 7,000 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was also noted as having been used as a drug or medication and the wood was made into game sticks. The flowers are fragrant, the foliage is poisonous. White-tailed Deer (*Odocoileus virginianus*) browse this plant; the flowers attract bees and butterflies, and water-birds and shore-birds

feed on the seeds. *Cephalanthus occidentalis* is native to northeast-central, south-central and southern North America. *5, 6, 13 (recorded as *Cephalanthus occidentalis* L. var. *californicus* Benth.), 15, 18, 28 (color photograph), 43 (042310), 44 (081311 - color photograph of *Cephalanthus occidentalis* var. *californicus*), 46 (recorded as *Cephalanthus occidentalis* L. var. *californicus* Benth., Page 807), 52 (color photograph), 63 (042310 - color presentation), 80 (This species is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. "This stream-bottom shrub contains a bitter glycoside and has been suspected of causing poisoning in cattle."), 85 (081411 - color presentation), 115 (color presentation), 124 (081311), 127*

Cephalanthus occidentalis var. *californicus* (see *Cephalanthus occidentalis*)

***Galium microphyllum* A. Gray: Bracted Bedstraw**

COMMON NAMES: Bedstraw; Bracted Bedstraw; Small-leaf Bed-straw¹⁴⁰. DESCRIPTION: Terrestrial perennial forb/herb (prostrate, decumbent, ascending or erect stems 4 to 16 inches in height/length, plants were observed and described as being 4 inches in height and 8 inches in width); the foliage is pale gray-green; the flowers are pale cream-yellow, green, greenish, greenish-white, greenish-yellow, purplish, white, off-white, yellow, yellow-green, pale yellowish or yellowish-brown; flowering generally takes place between early March and late October (additional records: one for early December and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; plateaus; rock cliffs; rock walls; rocky canyons; along canyon walls; along bedrock, cobbly, gravelly and sandy canyon bottoms; rocky bases of cliffs; crevices in rocks; pockets of soil in rocks; rocky bluffs; rocky ledges; under ledges; rocky ridges; rocky ridgelines; rocky hills; rocky hillsides; escarpments; rocky, rocky-gravelly-sandy, gravelly, gravelly-loamy and sandy-clayey-loamy slopes; rocky outcrops; amongst boulders and rocks; dells; along sandy roadsides; rocky arroyos; rocky-sandy bottoms of arroyos; draws; along rocky ravines; seeps; beside springs; along streams, along and in sandy streambeds; along creeks; along and in rocky creekbeds; along and in rocky, gravelly and sandy washes; within sandy pools; cienegas; banks of creeks and washes; edges of streams and washes; sandy margins of watercourses; bouldery-sandy terraces; floodplains, and bouldery riparian areas growing in moist, damp and dry bouldery, bouldery-sandy, rocky, rocky-gravelly-sandy, rocky-sandy, cobbly, gravelly and sandy ground; gravelly loam and sandy-clayey loam ground, and humusy ground, occurring from 700 to 8,100 feet in elevation in the forest, woodland, scrub, grassland and wetland ecological formations. NOTE: *Galium microphyllum* is native to southwest-central and southern North America. *5, 6, 18 (genus), 43 (072410), 46 (Page 810), 58, 63 (060212), 85 (072410 - color presentation of dried material), 140 (Pages 250 & 304)*

Hedyotis pygmaea (see *Houstonia wrightii*)

***Houstonia wrightii* A. Gray: Pygmy Bluet**

SYNONYMY: *Hedyotis pygmaea* J.J. Roemer & J.A. Schultes. COMMON NAMES: Ground Lilic; Lilac Weed; Pygmy Bluet; Wright Bluets; Wright's Bluets. DESCRIPTION: Terrestrial perennial forb/herb (1 to 14 inches in height); the leaves are pale green or dark green; the flowers (to ¼ inch in diameter) may be pale bluish-lavender, blue, blue-white, pale lavender, lavender, lavender-white, light pink, pale pinkish-white, pink, pinkish-white, pale purple, pale purple-white, purple, purplish-white, light violet, violet, white, white-pale lavender, whitish-lavender, whitish-pale pink, whitish-pink or white tinged purple; flowering generally takes place between late May and late October. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; mesas; plateaus; rocky cliffs; rocky canyons; canyon bottoms; knolls; rocky ridges; ridgetops; rocky ridgelines; loamy clearings in forests and woodlands; grassy meadows; foothills; hills; rocky and loamy hillsides; rocky, rocky-sand-loamy, gravelly, sandy-loamy, sandy-clayey-loamy, loamy and clayey slopes; bedrock and rocky outcrops; amongst boulders and rocks; sandy and clayey-loamy flats; valley floors; valley bottoms; along roadsides; within sandy arroyos; within clayey-loamy draws; bottoms of draws; springs; along streams; along creeks; along rocky creekbeds; along and in rocky, rocky-sandy, stony, gravelly and sandy washes; rocky drainages; marshes; depressions; along shores of lakes; benches; terraces; bottomlands; riparian areas, and disturbed areas in bouldery, rocky, rocky-sandy, stony, gravelly and sandy ground; rocky loam, rocky-gravelly loam, rocky-sandy loam, gravelly loam, sandy loam, sandy-clayey loam, clayey loam and loam ground; rocky-clay and clay ground, and silty ground, occurring from 4,000 to 13,000 feet in elevation in the forest, woodland, scrub, grassland and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America. *Houstonia wrightii* is native to southwest-central and southern North America. *5, 6, 28 (color photograph), 43 (072909), 46, 63 (072909), 85 (072909), 127*

Salicaceae: The Willow Family

Populus arizonica (see *Populus fremontii* subsp. *fremontii* and/or *Populus fremontii* subsp. *mesetae*)

***Populus fremontii* S. Watson: Frémont Cottonwood**

COMMON NAMES: Alamo (a name also applied to other species and the the genus *Populus*, Spanish); Alamo Cottonwood (a name also applied to other species); Arizona Cottonwood; Cottonwood (a name also applied to other species, the genus *Populus* and the Salicaceae); Fremont Alamo; Frémont Alamo; Fremont Cottonwood; Frémont Cottonwood; Fremont Poplar; Frémont Poplar; Fremont Western Cottonwood; Frémont Western Cottonwood; Fremont's Alamo; Frémont's Alamo; Fremont's Cottonwood; Frémont's Cottonwood; Fremont's Poplar; Frémont's Poplar; Fremont's Western Cottonwood;

Frémont's Western Cottonwood; Meseta Cottonwood; Rio Grande Cottonwood; Riparian Forest cottonwood; Western Cottonwood (a name also applied to other species). DESCRIPTION: Terrestrial perennial deciduous tree (20 inches to 112 feet in height with a wide and flat-topped crown, one sapling was described as being 20 inches in height and 8 inches in width); the older fissured bark is brownish, gray, gray-brown, grayish-white, pale tan or whitish; the branches are gray-brown to reddish-brown; the twigs are yellow before turning a bone-white, pale gray, tan or tannish-white; the leaves are a shiny gray-green, bright green or yellow-green turning golden-yellow or lemon-yellow in autumn; the flowers (catkins with the male (1 to 3/4 inches in length) and female (2 to 5 inches in length) on separate trees) may be greenish-yellow, reddish or yellowish-green; flowering generally takes place between early February and early May (additional records: one for late August and one for mid-September); the cottony seeds are fuzzy and white. HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; along rocky canyons; along rocky and sandy canyon bottoms; chasms; bases of cliffs; bluffs; edges of meadows; foothills; along bouldery hills; rocky hillsides; bouldery-loamy, rocky, gravelly-sandy and sandy-clayey-loamy slopes; amongst rocks; gravelly and clayey flats; basins; valley floors; along valley bottoms; along railroad right-of-ways; gravelly-loamy and sandy-loamy roadsides; within sandy-silty arroyos; bottoms of arroyos; draws; springs; along streams; gravelly streambeds; along creeks; rocky and sandy creekbeds; along rivers; sandy-clayey-loamy riverbeds; along and in rocky-sandy, sandy and loamy washes; drainages; waterholes; oases; cienegas; freshwater marshes; along rocky and sandy banks of streams, creeks, rivers and washes; along edges of streams, rivers, ponds and lakes; sandy-clayey margins of rivers and playas; along shores of lakes; gravel and sand bars; rocky-sandy benches; terraces; bottomlands; sandy floodplains; mesquite bosques; stock tanks; edges of reservoirs; along canals; along ditches; ditch banks; bouldery-gravelly-sandy, rocky-silty-loamy, sandy and silty-loamy riparian areas, and disturbed areas growing in areas where subsurface water is available in bouldery, bouldery-gravelly, bouldery-gravelly-sandy, bouldery-loamy, rocky, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-silty loam, gravelly loam, gravelly-sandy loam, sandy loam, sandy-clayey loam, silty loam and loam ground; clay ground, and sandy silty and silty ground, occurring from sea level to 9,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop; it was also noted as having been used as an indicator of planting seasons; as tools; as musical instruments, fuel and as a drug or medication. The Frémont Cottonwood may have a life span of more than 130 year of age. It reaches reproductive maturity in 5 to 10 years. Consider planting male trees if the "cotton" produced by female trees is objectionable. The Frémont Cottonwood is very useful in slowing soil and stream bank erosion and in re-vegetating damaged riparian areas. The cottonwood provides food for Beavers, Elk, Deer, and squirrels, and the Golden Eagle (*Aquila chrysaetos*), Swainson's Hawk (*Buteo swainsoni*), Red-tailed Hawk (*Buteo jamaicensis*), Bell's Vireo (*Vireo bellii*) build nests in the crown. Cottonwood bark is a principle food of the American Beaver (*Castor canadensis*), and the stems of poplars are used in the construction of their dams. The trees are sometimes parasitized by the Yellow (or Colorado Desert) Mistletoe (*Phoradendron macrophyllum* subsp. *macrophyllum*). Native stands of Cottonwood Trees have been decimated due to the altering of natural water flows, the clearing and development of the flood plains, stream channelization and the loss of suitable recruitment sites. When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Populus fremontii* is native to southwest-central and southern North America. *5, 6, 13, 18, 26 (color photograph), 28 (color photograph 57), 43 (042410), 46 (Pages 208-209), 48, 52 (color photograph), 53, 58, 63 (042310 - color presentation), 77, 85 (042410 - color presentation), 115 (color presentation), 127*

***Populus fremontii* S. Watson subsp. *fremontii*: Frémont Cottonwood**

SYNONYMY: *Populus arizonica* C.S. Sargent; *Populus fremontii* S. Watson var. *arizonica* (C.S. Sargent) W.L. Jepson; *Populus fremontii* S. Watson var. *macdougalii* (J.N. Rose) W.L. Jepson; *Populus fremontii* S. Watson var. *pubescens* C.S. Sargent; *Populus fremontii* S. Watson var. *thornberi* C.S. Sargent; *Populus fremontii* S. Watson var. *toumeyii* C.S. Sargent. COMMON NAMES: Alamo (a name also applied to the species, other species and the genus *Populus*, Spanish); Alamo Cottonwood (a name also applied to the species and other species); Arizona Cottonwood (a name also applied to the species); Cordate-leaved Cottonwood; Cottonwood (a name also applied to the species, other species, the genus *Populus* and to the Salicaceae); Fremont Alamo (typical, a name also applied to the species); Frémont Alamo (typical, a name also applied to the

species); Fremont Cottonwood (typical, a name also applied to the species); Frémont Cottonwood (typical, a name also applied to the species); Fremont Poplar (typical, a name also applied to the species); Frémont Poplar (typical, a name also applied to the species); Fremont Western Cottonwood (typical, a name also applied to the species); Frémont Western Cottonwood (typical, a name also applied to the species); Fremont's Alamo (typical, a name also applied to the species); Frémont's Alamo (typical, a name also applied to the species); Fremont's Cottonwood (typical, a name also applied to the species); Frémont's Cottonwood (typical, a name also applied to the species); Fremont's Poplar (typical, a name also applied to the species); Frémont's Poplar (typical, a name also applied to the species); Fremont's Western Cottonwood (typical, a name also applied to the species); Frémont's Western Cottonwood (typical, a name also applied to the species); Rio Grande Cottonwood (a name also applied to the species); Riparian Forest Cottonwood (typical, a name also applied to the species); Western Cottonwood (a name also applied to the species and other species). DESCRIPTION: Terrestrial perennial deciduous tree (10 to 112 feet in height with a wide and flat-topped crown); the older bark may be brownish, gray, gray-brown, grayish-white, pale tan or whitish; the branches are gray-brown to reddish-brown; the twigs are yellow before turning a bone-white, pale gray, tan or tannish-white; the leaves are a shiny bright green or yellow-green turning golden-yellow or lemon-yellow in autumn; the flowers (catkins with the male (1 to 3/4 inches in length) and female (2 to 5 inches in length) on separate trees) may be greenish-yellow, reddish or yellowish-green; flowering generally takes place between early February and early May; the cottony seeds are fuzzy and white. HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; along canyons; canyon bottoms; foothills; along bouldery hills; bouldery-loamy and rocky slopes; gravelly and clayey flats; basins; valley floors; springs; along streams; streambeds; along creeks; sandy-loamy creekbeds; along rivers; sandy-clayey-loamy riverbeds; along washes; drainages; waterholes; oases; ciénegas; along banks of streams, creeks and rivers; edges of ponds and lakes; margins of playas; along shores of lakes; gravel and sand bars; terraces; bottomlands; floodplains; mesquite bosques; stock tanks; edges of reservoirs; along ditches; bouldery-gravelly-sandy riparian areas, and disturbed areas growing in areas where subsurface water is available in bouldery, bouldery-gravelly-sandy, bouldery-loamy, rocky, gravelly and sandy ground; sandy loam and sandy-clayey loam ground; clay ground, and sandy silty ground, occurring from below sea level to 9,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Populus fremontii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop; it was also noted as having been used as an indicator of planting seasons; as tools; as musical instruments, fuel and as a drug or medication. The Frémont Cottonwood may have a life span of more than 130 year of age. It reaches reproductive maturity in 5 to 10 years. Use as a specimen plant in a large area and as a re-vegetation plant for the areas immediately adjacent to the main channel of streams, creeks, and rivers. Consider planting male trees if the "cotton" produced by female trees is objectionable. The cottonwood provides food for Beavers, Elk, Deer, and squirrels, and the Golden Eagle (*Aquila chrysaetos*), Swainson's Hawk (*Buteo swainsoni*), Red-tailed Hawk (*Buteo jamaicensis*), Bell's Vireo (*Vireo bellii*) build nests in the crown. Cottonwood bark is a principle food of the American Beaver (*Castor canadensis*), and the stems of poplars are used in the construction of their dams. The trees are sometimes parasitized by the Yellow (or Colorado Desert) Mistletoe (*Phoradendron macrophyllum* subsp. *macrophyllum*). Native stands of Cottonwood Trees have been decimated due to the altering of natural water flows, the clearing and development of the flood plains, stream channelization and the loss of suitable recruitment sites. **When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Nettleleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Populus fremontii* subsp. *fremontii* intergrades with *Populus fremontii* subsp. *mesetae*. *Populus fremontii* subsp. *fremontii* is native to southwest-central and southern North America. *5, 6, 13, 15, 18 (species), 26 (species, color photograph of species), 28 (species, color photograph of the species 57), 43 (042410), 44 (081411), 46 (Pages 208-209), 48 (species), 52 (species, color photograph of the species), 53 (species), 58 (species), 63 (042410 - color presentation of bark), **85** (081411), 115 (color presentation of the species), 124 (081411 - no record of species or subspecies; genus record), 127 (species), 140 (Page 304)***

***Populus fremontii* S. Watson subsp. *mesetae* J.E. Eckenwalder: Frémont Cottonwood**

SYNONYMY: *Populus arizonica* C.S. Sargent, *Populus fremontii* S. Watson var. *mesetae* (J.E. Eckenwalder) E.L. Little, *Populus mexicana* auct. non A. Wesmael. COMMON NAMES: Alamo (a name also applied to the species, other species

and the genus *Populus*, Spanish); Alamo Cottonwood (a name also applied to the species and other species); Arizona Cottonwood (a name also applied to the species); Cottonwood (a name also applied to the species, other species, the genus *Populus* and to the Salicaceae); Frémont Cottonwood (a name also applied to the species); Frémont Poplar (a name also applied to the species); Frémont's Cottonwood (a name also applied to the species); Meseta Cottonwood; Rio Grande Cottonwood (a name also applied to the species); Western Cottonwood (a name also applied to the species and other species). DESCRIPTION: Terrestrial perennial deciduous tree (10 to 112 feet in height with a rounded crown); the older bark is brownish, gray, gray-brown, grayish-white, pale tan or whitish; the branches are gray-brown to reddish-brown; the twigs are yellow before turning a bone-white, pale gray, tan or tannish-white; the leaves are a shiny bright green or yellow-green turning golden-yellow or lemon-yellow in autumn; the flowers (catkins with the male (1 to 3/4 inches in length) and female (2 to 5 inches in length) on separate trees) may be greenish-yellow, reddish or yellowish-green; flowering generally takes place between early February and early May; the cottony seeds are fuzzy and white. HABITAT: Within the range of this species it has been reported from canyons; canyon bottoms; foothills; valley floors; springs; along streams; streambeds; along creeks; along rivers; along sandy washes; drainages; waterholes; oases; cienegas; along banks of streams, creeks and rivers; (sandy-clayey) margins of rivers; gravel and sand bars; terraces; bottomlands; sandy floodplains; mesquite bosques; along ditches; riparian areas, and disturbed areas growing in areas where subsurface water is available in rocky, gravelly and sandy ground; sandy-clayey loam ground; clay ground, and sandy silty ground, occurring from sea level to 9,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Populus fremontii*, was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or fiber crop; it was also noted as having been used as an indicator of planting seasons and as tools; musical instruments, fuel and as a drug or medication. The Frémont Cottonwood may have a life span of more than 130 year of age. It reaches reproductive maturity in 5 to 10 years. Consider planting male trees if the "cotton" produced by female trees is objectionable. The Cottonwood Tree is very useful in slowing soil and stream bank erosion and in re-vegetating damaged riparian areas. The cottonwood provides food for Beavers, Elk, Deer, and squirrels, and the Golden Eagle (*Aquila chrysaetos*), Swainson's Hawk (*Buteo swainsoni*), Red-tailed Hawk (*Buteo jamaicensis*), Bell's Vireo (*Vireo bellii*) build nests in the crown. Cottonwood bark is a principle food of the American Beaver (*Castor canadensis*), and the stems of poplars are used in the construction of their dams. The trees are sometimes parasitized by the Yellow (or Colorado Desert) Mistletoe (*Phoradendron macrophyllum* subsp. *macrophyllum*). Native stands of Cottonwood Trees have been decimated due to the altering of natural water flows, the clearing and development of the flood plains, stream channelization and the loss of suitable recruitment sites. When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Populus fremontii* subsp. *mesetae* intergrades with *Populus fremontii* subsp. *fremontii*. *Populus fremontii* S. Watson subsp. *mesetae* is native to southwest-central and southern North America. *5, 6, 13 (species), 18 (species), 26 (species, color photograph of the species), 28 (species, color photograph of the species 57), 43 (042410), 46 (species, Pages 208-209), 48 (species), 52 (species, color photograph of the species), 53 (species), 58 (species), 63 (042410), 77 (species), 85 (042410 -), 115 (color presentation of the species), 127 (species)*

Populus fremontii var. *arizonica* (see *Populus fremontii* subsp. *fremontii*)

Populus fremontii var. *macdougali* (see *Populus fremontii* subsp. *fremontii*)

Populus fremontii var. *mesetae* (see *Populus fremontii* subsp. *mesetae*)

Populus fremontii var. *pubescens* (see *Populus fremontii* subsp. *fremontii*)

Populus fremontii var. *thorneri* (see *Populus fremontii* subsp. *fremontii*)

Populus fremontii var. *toumey* (see *Populus fremontii* subsp. *fremontii*)

Populus mexicana (see *Populus fremontii* subsp. *mesetae*)

***Salix exigua* T. Nuttall: Narrowleaf Willow**

SYNONYMY: *Salix exigua* T. Nuttall var. *nevadensis* (S. Watson) C.K. Schneider; *Salix exigua* T. Nuttall var. *stenophylla* (P.A. Rydberg) C.K. Schneider. COMMON NAMES: Acequia Willow; Basket Willow; Bila (Zuni for Willow, Bark of the Willow is Bila Tsikwa:we); Coyote Willow; Desert Willow; Dusky Willow; Gray Willow; Hinds Willow; Hinds' Willow; Linear-leaf Willow (Oklahoma); Linear-leaved Willow (Oklahoma); Longleaf Willow; Narrow-leaf Sandbar Willow; Narrow Leaf Willow; Narrow-leaf Willow; Narrow-leaved Willow; Narrowleaf Willow; Parish Willow; Parish' Willow; Sandbar Willow; Saule à Feuilles Argentees (French); Silver-leaf Willow; Silver-leaved Willow; Silverleaf Willow; Silvery Desert Willow; Slender Willow; Texas Sandbar Willow. DESCRIPTION: Terrestrial perennial deciduous shrub or tree (20 inches to 33 feet in height); the bark is greenish or green-gray becoming gray-brown with age; the branches are gray-brown, red-brown or yellow-brown; the twigs are reddish or yellow-brown aging to gray or red-brown; the leaves are gray-green, silvery or yellow-green; the flowers (catkins with the male ½ to 1 inch in length) and female (½ to 1½ inches in length) on separate trees) are yellow; the anthers are yellow; flowering generally takes place between early February and early September (additional records: two for early October, three for mid-October, one for mid-November and two for late December). HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; along rocky, gravelly, sandy and clayey canyons; along bouldery-sandy, rocky, rocky-sandy, sandy, sandy-loamy and sandy-silty canyon bottoms; silty bases of cliffs; crevices in rocks; meadows; foothills; hills; bouldery-sandy, rocky, cindery, sandy and clayey-loamy slopes; amongst boulders; sandy steppes; prairies; plains; cindery, sandy and silty flats; basins; hollows; sandy valley floors; bouldery-gravelly valley bottoms; coastal flats; along gravelly roadsides; within rocky and stony arroyos; silty bottoms of draws; gulches; ravines; bottoms of ravines; stony and gravelly seeps; springs; along and in bouldery-rocky, gravelly and sandy streams; bouldery, bouldery-stony-sandy-silty, bouldery-sandy, rocky-sandy and sandy streambeds; along and in rocky and rocky-gravelly-sandy creeks; along and in bouldery, sandy and silty creekbeds; along and in rivers; along and in rocky-sandy, gravelly-sandy and sandy riverbeds; along and in bedrock, rocky, gravelly, gravelly-sandy and sandy washes; along rocky, gravelly-sandy, sandy-loamy and clayey-loamy drainages; among and in pools; along and in silty ponds; along lakes; waterholes; boggy areas; cienegas; freshwater marshes; silty depressions; along (rocky and sandy) banks of springs, streams, streambeds, creeks, creekbeds; rivers, riverbeds and washes; along (rocky, gravelly, sandy, sandy-loamy and silty) edges of springs, streams, creeks, rivers, riverbeds, washes, ponds, lakes and saltwater marshes; along (rocky and rocky-sandy) margins of rivers, lakes and lakebeds; along (silty) shores of rivers and lakes; mudflats; along gravel and sand bars; beaches; sandy benches; sandy terraces; sandy bottomlands; bedrock, bouldery, bouldery-gravelly-sandy, stony-sandy, gravelly, gravelly-sandy, sandy and silty floodplains; lowlands; mesquite bosques; willow thickets; borders of reservoirs; along canals; along canal banks; along ditches; along sandy ditch banks; rocky-gravelly-sandy, rocky-sandy, gravelly-loamy and sandy riparian areas, and disturbed areas growing in shallow water and wet, moist, damp and dry bouldery, bouldery-rocky, bouldery-gravelly, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-sandy, shaley, stony, stony-sandy, cindery, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam and clayey loam ground; clay ground, and bouldery-stony-sandy silty, rocky silty, sandy silty and silty ground, occurring from sea level to 9,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food (candy), fodder, beverage, and/or fiber crop; it was also noted as having been used as a fuel, as tools, to make clappers and whistles, as a drug or medication and as ceremonial items. The Narrowleaf Willow may be useful in re-vegetating riparian areas and planting on stream bottoms to prevent surface erosion. It is more of a thicket-forming than a tree-forming species with individual stems having a life span of 10 to 20 years of age. Narrowleaf Willow is browsed by Moose (*Alces alces*), Elk (*Cervus elaphus*), Mule Deer (*Odocoileus hemionus*) and American Beaver (*Castor canadensis*) with the thickets providing excellent cover for birds and other wildlife. When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soap-tree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Salix exigua* is native to northwestern, central and southern North America. *5, 6, 15, 18 (genus), 28 (color photograph 39), 43 (042510), 46 (recorded as *Salix exigua* Nutt., Page 211 including *Salix exigua* Nutt. var.

nevadensis (Wats.) Schneid. and *Salix exigua* Nutt. var. *stenophylla* (Rydb.) Schneid.), 48 (genus), 52 (color photograph), 53, 63 (042510 - color presentation), 85 (042610 - color presentation), 124 (110810), 127, 140 (Page 304)*

Salix exigua var. *nevadensis* (see *Salix exigua*)

Salix exigua var. *stenophylla* (see *Salix exigua*)

***Salix gooddingii* C.R. Ball: Goodding's Willow**

SYNONYMY: *Salix gooddingii* C.R. Ball var. *variabilis* C.R. Ball; *Salix nigra* H. Marshall var. *vallicola* W.R. Dudley. COMMON NAMES: Black Willow (a name also applied to other species); Dudley Willow; Dudley Willow's; Goodding Black Willow; Goodding Willow; Goodding's Black Willow; Goodding's Willow; Gooding's Willow (error); Goodings Willow (error); Southwestern Willow; Valley Willow (a name also applied to other species); Western Black Willow (a name also applied to other species). DESCRIPTION: Terrestrial perennial deciduous tree (4 to 98 feet in height with a broad rounded crown); the older bark is gray and deeply furrowed; the branches are gray-brown to yellow-brown; the twigs are brown, pale gray, gray-tan, yellow or yellow-brown; the leaves (2 to 4 inches in length) are green, yellow or yellowish-green; the flowers (male catkins (1½ to 3 inches in length) and female catkins (1 to 2½ inches in length) are on separate trees) are cream, green, yellow or yellow-green; flowering generally takes place between mid-December and late June (additional records: one for mid-July and one for early mid-August); the seeds are cottony. HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; rocky mesas; plateaus; hanging gardens; along rocky canyons; along bedrock, bouldery-gravelly-sandy, rocky and silty canyon bottoms; meadows; foothills; rocky hillsides; rocky, rocky-sandy, sandy, clayey-loamy and silty slopes; amongst boulders and rocks; bouldery niches; gravelly, sandy, clayey and silty flats; basins; valley floors; along bouldery-sandy valley bottoms; along railroad right-of-ways; roadsides; along and in arroyos; rocky bottoms of arroyos; along and in rocky draws; gullies; gravelly-clayey-loamy ravines; in sand and silt about seeps; in gravel and sand around springs; in sand along and in streams; sandy streambeds; in sand along creeks; along and in bouldery-sandy-silty, rocky, cobbly-gravelly-silty, sandy and silty creekbeds; in gravel and sand along rivers; along and in bouldery, sandy and silty riverbeds; along and in gravelly-sandy washes; along sandy drainages; along and in rocky, gravelly and silty-clayey drainage ways; along rocky-sandy-clayey-loamy watercourses; around and in pools; boggy areas; ciénegas; freshwater marshes; depressions; along (bouldery-stony-gravelly-sandy, bouldery-gravelly-sandy, gravelly-clayey, sandy and loamy) banks of streams, creeks, rivers and washes; along (muddy, sandy and sandy-clayey) edges of gullies, seeps, streams, creeks, ponds, playas, freshwater marshes and sloughs; (muddy, rocky and sandy) margins of rivers, ponds, pools, lakes, lakebeds and marshes; along shores of rivers and lakes; mudflats; gravel and sand bars; sandy beaches; silty benches; sandy terraces; bottomlands; along boulder-stony-gravelly-sandy-silty, bouldery-gravelly-sandy-loamy, rocky, cobbly-gravelly, gravelly, gravelly-sandy, gravelly-silty, sandy and silty floodplains; willow thickets; mesquite woodlands; along fencelines; along dikes; rocky edges and beds of stock tanks; banks of reservoirs; along canals; canal banks; along and in cindery and sandy ditches; along ditch banks; rocky, gravelly, gravelly-sandy, gravelly-sandy-silty, sandy, sandy-clayey and silty riparian areas, and disturbed areas growing in shallow water; muddy, and wet or moist bouldery, bouldery-stony-gravelly-sandy, bouldery-gravelly-sandy, bouldery-sandy, rocky, rocky-sandy, cobbly-gravelly, cindery, gravelly, gravelly-sandy and sandy ground; bouldery-gravelly-sandy loam, rocky-sandy-clayey loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; gravelly clay, sandy clay, silty clay and clay ground, and bouldery-stony-gravelly-sandy silty, cobbly-gravelly-silty, gravelly silty, gravelly-sandy silty and silty ground, occurring from below sea level to 8,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat and useful in the revegetating of disturbed riparian areas. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, beverage and/or fiber crop; it was also noted as having been used as a tool and as a drug or medication. This plant is important in stream bank protection and in controlling erosion and provides valuable shade for fish and other wildlife. The Goodding Willow provides cover and browse for wildlife, and the bark is eaten by beavers. This plant is a preferred food plant of the American Beaver (*Castor canadensis*) and is used in the building of their lodges and dens. When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquini*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koerberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans*

major), **Fremont Cottonwood** (*Populus fremontii* subsp. *fremontii*). *Salix gooddingii* is native to southwest-central and southern North America. *5, 6, 13 (recorded as *Salix nigra* Marsh. var. *vallicola* Dudley), 15, 18 (genus), 28 (color photograph 62), 43 (042610), 44 (081411), 46 (Page 212), 48 (genus), 52 (“Goodding Willow” listed as a common name under *Salix nigra* Marsh), 53, 58, 63 (042610 - color presentation), 77, **85** (081411 - color presentation), 115 (color presentation), 124 (081411), 127, 140 (Page 304)*

Salix gooddingii var. *variabilis* (see *Salix gooddingii*)

Salix nigra var. *vallicola* (see *Salix gooddingii*)

Sapindaceae: The Soapberry Family

Dodonaea angustifolia (see *Dodonaea viscosa*)

***Dodonaea viscosa* (C. Linnaeus) N.J. von Jacquin: Florida Hophbush**

SYNONYMY: *Dodonaea angustifolia* C. Linnaeus; *Dodonaea viscosa* N.J. von Jacquin var. *angustifolia* (C. Linnaeus) G. Bentham; *Dodonaea viscosa* N.J. von Jacquin var. *linearis* (W.H. Harvey & O.W. Sonder) E.E. Sherff; *Dodonaea viscosa* N.J. von Jacquin var. *linearis* (W.H. Harvey & O.W. Sonder) E.E. Sherff forma *arizonica* (A. Nelson) E.E. Sherff. COMMON NAMES: A’ali’i; Airia; Akeake; Alamillo (“Little Winged One”, Spanish: Chihuahua, Sonora)¹⁴⁰; Aria <airia> (Spanish: Mexico)¹⁴⁰; Cachoveano (Hispanic); Chapulixctli (Hispanic); Chapuliztle; Chupuliztle <chapuliz> (Spanish)¹⁴⁰; [Hierba de la] Cucaracha (“Cockroach [Herb]”, Spanish: Durango)¹⁴⁰; Cuerno de Cabra (“Goat’s Horn”, Spanish: Oaxaca)¹⁴⁰; Faxima-vermelha (Portuguese: Brazil); Florida Hophbush; Gitarán (Spanish: Mexico, Puerto Rico)¹⁴⁰; Granadina (Spanish: Baja California)¹⁴⁰; Guachomó (Spanish: Mexico)¹⁴⁰; Guayabillo (“Little Guava”, Spanish: Baja California)¹⁴⁰; Hop Bush; Hop-bush (English: Arizona to Florida)¹⁴⁰; Hopseed Bush (English)¹⁴⁰; Hopshrub; Huesito (“Little Bone”, Spanish: Chiapas)¹⁴⁰; Jarilla [de Loma] (“[Wild] Little Arrow”, Spanish: Chihuahua, Sonora to Oaxaca)¹⁴⁰; Jirimú (Spanish: Michoacán)¹⁴⁰; Ma□cikári (Uto-Aztecan: Guarijío)¹⁴⁰; Matagusano (Hispanic); Mundito (“Little World”, Spanish: Hidalgo)¹⁴⁰; Munditos; Narrow-leaf Hophbush (*D.v.* var. *angustissima*); Ocotillo (“Little Torch”, Spanish: Guanajuato, Hidalgo)¹⁴⁰; Palomilto (Spanish: San Luis Potosí)¹⁴⁰; Pirimu (Tarascan: Purépecha)¹⁴⁰; Pirumu (Hispanic); Switch Sorrel (English: Arizona)¹⁴⁰; Switch-sorrel; Tapachile (Spanish)¹⁴⁰; Tarachico; Tarachiki (Mexican); Tarachique [Tarachico] (Spanish: Ópata, Sonora)¹⁴⁰; Taratsike (Uto-Aztecan: Ópata, Sonora)¹⁴⁰; Tonalcotl-xihuitl [Toñalokotl] (Uto-Aztecan: Náhuatl)¹⁴⁰; Varal (“Branch Thicket”, Spanish: Arizona, Hidalgo, Sonora)¹⁴⁰; Vassoura-do-campo (Portuguese: Brazil); Vassoura-vermelha (Portuguese: Brazil); Vassourão-vermelho (Portuguese: Brazil); Wedge-leaf Hophbush (*D.v.* var. *cuneata*). DESCRIPTION: Terrestrial perennial evergreen shrub or tree (ascending and/or erect stems 2 to 26 feet in height; one plant was observed and described as being 5 feet in height and 20 inches in width, one plant was observed and described as being 7 feet in height and width, one plant was observed and described as being 10 feet in height and 6 feet in width); the bark is light gray or gray; the stems are brown, reddish or reddish-brown; the leaves are green, dark green or yellow-green; the flowers are green, greenish, pale yellow, yellow-green, yellowish, yellowish-green or yellow-orange; flowering generally takes place throughout the year between early January and late December; the papery winged fruit may be brown, light golden, pinkish-red, purple, red-yellow, tan or light yellow-green drying straw-colored. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky mountainsides; cliffs; bases of cliffs and rock faces; rocky canyons; canyonsides; canyon bottoms; rocky and chalky ridges; foothills; rocky and rocky-gravelly hills; rocky and sandy hillsides; rocky, rocky-loamy, gravelly and sandy-clayey-loamy slopes; bases of rocky slopes; bajadas; bouldery and rocky outcrops; amongst boulders and rocks; banks; flats; valley floors; along roadsides; arroyos; bottoms of arroyos; rocky-gravelly draws; gullies; along streams; bouldery and rocky streambeds; in creekbeds; along and in rocky washes; along and in rocky drainages; banks of streams and creeks; (rocky-sandy) edges of washes; sandy beaches; gravelly terraces; sandy bottomlands; mesquite bosques; along fencelines, and riparian areas growing in damp and dry bouldery, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, gravelly and sandy ground; rocky loam and sandy-clayey loam ground; humusy ground, and chalky ground, occurring from sea level to 7,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. *Dodonaea viscosa* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea; South America; islands in the Pacific Ocean; western, eastern and southern Asia; western, eastern and southern Africa and coastal islands in the Indian Ocean; Australia and New Zealand. *5, 6, 13 (recorded as *Dodonaea viscosa* Jacq. var. *angustifolia* (L.f.) Bentham, Page 145), 18, 26 (color photograph), **28** (color photograph 841), 30, 43 (120310 - *Dodonaea angustifolia* L.f., *Dodonaea viscosa* Jacq., *Dodonaea viscosa* var. *angustifolia* (L.f.) Benth., *Dodonaea viscosa* var. *linearis* (Harv. & Sond.) Sherff), 44 (120310 - no record of genus or species), **46** (recorded as *Dodonaea viscosa* Jacq., *Dodonaea viscosa* var. *linearis* (Harv. & Sond.) Sherff forma *arizonica* (A. Nels.) Sherff, Pages 528-529), **48**, 63 (102010 - color presentation), 77 (single plant a possible escape from cultivation), **85** (102010 - color presentation), 91 (recorded as *Dodonaea angustifolia* L.f., Pages 183-185), 115 (color presentation), 124 (031511 - no record of genus or species), 127, 140 (recorded as *Dodonaea viscosa* Jacquin var. *angustifolia* (Linnaeus f.) Bentham, Pages 254-255 & 305)*

Dodonaea viscosa var. *angustifolia* (see *Dodonaea viscosa*)

Dodonaea viscosa var. *linearis* (see *Dodonaea viscosa*)

Dodonaea viscosa var. *linearis* forma *arizonica* (see footnote 46 under *Dodonaea viscosa*)

Sapindus drummondii (see *Sapindus saponaria* var. *drummondii*)

***Sapindus saponaria* C. Linnaeus var. *drummondii* (W.J. Hooker & G.W. Arnott) L.D. Benson: Western Soapberry**

SYNONYMY: *Sapindus drummondii* W.J. Hooker & G.W. Arnott. COMMON NAMES: Amole (a name also applied to the species); Amole <yamole, yamolli> (“Soap”, Spanish)¹⁴⁰; Amole de Bolita (“Soap Balls”, Spanish: Mexico)¹⁴⁰; Amolillo (“Little Soapy One”, Spanish: Sonora)¹⁴⁰; Amolio (a name also applied to the species); Arbolio (“Little Tree”, Spanish: Sonora)¹⁴⁰; Arbolillo (a name also applied to the species); Bibi <pipe, pipal> (“fruit”, Oto-Manguan: Zapotec)¹⁴⁰; Boliche (Language Family Unknown: Sinaloa)¹⁴⁰; Cherioni (a name also applied to the species); Cherrion (a name also applied to the species); Cirioni <cherioni> (Spanish: Arizona)¹⁴⁰; Guayul (a name also applied to the species); Indian Soap Plant (a name also applied to the species); Jaboncillo (“Little Soap”, Spanish: Nuevo León, San Luis Potosí, Sonora, Tamaulipas and south)¹⁴⁰; Jutuhui (Uto-Aztec: Guarijio)¹⁴⁰; Matamuchacho (a name also applied to the species); Matamuchacho (“Boy Killer”, Spanish: Sonora)¹⁴⁰; Mexican Soapberry (a name also applied to the species); Ojo de Loro (a name also applied to the species); Palo Blanco (a name also applied to the species); Palo Blanco (“White Tree”, Spanish: Chihuahua)¹⁴⁰; Soap Berry (a name also applied to the species); Soap-berry (English)¹⁴⁰; Soapberry (a name also applied to the species); Tehistle <tehoitzli, tehuixtle, tehuitle> (“Sharp Rock”, Uto-Aztec: Náhuatl)¹⁴⁰; Tehuistle (a name also applied to the species); Tubchi <tupchi> (Uto-Aztec: Mayo, Sonora)¹⁴⁰; Tzatzupa (a name also applied to the species); Western Soapberry (a name also applied to the species); Wild Chinaberry (a name also applied to the species); Wild China-tree (a name also applied to the species); Wild Chinatree (a name also applied to the species). DESCRIPTION: Terrestrial perennial winter deciduous shrub or tree (7 to 50 feet in height with a rounded crown 25 to 30 feet in width); the bark is gray, grayish, grayish-brown, reddish-brown or yellow-gray; the twigs are gray-brown, yellow-green or yellowish-gray; the leaflets are a light green or dull yellow-green turning to yellow-gold in the fall; the flowers (1/8 to 1/4 inch in diameter in clusters 6 to 9 inches in length) are cream, cream-yellow, greenish-white, white, yellow or yellowish-white; flowering generally takes place between early May and mid-July (additional record: one for late March, flowering as late as August has been reported); the poisonous fruits (3/8 to 1/2 inch in diameter) are amber, golden, orange, orange-brown, yellowish or yellow-amber turning black or reddish-brown when dry. HABITAT: Within the range of this species it has been reported from mountains; along canyons; canyon sides; rocky, gravelly-clayey, sandy-loamy and loamy canyon bottoms; talus slopes; crevices in rock; meadows; foothills; hilltops; rocky and rocky-clayey hillsides; rocky, rocky-clayey, gravelly-clayey, sandy-loamy and clayey slopes; amongst boulders; sand dunes; sandy-silty berms; plains; bouldery flats; valley floors; along roadsides; along and in arroyos; within draws; gulches; ravines; springs; along rocky streams; along streambeds; along and in creeks; along and in creekbeds; bouldery and sandy riverbeds; along and in bedrock, rocky and rocky-gravelly washes; along bouldery drainages; along watercourses; along banks of streams, creeks and drainages; along edges of creekbeds and washes; sandy shores of riverbeds; terraces; sandy bottomlands; floodplains; mesquite bosques; fencerows; rocky riparian areas; sandy waste places, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy and sandy ground; sandy loam and loam ground; rocky clay, gravelly clay, silty clay and clay ground, and sandy silty and silty ground, occurring from 1,100 to 6,500 feet in elevation in the woodland, scrub, grassland, desert scrub and wetland ecological formation. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as tools, for making toys and as a drug or medication. *Sapindus saponaria* var. *drummondii* is native to south-central and southern North America. *5, 6, 13, 15, 28 (color photograph), 43 (042710), 46 (Page 528), 52 (recorded as *Sapindus drummondii* Hook. & Arn., color photograph), 53 (recorded as *Sapindus drummondii* Hook. & Arn.), 58, 63 (042710 - color presentation), 80 (*Sapindus saponaria* var. *drummondii* is listed as a Rarely Poisonous and Suspected Poisonous Range Plant. “This small tree growing along streams is considered poisonous but it is seldom eaten by livestock.”), 85 (042710 - color presentation), 91), 115 (color presentation of the species), 127, 140 (Pages 255-257 & 305 - recorded as *Sapindus drummondii* Hooker & Arnott)*

Scrophulariaceae: The Figwort Family

Antirrhinum nuttallianum (see *Sairocarpus nuttallianus*)

***Castilleja lanata* A. Gray (subsp. *lanata* is the subspecies reported as occurring in Arizona): Sierra Woolly Indian Paintbrush**

COMMON NAMES: Indian Paint Brush; Painted Cup; Sierra Woolly Indian Paintbrush; Sierran Woolly Indian Paintbrush; Woolly Paintbrush. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (1 to 2 feet in height); the color of the foliage has been described as being dark green, reddish-green or whitish-green; the flowers bright orange-red, pink with an orange tinge, bright red, red-carmine, reddish-orange, scarlet or yellow; flowering generally takes place between early February and early November. HABITAT: Within the range of this species it has been reported from mountains; mesas; bases of cliffs; rocky canyons; rocky canyon bottoms; talus slopes; crevices in rocks; buttes; rock ledges; ridgetops; foothills; gravelly-clayey-

loamy hills; hilltops; bouldery, rocky, rocky-gravelly and gravelly hillsides; rocky, rocky-gravelly, rocky-gravelly-loamy, rocky-sandy, gravelly and gravelly-loamy slopes; rocky outcrops; amongst rocks; basins; roadsides; gulches; ravines; along streams; gravelly-clayey-loamy streambeds; along and in rocky and sandy washes; rocky drainages; banks of washes, and riparian areas in bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly and sandy soils; rocky-gravelly loam, gravelly loam and gravelly-clayey loam soils, and rocky clay soils, occurring from 1,800 to 8,800 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Castilleja lanata* is native to southwest-central and southern North America. *5, 6, 15, 28 (color photograph), 43 (072909), 46, 48 (gen.), 63 (072909), 80 (Species of the genus *Castilleja* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Various species of this genus are secondary or facultative selenium absorbers."), 85 (072909), 115 (color presentation), 140 (Page 305)*

Linaria canadensis var. *texana* (see *Nuttallanthus texanus*)

Linaria texana (see *Nuttallanthus texanus*)

***Maurandella antirrhiniflora* (F.W. von Humboldt & A.J. Bonpland ex C.L. von Willdenow) W.H. Rothmaler:
Roving Sailor**

SYNONYMY: *Maurandya antirrhiniflora* F.W. von Humboldt & A.J. Bonpland ex C.L. von Willdenow. COMMON NAMES: Blue Snapdragon Vine; Chicka-biddy (English)¹⁴⁰; Climbing Snapdragon; Little Snapdragon Vine; Mexican Snapdragon Vine; Mipil (Spanish: Hidalgo)¹⁴⁰; Roving Sailor (English: Arizona, New Mexico, Texas to Florida)¹⁴⁰; Shí Násdzid <si nal_ídi> (Athapascan: Navajo)¹⁴⁰; Snapdragon Maurandya; [Blue, Little, Violet, Vine] Snapdragon [Vine] (English)¹⁴⁰; Snapdragon Vine; Tlonanesdidzi ("Vine", Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Twining Snapdragon (a name also applied to other species); Twining Snapdragon Vine; Violet Twining; Violet Twining Snapdragon. DESCRIPTION: Terrestrial perennial forb/herb or vine (climbing or twining stems 1 to 8 feet in length; one plant was observed and described as being a climbing vine 3 feet by 2 feet); the arrowhead-shaped leaves are a bright green; the flowers may be blue, blue-lavender, blue-purple, blue-violet, blue & white, lavender, lavender-white, lilac, magenta, magenta-lilac, magenta-pink, magenta-purple, maroon-pink, pink, pink-fuchsia, pink-purple, light purple, purple, dark purple, purple-blue, purple-lilac, purple-pink, purple-red, purple-rose, purple & white, purple & yellow, pale purplish, bright red, reddish-lavender, reddish-pink, reddish-purple, red-rose, rose, rose-pink, rose-purple, rose-red, pale violet or white; flowering generally takes place between late March and early November (additional records: one for late February and one for early March); the fruits are cup-shaped. HABITAT: Within the range of this species it has been reported from mountains; bouldery and gravelly mesas; rims of canyons; cliffs; rock walls; bouldery, rocky and gravelly-loamy canyons; along canyon walls; bouldery, rocky and cobbly canyon bottoms; gorges; bases of cliffs; gravelly talus slopes; crevices in rocks; rocky ledges; rocky-gravelly meadows; cinder cones; foothills; rocky hills; rocky hillsides; bedrock, bouldery, rocky, rocky-gravelly, rocky-gravelly-sandy-loamy, rocky-sandy, stony, cindery, gravelly, gravelly-sandy, gravelly-loamy, sandy and sandy-clayey-loamy slopes; bajadas; rocky outcrops; amongst boulders, rocks and pebbles; rocky alcoves; debris fans; sandy lava flows; flats; valley floors; along gravelly-loamy roadsides; within arroyos; clayey bottoms of arroyos; draws; gulches; seeps; rocky springs; along streams; along and in rocky and gravelly streambeds; along creeks; rocky creekbeds; along rivers; riverbeds; along and in rocky, shaley, gravelly and sandy washes; drainages; drainage ways; watercourses; along sandy waterfalls; in shallow pools; along (rocky and sandy) banks of arroyos, streams, creeks, rivers and washes; edges of washes and lakes; along margins of arroyos and washes; (pebbly) shores of lakes; gravel bars; benches; shaley and sandy terraces; floodplains, and bouldery riparian areas growing in wet, moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, shaley, stony, cobbly, cobbly-gravelly, cindery, gravelly, gravelly-sandy, pebbly and sandy ground; rocky-gravelly-sandy loam, gravelly loam, sandy-clayey loam and clayey loam ground; clay ground, and silty ground often observed growing in the shade under and in shrubs and trees and amongst rocks, occurring from 1,200 to 8,800 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The vines will die back to the ground in the winter months. *Maurandella antirrhiniflora* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (recorded as *Maurandya antirrhiniflora*, color photograph 667), 43 (042710), 44 (021611), 46 (recorded as *Maurandya antirrhiniflora* Humb. & Bonpl., Page 767), 58, 63 (042710 - color presentation), 77 (recorded as *Maurandya antirrhiniflora*, color photograph #93), 85 (042710 - color presentation including habitat), 86 (recorded as *Maurandya antirrhiniflora*, color photograph), 115 (color presentation), 124 (021611 - no record of species), 140 (Pages 192-193 & 305 - recorded as *Maurandya antirrhiniflora* Humboldt & Bonpland)*

Maurandya antirrhiniflora (see *Maurandella antirrhiniflora*)

***Mimulus guttatus* A.P. de Candolle: Seep Monkeyflower**

COMMON NAMES: Almizcle Amarillo (Spanish: Mexico)¹⁴⁰; Antapittsekwana (Uto-Aztecán: Shoshoni)¹⁴⁰; Baseró (Uto-Aztecán: Tarahumara, Chihuahua)¹⁴⁰; Berro (Portuguese: Brazil); Berro ("Water Cress", Spanish: Chihuahua, Sonora)¹⁴⁰; Common Large Monkey-flower; Common Large Monkeyflower; Common Monkey Flower (a name also applied to other species); Common Monkey-flower (a name also applied to other species); Common Monkeyflower (a name also applied to other species); Common [Round-leaf, Seep, Spring, Spotted, Yellow] Monkey-flower (English)¹⁴⁰; Common Stream Monkeyflower; Common Streamside Monkeyflower; Common Yellow Monkey Flower; Common Yellow Monkey-flower; Common Yellow Monkeyflower; Creek Monkey Flower; Creek Monkey-flower; Creek Monkeyflower; Creekside Monkeyflower; Golden Monkey

Flower; Golden Monkey-flower; Golden Monkeyflower; Lama (“Mud”, Spanish: Chihuahua, Sonora); Langsdorff’s Yellow Monkey Flower; Langsdorff’s Yellow Monkey-flower; Large Common Monkey-flower; Large Yellow Monkey-flower; Llantén <lantén> Cimmarón (“Wild *Plantago*”, Spanish: Chihuahua)¹⁴⁰; Mim Gut; Mim-gut; Mimgut; Mimulo (Spanish: Mexico)¹⁴⁰; Monkey Flower (a name also applied to the genus *Mimulus* and the Phrymaceae); Monkey-flower (a name also applied to the genus *Mimulus* and the Phrymaceae); Monkeyflower (a name also applied to the genus *Mimulus* and the Phrymaceae); Paakor□b□ (Uto-Aztecan: Kawaiisu)¹⁴⁰; Parish’s Monkeyflower; Seep Monkey-flower (a name also applied to other species); Seep Monkeyflower (a name also applied to other species); Seep Spring Mimulus; Seep Spring Monkey Flower; Seep-spring Mimulus; Seep-spring Monkey Flower; Seep-spring Monkeyflower; Spotted Monkey Flower; Spring Seep Mimulus; Spring-seep Monkey-flower; Spring-seep Monkeyflower; Spring-seep Mimulus; Stream Mimulus; Stream Monkey Flower; Stream Monkey-flower; Stream Monkeyflower; Streamside Monkey Flower; Parish’s Monkeyflower; Streamside Monkey-flower; Streamside Monkeyflower; Suugádi Mamaradi (Uto-Aztecan: Northern Tepehuan, Chihuahua)¹⁴⁰; Tocoiahui (Uto-Aztecan: Guarijío)¹⁴⁰; Toka□oiawi (Uto-Aztecan: Mayo)¹⁴⁰; Yellow Common Monkeyflower; Yellow Creek Monkeyflower; Yellow Monkey Flower (a name also applied to other species); Yellow Monkey-flower (a name also applied to other species); Yellow Stream Monkeyflower; Yellow-stream Monkeyflower. DESCRIPTION: Terrestrial (or semi-aquatic) annual or perennial forb/herb (decumbent and/or erect stems 2 inches to 5 feet in height); the leaves are dark green; the flowers are bright orange-yellow, pale yellow, yellow or yellow with brown-red, golden, maroon, orange, orange-brown, orange-red, red, red-brown, reddish, reddish-brown or reddish-orange spots; flowering generally takes place between mid-February and early October (additional records: one for early January, one for mid-January, one for late January, one for late October, one for early November, one for mid-November and one for early December; flowering has also been reported as having infrequent flowering in October, November and December). HABITAT: Within the range of this species it has been reported from bouldery mountains; mountaintops; rocky and gravelly-loamy mountainsides; sandy and sandy-clayey mesas; rocky plateaus; rock walls; rocky cliffs; hanging gardens; rocky bases of cliffs; rocky canyons; along bedrock, rocky, rocky-sandy, gravelly-loamy, sandy and loamy-clayey canyon bottoms; rocky talus slopes; crevices in rocks; bluffs; rocky ledges; ridges; rocky clearings in forests and woodlands; gravelly-loamy, sandy-loamy, clayey and clayey-loamy meadows; rocky foothills; bouldery and rocky hills; hilltops; bouldery, rocky, rocky-loamy-clayey, rocky-clayey, shaley, shaley-gravelly and clayey hillsides; bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-gravelly-sandy, gravelly, gravelly-loamy, sandy, sandy-loamy, sandy-clayey, loamy, clayey-loamy and peaty-sandy slopes; alluvial fans; bajadas; bedrock, bouldery, rocky and clayey outcrops; along and amongst boulders and rocks; on boulders and rocks; felsenmeer; sand dunes; alcoves; prairies; sandy and loamy flats; uplands; rocky-gravelly-loamy basins; sandy valley floors; valley bottoms; along coastal beaches; coastal bluffs; coastal terraces; roadcuts; along rocky, gravelly and sandy roadsides; along and in bedrock and sandy-loamy arroyos; rocky bottoms of arroyos; muddy draws; bottoms of draws; gullies; along gulches; ravines; bottoms of ravines; gravelly-sandy-clayey-loamy and sandy soils around and in seeps; seeping springs; mucky, rocky-sandy, gravelly, sandy-silty and loamy soils around and in springs; geysers; around seeping streams; along streamlets; bouldery, rocky, gravelly, sandy and silty soils along and in streams; rocky, rocky-sandy, gravelly and sandy streambeds; along brooks; muddy, gravelly, sandy and loamy soils along and in creeks; along and in bouldery, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy creekbeds; along and in rivers; along and in gravelly and sandy riverbeds; along and in bedrock, rocky, rocky-sandy, stony, cobbly-gravelly, gravelly and sandy washes; within bouldery, rocky, cobbly-loamy and loamy drainages; within drainage ways; along rocky and sandy watercourses; at waterfalls; oases; around and in pools; vernal pools; around ponds; along lakes; lakebeds; sandy bogs; ciénegas; in freshwater marshes; rocky-sandy marshy areas; gravelly-clayey-loamy swampy areas; bedrock depressions; along (muddy, rocky, stony, gravelly-sandy-clayey-loamy, sandy, sandy-clayey, clayey-loamy and loamy) banks of arroyos, springs, rivulets, streams, creeks, creekbeds, rivers, pools and lakes; along and in (muddy, rocky-sandy, gravelly, gravelly-sandy, sandy and sandy-silty) edges of springs, rivulets, streams, creeks, rivers, washes, pools, ponds, lakes and bogs; (gravelly and sandy) margins of springs, streams, creeks and ponds; along (muddy and sandy) shores of rivers and lakes; mudflats; draw-down areas; along mud, rocky-sand, gravel, gravelly-sand and sand bars; cobbly-sandy benches; coves; hummock fields; shelves; sandy and silty-loamy terraces; along bouldery, sandy and loamy bottomlands; gravelly-sandy and sandy floodplains; clayey lowlands; dams; along beaver dams; gravelly shores of beaver ponds; edges of stock tanks; canals; edges of canals; along and in ditches; ditch banks; rocky-sandy, gravelly, gravelly-sandy, gravelly-sandy-loamy and sandy riparian areas, and disturbed areas growing in shallow water; mucky; muddy, and wet, moist, damp and dry bouldery, bouldery-rocky, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, shaley-gravelly, stony, cobbly, cobbly-gravelly, cobbly-sandy, gravelly, gravelly-sandy, sandy and peaty-sandy ground; rocky-gravelly loam, cobbly loam, gravelly loam, gravelly-sandy loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam, clayey loam, silty loam, silty-clayey loam and loam ground; rocky-loamy clay, rocky clay, sandy clay, loamy clay and clay ground, and sandy silty and silty ground, occurring from sea level to 13,000 (14,300?) feet in elevation in the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat, consider planting with native mosses, sedges and violets. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop; it was also noted as having been used as a drug or medication. *Mimulus guttatus* is native to northwestern, northern, west-central and southern North America. *5, 6, 15, 28 (color photograph 516), 43 (042810), 44 (), 46 (Page 781), 48 (genus), 58, 63 (081411 - color presentation including habitat), 77 (color photograph #52), 85 (081811 - color presentation), 86 (color photograph), 115 (color presentation), 124 (081411), 127, 140 (Pages 261-262 & 298 - placed in the Phrymaceae)*

***Nuttallanthus texanus* (G.H. Scheele) D.A. Sutton: Texas Toadflax**

SYNONYMY: *Linaria canadensis* (C. Linnaeus) G.L. Dumont de Courset var. *texana* (G.H. Scheele) F.W. Pennell; *Linaria texana* G.H. Scheele. COMMON NAMES: Blue Toad Flax; Blue Toadflax; Old Field Toad Flax; Old-field Toadflax; Texas Toad-flax; Texas Toadflax; Toadflax. DESCRIPTION: Terrestrial annual or biennial forb/herb (erect stems 8 to 32 inches in height); the basal rosette of leaves are dark green; the flowers may be light blue, pale blue-violet, blue, blue-purple, blue-violet, dark blue-lavender, lavender, lavender-blue, light purple, purple, dark purple, purple-blue, purple & white & yellow, purplish or violet; flowering generally takes place between late January and late May (additional records: one for late May, one for late June, one for late July, one for mid-September and one for mid-October). HABITAT: Within range reported from mountains; mountaintops; sandy mesas; canyons; gravelly canyon bottoms; crevices in rocks; clayey pockets of soil; ridges; ridgetops; foothills; rocky hills; rocky and rocky-gravelly hillsides; bouldery, bouldery-sandy, rocky, rocky-gravelly, gravelly-sandy, gravelly-loamy, gravelly-clayey-loamy, sandy and clayey slopes; rocky-sandy alluvial fans; bajadas; rocky outcrops; amongst boulders; bases of boulders; along volcanic dikes; sandy lava flows, banks; plains; bouldery-sandy, gravelly, gravelly-clayey-loamy and sandy flats; railroad right-of-ways; along sandy roadsides; along sandy arroyos; rocky draws; ravines; along seeps; springs; along streams; along and in rocky, rocky-sandy and sandy streambeds; along sandy creeks; rocky-sandy, cobbly and gravelly creekbeds; along rivers; along riverbeds; along and in gravelly-sandy and sandy washes; sandy drainages; within clayey depressions; loamy banks of rivers and washes; gravelly-sandy edges of arroyos; terraces; sandy floodplains; along sandy ditches; ditch banks; around stock tanks; rocky, gravelly-sandy and sandy riparian areas; recently burned areas of chaparral and coastal scrub, and disturbed areas growing in wet, moist, damp and dry bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam, gravelly-clayey loam, sandy loam and loam ground, and clay ground, occurring from sea level to 7,500 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Nuttallanthus texanus* is native to northwest-central, south-central and southern North America and western and southern South America. *5, 6, 15, 28 (recorded as *Linaria texana*, color photograph), 43 (072510), 46 (recorded as *Linaria texana* Scheele Page 765), 58, 63 (072510 - color presentation), 77 (color photograph #92 labeled *Linaria texana*), 85 (072510 - color presentation), 86 (note under *L. canadensis*), 115 (color presentation), 140 (Page 305)*

***Penstemon parryi* (A. Gray) A. Gray: Parry's Beardtongue**

COMMON NAMES: Desert Penstemon; Parry Beardtongue; Parry's Beardtongue; Parry Penstemon; Parry's Penstemon; Pichelitos; Varita de San Jose; Wind's Flower. DESCRIPTION: Terrestrial perennial forb/herb (2 to 5 feet in height and 1 to 3 feet in width); the foliage is gray-green; the flowers may be lavender, magenta, pink, pinkish-lavender, pinkish-purple, purple, purple-magenta, pink, red, rose-magenta, rose-pink or scarlet; flowering generally takes place between mid-February and late June (additional records: one for mid-July, one for late July and one for early August). HABITAT: Within the range of this species it has been reported from mountains; rocky mountainsides; mesas; bases of cliffs; rocky canyons; rocky canyon bottoms; rocky ridgetops; meadows; foothills; rocky hills; rocky, rocky-gravelly and gravelly hillsides; rocky slopes; bajadas; rocky outcrops; amongst rocks; alpine fell fields; plains; gravelly flats; basins; railroad right-of-ways; along rocky, gravelly, gravelly-sandy, sandy and clayey roadsides; rocky and sandy arroyos; gullies; seeps; around streams; streambeds; sandy creekbeds; along and in rocky and sandy washes; within drainages; along banks of rivers and washes; margins of rivers; benches; floodplains; riparian areas, and disturbed areas growing in dry rocky, rocky-gravelly, gravelly, gravelly-sandy and sandy ground; gravelly-sandy loam and clayey loam ground, and clay ground, occurring from 900 to 11,500 feet in elevation in the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Broad-billed Hummingbird (*Cyanthus latirostris*) and Costa's Hummingbird (*Calypte costae*) have been observed visiting the flowers. *Penstemon parryi* is native to southwest-central and southern North America. *5, 6, 10, 15, 16, 18, 28 (color photograph 673), 43 (072909), 44 (081811 - no record of species; genus record), 46 (Page 773), 48 (genus), 58, 63 (042810 - color presentation), 77 (color photograph #95), 80 (Species of the genus *Penstemon* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Species of *Penstemon* are facultative or secondary selenium absorbers."), 85 (081811 - color presentation), 86 (color photograph), 115 (color presentation), 124 (081811 - no record of species; genus record), 140 (Page 298 - placed in the Plantaginaceae)*

***Penstemon pseudospectabilis* M.E. Jones: Desert Penstemon**

COMMON NAMES: Arizona Penstemon; Canyon Penstemon; Desert Penstemon; Mohave Beardtongue; Nevada Penstemon; Rosey Desert Beardtongue. DESCRIPTION: Terrestrial perennial forb/herb, subshrub or shrub (erect stems 1 to 4 feet in height and 18 inches to 2 feet in width); the stems may be magenta; the leaves are gray or green; the flowers may be cerise, fuchsia, fuchsia-pink, lavender, lavender-red, magenta, maroon, pink, dark pink, pink-orange-salmon, pink-purple, purple, purplish-pink, raspberry, red, reddish-pink, rose, rose-pink, rose-purple, rosy-magenta or rosy-pink; flowering generally takes place between mid-February and late June (additional records: one for mid-January, one for late July, one for late October, three for early November, one for late November and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; canyon rims; rocky canyons; canyon sides; rocky canyon bottoms; meadows; foothills; rocky hills; along bouldery-rocky, rocky-gravelly-loamy and sandy-loamy hillsides; rocky and gravelly slopes; gravelly-sandy bajadas; bedrock outcrops; bases of outcrops; amongst boulders and rocks; rocky flats; along rocky roadbanks; gravelly roadsides; ravines; springs; in sandy streambeds; along creeks; along rivers; along and in sandy and sandy-clayey washes; within shallow pools; banks of streams and creeks; riparian areas, and disturbed areas growing in shallow water and moist, damp and dry bouldery, bouldery-rocky, rocky, cindery, pebbly, gravelly, gravelly-sandy and sandy ground; rocky-gravelly loam and sandy loam ground, and gravelly clay and sandy clay ground sometimes in the shade of boulders and trees, occurring from 300 to 8,000

feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Costa's Hummingbird (*Calypte costae*) and Rufous Hummingbird (*Selasphorus rufus*) have been observed visiting the flowers. *Penstemon pseudospectabilis* is native to southwest-central and southern North America. *5, 6, 10, 18, 28 (color photograph), 43 (071510), 46 (Pages 774-775), 48 (genus), 63 (071510 - color presentation), 80 (Species of the genus *Penstemon* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Species of *Penstemon* are facultative or secondary selenium absorbers."), 85 (071510 - color presentation), 115 (color presentation)*

***Sairocarpus nuttallianus* (G. Bentham ex A.L. de Candolle) D.A. Sutton: Violet Snapdragon**

SYNONYMY: *Antirrhinum nuttallianum* G. Bentham ex A.L. de Candolle. COMMON NAMES: Nuttall Snapdragon; Violet Snapdragon; Violet Toad's-mouth. DESCRIPTION: Terrestrial annual or biennial forb/herb (erect stems 12 to 40 inches in height); the foliage is dark green, the lower leaves may be reddish; the flowers (3/8 inch in length and width) may be blue, blue-violet, blue & white, dark blue, dark blue (with a golden center), bluish, dark indigo-blue, lavender, light purple, purple, purple (with a white center), purple-lavender, dark purple-blue, purplish, purplish-blue, violet, violet & blue-purple, violet (with cream-colored markings) or dark violet; flowering generally takes place between mid-February and late June (additional records: two for late July, one for early August, two for mid-September, one for mid-October and one for mid-November). HABITAT: Within the range of this species it has been reported from mountains; rocky and sandy mesas; rocky cliffs; bases of cliffs; rocky and stony canyons; along sandy and silty canyon bottoms; talus slopes; sandy crevices in boulders and rocks; sandy pockets of soil; bluffs; ledges; ridges; rocky ridgetops; bouldery-rocky and rocky hills; bouldery-rocky, rocky and loamy hillsides; bouldery, bouldery-sandy, rocky and rocky-clayey slopes; pediments; around rocky outcrops; amongst boulders and rocks; bases of boulders; sand dunes; bouldery-rocky; flats; ocean bluffs; bases of ocean bluffs; coastal slopes; coastal flats; sandy roadsides; along stony arroyos; within rocky gullies; ravines; streambeds; along creeks; along cobbly and sandy creekbeds; within rocky and sandy washes; sandy drainages; (sandy) banks of arroyos and rivers; along (sandy) edges of streambeds and washes; margins of lakes; gravelly-sandy riparian areas; recently burned areas of chaparral and coastal sage scrub, and disturbed areas growing in wet, moist, damp and dry bouldery, bouldery-rocky, bouldery-gravelly, bouldery-sandy, rocky, rocky-sandy, stony, cobbly, gravelly-sandy and sandy ground; sandy loam and loam ground; loamy clay and rocky-clay and clay ground, and silty ground often found in shaded areas, occurring from sea level to 4,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. *Sairocarpus nuttallianus* is native to southwest-central and southern North America. *5, 6, 15, 28 (recorded as *Antirrhinum nuttallianum*, color photograph), 43 (072510 - *Sairocarpus nuttallianus* (A.DC.) D.A. Sutton), 46 (recorded as *Antirrhinum nuttallianum* Benth., Page 766), 63 (072510 - color presentation), 77, 85 (072510 - color presentation), 140 (Page 305)*

Stemodia arizonica (see *Stemodia durantifolia*)

***Stemodia durantifolia* (C. Linnaeus) O. Swartz: Whitewoolly Twintip**

SYNONYMY: *Stemodia arizonica* F.W. Pennell. COMMON NAMES: Arizona Stemodia; Blue Stemwort; Blue Streamwort; Purple Stemodia; White Woolly Stemodia; White Woolly Twintip; White-woolly Stemodia; White-woolly Twintip; White-woolly Twintip; Whitewoolly Twintip; Whitewoolly Twintip. DESCRIPTION: Terrestrial annual forb/herb (decumbent and/or erect stems 12 to 28 inches in height); the foliage may be pale green or green; the flowers may be blue, blue with a yellow throat, dark blue, blue-purple with a white throat, lavender, purple, dark purple, purple with a yellow throat, purple-blue, dark violet with a white throat, violet-blue or white; flowering generally takes place between early January and late October (additional records: one for mid-November, one for late November, one for early December and two for late December). HABITAT: Within the range of this species it has been reported from mountains; rock cliffs; rock walls; bases of cliffs; rocky and gravelly canyons; along rocky and sandy canyon bottoms; crevices in boulders and rocks; limestone ridges; hills; hillsides; rocky and sandy slopes; amongst rocks; barrens; sandy flats; rocky, stony, gravelly and sandy arroyos; bottoms of ravines; rocky seeps; sandy springs; streamlets over bedrock; in rock, gravel and sand along streams; bouldery, bouldery-sandy, rocky and sandy streambeds; creekbeds; in sand along rivers; bouldery-sandy, rocky-sandy, gravelly and sandy riverbeds; in bouldery, rocky-sandy and sandy washes; within drainages; waterholes; oases; marshes; along (muddy and sandy) banks of arroyos, streams, streambeds, creeks, rivers and pools; (rocky and sandy) edges of arroyos; streams, rivers, washes, waterholes and pools; margins of rivers; rocky-sandy benches; rocky-sandy bottomlands; floodplains; lowlands; rocky and gravelly-sandy riparian areas, and disturbed areas growing in shallow water; muddy, and wet, moist, damp and dry (rarely reported, seasonally wet) bouldery, bouldery-sandy, rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground, occurring from sea level to 4,100 (one record at 7,900) feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Stemodia durantifolia* is native to south-central and southern North America; (and possibly Central America though no records were located) coastal islands in the Caribbean Sea, and South America. *5, 6, 15, 43 (041312), 44 (041312), 46 (Page 782), 63 (041312), 77, 85 (041312 - color presentation), 106 (041312), 115 (041312 - color presentation), 124 (041312 - no record of species or genus), 140 (Page 298 - placed in the Plantaginaceae)*

***Veronica peregrina* C. Linnaeus subsp. *xalapensis* (K.S. Kunth) F.W. Pennell: Hairy Purslane Speedwell**

SYNONYMY: *Veronica peregrina* C. Linnaeus var. *xalapensis* (K.S. Kunth) F.W. Pennell. COMMON NAMES: Hairy Purslane Speedwell; Jalapa Speedwell; Necklace Speedwell; Necklace Weed; Neckweed; Purslane Speedwell; Veronica-de-xalapa (Portuguese). DESCRIPTION: Aquatic or terrestrial annual forb/herb (4 to 12 inches in height); the leaves are yellow-

green; the tiny flowers may be blue, pale lavender, pink-white, purple, purple-blue, white, white-blue or white-light pink; flowering generally takes place between early February and mid-October; the heart-shaped fruits are reddish. HABITAT: Within the range of this species it has been reported from mountains; grassy mesas; plateaus; bases of cliffs; along bouldery and rocky canyons; bedrock and bouldery canyon bottoms; bluffs; buttes; ledges; ridges; rocky ridgetops; openings in forests; clayey, clayey-loamy and silty meadows; bouldery hills; sandy hilltops; bouldery and rocky hillsides; bouldery, rocky-gravelly, shaley, gravelly-sandy, gravelly-clayey, gravelly-silty-loamy, sandy and silty slopes; rocky-sandy-loamy and gravelly-sandy alluvial fans; bouldery and rocky outcrops; amongst rocks; sand dunes; clayey-loamy prairies; plains; gravelly-clayey and loamy flats; uplands; sandy hollows; valley floors; muddy valley bottoms; coastal plains; roadcuts; along gravelly and gravelly-sandy roadsides; within bedrock arroyos; draws; bottoms of draws; gulches; grassy ravines; within muddy seeps; around springs; in muddy and clayey soils along streams; along and in bouldery-sandy and sandy streambeds; along creeks; along rocky-sandy, cobbly, gravelly-sandy and sandy creekbeds; along rivers; sandy riverbeds; along and in muddy, rocky, rocky-clayey, rocky-silty, gravelly and sandy washes; along rocky, rocky-sandy and rocky-silty drainages; within drainage ways; along waterways; waterholes; around and in clayey and clayey-loamy pools; vernal pools; silty-clayey poolbeds; in rocks around silty ponds; pondbeds; in lakes; lakebeds; playas; around and in lagoons; boggy areas; ciénegas; silty marshes; mud holes; loamy-clayey depressions; along and in clayey swales; along (muddy, rocky, sandy, sandy-loamy, sandy-silty and loamy) banks of streams, creeks, rivers, pools, ponds and lakes; along (muddy and sandy) edges of streams, rivers, washes, pools, ponds, lakes and swamps; along (muddy, gravelly and clayey) margins of streamlets, streams, creeks, rivers, pools, ponds and lakes; along (mucky, muddy and sandy) shorelines of ponds and lakes; muddy draw-down areas; gravelly-silty-loamy mudflats; rocky-sand, gravel, gravelly-sand and sand bars; rocky-sandy and sandy beaches; benches; clayey hummocks; sandy terraces; bottomlands; silty-clayey floodplains; lowlands; dams; below dikes; in silty-clayey stock tanks; sandy, muddy and silty soils around and in stock tanks (charcos, represos); muddy-rocky edges and shorelines of reservoirs; along ditches; silty trenches; rocky, cobbly, gravelly-sandy, sandy and sandy-clayey riparian areas; waste places, and disturbed areas growing in shallow water; mucky; muddy, and wet, soggy, moist, damp and dry bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, cobbly, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly loam, gravelly-clayey loam, gravelly-silty loam, sandy loam, clayey loam and loam ground; rocky clay, gravelly clay, sandy clay, loamy clay, silty clay and clay ground, and rocky silty, sandy silty and silty ground, occurring from 100 to 10,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Veronica peregrina* subsp. *xalapensis* is native to southwest-central and southern North America; Central America and coastal Islands in the Caribbean Sea, and eastern, western and southern South America. *5, 6, 15, 18 (genus), 43 (042810 - *Veronica peregrina* var. *xalapensis* Kunth), 46 (Page 785), 58, 63 (042810 - color presentation), 77, 85 (082011 - color presentation of dried material), 101 (color photograph of species)*

Veronica peregrina var. *xalapensis* (see *Veronica peregrina* subsp. *xalapensis*)

Simaroubaceae: The Quassia-wood Family

Ailanthus altissima (P. Miller) W.T. Swingle: Tree of Heaven

COMMON NAMES: Ailanthus; Cancer Tree; China Sumac; Chinese Sumac; Chinese Tree-of-heaven; Copal Tree; Hemelboom; Stinking Ash; Stinking Cedar; Stinktree; Stinkweed; Tree of Heaven; Tree-of-heaven; Tree-of-heaven Ailanthus; Varnish Tree; Varnishtree. DESCRIPTION: Terrestrial perennial deciduous tree (5 (commonly 20-66) to 80 feet in height with crowns 15 to 50 feet in width); the bark is light brown or dark gray; the twigs are light brown; the leaves are dark green above and paler green beneath; the flowers (female and male flowers on separate trees, male flower may have an objectionable odor) are pale green, green, white, white-yellow, whitish-green or yellowish-green; flowering generally takes place between mid-April and late June (additional record: one for late August); the winged fruits are reddish-brown or reddish-green. HABITAT: Within the range of this species it has been reported from mountains; bouldery crags; plateaus; gravelly canyons; canyon bottoms; gorges; talus, ridgetops; sandy meadow; foothills; hills; bedrock and rocky and sandy slopes; flats; valley bottoms; along gravelly-sandy roadsides; springs; streams; creekbeds; along rivers; sandy riverbeds; along washes; in drainages; marshes; gravelly and sandy banks of creeks and washes; along edges of washes; sandy benches; terraces; floodplains; along fencelines; in bouldery, rocky-gravelly-sandy ditches; riparian areas; waste places, and disturbed areas in rocky, gravelly, gravelly-sandy and sandy soils, occurring from 800 to 7,700 feet in elevation in the forest, woodland, scrub, grassland and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. This tree spreads rapidly by root sprouts and seeds. *Ailanthus altissima* is native to eastern Asia (China). *5, 6, 18, 26 (color photograph), 28 (color photograph), 43 (081009), 46 (Supplement, page 1058), 52 (color photograph), 53 (note under *Holacantha*, *Holacantha emoryi*), 63 (081009), 85 (081009), 109 (color photograph)*

Simmondsiaceae: The Jojoba Family

Simmondsia californica (see *Simmondsia chinensis*)

Simmondsia chinensis (J.H. Link) C.K. Schneider: Jojoba

SYNONYMY: *Simmondsia californica* T. Nuttall. COMMON NAMES: California Coffee Berry; California Jojoba; Coffee Berry (a name also applied to other species); Coffeeberry (a name also applied to other species); Coffee Bush (a name also applied to other species); Coffee Bush (English)¹⁴⁰; Coffee-bush (a name also applied to other species); Deer-nut; Deer [Goat, Pig, Sheep]-nut (English)¹⁴⁰; Deernut; Goat Nut; Goat-nut (a name also given to the genus *Simmondsia*); Goatnut (a name also given to the genus *Simmondsia*); Gray Box Bush; Ho:hovai (Uto-Aztecan: Hiá Ce□ O'odham)¹⁴⁰; Ho:hovai; Hohoova (Uto-Aztecan: Yaqui)¹⁴⁰; Hohowai [Ho:hovai, pl.; Hohwi, sing.] (Uto-Aztecan: Tohono O'odham)¹⁴⁰; Ioligam (Tohono O'odham); Jojo Beans (a name given to the plant by seed collectors, Arizona); Jojoba (a name also given to the genus *Simmondsia* and the Simmondsiaceae, Spanish); Jojoba (English and Spanish)¹⁴⁰; Jojoba Bean; Jojoba Bush; Jojobe; Pig-nut (a name also applied to other species); Pignut (a name also applied to other species); Pnaacól (Hokan: Seri)¹⁴⁰; Pnaokt (Seri); Qawnaxal <kowanukal> (Uto-Aztecan: Cahuilla)¹⁴⁰; Quinine Plant (a name also applied to other species); Quinine Plant (English)¹⁴⁰; Quinine-plant; Sheep-nut; Sheepnut; Wild Hazel (English)¹⁴⁰; Wild-hazel. DESCRIPTION: Terrestrial perennial evergreen shrub (8 inches to 13 feet in height, one plant was reported to be 2 feet in height and 6½ feet in width, plants were reported to be 4 feet in height and 6 feet in width, plants were reported that were 5¼ feet in height and 5 feet in width); the stems are greenish-tan aging to reddish-brown and gray; the leaves are blue-gray, gray-green or green; the flowers (male and female flowers are borne on separate plants) are green, greenish-yellow, greenish-white, yellow or yellow-green; flowering may vary considerably from year to year but generally takes place between late December and mid-August (additional records: one for ten for late September, two for early October, three for mid-October, five for late October, two for early November, four for mid-November, two for late November and two for early December, peak blooms occur February through April); the ripe fruits are tan. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky mesas; plateaus; cliffs; rocky cliff faces; bouldery and rocky canyons; along rocky and gravelly canyon bottoms; rocky crevices; gravelly knolls; bouldery and rocky ridges; rocky ridgetops; rocky foothills; rocky and gravelly hills; hilltops; rocky, rocky-clayey and gravelly hillsides; bouldery, rocky, gravelly, sandy, sandy-loamy and clayey slopes; alluvial fans; bajadas; piedmonts; rocky outcrops; amongst boulders and rocks; rocky coves; dunes; sandy flats; basins; valley floors; coastal terraces; coastal beach dunes; coastal beaches; along rocky, rocky-sandy, gravelly-sandy and clayey roadsides; along rocky arroyos; along rocky bottoms of arroyos; draws; along sandy gullies; rocky ravines; seeps; around springs; around seeping streams; along runnels; along streams; along and in streambeds; along creeks; creekbeds; along and in rocky, rocky-sandy, stony, gravelly-sandy and sandy washes; rocky-clayey drainages; along and in drainage ways; (gravelly, gravelly-sandy and sandy) banks of creeks and washes; along edges of arroyos and washes; (rocky) margins of arroyos; rocky and gravelly terraces; loamy bottomlands; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; sandy loam and loam ground, and rocky clay and clay ground, occurring from sea level to 5,400 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or beverage crop; it was also noted as having been used as a drug or medication. This plant may live to be from 100 to over 200 years of age. Jojoba is an important browse plant for wildlife and is browsed by Desert Bighorn Sheep (*Ovis canadensis* subsp. *mexicana*), Jackrabbits (*Lepus* sp.) and Mule Deer (*Odocoileus hemionus*) and desert chipmunks, and Desert Mule Deer, gophers, mice (including the Bailey's Pocket Mouse (*Chaetodipus baileyi* subsp. *baileyi*), pack rats, Collard Peccary (*Peccari tajacu* subsp. *sonoriensis*), rabbits, ground squirrels including the Harris' Antelope Squirrel (*Ammospermophilus harrisi*) and other mammals and birds feed on the seeds. The Jojoba (*Simmondsia chinensis*) has also been included in the Box Family (Buxaceae) and the Spurge Family (Euphorbiaceae). *Simmondsia chinensis* is native to southwest-central and southern North America. *5, 6, 13 (Pages 117-118), 16, 18, 26 (color photograph), 28 (color photographs 836 A&B), 43 (042910 - *Simmondsia chinensis* C.K. Schneid.), 44 (082011), 46 (included as a member of the Box Family (Buxaceae), Page 521), 48, 58, 63 (042910 - color presentation), 77, 85 (082011 - color presentation), 91 (Pages 369-372), 115 (color presentation), 124 (082011 - no record of genus or species), 127, 134, 140 (Pages 263-265 & 305)*

Solanaceae: The Potato Family

Datura meteloides (see *Datura wrightii*)

***Datura wrightii* E.A. von Regel: Sacred Thorn-apple**

SYNONYMY: *Datura meteloides* auct. non M.F. Dunal p.p. COMMON NAMES: A'neglakya (Language Isolate: Zuni)¹⁴⁰; Angel's Trumpet (a name also applied to other species); Angel's-trumpet (a name also applied to other species); Angel's-trumpet (English)¹⁴⁰; Ch'óhójilyééh <é'óxo□'vil□éi, c'oxojiléi> ("Madness Producing", Athapascan: Navajo)¹⁴⁰; Chamico (Spanish: Yucatán)¹⁴⁰; Cmalgapit ("Ear Deaf", Yuman: Maricopa)¹⁴⁰; Dekúba <deku-ba, reku-ba> (Uto-Aztecan: Tarahumara)¹⁴⁰; Devil's Weed; Estramonio (Spanish)¹⁴⁰; Gegeda A'gama <gugudua'gcama, gugurha agama> ("The One With Big Horns or Big Horned One", Uto-Aztecan: Nevome, Sonora)¹⁴⁰; Giant Jimson; Hairy Thorn-apple; Hakatdam <hakandam> (Uto-Aztecan: Onavas Pima)¹⁴⁰; Indian Apple (not recommended for use); Indian Apple (English)¹⁴⁰; Indian-apple (not recommended for use); Itanasbase ("Round Leaf", Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; <jaa ilgodó> ("Forget Yourself", Athapascan: Western Apache)¹⁴⁰; Jimson Weed (a name also applied to other species and the genus *Datura*); Jimson Weed (English)¹⁴⁰; Jimson-weed (a name also applied to other species and the genus *Datura*); Jimsonweed (a name also applied to other species and the genus *Datura*), Kiksawva'al <kikisowil> (Uto-Aztecan: Cahuilla)¹⁴⁰; Kookivuri <kokovuri> (Uto-

Aztecán: Mountain Pima¹⁴⁰; Kota□opi <kotata'p> (Uto-Aztecán: Tohono O'odham)¹⁴⁰; Kot□opi <kotodopi, kodop, kododophi, kotobi, kotdobi> (Uto-Aztecán: Akimel O'odham)¹⁴⁰; Máanet (Uto-Aztecán: Luiseño)¹⁴⁰; Main-oph-weep (Uto-Aztecán: Paiute)¹⁴⁰; Malyakatu' (Yuman: Mohave)¹⁴⁰; Mímip [Manopweep, Manop^hweep] (Uto-Aztecán: Southern Paiute)¹⁴⁰; Mo'moy (Chumash: Barbareño Chumash)¹⁴⁰; Momohit (Uto-Aztecán: Tübatulabal)¹⁴⁰; Momoy (Chumash: Ineseño and Ventureño Chumash)¹⁴⁰; Moon Flower; Moon Lily; Moop□ (Uto-Aztecán: Kawaiisu)¹⁴⁰; Muip□ <muipe> (Uto-Aztecán: Northern Paiute)¹⁴⁰; Muippüh (Uto-Aztecán: Panamint)¹⁴⁰; Navamutuda <nabamutuda> (Uto-Aztecán: Nevome, Sonora)¹⁴⁰; Ndiyiliitsoh <ntiGíliitshoh> (Athapascan: Navajo)¹⁴⁰; Pricklyburr; Sacred Datura (a name also applied to other species); Sacred Datura (English)¹⁴⁰; Sacred Thorn Apple; Sacred Thorn-apple; Sacred Thornapple; Saemp'e (Kiowa Tanoan: Tewa)¹⁴⁰; Selguacha; Shmalk Tuch (Yuman: Paipai)¹⁴⁰; □mal Ka:pí:□ (Yuman: Cocopa)¹⁴⁰; Smalगतú ("Ear-something Inside", Yuman: Havasupai)¹⁴⁰; Smalk^atú' (Yuman: Walapai)¹⁴⁰; Southwestern Thorn Apple; Sweet Scented Datura (a name also applied to other species); Sweet-scented Datura (a name also applied to other species); Táguaro (Uto-Aztecán: Sonora)¹⁴⁰; Tañaniva (Uto-Aztecán: Northern Paiute)¹⁴⁰; Tebwi (Uto-Aztecán: Yaqui)¹⁴⁰; Tecuyani (Uto-Aztecán: Náhuatl)¹⁴⁰; Tecuyai (Uto-Aztecán: Guarijio)¹⁴⁰; Thorn Apple (a name also applied to other species and the genus *Datura*); [Sacred] Thorn Apple (English)¹⁴⁰; Thorn-apple (a name also applied to other species and the genus *Datura*); Thornapple (a name also applied to other species and the genus *Datura*); Tikúwari (Uto-Aztecán: Tarahumara)¹⁴⁰; Tlapa (Spanish)¹⁴⁰; Tókocovi <tokorhobi> (Uto-Aztecán: Nevome, Sonora)¹⁴⁰; Tokorakai (Uto-Aztecán: Northern Tepehuan)¹⁴⁰; Tokorep <tókorew> (Uto-Aztecán: Mountain Pima)¹⁴⁰; Tolache (a name also applied to the genus *Datura*, Spanish); Tolache <toluache, tolguacha> (Spanish)¹⁴⁰; Tolguacha; Tolohua-xíhuifl <tologuaxíhuifl> (Uto-Aztecán: Náhuatl)¹⁴⁰; Tsimona <timóna> (Uto-Aztecán: Hopi)¹⁴⁰; □ᵁᵁᵁᵁᵁᵁ (Uto-Aztecán: Ute)¹⁴⁰; Western Jimson; Western Jimson Weed; Western Jimson-weed; Western Jimsonweed; Wright Datura; Wright Jimson Weed; Wright Jimson-weed; Wright Jimsonweed; Wright's Datura; Wright's Datura; Wright's Jimson Weed; Wright's Jimson-weed; Wright's Jimsonweed. DESCRIPTION: Terrestrial annual or perennial forb/herb or subshrub (spreading, sprawling and/or erect stems 1 to 5 feet in height sometimes spreading to 6 feet in width; one plant was observed and described as being 16 inches in height and 20 inches in width, one plant was observed and described as being 18 inches in height and 2 feet in width, two plants were observed and described as being 20 inches in height and 20 inches in width, one plant was observed and described as being 20 inches in height and 4 feet in width); the leaves may be dark green, gray-green or purplish; the trumpet-shaped flowers (2½ to 5½ inches in length and 6 to 10 inches in diameter) may be creamy-white, greenish-white, pale ivory, pale lavender, light purple, purple, white or white tinged with lavender, pink-lavender, purple, rose-purple or violet; flowering generally takes place between mid-March and late November (additional record: one for mid-February); the round and thorny fruits (1¼ to 2 inches in diameter) are green or whitish-green drying to brown. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; sandy mesas; bases of cliffs; rocky canyons; canyon walls; sandy canyon bottoms; chasms; gorges; talus slopes; crevices in boulders and rocks; bluffs; rocky ridges; foothills; rolling hills; rocky hillsides; bouldery, rocky, gravelly-sandy, gravelly-loamy, sandy and sandy-silty slopes; rocky-sandy-loamy alluvial fans; alluvial fans; bajadas; bouldery and rocky outcrops; amongst rocks; sandy alcoves; plains; bouldery, rocky-sandy and sandy flats; sandy valley floors; sandy coastal beaches; coastal strands; along rocky, gravelly-sandy and sandy roadsides; along and in bedrock and sandy arroyos; along sandy draws; gulches; muddy springs; along clayey streams; bouldery-loamy, gravelly-sandy and sandy streambeds; rocky-sandy and gravelly-sandy soils along and in creeks; sandy creekbeds; along rivers; sandy riverbeds; along and in gravelly and sandy washes; within sandy drainage ways; silty lakebeds; freshwater and saltwater marshes; clayey-loamy swales; (sandy) banks of arroyos, streams, rivers and washes; (gravelly) edges of rivers; along margins of arroyos, rivers and riverbeds; (gravelly) shorelines of lakes; gravel bars; sandy benches; gravelly and sandy shelves; sandy terraces; sandy bottomlands; along sandy floodplains; fencelines; along and in ditches; canal banks; sandy riparian areas; sandy waste places, and disturbed areas growing in moist and dry bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; bouldery loam, rocky-sandy loam, gravelly loam and clayey loam ground; rocky clay and clay ground, and sandy silty and silty ground, occurring from sea level to 7,900 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug, medication or narcotic. This plant is extremely poisonous, and just simply touching them may be dangerous. Sphinx Moths have been observed visiting the flowers. *Datura wrightii* is native to south-central and southern North America. *5, 6, 28 (recorded as *Datura meteloides*, "All parts of the plant extremely poisonous if ingested"), color photograph 208), 43 (072909), 44 (031611), 46 (recorded as *Datura meteloides* DC., Page 760), 58, 63 (043010 - color presentation), 77, 80 (This plant is listed as a Secondary Poisonous Range Plant. "Toxicity results from the high content of several solanaceous alkaloids. Poisoning of both livestock and humans can occur from the ingestion of any part of the plant, including the seeds. ... It is rare when any livestock purposely consume any of the daturas. The ill-scented herbage makes the plants highly distasteful, and livestock literally have to be forced to eat it because of the lack of other forage."), 85 (082111 - color presentation), 86 (color photograph), 115 (color presentation), 124 (031611), 127, 140 (Page 265-266 & 306), WTK (August 6, 2005)*

***Lycium andersonii* A. Gray: Water Jacket**

COMMON NAMES: Anderson Box Thorn; Anderson Box-thorn; Anderson Boxthorn; Anderson Desert Thorn; Anderson Desert-thorn; Anderson Lycium; Anderson Thorn Bush; Anderson Thorn-bush; Anderson Thornbush; Anderson Wolf Berry; Anderson Wolf-berry; Anderson Wolfberry; Anderson's Box Thorn; Anderson's Box-thorn; Anderson's Boxthorn; Anderson's Desert-thorn; Anderson's Lycium; Anderson's Thorn Bush; Anderson's Thorn-bush; Anderson's Thornbush; Anderson's Wolf-berry; Anderson's Wolfberry; Barchata; Boxthorn (a name also applied to other species); Cacaculo; Desert-thorn (a name also applied to other species); Desert Wolfberry (a name also applied to other species); Manzanita; Narrowleaf Wolfberry (a name also applied to other species); Red-berried Desert-thorn; Red Berry Desert Thorn; Red-berry Desert-thorn;

Redberry Desert-thorn; Squawberry; Tomatillo; Water Jacket; Water-jacket; Waterjacket; Wolfberry (a name also applied to other species); Wright Desert Thorn; Wright Lycium. DESCRIPTION: Terrestrial perennial drought-deciduous shrub (1 to 10 feet in height and about the same in width; one plant was observed and described as being 2 feet in height with a crown 2 feet in width and a trunk diameter of 1 inch, one plant was observed and described as being 3 feet in height with a crown 3 feet in width and a trunk diameter of 1½ inches, one plant was observed and described as being 4 feet in height with a crown 6½ feet in width); the thorn-tipped older branches are grayish; the newer growth is brownish; the spatula-shaped leaves are dark green; the flowers (to ½ inch in length) may be light blue, blue, blue-lavender, pale bluish-cream, cream, cream-white, pale lavender, lavender, pink, light purple, purple, dark purple, pale violet, white, whitish or whitish with a pink tinge; flowering generally takes place between late September and late May (additional records: two for mid-June, four for late June, one for early July, one for mid-July, two for late July, one for early August, four for late August and two for early September); the juicy fruits (to 3/8 inch in length) are orange, orange-red, bright red, reddish-orange or salmon. HABITAT: Within the range of this species it has been reported from mountains; shaley mountainsides; sandy mesas; plateaus; cliffs; rocky, rocky-gravelly, gravelly, sandy and sandy-loamy canyons; along canyon walls; rocky and sandy canyon bottoms; gorges; along bases of cliffs; rocky talus; crevices in rocks; pockets of wind-blown silt-like soils; bluffs; buttes; knolls; rocky ledges; ridges; foothills; hills; rocky hillsides; bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy, rocky-clayey, shaley, cindery, gravelly and sandy slopes; alluvial fans; gravelly bajadas; amongst boulders and rocks; rocky alcoves; lava flows; sand dunes; gravelly and sandy plains; cindery, gravelly, sandy, sandy-silty and clayey flats; loamy basins; cindery valley floors; loamy valley bottoms; along railroad right-of-ways; along sandy roadsides, along rocky, gravelly and sandy arroyos; rocky draws; gullies; seeps; in shale and clay around springs; creekbeds; along rocky-sandy rivers; rocky riverbeds; along and in muddy and rocky, rocky-gravelly, rocky-sandy, rocky-clayey, gravelly, gravelly-sandy, sandy, sandy-silty washes; drainages; within drainage ways; playas; boggy areas; swales; along (rocky and sandy) banks of arroyos and washes; along (sandy) edges of streambeds and washes; along (sandy-loamy) margins of washes and ponds; shores of rivers; rocky benches; shaley and sandy terraces; sandy and loamy bottomlands; floodplains; mesquite bosques; fencelines; canals, and shaley and gravelly-sandy riparian areas growing in muddy ground and dry desert pavement; bouldery, bouldery-gravelly, rocky, rocky-gravelly, rocky-gravelly-sandy, rocky-sandy, shaley, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; sandy loam, silty loam and loam ground; rocky clay and clay ground, and sandy silty and silty ground, occurring from 300 to 5,800 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or beverage crop. The Black-chinned Hummingbird (*Archilochus alexandri*) and Broad-billed Hummingbird (*Cyananthus latirostris*) have been observed visiting the flowers and birds and mammals feed on the berries. The Anderson Lycium provides resting and feeding cover for small wildlife including the Masked Bobwhite Quail (*Colinus virginianus* subsp. *ridgwayi*). *Lycium andersonii* is native to southwest-central and southern North America. *5, 6, 10, 13, 15, 18, 28 (color photograph 699 A&B), 43 (043010), 44 (120910), 46 (Pages 751-752), 58, 63 (043010 - color presentation), 77, **85** (041030 - color presentation), 124 (120910 - no record, genus), 127*

***Lycium berlandieri* M.F. Dunal: Berlandier's Wolfberry**

COMMON NAMES: Bachata (Arizona, Sonora)¹⁴⁰; Berlandier Lycium; Berlandier Wolfberry; Berlandier's Wolfberry; Boxthorn (a name also applied to other species and the genus *Lycium*); Huichutilla; Salicieso (a name also applied to other species and the genus *Lycium*, Arizona, Sonora); Silver Wolfberry; Terrac Wolfberry; Wolfberry (a name also applied to other species and the genus *Lycium*). DESCRIPTION: Terrestrial perennial drought-deciduous shrub (20 inches to 10 feet in height; one plant was observed and described as being 3 feet in height with a crown 3 feet in width); the bark on the stems and branches may be almost black, brown, dark brown, gray, gray-brown, purple-brown, dark red or reddish; the leaves are dark green; the bell-shaped flowers may be bluish, cream, cream-white, cream-yellow, pale green, lavender, purple, tan, white, whitish or pale yellow; flowering generally takes place between early February and early September (additional records: one for early January, two for late September, three for early October, one for mid-October, two for late November, one for early December, one for mid-December and one for late December; flowering mainly between July and September has been reported); the mature fruits are orange, red or red-orange. HABITAT: Within the range of this species it has been reported from mountains; rocky cliffs; bases of cliffs; rocky canyons; bouldery and rocky canyon bottoms; rocky talus slopes; crevices; buttes; ledges; rocky ridgetops; rocky foothills; rocky, gravelly, gravelly-sandy and sandy hills; rocky hillsides; bedrock and rocky slopes; rocky, gravelly, gravelly-sandy and sandy bajadas; bouldery and rocky outcrops; amongst boulders and rocks; boulder fields; prairies; cobbly plains; gravelly and gravelly-sandy flats; rocky-gravelly basins; valley floors; along gravelly-sandy-clayey-loamy roadsides; along rocky, gravelly and sandy arroyos; bottoms of arroyos; ravines; streambeds; along and in sandy washes; playas; (rocky and sandy) edges of rivers; clayey-loamy terraces; bottomlands; mesquite bosques; ditches, and riparian areas growing in dry desert pavement; bouldery, rocky, rocky-gravelly, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly-sandy-clayey loam, sandy loam and clayey loam ground, and loamy clay ground, occurring from sea level to 8,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This spiny shrub may be an attractive component of a restored native habitat. The Berlandier Lycium may live to be more than 90 years of age. The Costa's Hummingbird (*Calypte costae*) has been observed visiting the flowers and Gambel's Quail (*Callipepla gambelii* subsp. *gambelii*) uses the plant for cover, feeding and roosting. *Lycium berlandieri* is native to southwest-central and southern North America. *5, 6, 10, 13 (Page 200), 16, 18 (genus), 28 (color photograph 700), 43 (043010), 44 (082111 - no record of species; genus record), 46 (Page 752), 63 (043010), **85** (082111 - color presentation), 115 (color presentation), 124 (082111), 140 (Pages 268 & 306)*

***Nicotiana glauca* R. Graham: Tree Tobacco**

COMMON NAMES: Brazilian Tree Tobacco; Buena Mosa; Don Juan (Yaqui); Gigante; Glauous Tobacco; Mexican Tobacco; Mustard Tree (a name also applied to other species); Rape; San Juan Tree; Shrub Tobacco; Tabaco Amarillo; Tabaco Moro; Tree Tobacco (a name also applied to other species); Tronadora; Wild Tobacco (a name also applied to other species); Wildetabak (Afrikaans); Yellow Tree Tobacco. DESCRIPTION: Terrestrial perennial evergreen shrub or tree (1 to 26 feet in height with a crown to 10 feet in width); the bark is yellow-brown; the leaves are blue-green, bluish-green or dull green; the tubular flowers (1¼ to 2 inches in length) are pale yellow, yellow or yellow-greenish; flowering generally takes place between mid-January to late December. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; plateaus; rocky canyons; along rocky canyon bottoms; sandy ledges; foothills; rocky hills; rocky hilltops; bouldery hillsides; rocky and sandy-loamy slopes; sandy and silty flats; gravelly basins; valley floors; coastal marshes; along rocky and sandy roadsides; rocky and sandy arroyos; bottoms of arroyos; springs; along streams; along and in streambeds; along and in creeks; along rivers; along and in rocky-sandy and sandy riverbeds; along and in sandy washes; within drainages; along and in watercourses; oases; boggy areas; (gravelly-sandy and sandy) banks of creeks, rivers and washes; along (sandy and sandy-silty) edges of rivers and lakes; along margins of washes; shores of creeks and lakes; terraces; bottomlands; floodplains; fencerows; along banks of canals; along ditches; ditch banks; riparian areas; waste places, and disturbed areas growing in dry bouldery, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; sandy loam ground, and sandy silty and silty ground, occurring from near sea level to 5,000 (one record at 8,200 feet) feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food and beverage and as a drug or medication. *Nicotiana glauca* is native to western and southern South America. *5, 6, 13, 16, 18, 28 (color photograph 385), 43 (050210), 44(082111), 46 (Page 761), 63 (050210 - color presentation), 68, 77, 80 (This species is listed as a Secondary Poisonous Range Plant. “The poisonous principle is the highly toxic nicotine and other alkaloids which are poisonous to all classes of livestock and to humans. The plants are generally unpalatable to range livestock but frequent losses have been reported. ... Since wild tobaccos are generally unpalatable and grow predominantly in waste places, range improvement to reduce waste areas and to provide ample forage is the best means of preventing losses.”), 85 (082111 - color presentation), 86 (color photograph), 97, 115 (color presentation), 124 (082111 - no record of genus or species), 127*

***Nicotiana obtusifolia* M. Martens & H.G. Galeotti var. *obtusifolia*: Desert Tobacco**

SYNONYMY: *Nicotiana trigonophylla* M.F. Dunal. COMMON NAMES: Ban Vivga <ban vi:v> (“Coyote Tobacco”, Uto-Aztec: Akimel O’odham)¹⁴⁰; Ban Wiwga (Uto-Aztec: Tohono O’odham)¹⁴⁰; Biy, Biba-ta (Uto-Aztec: Ópata)¹⁴⁰; Coyote Tobacco (a name also applied to the species and to other species); Coyote [Desert] Tobacco (English)¹⁴⁰; Desert Tobacco (a name also applied to the species and to other species); Goy Biba (Uto-Aztec: Mayo)¹⁴⁰; Ha Wiwga (“Their Tobacco”, Uto-Aztec: Tohono O’odham)¹⁴⁰; Hapis Casa (“Putrid Tobacco”, Hokan: Seri)¹⁴⁰; Hatalewah Ū’v <a’uv, aúva> (“Coyote Tobacco”, Yuman: Mohave)¹⁴⁰; Intelwayok (“Old Time Tobacco”, Yuki: Yuki)¹⁴⁰; Isily Piv’a <pivat-isil> (“Coyote’s Tobacco”, Uto-Aztec: Coahuilla)¹⁴⁰; Ka□ódn,iúva (Yuman: Havasupai)¹⁴⁰; Mela’ Ū’v (“Coyote Tobacco”, Yuman: Yuma)¹⁴⁰; Nát’oh (Athapascan: Navajo)¹⁴⁰; Nátotē (Athapascan: Jicarilla Apache)¹⁴⁰; O’odham Ha Vivka (“People’s Tobacco”, Uto-Aztec: Hiá Ce□ O’odham, Arizona Sonora)¹⁴⁰; Pahompin <pāmüpi> (Uto-Aztec: Panamint)¹⁴⁰; Pahmóbi (Uto-Aztec: Mono)¹⁴⁰; Pahnú (Uto-Aztec: Western Paiute)¹⁴⁰; Pamu (Uto-Aztec: Mono)¹⁴⁰; Pí:va-t [Píivat] (Uto-Aztec: Luiseño)¹⁴⁰; Piiva <piva, pi’va, pi:wa> (Uto-Aztec: Hopi)¹⁴⁰; Punche (“a Punch” a name also applied to the species); Q□’apI (Uto-Aztec: Southern Paiute)¹⁴⁰; Qo□ápü (Uto-Aztec: Ute)¹⁴⁰; So□o(n)d□ <soódá> (Uto-Aztec: Kawaiisu)¹⁴⁰; Tabaquillo (“Little Tobacco” a name also applied to the species); Tabaquillo de Coyote (a name also applied to the species); Tobaco Cimarrón (“Wild Tobacco”, Spanish: Sonora)¹⁴⁰; Tobaco [de] Coyote [Loco] (“Coyote [Crazy] Tobacco”, Spanish: Chihuahua, San Luis Potosí, Sonora)¹⁴⁰; Tobaquillo [de Coyote] (“Little [Coyote] Tobacco”, Spanish: Texas to Arizona, Sonora)¹⁴⁰; Tsawawap (Uto-Aztec: Southern Paiute)¹⁴⁰; □U:p <op> (Yuman: Cocopa)¹⁴⁰; ‘Úva <u:v> (Yuman: Walapai)¹⁴⁰; Uvaaná,a (Yuman: Maricopa)¹⁴⁰; Viv (Uto-Aztec: Onavas Pima)¹⁴⁰; Vivá-t (Uto-Aztec: Eudeve)¹⁴⁰; Vivai (Uto-Aztec: Northern Tephuan)¹⁴⁰; Vivam (Uto-Aztec: Yaqui)¹⁴⁰; Wiopuli <wiopulí, wiupuri, viopoli> (Uto-Aztec: Tohono O’odham)¹⁴⁰; Wipá (Uto-Aztec: Guarijío)¹⁴⁰; Wipáka <aura-ka, bawa-ra-ka, huipá, pawa-ra-ka> (Uto-Aztec: Tarahumara)¹⁴⁰; Wiw <viva> (Uto-Aztec: Mountain Pima)¹⁴⁰; Wo’i Viva (Yaqui). DESCRIPTION: Terrestrial annual, biennial or perennial forb/herb or subshrub (erect stems 1 to 3½ feet in height); the leaves are gray-green or dark green; the flowers may be cream, cream & pale green, cream-green, cream-white, cream-yellow, greenish, greenish-white, greenish-yellow, deep purple, lemon-yellow, pale white, white, yellow, yellow-cream, yellow-green, yellow-white or yellowish-greenish; flowering generally takes place between late February and early November (additional records: one for mid-January, one for late November, two for mid-December and one for late December, flowering probably takes place throughout the rest of the year). HABITAT: Within the range of this species it has been reported from mountains; bouldery and rocky-gravelly mountaintops; plateaus; along rims; cliffs; bases of cliffs; rocky and gravelly-loamy canyons; canyon walls; along canyon bottoms; gorges; bouldery-gravelly-silty and silty-clayey talus slopes; along crevices in boulders and rocks; rocky bluffs; rocky buttes; rocky ledges; bouldery ridges; bouldery ridgetops; edges of meadows; craters; cinder cones; foothills; rocky hills; bouldery hilltops; bouldery-rocky and rocky hillsides; bouldery escarpments; bouldery, bouldery-rocky, bouldery-gravelly, rocky, rocky-gravelly-sandy-clayey, stony, cindery, gravelly, gravelly-sandy, sandy, sandy-loam and sandy-clayey slopes; bajadas; rocky outcrops; amongst boulders, rocks and stones; bases of boulders and rocks; sandy lava flows; dunes; debris fans; rocky plains; sandy and sandy-loamy flats; basins; valley floors; valley bottoms; rocky-sandy coastal shores; along railroad right-of-ways; along rocky, rocky-gravelly-sandy-clayey-loamy, gravelly, gravelly-sandy, gravelly-sandy-clayey-loamy and sandy roadsides; along sandy-loamy arroyos; arroyo walls; arroyo bottoms; gulches; in sand and loam

around springs; loamy soil along streams; along gravelly-sandy and sandy streambeds; rocky creeks; sandy creekbeds; bouldery-sandy and sandy riverbeds; along and in bedrock, rocky, rocky-sandy, gravelly-sandy and sandy washes; drainages; bouldery drainage ways; sandy waterholes; marshy areas; sinks; (rocky, cobbly, sandy and silty) banks of creeks, rivers and washes; edges of lakes; (rocky-sandy) shores of lakes; mudflats; gravelly and sandy terraces; bottomlands; floodplains; ditches; ditch banks; sandy riparian areas; waste places, and disturbed areas growing in moist, damp and dry bouldery, bouldery-rocky, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony, cobbly, cindery, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-sandy-clayey loam, gravelly loam, gravelly-sandy-clayey loam, sandy loam, clayey loam and loam ground; rocky-gravelly-sandy clay, sandy, silty clay and clay ground, and bouldery-gravelly silty and silty ground, occurring from sea level to 6,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant tends to be weedy; however, consideration could be given to using some plants in your project because the flowers are used by hummingbirds when other nectar-rich sources are not available. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used for food, beverage and/as a drug or medication. *Nicotiana obtusifolia* var. *obtusifolia* is native to southwest-central and southern North America. *5, 6, 15 (recorded as *Nicotiana trigonophylla* Dunal), 16 (recorded as *Nicotiana trigonophylla* Dunal), 28 (recorded as *Nicotiana trigonophylla*, color photograph 209), 43 (050310), 44 (082211 - no listing under Common Names; genus and species records), 46 (recorded as *Nicotiana trigonophylla* Dunal, Page 761), 58 (recorded as *Nicotiana trigonophylla* Dunal), 63 (050310 - color presentation), 68, 77 (recorded as *Nicotiana trigonophylla* Dunal), 80 (This species is listed as a Secondary Poisonous Range Plant. "The poisonous principle is the highly toxic nicotine and other alkaloids which are poisonous to all classes of livestock and to humans. The plants are generally unpalatable to range livestock but frequent losses have been reported. ... Since wild tobaccos are generally unpalatable and grow predominantly in waste places, range improvement to reduce waste areas and to provide ample forage is the best means of preventing losses."), 85 (082211 - color presentation), 86 (recorded as *Nicotiana trigonophylla*, color photograph), 115 (color presentation of the species), 124 (082111 - no record of genus, species or variety), 127, 140 (Pages 268-269 & 306 - recorded as *Nicotiana obtusifolia* Martens & Galeotti [*N. trigonophylla* Dunal])*

Nicotiana trigonophylla (see *Nicotiana obtusifolia* var. *obtusifolia*)

***Physalis acutifolia* (J. Miers) N.Y. Sandwith: Sharpleaf Groundcherry**

SYNONYMY: *Physalis wrightii* A. Gray. COMMON NAMES: Groundcherry (a name also applied to the genus *Physalis*); Irrigation Groundcherry; Pointed-leaved Ground-cherry; Sharp Leaf Ground Cherry; Sharp Leaved Ground Cherry; Sharp-leaf Ground-cherry; Sharp-leaf Groundcherry; Sharpleaf Ground Cherry; Sharpleaf Groundcherry; Sharpleaved Ground-cherry; Tomatillo (a name also applied to the genus *Physalis*); Wright Ground Cherry; Wright Ground-cherry; Wright Groundcherry; Wright's Ground Cherry; Wright's Ground-cherry; Wright's Groundcherry. DESCRIPTION: Terrestrial annual forb/herb (2 to 42 inches in height, one plant was described as being 20 inches in height and 40 inches in width); the foliage is bluish-green or gray-green; the wheel-shaped flowers ($\frac{1}{2}$ to $\frac{3}{4}$ inch in diameter) are cream, greenish-yellow, white or whitish (with a greenish, orange-yellow, yellow or yellow-green center), pale yellow or yellow; the anthers are purplish; flowering generally takes place between mid-August and late November (additional records: one for mid-May, one for early June, one for late June, two for early July, one for mid-July, one for late July, one for mid-December and one for late December, flowering possibly starting as early as April and ending in late December has been reported); the berry-like seed-pods ($\frac{3}{4}$ to $1\frac{1}{4}$ inches in length) are covered with a green, papery "Chinese lantern". HABITAT: Within the range of this species it has been reported from mountains; rocky mesas; canyons; canyon bottoms; foothills; hills; rocky hillsides; rocky slopes; alluvial fans; plains; clayey flats; valley floors; coastal plains; along railroad right-of-ways; roadbeds; along gravelly and gravelly-sandy-clayey-loamy roadsides; arroyos; bottoms of arroyos; draws; gullies; rocky ravines; springs; along streams; in streambeds; creekbeds; along rivers; rocky-sandy and sandy riverbeds; along and in rocky and clayey washes; drainages; around ponds; pondbeds; playas; marshlands; muddy-silty swampy areas; depressions; sloughs; banks of rivers; (sandy-clayey) edges of ponds and swales; sand bars; benches; lowlands; sandy floodplains; mesquite bosques; dikes; canals; canal banks; along ditches; ditch banks; riparian areas, and disturbed areas growing in moist and dry rocky, rocky-sandy, gravelly and sandy soils; gravelly-sandy-clayey loam sandy loam ground; sandy clay, humusy clay and clay ground, and silty ground, occurring from sea level to 4,800 feet in elevation in the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food crop. Quail, White-tailed Deer (*Ovis canadensis*) and Bighorn Sheep (*Ovis canadensis*) browse this plant. *Physalis acutifolia* is native to southwest-central and southern North America. *5, 6, 16, 43 (050310), 44 (040211), 46 (recorded as *Physalis wrightii* Gray, Page 754), 58, 63 (050310 - color presentation of seed-pod), 68 (recorded as *Physalis wrightii* Gray), 77, 80 (Species of the genus *Physalis* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "It has been suspected that animals have been poisoned by eating large quantities of the tops and unripe fruits of these forbs."), 85 (082211 - color presentation), 101 (recorded as *Physalis wrightii* Gray, color photograph), 124 (040211 - no record of species; genus record), 127, 140 (Pages 270 & 306)*

***Physalis crassifolia* G. Bentham: Yellow Nightshade Groundcherry**

COMMON NAMES: Desert Ground Cherry; Greene Ground-cherry; Greene's Ground Cherry; Greene's Ground-cherry; Thick Leaved Ground Cherry; Thick-leaf Ground Cherry; Thick-leaf Ground-cherry; Thick-leafed Groundcherry; Thick-leaved Ground Cherry; Thick-leaved Ground-cherry; Thicketleaf Ground-cherry; Thicketleaf Groundcherry; Tomato de Culebra; Tomatillo del Desierto; Yellow Nightshade Ground Cherry; Yellow Nightshade Ground-cherry; Yellow Nightshade

Groundcherry. DESCRIPTION: Terrestrial annual or perennial forb/herb or subshrub (4 to 40 inches in height); the leaves are gray-green or dark green; the flowers are greenish-yellow, pale yellow, yellow, yellow-green, yellowish, yellowish-whitish, white or pale white-yellowish; the anthers are yellow; flowering may take place throughout the year between early January and late December. HABITAT: Within the range of this species it has been reported from rocky mountains; bouldery and rocky mountaintops; rocky mountainsides; sandy mesas; rocky cliffs; bases of cliffs; bouldery, rocky and shaley canyons; rocky canyon walls; rocky, gravelly and sandy canyon bottoms; gorges; scree; talus slopes; crevices in rocks; buttes; sandy bases of buttes; knolls; rocky-sandy-loamy flanks of knolls; rocky ridges; ridgetops; ridge crests; cinder cones; rocky foothills; rocky and sandy hills; bouldery, bouldery-rocky, bouldery-sandy, rocky and loamy hillsides; bouldery, bouldery-rocky-gravelly-sandy, bouldery-sandy, rocky, rocky-sandy, gravelly and sandy slopes; rocky alluvial fans; gravelly-sandy and sandy bajadas; rocky outcrops; amongst boulders and rocks; lava flows; sand dunes; plains; gravelly and sandy flats; valley floors; along rocky-gravelly, gravelly, gravelly-sandy, gravelly-loamy, sandy and clayey roadsides; rocky arroyos; along rocky bottoms of arroyos; along rocky draws; gullies; rocky ravines; seeps; springs; around seeping streams; along streams; in sand along creeks; along sandy creekbeds; along rivers; sandy riverbeds; along and in bouldery-gravelly, rocky, rocky-pebbly, rocky-sandy, gravelly, gravelly-sandy and sandy washes, within bouldery and rocky drainages; within rocky and gravelly-sandy drainage ways; around poolbeds; marshes; sandy-silty and silty depressions; (bouldery and sandy) banks of creeks and lakes; edges of arroyos and pondbeds; rocky terraces; canal walls; rocky ditch banks; riparian areas, and disturbed areas growing in dry desert pavement; bouldery, bouldery-rocky, bouldery-rocky-gravelly-sandy, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-pebbly, rocky-sandy, shaley, cindery, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, gravelly loam and clayey loam ground; clay ground, and sandy silty and silty ground, occurring from sea level to 5,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Physalis crassifolia* is native to southwest-central and southern North America. *5, 6, 16, 28 (color photograph), 43 (050410), 44 (011111), 46 (Page 755), 63 (050410 - color presentation), 77, 80 (Species of the genus *Physalis* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "It has been suspected that animals have been poisoned by eating large quantities of the tops and unripe fruits of these forbs."), 85 (050410 - color presentation of dried material), 140 (Page 306)*

***Physalis hederifolia* A. Gray: Ivyleaf Groundcherry**

COMMON NAMES: Ground Cherry; Heartleaf Groundcherry; Ivy Leafed Ground Cherry; Ivy-leaved Ground Cherry; Ivyleaf Ground Cherry; Ivyleaf Groundcherry. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (4 to 20 inches in height); the leaves are green or dark green; the flowers may be cream-yellow, green-yellow, orange, pale yellow, yellow or yellowish-green; flowering generally takes place between late March and early October (additional records: two for early February, one for late October and one for early November). HABITAT: Within the range of this species it has been reported from mountains; sandy and clayey mesas; plateaus; bouldery and rocky cliffs; bases of cliffs; along rocky and sandy canyons; gravelly and sandy canyon bottoms; crevices in rocks; bluffs; along bedrock and rocky ledges; along shaley ridges; ridgetops; meadows; foothills; rocky and gravelly hillsides; bouldery, rocky, rocky-loamy, gravelly, gravelly-loamy, sandy-loamy and clayey-loamy slopes; alluvial fans; rocky outcrops; amongst boulders and rocks; lava flows; sandy plains; flats; basins; sandy valley floors; along gravelly-loamy, sandy and clayey roadsides; draws; gulches; gullies; rocky and gravelly-loamy soils near springs; streambeds; along creeks; along rivers; riverbeds; in sandy washes; along sandy banks of streams, creeks, rivers and washes; sandy edges of washes; margins of washes; sand bars; sandy terraces; bottomlands; floodplains; mesquite bosques; ditches; riparian areas, and disturbed areas growing in dry bouldery, rocky, shaley, cindery, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, sandy loam and loam ground, and cindery clay, silty clay and clay ground, occurring from 3,000 to 7,600 feet in elevation in the forest, woodland, scrub, grassland; desertscrub and wetland ecological formations. NOTE: *Physalis hederifolia* is native to south-central and southern North America. *5, 6, 43 (073009), 46 (*Physalis hederifolia* Gray, Page 755), 58 (*Physalis hederifolia* Gray), 63 (050410), 80 (Species of the genus *Physalis* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "It has been suspected that animals have been poisoned by eating large quantities of the tops and unripe fruits of these forbs."), 85 (050410 - color presentation), 115 (color presentation)*

Physalis hederifolia (see footnotes 46 and 58 under *Physalis hederifolia*)

Physalis wrightii (see *Physalis acutifolia*)

***Solanum americanum* P. Miller: American Black Nightshade**

COMMON NAMES: American Nightshade (a name also applied to other species); American Black Night-shade; American Black Nightshade; Black Nightshade (a name also applied to other species); Chichikarita (Tarahumara); Chichiquelite (Mexico: Sonora); Common Purple Nightshade (a name also applied to other species); Glossy Nightshade; Hierba Mora (Hispanic); Hierba Mora Negra (Spanish); Little White Nightshade; Mamyam (Yaqui: Mexico, Sonora); Mock Black Nightshade; Pichecua (Purépecha); Pitsekua Blanca (Purépecha); Pitsekua Urapitu (Purépecha); Purple Nightshade (a name also applied to other species); Quelite Cimarrón (Hispanic); Small Flowered Night Shade; Small Flowered Nightshade; Small-flower Nightshade; Small-flowered Night-shade; Small-flowered Nightshade; Small-flowered White Nightshade; Smallflower Nightshade; Small-leaved Nightshade; Wicha Mamyam (Yaqui: Mexico, Sonora). DESCRIPTION: Terrestrial (may be semi-aquatic) annual or perennial forb/herb or subshrub (erect stems 4 inches to 5 feet in height; one plant was reported to be 40 inches in diameter); the leaves (margins entire) are green; the flowers may be cream-white, cream-yellow, pale lavender, lavender, pale violet, white, white tinged with purple, whitish or yellowish-white; the anthers are yellow; flowering generally takes place

between early January and late December; the mature berries may be black, blackish, green, orange-brown, purple, dark purple or purplish-black HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; in rocky canyons; along rocky canyon bottoms; chasms; ridges; meadows; rocky hills; rocky-loamy, sandy and clayey slopes; rocky-sandy-loamy alluvial fans; shaley outcrops; amongst rocks; sandy banks; sandy prairies; sandy and clayey flats; uplands; valley floors; valley bottoms; coastal bluffs; roadsides; arroyos; around seeps; gravelly springs; along streams; along and in rocky-sandy, gravelly and sandy streambeds; along creeks; along sandy creekbeds; along rivers; in sandy riverbeds; along and in rocky, rocky-sandy, sandy and loamy washes; within silty and silty-clayey drainages; clayey lakebeds; playas; ciénegas; freshwater marshlands; depressions; (sandy) banks of streams and rivers; along (soggy) edges of streams, creeks, rivers, washes, ponds, saltwater marshes and swamps; margins of arroyos and ponds; mudflats; benches; rocky terraces; bottomlands; rocky and cobbly-sandy floodplains; lowlands; mesquite bosques; along fencerows; sandy shores of reservoirs; sandy canal banks; ditches; cobbly-sandy, gravelly-sandy and sandy riparian areas; waste places and disturbed areas growing in shallow water; soggy and wet, moist, damp and dry rocky, shaley, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy loam, gravelly loam and loam ground; rocky clay, silty clay and clay ground, and silty ground, occurring from sea level to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Solanum americanum* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and northern, western, central and eastern South America, may be native to Eurasia. *5, 6, 18 (genus), 30, 43 (082311), 44 (082311 - color photograph), 46 (Page 759), 63 (082311 - color presentation), 85 (082411 - color presentation), 115 (color presentation), 124 (082311 - no record of species; genus record), 127 (082311 - no record of species)*

***Solanum douglasii* M.F. Dunal: Greenspot Nightshade**

SYNONYMY: *Solanum nigrum* C. Linnaeus var. *douglasii* (M.F. Dunal) A. Gray. COMMON NAMES: Douglas Horse-nettle; Douglas Night Shade; Douglas Night-shade; Douglas Nightshade; Douglas' Horse-nettle; Douglas' Night Shade; Douglas' Night-shade; Douglas' Nightshade; Douglas's Horse-nettle; Douglas's Night Shade; Douglas's Night-shade; Douglas's Nightshade; Green-spot Nightshade; Greenspot Nightshade. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (1 to 6½ feet in height, one plant was reported as being 32 inches in height and 5 feet in width); the flowers may be blue-violet, blue-white, cream, pale lavender, lavender, pale purple, purple, purple-white, white, white tinged with purple, white-pale lavender, white-lavender or whitish; the anthers are yellow; flowering generally takes place between early February and early December (additional records: two for early January, two for mid-January and three for late December); the mature fruits may be black, blue-black, green or orange-brown. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mesas; plateaus; rocky and gravelly-loamy canyons; rocky canyon bottoms; chasms; bases of cliffs; talus slopes; crevices in cliffs and rocks; bluffs; wet meadows; foothills; bouldery and rocky hills; hilltops; bouldery and rocky hillsides; bouldery-gravelly, rocky, rocky-gravelly, rocky-sandy, rocky-clayey, gravelly, gravelly-sandy, gravelly-loamy, sandy-loamy, loamy, clayey and clayey-loamy slopes; rocky-sandy-loamy alluvial fans; rocky outcrops; amongst rocks; bouldery-sandy, clayey and clayey-loamy flats; basins; valley floors; coastal beaches; along rocky, rocky-gravelly, gravelly and gravelly-sandy roadsides; draws; gulches; gullies; ravines; seeps; springs; in rock along streams; along rocky streambeds; along creeks; along sandy creekbeds; silty-clayey riverbeds; within gravelly and sandy washes; drainages; within rocky drainage ways; oases; freshwater marshes; banks of creeks and rivers; (sandy) edges of washes and marshes; shores of lakes; gravelly and sandy terraces; bottomlands; floodplains; margins of charcos (stock tanks); ditches; sandy riparian areas; waste places, and disturbed areas growing in wet, moist and dry bouldery, bouldery-gravelly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky-gravelly-clayey loam, rocky-sandy loam, gravelly loam, sandy loam, clayey loam and loam ground; rocky-clayey, silty clay and clay ground, and silty ground, occurring from sea level to 8,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or dye crop; it was also noted as having been used as a drug or medication and for body art. A bee (*Ptiloglossa* sp.) was observed and reported as gathering nectar from the flowers in early September. *Solanum douglasii* is native to southwest-central and southern North America. *5, 6, 15, 18 (genus), 43 (050610 - no record for *Solanum nigrum* var. *douglasii*), 44 (082411 - color photograph), 46 (Page 758), 58, 63 (050610 - color presentation), 77 (color photograph #98), 85 (082411 - color presentation), 124 (082411 - no record of species; genus record), 127, 140 (Pages 272 & 306)*

Solanum nigrum var. *douglasii* (see *Solanum douglasii*)

Sterculiaceae: The Cacao Family

***Hermannia pauciflora* S. Watson: Santa Catalina Burstwort**

COMMON NAMES: Burstwort; Few-flowered Hermannia; Hierba del Soldado; Santa Catalina Burstwort; Sparseleaf Hermannia. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (trailing to erect stems 8 to 16 inches in height); the small flowers are orange, orange-yellow or yellow; based on few available records, flowering generally takes place between early January and mid-November (flowering records: one for early January, three for early mid-January, one for early February, three for mid-February, one for early March, two mid-March, two for late March, three for mid-April, one for late May, one for mid-July, three for late August, two for early September, one for late October and one for mid-November. HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; along canyon bottoms; rocky gorges; talus slopes;

crevices in rocks; soil pockets in rocky slopes; foothills; rocky hills; rocky hillsides; bedrock and rocky slopes; rocky outcrops; amongst rocks; alluvial fans; basins; arroyos; along and in rocky washes; floodplains, and riparian areas growing in dry rocky ground, occurring from sea level to 4,300 feet in elevation in the scrub, grassland and desertscrub ecological formations. NOTE: *Hermannia pauciflora* is native to southwest-central and southern North America. *5, 6, 8, 13, 16, 43 (050710), 44 (082711 - no record of genus or species), 46 (Page 555), 63 (050710), 77, 85 (082711 - color presentation), 127 (082711 - no record of genus or species)*

Waltheria americana (see *Waltheria indica*)

***Waltheria indica* C. Linnaeus: Uhaloa**

SYNONYMY: *Waltheria americana* C. Linnaeus; *Waltheria indica* C. Linnaeus var. *americana* (C. Linnaeus) R. Brown ex E.Y. Hosaka. COMMON NAMES: Basora-prieta (Spanish); Boater Bush; Buff Coat; Escobillo Blanco (Spanish); Florida Waltheria; Guirmauve (Spanish); Hierba del Soldado (Hispanic); Leather Coat; Malvavisco (Spanish); Mauve-gris (Spanish); Monkey-bush; Sleepy-morning; Tapacola (Hispanic); Tapaculo (Hispanic); Tapanalgas (Hispanic); Uhaloa; Velvet-leaf. DESCRIPTION: Terrestrial perennial forb/herb, subshrub or shrub (prostrate, ascending or erect stems 6 inches to 6½ feet in height); the flowers are lemon-yellow, orange, pink, white, pale yellow or yellow; flowering generally takes place throughout the year between early January and late December. HABITAT: Within the range of this species it has been reported from mountains; mountaintops; mountainsides; rocky mesas; rocky canyons; sandy canyon bottoms; crevices in rocks; ledges; foothills; hills; hilltops; rocky hillsides; rocky slopes; alluvial fans; rocky outcrops; rocky and rocky-loamy flats; sandy river basins; valley floors; along roadsides; along sandy arroyos; gravelly-sandy bottoms of arroyos; along and in rocky and gravelly streambeds; riverbeds; washes; waterholes; sandy benches; coves; waste places, and disturbed areas growing in dry rocky, gravelly and sandy ground and rocky loam ground, occurring from sea level to 7,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Waltheria indica* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and South America. *5, 6, 13 (recorded as *Waltheria americana* L., Page 105), 15 (recorded as *Waltheria indica* L. var. *americana* (L.) R. Br.), 30, 43 (072510 - no record of *Waltheria indica* var. *americana*), 46 (recorded as *Waltheria americana* L., Page 555), 58 (recorded as *Waltheria americana* L.), 63 (072510 - color presentation of seed), 85 (072510 - color presentation of dried material), 140 (Page 296 - placed in the Malvaceae)*

Waltheria indica var. *americana* (see *Waltheria indica*)

Tamaricaceae: The Tamarix Family

***Tamarix chinensis* João de Loureiro: Five-stamen Tamarisk**

SYNONYMY: *Tamarix pentandra* P. Simon von Pallas. COMMON NAMES: Asiatic Tamarisk (Iowa); Cheng Liu (transcribed Chinese); China Tamarisk; Chinese Salt Cedar; Chinese Salt-cedar; Chinese Saltcedar; Chinese Tamarisk; Chinese Tamarix; Five Stamen Tamarisk; Five Stamen Tamarix; Five-stamen Tamarisk; Five-stamen Tamarix; Five-stamened Tamarisk; Fivestamen Tamarisk; Fivestamen Tamarix; French Tamarisk; Juniper Tamarix (a name also applied to other species); Pino Salado; Salt Cedar (a name also applied to other species and the genus *Tamarix*); Salt-cedar (a name also applied to other species and the genus *Tamarix*); Saltcedar (a name also applied to other species and the genus *Tamarix*); Tamarisco; Tamarisk (a name also applied to other species, the genus *Tamarix* and to the Tamaricaceae); Tamarix (a name also applied to other species, the genus *Tamarix* and to the Tamaricaceae). DESCRIPTION: Terrestrial perennial deciduous shrub or tree (4 to 33 feet in height); the bark is black, brown or reddish-brown; the branches are grayish-green; the twigs are green becoming purplish or reddish; the scale-like leaves are bluish-green, grayish-green or green; the flowers are cream, pale pink, pink, deep pink, pinkish-white, purplish, deep purplish-pink, red, reddish-pink, white or white-pink; flowering generally takes place between early March and late November. HABITAT: Within the range of this species it has been reported from mountains; rocky canyons; rocky canyon walls; bases of canyon walls; along rocky and sandy canyon bottoms; chasms; shaley knolls; ridges; rocky and sandy hillsides; rocky, rocky-sandy, shaley, gravelly-clayey, sandy-loamy, clayey, clayey-loamy and silty slopes; sand dunes; prairies; clayey-loamy plains; muddy, stony-cobbly, gravelly-sandy, gravelly-loamy, sandy, sandy-loamy, sandy-silty, clayey and clayey-loamy flats; rocky, rocky-sandy and sandy uplands; basins; hollows; valley floors; sandy valley bottoms; roadcuts; along roadsides; silty arroyos; within sandy draws; bottoms of arroyos; draws; within gulches; bottoms of gullies; along and in gravelly-sandy ravines; broad grassy bottoms of ravines; seeps; shaley and sandy springs; bouldery and sandy along streams; along and in streambeds; along creeks; along and in sandy and loamy creekbeds; in sand along rivers; along rocky-cobbly-sandy, gravelly-sandy, sandy and silty riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy, sandy, sandy-clayey and sandy-silty washes; along and in drainages; along watercourses; tanks; in moist sandy soils along ponds; along lakes; lakebeds; ciénegas; marshy areas; vernal moist swales; along (muddy, rocky, rocky-gravelly-silty, sandy and clayey) banks of gullies, streams, creeks, creekbeds, rivers, washes and ponds; (gravelly and sandy) edges of streams, rivers, ponds, lakes and marshes; along (wet-moist, muddy and sandy) margins of rivers, ponds and lakes; shorelines of ponds and lakes; clayey mudflats; cobbly, gravel, gravelly-sand, sand and silt bars; rocky-sandy and sandy beaches; sandy benches; coves; riparian ledges; terraces; bottomlands; sandy floodplains; lowlands; mesquite bosques; dams; banks of stock tanks; rocky, shaley, sandy, sandy-clayey and clayey soils around and in reservoirs and dry beds; canals; along canal banks; along and in ditches; ditch banks; gravelly-sandy and sandy riparian areas,

and disturbed areas growing in rimrock pavement; cryptogrammic; shallow water; muddy and wet, moist, damp and dry bouldery, stony-cobbly, rocky, rocky-cobbly-sandy, rocky-sandy, shaley, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam, clayey loam and loam ground, gravelly clay, sandy clay and clay ground; and rocky-gravelly silty, sandy silty and silty ground, occurring from sea level to 8,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Plant that poses a significant threat to our native biotic communities. *Tamarix chinensis* is native to eastern Asia. *5, 6, 13, 16 (recorded as *Tamarix pentandra* Pall.), 18, 26 (note), 28 (recorded as *Tamarix pentandra*, color photograph 35), 43 (050710), 44 (082411 - color photograph), 46 (recorded as *Tamarix pentandra* Pall., Page 557), 52 (color photograph), 63 (050710 - color presentation), 68, 85 (082511 - color presentation), 91, **109** (color photograph of a *Tamarix* sp.), 124 (082411), **HR***

Tamarix pentandra (see *Tamarix chinensis*)

Ulmaceae: The Elm Family

Celtis douglasii (see *Celtis laevigata* var. *reticulata*)

***Celtis ehrenbergiana* (J.F. Klotzsch) F.M. Liebmann: Spiny Hackberry**

SYNONYMY: *Celtis pallida* J. Torrey; *Celtis tala* J. Gillies ex J. É. Planchon var. *pallida* (J. Torrey) J. É. Planchon. COMMON NAMES: Acebuche (Spanish: Coahuila, Sonora)¹⁴⁰; Bainora <vainora> (Uto-Aztecan: Cahita, Sonora)¹⁴⁰; Bainoro; Capul <capui> (“Cherry or Capul”, Spanish: Sonora, Durango, Texas)¹⁴⁰; Desert Hackberry; Garabato (“Iron Hook”, Spanish: Sinaloa)¹⁴⁰; Garambullo (“Spiny Plant”, Spanish: Mayo, Sonora)¹⁴⁰; Gec Cehd (Oto-Manguan: Zapotec)¹⁴⁰; Granejo [Amarillo] (“[Yellow] Little Seed”, Spanish: Chihuahua, Durango, Nuevo León, Sonora, Tamaulipas, Texas)¹⁴⁰; Granjeno (Spanish); Guichi-bezia (Oto-Manguan: Zapotec)¹⁴⁰; Gumbro <cumbro, cúmero> (Uto-Aztecan: Cahita, Mayo, Onavas Pima)¹⁴⁰; [Desert, Spiny] Hackberry [Hagberry, Hegeberry] (English)¹⁴⁰; Huasteco; [Granejo] Huasteco (“Huastec [Seeds]”, Spanish: Tamaulipas)¹⁴⁰; Jilhazhí <jilhazhi> (Athapaskan: Navajo)¹⁴⁰; K:om (Uto-Aztecan: Onavas Pima), Ko:m <kohm> (Uto-Aztecan: Akimel O’odham, Tohono O’odham)¹⁴⁰; Kuavulí <kókauli> (Uto-Aztecan: Akimel O’odham, Hiá Ce□ O’odham)¹⁴⁰; Kunwo (Uto-Aztecan: Yaqui)¹⁴⁰; Kuwavul <ku’avor> (Uto-Aztecan: Tohono O’odham, Onavas Pima)¹⁴⁰; Palo de Águila (“Eagle’s Tree”, Spanish: Sonora)¹⁴⁰; Ptaacal (Hokan: Seri)¹⁴⁰; Rompecapa (“Cape Tearer”, Spanish: Oaxaca, Sonora)¹⁴⁰; Spiny Desert Hackberry; Spiny Hackberry; Spiny [Shiny] Hackberry (English)¹⁴⁰; Suhtú (Uto-Aztecan: Guarijio)¹⁴⁰; Wusha’i (Uto-Aztecan: Onavas Pima)¹⁴⁰. DESCRIPTION: Terrestrial perennial (drought-deciduous) evergreen shrub or tree (3 to 20 feet in height with rounded crowns; one plant was observed and described as being 7 feet in height with a crown 7 feet in width); one plant was observed and described as being 7 feet in height with a crown 13 feet in width); the bark is gray; the thorny branches are whitish-gray; the leaves are green or dark green; the inconspicuous flowers may be green, greenish-yellow, white-green or yellow; flowering generally takes place between early March and late October (flowering has also been reported as ending in November, flowering has also been reported as occurring year-round); the ripe fruits are orange, bright red, reddish-orange or yellow. HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky and rocky-gravelly canyons; rocky canyon bottoms; rocky bases of cliffs; ridges; rocky ridgetops; foothills; rocky hills; rocky hillsides; bedrock, bouldery, rocky, gravelly, gravelly-loamy and gravelly-sandy slopes; bajadas; rocky outcrops; amongst boulders; coves; cobbly plains; gravelly-sandy and sandy flats; rocky-gravelly basins; along roadsides; along rocky and sandy arroyos; rocky and sandy bottoms of arroyos; draws; gullies; seeps; springs; along seeping streams; along streams; along and in streambeds; in sand along creeks; along rivers; bouldery-cobbly-sandy riverbeds; along and in gravelly and sandy washes; within drainages; banks of arroyos, rivers, washes and drainages; (sandy) edges of rivers; along margins of arroyos and washes; benches; gravelly terraces; bottomlands; gravelly-clayey floodplains; mesquite bosques; around stock tanks (represos); riparian areas, and disturbed areas growing in muddy (rarely reported) and dry desert pavement; bouldery, bouldery-rocky, bouldery-cobbly-sandy, rocky, rocky-gravelly, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam ground, and gravelly clay ground, occurring from sea level to 6,000 feet in elevation in the forest, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The small fruits are reportedly juicy and sweet. The Desert Hackberry may live to be more than 88 years of age and may be useful in controlling erosion. The Desert Hackberry is a larval food plant for the American Snout (*Libytheana carinenta*) and Empress Leilia (*Asterocampa leilia*) and is browsed by deer; the fruits are eaten by Northern Mockingbirds (*Mimus polyglottos*), Thrashers and other species of birds, small desert mammals, White-nosed Coati (*Nasua narica*), Coyotes (*Canis latrans*), foxes and Javelinas (*Peccari tajacu*). It provides a nesting site for the White-wing Dove (*Zenaida asiatica*) and cover for Gambel’s Quail (*Callipepla gambelii gambelii*) as well as other birds and mammals. *Celtis ehrenbergiana* is native to south-central and southern North America; Central America and coastal islands in the Caribbean Sea, and western, eastern and southern South America. *5, 6, 13 (recorded as *Celtis tala* Gillies var. *pallida* (Torrey) Planch., Pages 155-156), 15 (recorded as *Celtis pallida* Torr.), 16 (recorded as *Celtis pallida* Torr.), 18, 26 (recorded as *Celtis pallida*, color photograph), 28 (recorded as *Celtis pallida*, color photograph 69), 43 (050810), 44 (120310 - no record of species; genus record), 46 (recorded as *Celtis pallida* Torr., Page 220), 48, 58 (recorded as *Celtis pallida* Torr.), 63 (050810), 77 (recorded as *Celtis pallida* Torr.), **85** (082611 - also recorded as *Celtis pallida* var. *pallida* Torrey), 91 (recorded as *Celtis pallida* Torr., Pages 154-156), 115 (color presentation), 124 (031611 - no record of species; genus record), 140 (Pages 272-273, 274 & 288 - recorded as *Celtis pallida* Torrey, placed in the Cannabaceae), **WTK** (July 13, 2005)*

***Celtis laevigata* C.L. von Willdenow var. *reticulata* (J. Torrey) L.D. Benson: Netleaf Hackberry**

SYNONYMY: *Celtis douglasii* J.É. Planchon; *Celtis reticulata* J. Torrey. COMMON NAMES: ¹⁴⁰aqwá' <aqwa?> (Yuman: Walapai)¹⁴⁰; Acibuche <acebuche> (Spanish: Chihuahua)¹⁴⁰; Aceituna ("Olive", Spanish)¹⁴⁰; Bainoro <vainora> (Spanish: Sonora)¹⁴⁰; Canyon Hackberry; Cúmaro (Mexico, Sonora); [Palo] Cumbro (Spanish: Sinaloa)¹⁴⁰; Cúmero <combro, cumaro, cumbro> (Uto-Aztecan: Cahita, Mayo, Sonora, Sinaloa)¹⁴⁰; Didzé Bik'□□dlizí <di□é bek□λizi> (Athapascan: Navajo)¹⁴⁰; Douglas Hackberry; Douglas's Hackberry; False Elm; Garabato Blanco ("White Iron Hook", Spanish: Baja California)¹⁴⁰; Gumbro (Uto-Aztecan: Onavas Pima); Hack Berry; Hackberry (a name also applied to the genus *Celtis*); [Net-leaf] Hackberry (English)¹⁴⁰; IYntlidz ("Hard Seed", Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Jilhááze (Athapascan: Western Apache)¹⁴⁰; Jilhazi <jilxazi, tjilxájih> ("Chewing Plant", Athapascan: Navajo)¹⁴⁰; Ke□moci (Uto-Aztecan: Guarijío)¹⁴⁰; Ko:m <kom> (Uto-Aztecan: Tohono O'odham)¹⁴⁰; Kumar (Uto-Aztecan: Onavas Pima)¹⁴⁰; Machaquí <uchieá> (Uto-Aztecan: Guarijío, Sonora)¹⁴⁰; Membrillo (Spanish: San Luis Potosí)¹⁴⁰; Net Leaf Hackberry; Net-leaf Hackberry; Net-leaf Sugar Hackberry; Net-leafed Hackberry; Net Leaved Hackberry; Net-leaved Hackberry; Netleaf Hackberry; Oklahoma Hackberry; Palo Blanco ("White Tree", Spanish: Arizona, Texas, Coahuila, Durango, Tamaulipas)¹⁴⁰; Palo Duro ("Hard Tree", Spanish: New Mexico)¹⁴⁰; Palo Mulato ("Mulato Tree", Spanish: Durango)¹⁴⁰; Shikai-shikai-ka (Keres: Acoma, Laguna)¹⁴⁰; Small-leaf Nettle Tree; Small-leaved Nettle Tree; Sugar-berry (a name also applied to the genus *Celtis*); Sugar-berry (English)¹⁴⁰; Sugarberry (a name also applied to the genus *Celtis*); Thick-leaf Hackberry; Thick-leaved Hackberry; Vaior (Spanish: Mexico)¹⁴⁰; Western Hackberry (a name also applied to other species); Western Hackberry (English)¹⁴⁰. DESCRIPTION: Terrestrial perennial deciduous shrub or tree (40 inches to 60 feet in height with a rounded and spreading crown; stunted shrubs or trees up to 2 feet in height were observed and reported from forests at higher elevations, one tree was observed and described as being 13 feet in height and 16 feet in width, one tree was observed and described as being 30 feet in height and width); the bark is gray, dark gray or reddish-brown becoming "warty" with age; the twigs are reddish-brown; the upper surface of the leaves may be dark green or yellow-green and the lower surface is gray-green appearing in early April to late May developing fully in June, they turn yellow in the fall; the inconspicuous flowers are green or yellow-green; the anthers are green; the stigmas are whitish-green; flowering generally takes place between mid-March and mid-September; the fruits may be black, purplish, pale orange, orange, orange-red-brown, dark red, reddish or reddish-black. HABITAT: Within the range of this species it has been reported from mountains; mountainsides; rocky mesas; plateaus; rocky cliffs; hanging gardens; bases of cliffs; along bouldery, rocky, rocky-gravelly and gravelly-loamy canyons; canyonsides; bouldery, rocky, gravelly and gravelly-sandy-clayey canyon bottoms; chasms; gorges; bouldery talus; crevices in rocks; bluffs; ledges; rocky ridges; rocky ridgetops; foothills; sandy hills; rocky hillsides; bouldery, bouldery-sandy, rocky, rocky-sandy-clayey-loamy, rocky-loamy, shaley, shaley-gravelly, gravelly-loamy, sandy-loamy and loamy slopes; alluvial fans; rocky outcrops; amongst boulders and rocks; bases of rock slides; rocky and sandy alcoves; sandy lava flows; lava beds; sand dunes; shell banks; breaks; prairies; plains; sandy flats; basins; sandy valley floors; valley bottoms; along gravelly-loamy roadsides; along and in gravelly arroyos; sandy bottoms of arroyos; bottoms of draws; gulches; rocky gullies; ravines; sandy seeps; springs; along streams; along and in bouldery, gravelly-sandy and sandy streambeds; in sand along creeks; along and in bouldery and sandy creekbeds; along rivers; riverbeds; along and in rocky, rocky-gravelly, gravelly, sandy and sandy-clayey-loamy washes; rocky-sandy drainages; loamy drainage ways; along watercourses; oases; among and in pools; ponds; lakes; tanks; ciénegas; along (rocky) banks of arroyos, ravines, streams, streambeds, creeks, rivers, washes and drainages; (sandy) edges of arroyos, springs, streams and washes; along margins of rivers and ponds; shores of lakes; rocky-sandy and gravelly-sandy benches; gravelly, sandy and silty-loamy terraces; silty bottomlands; along floodplains; mesquite bosques; fencerows; gravelly canal banks; along ditches; rocky-gravelly and sandy riparian areas, and disturbed areas growing in wet, moist, damp and dry (seasonally wet) bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, shaley-gravelly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-sandy-clayey loam, gravelly loam, sandy loam, sandy-clayey loam, silty loam and loam ground; gravelly-sandy clay ground, and silty ground, occurring from 300 to 7,700 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food, fiber and/or dye crop; it was also noted as having been used for tools, as a drug or medication or as a fuel. The Netleaf Hackberry may be useful in the rehabilitation of disturbed sites and suitable for planting in patios, yards and along streets in urban areas and may live to be 100 to 200 years in age. The Netleaf Hackberry provides cover and food for many species of birds and mammals; the American Beaver (*Castor canadensis*) feeds on the wood; the plant is browsed by Pronghorn (*Antilocapra americana*), Mule Deer (*Odocoileus hemionus*) and White-tailed Deer (*Odocoileus virginianus*); the fruit is eaten by wildlife; and Scrub Jays (*Aphelocoma californica*) feed on the leaf galls that form on the foliage. When restoring the floodplains of the major river systems in this township consider including the following plants in the mix: Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowhood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*),

Soaptree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Celtis laevigata* var. *reticulata* is native to south-central and southern North America. *5, 6, 13 (Pages 154-155), 15 (recorded as *Celtis reticulata* Torr.), 18, 26 (recorded as *Celtis reticulata*, color photograph), 28 (recorded as *Celtis reticulata*, color photograph 70), 43 (120410 - *Celtis laevigata* var. *reticulata* (Torr.) L.D. Benson), 44 (031611 - located in the Common Names link under *Celtis reticulata* Torr.; genus record), 46 (Page 220), 48, 52 (recorded as *Celtis reticulata*, color photograph), 53, 58 (recorded as *Celtis reticulata* Torr.), 63 (050910 - color presentation), **85** (082611 - color presentation), 115 (color presentation), 124 (031611), 127, 140 (Pages 108, 272, 273-274 & 288 - recorded as *Celtis reticulata* Torrey, placed in the Cannabaceae), **WTK** (August 4, 2005)*

Celtis pallida (see *Celtis ehrenbergiana*)

Celtis pallida var. *pallida* (see footnote 85 under *Celtis ehrenbergiana*)

Celtis reticulata (see *Celtis laevigata* var. *reticulata*)

Celtis tala var. *pallida* (see *Celtis ehrenbergiana*)

Urticaceae: The Nettle Family

***Parietaria hespera* B.D. Hinton: Rillita Pellitory**

COMMON NAME: California Pellitory; Rillita Pellitory. DESCRIPTION: Terrestrial annual or perennial forb/herb (prostrate, decumbent, ascending or erect stems $\frac{3}{4}$ to 22 inches in height); the stems may be purple; the leaves are pale green or green; the inconspicuous flowers may be cream, pale green, green, greenish, white or white-green; flowering generally takes place between early February and early June (additional records: one for mid-January, two for late June, one for early July, one for mid July, one for late July and one for late August). HABITAT: Within the range of this species it has been reported from mountains; mesas; plateaus; cliffs; bases of cliffs; bouldery, rocky and stony canyons; along rocky and sandy-loamy canyon bottoms; talus slopes; crevices in rocks; buttes; ledges; loamy and clayey-loamy ridges; rocky ridgetops; foothills; bouldery and rocky hills; clayey hilltops; rocky hillsides; along bouldery, bouldery-silty, rocky, cobbly, gravelly and clayey-loamy slopes; bouldery-stony-gravelly-sandy and rocky-sandy-loamy alluvial fans; bajadas; boulder and rock outcrops; bases of boulders and rocks; sheltered areas below rocks, shrubs and trees; caves; rocky niches; sand dunes; sandy-loamy plains; flats; valley floors; roadsides; rocky arroyos; rocky draws; springs; along streams; along creeks; along rocky creekbeds; along rivers; riverbeds; along and in rocky, rocky-sandy, gravelly, gravelly-sandy, sandy and sandy-clayey washes; within bouldery-rocky drainages; cobbly-sandy drainage ways; tanks; depressions; rocky swales; (loamy) banks of arroyos; streambeds, rivers and washes; (bouldery) edges of washes, drainage ways and salt marshes; margins of rivers and washes; benches; rocky-sandy floodplains; canals; bottoms of stock tanks; sandy riparian areas, and disturbed areas growing in wet, moist, damp and dry bouldery, bouldery-rocky, bouldery-stony-gravelly-sandy, rocky, rocky-sandy, stony, cobbly, cobbly-sandy, gravelly, gravelly-sandy and sandy ground; rocky-sandy loam, sandy loam, clayey loam and loam ground; bouldery clay, rocky clay, sandy clay and clay ground, and silty ground often in shaded areas, occurring from sea level to 6,500 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: *Parietaria hespera* B.D. Hinton var. *californica* B.D. Hinton, the California Pellitory has been described as being either annual or perennial, and *Parietaria hespera* B.D. Hinton var. *hespera* has been described as a perennial. *Parietaria hespera* is native to southwest-central and southern North America. *5, 6, 15, 16, 43 (050910), 46 (no record of species), 58, 63 (050910), **85** (050910)*

Verbenaceae: The Verbena Family

***Glandularia bipinnatifida* (T. Nuttall) T. Nuttall: Dakota Mock Vervain**

COMMON NAMES: Alfombrilla (Hispanic); Alfombrilla de Campo (Hispanic); Azul Chichique (Hispanic); Dakota Mock Vervain; Dakota Mock-vervain; Dakota Verbena; Dakota Vervain; Davis Mountain Mock Vervain; Desert Vervain; Hierba del Ojo (Hispanic); Moradilla (Hispanic); Prostrate Vervain; Small-flowered Verbena; Tatsundiku Moradu (Purépecha); Vervain (a name also applied to other species, the genus *Verbena* and the Verbenaceae); Wright Vervain. DESCRIPTION: Terrestrial annual or perennial forb/herb (prostrate, decumbent, ascending to erect stems 4 to 20 inches in height); the leaves may be gray, dark green or yellow-green; the flowers may be light blue, pale blue-violet, blue, blue-lavender, blue-purple, bluish-lavender, bluish-purple, light lavender, lavender, lavender-blue, lavender-pink, lavender-purple, periwinkle blue, pale pink-lavender, pink, deep pink, pink-lavender, pink-purple, pale purple (aging blue), purple, purple & white, purplish-pink, rose, rose-pink, rose-purple, violet, violet-purple, white or yellow; flowering generally takes place between early February and early November (additional record: one for early December). HABITAT: Within the range of this species it has been reported from mountains; rocky mountaintops; rocky mountainsides; grassy mesas; rocky plateaus; shaley rimrock; cliffs; along rocky, gravelly and

gravelly-loamy canyons; rocky canyon walls; along sandy canyon bottoms; scree; crevices in rocks; bluffs; rocky buttes; buttes; knolls; rocky and rocky-gravelly ridges; rocky and rocky-gravelly ridgetops; clearings in forests; meadows; foothills; rocky, rocky-loamy and clayey hills; rocky-gravelly-loamy hilltops; rocky and rocky-gravelly hillsides; bouldery, rocky, rocky-loamy, rocky-clayey, rocky-clayey-loamy, shaley, stony, gravelly, gravelly-sandy, gravelly-silty, sandy, sandy-clayey-loamy, loamy, loamy-clayey, clayey and clayey-loamy slopes; bajadas; pediments; bedrock and rocky outcrops; amongst boulders; lava beds; sand hills; dunes; shaley, loamy and loamy-clayey banks; breaks; rocky, rocky-loamy, gravelly-loamy, sandy, loamy, loamy-clayey and silty prairies; gravelly-loamy, sandy, sandy-loamy and sandy-clayey-loamy plains; sandy and sandy-clayey-loamy flats; loamy, loamy-clayey and silty uplands; sandy valley floors; along railroad right-of-ways; along and in gravelly-loamy roadbeds; roadcuts; along rocky, rocky-silty, shaley, cindery, gravelly, gravelly-sandy-loamy, gravelly-loamy, sandy, sandy-loamy, clayey-loamy and silty roadsides; clayey-loamy arroyos; chutes; rocky draws; bottoms of draws; within rocky gulches; sandy bottoms of gulches; bouldery-rocky gullies; stony ravines; seeps; springs; in clay along streams; along and in rocky streambeds; in sand along creeks; sandy creekbeds; along and in rivers; along and in riverbeds; along and in gravelly and sandy washes; sandy drainages; along drainage ways; in rocks around ponds; bogs; bowls; swales; along (stony, gravelly-sandy, clayey and silty) banks of arroyos, draws, creeks, rivers and bowls; (silty) edges of streams and washes; margins of rivers and lakes; shores of lakes; terraces; sandy floodplains; lowlands; flanks of stock tanks; sandy and clayey ditches; sandy and clayey-loamy riparian areas, and disturbed areas growing in moist and dry bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, shaley, stony, stony-sandy, cindery, cindery-gravelly, gravelly, gravelly-sandy and sandy ground; rocky loam, rocky-gravelly loam, rocky-clayey loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, sandy-clayey loam, clayey loam, silty loam, silty-clayey loam and loam ground; rocky clay, loamy clay, silty clay and clay ground, and rocky silty, gravelly silty and silty ground, occurring from 700 to 10,100 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. The flowers may be fragrant. *Glandularia bipinnatifida* is native to south-central and southern North America and Central America. *5, 6, 15, 18, 28 (recorded as *Verbena bipinnatifida*, color photograph 638), 30, 43 (051110 - *Glandularia bipinnatifida* Nutt.), 44 (082611 - no listing recorded under Common Names), 46 (recorded as *Verbena bipinnatifida* Nutt., Page 727), 48 (genus), 58, 63 (051110), **85** (082611), 115 (color presentation), 124 (082611), 127*

***Glandularia bipinnatifida* (T. Nuttall) T. Nuttall var. *bipinnatifida*: Dakota Mock Vervain**

SYNONYMY: *Verbena bipinnatifida* J.C. Schauer. COMMON NAMES: Alfombrilla (Hispanic); Alfombrilla de Campo (Hispanic); Azul Chichique (Hispanic); Dakota Mock Vervain; Dakota Verbena; Hierba del Ojo (Hispanic); Moradilla (Hispanic); Small-flowered Verbena; Tatsundiku Moradu (Purépecha); Vervain. DESCRIPTION: Terrestrial annual or perennial forb/herb (decumbent, ascending to erect stems 4 to 20 inches in height, one plant was reported to be 4 inches in height and 40 inches in width, one plant was reported to be 12 inches in height and 16 inches in width); the leaves may be gray, dark green or yellow-green; the flowers may be bluish-purple, light lavender, lavender, lavender-pink, magenta-pink, periwinkle blue, pink, dark pink, pink-lavender, pale purple (aging blue), purple, purple & white, purplish-pink, rose, rose-pink, rose-purple, violet, white or yellow; flowering generally takes place between early February and early November (additional record: one for early December). HABITAT: Within the range of this species it has been reported from mountains; mountaintops; rocky mountainsides; gravelly-loamy mesas; cliffs; along rocky, gravelly and gravelly-loamy canyons; sandy canyon bottoms; crevices in rocks; bluffs; buttes; knolls; rocky ridges; rocky ridgetops; meadows; foothills; rocky, rocky-loamy and clayey hills; rocky-gravelly-loamy hilltops; rocky and rocky-gravelly hillsides; bouldery-sandy, rocky, gravelly and gravelly-silty slopes; bajadas; pediments; rocky outcrops; amongst boulders; lava beds; sand hills; dunes; rocky, rocky-loamy, gravelly-loamy, gravelly-clayey-loamy, sandy and loamy prairies; sandy flats; sandy valley floors; along railroad right-of-ways; gravelly-loamy roadbeds; along rocky, gravelly, sandy, sandy-loamy and silty roadsides; clayey-loamy arroyos; rocky draws; bottoms of draws; gulches; bottoms of ravines; seeps; springs; in clay along streams; along and in rocky streambeds; in sand along creeks; sandy creekbeds; along and in rivers; along and in riverbeds; in washes; sandy drainages; drainage ways; in rocks around ponds; sumps; banks of rivers; silty edges of streams and washes; margins of lakes; shores of lakes; terraces; sandy floodplains; lowlands; sandy and clayey ditches; along clayey-loamy riparian areas and disturbed areas growing in moist and dry bouldery, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony-sandy, gravelly and sandy ground; rocky loam, rocky-gravelly loam, rocky-sandy loam, gravelly loam, gravelly-sandy loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; silty clay and clay ground, and gravelly silty and silty ground, occurring from 700 to 9,300 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The species, *Glandularia bipinnatifida*, was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. The flowers may be fragrant. *Glandularia bipinnatifida* var. *bipinnatifida* is native to south-central and southern North America. *5, 6, 15, 18, 28 (color photograph of the species, *Verbena bipinnatifida*), 30 (species), 43 (051110), 46 (*Verbena bipinnatifida* Nutt., Page 727), 48 (genus), 58, 63 (051110 - color presentation), **85** (051310 - color presentation), 115 (color presentation of the species), 127 (species), 140 (Page 306 - recorded as *Glandularia bipinnatifida* (Nuttall) Nuttall [*Verbena bipinnatifida* Nuttall!])*

***Glandularia gooddingii* (J.I. Briquet) O.T. Solbrig: Southwestern Mock Vervain**

SYNONYMY: *Verbena gooddingii* J.I. Briquet; *Verbena gooddingii* J.I. Briquet var. *nepitifolia* I. Tidestrom. COMMON NAMES: Desert Verbena (a name also applied to other species); Desert Vervain; Goodding Glandularia; Goodding Mock Vervain; Goodding Verbena; Goodding Vervain; Goodding's Glandularia; Goodding's Mock Verbena; Goodding's Mock

Vervain; Goodding's Verbena; Goodding's Vervain; Gooding Verbena (error); Mexican Vervain; Mojave Verbena; Southwestern Mock Vervain; Southwestern Mock Vervain; Southwestern Verbena; Southwestern Vervain; Sweet William; Verbena (a name also applied to other species, the genus *Verbena* and the Verbenaceae); Vervain (a name also applied to other species, the genus *Verbena* and the Verbenaceae). DESCRIPTION: Terrestrial perennial forb/herb (6 inches to 2 feet in height; one plant was observed and described as being 6 to 10 inches in height and 6 inches in width, one plant was observed and described as being 24 inches in height and 12 inches in width); the leaves are gray-green, green or dark green; the flowers may be light blue, blue, blue-lavender, blue-purple, blue-violet, bluish-purple, pale lavender, lavender, lavender-blue, lavender-purple, magenta, pink, pink-lavender, pink-purple, pink-violet, light purple, purple, purple-blue, purple-lavender, purplish-pink, reddish-violet, rose-pink, sky blue or white-lavender; flowering generally takes place between early February and mid-October (additional records: one for early November, one for mid-November, two for late November and one for early December). HABITAT: Within the range of this species it has been reported from mountains; cobbly-gravelly and gravelly mesas; plateaus; rocky cliffs; along canyons; bouldery-cobbly, rocky, gravelly and sandy canyon bottoms; rock cliffs; talus slopes; crevices in rocks; rocky ledges; rocky-sandy and sandy ridges; rocky ridgetops; meadows; cinder cones; gravelly, gravelly-sandy and sandy foothills; rocky hills; hilltops; rocky hillsides; bouldery-sandy, rocky, rocky-gravelly, gravelly and clayey-loamy slopes; rocky outcrops; amongst boulders; rocky plains; sandy and clayey-loamy flats; sandy valley floors; in roadways; along rocky, cindery, gravelly, gravelly-sandy-clayey-loamy, gravelly-loamy, pebbly, sandy, sandy-loamy and loamy roadsides; within rocky and gravelly arroyos; rocky bottoms of arroyos; gravelly gulches; bouldery-rocky ravines; seeps; springs; along and in streambeds; along creeks; creekbeds; along rivers; along and in rocky, rocky-sandy, gravelly and sandy washes; drainages; around pools; playas; ciénegas; (sandy and silty) banks of creeks, rivers and washes; (gravelly-sandy and silty) edges of streambeds and washes; margins of washes; sand bars; cobbly benches; shelves; terraces; sandy bottomlands; sandy-clayey floodplains; rocky, cobbly-gravelly, gravelly and sandy riparian areas; recently burned areas of forests, and disturbed areas growing in dry bouldery, bouldery-rocky, bouldery-cobbly, bouldery-sandy, rocky, rocky-gravelly, rocky-sandy, stony, cobbly, cobbly-gravelly, cindery, gravelly, gravelly-sandy, pebbly and sandy ground; rocky-gravelly loam, gravelly loam, gravelly-sandy-clayey loam, gravelly-clayey loam, sandy loam, clayey loam and loam ground; bouldery clay, sandy clay and clay ground, and powdery-silty and silty ground, occurring from 500 to 7,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The flowers may be fragrant. *Glandularia gooddingii* is native to southwest-central and southern North America. *5, 6, 15, 16, 28 (color photograph 636), 43 (073109), 44 (082611 - no listing recorded under Common Names, common names listing recorded under *Verbena gooddingii* Briq., color photograph), 46 (recorded as *Verbena gooddingii* Briq., Pages 726-727 and *Verbena gooddingii* Briq. var. *nepetifolia* Tidestrom, Pages 726-727), 48 (genus), 63 (051410), 77 (recorded as *Verbena gooddingii* Briq., color photograph #53), **85** (082611 - color presentation), 115 (color presentation), 124 (082611 - no record of species; genus record), 140 (Page 306)*

***Tetradlea coulteri* A. Gray: Coulter's Wrinklefruit**

COMMON NAMES: Coulter Tetradlea; Coulter Wrinklefruit; Coulter's Wrinklefruit. DESCRIPTION: Terrestrial perennial forb/herb or subshrub (8 to 20 inches in height); the foliage may be ash-gray or gray-green; the flowers are pale apricot with a pale peach floral tube, cream, cream with a pinkish floral tube, cream-white, creamy-tan, greenish-white, pink-cream, white, pale yellow or yellow; the anthers are dark brown; flowering generally takes place between mid-April and late October (additional records: one for mid-March and one for late March). HABITAT: Within the range of this species it has been reported from mountains; bouldery mountaintops; gravelly mesas; rims of gorges; canyons; gravelly ridges; bosques; rocky foothills; hills; rocky, rocky-gravelly, rocky-gravelly-silty and gravelly hillsides; sandy bases of escarpments; rocky, rocky-gravelly-sandy-loamy, cobbly and gravelly slopes; sandy bajadas; amongst boulders; silty plains; gravelly and sandy flats; sandy basins; gravelly valley floors; gravelly-silty-loamy valley bottoms; along gravelly-sandy-clayey-loamy, gravelly-loamy, sandy and clayey roadsides; arroyos; sandy bottoms of arroyos; along and in bedrock-rocky, rocky and sandy washes; drainages; drainage ways; swales; rocky banks of arroyos and washes; edges of washes; benches; sandy-loamy terraces; floodplains; ditches; in silty-clay at stock tanks, and disturbed areas growing in dry bouldery, rocky, rocky-gravelly, shaley, cobbly, gravelly and sandy ground; rocky-gravelly-sandy loam, gravelly loam, gravelly-sandy-clayey loam, gravelly-silty loam, sandy loam and sandy-clayey loam ground; silty clay ground, and rocky-gravelly silty and silty ground, occurring from 400 to 7,500 feet in elevation in the woodland, grassland and desertscrub ecological formations. NOTES: This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a drug or medication. The genus *Tetradlea* is sometimes placed in the Lamiaceae (Labiatae), the Mint Family. *Tetradlea coulteri* is native to southwest-central and southern North America. *5, 6, 16, 43 (051410), 46 (Page 730), 58, 63 (051410 - color presentation), 77, **85** (051410 - color presentation), 115 (color presentation), 127*

Verbena bipinnatifida (see *Glandularia bipinnatifida* var. *bipinnatifida*)

Verbena gooddingii (see *Glandularia gooddingii*)

Verbena gooddingii var. *nepetifolia* (see *Glandularia gooddingii*)

Viscaceae (Loranthaceae): The Christmas Mistletoe Family

***Phoradendron californicum* T. Nuttall: Mesquite Mistletoe**

SYNONYMY: *Phoradendron californicum* T. Nuttall var. *distans* W. Trelease. **COMMON NAMES:** Acacia Mistletoe; American Mistletoe (a name also applied to the genus *Phoradendron*); California Mistletoe; California Mesquite Mistletoe; Chayal (Uto-Aztecan: Cahuilla)¹⁴⁰; Chile de Espino (“Spiny Chile”, Spanish: Sonora)¹⁴⁰; Desert [Mesquite] Mistletoe (English)¹⁴⁰; Haakvo□ (Uto-Aztecan: Akimel O’odham)¹⁴⁰; Ha:hwa□; Ha:kva□ (Uto-Aztecan: Hiá Ce□ O’odham)¹⁴⁰; Ha:kwa□ <hakowa’t> (Uto-Aztecan: Tohono O’odham)¹⁴⁰; Haramkulyi (Uto-Aztecan: Mountain Pima)¹⁴⁰; Kanúc (Yuman: Maricopa)¹⁴⁰; Mesquite American Mistletoe; Mesquite Mistletoe; Pohótela (“Phainopepla” because the Phainopepla disperses the seeds, Uto-Aztecan: Mayo)¹⁴⁰; Sxacál [Sxyacál] (Yuman: Cocopa)¹⁴⁰; To:kī (Uto-Aztecan: Hiá Ce□ O’odham, Arizona)¹⁴⁰; To(a)ker <toc’guer> (“On The Oak”, Uto-Aztecan: Mountain Pima)¹⁴⁰; Toji (Spanish: Sonora)¹⁴⁰; Western Dwarf Mistletoe. **DESCRIPTION:** Terrestrial perennial subshrub or shrub (8 inches to 5 feet in height; one clump was observed and described as being 16 inches in length and 36 inches in width); the stems (16 to 40 inches in length) may be brown, green, green-reddish, dark olive-green, reddish, red-brown, yellow-green or yellowish; the fragrant flowers are greenish-yellow or yellow-green; the anthers are yellow; flowering generally takes place between late July and early June (additional records: one record for late June and one record for early July, flowering beginning in January and ending in November has also been reported); the fruits may be orange, orange-pink, pink, pink-red, pale red, reddish, red-orange, salmon (reported on surfaces exposed to sunlight), white, white-pink, white-reddish or whitish to yellow-white (reported on surfaces not exposed to sunlight) with the older berries turning brown-red or red. **HABITAT:** This partial parasite was observed growing on Catclaw Acacia, Foothill Paloverde and Velvet Mesquite, and is commonly reported as growing on: *Acacia* spp. (*Acacia constricta*, Whitethorn Acacia; *Acacia farnesiana*, Sweet Acacia, and *Acacia greggii*, Catclaw Acacia); *Condalia* spp. (*Condalia globosa*, Bitter Snakewood and *Condalia warnockii*, Kearney Snakewood); *Larrea tridentata*, Creosote Bush; *Olneya tesota*, Desert Ironwood; *Parkinsonia* spp. (*Parkinsonia aculeata*, Jerusalem Thorn; *Parkinsonia florida*, Blue Palo Verde; *Parkinsonia microphylla*, Yellow Palo Verde, and *Parkinsonia praecox*, Sonoran Palo Verde); *Prosopis* spp. (*Prosopis glandulosa*, Honey Mesquite; *Prosopis pubescens*, Screwbean Mesquite, and *Prosopis velutina*, Velvet Mesquite); *Simmondsia chinensis*, Jojoba, and *Ziziphus obtusifolia*, Lotebush, occurring from sea level to 5,100 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. **NOTES:** When removing Mesquite Mistletoe from the trees and shrubs on your property consider leaving some of the plants for wildlife. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a food (berries) and as a drug or medication. The flowers are fragrant. The Northern Mockingbird (*Mimus polyglottos*) and Phainopepla (*Phainopepla nitens*) feed on the berries; White-wing Doves (*Zenaida asiatica*) and Verdins (*Auriparus flaviceps*) nest in the stems, and Mourning Doves (*Zenaida macroura*), Gambel’s Quail (*Callipepla gambelii*) as well as other birds take refuge in the stems. *Phoradendron californicum* is native to southwest-central and southern North America. *5, 6, 13 (Pages 285-286, color photograph: Plate U.2., Page 406), 15, 16, 28 (color photograph 799), 43 (051710 - *Phoradendron californicum* var. *distans* Trel. in Trel.), 44 (082611), 46 (recorded as *Phoradendron californicum* Nutt. and *Phoradendron californicum* Nutt. var. *distans* Trelease, Page 224), 58, 63 (051410 - color presentation), 77, 80 (Species of the genus *Phoradendron* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. “Cattle may be killed by browsing these parasitic forbs, but plants are unpalatable and poisoning is rare. Also children may be poisoned by eating the berries.”), 85 (082611 - color presentation), 97, 115 (color presentation), 124 (082611 - no record of genus or species), 127, 140 (Pages 276-278 & 305 - placed in the Santalaceae), ADS (Kissing plant is a tree killer, Tuesday, November 30, 2010, Section A, Pages 1&4, retort Friday, December 3, 2010, Section A, Page 17: Story missed positive points on mistletoe), WTK (August 4, 2005)*

***Phoradendron juniperinum* G. Engelmann ex A. Gray: Juniper Mistletoe**

COMMON NAMES: Juniper Mistletoe; O’ka (Uto-Aztecan: Shoshoni)¹⁴⁰. **DESCRIPTION:** Terrestrial perennial evergreen subshrub or shrub (to 2 feet in diameter); the stems may be light brown, orange or yellow-green; this plant has no leaves or if present are small and scale-like; the inconspicuous flowers are greenish with male and female flowers born on separate plants; flowering generally takes place between late March and late October (additional records: one for early January, one for early February, one for mid-February, one for early March, one for early December, one for mid-December and two for late December); the fruits (about 1/8 inch in diameter) are pale green, pinkish, pinkish-white, reddish, white or whitish-pink. **HABITAT:** Partial parasite commonly found growing on: *Juniperus* spp. (*Juniperus deppeana*, Aligator Juniper; *Juniperus californica*, California Juniper; *Juniperus monosperma*, Oneseed Juniper; *Juniperus coahuilensis*, Redberry Juniper; *Juniperus scopulorum*, Rocky Mountain Juniper; *Juniperus osteosperma*, Utah Juniper, and *Juniperus occidentalis*, Western Juniper); occasionally on *Pinus* spp. (*Pinus monophylla*, Pinyon Pine); rarely on *Cupressus* spp. (*Cupressus arizonica*, Arizona Cypress), and very rarely on *Chamaebatiaria* spp. (Desert Sweet) and *Prosopis* spp., (Mesquite), occurring from 3,200 to 8,600 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. **NOTES:** This plant was reported to have been utilized by native peoples of North America. This is a rounded plant, similar in general appearance to what might be considered to be a large *Arceuthobium*. The Juniper Mistletoe is the most common of the True Mistletoes observed growing in Junipers. *Phoradendron juniperinum* is native to southwest-central and southern North America. *5, 6, 28 (color photograph 800), 43 (080109), 46, 63 (080109 - color presentation), 80 (Species of the genus *Phoradendron* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. “Cattle may be killed by browsing these parasitic forbs, but plants are unpalatable and poisoning is rare. Also children may be poisoned by eating the berries.”), 85 (080109), 97, 99 (color photograph), 115 (color presentation), 127, 140 (Page 276)*

Vitaceae: The Grape Family

Vitis arizonica G. Engelm.: Canyon Grape

SYNONYMY: *Vitis arizonica* G. Engelm. var. *glabra* T.V. Munson; *Vitis treleasei* T.V. Munson ex L.H. Bailey.

COMMON NAMES: Arizona Grape; Arizona Wild Grape; Bakámai Bišáparagai (Uto-Aztec: Northern Tepehuan)¹⁴⁰; Canyon [Arizona, Gulch, Wild] Grape (English)¹⁴⁰; Ch'il Na'at'l'o'ii ("Weaving Plant", Athapascan: Navajo)¹⁴⁰; Dahts'aa' <dasts'aa, dahts'aa' benanisidzi, tach'aa> (Athapascan: Western Apache)¹⁴⁰; Dastsa <dastasa> (Athapascan: Chiricahua and Mescalero Apache)¹⁴⁰; Gulch Grape; I'icamác (Yuman: Maricopa)¹⁴⁰; Idjérk'a (Yuman: Havasupai)¹⁴⁰; Isampu (Uto-Aztec: Panamint)¹⁴⁰; Itcêq^a <i'je:qa> (Yuman: Walapai)¹⁴⁰; Jeyulí (Uto-Aztec: Guarijío)¹⁴⁰; Mákwiit (Uto-Aztec: Luiseño)¹⁴⁰; Mischiñ Uu□vis <mischiñ huu□vis> (Uto-Aztec: Akimel O'odham)¹⁴⁰; Ó:va (Uto-Aztec: Hopi)¹⁴⁰; Parra ("Vine", Spanish: Tamaulipas)¹⁴⁰; Parra Cimarrona (Hispanic); Parra del Monte [Silvestre] ("Wild Grape", Spanish: Arizona, Texas, Chihuahua)¹⁴⁰; Shohar U'ushi (Uto-Aztec: Mountain Pima)¹⁴⁰; Sonótova (Uto-Aztec: Mono)¹⁴⁰; Squ'r□'o□napu (Uto-Aztec: Ute)¹⁴⁰; Tutzé (Athapascan: Jicari-Illa Apache)¹⁴⁰; U'li (Hispanic); U:dvis (Uto-Aztec: Hiá Ce□ O'odham)¹⁴⁰; U:□wis (Uto-Aztec: Tohono O'odham)¹⁴⁰; U:va <uuwa> (Uto-Aztec: Onavas Pima)¹⁴⁰; □U:vs (Yuman: Cocopa)¹⁴⁰; Uirí (Uto-Aztec: Guarijío)¹⁴⁰; Uri <uli> (Uto-Aztec: Tarahumara)¹⁴⁰; Uuva (Uto-Aztec: Yaqui)¹⁴⁰; Uva [Cimarrón] ("Wild Grape", Spanish: Chihuahua, Sonora)¹⁴⁰; Uva de Monte (Hispanic); Uva Silvestre (Hispanic); Vid ("Vine", Spanish)¹⁴⁰; Wild Grape (a name also applied to other species, the genus *Vitis* and to the Vitaceae).

DESCRIPTION: Terrestrial perennial deciduous vine (clambering, climbing scrambling, sprawling, spreading, trailing and/or twining stems 16 inches to 33 feet in length); the bark is red-brown; the heart-shaped leaves are green, dark green or yellow-green; the stems may be reddish; the tiny flowers may be cream-white-yellow, cream-yellow, pale green, greenish, white, greenish-white, greenish-yellow, pale yellow, yellow, yellow-green or yellowish-white; flowering generally takes place between early April and late June (additional records: one for mid-July and one for late August; flowering in March has also been reported); the mature fruits (¼ to ¾ inch in diameter, juicy with a few large seeds) may be black, dark blue, blue-black, dark blue-purple, deep purple or purple sometimes with a (glaucous) bloom.

HABITAT: Within the range of this species it has been reported from mountains; plateaus; cliffs; along rocky, rocky-clayey, gravelly-sandy, sandy and clayey-loamy canyons; canyon walls; rocky, stony and sandy canyon bottoms; chasms; bases of cliffs; along talus; crevices; bluffs; along rocky ledges; meadows; hills; hillsides; rocky escarpments; bouldery-cobbly, rocky, rocky-loamy, gravelly, gravelly-sandy and sandy slopes; bajadas; rock outcroppings; amongst boulders and rocks; shaded alcoves; gravelly flats; sandy basins; valley floors; along gravelly roadsides; within arroyos; bottoms of arroyos; within rocky draws; gulches; rocky ravines; seeps; along springs; along streams; along and in rocky-gravelly-sandy streambeds; along and in bouldery creeks; along rocky, rocky-sandy and sandy-clayey creekbeds; riverbeds; along and in rocky and sandy washes; along watercourses; in bedrock and bouldery-rocky drainages; along and in lakes; boggy areas; along rocky banks of streams, creeks, creekbeds, rivers, washes and lakes; sandy edges of rivers and washes; along rocky shores of lakes; benches; sandy bottomlands; floodplains; along fencelines; in ditches; ditch banks; bouldery, bouldery-sandy, rocky, sandy and sandy-clayey riparian areas, and disturbed areas growing in shallow water and wet, moist, damp and dry bouldery, bouldery-rocky, bouldery-cobbly, bouldery-sandy, rocky, rocky-gravelly-sandy, rocky-sandy shaley, stony, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, sandy loam and clayey loam ground, and rocky clay, sandy clay and clay ground, occurring from 2,000 to 9,200 feet in elevation in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations.

NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America and could be investigated to determine its value as a home garden or commercial food and/or beverage crop; it was also noted as having been used as a toy or in games, as a love medicine and for ceremonial items. The flowers may be fragrant. The Canyon Grape may be useful in controlling erosion along drainages. Birds feed on the berries. Canyon Grape is useful in controlling erosion along creeks. **When restoring the floodplains of the major river systems in this township consider including the following plants in the mix:** Inland Saltgrass (*Distichlis spicata*), Vine Mesquite Grass (*Panicum obtusum*), Indian Rushpea (*Hoffmannseggia glauca*), Little Snapdragon Vine (*Maurandella antirrhiniflora*), Schott Yellowwood (*Nissolia schottii*), Fingerleaf Gourd (*Cucurbita digitata*), Red Sprangletop (*Leptochloa panicea* subsp. *brachiata*), Whiplash Pappusgrass (*Pappophorum vaginatum*), Alkali Sacaton (*Sporobolus airoides*), Big Sacaton (*Sporobolus wrightii*), Hartweg Twinevine (*Funastrum cynanchoides*), Hartweg Twinevine (*Funastrum cynanchoides* subsp. *heterophyllum*), Virginia Creeper (*Parthenocissus quinquefolia*), Canyon Grape (*Vitis arizonica*), Drummond Clematis (*Clematis drummondii*), Mojave Seablite (*Suaeda moquinitii*), Prairie Acacia (*Acacia angustissima*), Allthorn (*Koeberlinia spinosa* var. *spinosa*), Desert Saltbush (*Atriplex polycarpa*), Fourwing Saltbush (*Atriplex canescens*), Wright Lycium (*Lycium andersonii* var. *wrightii*), Torrey Lycium (*Lycium torreyi*), Arrowweed (*Pluchea sericea*), Fremont Lycium (*Lycium fremontii*), Creosote Bush (*Larrea tridentata* var. *tridentata*), Greythorn (*Ziziphus obtusifolia* var. *canescens*), Southern Cattail (*Typha domingensis*), Seep Willow (*Baccharis salicifolia*), Whitethorn Acacia (*Acacia constricta*), Desert Hackberry (*Celtis ehrenbergiana*), Catclaw Acacia (*Acacia greggii* var. *greggii*), Soap-tree Yucca (*Yucca elata*), Coyote Willow (*Salix exigua*), Screwbean Mesquite (*Prosopis pubescens*), Common Cottonbush (*Cephalanthus occidentalis*), Desert Elderberry (*Sambucus nigra* ssp. *canadensis*), Blue Paloverde (*Parkinsonia florida*), Western Soapberry (*Sapindus saponaria* var. *drummondii*), Netleaf Hackberry (*Celtis laevigata* var. *reticulata*), Velvet Mesquite (*Prosopis velutina*), Western Black Willow (*Salix gooddingii*), Velvet Ash (*Fraxinus velutina*), Arizona Black Walnut (*Juglans major*), Fremont Cottonwood (*Populus fremontii* subsp. *fremontii*). *Vitis arizonica* is native to southwest-central and southern North America. *5, 6, 13, 15, 18 (genus), 28 (color photograph), 30, 43 (080209), 44 (041312 - no record of species; genus record), 46 (*Vitis arizonica* Engelm., Page 535; *Vitis arizonica* Engelm. var. *glabra* Munson, Page 535 and *Vitis treleasei* Munson - note, Page 535), 48, 58, 63 (051510 - color presentation), **85** (051510 - color presentation), 115 (color presentation), 124 (041312 - no record of species; genus record), 125, 127, 140 (Pages 278-280 & 307), **WTK** (August 6, 2005)*

Vitis arizonica var. *glabra* (see *Vitis arizonica*)

Vitis treleasei (see *Vitis arizonica*)

Zygophyllaceae: The Creosote-bush Family

***Kallstroemia grandiflora* J. Torrey ex A. Gray: Arizona Poppy**

COMMON NAMES: Arizona Caltrop; Arizona Poppy; Arizona-poppy; Arizona Summer Poppy; Baiborin, Caltrop (a name applied to the genus *Kallstroemia* and the Zygophyllaceae); Desert Poppy; Desert-poppy; Mexican Poppy; Mexican-poppy; Orange Caltrop; Summer Poppy; Summer-poppy. DESCRIPTION: Terrestrial annual forb/herb (prostrate, spreading decumbent and/or ascending stems 4 inches to 1 foot in height and to 4 feet in length); the stems may be reddish-orange; the leaves gray-green or green; the flowers (½ to 1¼ inches in diameter) may be apricot-orange, harvest-moon-orange, melon-orange, light orange, orange, orange with a crimson or red center, orangish-yellow, pink-orange, yellow-orange or yellowish-orange; the anthers are orange; flowering generally takes place between late June and early November (additional records: one for mid-May, one for late November and one for mid-December). HABITAT: Within the range of this species it has been reported from mountains; mesas; rocky canyons; canyon bottoms; rocky ridgetops; foothills; sandy hills; rocky hillsides; sandy escarpments; rocky, rocky-loamy, gravelly, gravelly-sandy-loamy, gravelly-loamy, gravelly-clayey, sandy, clayey and silty slopes; gravelly bajadas; rocky outcrops; lava flows; llanos; plains; rocky, gravelly and gravelly-sandy flats; basins; along valley floors; along sandy railroad right-of-ways; along rocky-gravelly, gravelly, gravelly-sandy, gravelly-sandy-loamy, gravelly-loamy, gravelly-clayey, sandy and loamy roadsides; sandy arroyos; streambeds; creeks; rocky-sandy and sandy creekbeds; along and in rocky, gravelly, gravelly-sandy-silty and sandy washes; drainages; along banks of rivers; benches; sandy terraces; rocky-sandy bottomlands; floodplains; mesquite bosques; around stock tanks; ditches; sandy riparian areas, and disturbed areas growing in moist and dry rocky, rocky-gravelly, rocky-sandy, gravelly, gravelly-sandy and sandy ground; rocky loam, gravelly loam, gravelly-sandy loam, sandy loam and loam ground; gravelly clay, sandy clay and clay ground, and gravelly-sandy silty and silty ground, occurring from sea level to 6,600 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. The Arizona Poppy is a food plant of doves, quail and Whitetail Deer (*Odocoileus virginianus* subsp. *couesi*). *Kallstroemia grandiflora* is native to southwest-central and southern North America. *5, 6, 16, 28 (color photograph 533), 43 (073109), 44 (082611 - color photograph, no records listed under Common Names; genus record), 46 (Page 492), 48, 58, 63 (051510 - color presentation), 68, 77, **80** (Species of the genus *Kallstroemia* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Animals must be forced to eat large amounts of this unpalatable, annual forb before poisoning occurs."), **85** (082611 - color presentation), 86 (color photograph), 115 (color presentation), 124 (082611 - no record of species; genus record), 140 (Page 307)*

***Kallstroemia parviflora* J.B. Norton: Warty Caltrop**

COMMON NAMES: Warty Caltrop. DESCRIPTION: Terrestrial prostrate and spreading annual forb/herb (sprawling and spreading prostrate and/or decumbent stems 10 to 40 inches in length); the stems may be reddish-brown; the leaves are green; the flowers (¼ to ½ inch in diameter) may be apricot, light orange, orange, orange-yellow, pink, salmon, salmon-orange, pale yellow, pale yellow-orange, yellow, yellow-orange or yellowish-white; flowering generally takes place between late June and late October. HABITAT: Within the range of this species it has been reported from mountains; mesas; canyons; canyon bottoms; talus slopes; meadows; foothills; hills; hilltops; rocky hillsides; rocky, rocky-gravelly and sandy slopes; silty bajadas; rocky and shaley outcrops; amongst rocks; lava flows; plains; gravelly flats; gravelly and sandy valley floors; along gravelly, gravelly-sandy and sandy roadsides; along clayey-loamy arroyos; along within draws; sandy bottoms of draws; within gulches; within ravines; along streams; along rivers; riverbeds; along and in cobbly, gravelly-sandy and sandy washes; along drainages; depressions; (sandy) shores of creeks; sand bars; sandy benches; gravelly-sandy terraces; bottomlands; floodplains; sandy mesquite bosques; clayey-loamy riparian areas, and disturbed areas growing in damp and dry in rocky, rocky-gravelly, shaley, cobbly, gravelly, gravelly-sandy and sandy ground; gravelly loam, sandy loam and clayey loam ground; sandy clay ground, and silty ground, occurring from 1,000 to 6,900 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Kallstroemia parviflora* is native to south-central and southern North America. *5, 6, 15, 43 (073109), 46 (Page 492), 63 (073109), **80** (Species of the genus *Kallstroemia* are considered to be Rarely Poisonous and Suspected Poisonous Range Plants. "Animals must be forced to eat large amounts of this unpalatable, annual forb before poisoning occurs."), 77, **85** (072510 - color presentation), 86 (note under *Kallstroemia grandiflora*), 124 (112010 - no record, genus)*

Larrea divaricata (see *Larrea tridentata* var. *tridentata*)

Larrea divaricata subsp. *tridentata* (see *Larrea tridentata* var. *tridentata*)

***Larrea tridentata* (A.P. de Candolle) F.V. Coville (var. *tridentata* is the variety reported as occurring in Arizona): Creosote Bush**

SYNONYMY: (for *L.t. var. tridentata*: *Larrea divaricata* auct. non A.J. Cavanilles; *Larrea divaricata* A.J. Cavanilles subsp. *tridentata* (A.P. de Candolle) R.S. Felger & C.H. Lowe). COMMON NAMES: Chaparral (a name more commonly applied to plant associations rather than a particular species of plant); Chihuahuan Creosote; Coville Creosotebush; Creosote; Creosote Bush; Creosote-bush; Creosotebush; Creosotebrush; Creosotum; Cresote; Cresote Bush; Gobernadora (Spanish); Greasewood (a name also applied to other species); Guamis; Hediondilla ("Little Bad Smeller" a name also applied to other species, Spanish); Kreesotstrauch (German); Shea Goi (Pima); Spreading Creosote; Z'xat (Seri). DESCRIPTION: Terrestrial perennial evergreen shrub (20 inches to 13 feet in height and about the same in width, plants were observed and described as being 13 inches in height and 10 inches in width, one plant was observed and described as being 40 inches in height and 2 feet in width, plants were observed and described as being 40 inches in height and 50 inches in width, one plant was observed and described as being 4 feet in height and 5 feet in width, plants were observed and described as being 4 feet in height and 3 feet in width, one plant was observed and described as being 6 feet in height and 8 feet in width); the bark is gray; the leaves are bright glossy green or yellow-green; the flowers ($\frac{1}{2}$ to 1 inch in diameter) are yellow or yellow-white; flowering takes place throughout the year with the peak blooming periods occurring in the spring, between March and April, and then again between November and December; the round, fuzzy fruits ($\frac{1}{4}$ inch in diameter) are gray, reddish, white or rust colored. HABITAT: Within the range of this species it has been reported from mountains; rocky, rocky-gravelly, rocky-clayey-loamy, gravelly and sandy mesas; plateaus; rocky cliffs; rims of canyons; rocky, sandy and clayey canyons; rocky canyon bottoms; rocky talus slopes; sandy pockets of soil; sandy buttes; along rocky ridges; bedrock, bouldery-cobbly and rocky foothills; amongst bouldery, rocky, rocky-sandy, gravelly and sandy hills; hilltops; rocky and sandy hillsides; bedrock, rocky, rocky-sandy, rocky-clayey-loamy, stony-gravelly-sandy, gravelly, gravelly-sandy, sandy and sandy-silty slopes; rocky alluvial fans; stony-gravelly-sandy, gravelly, sandy and sandy-silty bajadas; pediments; rocky outcrops; amongst boulders and rocks; lava fields; sandy lava beds; sand dunes; breaks; rocky-gravelly, gravelly and sandy plains; rocky, rocky-sandy, cindery-gravelly, gravelly, gravelly-sandy, sandy, sandy-clayey and clayey-silty flats; basins; sandy valley floors; along rocky-sandy, stony, gravelly, gravelly-loamy and sandy roadsides; stony-gravelly-sandy arroyos; along sandy bottoms of arroyos; springs; rocky streambeds; creekbeds; along rivers; sandy riverbeds; along and in rocky, gravelly, gravelly-sandy and sandy washes; drainages; along (sandy) banks of streams, creeks, rivers and washes; (sandy) edges of washes, lakes and swales; margins of washes; (rocky and rocky-sandy) shores of rivers and lakes; gravel and sand bars; benches; shelves; gravelly, sandy and sandy-silty terraces; floodplains; mesquite bosques; around margins of charcos; in gravelly-sand and sandy-clay along canals; gravelly and gravelly-sandy riparian areas, and disturbed areas growing in dry rocky desert pavement; bouldery, bouldery-cobbly, rocky, rocky-gravelly, rocky-sandy, stony, stony-gravelly-sandy, cindery-gravelly, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, gravelly loam and clayey loam ground; sandy clay and clay ground, and rocky-sandy silty, sandy silty, clayey silty and silty ground, occurring from below sea level to 7,000 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America, it was noted as having been used as a building material (*L.t. var. tridentata*), as tools, in the making of brooms, brushes and musical instruments (*L.t. var. tridentata*), as a drug or medication and in body art (*L.t. var. tridentata*). Older stems of the Creosote Bush may be 40 to 90 years of age. Using Creosote Bush in the restoration of disturbed sites may increase water infiltration and storage, transplants recommended over spot-seeding and rodent protection for the transplanted seedlings is necessary. When planting a Creosote Bush consider planting a small Desert Night-blooming *Cereus (Peniocereus greggii var. transmontanus)* at the base of the plant. The branches will provide support and the roots will protect the tuber of the cactus from hungry Javelinas. The Creosote Bush is the characteristic plant of the southwestern deserts in North America with its distribution very closely delineating the desert regions. As the Creosote Bush ages the older central stems of the plant die off and new stems form at the outer edge of the crown. New stems are not created at the center of the plant. As the crown of the plant expands a "clonal ring", made up of genetically identical individual shrublets, develops which continues the outward expansion of the ring eventually reaching several yards in diameter. It has been estimated that some of the older rings approach from 9,400 to 11,700 years of age. The Creosote Bush provides cover for many animals; Lac Scale insects (*Tachardiella larreae*), jackrabbits, desert woodrats and other small mammals feed on this plant; stem galls are produced in response to the Creosote Gall midge (*Asphondylia* sp.), and the Desert Tortoise (*Gopherus agassizi*) often digs its shelter under the base of the plant where the roots help to stabilize the soil. *Larrea tridentata* is native to southwest-central and southern North America. *5, 6, 13 (Pages 120-124, color photographs of *Larrea tridentata* var. *tridentata*: Plates L.2., Page 399 and M.1., Page 400), 15 (recorded as (*Larrea tridentata* (Sesse & Moc. ex DC.) Cov.), 18, 26 (recorded as *Larrea tridentata*, color photograph 354), 28, (recorded as *Larrea tridentata* (*Larrea divaricata*), color photograph), 43 (051710 - *Larrea tridentata* Coville, *Larrea divaricata* Cav. subsp. *tridentata* (Sesse & Moc. ex DC.) Felger), 44 (121410), 46 ("An outstanding xerophyte and a very important element of the perennial desert flora in southern and western Arizona. ... Creosote-bush has a strong characteristic odor, especially noticeable when the foliage is wet. The plant is ordinarily not touched by livestock, although it is reported that sheep, especially pregnant ewes, have been killed by partaking of it. This plant is reported to cause dermatitis in exceptional persons who are allergic to it.", Page 491), 48, 63 (051610 - color presentation), 80 (This species is listed under Rarely Poisonous and Suspected Poisonous Range Plants. "Early reports accusing this common desert shrub of being poisonous have been proven wrong."), 85 (051610 - color presentation), 91 (*Larrea tridentata* (Moc. & Ses.) Cav. [= *L. divaricata* Cav. subsp. *tridentata* (Ses. & Moc. ex DC.) Felger & Lowe, *Covillea tridentata* (DC.) Vail], Pages 255-259), 101 (color photograph), 107, 115 (color presentation), 124 (110910 - no record), 127*

***Larrea tridentata* (A.P. de Candolle) F.V. Coville var. *tridentata*: Creosote Bush**

SYNONYMY: *Larrea divaricata* auct. non A.J. Cavanilles; *Larrea divaricata* A.J. Cavanilles subsp. *tridentata* (A.P. de Candolle) R.S. Felger & C.H. Lowe. COMMON NAMES: Chaparral (a name more commonly applied to plant associations rather than a particular species of plant, a name also applied to the species); Coville Creosotebush (a name also applied to the species); Creosote Bush (a name also applied to the species, the genus *Larrea* and the Zygophyllaceae); Creosote-bush (a name also applied to the species, the genus *Larrea* and the Zygophyllaceae); Creosotebush (a name also applied to the species); Greasewood (a name also applied to the species and other species, New Mexico); Guamis (a name also applied to the species); Hediondilla (“Little Bad Smeller” a name also applied to the species and other species, Spanish). DESCRIPTION: Terrestrial perennial evergreen shrub (20 inches to 13 feet in height and about the same in width); the bark is gray; the leaves are bright glossy green or yellow-green; the flowers (½ to 1 inch in diameter) are yellow or yellow-white; flowering takes place throughout the year with the peak blooming periods occurring in the spring, between March and April, and then again between November and December; the round, fuzzy fruits (¼ inch in diameter) are gray, reddish, white or rust colored. HABITAT: Within the range of this species it has been reported from mountains; rocky, gravelly and sandy mesas; plateaus; rims of canyons; sandy canyons; canyon bottoms; talus slopes; sandy pockets of soil; rocky ridges; foothills; rocky hills; rocky hillsides; bedrock, rocky, gravelly, sandy and sandy-loamy slopes; alluvial fans; gravelly and sandy bajadas; rocky outcrops; amongst boulders and rocks; sand dunes; benchlands; sandy plains; cindery-gravelly, gravelly and sandy flats; sandy valley floors; sandy roadsides; arroyos; bottoms of arroyos; along riverbeds; along and in gravelly-sandy and sandy washes; (sandy) banks of streams, creeks and rivers; edges of washes; gravelly and sandy terraces; floodplains; mesquite bosques; riparian areas, and disturbed areas growing in dry bouldery, rocky, rocky-sandy, stony, gravelly, gravelly-sandy and sandy ground; rocky-clayey loam, sandy loam and clayey loam ground; sandy clay ground, and rocky-sandy silty and silty ground, occurring from below sea level to 5,800 feet in elevation in the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This plant may be an attractive component of a restored native habitat. This plant was reported to have been utilized by native peoples of North America; it was noted as having been used as a building material, as a tool, in the making of brooms, brushes and musical instruments, as a drug or medication and in creating body art. Older stems of the Creosote Bush may be 40 to 90 years of age. Using Creosote Bush in the restoration of disturbed sites may increase water infiltration and storage; transplants are recommended over spot-seeding, rodent protection is necessary for transplanted seedlings. When planting a Creosote Bush consider planting a small Desert Night-blooming Cereus (*Peniocereus greggii* var. *transmontanus*) at the base of the plant. The branches will provide support and the roots will protect the tuber of the cereus from hungry Javelinas. The Creosote Bush is the characteristic plant of the southwestern deserts in North America with its distribution very closely delineating the desert regions. As the Creosote Bush ages the older central stems of the plant die off and new stems form at the outer edge of the crown. New stems are not created at the center of the plant. As the crown of the plant expands a “clonal ring”, made up of genetically identical individual shrublets, develops which continues the outward expansion of the ring eventually reaching several yards in diameter. It has been estimated that some of the older rings approach from 9,400 to 11,700 years of age. The Creosote Bush provides cover for many animals; Lac Scale insects (*Tachardiella larreae*), jackrabbits, desert woodrats and other small mammals feed on this plant; stem galls are produced in response to the Creosote Gall midge (*Asphondylia* sp.), and the Desert Tortoise (*Gopherus agassizi*) often digs its shelter under the base of the plant where the roots help to stabilize the soil. *Larrea tridentata* var. *tridentata* is native to southwest-central and southern North America. *5, 6, 13 (Pages 122-123, color photograph: Plates L.2., Page 399 and M.1., Page 400), 16, 18, 26 (species, recorded as *Larrea tridentata*, color photograph of species), 28 (recorded as *Larrea tridentata* (*Larrea divaricata*), color photograph 354), 43 (051710 - *Larrea tridentata* Coville, *Larrea divaricata* Cav. subsp. *tridentata* (Sessé & Moc. ex DC.) Felger), 44 (082611 - no listings recorded under Common Names; genus and species records, color photograph of species), 46 (species, recorded as *Larrea tridentata* (DC.) Coville: “An outstanding xerophyte and a very important element of the perennial desert flora in southern and western Arizona. ... Creosote-bush has a strong characteristic odor, especially noticeable when the foliage is wet. The plant is ordinarily not touched by livestock, although it is reported that sheep, especially pregnant ewes, have been killed by partaking of it. This plant is reported to cause dermatitis in exceptional persons who are allergic to it.”, Page 491), 48, 63 (051610 - color presentation), 77 (recorded as *Larrea divaricata* Cav.ssp. *tridentata* (DC.) Felger & Lowe, color photograph #101), 80 (This species is listed under Rarely Poisonous and Suspected Poisonous Range Plants. “Early reports accusing this common desert shrub of being poisonous have been proven wrong.”), 85 (082711), 91 (*Larrea tridentata* (Moc. & Ses.) Cav. [= *L. divaricata* Cav. subsp. *tridentata* (Ses. & Moc. ex DC.) Felger & Lowe, *Covillea tridentata* (DC.) Vail], Pages 255-259), 101 (species, color photograph of species), 107, 115 (color presentation), 124 (082711 - no record of genus, species or variety), 127, HR*

LISTING OF ANIMALS

STRICTLY ENFORCED LAWS PROTECT MANY OF ARIZONA’S NATIVE ANIMALS FROM COLLECTION AND FROM BEING DISTURBED OR KILLED

Operation GAME THIEF: 602-942-3000

Kingdom Animalia: The Animal Kingdom
Subkingdom Metazoa: The Multicellular Animals
Section Protostomia: The Protosomes
Phylum Arthropoda: The Arthropods
Subphylum Mandibulata: The Mandibulates

CLASS INSECTA: The INSECTS

ORDER HYMENOPTERA: The ANTS, BEES, SAWFLIES, WASPS and Their Allies

Apidae: The Honeybee Family

It has been suggested that, if stung, you should remove the stinger as soon as possible, call 911 or 1-800-222-1222 for additional information and consider transport to a medical facility, it may take hundreds of bee stings to inflict a fatal toxic dose of venom in a healthy adult; however, one sting can cause a fatal allergic (anaphylactic) reaction in a hypersensitive person. *97*

<http://www.pharmacy.arizona.edu/outreach/poison>

If stung contact the Arizona Poison and Drug Information Center: 1-800-222-1222.

***Apis mellifera* Linnaeus, 1758: Honeybee**

COMMON NAMES: Abeille Domestique (French)⁴²; African Honeybee; European Honeybee; Honeybee; Western Honeybee. HABITS: Found in bee boxes, buildings, water boxes and holes in ground, caves, cavities in saguaros, crevices, hollow trees and logs. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. NOTES: Introduced EXOTIC Invasive Species. The Honeybee is an exotic domesticated animal kept for crop pollination and for the production of honey and beeswax. *14 (041912 - no record of species), 42 (061812), 60, 97, 106 (041912 - color presentation), WTK (August 6, 2005)*

ORDER LEPIDOPTERA: The BUTTERFLIES, MOTHS AND SKIPPERS

Hesperiidae: The Skipper Family

***Agathymus aryxna* (Dyar, 1905): Arizona Giant Skipper**

COMMON NAMES: Arizona Giant Skipper; Arizona Giant-skipper; Aryxna Agave Borer; Aryxna Giant Skipper; Dyar's Giant Skipper. HABITS: The larvae are leaf borers feeding on the leaves and stems of Agave spp. HABITAT: Within the range of this species it has been reported as occurring in the grassland ecological formation. *8, 14 (060312), 42 (061812), 106 (060312 - no record of species; genus record)*

***Agathymus polingi* (Skinner, 1905): Poling's Giant Skipper**

COMMON NAMES: Amole Giant Skipper; Little Giant Skipper; Poling's Agave Borer; Poling's Giant Skipper; Poling's Giant-skipper. HABITS: The larvae are leaf borers feeding on the leaves and stems of Agave spp. HABITAT: Reported from mountains; hills; slopes, and rocky flats. *8, 14 (060312), 42 (061812), 106 (060312 - no record of species; genus record)*

Nymphalidae: The Brush-footed Butterfly Family

***Limenitis archippus* (Cramer, 1775) (subsp. *obsoleta* W.H. Edwards, 1882 is the only subspecies reported as occurring in Arizona): Viceroy Butterfly**

COMMON NAMES: Arizona Viceroy (*L.a. obsoleta* W.H. Edwards, 1882); Hulst's Admiral; Mariposa (Hispanic); Obsolete Viceroy Butterfly (*L.a. obsoleta* W.H. Edwards, 1882); Viceroy; Western Admiral; Western Viceroy. HABITS: Feeds on dung and the catkins (larvae), leaves (larvae) and tree sap, rarely on flowers of willows (*Salix* spp.). HABITAT: Within the range of this species it has been reported from the scrub, grassland and wetland ecological formations. *8, 14 (060312 - also

includes an additional record for *Basilarchia archippus* subsp. *obsoleta* (W.H. Edwards)), 42 (061812), 60, 106 (060312 - color presentation), **HR***

Riodinidae: The Metalmark Family

***Calephelis arizonensis* McAlpine, 1971: Arizona Metalmark**

SYNONYMY: *Calephelis rawsoni* subsp. *arizonensis* McAlpine, 1971 - Invalid?. COMMON NAMES: Arizona Metalmark; Arizona Metalmark Butterfly; Rawson's Metalmark. HABITS: Feeds on species in the genus *Bidens* (Beggar Ticks and Bur Marigolds). HABITAT: Reported from mountains; canyons; woodlands, and riparian areas. *8, 14 (060312 - recorded as *Calephelis rawsoni* subsp. *arizonensis* McAlpine), 42 (061812), 106 (060312 - no record of species or genus)*

Calephelis rawsoni subsp. *arizonensis* (see *Calephelis arizonensis*)

Section Deuterostomia: The Deuterostomes
Phylum Chordata: The Chordates
Subphylum Vertebrata: The Vertebrates

CLASS AMPHIBIA: The AMPHIBIANS

Ranidae: The Frog Family

***Lithobates yavapaiensis* (Platz and Frost, 1984): Lowland Leopard Frog**

SYNONYMY: *Rana yavapaiensis* Platz and Frost, 1984. COMMON NAMES: Lowland Leopard Frog; Rana de Yavapai (Spanish)^{42,106}; San Felipe Leopard Frog; Yavapai Frog; Yavapai Leopard Frog. HABITS: Feeds on algae (larvae), organic debris (larvae), insects, plant tissue (larvae), snails and spiders). Takes shelter in underground burrows and rock fissures. Breeding takes place in cienegas, impoundments, ponds, rivers, springs and streams. HABITAT: Within the range of this species it has been reported from freshwater springs; small to medium-sized streams and rivers; small ponds; marsh habitats, and stock tanks being generally restricted to permanent and semi permanent waters often concentrating in deep pools in association with root masses of large riparian trees in the woodland, grassland and wetland ecological formations. *8, 14 (041912 - recorded as *Rana yavapaiensis* (Platz and Frost), color presentation), 42 (061812), 87 (recorded as *Rana yavapaiensis*), 106 (041912 - recorded as *Rana yavapaiensis* Platz and Frost, 1984, color presentation)*

Rana yavapaiensis (see *Lithobates yavapaiensis*)

CLASS AVES: The BIRDS

Accipitridae: The Eagle, Hawk, Kite and Allies Family

***Accipiter cooperii* (Bonaparte, 1828): Cooper's Hawk**

COMMON NAMES: Big Blue Darter; Chicken Hawk; Cooper's Hawk; Epervier de Cooper (French)⁴²; Épervier de Cooper (French)⁴²; Gavilán de Cooper (Spanish)⁴²; Galvilan Palomero (Hispanic)¹⁴; Gavilán Pollero (Spanish)⁹⁰; Hen Hawk; Mexican Hawk; Quail Hawk; Striker; Swift Hawk. HABITS: Feeds on small birds and mammals. Nests are platforms made of sticks located in trees. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (041912 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - color presentation), **146***

***Accipiter striatus* Vieillot, 1808: Sharp-shinned Hawk**

COMMON NAMES: Epervier Brun (French)⁴²; Épervier Brun (French)⁴²; Falcon de Sierra (Spanish: *A.s. venator* Wetmore, 1914 - Valid)¹⁰⁶; Galvilan Pajerero (Hispanic)¹⁴; Gavilán Pecho Blanco (*A.s. chionogaster* - Invalid; *A. chionogaster* (Kaup, 1852) - Valid)⁴²; Gavilán Pecho Rufo (Spanish)⁴²; Gavilán Pecho Rufo (Spanish: *A.s. venator* Wetmore, 1914 - Valid)¹⁰⁶; Plain-breasted Hawk (*A.s. ventralis* - Invalid; *A. ventralis* P.L. Sclater, 1866 - Valid); Puerto Rican Sharp-shinned Hawk (*A.s. venator* Wetmore, 1914 - Valid); Rufous-thighed Hawk (*A.s. erythronemius* - Invalid; *A. erythronemius* (Kaup, 1850) - Valid);

Sharp-shinned Hawk; “Sharp-shins”; “Sharpies”; White-breasted Hawk (*A.s. chionogaster* - Invalid; *A. chionogaster* (Kaup, 1852) - Valid); Wishag (Tohono O’odham)⁹⁰. HABITS: Feeds on birds and small mammals. Nests are platforms made of twigs located in trees. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (041912 - subsp. *velox* (Wilson), color presentation), 20, 42 (071912), 55, 69, 73, 84, 90, 93, 106 (041912 - includes a listing of subspecies, color presentation), **146***

***Buteo albonotatus* Kaup, 1847: Zone-tailed Hawk**

COMMON NAMES: Aguililla Aura (Spanish)⁴²; Aguililla Cola Cinchada (Hispanic)¹⁴; Buse à Queue Barrée (French (French)⁴²; Zone-tailed Hawk. HABITS: Feeds on small birds, lizards and rodents. Nests are platforms made of sticks and green twigs located on cliffs or in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (041912 - color presentation), 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - color presentation), **146***

***Buteo jamaicensis* (Gmelin, 1788): Red-tailed Hawk**

COMMON NAMES: Aguililla Cola Roja (Spanish)⁴²; Buse à Queue Rousse (French)⁴²; Buzzard; Buzzard Hawk; Chicken Hawk; Eastern Redtail; Gavilan Cola Roja (Hispanic)¹⁴; Gavilán Cola Roja (Spanish)⁹⁰; Harlan’s Hawk (*B.j. harlani* (Audubon, 1830)); Hen Hawk; Mouse Hawk; Red Hawk; Redtail; Red-tailed Buzzard; Red-tailed Hawk; Western Redtail. HABITS: Feeds on birds, lizards and rodents. Nests are platforms made of sticks located on cliffs and in saguaro cacti and trees. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (041912 - subsp. *calurus* (Cassin); subsp. *fuertesi* (Sutton & Van Tyne); subsp. *harlani* (Audubon), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - includes a listing of subspecies, color presentation), **146, HR***

***Circus cyaneus* (Linnaeus, 1766): Northern Harrier**

COMMON NAMES: Busard Saint-Martin (French)⁴²; Gavilan Norteno (Hispanic)¹⁴; Gavilán Rastrero (Spanish)⁴²; Hen Harrier; Marsh Hawk; Northern Harrier. HABITS: Feeds on birds, mice and other small mammals. Nests are made of grasses, reeds and stalks located on the ground in grasses or marshes. HABITAT: Within the range of this species it has been reported from the tundra, scrub, grassland, desertscrub and wetland ecological formations. *14 (041912 - subsp. *hudsonius* (Linnaeus), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - color presentation), **146***

***Pandion haliaetus* (Linnaeus, 1758): Osprey**

COMMON NAMES: Balbuzard Pêcheur (French)⁴²; Fish Eagle; Fish Hawk; Gavilán Pescador (Spanish)⁴²; Marsh Hawk; Osprey; Sea Hawk. HABITS: Feeds on fish. Nests are massive platforms made of sticks located in tall cacti and trees, on cliff ledges, rock pinnacles and on the ground. HABITAT: Within the range of this species it has been reported from the forest, woodlands, scrub, desertscrub and wetland ecological formations. *8, 14 (041912 - subsp. *carolinensis* (Gmelin), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - includes a listing of subspecies, color presentation), **146***

***Parabuteo unicinctus* (Temminck, 1824): Harris’s Hawk**

COMMON NAMES: Aguililla Cinchada (Spanish)⁹⁰; Aguililla Roja (Hispanic)¹⁴; Aguililla Rojinegra (Spanish)⁴²; Bay-winged Hawk; Buse de Harris (French)⁴²; Dusky Hawk; Harris Hawk; Harris’ Hawk; Harris’s Hawk; “Louisiana Hawk”. HABITS: Feeds on rabbits, rodents, and birds. Nests are platforms made of sticks located in mesquites, small trees and yuccas. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *14 (041912 - subsp. *harrisi* (Audubon), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - includes a listing of subspecies, color presentation), **146***

Alcedinidae: The Kingfisher Family

***Megaceryle alcyon* (Linnaeus, 1758): Belted Kingfisher**

SYNONYMY: *Ceryle alcyon* (Linnaeus, 1758). COMMON NAMES: Belted Kingfisher; Halcyon; Lazy Bird; Martin Pescador (Hispanic)¹⁴. HABITS: Feeds on amphibians, birds, crustaceans, small fishes, insects, lizards and mammals. Eggs are laid at the end of burrows located on the banks of creeks, rivers, lakes and ponds. HABITAT: Within the range of this species it has been reported from the desertscrub and wetland ecological formations. *8, 14 (053112 - subsp. *alcyon*; subsp. *caurina*, color presentation of species), 42 (061812), 55, 69, 73, 84, 93, 106 (053112 - color presentation), **146***

Ceryle alcyon (see *Megaceryle alcyon*)

Anatidae: The Duck, Goose and Swan Family

***Aix sponsa* (Linnaeus, 1758): Wood Duck**

COMMON NAMES: Canard Branchu (French)⁴²; Carolina Duck; Pato Arbolero (Hispanic)¹⁴; Pato Arcoiris (Spanish)⁴²; Wood Duck. HABITS: Feeds on acorns, algae, amphibians, arachnids, fishes, gastropods, insects, mollusks, plants and seeds. Nests are lined with down and located in cavities in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, grassland, desertscrub and wetland ecological formations. *14 (053112 - color presentation), 20, 42 (061812), 55, 69, 73, 84 (sighting considered to be far from the normal range of this species), 93, 106 (053112 - color presentation), **146***

***Anas acuta* Linnaeus, 1758: Northern Pintail**

COMMON NAMES: Canard Pilet (French)⁴²; Northern Pintail; Northern Pintail Duck; Pato Golondrino (Spanish)^{14,42}; Pintail; Sprig. HABITS: Feeds on insects and aquatic plants. Nests are down-lined hollows located in marshes and on prairies. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (053112 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (053112 - color presentation), **146***

***Anas americana* Gmelin, 1789: American Wigeon**

SYNONYMY: *Mareca americana* (Gmelin, 1789). COMMON NAMES: American Wigeon; American Wigeon Duck; Baldpate; Canard d'Amérique (French)⁴²; Pato Chalcuan (Hispanic)¹⁴; Pato Chalcuán (Spanish)⁴²; Widgeon. HABITS: Feeds on crustaceans, grasses, insects, mollusks, aquatic plants and seeds. Nests are lined with down and located on the ground in depressions and in hollows in grass. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (053112 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (053112 - color presentation), **146***

***Anas clypeata* Linnaeus, 1758: Northern Shoveler**

SYNONYMY: *Spatula clypeata* Linnaeus, 1758. COMMON NAMES: Canard Souchet (French)⁴²; Northern Shoveler; Northern Shoveler Duck; Northern Shoveller (British English)¹⁰⁶; Pato Cucharón (Hispanic)¹⁴; Pato Cucharón-norteño (Spanish)⁴²; "Poor Man's Mallard"; Shoveler; "Smiling Mallard"; Spoonbill; "Spoony". HABITS: Feeds on bulrushes, crustaceans, decapods, gastropods, insects, grasses, mollusks, sedges and zooplankton. Nests are hollows, lined with down, located on the ground in grasses, sedges and under bushes. HABITAT: Within the range of this species it has been reported from the forest, grassland, desertscrub and wetland ecological formations. *14 (053112 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (053112 - color presentation), **146***

***Anas crecca* Linnaeus, 1758: Green-winged Teal**

COMMON NAMES: Cerceta ala Verde (Spanish)⁴²; Cerceta de Alas Verdes (Hispanic)¹⁴; Common Teal; Eurasian Teal; Green-winged Teal; Green-winged Teal Duck; North American Green-winged Teal (*A.c. carolinensis* (Gmelin, 1789) - Valid; *Anas carolinensis* Gmelin, 1789 - Invalid); Sarcelle d'Hiver (French)⁴²; Teal. HABITS: Feeds on arthropods, grasses, insects, mollusks and aquatic plants. Nests are down and grass lined hollows located in marshes and under shrubs or small trees. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (053112 - subsp. *carolinensis* (Gmelin), color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (053112 - color presentation), **146***

***Anas cyanoptera* Vieillot, 1816: Cinnamon Teal**

COMMON NAMES: Andean Cinnamon Teal (*A.c. orinoma* (Oberholzer, 1906) - Valid); Argentine Cinnamon Teal (*A.c. cyanoptera* Vieillot, 1816 - Valid); Borrero's Cinnamon Teal (*A.c. borroei* Snyder and Lumsden, 1951 - Valid); Cerceta Café (Hispanic)¹⁴; Cerceta Canela (Spanish)⁴²; Cinnamon Teal; Cinnamon Teal Duck; Northern Cinnamon Teal (*A.c. septentrionalium* Snyder and Lumsden, 1951 - Valid); Sarcelle Cannelle (French)⁴²; Tropical Cinnamon Teal (*A.c. tropica* Snyder and Lumsden, 1951 - Valid). HABITS: Feeds on grasses, insects, mollusks and aquatic plants. Nests are down lined hollows located in bulrushes, grasses and reeds. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (053012 - subsp. *septentrionalium* (Vieillot), color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (053112 - includes a listing of subspecies, color presentation), **146***

***Anas discors* Linnaeus, 1766: Blue-winged Teal**

COMMON NAMES: Blue-winged Teal; Blue-winged Teal Duck; Cerceta ala Azul (Spanish)⁴²; Cerceta de Alas Azules (Hispanic)¹⁴; Sarcelle à Ailes Bleues (French)⁴². HABITS: Feeds on crustaceans, decapods, grasses, insects and insect larvae, mollusks, plants, snails and annelid worms. Nests are shallow depressions and hollows, lined with dry grasses and down, located on the ground near water. HABITAT: Within the range of this species it has been reported from wetland ecological formation within the forest, woodland, grassland and desertscrub ecological formations. *14 (053112 - subsp. *discors* Linnaeus, color presentation), 20, 42 (061812), 55, 69, 73, 84, 106 (053112 - color presentation), **146***

***Anas platyrhynchos* Linnaeus, 1758: Mallard**

COMMON NAMES: Canard Colvert (French)⁴²; Common Mallard; Common Wild Duck; Curly-tail; Domestic Duck (*A.p. domesticus* Linnaeus, 1758 - Invalid?)¹⁰⁶; English Duck; French Duck; Gray Duck; Gray Mallard; Greenhead; Mallard; Mallard Duck; Mexican Duck; Mottled Duck; Pato de Collar (Spanish)^{14,42}; Stock Duck; Wild Duck. HABITS: Feeds on acorns, earthworms and aquatic plants. Nests are down-lined hollows located in grass and reeds and under shrubs, saplings and deadfalls,

rarely in crotches in trees and abandoned crow, hawk and magpie nests. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (060312 - subsp. *platyrhynchos*; subsp. *diasi* (Ridgway), color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (060312 - includes a listing of subspecies, color presentation), 146*

***Anas strepera* Linnaeus, 1758: Gadwall**

COMMON NAMES: Canard Chipeau (French)⁴²; Common Gadwall (*A.s. strepera* Linnaeus, 1758 - Valid); Coues' Gadwall (*A.s. couesi* Streets, 1876 - Valid: extinct circa 1874); Gadwall; Gadwall Duck; Pato Friso (Spanish)⁴²; Pato Pinto (Hispanic)¹⁴. HABITS: Feeds on arachnids, crustaceans, gastropods, grasses and other plants, insects and mollusks. Nests are lined with down and located in depressions and hollows on the ground in grass and under shrubs. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (060312 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (060312 - includes a listing of subspecies, color presentation), 146*

***Aythya affinis* (Eyton, 1838): Lesser Scaup**

COMMON NAMES: "Bluebill"; Lesser Scaup; Lesser Scaup Duck; Little Bluebill; Broadbill; Pato Boludo Chico (Hispanic)¹⁴; Pato Boludo-menor (Spanish)⁴²; Petit Fuligule (French)⁴²; Western Scaup. HABITS: Feeds on crustaceans, decapods, gastropods, insects, pondweed, mollusks and annelid worms. Nests are depressions lined with down and grasses located on the ground in grasses and tall vegetation. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the grassland and desertscrub ecological formations. *14 (060312 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (060312 - color presentation), 146*

***Aythya collaris* (Donovan, 1809): Ring-necked Duck**

COMMON NAMES: Fuligule à Collier (French)⁴²; Pato Chaparro (Hispanic)¹⁴; Pato Pico Anillado (Spanish)⁴²; Ring-necked Duck; "Ringbill". HABITS: Feeds on arachnids, arthropods, fishes, gastropods, insects and insect larvae, mollusks, aquatic plants and annelid worms. Nests are bowl-shaped, down-lined cups made of grasses, reeds and aquatic vegetation located in marshes. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. *14 (060312 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (060312 - color presentation), 146*

***Bucephala albeola* (Linnaeus, 1758): Bufflehead**

COMMON NAMES: Bufflehead; Bufflehead Duck; Pato Chillon Chico (Hispanic)¹⁴; Pato Monja (Spanish)⁴²; Petit Garrot (French)⁴². HABITS: Feeds on crustaceans, fishes, gastropods, insects and insect larvae, mollusks and plant material. Nests are located in tree cavities. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. *14 (060312 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (060312 - color presentation), 146*

Mareca americana (see *Anas americana*)

***Oxyura jamaicensis* (Gmelin, 1789): Ruddy Duck**

COMMON NAMES: Andean Ruddy Duck (*O.j. ferruginea* (Eyton, 1838) - Invalid?; *Oxyura ferruginea* (Eyton, 1838) - Valid); Columbian Ruddy Duck (*O.j. andina* Lehmann, 1946 - Invalid?); Érismaire Rousse (French)⁴²; North American Ruddy Duck (*O.j. jamaicensis* (Gmelin, 1789) - Valid); Pato Tepalcate (Spanish)^{14,42}; Ruddy Duck; Spoon-bill (*O.j. rubida* (A. Wilson, 1814) - Valid); Steel-head (*O.j. rubida* (A. Wilson, 1814) - Valid); Tough-head (*O.j. rubida* (A. Wilson, 1814) - Valid). HABITS: Feeds on crustaceans, gastropods, insects, aquatic plant roots and seeds, pondweed, sedges and annelid worms. Nests are baskets made of woven grass located attached to reeds over water. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. *14 (060312 - subsp. *rubida* (Wilson), color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (060312 - includes a listing of subspecies, color presentation), 146*

Spatula clypeata (see *Anas clypeata*)

Apodidae: The Swift Family

***Aeronautes saxatalis* (Woodhouse, 1853): White-throated Swift**

COMMON NAMES: Vencejo Montanes (Hispanic)¹⁴; Vencejo Pecho Blanco (Spanish)⁴²; White-throated Swift. HABITS: Feeds on insects. Nests are brackets made of saliva cemented twigs located in caves and crevices in mountain and sea cliffs. HABITAT: Within the range of this species it has been reported from the forest, woodland, grassland, desertscrub and wetland ecological formations. *14 (041912 - subsp. *saxatalis* (Woodhouse), color presentation), 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - includes a listing of subspecies, color presentation), 146*

Ardeidae: The Bittern, Egret and Heron Family

***Ardea alba* Linnaeus, 1758: Great Egret**

SYNONYMY: *Casmerodius albus* (Linnaeus, 1758). COMMON NAMES: American Egret; Common Egret; Garza Blanca (Spanish); Garza Grande (Hispanic)¹⁴; Grande Aigrette (French)⁴²; Great Egret; Great White Egret; Great White Heron; Kotuku (New Zealand); White Heron. HABITS: Feeds on fishes, frogs, insects and snakes. Nests are bulky platforms made of stems and sticks located in trees, dead brush and tule marshes. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formation. *14 (060312 - subsp. *egretta* (Gmelin), color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (060312 - includes a listing of subspecies, color presentation), **146***

***Ardea herodias* Linnaeus, 1758: Great Blue Heron**

COMMON NAMES: Garza (Spanish)⁹⁰; Garza Ceniza (Hispanic)¹⁴; Garza Morena (Spanish)⁴²; Grand Héron (French)⁴²; Great Blue Heron; Great White Heron (*A.h. occidentalis* Audubon, 1835; a white morph of the Great Blue Heron); Treganza's Heron; Wurdemann's Heron (an intermediate morph of the Great Blue Heron which has a white head). HABITS: Feeds on amphibians, small birds, crayfish, decapods, fishes, frogs, insects, mice, mollusks, reptiles, rodents, spiders and turtles. Nests are bulky platforms made up of sticks and located on cliffs, islets, rocky islands, swamps and trees. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. NOTES: **If disturbed, adults may abandon nests and roosting sites and quit feeding nestlings.** *14 (060312 - subsp. *herodius*; subsp. *tregansai* (Court), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (060312 - includes a listing of subspecies, color presentation), **146***

Butorides striatus (see *Butorides virescens*)

***Butorides virescens* (Linnaeus, 1758): Green Heron**

SYNONYMY: *Butorides striatus* (Linnaeus, 1758). COMMON NAMES: Garceta Verde (Spanish)⁴²; Garza Espalda Verde (Hispanic)¹⁴; Green-backed Heron; Green Heron; Héron Vert (French)⁴²; Little Heron; Mangrove Heron; Striated Heron. HABITS: Feeds on annelid worms, crayfish, crustaceans, decapods, fishes, frogs, gastropods, insects, mice, mollusks, reptiles and spiders. Nests are flimsy platforms made up of grasses and sticks and located in clumps of grass, shrubs, thickets, or in trees. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the grassland and desertscrub ecological formations. *14 (060312 - subsp. *anthonyi* (Mearns); subsp. *virescens* (Linnaeus), color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (060312 - includes a listing of subspecies, color presentation), **146***

Casmerodius albus (see *Ardea alba*)

***Egretta thula* (Molina, 1782): Snowy Egret**

SYNONYMY: *Leucophoyx thula* (Molina, 1782) - Invalid?. COMMON NAMES: Aigrette Neigeuse (French)⁴²; Garceta Pie-dorado (Spanish)⁴²; Garza Nevado (Hispanic)¹⁴; Brewster's Egret; Snowy Egret; Snowy Heron. HABITS: Feeds on small amphibians, crustaceans, decapods, fishes, gastropods, insects, mammals, reptiles and annelid worms. Shallow platform nests are made of dead bullrushes and sticks and lined with fine twigs located in tules, marsh grasses shrubs or trees. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. *8, 14 (060312 - subsp. *brewsteri* (Thayer & Bangs), color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (060312 - color presentation), **146***

***Ixobrychus exilis* (Gmelin, 1789): Least Bittern**

COMMON NAMES: Avetoro Mínimo (Spanish)⁴²; Garcita Chica (Hispanic)¹⁴; Least Bittern; Petit Blongios (French)⁴²; Western Least Bittern (*I.e.* subsp. *hesperis* Dickey and van Rossem, 1924 - Invalid). HABITS: Feeds on amphibians, birds, fishes, gastropods, insects, mollusks and annelid worms. Nests are well concealed platforms constructed from cattails, grasses, reeds, sticks and twigs located above water among cattails, reeds and rushes in marshes and reedy ponds. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the woodland, grassland and desertscrub ecological formations. *14 (060312 - subsp. *exilis* (Gmelin); subsp. *hesperis* - separate record, color presentation under subsp. *exilis*), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (060312 - includes a listing of subspecies, color presentation), **146***

Leucophoyx thula (see *Egretta thula*)

***Nycticorax nycticorax* (Linnaeus, 1758): Black-crowned Night-heron**

COMMON NAMES: Bihoreau Gris (French)⁴²; Black-crowned Night Heron; Black-crowned Night-heron; Garza Copete Negro (Hispanic)¹⁴; Night Heron (Eurasia); Pedrete Corona Negra (Spanish)⁴². HABITS: Feeds on annelid worms, small birds [and the young of other water birds], crustaceans, decapods, small fishes, frogs, insects, small mammals, mollusks and reptiles. Nests are loose platforms made of canes, stalks and sticks and lined with marsh grasses or twigs located on the ground in marshes, in thickets and tules, and in shrubs and trees. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. NOTE: **The Black-**

crowned Night-heron is sensitive to human disturbance. *14 (060312 - subsp. *hoactli* (Gmelin), color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (060312 - color presentation), **146***

Bombycillidae: The Waxwing Family

***Bombycilla cedrorum* Vieillot, 1808: Cedar Waxwing**

COMMON NAMES: Ampelis Chinito (Spanish)⁴²; Cedar Waxwing; Chinito (Spanish: Mexico)¹⁴⁰; Chinito Bolera (Hispanic)¹⁴; Jaseur d'Amérique (French)⁴². HABITS: Feeds on berries, insects and seeds. Nests are bulky cups made of grass, moss and twigs woven onto the horizontal branches of trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, desertscrub and wetland ecological formations. *14 (060412 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (060412 - color presentation), **146***

Caprimulgidae: The Nighthawk, Nightjar and Allies Family

***Chordeiles acutipennis* (Hermann, 1783): Lesser Nighthawk**

COMMON NAMES: Aguador Tapacamino Chico (Hispanic)¹⁴; Chotacabras Menor (Spanish)⁴²; Lesser Nighthawk; Nehpod (Tohono O'odham)⁹⁰; Texas Nighthawk. HABITS: Feeds on insects. No nest, the eggs are laid on open ground. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. *14 (060412 - subsp. *texensis* Lawrence), 42 (061812), 55, 69, 73, 84, 90, 93, 106 (060412 - color presentation), **146***

Cardinalidae: The Bunting, Cardinal and Grosbeak Family

***Cardinalis cardinalis* (Linnaeus, 1758): Northern Cardinal**

SYNONYMY: *Richmondia cardinalis* (Linnaeus, 1758). COMMON NAMES: Cardenal (Hispanic)¹⁴; Cardenal Rojo (Spanish)^{42,90}; Cardinal Rouge (French)⁴²; Common Cardinal; Northern Cardinal; Redbird; Sipuk (Tohono O'odham)⁹⁰. HABITS: Feeds on small fruits, insects and seeds. Nests are loose cups of shredded bark and twigs located in a low shrubs or thickets. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. *14 (041912 - subsp. *affinis* Nelson; subsp. *superbus* Ridgway, color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - color presentation), **146***

***Cardinalis sinuatus* Bonaparte, 1838: Pyrrhuloxia**

SYNONYMY: *Pyrrhuloxia sinuata* Bonaparte, 1838. COMMON NAMES: Bichpod (Tohono O'odham)⁹⁰; Cardenal Gris (Spanish)⁹⁰; Cardenal Pardo (Spanish)⁴²; Cardinal Torito (Hispanic)¹⁴; Desert Cardinal; Gray Cardinal; Pyrrhuloxia. HABITS: Feeds on small fruits, insects and seeds. Nests are neat cups located in thorny bushes. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. *14 (041912 - subsp. *sinuatus* Bonaparte, color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - color presentation), **146***

***Passerina amoena* (Say, 1823): Lazuli Bunting**

COMMON NAMES: Colorín Lázuli (Spanish)⁴²; Jaspeado (Hispanic)¹⁴; Lazuli Bunting. HABITS: Feeds on small fruits, insects and seeds. Nests are loose cups made of grasses and leaves located in low bushes. HABITAT: Within the range of this species it has been reported from the scrub, desertscrub and wetland ecological formations. *14 (060412 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (060412 - color presentation), **146***

***Pheucticus melanocephalus* (Swainson, 1827): Black-headed Grosbeak**

COMMON NAMES: Black-headed Grosbeak; Picogordo Tigrillo (Spanish)⁴²; Rocky Mountain Grosbeak; Tigrillo (Hispanic)¹⁴. HABITS: Feeds on small fruits, insects and seeds. Nests are frail saucers made of plant stems and twigs located in bushes and tree forks. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060412 - subsp. *maculatus* (Audubon); subsp. *melanocephalus*, color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (060412 - color presentation), **146***

Pyrrhuloxia sinuata (see *Cardinalis sinuatus*)

Richmondia cardinalis (see *Cardinalis cardinalis*)

Cathartidae: The New World Vulture Family

***Cathartes aura* (Linnaeus, 1758): Turkey Vulture**

COMMON NAMES: Buzzard; Carrion Crow (Caribbean); Chilean Turkey Vulture (*C.a. jota* (Molina, 1782) - Valid); Eastern Turkey Vulture (*C.a. septentrionalis* Wied-Neuwied, 1839 - Valid); John Crow (Caribbean); Nuwi (Tohono O'odham)⁹⁰; Turkey Buzzard; Turkey Vulture; Urubu à Tête Rouge (French)⁴²; Western Turkey Vulture (*C.a. aura* (Linnaeus, 1758) - Valid; *C.a. meridionalis* - Invalid?; *C.a. teter* Friedmann, 1933 - Invalid); Zopilote (Spanish)^{14,90}; Zopilote Aura (Spanish)⁴². HABITS: Feeds on carrion. Little or no nest construction, eggs are laid in protected areas in crevices in rocks, on cliffs, on the ground in thickets and in tree hollows. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (041912 - subsp. *septentrionalis* Wied-Neuwied; subsp. *teter* Friedmann, color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - color presentation), **146***

Charadriidae: The Lapwing and Plover Family

***Charadrius vociferus* Linnaeus, 1758: Killdeer**

COMMON NAMES: Chiwi-chuhch (Tohono O'odham)⁹⁰; Chorlo Tildio (Spanish)⁴²; Killdeer; Pluvier Kildir (French)⁴²; Tildio (Spanish)^{14,90}. HABITS: Feeds on arachnids, insects, marine invertebrates and worms. No nest, eggs are laid in a scrape on bare ground in fields and shores. HABITAT: Within the range of this species it has been reported from the forest, grassland, desertscrub and wetland ecological formations. *14 (041912 - subsp. *vociferous* Linnaeus, color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - color presentation), **146***

Columbidae: The Dove and Pigeon Family

***Columba livia* Gmelin, 1789: Rock Dove**

COMMON NAMES: Blue Rock Dove; Common Pigeon; Pigeon Biset; Domestic Pigeon; Feral Pigeon; Pigeon Biset; Pigeon; Paloma Domestica (Hispanic)¹⁴; Paloma Doméstica (Spanish)⁴²; Pigeon; Pigeon Biset (French)⁴²; Rock Dove; Rock Pigeon. HABITS: Feeds on insects, green plant matter and seeds. Nests are located on buildings and cliffs. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC**. *14 (041912 - color presentation), 20, 42 (061812), 69, 73, 84, 90, 93, 106 (041912 - includes a listing of subspecies, color presentation), **146***

Columbigallina passerina (see *Columbina passerina*)

***Columbina inca* (Lesson, 1847): Inca Dove**

SYNONYMY: *Scardafella inca* (Lesson, 1847). COMMON NAMES: Gugu (Tohono O'odham)⁹⁰; Inca Dove; Tortola (Hispanic)¹⁴; Tórtola Cola Larga (Spanish)⁴²; Tortolita Común (Spanish)⁹⁰. HABITS: Feeds on fruit, insects and seeds. Saucer shaped nests are made of mixed vegetation and located in shrubs and low trees. HABITAT: Within the range of this species it has been reported from the grassland and desertscrub ecological formations. *14 (041912 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - color presentation), **146***

***Columbina passerina* (Linnaeus, 1758): Common Ground-dove**

SYNONYMY: *Columbigallina passerina* (Linnaeus) - Invalid?. COMMON NAMES: Common Ground Dove; Common Ground-dove; Common Ground-dove (*C.p. pallescens* (S.F. Baird, 1860) - Valid); Ground Dove; Torcacita (Hispanic)¹⁴; Tórtola Coquita (Spanish)⁴². HABITS: Feeds on seeds. Nests are made flimsy saucers of twigs located low to the ground in cacti, shrubs, trees and vines or on the ground. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (060512 - subsp. *pallescens* (Baird), color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (060512 - includes a listing of subspecies, color presentation), **146***

Scardafella inca (see *Columbina inca*)

***Zenaida asiatica* (Linnaeus, 1758): White-winged Dove**

COMMON NAMES: Mexican Dove; Okokoi (Tohono O'odham)⁹⁰; Paloma ala Blanca (Spanish)^{14,42}; Paloma de alas Blancas (Spanish)⁹⁰; Sonora Dove; Tourterelle à Ailes Blanche (French)⁴²; Western White-wing Dove (*Z.a. mearnsi* (Ridgway, 1915) - Valid); White-wing; White-winged Dove; White-winged Pigeon. HABITS: Feeds on berries, fruit, gastropods, insects, mollusks and seeds. Nests are flimsy stick platforms located in thickets and trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (041912 - subsp. *grandis* (Saunders); subsp. *mearnsi* (Ridgway); subsp. *monticola* (Saunders), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - color presentation), **146***

***Zenaida macroura* (Linnaeus, 1758): Mourning Dove**

SYNONYMY: *Zenaidura macroura* (Linnaeus, 1758). COMMON NAMES: American Mourning Dove; Carolina Pigeon; Carolina Turtle-dove; Carolina Turtledove; Clarion Island Turtledove (*Z.m. clarionensis* (C.H. Townsend, 1890) - Valid); Dove; Hohhi (Tohono O'odham)⁹⁰; Huilota (Hispanic)¹⁴; Mourning Dove; Paloma Huilota (Spanish)⁴²; Paloma Triste

(Spanish)⁹⁰; Panama Mourning Dove; Rain Dove; Tourterelle Triste (French)⁴²; Turtle Dove; Wild Dove. HABITS: Feeds on fruit, insects and seeds. Nests are loose platforms made of forbs, grasses, leaves, rootlets, sticks and twigs located in cacti, shrubs, trees and on the ground. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (041912 - subsp. *carolinensis* (Linnaeus); subsp. *marginella* (Woodhouse), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - includes a listing of subspecies, color presentation), **146***

Zenaidura macroura (see *Zenaida macroura*)

Corvidae: The Crow, Jay, Magpie and Raven Family

***Aphelocoma californica* (Vigors, 1839): Western Scrub-jay**

COMMON NAMES: California Jay; Pajaro Azul (Hispanic)¹⁴; Scrub Jay; Western Scrub Jay, Western Scrub-jay. HABITS: Feeds on acorns, berries, insects, nuts and seeds. Nests are bowls made of grass, rootlets and twigs located in shrubs and trees. NOTE: Through the burying of acorns they play an important role in the regeneration of oak woodlands lost to drought and fire. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060512 - subsp. *californica*; subsp. *woodhouseii* (Baird), color presentation), 42 (061812 - no subspecies listed), 84, 106 (060512 - includes a listing of subspecies, color presentation), **146***

***Corvus corax* Linnaeus, 1758: Common Raven**

COMMON NAMES: American Raven; Common Raven; Cuervo Común (Spanish)^{42,90}; Cuervo Grande (Hispanic)¹⁴; Grand Corbeau (French)⁴²; Hawani (Tohono O'odham)⁹⁰; Northern Raven Western Raven (*C.c. sinuatus* Wagler, 1829 - Valid). HABITS: Feeds on small animals and birds, berries, carrion, insects and seeds. Nests are made of bones, sticks and wool located on cliffs, saguaros and trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (041912 - subsp. *sinuatus* (Wagler), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (041912 - includes a listing of subspecies, color presentation), **146***

***Corvus cryptoleucus* Couch, 1854: Chihuahuan Raven**

COMMON NAMES: American White-necked Raven; Chihuahuan Raven; Cuervo Chihuahuense (Hispanic)¹⁴; Cuervo Llanero (Spanish)⁴²; White-necked Raven. HABITS: Feeds on carrion and insects, including grasshoppers. Nests are bowls and platforms made of sticks lined with fur located in mesquite trees and yuccas. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060512), 20, 42 (061812), 55, 69, 93, 106 (060512 - color presentation), **146***

Cuculidae: The Ani, Cuckoo and Roadrunner Family

***Geococcyx californianus* (Lesson, 1829): Greater Roadrunner**

COMMON NAMES: Correcaminos Norteño (Spanish)^{42,90}; Greater Roadrunner; Paisano (Spanish)^{14,90}; Roadrunner; Tadaí (Tohono O'odham)⁹⁰. HABITS: Feeds on the young of ground nesting birds, insects, lizards, scorpions and snakes. Nests are course shallow cups of sticks located in cacti, mesquite trees and shrubs. HABITAT: Within the range of this species it has been reported from the forest, scrub, grassland, desertscrub and wetland ecological formations. *14 (042012 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (042012 - color presentation), **146, HR***

Emberizidae: The Junco, Longspur, Sparrow and Towhee Family

***Aimophila carpalis* (Coues, 1873): Rufous-winged Sparrow**

SYNONYMY: *Peucaea carpalis* (Coues, 1873). COMMON NAMES: Rufous-winged Sparrow; Zacatonero ala Rufa (Spanish)⁴². HABITS: Feeds on berries, buds, fruit, insects and seeds. Nests are cups made of woven course and fine grasses located in low bushes and cacti, in young mesquite trees and on the ground. HABITAT: Within the range of this species it has been reported from the woodland, grassland and desertscrub ecological formations. *14 (042012 - recorded as *Peucaea carpalis* (Sclater)), 42 (061812), 55, 69, 73, 84, 90, 93, 106 (042012 - recorded as *Peucaea carpalis* (Coues, 1873), "This species was first discovered in 1872, near old Fort Lowell, Tucson, where it was described as "very common". In 1881, the sparrow was found: "sparingly about Tucson and Camp Lowell. It inhabited the mesquite thickets, keeping closely hidden in the bunches of 'sacaton' grass, from which, when flushed, it flew into the branches above." After 1886, verified species records were exceedingly rare. The species was considered extinct in Arizona due to overgrazing. The rufous-winged sparrow was rediscovered in 1936, the first record in over fifty years.", color presentation), **146***

***Aimophila ruficeps* (Cassin, 1852): Rufous-crowned Sparrow**

COMMON NAMES: Rufous-crowned Sparrow; Yuma Rufous-crowned Sparrow; Zacatonero Corona Rufa (Spanish)⁴². HABITS: Feeds on berries, buds, fruits and insects. Nests are cups lined with grass and plant fibers located on or near the ground. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (060512 - subsp. *rupicola*; subsp. *scottii* (Sennett), color presentation, color presentation), 42 (061812), 55, 69, 73, 93, 106 (060512 - includes a listing of subspecies, color presentation), **146***

***Amphispiza bilineata* (Cassin, 1850): Black-throated Sparrow**

COMMON NAMES: Ba' I-Chukulim (Tohono O'odham)⁹⁰; Black-throated Sparrow; Desert Sparrow; Gorrion Garganta Negra (Hispanic)¹⁴; Zacatonero Garganta Negra (Spanish)^{42,90}. HABITS: Feeds on berries, buds, fruit, insects and seeds. Nests are loose cups made up of grasses, twigs and plant fibers and located in cacti and shrubs. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. *14 (060512 - subsp. *deserticola* (Ridgway); subsp. *opuntia* (Burleigh & Lowery), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (060512 - color presentation), **146***

Chlorura chlorura (see *Pipilo chlorurus*)

***Chondestes grammacus* (Say, 1823): Lark Sparrow**

COMMON NAMES: Bruant à Joues Marron (French)⁴²; Gorrion Alondra (Hispanic)¹⁴; Gorrión Arlequín (Spanish)⁴²; Lark Sparrow. HABITS: Feeds on berries, buds, fruit, insects and seeds. Nests are cups made up of grasses and lined with fine fibers and hairs and located on the ground in the shelter of grasses and in small bushes and vines. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042012 - subsp. *strigatus* (Swainson), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (042012 - color presentation), **146***

***Junco hyemalis* (Linnaeus, 1758): Dark-eyed Junco**

COMMON NAMES: "Cassiar" Junco; Dark-eyed Junco; Gorrion Ojas Negros (Hispanic)¹⁴; Gray-headed Junco; Grey-headed Junco (*J.h. caniceps* (Woodhouse, 1853) - Valid); Junco Ardoisé (French), Junco Ojo Oscuro (Spanish)⁴²; Oregon Junco (*J.h. montanus* Ridgway, 1898 - Valid; *J.h. oreganus* (J.K. Townsend, 1837) - Valid; *J.h. shufeldti* Coale, 1887 - Valid; *J.h. thurberi* Anthony, 1890 - Valid); Pink-sided Junco (*J.h. hyemalis* (Linnaeus, 1758) - Valid); Red-backed Junco (*J.h. dorsalis* Henry, 1858 - Valid); Slate-colored Junco (*J.h. cismontanus* Dwight, 1918 - Valid; *J.h. hyemalis* (Linnaeus, 1758)) - Valid; White-winged Junco (*J.h. aikeni* Ridgway, 1873 - Valid). HABITS: Feeds on berries, buds, fruit, insects and seeds. Nests are cups made up of shreds of bark, grasses, mosses, rootlets and twigs lined with grasses and hair located on the ground in protected areas or on lower branches of shrubs and trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: The Dark-eyed Junco is a predator of the Douglas-fir Tussock Moth (*Orgyia pseudotsugata*) feeding on egg masses, larvae and pupae, and the Western Spruce Budworm (*Choristoneura occidentalis*). *14 (042012 - subsp. *aikeni* Ridgway; subsp. *caniceps* (Woodhouse); subsp. *cismontanus* Dwight; subsp. *dorsalis* Henry; subsp. *hyemalis*; subsp. *mearnsi* Ridgway; subsp. *montanus* Ridgway; subsp. *oreganus* (Townsend); subsp. *shufeldti* Coale; subsp. *thurberi* Anthony, color presentation), 20, 42 (061812), 55, 69, 73, 90, 93, 106 (042012 - includes a listing of subspecies, color presentation), **146***

Junco hyemalis subsp. *aikeni*: White-winged Junco (see *Junco hyemalis*)

Junco hyemalis subsp. *caniceps*: Grey-headed Junco (see *Junco hyemalis*)

Junco hyemalis subsp. *cismontanus*: Slate-colored Junco (see *Junco hyemalis*)

Junco hyemalis subsp. *dorsalis*: Red-backed Junco (see *Junco hyemalis*)

Junco hyemalis subsp. *hymenalis*: Slate-colored Junco (see *Junco hyemalis*)

Junco hyemalis subsp. *mearnsi*: Pink-sided Junco (see *Junco hyemalis*)

Junco hyemalis subsp. *montanus*: Oregon Junco (see *Junco hyemalis*)

Junco hyemalis subsp. *oreganus*: Oregon Junco (see *Junco hyemalis*)

Junco hyemalis subsp. *shufeldti*: Oregon Junco (see *Junco hyemalis*)

Junco hyemalis subsp. *thurberi*: Oregon Junco (see *Junco hyemalis*)

***Melospiza lincolni* (Audubon, 1834): Lincoln's Sparrow**

COMMON NAMES: Bruant de Lincoln (French)⁴²; Gorrión Lincoln (Hispanic)¹⁴; Gorrión de Lincoln (Spanish)⁴²; Lincoln's Sparrow; "Tom's Finch". HABITS: Feeds on berries, buds, fruits, insects and seeds. Nests are cups made of grasses located under vegetation on the ground and in bogs and muskegs. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (042012 - subsp. *alticola* (Miller and McCabe); subsp. *lincolni*, color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (042012 - color presentation), **146***

***Melospiza melodia* (A. Wilson, 1810): Song Sparrow**

COMMON NAMES: Alameda Song Sparrow (*M.m. pusillula* Ridgway, 1899 - Valid); Aleutian Song Sparrow (*M.m. sanaka* McGregor, 1900 - Valid); Amak Song Sparrow (*M.m. amaka* Gabrielson and Lincoln, 1951 - Invalid; *M.m. sanaka* McGregor, 1900 - Valid); Bischoff Song Sparrow (*M.m. insignis* S.F. Baird, 1869 - Valid); Bruant Chanteur (French)⁴²; Desert Song Sparrow (*M.m. fallax* (S.F. Baird, 1854) - Valid); Giant Song Sparrow (*M.m. maxima* Gabrielson and Lincoln, 1951 - Valid); Gorrión Cantor (Hispanic)¹⁴, Gorrión Cantor (Spanish)⁴²; Kenai Song Sparrow (*M.m. kenaiensis* Ridgway, 1900 - Valid); Riley Song Sparrow (*M.m. inexpectata* Riley, 1911 - Invalid; *M.m. merrilli* Brewster, 1896 - Valid); San Pablo Song Sparrow (*M.m. samuelis* (S.F. Baird, 1858) - Valid); Santa Barbara Song Sparrow (*M.m. coronatorum* Grinnell and Daggett, 1903 - Invalid; *M.m. graminea* C.H. Townsend, 1890 - Valid); Semidi Song Sparrow (*M.m. semidiensis* Brooks, 1919 - Invalid?); Song Sparrow; Sooty Song Sparrow (*M.m. rufina* (Bonaparte, 1850) - Valid); Suisun Song Sparrow (*M.m. maxillaris* Grinnell, 1909 - Valid); Yakutat Song Sparrow (*M.m. caurina* Ridgway, 1899 - Valid). HABITS: Feeds on berries, buds, fruit, insects and seeds. Nests are cups made of grasses located on the ground and in low bushes. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *14 (060512 - subsp. *fallax* (Baird); subsp. *juddi* (Bishop); subsp. *montana* (Henshaw), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (060512 - includes a listing of subspecies, color presentation), **146***

Melozone aberti (see *Pipilo aberti*)

Melozone fusca (see *Pipilo fuscus*)

Melozone fuscus (see *Pipilo fuscus*)

Peucaea carpalis (see *Aimophila carpalis*)

***Pipilo aberti* S.F. Baird, 1852: Abert's Towhee**

SYNONYMY: *Melozone aberti* (Baird, 1852). COMMON NAMES: Abert's Towhee; Toqui de Abert (Hispanic)¹⁴; Toquí Enmascarado (Spanish)⁴². HABITS: Feeds on buds, berries, small fruit, insects and seeds. Nests are cups made of grasses located close to the ground in bushes and trees. HABITAT: Within the range of this species it has been reported from the desertscrub and wetland ecological formations. *14 (042012 - recorded as *Melozone aberti* subsp. *aberti* (Baird), color presentation), 42 (061812 - no record for *Melozone aberti*), 55, 69, 73, 93, 106 (042012 - color presentation), **146***

***Pipilo chlorurus* (Audubon, 1839): Green-tailed Towhee**

SYNONYMY: *Chlorura chlorura* (Audubon, 1839). COMMON NAMES: Green-tailed Towhee; Tohi à Queue Verte (French)⁴²; Toqui Cola Verde (Hispanic)¹⁴; Toquí Cola Verde (Spanish)⁴². HABITS: Feeds on berries, buds, fruit, insects and seeds. Nests are made of shredded bark and grasses located under brush and on the ground. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042012 - color presentation), 42 (061812), 55, 69, 73, 84, 90, 93, 106 (042012 - color presentation), **146***

***Pipilo fuscus* Swainson, 1827: Canyon Towhee**

SYNONYMY: *Melozone fusca* Swainson, 1827; *Melozone fuscus* (Swainson, 1827). COMMON NAMES: Bichput (Tohono O'odham)⁹⁰; Brown Towhee; Canyon Towhee; Toqui Canonero (Hispanic)¹⁴; Toquí Pardo (Spanish)⁴²; Toquí Pinto (Spanish)⁹⁰; Vieja (Spanish)⁹⁰; Yuma Brown Towhee. HABITS: Feeds on berries, buds, fruit, insects and seeds. Nests are large deep cups of grasses and rootlets located in bushes and low trees. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042012 - recorded as *Melozone fuscus* subsp. *mesatus* (Oberholser); subsp. *mesoleucus* (Baird), color presentation), 42 (061812 - no record for either *Melozone fusca* or *Melozone fuscus*), 55, 69, 73, 84, 90, 93, 106 (042012 - recorded as *Melozone fusca* Swainson, 1827, color presentation), **146***

***Pipilo maculatus* Swainson, 1827: Spotted Towhee**

COMMON NAMES: Oregon Towhee; Spotted Towhee. HABITS: Feeds on berries, buds, fruit, insects and seeds. Nests are bulky cups made up of strips of bark, stalks of forbs, leaves and twigs and lined with shredded bark, grasses, hairs and pine needles and located low in dense bushes or on and/or close to the ground. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, desertscrub and wetland ecological formations. *14 (060512 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (06051 - color presentation), **146***

***Pooecetes gramineus* (Gmelin, 1789): Vesper Sparrow**

COMMON NAMES: Bruant Vespéral (French)⁴²; Gorrión Cola Blanca (Spanish)⁴²; Vesper Sparrow. HABITS: Feeds on berries, buds, fruits, insects, seeds and small fruit. Nests are grass lined cups located on the ground in grass and low vegetation. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (042012 - subsp. *altus* (Marshall); subsp. *confinis* (Baird), color presentation), 20, 42 (061812), 55, 69, 73, 84, 93, 106 (042012 - color presentation), **146***

***Spizella breweri* Cassin, 1856: Brewer's Sparrow**

COMMON NAMES: Brewer's Sparrow (*S.b. breweri* Cassin, 1856 - Invalid; *Spizella breweri* Cassin, 1856 - Valid); Gorrión Brewer (Hispanic)¹⁴; Gorrión de Brewer (Spanish)⁴²; Timberline Sparrow (*S.b. taverneri* Swarth and A.C. Brooks, 1925 - Invalid; *Spizella taverneri* Swarth and A.C. Brooks, 1925 - Valid). HABITS: Feeds on berries, buds, fruit, insects and seeds. Nests are cups made of grasses located in low conifers, sagebrush or on the ground. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (042012 - subsp. *breweri*: Brewer's Sparrow; subsp. *taverneri* (Swarth and Brooks)), 42 (061812), 55, 69, 73, 84, 90, 93, 106 (042012 - includes a listing of subspecies, color presentation), **146***

Spizella breweri subsp. *breweri* (see *Spizella breweri*)

***Spizella passerina* (Bechstein, 1798): Chipping Sparrow**

COMMON NAMES: Bruant Familier (French)⁴²; Chipping Sparrow; Gorrión Ceja Blanca (Spanish)⁴²; "Hairbird". HABITS: Feeds on berries, buds, fruit, insects and seeds. Nests are cups made of grasses and rootlets and lined with hair located in bushes, trees and vines or on the ground. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: The Chipping Sparrow is a predator of the Douglas-fir Tussock Moth (*Orgyia pseudotsugata*) and the Western Spruce Budworm (*Choristoneura occidentalis*). *14 (060512 - subsp. *arizonae* (Coues), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (060512 - color presentation), **146***

***Zonotrichia albicollis* (Gmelin, 1789): White-throated Sparrow**

COMMON NAMES: Bruant à Gorge Blanche (French)⁴²; Gorrión Garganta Blanca (Hispanic)¹⁴; Gorrión Garganta Blanca (Spanish)⁴²; White-throated Sparrow. HABITS: Members of this family feed on berries, buds, fruit, insects and seeds. Nests are cups made of bark fiber, grasses, hairs, mosses and rootlets located either on the ground under shrubbery or low in trees. HABITAT: Within the range of this species it has been reported from the desertscrub and wetland ecological formations. *14 (060512 - color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (060512 - color presentation), **146***

***Zonotrichia leucophrys* (J.R. Forster, 1772): White-crowned Sparrow**

COMMON NAMES: Bruant à Couronne Blanche (French)⁴²; Gambel's Sparrow; Gorrión Copete Blanco (Hispanic)¹⁴; Gorrión Corona Blanca (Spanish)^{42,90}; Intermediate Sparrow; Mountain White-crowned Sparrow (*Z.l. oriantha* Oberholser, 1932); Nuttall's Sparrow; Tomtol (Tohono O'odham)⁹⁰; White-crown; White-crowned Sparrow. HABITS: Members of this family feed on berries, buds, fruit, insects and seeds. Nests are cups made of grasses located in bushes or on the ground. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042012 - subsp. *gambelii* (Nuttall); subsp. *oriantha* (Oberholser), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (042012 - includes a listing of subspecies, color presentation), **146***

Falconidae: The Caracara and Falcon Family

***Falco columbarius* Linnaeus, 1758: Merlin**

COMMON NAMES: Black Merlin (*F.c. suckleyi* Ridgway, 1874 - Valid); Coastal Forest Merlin (*F.c. suckleyi* Ridgway, 1874 - Valid); Faucon Émerillon (French)⁴²; Halcón Esmerejón (Spanish)⁴²; Merlin; Pigeon Hawk; Prairie Merlin (*F.c. richardsonii* Ridgway, 1871 - Valid); Smyril (Indo-European: Insular Nordic; Faroese for *F.c. aesealon* Tunstall, 1771 - Valid)¹⁰⁶; Smyrill (Indo-European: Insular Nordic; Icelandic applied to *F.c. aesealon* Tunstall, 1771 - Valid)¹⁰⁶; Taiga Merlin (*F.c. columbarius* Linnaeus, 1758 - Valid); Tundra Merlin (*F.c. columbarius* Linnaeus, 1758 - Valid). HABITS: Feeds on birds, insects and rodents. Nests are made in cavities, cliff ledges, niches, tree tops and on the ground. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060512 - subsp. *bendirei* (Swann); subsp. *columbarius*; subsp. *richardsonii* (Ridgway); subsp. *suckleyi* (Ridgway), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (060512 - includes a listing of subspecies, color presentation), **146***

***Falco peregrinus* Tunstall, 1771: Peregrine Falcon**

COMMON NAMES: American Peregrine Falcon (*F.p. anatum* Bonaparte, 1838 - Valid); Arctic Peregrine Falcon (*F.p. tundrius* C.M. White, 1968 - Valid); Austral Peregrine Falcon (*F.p. cassini* Sharpe, 1873 - Valid); Australian Peregrine Falcon (*F.p. macropus* Swainson, 1838 - Valid); Barbary Falcon (*F.p. pelegrioides* Temminck, 1829 - Invalid?; *Falco pelegrioides* Temminck, 1829 - Valid); Black Shaheen (*F.p. peregrinator* Sundevall, 1837 - Valid); Duck Hawk (*F.p. anatum* Bonaparte, 1838 - Valid); Eurasian Peregrine Falcon (*F.p. peregrinus* Tunstall, 1771 - Valid); Faucon Pèlerin (French)⁴²; Faucon Pèlerin

(French)⁴²; Halcon Arctico (Hispanic); Halcon Peregrino (Hispanic)¹⁴; Halcón Peregrino (Spanish)⁴²; Indian Peregrine Falcon (*F.p. peregrinator* Sundevall, 1837 - Valid); Maltese Falcon (*F.p. brookei* Sharpe, 1873 - Valid); Mediterranean Falcon (*F.p. brookei* Sharpe, 1873 - Valid); Peale's Falcon (*F.p. pealei* Ridgway, 1874 - Valid); Peregrine; Peregrine Falcon; Shaheen (*F.p. peregrinator* Sundevall, 1837 - Valid); Shaheen Falcon (*F.p. peregrinator* Sundevall, 1837 - Valid). HABITS: Feeds on bats, birds, insects, reptiles and rodents. Eggs are laid on potholes, scrapes or sticks located on cliff ledges. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The Peregrine Falcon has been reported as being the fastest creature on earth, able to free fall at speeds exceeding 260 mph. *14 (042012 - subsp. *anatum* (Bonaparte); subsp. *tundrius* (White), color presentation of subspecies *anatum*), 20, 35, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (042012 - includes a listing of subspecies, color presentation), **146***

***Falco sparverius* Linnaeus, 1758: American Kestrel**

COMMON NAMES: American Kestrel; Cernicalo (Hispanic)¹⁴; Cernicalo Americano (Spanish)^{42,90}; Crécerelle d'Amérique (French)⁴²; Desert Sparrow Hawk; Sisiki (Tohono O'odham)⁹⁰; Sparrow Hawk. HABITS: Feeds on amphibians, small birds, insects, reptiles and rodents. Eggs are laid in holes in saguaros and trees and on cliffs. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042012 - subsp. *sparverius* Linnaeus, color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (042012 - includes a listing of subspecies, color presentation), **146***

Fringillidae: The Cardueline and Fringilline Finch Family

***Carduelis lawrencei* Cassin, 1850: Lawrence's Goldfinch**

SYNONYMY: *Spinus lawrencei* (Cassin, 1850). COMMON NAMES: Jilguero Gris (Spanish)⁴²; Lawrence's Goldfinch. HABITS: Feeds on berries, buds, small fruit, insects and seeds. Nests are small, neat, tightly woven cups located in bushes and small trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042012 - color presentation), 42 (061812), 55, 69, 73, 84, 93, 106 (042012 - color presentation), **146***

***Carduelis pinus* (A. Wilson, 1810): Pine Siskin**

SYNONYMY: *Spinus pinus* (A. Wilson, 1810). COMMON NAMES: Jilguero Pinero (Spanish)⁴²; Pine Finch, Pine Siskin, Pinonero Rayado (Hispanic)¹⁴; Tarin des Pins (French)⁴². HABITS: Feeds on insects and seeds. Nests are neat cups made up of grasses and twigs and located on horizontal branches of trees usually conifers. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The Pine Siskin is a predator of the Douglas-fir Tussock Moth (*Orgyia pseudotsugata*) and Western Spruce Budworm (*Choristoneura occidentalis*). *14 (060612 - recorded as *Spinus pinus* Wilson: *C.p.* subsp. *pinus*, color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (060612 - color presentation), **146***

***Carduelis psaltria* (Say, 1823): Lesser Goldfinch**

SYNONYMY: *Spinus psaltria* (Say, 1823). COMMON NAMES: Arkansas Goldfinch; Arkansas Green-back; Dark-backed Goldfinch; Green-backed Goldfinch (*C.p. hesperophila* (Oberholser, 1903) - Valid); Jilguero Dominico (Spanish)⁴²; Lesser Goldfinch; Tarweed Canary. HABITS: Feeds on tree buds, insects (larval and adult stages) and seeds. Nests are small cups made of fine plant materials including strips of bark, cocoons, cotton, feathers, grasses, leaves, lichens, mosses, plant stems, rootlets, thistle, twigs, spider webbing and wool with the nest height being from 1 to 30 feet and located in bushes, shrubs and trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042112 - subsp. *hesperophilus* (Oberholser); subsp. *psaltria*, color presentation), 42 (061812), 55, 69, 73, 84, 90, 93, 106 (042112 - includes a listing of subspecies, color presentation), **146***

***Carpodacus mexicanus* (Statius Müller, 1776): House Finch**

COMMON NAMES: "Hollywood Finch"; House Finch; "Linnet"; Pinzón Mexicano (Spanish)^{42,90}; Roselin Familier (French)⁴². HABITS: Feeds on buds, berries, fruit, insects and seeds. Nests are tightly woven, compact cups made of debris, feathers, grasses, hair, lichens, plant tufts, sticks and twigs located in cavities and in bushes, cacti, shrubs, trees and vines, sometime uses abandoned nests of other birds. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042112 - subsp. *frontalis* (Say), color presentation), 20, 42 (061812), 55, 69, 73, 84, 90, 93, 106 (042112 - color presentation), **146***

Spinus pinus (see *Carduelis pinus*)

Spinus psaltria (see *Carduelis psaltria*)

Hirundinidae: The Martin and Swallow Family

***Hirundo rustica* Linnaeus, 1758: Barn Swallow**

COMMON NAMES: Barn Swallow; Golondrina (Hispanic)¹⁴; Golondrina Tijereta (Spanish)⁴²; Hironnelle Rustique (French)⁴²; Ladu Swala (“Barn-swallow”, Sweden)¹⁰⁶; Swallow. HABITS: Feeds on insects. Nests are cups made of mud lined with feathers located on cliff ledges and man-made structures. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060612 - subsp. *erythrogaster* Boddaert, color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060612 - includes a listing of subspecies, color presentation), **146***

***Progne subis* (Linnaeus, 1758): Purple Martin**

COMMON NAMES: Golondrina Azulnegra (Spanish)⁴²; Hironnelle Noire (French)⁴²; Martin Azul (Hispanic)¹⁴; Purple Martin; Western Purple Martin. HABITS: Feeds on insects. Nests made of feathers, grasses, leaves, mud and stalks located in holes in saguaros and trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, grassland, desertscrub and wetland ecological formations. *14 (060612 - subsp. *subis* (Linnaeus); subsp. *hesperia* (AZ)), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060612 - includes a listing of subspecies, color presentation: “Purple Martins suffered a severe population crash in the 20th Century widely linked to the release and spread of European Starlings in North America. Starlings and House Sparrows compete with martins for nest cavities. Where Purple Martins once gathered by the thousands, by the 1980s they had all but disappeared.”^{[7]b}), **146***

***Stelgidopteryx serripennis* (Audubon, 1838): Northern Rough-winged Swallow**

COMMON NAMES: Golondrina ala Aserrada (Spanish)⁴²; Hironnelle à Ailes Hérissées (French)⁴²; Golondrina alas Errada (Hispanic)¹⁴; Northern Rough-winged Swallow; Rough-winged Swallow. HABITS: Feeds on insects. Nests located in holes in banks, caves and crevices in rock. HABITAT: Within the range of this species it has been reported from the forest, woodland, grassland, desertscrub and wetland ecological formations. *14 (060612 - subsp. *psammochrous* (Griscom); subsp. *serripennis*, color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060612 - color presentation), **146***

***Tachycineta thalassina* (Swainson, 1827): Violet-green Swallow**

COMMON NAMES: Golondrina Verde (Hispanic)¹⁴; Golondrina Verdemar (Spanish)⁴²; Violet-green Swallow. HABITS: Feeds on insects. Nests are cups made of grasses lined with feathers located in holes in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042112 - subsp. *lepida* (Mearns), color presentation), 42 (072012), 55, 69, 73, 84, 90, 93, 106 (042112 - color presentation), **146***

Icteridae: The Blackbird, Oriole and Allies Family

***Agelaius phoeniceus* (Linnaeus, 1766): Red-winged Blackbird**

COMMON NAMES: Bicolored Blackbird (*A.p. gubernator* (Wagler, 1832) - Valid); Carouge à Épaulettes (French)⁴²; Red-wing; Red-winged Blackbird; S-Wegi Shashani (Tohono O’odham)⁹⁰; Tordo de Alas Rojas (Hispanic)¹⁴; Tordo Sargento (Spanish)⁴². HABITS: Feeds on small aquatic animals, small fruit, insects and seeds. Nests are a woven grass cup attached to bushes, grasses, marsh reeds and tules. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (060612 - subsp. *arctolegus* (Oberholser); subsp. *fortis* (Ridgway); subsp. *nevadensis* (Grinnell); subsp. *sonoriensis* (Ridgway), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060612 - includes a listing of subspecies, color presentation), **146***

Cassidix mexicanus (see *Quiscalus mexicanus*)

***Euphagus cyanocephalus* (Wagler, 1829): Brewer’s Blackbird**

COMMON NAMES: Brewer’s Blackbird; Quiscale de Brewer (French)⁴²; Tordo Ojo Amarillo (Spanish)⁴²; Tordo Brewer (Hispanic)¹⁴. HABITS: Feeds on fruits, insects, seeds, small aquatic life. Nests are bulky grass-lined cups made up of grasses and twigs, plastered with mud located on the ground or in low shrubs or trees. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (060612 - color presentation), 20, 42 (061912), 55, 69, 73, 84, 93, 106 (060612 - color presentation), **146***

***Icterus cucullatus* Swainson, 1827: Hooded Oriole**

COMMON NAMES: Bolsero Encapuchado (Spanish)⁴²; Calandria (Spanish)⁹⁰; Calandria Copetona (Hispanic)¹⁴; Hooded Oriole; S-Oam Shashani (Tohono O’odham)⁹⁰. HABITS: Feeds on small aquatic animals, small fruit, insects and seeds; nests are a long, hanging basket or woven pouch located under palm fronds, shrubs and yuccas. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. *14 (042112 - color presentation), 20, 42 (061912), 55, 69, 73, 84, 93, 106 (042112 - color presentation), **146***

***Icterus parisorum* Bonaparte, 1838: Scott’s Oriole**

COMMON NAMES: Bolsero Tunero (Spanish)⁴², Calandria Matraquera (Hispanic)¹⁴, Scott's Oriole. HABITS: Feeds on fruits, insects and nectar. Nests are hanging pouches made of grasses and leaves located in dried yucca fronds and small trees. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060612 - color presentation), 42 (061912), 55, 69, 73, 84, 93, 106 (060612 - color presentation), **146***

***Molothrus aeneus* (Wagler, 1829): Bronzed Cowbird**

SYNONYMY: *Tangavius aeneus* (Wagler, 1829). COMMON NAMES: Bronze-brown Cowbird (*M.a. armenti* Cabanis, 1851 - Valid); Bronzed Cowbird; Red-eyed Cowbird; Tordo Ojo Rojo (Spanish)⁴²; Tordo Ojos Rojos (Hispanic)¹⁴. HABITS: Feeds on small aquatic animals, small fruit, insects and seeds; parasitic. Eggs are laid in the nests of orioles and other birds. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (042212 - subsp. *loyei* (Parkes and Blake), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - color presentation), **146***

***Molothrus ater* (Boddaert, 1783): Brown-headed Cowbird**

COMMON NAMES: Brown-headed Cowbird; Common Cowbird; Dwarf Cowbird; Nevada Cowbird; Tordo (Spanish)⁹⁰; Tordo Cabeza Café (Spanish)⁴²; Tordo Copete Café (Hispanic)¹⁴; Vacher à Tête Brune (French)⁴². HABITS: Feeds on small aquatic animals, small fruit, insects and seeds; parasitic. Eggs are laid in the nests or other birds. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042212 - subsp. *artemisiae* (Grinnell); subsp. *obscurus* (Gmelin), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - color presentation), **146***

***Quiscalus mexicanus* (Gmelin, 1788): Great-tailed Grackle**

SYNONYMY: *Cassidix mexicanus* (Gmelin, 1788). COMMON NAMES: "Blackbird"; Boat-tailed Grackle (a name more appropriately applied to *Quiscalus major* Vieillot, 1819 of the eastern and southern United States coastal marshes and Florida); Chanate Cola Grande (Hispanic)¹⁴; "Crow"; "Cuervo" (Mexico)¹⁰⁶; Great-tailed Grackle; "Jackdaw"; Mexican Grackle; Zanate (Spanish)⁹⁰; Zanate Mexicano (Spanish)⁴². HABITS: Feeds on small aquatic animals, small fruit, insects and seeds. Nests are cups made of sticks, grasses, mud and sticks lined with grasses located in trees, bushes and marsh reeds. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (042212 - subsp. *monsoni* (Phillips); subsp. *prosopticola* (Lowery), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - color presentation), **146***

Tangavius aeneus (see *Molothrus aeneus*)

***Xanthocephalus xanthocephalus* (Bonaparte, 1826): Yellow-headed Blackbird**

COMMON NAMES: Carouge à Tête Jaune (French)⁴²; Tordo Cabeza Amarilla (Hispanic)¹⁴; Yellow-headed Blackbird. HABITS: Feeds on small aquatic life, insects, small fruit, seeds and waste grain. Nests are woven cups made of grasses and sedges located above water on cattails, reeds and tules in marshy areas. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (042212 - color presentation), 20, 42 (061912), 55, 69, 73, 84, 93, 106 (042212 - color presentation), **146***

Mimidae: The Catbird, Mockingbird and Thrasher Family

***Dumetella carolinensis* (Linnaeus, 1766): Gray Catbird**

COMMON NAMES: Catbird; Gray Catbird; Grey Catbird; Maullador Gris (Spanish)⁴²; Moqueur Chat (French)⁴²; Slate-colored Mockingbird. HABITS: Feeds on berries, fruits and insects. Nests are bulky cups or masses made up of cotton, moss, roots, snake skins, stems, string, corn husks and twigs and lined with finer plant material including rootlets located in shrubs, tangles, vines and small trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTE: *Dumetella carolinensis* is native to central and southern North America; Central America, and coastal islands in the Caribbean Sea, and South America. *14 (041512 - subsp. *ruficrissa* (Aldrich), color presentation), 20, 42 (061912), 55, 69, 73, 93, 106 (041512 - color presentation), **146***

***Mimus polyglottos* (Linnaeus, 1758): Northern Mockingbird**

COMMON NAMES: Cenzontle (Spanish)^{14,90}; Centzontle Norteño (Spanish)⁴²; Mockingbird; Moqueur Polyglotte (French)⁴²; Northern Mockingbird; Shug (Tohono O'odham)⁹⁰. HABITS: Feeds on arachnids, berries, crustaceans, fruits, gastropods, insects, mollusks, reptiles and seeds. Nests are bulky cups made of grasses, hair, leaves, mosses, plant stems, rootlets, sticks, twigs and wool and lined with fine plant material and rootlets located near ground in bushes, chollas, shrubs, thickets, dense trees and vines. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042212 - subsp. *leucopterus* (Vigors), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - color presentation), **146***

***Toxostoma curvirostre* (Swainson, 1827): Curve-billed Thrasher**

COMMON NAMES: Cuitlacoche; Cuitlacoche Comun (Hispanic)¹⁴; Cuitlacoche Pico Curvo (Spanish)^{42,90}; Curve-billed Thrasher; Kudwik (Tohono O'odham)⁹⁰; Palmer's Thrasher. HABITS: Feeds on arachnids, berries, crustaceans, diplopods, fruits, gastropods, insects, mollusks and seeds. Nests are woven cups made up of bark, grasses, hair, rootlets, sticks and twigs and located in bushes, cholla cacti and shrubs. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042212 - subsp. *celsum* (Moore), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - color presentation), **146***

Odontophoridae: The Quail Family

***Callipepla gambelii* (Gambel, 1843): Gambel's Quail**

COMMON NAMES: Arizona Quail; Codorniz Chiquiri [Spanish]⁴²; Codorniz (Gambel) Chiquiri (Spanish)⁹⁰; Codorniz de Gambel (Hispanic)¹⁴; Desert Quail; Fulvous-breasted Quail (*C.g. fulvipectis* Nelson, 1899); Gambel's Quail; Kakaichu (Tohono O'odham)⁹⁰. HABITS: Feeds on insects, plant material and seeds. Eggs are laid in scrapes or grass lined nests located on the ground under prickly-pear cacti. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042212 - subsp. *gambelii*; subsp. *ignoscens* (Friedmann); subsp. *sanus* (Mearns), color presentation), 42 (061912), 55 (recorded as *Lophortyx gambelii*), 69 (note, recorded as *Lophortyx gambelii*), 73 (recorded as *Lophortyx gambelii*), 84, 90, 93 (recorded as *Lophortyx gambelii*), 106 (042212 - includes a listing of subspecies, color presentation), **146**

***Callipepla gambelii* subsp. *gambelii* (Gambel, 1843): Gambel's Quail**

SYNONYMY: *Lophortyx gambelii* subsp. *gambelii* (Gambel, 1843); *Lophortyx gambelii* subsp. *ignoscens* (Friedmann, 1943); *Lophortyx gambelii* subsp. *sanus* (Mearns, 1914). COMMON NAMES: Arizona Quail; Codorniz Chiquiri [Spanish]⁴²; Codorniz (Gambel) Chiquiri (Spanish)⁹⁰; Codorniz de Gambel (Hispanic)¹⁴; Desert Quail; Gambel's Quail; Kakaichu (Tohono O'odham)⁹⁰. HABITS: The species feeds on insects, plant material and seeds. The eggs are laid in scrapes or grass lined nests located on the ground under prickly-pear cacti. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042212 - species, color presentation), 42 (061912), 55 (species, recorded as *Lophortyx gambelii*), 69 (note, species, recorded as *Lophortyx gambelii*), 73 (species, recorded as *Lophortyx gambelii*), 84 (species), 90 (species), 93 (species, recorded as *Lophortyx gambelii*), 106 (042212 - species including a listing of subspecies, color presentation), **WTK** (August 4, 2005)*

Lophortyx gambelii subsp. *gambelii* (see *Callipepla gambelii* subsp. *gambelii*)

Lophortyx gambelii subsp. *ignoscens* (see *Callipepla gambelii* subsp. *gambelii*)

Lophortyx gambelii subsp. *sanus* (see *Callipepla gambelii* subsp. *gambelii*)

Parulidae: The Wood Warbler Family

***Dendroica coronata* (Linnaeus, 1766): Yellow-rumped Warbler**

SYNONYMY: *Setophaga coronata* (Linnaeus, 1766). COMMON NAMES: Audubon Warbler; Audubon's Warbler (*D.c. auduboni* (J.K. Townsend, 1837) - Valid); Black-fronted Warbler (*D.c. nigrifrons* Brewster, 1889 - Valid); Chipe Coronado (Spanish)⁴²; Goldman's Warbler (*D.c. goldmani* Nelson, 1897 - Valid); Myrtle Warbler (*D.c. coronata* (Linnaeus, 1766) - Valid); Paruline à Croupion Jaune (French)⁴²; Verdin Cola Amarilla (Hispanic)¹⁴; Yellow-rumped Warbler. HABITS: Feeds on insects and spiders. Nests are cupped-shaped and made of shredded bark, feathers and twigs and located in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042212 - recorded as *Setophaga coronata*: *D.c.* subsp. *auduboni* (Audubon's); subsp. *coronata* ("Myrtle"), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - recorded as *Setophaga coronata* (Linnaeus, 1766), includes a listing of subspecies, color presentation), **146***

***Dendroica nigrescens* (J.K. Townsend, 1837): Black-throated Gray Warbler**

SYNONYMY: *Setophaga nigrescens* (J.K. Townsend, 1837). COMMON NAMES: Black-throated Gray Warbler; Black-throated Grey Warbler; Chipe Negrogris (Spanish)⁴²; Paruline Grise (French)⁴²; Verdin Gris Garganta Negra (Hispanic)¹⁴. HABITS: Feeds on insects and spiders. Nests are neat, tightly-woven cups made up of grass stalks and plant fibers and lined with feathers and hair often located on horizontal branches in a shrubs and trees. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060712 - recorded as *Setophaga nigrescens* (Townsend), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060712 - recorded as *Setophaga nigrescens* (Townsend, 1837), color presentation), **146***

***Dendroica petechia* (Linnaeus, 1766): Yellow Warbler**

SYNONYMY: *Setophaga petechia* (Linnaeus, 1766). COMMON NAMES: American Yellow Warbler; Barbados Golden Warbler (*D.p. petechia* (Linnaeus, 1766) - Valid); Barbados Yellow Warbler (*D.p. petechia* (Linnaeus, 1766) - Valid); Barbados Yellow Wood Warbler (*D.p. petechia* (Linnaeus, 1766) - Valid); Californian Yellow Warbler (*D.p. brewsteri* Grinnell, 1903 - Valid); Chipe Amarillo (Spanish)⁴²; Mangrove Warbler (*D.p. erithachorides* S.F. Baird, 1858 - Valid); Paruline Jaune (French)⁴²; Sonoran Yellow Warbler (*D.p. sonorana* Brewster, 1888 - Valid); “Summer Yellowbird”; Verdin Amarillo (Hispanic)¹⁴; Yellow Warbler. HABITS: Feeds on insects and spiders. Nests are felted cups of plant fibers located in the forks of shrubs and trees. HABITAT: Within the range of this species it has been reported from the desertscrub and wetland ecological formations. *14 (042212 - recorded as *Setophaga petechia* (Linnaeus): *D.p.* subsp. *amnicola* (Batchelder); *D.p.* subsp. *morcomi* (Coale); *D.p.* subsp. *rubiginosa* (Pallas); *D.p.* subsp. *sonorana* (Brewster), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - recorded as *Setophaga petechia* (Linnaeus, 1766), includes a listing of subspecies, color presentation), 146*

***Dendroica townsendi* (J.K. Townsend, 1837): Townsend’s Warbler**

SYNONYMY: *Setophaga townsendi* (J.K. Townsend, 1837). COMMON NAMES: Chipe Negroamarillo (Spanish)⁴²; Townsend’s Warbler; Verdin Townsend (Hispanic)¹⁴. HABITS: Feeds on berries, insects, plant nectar, seeds and spiders. Nests are shallow cups made up of grasses and lined with moss and located on top of branches in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, grassland, desertscrub and wetland ecological formations. *14 (060712 - recorded as *Setophaga townsendi* (Townsend): color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060712 - recorded as *Setophaga townsendi* (Townsend, 1837), color presentation), 146*

***Geothlypis trichas* (Linnaeus, 1766): Common Yellowthroat**

COMMON NAMES: Common Yellowthroat; “Yellow-throat”; Garganta Amarilla Conun (Hispanic)¹⁴; Mascarita Común (Spanish)⁴²; Paruline Masquée (French)⁴². HABITS: Feeds on insects, seeds and spiders. Nests are woven cups made up of bark, forbs, grasses, hair and leaves and lined with grasses and hair located on the ground under bushes in marshes and low in vegetation. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. *14 (060712 - subsp. *campicola* (Behle & Aldrich); subsp. *chryseola* (Van Rossem); subsp. *occidentalis* (Brewster), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060712 - color presentation), 146*

***Icteria virens* (Linnaeus, 1758): Yellow-breasted Chat**

COMMON NAMES: Buscabreña (Spanish)⁴²; Long-tailed Chat; Paruline Polyglotte (French)⁴²; Yellow-breasted Chat. HABITS: Feeds on arachnids, berries, crustaceans, insects and spiders. Nests are large open cups made of bark, stems of forbs, grasses, leaves, rootlets and twigs located in briars, bushes, thick shrubs, thickets and small trees. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, scrub, grassland, desertscrub ecological formations. *14 (042212 - subsp. *auricollis* (Deppe), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - color presentation), 146*

***Oporornis tolmiei* (J.K. Townsend, 1839): MacGillivray’s Warbler**

COMMON NAMES: Chipe de Tolmie (Spanish)⁴²; MacGillivray’s Warbler; Verdin MacGillivray (Hispanic)¹⁴. HABITS: Feeds on insects and spiders. Nests are cupped-shaped and made of grasses located in briars, low brush and weeds. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042212 - subsp. *monticola* (Phillips); subsp. *tolmiei*, color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - color presentation), 146*

Oreothlypis celata (see *Vermivora celata*)

Oreothlypis luciae (see *Vermivora luciae*)

Oreothlypis ruficapilla (see *Vermivora ruficapilla*)

***Protonotaria citrea* (Boddaert, 1783): Prothonotary Warbler**

COMMON NAMES: Chipe Dorado (Spanish)⁴²; Paruline Orangée (French)⁴²; Golden Swamp Warbler; Prothonotary Warbler. HABITS: Feeds on insects and snails. Nests are cups made of moss located in cavities in trees and holes in stumps. HABITAT: Within the range of this species it has been reported from the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: *Protonotaria citrea* is native to central and southern North America; Central America and coastal islands in the Caribbean Sea, and northern South America. *14 (041512), 20, 42 (061912), 55, 69, 106 (041512 - color presentation), 146*

***Seiurus aurocapilla* (Linnaeus, 1766): Ovenbird**

SYNONYMY: *Seiurus aurocapillus* (Linnaeus, 1766). COMMON NAME: Chipe Suelero (Spanish)⁴²; Oven Bird; Ovenbird; Paruline Couronnée (French)⁴². HABITS: Feeds on insects, snails and fruit. Nests are a woven leaf-domed cup made of bark, feathers, grasses, hair, leaves, mosses, rootlets other plant fibers, it is located on a depression in the forest floor.

HABITAT: Within the range of this species it has been reported from the forest, woodland, grassland, desertscrub and wetland ecological formations. *14 (041512 - subsp. *cinereus* (Miller)), 20, 42 (061912), 55, 69, 73, 106 (041512 - color presentation), **146***

Seiurus aurocapillus (see *Seiurus aurocapilla*)

Setophaga coronata (see *Dendroica coronata*)

Setophaga nigrescens (see *Dendroica nigrescens*)

Setophaga petechia (see *Dendroica petechia*)

Setophaga townsendi (see *Dendroica townsendi*)

***Vermivora celata* (Say, 1823): Orange-crowned Warbler**

SYNONYMY: *Oreothlypis celata* (Say, 1823). COMMON NAMES: Chipe Corona Naranja (Spanish)⁴²; Lutescent Warbler; Orange-crowned Warbler; Paruline Verdâtre (French)⁴²; Verdin Copete Naranja (Hispanic)¹⁴. HABITS: Feeds on berries, insects, nectar and spiders. Nests are small open cups made up of grasses, rootlets and other plant fibers located in a low shrub or on the ground under vegetation. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060712 - recorded as *Oreothlypis celata* (Say): V.c. subsp. *celeta*; subsp. *lutescens* (Ridgway); subsp. *orestera* (Oberholser), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060712 - recorded as *Oreothlypis celata* (Say, 1823), color presentation), **146***

***Vermivora luciae* (J.G. Cooper, 1861): Lucy's Warbler**

SYNONYMY: *Oreothlypis luciae* (J.G. Cooper, 1861). COMMON NAMES: Chipe Rabadilla Rufa (Spanish)⁴²; Lucy's Warbler; Verdin Lucy (Hispanic)¹⁴. HABITS: Feeds on insects (beetles, caterpillars, leafhoppers) and spiders. Nests are cup-shaped and located in trees, under loose bark or in a cavity of hole. HABITAT: Within the range of this species it has been reported from the desertscrub and wetland ecological formations. *14 (042212 - recorded as *Oreothlypis luciae* (Cooper)), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - recorded as *Oreothlypis luciae* (Cooper, 1861), color presentation), **146***

***Vermivora ruficapilla* (A. Wilson, 1811): Nashville Warbler**

SYNONYMY: *Oreothlypis ruficapilla* (A. Wilson, 1811). COMMON NAMES: Calaveras Warbler (*V.r. ridgwayi* Van Rossem, 1929 - Valid); Chipe de Coronilla⁴²; Nashville Warbler; Paruline à Joues Grises (French)⁴²; Verdin Nashville (Hispanic)¹⁴. HABITS: Feeds on insects and spiders. Nests are cup-shaped and made up of grasses, leaves, rootlets and soft vegetation and located in the ground, near the ground or on the ground under a tussock, usually on a steep slope. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, desertscrub and wetland ecological formations. *14 (060712 - recorded as *Oreothlypis ruficapilla* (Wilson); *V.p.* subsp. *ridgwayi* (Van Rossem)), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060712 - recorded as *Oreothlypis ruficapilla* (Wilson, 1811), color presentation), **146***

***Wilsonia pusilla* (A. Wilson, 1811): Wilson's Warbler**

COMMON NAMES: Chipe Corona Negra (Spanish)⁴²; Paruline à Calotte Noire (French)⁴²; Pileolated Warbler; Wilson's Warbler; Verdin Wilson (Hispanic)¹⁴. HABITS: Feeds on insects and spiders. Nests are cups made up of bark, grasses, deer and horse hair, leaves, mosses, plant fibers and stems and located on the ground or near to the ground in shrubs. HABITAT: Within the range of this species it has been reported from the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTE: The Wilson's Warbler is a predator of the Douglas-fir Tussock Moth (*Orgyia pseudotsugata*) and Western Spruce Budworm (*Choristoneura occidentalis*). *14 (042212 - subsp. *chryseola* (Ridgway); subsp. *pileolata* (Pallas); subsp. *pusilla*, color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - includes a listing of subspecies, color presentation), **146***

Passeriidae: The Old World Sparrow Family

***Passer domesticus* (Linnaeus, 1758): House Sparrow**

COMMON NAMES: English Sparrow (United States); Gorrión Casero (Spanish)^{42,90}; Gorrión Ingles (Hispanic)¹⁴; House Sparrow; O'Odopiwa (Tohono O'odham)⁹⁰; Moineau Domestique (French)⁴²; Phillip Sparrow; Zacatero (Spanish)⁹⁰. HABITS: Feeds on fruit, garbage, grain, insects (and insect larvae) and seeds; nests are bulky masses of debris, feathers, forbs, grasses, straw and twigs located in cavities, crannies, ivy, niches, rocks and suspended from trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Species, partially responsible for the near extinction of Bluebirds in the United States. The House Sparrow is an agricultural pest feeding on grains. The House Sparrow prefers agricultural and urban areas close to human habitation. *14 (042212 - color presentation), 20, 42 (061912), 55, 69, 73, 84, 93, 106 (042212 - includes a listing of subspecies, color presentation), **146***

Picidae: The Woodpecker and Wryneck Family

Centurus uropygialis (see *Melanerpes uropygialis*)

***Colaptes auratus* (Linnaeus, 1758): Northern Flicker**

SYNONYMY: *Colaptes cafer* (Gmelin, 1788) - Invalid?. COMMON NAMES: Carpintero de Pechera (Spanish)⁴²; Carpintero Norteno (Hispanic)¹⁴; Common Flicker; Clape; Gaffer Woodpecker; Gawker Bird; Guadalupe Flicker (*C.a. rufipileus* Ridgway, 1876 - Valid, extinct circa 1910); Harry-wicket; Heigh-ho; Northern Flicker; Pic Flamboyant (French)⁴²; Red-shafted Flicker (*C.a. cafer* (Gmelin, 1788) - Valid); Wake-up; Walk-up; Wick-up; Yarrup; Yellow-shafted Flicker; Yellowhammer. HABITS: Feeds on berries, fruit and insects. Nests are made in hollowed out holes in posts, stumps and trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060812 - subsp. *borealis* (Ridgway); subsp. *collaris* (Vigors), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060812 - several subspecies mentioned, color presentation), **146** (recorded as Northern Flicker [Red-shafted])*

Colaptes cafer (see *Colaptes auratus*)

***Colaptes chrysoides* (Malherbe, 1852): Gilded Flicker**

COMMON NAMES: Carpintero Collarejo Cesértico (Spanish)⁹⁰; Common Flicker; Gilded Flicker; Kudat (Tohono O'odham)⁹⁰; Mearn's Gilded Flicker. HABITS: Feeds on acorns, fruits, insects, seeds and spiders. Nests are made in hollowed out holes in the saguaro cactus. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. *14 (042212), 42 (061912), 55, 69, 84, 90, 93, 106 (042212 - color presentation), **146***

Dendrocopus scalaris (see *Picoides scalaris*)

***Melanerpes formicivorus* (Swainson, 1827): Acorn Woodpecker**

COMMON NAMES: Acorn Woodpecker; Ant-eating Woodpecker; California Woodpecker; Carpintero Bellotero (Spanish)⁴²; Carpintero Encinero (Hispanic)¹⁴; Mearns' Woodpecker. HABITS: Feeds on acorns, ants (and other insects and invertebrates), bird eggs, fruits, grass, lizards, flower nectar, nuts, oak catkins, sap and pine seeds. Eggs are laid in cavities in trees or dead parts of trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060812 - subsp. *formicivorus* (Swainson), color presentation), 42 (061912), 55, 69, 73, 84, 93, 106 (060812 - color presentation), **146***

***Melanerpes uropygialis* (S.F. Baird, 1854): Gila Woodpecker**

SYNONYMY: *Centurus uropygialis* S.F. Baird, 1854. COMMON NAMES: Carpintero del Desierto (Spanish)^{42,90}; Carpintero Gila (Hispanic)¹⁴; Gila Woodpecker; Hikiwigi (Tohono O'odham)⁹⁰. HABITS: Feeds on berries, fruit, honey and wood boring insects. Nests are made in hollowed out holes in saguaros and trees. HABITAT: Within the range of this species it has been reported from the desertscrub and wetland ecological formations. *14 (042212 - subsp. *urophygialis* (Baird), color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - color presentation), **146***

***Picoides scalaris* (Wagler, 1829): Ladder-backed Woodpecker**

SYNONYMY: *Dendrocopus scalaris* (Wagler, 1829). COMMON NAMES: Cactus Woodpecker; Carpintero Listado (Hispanic)¹⁴; Carpintero Mexicano (Spanish)⁴²; Chehegam (Tohono O'odham)⁹⁰; Ladder-backed Woodpecker; Pájaro Carpintero (Spanish)⁹⁰. HABITS: Feeds on wood boring insects and cactus fruits. Nests are made in hollowed out holes in agaves, cacti, posts and yuccas. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (041222 - subsp. *cactophilus* (Oberholser); subsp. *symplectus* (Oberholser), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - color presentation), **146***

***Sphyrapicus nuchalis* S.F. Baird, 1858: Red-naped Sapsucker**

SYNONYMY: *Sphyrapicus varius* subsp. *nuchalis* S.F. Baird, 1858. COMMON NAMES: Carpintero Rojo (Hispanic)¹⁴; Chupasavia Nuca Roja (Spanish)⁴²; Red-naped Sapsucker. HABITS: Feeds on berries, insects, tree sap and seeds. Nests are made in hollowed out holes in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042212 - color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - color presentation), **146***

Sphyrapicus varius subsp. *nuchalis* (see *Sphyrapicus nuchalis*)

Podicipedidae: The Grebe Family

***Podiceps nigricollis* C.L. Brehm, 1831: Eared Grebe**

COMMON NAMES: Black-necked Grebe; Eared Grebe; Grèbe à Cou Noir (French)⁴²; Zambullidor Orejudo (Spanish)^{14,42}. HABITS: Feeds on crustaceans, decapods, insects and insect larvae and fishes. Nests are made in a depression lined with algae located on floating platforms of aquatic plants anchored to reeds in lakes, ponds and sloughs. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. *14 (060812 - subsp. *californicus* (Heerman), color presentation), 20, 42 (061912), 55, 69, 73, 84, 93, 106 (060812 - includes a listing of subspecies, color presentation), **146***

***Podilymbus podiceps* (Linnaeus, 1758): Pied-billed Grebe**

COMMON NAMES: Dabchick; Devil-diver; Dive-dapper; Grebe; Grèbe à bec bigarré (French)⁴²; Hell-diver; Pied-billed Grebe; Water Witch; Zambullidor Pico Grueso (Spanish)⁴²; Zambullidor Pico Pinto (Hispanic)¹⁴. HABITS: Feeds on amphibians (tadpoles and frogs), crayfish, decapods, eels, small fish and aquatic insects. Nests are open bowls located on floating rafts made of aquatic vegetation and marsh plants anchored to reeds in marshy lakes and ponds. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. *14 (060812 - subsp. *podiceps* (Linnaeus), color presentation), 20, 42 (061912), 55, 69, 73, 84, 93, 106 (060812 - color presentation), **146***

Ptilonotidae: The Silky Flycatcher Family

***Phainopepla nitens* (Swainson, 1838): Phainopepla**

COMMON NAMES: Capulinero (Hispanic)¹⁴; Capulinero Negro (Spanish)^{42,90}; Kuigam (Tohono O'odham)⁹⁰; Northern Phainopepla; Phainopepla. HABITS: Feeds on berries, elderberries, fruits, grapes, small insects, mistletoe berries and vegetables. Nests are shallow cups on the forks of limbs of trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042212 - subsp. *lepada* (Van Tyne), color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - color presentation), **146***

Rallidae: The Coot, Gallinule and Rail Family

***Fulica americana* Gmelin, 1789: American Coot**

COMMON NAMES: Alae Keo Keo (Hawaiian: *F.a. alai* Peale, 1848 - Invalid; *F. alai* Peale, 1848 - Valid)⁴²; American Coot; Coot; Foulque d'Amérique (French); Gallareta Americana (Spanish)^{14,42}; Hawaiian Coot (*F.a. alai* Peale, 1848 - Invalid; *F. alai* Peale, 1848 - Valid); Marsh Hen; Mud Hen; Pouldeau (Cajun: Louisiana coast)¹⁰⁶; Poule d'Eau ("Water Hen", French)¹⁰⁶; Rice Hen. HABITS: Feeds on algae, arthropods, fish, gastropods, grasses, insects, mollusks, aquatic plants, pond scum and seeds. Nests are shallow reed baskets made of forbs, grasses and other marsh vegetation located among tall reeds and sedges and on rafts of reeds in marshes. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. *14 (060812 - subsp. *americana* (Gmelin), color presentation), 20, 42 (061912), 55, 69, 73, 84, 93, 106 (060812 - color presentation), **146***

***Gallinula chloropus* (Linnaeus, 1758): Common Moorhen**

COMMON NAMES: African Common Moorhen (*G.c. meridionalis* (C.L. Brehm, 1831) - Valid); 'Alae 'Ula ("Red Hawaiian Coot", Hawaiian for *G.c. sandvicensis* Streets, 1877 - Valid)¹⁰⁶; Andean Common Moorhen (*G.c. garmani* Allen, 1876 - Valid); Antillean Common Moorhen (*G.c. cerceris* Bangs, 1910 - Valid); Barbados Moorhen (*G.c. barbadensis* Bond, 1954 - Valid); Black Gallinule; Common Gallinule (*G.c. cachinnans* Bangs, 1915 - Valid); Common Moorhen; Common Waterhen; Eurasian Common Moorhen (*G.c. chloropus* (Linnaeus, 1758) - Valid); Florida Gallinule (*G.c. cerceris* Bangs, 1910 - Valid; however, obsolete in application to the Florida Gallinule); Gallineta Frente Roja (Spanish)⁴²; Gallinule Poule-d'eau (French)⁴²; Hawaiian Common Gallinule (*G.c. sandvicensis* Streets, 1877 - Valid); Hawaiian Common Moorhen (*G.c. sandvicensis* Streets, 1877 - Valid); Indio-Pacific Common Moorhen (*G.c. orientalis* Horsfield, 1821 - Valid); Madagascan Common Moorhen (*G.c. pyrrhorhoa* A. Newton, 1861 - Valid); Mariana Common Gallinule (*G.c. guami* Hartert, 1917 - Valid); Mariana Common Moorhen (*G.c. guami* Hartert, 1917 - Valid); Marsh Hen (*G.c. cachinnans* Bangs, 1915 - Valid); Mor-hen; North American Common Moorhen (*G.c. cachinnans* Bangs, 1915 - Valid); Pulattat (Austronesian: Chamorro; Mariana Islands *G.c. guami* Hartert, 1917 - Valid)¹⁰⁶; Southern American Common Moorhen (*G.c. galeata* (Lichtenstein, 1818) - Valid); Subandean Common Moorhen (*G.c. pauxilla* Bangs, 1915 - Valid). HABITS: Feeds on birds, carrion, crustaceans, earthworms, small fishes, fruits, grasses, insects, mollusks, aquatic plants, snails, spiders and tadpoles. Nests are saucers and/or roofed baskets made of reeds, rushes and other dead vegetation located within aquatic plants in marshes or on the ground in grasses. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the woodland, grassland and desertscrub ecological formations. *14 (060812 - subsp. *cachinnans* (Bangs), color presentation), 20, 42 (061912), 55, 69, 73, 84, 93, 106 (060812 - includes a listing of subspecies, color presentation), **146***

***Porzana carolina* (Linnaeus, 1758): Sora**

COMMON NAMES: Carolina Crake (Europe); Carolina Rail; Crake; Marouette de Caroline (French)⁴²; Polluela Sora (Spanish)⁴²; Sora (Hispanic)¹⁴; Sora Crake; Sora Rail. HABITS: Feeds on arachnids, crustaceans, duckweed, fish, insects, mollusks, aquatic plants, seeds and snails. The saucer-shaped nests are well concealed and made up of woven grasses, rushes, sedges and stalks located in marshes on platforms over shallow water or on the ground amongst clumps of grass. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. *14 (060912), 20, 42 (061912), 55, 69, 73, 84, 93, 106 (060912 - color presentation), **146***

Regulidae: The Kinglet Family

***Regulus calendula* (Linnaeus, 1766): Ruby-crowned Kinglet**

COMMON NAMES: Reyezuelo Copete Rubio (Hispanic)¹⁴; Reyezuelo de Rojo (Spanish)⁴²; Reyezuelo (Spanish)⁹⁰; Roitelet à Couronne Rubis (French)⁴²; Ruby-crowned Kinglet. HABITS: Feeds on arachnids, berries, fruits, insects, tree sap, spiders and seeds. Nests are spherical and made up of lichens and moss located under the tips of branches in conifer trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: The Ruby-crowned Kinglet is a predator of the Douglas-fir Tussock Moth (*Orgyia pseudotsugata*) and Western Spruce Budworm (*Choristoneura occidentalis*). *14 (060912 - subsp. *calendula* (Linnaeus), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060912 - includes a listing of subspecies, color presentation), **146***

Remizidae: The Verdin Family

***Auriparus flaviceps* (Sundevall, 1850): Verdin**

COMMON NAMES: Baloncillo (Spanish)^{42,90}; Gisop (Tohono O'odham)⁹⁰; Verdin (Hispanic)¹⁴. HABITS: Feeds on berries, insects, insect eggs and larvae and seeds. Nests are spheres of thorny twigs lined with grasses and feathers located in bushes, chollas, shrubs, trees and the stems of the Desert Mistletoe. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (042212 - subsp. *ornatus* (Lawrence), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042212 - color presentation), **146***

Scolopacidae: The Curlew, Sandpiper and Allies Family

Actitis macularia (see *Actitis macularius*)

***Actitis macularius* (Linnaeus, 1766): Spotted Sandpiper**

SYNONYMY: *Actitis macularia* (Linnaeus, 1766). COMMON NAMES: Alzacolita (Hispanic)¹⁴; Chevalier Grivelé (French)⁴²; Playero Alzacolita (Spanish)⁴²; Spotted Sandpiper. HABITS: Feeds on crustaceans, fish, insects, mollusks and worms. Nests are depressions or scrapes on the ground lined with bark, grasses, stones and twigs located in grass or gravel under bushes and near shores. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the forest, woodland, grassland and desertscrub ecological formations. *14 (060912 - recorded as *Actitis macularia* (Linnaeus): color presentation), 20, 42 (061912), 55, 69, 73, 84, 93, 106 (060912 - color presentation), **146***

Strigidae: The Typical Owl Family

***Bubo virginianus* (Gmelin, 1788): Great Horned Owl**

COMMON NAMES: Baha California Great Horned Owl (*B.v. elachistus* Brewster, 1902 - Valid); Buho (Spanish)⁹⁰; Búho Cornudo (Spanish)⁴²; Californian Great Horned Owl (*B.v. pacificus* Cassin, 1854 - Valid); "Cat Owl"; Central American Great Horned Owl (*B.v. mesembrinus* (Oberholser, 1904) - Valid); Coastal Great Horned Owl (*B.v. saturatus* Rigway, 1877 - Valid); Common Great Horned Owl (*B.v. virginianus* (Gmelin, 1788) - Valid); Desert Great Horned Owl (*B.v. pallescens* Stone, 1897 - Valid); Grand-duc d'Amérique (French)⁴²; Great Horned Owl; Horned Owl; North Andean Great Horned Owl (*B.v. nigrescens* Berlepsch, 1884 - Valid); Northeastern Great Horned Owl (*B.v. heterocnemis* (Oberholser, 1904) - Valid); Northern Great Horned Owl (*B.v. subarcticus* Hoy, 1853 - Valid); Northwestern Great Horned Owl (*B.v. lagophonus* (Oberholser, 1904) - Valid); Rocky Mountains Great Horned Owl (*B.v. pinorum* (Dickerman and Johnson, 2008) - Invalid?); South American Great Horned Owl (*B.v. nacurutu* (Vieillot, 1817) - Valid); Subarctic Great Horned Owl (*B.v. subarcticus* Hoy, 1852 - Valid); Tecolote Cornudo (Spanish)⁹⁰; Tecolote Cuernudo (Hispanic)¹⁴; Tiger Owl; Yucatan Great Horned Owl (*B.v. mayensis* Nelson, 1901 - Valid). HABITS: Feeds on frogs, small birds, crayfish, decapods, fishes, insects, lizards and small mammals. Eggs are laid in the deserted nests of other birds and sometimes lining the nest with feathers located on the ground or in crevices, potholes, trees and on bluffs and cliffs. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060913 - subsp. *occidentalis* (Stone); subsp. *pallescens* (Stone), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060912 - includes a listing of subspecies, color presentation), **146***

***Glaucidium brasilianum* subsp. *cactorum* Van Rossem 1937: Cactus Ferruginous Pigmy-owl**

COMMON NAMES: Cactus Ferruginous Pigmy Owl; Cactus Ferruginous Pigmy-owl. HABITS: Feeds on amphibians, small birds, earthworms, frogs, insects, reptiles and small rodents. Nests are located in cavities and abandoned woodpecker holes in saguaros and trees. HABITAT: Within the range of this species it has been reported from the desertscrub and wetland ecological formations. *8, 14 (060912 - subsp. *cactorum* (AZ)), 42 (061912), 55 (species), 69 (species), 73 (species), 84 (species), 90 (species), 93 (species), 106 (060912 - species, color presentation of species)*

***Micrathene whitneyi* (J.G. Cooper, 1861): Elf Owl**

COMMON NAMES: Elf Owl; Kuhkwul (Tohono O'odham)⁹⁰; Socorro Elf Owl (*M.w. graysoni* Ridgway, 1886 - Valid: extinct circa 1970); Tecolote Enano (Spanish)^{42,90}; Tecolotito (Hispanic)¹⁴. HABITS: Feeds on centipedes, insects (beetles, crickets, grasshoppers, moths) and scorpions. Nesting takes place in abandoned woodpecker holes in cottonwoods, saguaros, sycamores and other trees. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060912 - subsp. *whitneyi* (Cooper), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060912 - includes a listing of subspecies, color presentation), 146*

Sturnidae: The Myna and Starling Family

***Sturnus vulgaris* Linnaeus, 1758: European Starling**

COMMON NAMES: Azores Starling (*S.v. granti*, 1903 - Invalid?); Common Starling (*S.v. vulgaris* Linnaeus, 1758 - Valid); Estornino Pinto (Spanish)⁴²; Étourneau Sansonnet (French)⁴²; European Starling; Faroese Starling (*S.v. faroensis* Feilden, 1872 - Invalid?); Shetland Starling (*S.v. zetlandicus* Hartert, 1918 - Invalid?); Starling. HABITS: Feeds on amphibians, arachnids, berries, crustaceans, decapods, fruits, grains, grubs, insects, mollusks, nectars, seeds, spiders and worms. Nests are made up of bark, dry grass, hair, leaves, lichen, moss, rootlets, straw, sticks and twigs and lined with down, feathers, soft leaves and wool and may be located in abandoned bird nests, depressions, cavities in cliffs, trees, posts, rocks, shrubs, trees and in underground burrows. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: **EXOTIC** Invasive Species. Starlings can damage crops, cause substantial loss to feeding operations for cattle, and compete with native birds for nesting sites and food. *14 (042312 - color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - includes a listing of subspecies, color presentation), 146*

Sylviidae: The Gnatcatcher and Old World Warbler Family

***Poliophtila melanura* Lawrence, 1857: Black-tailed Gnatcatcher**

COMMON NAMES: Black-tailed Gnatcatcher; Perlita del Desierto (Spanish)^{42,90}; Pisita Cola Negra (Hispanic)¹⁴; Plumbeous Gnatcatcher; Schuk Mookam Gisop (Tohono O'odham)⁹⁰. HABITS: Feeds on small insects and spiders. The nests are felted open cups made up of strips of bark, forbs, grasses, plant fibers and spider webbing and lined with finer and softer material, and located low to the ground in the forks of branches of shrubs. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (042312 - subsp. *melanura* (Lawrence), color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), 146*

Thraupidae: The Tanager Family

***Piranga ludoviciana* (A. Wilson, 1811): Western Tanager**

COMMON NAMES: Louisiana Tanager; Piranga Cabeza Roja (Hispanic)¹⁴; Tangara à Tête Rouge (French)⁴²; Tángara Capucha Roja (Spanish)⁴²; Western Tanager. HABITS: Feeds on berries, small fruits (hawthorn apples, cherries, elderberries, mulberries, raspberries, serviceberries), insects and agave nectar. Nests are shallow flimsy saucers made up of shredded bark, grasses, pine needles, rootlets, weed stalks and twigs and located on the horizontal branches of trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Western Tanagers are major consumers of the Western Spruce Budworm (*Choristoneura occidentalis*) and may also eat the larvae of the Douglas-fir Tussock Moth (*Orgyia pseudotsugata*). *14 (042312 - color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), 146*

***Piranga rubra* (Linnaeus, 1758): Summer Tanager**

COMMON NAMES: Cooper's Tanager; Piranga Avispera (Hispanic)¹⁴; Summer Tanager; Tángara Roja (Spanish)⁴²; Tangara Vermillon (French)⁴². HABITS: Feeds on berries, insects and small fruits. Nests are shallow cups made of shredded bark and grasses and located on the horizontal branches of trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTE: The genus *Piranga* may have been

moved from the Tanager Family [Thraupidae] to the Cardinal Family [Cardinalidae]. *14 (060912 - subsp. *cooperi* (Ridgway); subsp. *rubra*, color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060912 - color presentation), **146***

Trochilidae: The Hummingbird Family

***Archilochus alexandri* (Bourcier and Mulsant, 1846): Black-chinned Hummingbird**

COMMON NAMES: Black-chinned Hummingbird; Chuparosa (Hispanic)¹⁴; Colibrí Barba Negra (Spanish)^{42,90}; Wipismal (Tohono O'odham)⁹⁰. HABITS: Feeds on small insects and nectar collected from flowers. Nests are tiny cups made up of lichens and plant wool that is woven together with spider webbing, and located in shrubs and trees. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *10, 14 (042312 - color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), **146***

***Calypte anna* (Lesson, 1829): Anna's Hummingbird**

COMMON NAMES: Anna's Hummingbird; Chuparosa Anna (Hispanic)¹⁴; Colibrí Cabeza Roja (Spanish)^{42,90}; Wipismal (Tohono O'odham)⁹⁰. HABITS: Feeds on small insects and nectar collected from flowers. Nests are tiny woven cups made up of lichens, mosses and very small twigs bound together with spider silk, often being lined with down feathers and hair and located in vines, shrubs and trees. HABITAT: Within the range of this species it has been reported from the woodland, scrub, desertscrub and wetland ecological formations. *10, 14 (042312 - color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), **146***

***Calypte costae* (Bourcier, 1839): Costa's Hummingbird**

COMMON NAMES: Chuparosa Costa (Hispanic)¹⁴; Colibrí Cabeza Violeta (Spanish)⁴²; Costa's Hummingbird. HABITS: Feeds on small insects and nectar collected from flowers. Nests are small woven cups made up of down, plant fibers and leaves and coated with lichen located on limbs of shrubs and trees. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *10, 14 (042312 - color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), **146***

***Cynanthus latirostris* Swainson, 1827: Broad-billed Hummingbird**

COMMON NAMES: Broad-billed Hummingbird; Colibrí Pico Ancho (Spanish)⁴²; Chuparosa Pico Ancho (Hispanic)¹⁴. HABITS: Feeds on small insects and nectar collected from flowers. Nests are loosely woven, rough cups located on vertical branches. HABITAT: Within the range of this species it has been reported from the desertscrub and wetland ecological formations. *10, 14 (060912 - subsp. *magicus* (Mulsant and Verreaux), color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060912 - color presentation), **146***

Troglodytidae: The Wren Family

***Campylorhynchus brunneicapillus* (Lafresnaye, 1835): Cactus Wren**

COMMON NAMES: Cactus Wren; Hokkad (Tohono O'odham)⁹⁰; Matraca del Desierto (Hispanic)⁹⁰; Saltapared del Disierto (Hispanic)¹⁴. HABITS: Feeds on small frogs, fruits, insects (ants, beets, grasshoppers, wasps), small reptiles, seeds and spiders. Nests are spheroid masses made up of grasses and straw and lined with feathers and hair and located in cacti, yuccas and thorny bushes. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (042312 - subsp. *couesi* (Sharpe), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), **146***

***Cistothorus palustris* (A. Wilson, 1810): Marsh Wren**

SYNONYMY: *Telmatodytes palustris* (A. Wilson, 1810). COMMON NAMES: Chivirín Pantanero (Spanish)⁴²; Long-billed Marsh-wren; Long-billed Marsh Wren; Marsh Wren; Saltapared del la Cienega (Hispanic)¹⁴; Troglodyte des Marais (French)⁴²; Western Marsh Wren. HABITS: Feeds on arachnids (spiders), gastropods (snails), insects and molluscs. Nests are round balls or domed made of grasses located above water in cattails, reeds, rushes and stalks talus. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (060912 - subsp. *iliacus* (Ridgway); subsp. *plesius* (Oberholser), color presentation), 20, 42 (061912), 55, 69, 73, 84, 93, 106 (060912 - color presentation), **146***

***Salpinctes obsoletus* (Say, 1823): Rock Wren**

COMMON NAMES: Chivirín Saltarroca (Spanish)⁴²; Rock Wren; Saltapared Rocosa (Hispanic)¹⁴. HABITS: Feeds on insects and spiders. Nests are cups made up of bark, grasses, moss, rootlets and weeds lined with feathers, hairs and wool and located in rock crannies. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *14 (042312 - subsp. *obsoletus* (Say), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), **146***

Telmatodytes palustris (see *Cistothorus palustris*)

***Thryomanes bewickii* (Audubon, 1827): Bewick's Wren**

COMMON NAMES: Baird's Wren; Bewick's Wren; Chivirín cola oscura (Spanish); Guadalupe Bewick's Wren (*T.b.brevicauda* - Valid [Ridgway, 1876?]: extinct circa 1890s); Saltapared Tapetatero (Hispanic)¹⁴; San Clemente Bewick's Wren (*T.b.leucophrys* - Valid [Oberholser, 1898?]: extinct circa 1940s). HABITS: Feeds on insects and spiders. The cup-shaped nests are made up of twigs and located in rock crannies, crevices and holes. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060912 - subsp. *cryptus* (Oberholser); subsp. *eremophilus* (Oberholser), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060912 - includes a listing of subspecies, color presentation), **146***

***Troglodytes aedon* Vieillot, 1809: House Wren**

COMMON NAMES: Chivirín Saltapared (Spanish)⁴²; Guadalupe House Wren (*T.a.guadeloupensis* - Valid: possibly extinct); House Wren; Parkman's Wren; Saint Lucia House Wren (*T.a.mesoleucus* - Valid); Saltapared Cucacrachero (Hispanic)¹⁴; Troglodyte Familier (French)⁴². HABITS: Feeds on insects, snails and spiders. Large cup nests are constructed of small dry sticks and twigs and lined with strips of bark, feathers, hair, moss, rootlets, spider cocoons and/or wool and located in various cavities, including holes in trees, and in other bird nests. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060912 - subsp. *parkmannii* (Audubon), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060912 - includes a listing of subspecies, color presentation), **146***

Turdidae: The Bluebird, Solitaire and Thrush Family

***Catharus guttatus* (Pallas, 1811): Hermit Thrush**

SYNONYMY: *Hylocichla guttata* (Pallas, 1811) - Invalid?. COMMON NAMES: Grive Solitaire (French)⁴²; Cuitlacoche Ermitano (Hispanic)¹⁴; Hermit Thrush; Zorzal Cola Rufa (Spanish)⁴². HABITS: Feeds on berries, wild fruit, grubs, insects, seeds, snails, spiders and worms. Nests are cups made up of leaves, moss, rootlets and twigs located on or near to the ground. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (060912 - subsp. *auduboni* (Baird); subsp. *guttatus*; subsp. *nanus* (Audubon); subsp. *sequoiensis* (Bedding); subsp. *slevini* (Grinnell), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (060912 - color presentation), **146***

***Catharus ustulatus* (Nuttall, 1840): Swainson's Thrush**

SYNONYMY: *Hylocichla swainsonii* (Nuttall, 1840) - Invalid; *Hylocichla ustulata* (Nuttall, 1840) - Invalid?. COMMON NAMES: Alma's Thrush; Cuitlacoche Swainson (Hispanic)¹⁴; Grive à Dos Olive (French)⁴²; Olive-backed Thrush; Russet-backed Thrush; Swainson's Thrush; Swamp Robin; Zorzal de Swainson (Spanish)⁴². HABITS: Feeds on berries, fruits, insects (including grubs), seeds, spiders and worms. Nests are cups made up of ferns, grasses, leaves, moss, rootlets, sedges and twigs and lined with lichens and dead leaves located on the horizontal branches of shrubs and trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTES: The Swainson's Thrush is a predator of the Douglas-fir Tussock Moth (*Orgyia pseudotsugata*) and Western Spruce Budworm (*Choristoneura occidentalis*). *14 (060912 - subsp. *swainsoni* (Tschudi); subsp. *ustulatus*), 20, 42 (061912), 55, 69, 73, 84, 93, 106 (060912 - includes a listing of subspecies, color presentation), **146***

Hylocichla guttata (see *Catharus guttatus*)

***Hylocichla mustelina* (J.F. Gmelin, 1789): Wood Thrush**

COMMON NAMES: Grive des Bois (French)⁴²; Cuitlacoche (Hispanic)¹⁴; Wood Thrush; Zorzal Maculado (Spanish)⁴². HABITS: Feeds on the fruits of the black cherry, black gum, blueberry, dogwood, elderberry, fox grape, holly, jack-in-the-pulpit, pokeweed, spicebush and Virginia creeper plants, and on insects, small salamanders and snails. Nests are cups made of dead grasses, leaves, stems and twigs and lined with mud, fine grass and rootlets; it is located in the fork of a horizontal branch of a sapling, shrub or tree. HABITAT: Within the range of this species it has been reported from the forest, woodland, grassland, desertscrub and wetland ecological formations. NOTE: *Hylocichla mustelina* is native to central and southern North America and Central America. *14 (041512), 20, 42 (061912), 69, 106 (041512 - color presentation), **146***

Hylocichla swainsonii (see *Catharus ustulatus*)

Hylocichla ustulata (see *Catharus ustulatus*)

***Sialia mexicana* Swainson, 1832: Western Bluebird**

COMMON NAMES: Azulejo Garganta Azul (Spanish)⁴²; Chestnut-backed Bluebird; Merle-bleu de l'Ouest (French)⁴²; Mexican Bluebird; Ventura Azul (Hispanic)¹⁴; Western Bluebird. HABITS: Feeds on berries, fruits, grubs, insects, seeds, snails,

spiders, and worms. Nests are made up of grasses located in cavities. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (061012 - subsp. *bairdi* (Ridgway), color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (061012 - color presentation), **146***

***Turdus migratorius* Linnaeus, 1766: American Robin**

COMMON NAMES: American Robin; Merle d'Amérique (French)⁴², Mirlo Primavera (Spanish)⁴²; North American Robin; Primavera (Hispanic)¹⁴; Robin. HABITS: Feeds on berries, earthworms, fruits, insects (caterpillars, beetle grubs, grasshoppers), small mollusks, seeds, snails and spiders. Nests are bowls made up of feathers, grasses, rootlets and small twigs and walled with mud, fine grass and soft materials; the nests are located in the forks or on the branches of shrubs or trees. The average life span for the American Robin is 2 years with 14 years being the longest lifespan known for this species. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (061012 - subsp. *migratorius*; subsp. *propinquus* (Ridgway), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (061012 - includes a listing of subspecies, color presentation), **146***

Tyrannidae: The Tyrant Flycatcher Family

***Camptostoma imberbe* P.L. Sclater, 1857: Northern Beardless-tyrannulet**

COMMON NAMES: Beardless Flycatcher; Beardless-tyrannulet; Mosquero Lampiño (Spanish)⁴²; Northern Beardless Flycatcher; Northern Beardless Tyrannulet; Northern Beardless-tyrannulet. HABITS: Feeds on berries, insects and spiders. The nests are made up of grasses and leaves and are domed or globular with a side entrance; the nest is located in matted trees, tree tangles and clumps of mistletoe. HABITAT: Within the range of this species it has been reported from wetland ecological formations. *8, 14 (061012 - subsp. *ridgwayi* (Brewster), color presentation), 20, 42 (061912), 55, 69, 73, 93, 106 (061012 - color presentation), **146***

***Contopus sordidulus* P.L. Sclater, 1859: Western Wood Pewee**

COMMON NAMES: Pibi Occidental (Spanish)⁴²; Western Wood Pewee; Western Wood-pewee. HABITS: Feeds on insects which may be taken by gleaning or hawking. Nests are tightly built grass or lichen-covered cups located on the horizontal branches of trees or in cavities in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042312 - subsp. *saturatus* (Bishop); subsp. *veliei* (Coues), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), **146***

***Empidonax wrightii* S.F. Baird, 1858: Gray Flycatcher**

COMMON NAMES: American Gray Flycatcher; Gray Flycatcher; Grey Flycatcher; Mosquero Gris (Hispanic)¹⁴; Mosquero Gris (Spanish)⁴². HABITS: Feeds on insects which may be taken by gleaning or hawking. Nests are woven cups which may be made up of strips of bark, grass stalks and other plant material and lined with softer materials such as soft grasses, feathers, hair and wool; the nests are located in sagebrush and on branches or in the limb-trunk crotches of junipers, pinyon pine and other small shrubs and trees. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042312 - color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), **146***

***Myiarchus cinerascens* (Lawrence, 1851): Ash-throated Flycatcher**

COMMON NAMES: Ash-throated Flycatcher; Copeton Cinezo (Hispanic)¹⁴; Papamoscas Cenizo (Spanish)^{42,90}; Tyrann à Gorge Cendrée (French)⁴². HABITS: Feeds on insects which may be taken by gleaning or less often by hawking, it may also feed on fruits and small mammals and reptiles. Nests are made of various materials including snake skins and located in cavities, knotholes and woodpecker holes in posts, trees and yuccas. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042312 - subsp. *cinerascens* (Lawrence), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), **146***

***Myiarchus tyrannulus* (Statius Müller, 1776): Brown-crested Flycatcher**

COMMON NAMES: Arizona Crested Flycatcher; Brown-crested Flycatcher; Mexican Crested Flycatcher; Mexican Flycatcher; Mosquero Cafe' (Hispanic)¹⁴; Papamoscas Tirano (Spanish)^{42,90}; Weid's Crested Flycatcher. HABITS: Feeds on insects and fruit. Nests lined with feathers and hairs are located in cavities in posts and trees including the Saguaro Cactus. HABITAT: Within the range of this species it has been reported from the forest, woodland, desertscrub and wetland ecological formations. *14 (042312 - subsp. *magister* (Ridgway), color presentation), 20, 42 (061912), 55, 69, 73, 84, 106 (042312 - color presentation), **146***

***Pyrocephalus rubinus* (Boddaert, 1783): Vermilion Flycatcher**

COMMON NAMES: Cardenalito (Hispanic)¹⁴; Darwin's Flycatcher (*P.r. nanus* Gould, 1839 - Valid); Galapagos Flycatcher (*P.r. nanus* Gould, 1839 - Valid); Mosquero Cardenal (Spanish)⁴²; Vermilion Flycatcher. HABITS: Feeds on insects, flycatchers feed mostly on insects (beetles, flies, grasshoppers) that are usually taken by hawking. Nests are flat saucers made of feathers, fibers, rootlets, stems, twigs and spider webbing lined with animal or plant hair and lichen located on the horizontal

crotches and forks of branches of conifers. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. *14 (042312 - subsp. *flammeus* (Van Rossem); subsp. *mexicanus* (Sclater), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), **146***

***Sayornis nigricans* (Swainson, 1827): Black Phoebe**

COMMON NAMES: Black Phoebe; Gihsupi (Tohono O'odham)⁹⁰; Papamoscas Negro (Spanish)^{14,42}. HABITS: Feeds on arachnids, insects and fishes. Nests are thick cups made of bark, feathers, plant fibers, forbs, grasses, hair, moss and rootlets lined with soft material including feathers and hair; mud must be available from habitat for nest construction; the nest may be located in caves, on ledges, in the exposed roots of trees close to water and/or plastered to cliff faces. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (061012 - subsp. *semiatra* (Vigors), color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (061012 - includes a listing of subspecies, color presentation), **146***

***Sayornis saya* (Bonaparte, 1825): Say's Phoebe**

COMMON NAMES: Moucherolle à Ventre Roux (French)⁴²; Papamoscas Boyero (Hispanic)¹⁴; Papamoscas Llanero (Spanish)⁴²; Say's Phoebe. HABITS: Feeds on berries and flying insects. Nests may be cup-shaped or brackets made up of grasses, moss, mud and wool and lined with hair and other fine materials; the nests may be located on ledges or rock walls. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042312 - subsp. *saya*; subsp. *yukonensis* (Bishop), color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), **146***

***Tyrannus verticalis* Say, 1823: Western Kingbird**

COMMON NAMES: Arkansas Kingbird; Madrugador Avispero (Hispanic)¹⁴; Tirano Pálido (Spanish)⁴²; Tyran de l'Ouest (French)⁴²; Western Kingbird. HABITS: Feeds on berries and insects which are taken by gleaning or hawking. Nests are bulky, neatly-lined saucers or cups made up of grasses, twigs and wool lined with matted hair and located in bushes and on horizontal branches of trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042312 - color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), **146***

***Tyrannus vociferans* Swainson, 1826: Cassin's Kingbird**

COMMON NAMES: Cassin's Kingbird; Madrugador Chilero (Hispanic)¹⁴; Tirano Gritón (Spanish)⁴². HABITS: Feeds on berries, fruits and flying insects which are taken by hawking. Nests are bulky cups lined with grasses, hair, twigs and wool and located on horizontal branches of trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042312 - subsp. *vociferans* (Swainson), color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), **146***

Tytonidae: The Barn Owl Family

***Tyto alba* (Scopoli): Barn Owl**

COMMON NAMES: Barn Owl; Canary Barn-owl (*T.a. gracilirostris* (Hartert, 1905) - Valid); Cave Owl; Church Owl; Common Barn Owl; Common Barn-owl; Barnyard Owl; Death Owl; Delicate Owl; Demon Owl; Dobby Owl; Effraie de Clochers (French)⁴²; Galápagos Barn-owl (*T.a. punctatissima* (G.R. Grey, 1839) - Valid); Ghost Owl; Golden Owl; Hissing Owl; Hobby Owl; Hobgoblin Owl; Lechuza (Spanish)^{14,90}; Lechuza de Campanario (Spanish)⁴²; Monkey-faced Owl; Night Owl; Rat Owl; Screech Owl; Scritch Owl; Silver Owl; Stone Owl; Straw Owl; White Owl; White-breasted Owl. HABITS: Feeds on birds, frogs, insects, small mammals and toads. Nests may be made on either a litter of disgorged fur pellets or a bare surface located in caves, hollow trees or other cavities. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *14 (061012 - subsp. *pratincola* (Bonaparte), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (061012 - includes a listing of subspecies, color presentation. "Compared to other owls of similar size, the Barn Owl has a much higher metabolic rate, requiring relatively more food. Pound for pound, Barn Owls consume more rodents – often regarded as pests by humans – than possibly any other creature. This makes the Barn Owl one of the most economically valuable wildlife animals to farmers. Farmers often find these owls more effective than poison in keeping down rodent pests, and they can encourage Barn Owl habitation by providing nest sites.^{[19]b}), **146***

Vireonidae: The Vireo Family

***Vireo bellii* Audubon, 1844: Bell's Vireo**

COMMON NAMES: Arizona Bell's Vireo; Arizona Vireo; Bell's Vireo; Least Bell's Vireo (*V.b. pusillus* - Valid); Vireo Aceitunado (Hispanic)¹⁴; Vireo de Bell (Spanish)⁴². HABITS: Feeds on insects, mollusks, snails and spiders. Nests are pensile well camouflaged cups made up of downy plant fibers, insect silk, grasses, spider webbing, sticks and wool suspended from branches of dense bushes, shrubs, vines (including the shrubs and vines of the Pacific [or Western] Poison Oak,

Toxicodendron diversilobum (Torr. & A. Gray) Greene) and low trees. HABITAT: Within the range of this species it has been reported from wetland ecological formations within the woodland, grassland and desertscrub ecological formations. *8, 14 (042312 - subsp. *arizonae*; subsp. *medius*, color presentation), 20, 42 (061912), 55, 69, 73, 84, 93, 106 (042312 - color presentation), **146***

***Vireo cassinii* Xantus de Vesey, 1858: Cassin's Vireo**

COMMON NAMES: Cassin's Vireo; "Solitary Vireo" (*Vireo cassinii* was once considered a subspecies of *Vireo solitarius*); Vireo de Cassin (Spanish)⁴². HABITS: Feeds on insects. Nests are cups made up of bark strips and down and located in the fork of a twig. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland and wetland ecological formations. *14 (061012), 42 (061912), 90, 106 (061012), **146***

***Vireo gilvus* (Vieillot, 1808): Warbling Vireo**

COMMON NAMES: Vireo Gorgojaedor (Hispanic)¹⁴; Vireo Gorjeador (Spanish)⁴²; Viréo Mélodieux (French)⁴²; Warbling Vireo. HABITS: Feeds on berries, insects, snails and spiders. Nests are tiny basket-like cups hanging from forked branches in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Warbling Vireos in the Pacific Northwest are predators of the Western Spruce Budworm and the Douglas-fir Tussock Moth (Torgersen and Torgersen, 1995) *88*¹⁴. *14 (061012 - subsp. *swainsonii* (Baird), color presentation), 20, 42 (061912), 55, 69, 73, 84, 90, 93, 106 (061012 - color presentation), **146***

***Vireo huttoni* Cassin, 1851: Hutton's Vireo**

COMMON NAMES: Hutton's Vireo; Stephen's Vireo; Vireo Hutton (Hispanic)¹⁴; Vireo Reyzeuelo (Spanish)⁴². HABITS: Feeds on insects. Nests are suspended cups made up of down or moss and lined with feathers and moss located hanging from the branches of shrubs and trees or the fork of a tree. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042312 - subsp. *stephenii* (Brewster), color presentation), 42 (061912), 55, 69, 73, 84, 90, 93, 106 (042312 - color presentation), **146***

***Vireo plumbeus* Coues 1866: Plumbeous Vireo**

COMMON NAMES: Plumbeous Vireo; "Solitary Vireo" (*Vireo plumbeus* was once considered a subspecies of *Vireo solitarius*); Vireo Plomizo (Spanish)⁴². HABITS: Feeds on insects. Nests are neat baskets made from strips of bark, down, long fibers and grasses and lined with soft material located hanging from the forks of twigs in bushes and trees and camouflaged with bark chips, catkins, leaves and lichen. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042312 - color presentation), 42 (061912), 90, 106 (042312 - color presentation), **146***

CLASS MAMMALIA: The MAMMALS

Antilocapridae: The Pronghorn Family

***Antilocapra americana* (Ord, 1815): Pronghorn**

COMMON NAMES: American Pronghorn (*A.a. americana* (Ord, 1815) - Valid); Antelope; Berrendo (Spanish)⁴²; Chihuahuan Pronghorn (*A.a. mexicana* Merriam, 1901 - Valid); Chihuahuan Pronghorn Antelope (*A.a. mexicana* Merriam, 1901); Mexican Pronghorn (*A.a. mexicana* Merriam, 1901 - Valid); Peninsular Pronghorn (*A.a. peninsularis* Nelson, 1912 - Valid); Prong Buck; Prong-horn; Pronghorn; Pronghorn Antelope; Prong-horned Antelope; Sonoran Pronghorn (*A.a. sonoriensis* Goldman, 1945 - Valid); Sonoran Pronghorn Antelope (*A.a. sonoriensis* Goldman, 1945 - Valid). HABITS: Feeds on cacti, forbs, grasses and shrubs. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: A pioneer of Tucson, Arizona, states that in the early days it was not uncommon to have bands of antelope circling the wagon on the trip between Tucson and Nogales.⁶⁵ *8, 14 (042312 - subsp. *americana* (Ord); subsp. *mexicana* Merriam, 1901; subsp. *sonoriensis* Goldman, 1945, color presentation of *Antilocapra americana americana*), 42 (061912), **55** (recorded as *Antilocapra americana* Ord. Prong-horned Antelope. Formerly widely distributed in grassland areas throughout the state; presently restricted to areas of favorable habitat.), 65 (*Antilocapra americana mexicana*), 73, 106 (042312 - includes a listing of subspecies, color presentation), 100 (color photograph), 110 (Sonoran Pronghorn (*Antilocapra americana sonoriensis*): Historic Range: Southwest Arizona, south of the Bill Williams River and east to the Santa Cruz River. In Mexico, the northern part of the State of Sonora.), 118 (recorded as *Antilocapra americana americana* (Ord) - Distribution: mapping and records for northeastern and northwestern Arizona; *Antilocapra americana mexicana* Merriam - Distribution: Southeastern Arizona, and *Antilocapra americana sonoriensis* Goldman - Distribution: Southwestern Arizona. Figure 111, Page 255), 148 (color presentation)*

***Antilocapra americana* subsp. *mexicana* Merriam, 1901: Chihuahuan Pronghorn**

COMMON NAMES: “Antelope”; Chihuahuan Pronghorn; Chihuahuan Pronghorn Antelope; Mexican Pronghorn; Prong-horn; Pronghorn, Pronghorn Antelope; Prong-horned Antelope. HABITS: The species feeds on cacti, forbs, grasses and shrubs. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. NOTES: EXTIRPATED from southeastern Arizona, several reintroductions have taken place. A pioneer of Tucson, Arizona, states that in the early days it was not uncommon to have bands of antelope circling the wagon on the trip between Tucson and Nogales.⁶⁵ *8 (Historically throughout south-eastern and south-central Arizona.), 14 (042312 - subsp. *americana* (Ord); subsp. *mexicana* Merriam, 1901; subsp. *sonoriensis* Goldman, 1945, color presentation of *Antilocapra americana americana*. Historically occurred in grass-shrub valleys and grasslands of southeastern and south-central Arizona), 42 (061912), 55 (species: recorded as *Antilocapra americana* Ord. Prong-horned Antelope. Formerly widely distributed in grassland areas throughout the state; presently restricted to areas of favorable habitat.), 65 (A pioneer of Tucson, Arizona, states that in the early days it was not uncommon to have bands of antelope circling the wagon on the trip between Tucson and Nogales.), 73 (species), 100 (color photograph of species), 106 (042312), 118 (recorded as *Antilocapra americana mexicana* Merriam - Distribution: Southeastern Arizona. Figure 111, Page 255), 148 (color presentation)*

Bovidae: The Cow, Sheep and Allies Family

***Bison bison* (Linnaeus, 1758): American Bison**

SYNONYMY: *Bos bison* Linnaeus, 1758. COMMON NAMES: American Bison; American Buffalo; Bison (*B.b. bison* (Linnaeus, 1758) - Valid); Bisonte (Hispanic)¹⁴; Bisonte Americano (Spanish)⁴²; Buffalo; Cibolas (term used to refer to the Buffalo and Buffalo-hunting Indians by early Mexican and Spanish explorers)¹⁴; Mountain Bison; Plains Bison (*B.b. bison* (Linnaeus, 1758) - Valid); Prairie Bison; Tatanka (Lakota Sioux); Wood Bison (*B.b. athabasca* Rhoads, 1898 - Valid; *B.b. bison* (Linnaeus, 1758) - Valid); Woodland Bison; Zu-ke-ta kah-noo-nah (used by the Indians for the smaller southern Buffalo, Texas and the Pecos Valley)¹⁴; Zu-ta kah-noo-nah (used by the Indians for the larger northern Buffalo, ranged from the Arkansas River and northward)¹⁴. HABITS: Feeds on grasses and sedges and other herbaceous vegetation to about 5 feet in height. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Native to North America. Herds have been reduced from an estimated 30 to 200 million head in the mid-1800's to around 350,000 head at present (mostly animals being raised for human consumption) with possibly fewer than 4,000 head (brought up from fewer than 550 Plains Bison in the United States) being continuously “free-roaming” animals. *8 (according to BISON-M the Arizona Game and Fish Department, Heritage Data Management System, *Bison bison* has been listed under the Natural Heritage Arizona State Rank "SRFSE" ("SRF" = "State Reported Falsely"; "SE" = "State Exotic")), 14 (042312 - recorded as *Bos bison* (Linnaeus) color presentation), 42 (072112), 55 (no record of species), 63 (052809), 73, 100, 106 (042312 - includes a listing of subspecies, color presentation), 118 (included in the Hypothetical List of Mammals possibly occurring in Arizona, satisfactory record of which is lacking. *Bison bison* subsp. (unnamed). “Although Coues (1867) indicated that buffalo “formerly ranged over Arizona - now absent,” there is no good evidence that they occurred in the state within historic times except as introductions (for example see Bailey, 1935:1).), 148 (color presentation)*

Bos bison (see *Bison bison*)

***Ovis canadensis* Shaw, 1804: Rocky Mountain Bighorn Sheep**

COMMON NAMES: American Bighorn; Audubon's Bighorn Sheep (*O.c. auduboni* Merriam, 1901 - Invalid?, extinct circa 1925); Badlands Bighorn (*O.c. auduboni* Merriam, 1901 - Invalid?); Berrego Cimarron (Hispanic)¹⁴; Berrego Cimarron del Desierto (Hispanic); Big Horn; Bighorn; Bighorn Sheep (*O.c. canadensis* Shaw, 1804 - Invalid?); Borrego Cimarrón (Spanish)⁴²; California Bighorn Sheep (*O.c. californiana* Douglas, 1829 - Invalid?); Desert Bighorn (*O.c. mexicana* Merriam, 1901 - Invalid?; *O.c. nelsoni* Merriam, 1897 - Invalid?); Desert Bighorn Sheep (*O.c. mexicana* Merriam, 1901 - Invalid?; *O.c. nelsoni* Merriam, 1897 - Invalid?); Mexican Bighorn Sheep (*O.c. mexicana* Merriam, 1901 - Invalid?); Mountain Sheep; Nelson's Bighorn Sheep (*O.c. nelsoni* Merriam, 1897 - Invalid?); Peninsular Bighorn Sheep (*O.c. cremnobates* Elliot, 1904 - Invalid?); Rocky Mountain Bighorn (*O.c. canadensis* Shaw, 1804 - Invalid?); Rocky Mountain Bighorn Sheep (*O.c. canadensis* Shaw, 1804 - Invalid?); Sierra Nevada Bighorn (*O.c. sierrae* Grinnell, 1912 - Invalid?); Sierra Nevada Bighorn Sheep (*O.c. sierrae* Grinnell, 1912 - Invalid?); Texas Big Horn Sheep; Texas Bighorn Sheep; Weems' Bighorn Sheep (*O.c. weemsi* Goldman, 1937 - Invalid?). HABITS: Feeds on agave, brittle bush, bursage, bush muhly, cacti, catclaw, cholla, coffeeberry, desert fluffgrass, desert ironwood, desert thorn, fairy duster, filaree, galleta, grama, jojoba, mesquite, mallow, Nevada joint fir, plantain, prickly-pear, ratany, ricegrass, saguaro, saltbush, threeawn and turpentine broom. Young are dropped in small scraped out depressions located in protected places on inaccessible peaks. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042312 - subsp. *canadensis*, color presentation; subsp. *mexicana* (Merriam), color presentations; subsp. *nelsoni*), 42 (061912 - no subspecies listed), 55 (recorded as *Ovis canadensis* Shaw. Bighorn. Probably formerly statewide in mountainous or rocky situations; presently restricted to scattered low desert mountains.), 65, 73, 100 (color photograph), 106 (042312 - listing of subspecies, color presentation), 118 (recorded as *Ovis canadensis mexicana* Merriam - Distribution: Probably formerly statewide in mountainous situations. Figure 112, Page 257), 148 (color presentation)*

***Ovis canadensis* subsp. *mexicana* Merriam, 1901 - Invalid?: Desert Bighorn Sheep**

COMMON NAMES: Berrego Cimarron del Desierto (Hispanic)¹⁴; Big Horn; Bighorn; Bighorn Sheep; Desert Bighorn; Desert Bighorn Sheep; Mexican Bighorn Sheep; Mountain Sheep. HABITS: The species feeds on agave, brittle bush, bursage, bush muhly, cacti, catclaw, cholla, coffeeberry, desert fluffgrass, desert ironwood, desert thorn, fairy duster, filaree, galleta, grama, jojoba, mesquite, mallow, Nevada joint fir, plantain, prickly-pear, ratany, ricegrass, saguaro, saltbush, threeawn and turpentine broom; young are dropped in small scraped out depressions located in protected places on inaccessible peaks. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, deserts scrub and wetland ecological formations. *14 (042312 - subsp. *canadensis*, color presentation; subsp. *mexicana* (Merriam), color presentations; subsp. *nelsoni*), 42 (061912 - no subspecies listed), 55 (species: recorded as *Ovis canadensis* Shaw. Bighorn. Probably formerly statewide in mountainous or rocky situations; presently restricted to scattered low desert mountains.”), 65 (species), 73 (species), 100 (color photograph of species, species record), 106 (042312 - color presentation of species), **118** (recorded as *Ovis canadensis mexicana* Merriam - Distribution: Probably formerly statewide in mountainous situations. Figure 112, Page 257), 148 (color presentation)*

Canidae: The Dog and Allies Family

***Canis latrans* Say, 1823: Coyote**

COMMON NAME: American Jackal; Barking Coyote; Belize Coyote (*C.l. goldmani* Merriam, 1904 - Valid); California Valley Coyote (*C.l. ochropus* Eschscholtz, 1829 - Valid); Colima Coyote (*C.l. vigilis* Merriam, 1897 - Valid); Coyote (English, French, Hispanic, Spanish: derived from the Náhuatl word “cōyotl”)^{14,42,106}; Durango Coyote (*C.l. impavidus* J.A. Allen, 1903 - Valid); Honduras Coyote (*C.l. hondurensis* Goldman, 1936 - Valid); Lower Rio Grande Coyote (*C.l. microdon* Merriam, 1897 - Valid); Mearns Coyote (*C.l. mearnsi* Merriam, 1897 - Valid); Mexican Coyote (*C.l. cagotis* C.E.H. Smith, 1839 - Valid); Mountain Coyote (*C.l. lestes* Merriam, 1897 - Valid); Northeastern Coyote (*C.l. thamnos* Jackson, 1949 - Valid); Northern Coyote (*C.l. incolatus* Hall, 1934 - Valid); Northwest Coast Coyote (*C.l. umpquensis* Jackson, 1949 - Valid); Peninsula Coyote (*C.l. peninsulae* Merriam, 1897 - Valid); Plains Coyote (*C.l. latrans* Say, 1823 - Valid); Prairie Wolf; San Pedro Martir Coyote (*C.l. clepticus* Elliot, 1903 - Valid); Salvador Coyote (*C.l. dickeyi* Nelson, 1932 - Valid); Southeastern Coyote (*C.l. frustor* Woodhouse, 1851 - Valid); Texas Plains Coyote (*C.l. texensis* Bailey, 1905 - Valid); Tiburón Island Coyote (*C.l. jamesi* Townsend, 1912 - Valid). HABITS: Feeds on amphibians, berries, birds, carrion, fruits, gophers, insects, mice, rabbits, reptiles and squirrels. The young are born in dens that may be dug in the ground or located in caves. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, deserts scrub and wetland ecological formations. *14 (042412 - subsp. *lestes* (Merriam); subsp. *mearnsi* (Merriam); subsp. *texensis* (V. Bailey), color presentation), 42 (061912), **55** (recorded as *Canis latrans* Say. Coyote. Statewide (120 - 9,100 feet).), 65 (color photograph), 73, 100 (color photograph), 106 (042412 - includes a listing of subspecies, color presentation), 118 (recorded as *Canis latrans mearnsi* Merriam - Distribution: Statewide. Figure 87, Page 217), 148 (color presentation)*

***Canis latrans* subsp. *mearnsi* Merriam, 1897: Coyote**

COMMON NAMES: Coyote; Mearns Coyote. HABITS: The species feeds on amphibians, berries, birds, carrion, fruits, gophers, insects, mice, rabbits, reptiles and squirrels. The young are born in dens that may be dug in the ground or located in caves. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, deserts scrub and wetland ecological formations. *14 (042412 - subsp. *lestes* (Merriam); subsp. *mearnsi* (Merriam); subsp. *texensis* (V. Bailey), color presentation of species), 42 (061912), 55 (species: recorded as *Canis latrans* Say. Coyote. Statewide (120 - 9,100 feet).), 65 (color photograph of species, species record), 73 (species), 100 (color photograph of species, species record), 106 (042412 - species, color presentation of species), **118** (recorded as *Canis latrans mearnsi* Merriam - Distribution: Statewide. Figure 87, Page 217), 148 (color presentation)*

***Canis lupus* Linnaeus, 1758: Gray Wolf**

COMMON NAMES: Buffalo Wolf (*C.l. nubilus* Say, 1823 - Valid); Common Wolf; Domestic Dog (*C.l. familiaris* Linnaeus, 1758 - Valid); Dusky Wolf (*C.l. nubilus* Say, 1823 - Valid); Gray Wolf; Grey Wolf; Intermountain Gray Wolf; Great Plains Wolf (*C.l. nubilus* Say, 1823 - Valid); Intermountain Gray Wolf; Lobo (Spanish)⁶⁵; Lobo Gris (Hispanic)¹⁴; Lobo Gris (Spanish)⁴²; Lobo Mexicano (Hispanic: applied to *C.l. baileyi* Nelson and Goldman, 1929 - Valid)¹⁴; Loup (French)⁴²; Mexican Gray Wolf (*C.l. baileyi* Nelson and Goldman, 1929 - Valid); Mexican Grey Wolf (*C.l. baileyi* Nelson and Goldman, 1929 - Valid); Mexican Wolf (*C.l. baileyi* Nelson and Goldman, 1929 - Valid); Northern Plains Gray Wolf (*C.l. nubilus* Say, 1823 - Valid); Southern Rocky Mountain Wolf (*C.l. youngi* Goldman, 1937 - Valid); Southern Rocky Mountain Gray Wolf (*C.l. youngi* Goldman, 1937 - Valid); Timber Wolf; Wolf. HABITS: Feeds on berries, birds, fish, fruits, insects, deer, elk, javelina, livestock, small mammals, bighorn sheep, pronghorn and rabbits. Maternity dens are chambers without nests usually located in the ground on high ground, under rock ledges, slopes of canyon walls or hills near water. HABITAT: Within the range of this species it has been reported from forest, woodland, grassland and wetland ecological formations. NOTES: The Mexican Gray Wolf is the smallest subspecies of gray wolf in North America. This wolf generally avoids desert areas. At one time the Mexican Gray Wolf was extirpated from Arizona; however, successful re-introduction efforts are bringing it back from near extinction. *8, 14 (042412 - subsp. *baileyi* Nelson and Goldman; subsp. *nubilus* Say; subsp. *youngi* Goldman, color presentation), 42 (061912), **55** (recorded as *Canis lupus* Frisch. Gray Wolf. Formerly throughout the eastern portions of the state, at present rare or approximately extinct.), 73, 100 (color photograph), 106 (042312 - includes a listing of subspecies, color presentation), 110

(recorded as *Canis lupus baileyi* - shows the historic range as being roughly that portion of Pima County east of the Tohono O'odham Nation), 118 (recorded as *Canis lupus baileyi* Nelson and Goldman - Distribution: Southeastern Arizona. Figure 88, Page 219), 148 (color presentation)*

***Canis lupus* subsp. *baileyi* Nelson and Goldman, 1929: Mexican Gray Wolf**

COMMON NAMES: Lobo (Spanish)⁶⁵; Lobo Mexicano (Hispanic)¹⁴; Mexican Gray Wolf; Mexican Grey Wolf; Mexican Wolf. HABITS: Feeds on berries, birds, fish, fruits, insects, deer, elk, javelina, livestock, small mammals, bighorn sheep, pronghorn and rabbits. Maternity dens are chambers without nests usually located in the ground on high ground, under rock ledges, slopes of canyon walls or hills near water. HABITAT: Within the range of this species it has been reported from forest, woodland, grassland and wetland ecological formations. NOTES: The Mexican Gray Wolf is the smallest subspecies of gray wolf in North America. This wolf generally avoids desert areas. At one time the Mexican Gray Wolf was extirpated from Arizona; however, successful re-introduction efforts are bringing it back from near extinction. *8, 14 (0042412 - subsp. *baileyi* Nelson and Goldman; subsp. *nubilus* Say; subsp. *youngi* Goldman, color presentation), 42 (061912), 55 (species: recorded as *Canis lupus* Frisch. Gray Wolf. Formerly throughout the eastern portions of the state, at present rare or approximately extinct.), 73 (species), 100 (species, color photograph of species), 106 (042312 - species, color presentation of species), 110 (recorded as *Canis lupus baileyi* - shows the historic range as being roughly that portion of Pima County east of the Tohono O'odham Nation), **118** (recorded as *Canis lupus baileyi* Nelson and Goldman - Distribution: Southeastern Arizona. Figure 88, Page 219), 148 (color presentation)*

***Urocyon cinereoargenteus* (Schreber, 1775): Common Gray Fox**

COMMON NAMES: Arizona Gray Fox (*U.c. scottii* Mearns, 1891 - Valid); Common Gray Fox; Gray Fox; Renard Gris (French)⁴²; Scott's Gray Fox (*U.c. scottii* Mearns, 1891 - Valid); Southern Gray Fox (*U.c. scottii* Mearns, 1891 - Valid); Zorra Gris (Hispanic)¹⁴; Zorra Gris (Spanish)⁴². HABITS: The species feeds on birds, desert cottontails, hackberry and prickly-pear fruits, grasses, insects (crickets and grasshoppers), juniper berries, lizards, manzanita berries, nuts, small rodents and snakes. Nests are made of bark, grasses and leaves and located in underground burrows, small caves, piles of rock, amongst boulders, crevices in cliffs and in hollows in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: The Gray Fox climbs trees. *14 (042412 - subsp. *scottii* (Mearns), color presentation), 42 (061912), **55** (recorded as *Urocyon cinereoargenteus* (Schreber). Gray Fox. Statewide with the possible exception of the northeast portion (120 - 5,800 feet.), 65 (species, color photograph), 73, 100 (color photograph), 106 (042412 - includes a listing of subspecies, color presentation), 118 (recorded as *Urocyon cinereoargenteus scottii* Mearns - Distribution: Probably statewide. Figure 90, Page 222), 148 (color presentation)*

***Urocyon cinereoargenteus* subsp. *scottii* Mearns, 1891: Common Gray Fox**

COMMON NAMES: Arizona Gray Fox; Common Gray Fox; Gray Fox; Scott's Gray Fox; Southern Gray Fox; Zorra Gris (Hispanic)¹⁴. HABITS: The species feeds on birds, desert cottontails, hackberry and prickly-pear fruits, grasses, insects (crickets and grasshoppers), juniper berries, lizards, manzanita berries, nuts, small rodents and snakes. Nests are made of bark, grasses and leaves and located in underground burrows, small caves, piles of rock, amongst boulders, crevices in cliffs and in hollows in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: The Gray Fox climbs trees. *14 (042412 - subsp. *scottii* (Mearns), color presentation of species), 42 (061912), 55 (species: recorded as *Urocyon cinereoargenteus* (Schreber). Gray Fox. Statewide with the possible exception of the northeast portion (120 - 5,800 feet.), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (042412 - species), **118** (recorded as *Urocyon cinereoargenteus scottii* Mearns - Distribution: Probably statewide. Figure 90, Page 222), 148 (color presentation)*

***Vulpes macrotis* Merriam, 1888: Kit Fox**

COMMON NAMES: Kit Fox; Desert Kit Fox (*V.m. arispus* Elliot, 1904 - Invalid?); Large-eared Kit Fox (*V.m. macrotis* Merriam, 1888 - Invalid); San Joaquin Kit Fox (*V.m. mutica* Merriam, 1902 - Invalid); Southern California Kit Fox (*V.m. macrotis* Merriam, 1888 - Invalid: extinct circa 1903); Swift-footed Fox (*V.m. arispus* Elliot, 1904 - Invalid?); Zorra del Desierto (Hispanic)¹⁴. HABITS: Feeds on berries, birds, cottontail rabbits, crickets, grasses, grasshoppers, ground squirrels, jack rabbits, kangaroo rats, lizards and pocket mice. The young are born in dens in underground burrows that have been excavated in soft soils. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Vulpes velox* (Say, 1823): The Swift Fox is generally considered a separate species by most authors. *14 (042412 - subsp. *macrotis* (Merriam); subsp. *neomexicanus* (Merriam)), 42 (061912), **55** (recorded as *Vulpes macrotis* Merriam. Kit Fox. Widely distributed at lower elevations throughout the southern part of the state (120 - 5,000 feet.), 65, 73, **78**, 100 (color photograph), 106 (042412 - color presentation), 118 (recorded as *Vulpes macrotis arispus* Elliot - Distribution: Lower elevations in western and southern part of the state; *Vulpes macrotis neomexicana* Merriam - Distribution: Extreme southeastern Arizona. Figure 89, Page 220), 148 (color presentation)*

***Vulpes macrotis* subsp. *arispus* Elliot - Invalid?, 1904: Kit Fox**

COMMON NAMES: Desert Kit fox; Kit Fox; Swift-footed Fox; Zorra del Desierto (Hispanic)¹⁴. HABITS: The species feeds on berries, birds, cottontail rabbits, crickets, grasses, grasshoppers, ground squirrels, jack rabbits, kangaroo rats, lizards and pocket mice. The young are born in dens in underground burrows that have been excavated in soft soils. HABITAT:

Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: *Vulpes velox* (Say, 1823): The Swift Fox is generally considered a separate species by most authors. *14 (042412 - subsp. *macrotis* (Merriam); subsp. *neomexicanus* (Merriam)), 42 (061912), 55 (species: recorded as *Vulpes macrotis* Merriam. Kit Fox. Widely distributed at lower elevations throughout the southern part of the state (120 - 5,800 feet).) 65 (species), 73 (species), 100 (color photograph of species), 106 (042412 - species, color presentation of species), **118** (recorded as *Vulpes macrotis arispus* Elliot - Distribution: Lower elevations in western and southern part of the state. Figure 89, Page 220), 148 (color presentation)*

Vulpes velox (see NOTE under *Vulpes macrotis*, *Vulpes macrotis arispus* and/or *Vulpes macrotis macrostis*)

Castoridae: The Beaver Family

***Castor canadensis* Kuhl, 1820: American Beaver**

COMMON NAMES: Admiralty Beaver (*C.c. phaeus* Heller, 1909 - Invalid?); American Beaver; Bank Beaver; Beaver; Canadian Beaver (*C.c. canadensis* Kuhl, 1820 - Invalid?); Carolina Beaver (*C.c. carolinensis* Rhoads, 1898 - Invalid?); Castor (French)⁴²; Castor (Hispanic)¹⁴; Castor Americano (Spanish)⁴²; Castor Cat; Colorado Beaver (*C.c. concisor* Warren and Hall, 1939 - Invalid?); Cook Inlet Beaver (*C.c. belugae* Taylor, 1916 - Invalid?); Flat Tail; Missouri River Beaver (*C.c. missouriensis* Bailey, 1919 - Invalid?); New England Beaver (*C.c. acadicus* Bailey, 1942 - Invalid?); North American Beaver; Pacific Beaver (*C.c. leucodonta* Gray, 1869 - Invalid?); Rio Grande Beaver (*C.c. mexicanus* Bailey, 1913 - Invalid?); Sonora Beaver (*C.c. frondator* Mearns, 1897 - Invalid?); Texas Beaver (*C.c. texensis* Bailey, 1905 - Invalid?); Washington Beaver (*C.c. pacificus* Rhoads, 1898 - Invalid?); Woods Beaver (*C.c. michiganensis* Bailey, 1913 - Invalid?). HABITS: Feeds on bark, branches, buds, leaves or needles and twigs of alder, aspen, birch, cattail, cottonwood, maple, mesquite, tamarix and willow, and the roots of pond lilies and other tuberous plants; kits are born in lodges or dens dug into banks, nest materials include stalks and leave of tules, sedges, herbs and fine rootlets. HABITAT: Within the range of this species it has been reported that riparian habitats are required with beaver reported from creeks, streams, rivers, marshes, cienegas, ponds and lakes in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Donald F. Hoffmeister noted in Mammals of Arizona that "Beaver in Arizona attempt to colonize some streams that are exceedingly small or have a very limited flow of water."¹⁴⁵ Beaver dams help reduce erosion, collect and retain organic matter and sediment and raise water tables (Las Cienegas National Conservation Area, Appendix 1, Chapter 3). Beaver dams may help to reduce flooding and provide habitat for other animals including otters and waterfowl. The extent of the historical distribution of the American Beaver in Pima County is unknown; however, it has been reported that the Tohono O'odham people hunted and ate beaver. *14 (042412 - subsp. *concoris* (Warren and Hall); subsp. *frondator* Mearns; subsp. *missouriensis* V. Bailey; subsp. *mexicanus* V. Bailey), 42 (061912 - no subspecies listed), 49, **55** (recorded as *Castor canadensis* Kuhl. Beaver. formerly widespread in all of the permanent streams of the state; now restricted in distribution), 73, 100 (color photograph), 106 (042412 - includes a listing of subspecies, color presentation. "Early American exploration of the San Pedro River, like most rivers in western North America, was driven by the pursuit of beaver pelts. James Ohio Pattie and his father led a party of fur trappers down the Gila River and then down the San Pedro River in 1826 which was so successful that he called the San Pedro the Beaver River.^[2] In the 19th century the river was a meandering stream with fluvial marshlands, riparian forest, Sporobolus grasslands and extensive beaver ponds. As the beaver were removed by fur trapping and cattle denuded the riparian vegetation, the river down-cut and then widened in a process of arroyo formation observed on many rivers in the Southwest.^[9] The beaver were finally extirpated by 1920's dynamiting of the beaver dams from soldiers from Fort Huachuca to prevent malaria. By the mid-20th century the once perennial river only flowed during the rainy season and beaver, fluvial marshlands and Sporobolus grasslands were uncommon.^{[9][10]} Physician naturalist Edgar Alexander Mearns' 1907 Mammals of the Mexican boundary of the United States reported beaver (*Castor canadensis*) on the San Pedro River and Babocomari Creek.^[11] Mearns claimed that the San Pedro River beaver represented a new subspecies *Castor canadensis frondator* or "Sonora beaver" that ranged from Mexico up to Wyoming and Montana.^[12]" from Wikipedia: [San Pedro River, Arizona](#)), 118 (recorded as *Castor canadensis repentinus* Goldman - Distribution: Formerly in the Colorado River from the Grand Canyon southward to Mexico and *Castor canadensis frondator* Mearns - Distribution: Formerly San Pedro and Gila River drainages. Figure 60, Page 155), 143 (note on the Tohono O'odham hunting beaver and included beaver in their diet), 148 (color presentation), WTK (The headwaters of the Babocomari River, Cienega Creek and Sonoita Creek are located near Sonoita, Arizona. With the Beaver being plentiful in the San Pedro and Babocomari Rivers it would seem possible that they were also present in the Cienega Creek, which flows into the Pantano and Rillito Creeks, and the Sonoita Creek, which flows into the Santa Cruz River, which in turn flow into the Gila and Salt Rivers.)*

Cervidae: The Deer and Allies Family

Cervus canadensis (see *Cervus elaphus*)

Cervus canadensis subsp. *merriami* (see *Cervus elaphus* subsp. *merriami*)

***Cervus elaphus* Linnaeus, 1758: Elk**

SYNONYMY: *Cervus canadensis* Linnaeus, 1758 / (Erxleben, 1777) - Invalid?. COMMON NAMES: Ala-Shan Wapiti (*C.e. (Cervus canadensis) alashanicus* Bobrinski and Flierov, 1935 - Invalid?); Alashan Wapiti (*C.e. (Cervus canadensis) alashanicus* Bobrinski and Flierov, 1935 - Invalid?); Altai Maral (*C.e. sibirica (Cervus canadensis sibiricus)* Severtzov, 1873 - Invalid?)^{106,148}; Altai Wapiti (*C.e. (Cervus canadensis) asiaticus* Severtzov, 1873 / Lydekker, 1898 - Invalid?); American Elk; Arizona Wapiti (*C.e. (Cervus canadensis) merriami* Nelson, 1902 - Invalid?: extinct circa 1923); Atlantica Deer (*C.e. atlanticus* Lonnberg, 1906 - Invalid?); Atlas Deer (*C.e. barbarus* Bennett, 1848 - Valid); Austria Deer (*C.e. austriacus* - Invalid?); Bactrian Deer (*C.e. bactrianus* Lydekker, 1900 - Invalid?); Baikal Wapiti (*C.e. (Cervus canadensis) baicalensis* Lydekker, 1915 - Invalid?); *C.e. (Cervus canadensis) isubra* Noack, 1889 - Invalid?)¹⁴⁸; Baltic Deer (*C.e. balticus* Matschie, 1907 - Invalid?); Barasingha Deer (*C.e. hanglu* Wagner, 1844 - Valid); Barbary Deer (*C.e. barbarus* Bennett, 1848 - Valid); Barbary Stag (*C.e. barbarus* Bennett, 1848 - Valid); Bukharian Deer (*C.e. bactrianus* Lydekker, 1900 - Invalid?); California Wapiti (*C.e. (Cervus canadensis) nannodes* Merriam, 1905 - Invalid?); Canadian Wapiti (*C.e. (Cervus canadensis) roosevelti* Merriam, 1897 - Invalid?); Carpathian Red Deer (*C.e. carpathicus* Tatarinov, 1956 - Invalid?); Carpathian Red Deer (*C.e. hippelaphus* Kerr, 1792 - Invalid?); Caspian Red Deer (*C.e. maral* Ogilby, 1840 - Invalid?); Central European Red Deer (*C.e. hippelaphus* Kerr, 1792 - Invalid?); Ciervo Común (Spanish)⁴²; Common Red Deer (*C.e. elaphus* Linnaeus, 1758 - Valid); Corsican Red Deer (*C.e. corsicanus* Erxleben, 1777 - Invalid?); Dwarf Wapiti (*C.e. (Cervus canadensis) nannodes* Merriam, 1905 - Invalid?); Eastern Elk (*Cervus canadensis canadensis* Linnaeus, 1758 / (Erxleben, 1777) - Invalid?); Eastern Red Deer (*C.e. montanus* Botezat, 1903 - Invalid?); Elk; Hanguang Deer (*C.e. hanglu* Wagner, 1844 - Valid); Hangul¹⁴⁸; Hangul (*C.e. (Cervus canadensis) hanglu* Wagner, 1844 - Valid)¹⁰⁶; Kansu Deer (*C.e. (Cervus canadensis) kansuensis* Pocock, 1912 - Invalid?); Kansu Red Deer (*C.e. (Cervus canadensis) kansuensis* Pocock, 1912 - Invalid?); Kashmir Deer (*C.e. hanglu* Wagner, 1844 - Valid); Kashmir Stag (*C.e. hanglu* Wagner, 1844 - Valid; *C.e. wallichi* G. Cuvier, 1823 - Invalid?); MacNeill's Deer (*C.e. (Cervus canadensis) macneilli* Lydekker, 1909 - Invalid?); Manchurian Elk (*C.e. (Cervus canadensis) xanthopygus* Milne-Edwards, 1867 - Invalid?); Manchurian Wapiti (*C.e. (Cervus canadensis) xanthopygus* Milne-Edwards, 1867 - Invalid?)¹⁰⁶; Manitoba Elk (*C.e. (Cervus canadensis) manitobensis* Millais, 1915 - Invalid?); Manitoban Elk (*C.e. (Cervus canadensis) manitobensis* Millais, 1915 - Invalid?); Maral Deer (*C.e. maral* Ogilby, 1840 - Invalid?); Maral Red Deer (*C.e. maral* Gray, 1850 - Invalid?); Merriam's Elk (*C.e. (Cervus canadensis) merriami* Nelson, 1902 - Invalid: extinct circa 1923); Merriam's Wapiti (*C.e. (Cervus canadensis) merriami* Nelson, 1902 - extinct circa 1923, Invalid?); Olympic Elk (*C.e. (Cervus canadensis) occidentalis* Hamilton Smith, 1827 - Invalid; *C.e. (Cervus canadensis) roosevelti* Merriam, 1897 - Invalid?); Red Deer; Rocky Mountain Elk (*C.e. (Cervus canadensis) nelsoni* Bailey, 1935 - Invalid?); Rocky Mountain Wapiti (*C.e. (Cervus canadensis) nelsoni* Bailey, 1935 - Invalid?); Roosevelt Elk (*C.e. (Cervus canadensis) roosevelti* Merriam, 1897 - Invalid?); Roosevelt Wapiti (*C.e. (Cervus canadensis) occidentalis* Hamilton Smith, 1827 - Invalid; *C.e. (Cervus canadensis) roosevelti* Merriam, 1897 - Invalid?); Roosevelt's Wapiti (*C.e. (Cervus canadensis) roosevelti* Merriam, 1897 - Invalid?); San Joaquin Valley Elk (*C.e. (Cervus canadensis) nannodes* Merriam, 1905 - Invalid?); Scottish Red Deer (*C.e. scoticus* Lonnberg, 1906 - Invalid?); Shingiel Red Deer (*C.e. (Cervus canadensis) wachei* Noack, 1902 - Invalid?); Short-faced Carpathian Red Deer (*C.e. campestris* Botezat, 1903 - Invalid?); Shou (*C.e. affinis* Hodgson, 1841 - Invalid?)¹⁴⁸; Shou (*C.e. (Cervus canadensis) wallichi* G. Cuvier, 1823 - Invalid?)¹⁰⁶; Shou Deer (*C.e. wallichi* G. Cuvier, 1823 - Invalid?); "Siberian Elk" (*C.e. sibirica (Cervus canadensis sibiricus)* Severtzov, 1873 - Invalid?); Sichuan Deer (*C.e. (Cervus canadensis) macneilli* Lydekker, 1909 - Invalid?); Sikkim Stag (*C.e. affinis* Hodgson, 1841 - Invalid; *C.e. wallichi* G. Cuvier, 1823 - Invalid?); Spanish Red Deer (*C.e. hispanicus* Helzheimer, 1909 - Invalid?); Swedish Red Deer (*C.e. elaphus* Linnaeus, 1758 - Valid); Tian Shan Maral (*C.e. (Cervus canadensis) songaricus* Severtzov, 1873 - Invalid?)¹⁰⁶; Tian Shan Wapiti (*C.e. (Cervus canadensis) songaricus* Severtzov, 1873 - Invalid?)¹⁰⁶; Tien-Shan Wapiti (*C.e. (Cervus canadensis) songaricus* Severtzov, 1873 - Invalid?)¹⁴⁸; Tibetan Red Deer (*C.e. wallichi* G. Cuvier, 1823 - Invalid?); Tule Elk (*C.e. (Cervus canadensis) nannodes* Merriam, 1905 - Invalid?); Venado Alazan (Hispanic)¹⁴; Wallich's Deer (*C.e. wallichi* G. Cuvier, 1823 - Invalid?); Wapiti¹⁴; Wapiti (French: applied to *C.e. elaphus* Linnaeus, 1758 - Valid)⁴²; Western Elk (*C.e. (Cervus canadensis) occidentalis* Hamilton Smith, 1827 - Invalid; *C.e. (Cervus canadensis) roosevelti* Merriam, 1897 - Invalid?); Western European Red Deer (*C.e. carpathicus* Tatarinov, 1956 - Invalid?); Western European Red Deer (*C.e. elaphus* Linnaeus, 1758 - Valid); Yarkand Deer (*C.e. (Cervus canadensis) yarkandensis* Blanford, 1892 - Invalid?). HABITS: Feeds on agaves (basal portions of fleshy leaves, green flower stalks and flowers); asters; bear grass; eriogonums; goosefoot; grasses; lupines; mushrooms; sedges, and other mountain plants and will browse aspen; cliffrose; conifer needles; manzanita; mountain mahogany; oak (acorns and leaves); rabbitbrush; sagebrush; serviceberry; snowberry, and willow. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The Elk known as *Cervus elaphus* subsp. *merriami*, which was native to Arizona, is now extinct with the last reported sighting being made in the White Mountains in 1923. This extinction was brought about by unregulated hunting. Merriam's Elk is believed to have been extirpated from New Mexico by 1900 and from Arizona in 1923. By 1913, *Cervus canadensis* subsp. *nelsoni*, were being transplanted into Arizona. *Cervus elaphus* is native to central and southern North America. *14 (042812 - subsp. *merriami* (Nelson); subsp. *nelsoni* (V. Bailey), color presentation), 42 (061912 - no record for *Cervus canadensis*), 55 (recorded as *Cervus canadensis* (Erxleben). Elk. Formerly probably occurred in most of the higher mountains of the state; was exterminated and reintroduced (in 1913); presently occurs at higher elevations in the central part of the state.), 73, 100 (color photograph), 106 (061212 - includes a listing of subspecies, color presentation; there is a separate "page" for Wapiti - *Cervus canadensis* (Erxleben, 1777)), 118 (recorded as *Cervus canadensis merriami* Nelson - Distribution: Extinct; probably formerly occurred in most of the higher mountains of the state. Figure 108, Page 251, and *Cervus canadensis nelsoni* Bailey - Distribution: Introduced into Arizona (in 1913 and later) from Yellowstone National Park, Wyoming. Now established.), 148 (color photographs, including color photographs of many of the subspecies), 149*

***Cervus elaphus* subsp. *merriami* Nelson, 1902 - Invalid?: Merriam's Elk**

SYNONYMY: *Cervus canadensis* subsp. *merriami* Nelson, 1902 - Invalid?, 1902. COMMON NAMES: Arizona Wapiti; Merriam's Elk; Merriam's Wapiti; Wapiti¹⁴. HABITS: The species feeds on agaves (basal portions of fleshy leaves, green flower stalks and flowers); asters; bear grass; eriogonums; goosefoot; grasses; lupines; mushrooms; sedges, and other mountain plants and will browse aspen; cliffrose; conifer needles; manzanita; mountain mahogany; oak (acorns and leaves); rabbitbrush; sagebrush; serviceberry; snowberry, and willow. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations, this subspecies has been reported from forests and wetland ecological formations. NOTES: The Elk known as *Cervus elaphus* subsp. *merriami*, which was native to Arizona, is now extinct with the last reported sighting being made in the White Mountains in 1923. This extinction was brought about by unregulated hunting. Merriam's Elk is believed to have been extirpated from New Mexico by 1900 and from Arizona in 1923. By 1913, *Cervus canadensis* subsp. *nelsoni*, were being transplanted into Arizona. *14 (042812 - subsp. *merriami* (Nelson); subsp. *nelsoni* (V. Bailey)), 42 (061912 - no record of this subspecies), 55 (species: recorded as *Cervus canadensis* (Erxleben). Elk. Formerly probably occurred in most of the higher mountains of the state; was exterminated and reintroduced (in 1913); presently occurs at higher elevations in the central part of the state.), 73 (species), 100 (color photograph of species, species record), 106 (061312 - recorded as *Cervus elaphus*: *Cervus canadensis merriami*), **118** (recorded as *Cervus canadensis merriami* Nelson - Distribution: Extinct; probably formerly occurred in most of the higher mountains of the state. Figure 108, Page 251), 148, 149 (no record)*

***Odocoileus hemionus* (Rafinesque, 1817): Mule Deer**

COMMON NAMES: Black-tailed Deer (*O.h. columbianus* (Richardson, 1829) - Invalid?); *O.h. hemionus* (Rafinesque, 1817) - Valid; Blacktail Deer (*O.h. columbianus* (Richardson, 1829) - Invalid?); Burro (*Odocoileus hemionus crooki* Mearns, 1897 - Invalid?); Burro Mule Deer (*O.h. eremicus* Mearns, 1897 - Invalid?); California Mule Deer (*O.h. californicus* Caton, 1876 - Invalid?); Cedros Island Mule Deer (*O.h. cedrosensis* Merriam, 1898 - Invalid?); Cerros Island Mule Deer *O.h. cerrosensis* Merriam, 1898 - Valid); Columbian Black-tailed Deer (*O.h. columbianus* (Richardson, 1829) - Invalid?); Crook Black-tailed Deer (*O.h. crooki* Mearns, 1897 - Invalid?); Desert Mule Deer (*O.h. crooki* Mearns, 1897 - Invalid?); *O.h. eremicus* Mearns, 1897 - Invalid?); Inyo Mule Deer (*O.h. inyoensis* Cowan, 1933 - Invalid?); Mule Deer; Peninsula Mule Deer (*O.h. peninsulæ* Lydekker, 1898 - Invalid?); Rocky Mountain Mule Deer (*O.h. hemionus* (Rafinesque, 1817) - Valid); Sitka Deer (*O.h. sitkensis* Merriam, 1898 - Invalid?); Sitka Black-tailed Deer (*O.h. sitkensis* Merriam, 1898 - Invalid?); Southern Mule Deer (*O.h. fuliginatus* Cowan, 1937 - Invalid?); Tiburon Island Mule Deer (*O.h. sheldoni* Goldman, 1939 - Invalid?); Venado Bura (Spanish)⁴²; Venado Pardo (Hispanic)¹⁴. HABITS: Feeds on acorns, beans, branches, fruits, leaves or needles, nuts, seeds and/or twigs of aspen, barberry, bitterbrush, blackberry, buckbrush, buckwheat, calliandra, ceanothus, catclaw, cedar, cliffrose, dogwood, Douglas fir, huckleberry, joint fir, jojoba, juniper, mountain mahogany, mountainlover, oak, pinyon, ponderosa pine, poplar, sagebrush, saltbush, serviceberry, thimbleberry, white fir, wild cherry, willow and yew, and grasses lupines, mistletoe, moss, mushrooms, salal, sedges and spurge. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042412 - subsp. *hemionus*; subsp. *crooki* (Mearns), color presentation), 42 (061912), **55** (recorded as *Odocoileus hemionus* (Rafinesque). Black-tailed or Mule Deer. Statewide, but not of uniform distribution (250 - 9,000 feet).), 65, 73, 100 (color photograph), 106 (042412 - includes a listing of subspecies, color presentation), 118 (recorded as *Odocoileus hemionus crooki* (Mearns) - Distribution: Northeastern, central and southeastern part of the state. Figure 109, Page 252), 148 (color presentation)*

***Odocoileus hemionus* subsp. *crooki* Mearns, 1897 - Invalid?: Mule Deer**

COMMON NAMES: Burro; Crook Black-tailed Deer; Desert Mule Deer; Mule Deer; Venado Pardo (Hispanic)¹⁴. HABITS: The species feeds on acorns, beans, branches, fruits, leaves or needles, nuts, seeds and/or twigs of aspen, barberry, bitterbrush, blackberry, buckbrush, buckwheat, calliandra, ceanothus, catclaw, cedar, cliffrose, dogwood, Douglas fir, huckleberry, joint fir, jojoba, juniper, mountain mahogany, mountainlover, oak, pinyon, ponderosa pine, poplar, sagebrush, saltbush, serviceberry, thimbleberry, white fir, wild cherry, willow and yew, and grasses lupines, mistletoe, moss, mushrooms, salal, sedges and spurge. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042412 - subsp. *hemionus*; subsp. *crooki* (Mearns), color presentation of species), 42 (061912 - no record of this subspecies), 55 (species: recorded as *Odocoileus hemionus* (Rafinesque) Black-tailed or Mule Deer. Statewide, but not of uniform distribution (250 - 9,000 feet).), 65, 73 (species), 100 (species, color photograph of species), 106 (042412 - species, color presentation of species), **118** (recorded as *Odocoileus hemionus crooki* (Mearns) - Distribution: Northeastern, central and southeastern part of the state. Figure 109, Page 252), 148 (color presentation)*

***Odocoileus virginianus* (Zimmermann, 1780): White-tailed Deer**

COMMON NAMES: Acapulco White-tailed Deer (*O.v. acapulcensis* Caton, 1877 - Invalid?); Andean White-tailed Deer (*O.v. peruvianus* Gray, 1874 - Invalid?); Arizona White-tailed Deer (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Arizona Whitetail (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Avery Island White-tailed Deer (*O.v. mcilhennyi* F.W. Miller, 1928 - Invalid?); Blackbeard Island White-tailed Deer (*O.v. nigribarbis* Goldman and Kellogg, 1940 - Invalid?); Bulls Island White-tailed Deer (*O.v. taurinsulæ* Goldman and Kellogg, 1940 - Invalid?); Carmen Mountains Jorge Deer (*O.v. carminis* Goldman and Kellogg, 1940 - Invalid?); Central American White-tailed Deer (*O.v. truei* Merriam, 1898 - Invalid?); Cerf de Virginie (French)⁴²; Chiapas White-tailed Deer (*O.v. nelsoni* Merriam, 1898 - Invalid?); Chiriqui White-tailed Deer (*O.v. chiriquiensis* J.A. Allen, 1904 - Invalid?); Coiba Island White-tailed Deer (*O.v. rothschildi* Thomas, 1902 - Invalid?); Columbian

White-tailed Deer (*O.v. leucurus* (Douglas, 1929) - Valid); Coues White-tailed (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Coues White-tailed Deer (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Coues' Deer (*O.v. couesi* Coues and Yarrow - Invalid?); Coues' White-tailed Deer (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Dakota White-tailed Deer (*O.v. dacotensis* Goldman and Kellogg, 1940 - Invalid?); Desert Whitetail (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Fantail (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Fantail Deer (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Florida Coastal White-tailed Deer (*O.v. osceola* Bangs, 1896 - Invalid?); Florida Keys White-tailed Deer (*O.v. clavium* Barbour and Allen, 1922 - Valid); Florida White-tailed Deer (*O.v. seminolus* Goldman and Kellogg, 1940 - Invalid?); Hilton Head Island White-tailed Deer (*O.v. hiltonensis* Goldman and Kellogg, 1940 - Invalid?); Lichtenstein's White-tailed Deer (*O.v. mexicanus* Gmelin, 1788 - Invalid?); Nicaragua White-tailed Deer (*O.v. truei* Merriam, 1898 - Invalid?); Hunting Island White-tailed Deer (*O.v. venatorius* Goldman and Kellogg, 1940 - Invalid?); Kansas White-tailed Deer (*O.v. macrourus* Rafinesque, 1817 - Invalid?); Key Deer (*O.v. clavium* Barbour and G.M. Allen, 1922 - Valid); Maso (Yaqui); Mexican Lowland White-tailed Deer (*O.v. thomasi* Merriam, 1898 - Invalid?); Mexican White-tailed Deer (*O.v. mexicanus* Gmelin, 1788 - Invalid?); Miquihuan White-tailed Deer (*O.v. miquihuanensis* Goldman and Kellogg, 1940 - Invalid?); Nelson's White-tailed Deer (*O.v. nelsoni* Merriam, 1898 - Invalid?); Northern Plains White-tailed Deer (*O.v. dacotensis* Goldman and Kellogg, 1940 - Invalid?); Northern Rocky Mountains White-tailed Deer (*O.v. ochrourus* Bailey, 1932 - Invalid?); Northern Vera Cruz White-tailed Deer (*O.v. veraecrucis* Goldman and Kellogg, 1940 - Invalid?); Northern (Woodland) White-tailed Deer (*O.v. borealis* Miller, 1900 - Invalid?); Northern Woodland White-tailed Deer (*O.v. borealis* Miller, 1900 - Invalid?); Northwest White-tailed Deer (*O.v. ochrourus* Bailey, 1932 - Invalid?); Oaxaca White-tailed Deer (*O.v. oaxacensis* Goldman and Kellogg, 1940 - Invalid?); Osceola's White-tailed Deer (*O.v. osceola* Bangs, 1896 - Invalid?); Peruvian Venado Deer (*O.v. peruvianus* Gray, 1874 - Invalid?); Plains White-tailed Deer (*O.v. macrourus* Rafinesque, 1817 - Invalid?); Rafinesque's White-tailed Deer (*O.v. macrourus* Rafinesque, 1817 - Invalid?); Rain Forest White-tailed Deer (*O.v. toltecus* Saussure, 1860 - Invalid?); Rothschild's White-tailed Deer (*O.v. rothschildi* Thomas, 1902 - Invalid?); Sandhill White-tailed Deer (*O.v. texanus* Mearns, 1898 - Invalid?); Sinaloa White-tailed Deer (*O.v. sinaloae* J.A. Allen, 1903 - Invalid?); Sonora White-tailed Deer (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); Sonoran Fantail (*O.v. couesi* Coues and Yarrow, 1875 - Invalid?); South American White-tailed Deer (*O.v. gymnotis* Wiegmann, 1833 - Invalid?); *O.v. peruvianus* Gray 1874 - Invalid?); Southern White-tailed Deer (*O.v. virginianus* (Zimmermann, 1870) - Valid); Tamaulipas White-tailed Deer (*O.v. miquihuanensis* Goldman and Kellogg, 1940 - Invalid?); Tawny Northwest White-tailed Deer (*O.v. ochrourus* Bailey, 1932 - Invalid?); Texas White-tailed Deer (*O.v. texanus* Mearns, 1898 - Invalid?); Thomas's White-tailed Deer (*O.v. thomasi* Merriam, 1898 - Invalid?); True's White-tailed Deer (*O.v. truei* Merriam, 1898 - Invalid?); Venado Cola Blanca (Hispanic)¹⁴; Venado Cola Blanca (Spanish)⁴²; Virginia Deer; Virginia White-tailed Deer (*O.v. virginianus* (Zimmermann, 1870) - Valid); Western White-tailed Deer (*O.v. macrourus* Rafinesque, 1817 - Invalid?); White-tailed Deer (*O.v. virginianus* (Zimmermann, 1870) - Valid); Whitetail; Whitetail Deer; Yucatán White-tailed Deer (*O.v. toltecus* Saussure, 1860 - Invalid?); *O.v. yucatanensis* Hays, 1872 - Invalid?). HABITS: The species feeds on fungi, grass and acorns, branches, buds, cones, fruits, leaves, mast, needles and /or twigs of alder, barberry, buckbrush, calliandra, catclaw acacia, Emory and scrub oaks and other evergreen oaks, hackberry, hemlock, holly-leaf buckthorn, juniper, mesquite, mountainlover, Oregon-grape, pinyon, ratany, sagebrush, skunkbush, spiderwort, spruce, willow, yellow-leaf silktassel. Young are generally dropped along ridges and hillsides. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042412 - subsp. *couesi* (Coues and Yarrow); subsp. *texana* (Mearns), color presentation), 42 (061912), 55 (recorded as *Odocoileus virginianus* (Zimmermann). White-tailed Deer. Southeastern Arizona (1,200 - 9,000 feet.), 65, 73, 100 (color photograph), 106 (042412 - includes a listing of subspecies, color presentation), 118 (recorded as *Odocoileus virginianus couesi* (Coues & Yarrow) - Distribution: Southern Arizona. Figure 110, Page 254), 148 (color presentation), **MBJ/WTK** (September 12, 2005)*

***Odocoileus virginianus* subsp. *couesi* Coues & Yarrow, 1875 - Invalid?: Coues' White-tailed Deer**

COMMON NAMES: Arizona Whitetail; Arizona White-tailed Deer; Coues' Deer; Coues White-tailed; Coues' White-tailed Deer; Desert Whitetail; Fantail; Fantail Deer; Maso (Yaqui); Sonora White-tailed Deer; Sonoran Fantail; Venado Cola Blanca (Hispanic)¹⁴; Virginia Deer; Whitetail; White-tailed Deer; Whitetail Deer. HABITS: The species feeds on fungi, grass and acorns, branches, buds, cones, fruits, leaves, mast, needles and /or twigs of alder, barberry, buckbrush, calliandra, catclaw acacia, Emory and scrub oaks and other evergreen oaks, hackberry, hemlock, holly-leaf buckthorn, juniper, mesquite, mountainlover, Oregon-grape, pinyon, ratany, sagebrush, skunkbush, spiderwort, spruce, willow, yellow-leaf silktassel. Young are generally dropped along ridges and hillsides. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042412 - subsp. *couesi* (Coues and Yarrow); subsp. *texana* (Mearns), color presentation of species), 42 (061912 - no record of this subspecies), 55 (species: recorded as *Odocoileus virginianus* (Zimmermann). White-tailed Deer. Southeastern Arizona (1,200 - 9,000 feet.), 65, 73 (species), 100 (color photograph of species), 106 (042412 - color presentation), 118 (recorded as *Odocoileus virginianus couesi* (Coues & Yarrow) - Distribution: Southern Arizona. Figure 110, Page 254), 148 (color presentation)*

Erethizontidae: The Porcupine Family

Erethizon dorsatum (see *Erethizon dorsatus*)

Erethizon dorsatum subsp. *couesi* (see *Erethizon dorsatus* subsp. *couesi*)

***Erethizon dorsatus* (Linnaeus, 1758): Common Porcupine**

SYNONYMY: *Erethizon dorsatum* (Linnaeus, 1758). COMMON NAMES: American Porcupine; Arizona Porcupine (*E.d. couesi* Mearns, 1897 - Valid); Canadian Porcupine; Canadian Tree Porcupine; Common Porcupine; Coues' Tree Porcupine (*E.d. couesi* Mearns, 1897 - Valid); North American Porcupine; Porc-épic d'Amérique (French)⁴²; Porcupine; Puerco Espin (Hispanic)¹⁴; Puercoespin Norteamericano (Spanish)⁴²; Rocky Mountain Porcupine (*E.d. epixanthus* Brandt, 1835 - Valid); Western Porcupine (*E.d. epixanthus* Brandt, 1835 - Valid); Yellow-haired Porcupine (*E.d. epixanthus* Brandt, 1835 - Valid). HABITS: Feeds on the bark of cedar, fir, hemlock, mesquite and pine trees and ocotillo and on acorns, apple trees, ash leaves, aspen trees, basswood, young beech trees and bechnuts, buckbrush (*Ceanothus* sp.), buds, clover, dwarf mistletoe, fungi, grass (juveniles), herbs (juveniles), leaves, lupine, oak leaves, pine needles, fruits of pricklypear cacti, skunk cabbage, sugar maples and twigs. Shelter is sought in caves, hollow logs, mine shafts, piles of rocks, rocky slopes and rock walls. The young are born in dens (no nest structure) located in the cavities of dying tree, tree stumps, caves, under rocks and man-made structures. Dens may be used for many years and generations. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042512 - subsp. *couesi* (Mearns); subsp. *epixanthum* (Brandt)), 42 (061912), 55 (recorded as *Erethizon dorsatum* Linnaeus. Porcupine. Probably statewide but more common in wooded areas (3,000 - 9,000 feet).), 65, 73, 100 (color photograph), 106 (042512 - recorded as *Erethizon dorsatum* (Linnaeus, 1758), includes a listing of subspecies, color presentation), 118 (recorded as *Erethizon dorsatum couesi* Mearns - Distribution: Statewide in mountains and riparian situations. Figure 86, Page 215), 148 (color presentation)*

***Erethizon dorsatus* subsp. *couesi* Mearns, 1897: Common Porcupine**

SYNONYMY: *Erethizon dorsatum* subsp. *couesi* (Mearns, 1897). COMMON NAMES: American Porcupine; Arizona Porcupine; Canadian Porcupine; Common Porcupine; Coues' Tree Porcupine; North American Porcupine; Porcupine; Puerco Espin (Hispanic)¹⁴. HABITS: Feeds on the bark of cedar, fir, hemlock, mesquite and pine trees and ocotillo and on acorns, apple trees, ash leaves, aspen trees, basswood, young beech trees and bechnuts, buckbrush (*Ceanothus* sp.), buds, clover, dwarf mistletoe, fungi, grass (juveniles), herbs (juveniles), leaves, lupine, oak leaves, pine needles, fruits of pricklypear cacti, skunk cabbage, sugar maples and twigs. Shelter is sought in caves, hollow logs, mine shafts, piles of rocks, rocky slopes and rock walls. The young are born in dens (no nest structure) located in the cavities of dying tree, tree stumps, caves, under rocks and man-made structures. Dens may be used for many years and generations. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042512 - subsp. *couesi* (Mearns); subsp. *epixanthum* (Brandt)), 42 (061912), 55 (species: recorded as *Erethizon dorsatum* Linnaeus. Porcupine. Probably statewide but more common in wooded areas (3,000 - 9,000 feet).), 65 (species), 73 (species), 100 (color photograph of species, species record), 106 (042512 - species including a listing of subspecies, color presentation of species), 118 (recorded as *Erethizon dorsatum couesi* Mearns - Distribution: Statewide in mountains and riparian situations. Figure 86, Page 215), 148 (color presentation of species)*

Felidae: The Cat Family

Felis concolor (see *Puma concolor*)

Felis concolor subsp. *azteca* (see *Puma concolor* subsp. *couguar*)

Felis concolor subsp. *browni* (see *Puma concolor* subsp. *couguar*)

Felis onca (see *Panthera onca*)

Felis pardalis (see *Leopardus pardalis*)

Felis pardalis subsp. *sonoriensis* (see *Leopardus pardalis* subsp. *sonoriensis*)

Felis rufus (see *Lynx rufus*)

Felis rufus subsp. *baileyi* (see footnote 118 under *Lynx rufus* subsp. *baileyi*)

Felis yaguarondi (see *Puma yagouarondi*)

Herpailurus yaguarondi (see *Puma yagouarondi*)

Felis yaguarondi (see *Puma yagouarondi*)

Herpailurus yaguarondi (see *Puma yagouarondi*)

***Leopardus pardalis* (Linnaeus, 1758): Ocelot**

SYNONYMY: *Felis pardalis* (Linnaeus, 1758). COMMON NAMES: Dwarf Leopard; Leopard-cat; McKenney's Wildcat; Ocelot; Ocelote (Spanish)⁴²; Painted Leopard; Sonoran Ocelot (*L.p. sonoriensis* (Goldman, 1925) - Valid); Tiger-cat; Tigrillo (Mexico)¹⁴⁵. HABITS: (Feeds on amphibians, lesser anteaters, armadillos, birds, fish, insects, land crabs, small to medium-sized mammals (including mice, rats and rabbits among others) and reptiles (including lizards, snakes and land tortoises). Kittens are born in a nest lined with grass or other materials located in rocky bluffs, caves, rocky dens, hollow logs or dense thickets. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: EXTIRPATED. *8, 14 (042512 - subsp. *sonoriensis* is the subspecies reported as occurring in Arizona), 42 (061912), 55 (recorded as *Felis pardalis* Linnaeus. Ocelot. Formerly southeastern Arizona as far north as Fort Verde; no recent records.), 100 (color photograph), 106 (042512 - includes a listing of subspecies), 118 (recorded as *Felis pardalis sonoriensis* Goldman - Distribution: Formerly southeastern Arizona as far north as Ft. Verde. Figure 104, Page 244), 148 (color presentation)*

***Leopardus pardalis* subsp. *sonoriensis* (Goldman, 1925): Sonoran Ocelot**

SYNONYMY: *Felis pardalis* subsp. *sonoriensis* Goldman, 1925. COMMON NAMES: Dwarf Leopard; McKenney's Wildcat; Ocelot; Ocelote (Spanish); Painted Leopard; Sonoran Ocelot. HABITS: (Feeds on amphibians, lesser anteaters, armadillos, birds, fish, insects, land crabs, small to medium-sized mammals (including mice, rats and rabbits among others) and reptiles (including lizards, snakes and land tortoises). Kittens are born in a nest lined with grass or other materials located in rocky bluffs, caves, rocky dens, hollow logs or dense thickets. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: EXTIRPATED. *8 (species), 14 (042512 - subsp. *sonoriensis* is the subspecies reported as occurring in Arizona), 42 (061912), 55 (species: recorded as *Felis pardalis* Linnaeus. Ocelot. Formerly southeastern Arizona as far north as Fort Verde; no recent records.), 100 (species, color photograph of species), 106 (042512 - includes a listing of subspecies), 118 (recorded as *Felis pardalis sonoriensis* Goldman - Distribution: Formerly southeastern Arizona as far north as Ft. Verde. Figure 104, Page 244), 148 (color presentation of species)*

***Lynx rufus* (Schreber, 1777): Bobcat**

SYNONYMY: *Felis rufus* Schreber, 1777. COMMON NAMES: Bailey Bobcat (*L.r. baileyi* Merriam, 1890 - Valid); Bailey's Lynx (*L.r. baileyi* Merriam, 1890 - Valid); Bobcat (*L.r. rufus* (Schreber, 1777) - Valid); Desert Bobcat (*L.r. baileyi* Merriam, 1890 - Valid); Gato Montes (Hispanic)¹⁴; Lince Americano (Spanish)⁴²; Lynx Roux (French)⁴²; Mexican Bobcat (*L.r. escuinapae* J.A. Allen, 1903 - Valid); Plateau Bobcat (*L.r. baileyi* Merriam, 1890 - Valid); Red Lynx; Wildcat. HABITS: Feeds on almost any meat source available including ground nesting birds, carrion, domestic cats, cottontail rabbits, deer, foxes, insects, jackrabbits, lizards, small mammals, opossums, porcupines, raccoons, reptiles, rodents, bighorn sheep, skunks and woodchucks. Shelter may be taken in a rock cleft, thickets or on the branches of trees. Young are born in dens located in rocky caves, rock shelters, recesses and protected areas with nests made of leaves and other dry plant material. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042512 - subsp. *baileyi* (Merriam), color presentation), 42 (061912), 55 (recorded as *Lynx rufus* (Schreber). Bobcat. Statewide (120 - 9,300 feet).), 65, 73, 100 (color photograph), 106 (042512 - includes a listing of subspecies, color presentation), 118 (recorded as *Lynx rufus baileyi* Merriam - Distribution: Statewide. Figure 106, Page 247), 148 (color presentation)*

***Lynx rufus* subsp. *baileyi* Merriam, 1890: Desert Bobcat**

COMMON NAMES: Bailey Bobcat; Bailey's Lynx; Bobcat; Desert Bobcat; Gato Montes (Hispanic)¹⁴; Plateau Bobcat; Wildcat. HABITS: Feeds on almost any meat source available including ground nesting birds, carrion, domestic cats, cottontail rabbits, deer, foxes, jackrabbits, lizards, small mammals, opossums, porcupines, raccoons, reptiles, rodents, bighorn sheep, skunks and woodchucks. Shelter may be taken in a rock cleft, thickets or on the branches of trees. Young are born in dens located in rocky caves, rock shelters, recesses and protected areas with nests made of leaves and other dry plant material. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042512 - subsp. *baileyi* (Merriam), color presentation), 42 (061912), 55 (species: recorded as *Lynx rufus* (Schreber). Bobcat. Statewide (120 - 9,300 feet).), 65, 73 (species), 100 (species, color photograph of species), 106 (042512 - species, includes a listing of subspecies, color presentation), 118 (recorded as *Lynx rufus baileyi* Merriam - Distribution: Statewide. Figure 106, Page 247), 148 (color presentation)*

***Panthera onca* (Linnaeus, 1758): Jaguar**

SYNONYMY: *Felis onca* Linnaeus, 1758. COMMON NAMES: Amazonian Jaguar (*P.o. onca* (Linnaeus, 1758) - Valid); Arizona Jaguar (*P.o. arizonensis* (Goldman, 1932) - Valid); American Leopard; Black Panther; Blank Panther; Central American Jaguar (*P.o. centralis* (Mearns, 1901) - Valid); Goldman's Jaguar (*P.o. goldmani* (Mearns, 1901) - Valid); Hernandez's Jaguar (*P.o. hernandesii* (J.E. Gray, 1857) - Valid); Jaguar; Jaguar (Hispanic)¹⁴; Jaguar (Spanish)⁴²; Jaguarete (Spanish)⁸; Mexican Jaguar (*P.o. hernandesii* (J.E. Gray, 1857) - Valid); Mexican Tiger; Panther; Paraguayan Jaguar (*P.o. paraguensis* (Hollister, 1914) - Valid); Parana Jaguar (*P.o. palustris* (Ameghino, 1888) - Valid); Peruvian Jaguar (*P.o. peruviana* (de Blainville, 1843) - Valid); Tigre^{65,145}; Veracruz Jaguar (*P.o. veraeacrusis* (Nelson and Goldman, 1933) - Valid); West Mexican Jaguar (*P.o. hernandesii* (J.E. Gray, 1857) - Valid); Yaguar⁸; Yukatan Jaguar (*P.o. goldmani* (Mearns, 1901) - Valid). HABITS: Feeds on armadillos, birds, caiman, capybaras, deer, fish, frogs, livestock, pacas, peccaries (javelina), mice, rabbits, tapirs, turtles and other vertebrates. Young are born in dens located in caves, rocky areas, dense brush and thickets. HABITAT: Within the

range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: EXTIRPATED from Arizona. *8, 14 (042512 - subsp. *arizonensis* (Goldman)), 42 (061912), 55 (recorded as *Felis onca* Linnaeus. Jaguar. Probably formerly rare throughout the state. Today an occasional individual is found in the southern part of the state.), 65, 100 (color photograph), 106 (042512 - includes a listing of subspecies, color presentation), 118 (recorded as *Felis onca arizonensis* Goldman - Distribution: Probably formerly rare throughout the state. Today an occasional individual found in the southern part of the state. Figure 104, Page 244), 148 (color presentation)*

***Panthera onca* subsp. *arizonensis* (Goldman, 1932): Arizona Jaguar**

COMMON NAMES: Arizona Jaguar; Jaguar; Jaguar (Hispanic)¹⁴; Jaguar (Spanish)⁴². HABITS: Feeds on armadillos, birds, caiman, capybaras, deer, fish, frogs, livestock, pacas, peccaries (javelina), mice, rabbits, tapirs, turtles and other vertebrates. Young are born in dens located in caves, rocky areas, dense brush and thickets. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: EXTIRPATED from Arizona. *8, 14 (042512 - subsp. *arizonensis* Goldman), 42 (061912), 55 (species, recorded as *Felis onca* Linnaeus. Jaguar. Probably formerly rare throughout the state. Today an occasional individual is found in the southern part of the state.), 65 (species), 100 (species, color photograph of species), 106 (042512 - species, includes a listing of subspecies, color presentation), 118 (recorded as *Felis onca arizonensis* Goldman - Distribution: Probably formerly rare throughout the state. Today an occasional individual found in the southern part of the state. Figure 104, Page 244), 148 (color presentation)*

***Puma concolor* (Linnaeus, 1771): Cougar**

SYNONYMY: *Felis concolor* Linnaeus, 1771. COMMON NAMES: Adirondack Cougar (*P.c. cougar* (Kerr, 1792) - Valid); Amazon Cougar (*P.c. discolor* (Schreber, 1777) - Invalid?; *P.c. puma* Molina, 1782 - Valid); American Lion; Andes Puma (*P.c. araucanus* (Osgood, 1943) - Invalid?; *P.c. puma* Molina, 1782 - Valid?); Argentine Puma (*P.c. cabreræ* Pocock, 1940 - Valid); Anthony's Puma (*P.c. anthonyi* (Nelson and Goldman, 1931) - Valid); Baja California Cougar (*P.c. improcera* (Phillips, 1912) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Bolivian Cougar (*P.c. osgoodi* (Nelson and Goldman, 1943) - Invalid?; *P.c. concolor* (Linnaeus, 1771) - Valid?); Brazilian Cougar (*P.c. concolor* (Linnaeus, 1771) - Valid); Brown Tiger; California Cougar (*P.c. californica* (May, 1896) - Invalid?; *P.c. cougar* (Kerr, 1792) - Valid?); California Lion; California Mountain Lion (*P.c. californica* (May, 1896) - Invalid?; *P.c. cougar* (Kerr, 1792) - Valid?); Cat-a-Mountain; Catamount; Catamount Cat (a mountain Red Tiger); Central American Puma (*P.c. costaricensis* (Merriam, 1901) - Valid); Chilean Puma (*P.c. puma* (Molina, 1782) - Valid); Columbian Cougar (*P.c. bangsi* (Merriam, 1901) - Invalid?; *P.c. concolor* (Linnaeus, 1771) - Valid?); Costa Rican Puma (*P.c. costaricensis* (Merriam, 1901) - Valid); Cougar; Deer Tiger; Eastern Cougar (*P.c. cougar* (Kerr, 1792) - Valid); Eastern Puma (*P.c. cougar* (Kerr, 1792) - Valid); Eastern South American Cougar (*P.c. capricornensis* (Merriam, 1901) - Invalid?; *P.c. anthonyi* (Nelson and Goldman, 1931) - Valid?); El Leon (Mexico); Ecuador Cougar (*P.c. soderstromii* (Lönnberg, 1913) - Invalid?; *P.c. concolor* (Linnaeus, 1771) - Valid?); Florida Cougar (*P.c. coryi* (Bangs, 1899) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Florida Panther (*P.c. coryi* (Bangs, 1899) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Ghost Cat; Indian Devil; Green's Puma (*P.c. greeni* (Nelson and Goldman, 1931) - Invalid?; *P.c. concolor* (Linnaeus, 1771) - Valid?); Hudson's Puma (*P.c. hudsoni* (Cabrera, 1958) - Invalid?; *P.c. cabreræ* Pocock, 1940 - Valid?); Incan Cougar (*P.c. incanum* (Nelson and Goldman, 1929) - Invalid?; *P.c. concolor* (Linnaeus, 1771) - Valid?); Kaibab Cougar (*P.c. kaibabensis* (Nelson and Goldman, 1931) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); King Cat; Leon de Montana (Hispanic); Louisiana Cougar (*P.c. arundivaga* (Hollister, 1911) - Invalid?; *P.c. cougar* (Kerr, 1792) - Valid?); Mato Grosso Cougar (*P.c. acrocodia* (Goldman, 1943) - Invalid?; *P.c. anthonyi* (Nelson and Goldman, 1931) - Valid?); Mayan Cougar (*P.c. mayensis* (Nelson and Goldman, 1929) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Mexican Cougar (*P.c. azteca* (Merriam, 1901) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Mexican Lion; Missoula Cougar (*P.c. missouleensis* (Goldman, 1943) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Mountain Lion (*P.c. concolor* (Linnaeus, 1771) - Valid); Mountain Screamer; North American Cougar (*P.c. cougar* (Kerr, 1792) - Valid); Northern South American Cougar (*P.c. concolor* (Linnaeus, 1771) - Valid); Northwestern Cougar (*P.c. oregonensis* (Rafinesque, 1832) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Olympic Mountains Cougar (*P.c. olympus* (Merriam, 1897) - Invalid?; *P.c. cougar* (Kerr, 1792) - Valid?); Oregon Cougar (*P.c. oregonensis* (Rafinesque, 1832) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Painted Cat; Painter; Panther; Patagonia Cougar (*P.c. patagonica* (Merriam, 1901) - Invalid?; *P.c. puma* Molina, 1782 - Valid?); Pearson's Puma (*P.c. pearsoni* (Thomas, 1901) - Invalid?; *P.c. puma* Molina, 1782 - Valid?); Puma; Puma (*P.c. concolor* (Linnaeus, 1771) - Valid); Puma (Spanish)⁴²; Red Tiger (Belize); Rocky Mountain Cougar (*P.c. hippolestes* (Merriam, 1897) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Silver Lion; Sneak Cat; Southern South American Cougar (*P.c. puma* Molina, 1782 - Valid); Texas Mountain Lion (*P.c. stanleyana* (Goldman, 1938) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Vancouver Island Cougar (*P.c. vancouverensis* (Nelson and Goldman, 1932) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Wisconsin Cougar (*P.c. schorgeri* (Jackson, 1955) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Yuma Cougar (*P.c. browni* (Merriam, 1903) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Yuma Mountain Lion (*P.c. browni* (Merriam, 1903) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid); Yuma Puma (*P.c. browni* (Merriam, 1903) - Invalid; *P.c. cougar* (Kerr, 1792) - Valid). HABITS: Feeds on beavers, bighorn sheep, birds, black bears, bobcats, cottontail rabbits, coyotes, deer (its major prey species in Arizona), elk, jackrabbits, javelina, livestock, porcupines, pronghorns, raccoons, skunks and small mammals. Kittens are born in dens located in protected areas such as shallow caves, crevices, downed logs, rock shelters and impenetrable thickets. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Running should be curtailed in areas where Mountain Lions are known to frequent, a person running may elicit an attack response from a nearby Mountain Lion. Mountain Lions are extremely agile and have great jumping power and have been reported as being able to leap to a height

of 18 feet into a tree. *8 (*Puma concolor* (Linnaeus)), 14 (042512 - subsp. *azteca* (Merriam); subsp. *kaibabensis* (Nelson and Goldman); subsp. *stanleyana* (Goldman), color presentation. The Yuma Mountain Lion (*Felis concolor browni*) is included as a separate record.), 42 (062012), 55 (recorded as *Felis concolor* Linnaeus. Mountain Lion. Statewide (200 - 8,000 feet).), 65, 73, 100 (color photograph), 106 (062012 - includes a listing of subspecies, color presentation. Taken from the "Cougar" page: As with many predators, a cougar may attack if cornered, if a fleeing human stimulates their instinct to chase, or if a person "plays dead". Standing still however may cause the cougar to consider a person easy prey.^[109] Exaggerating the threat to the animal through intense eye contact, loud but calm shouting, and any other action to appear larger and more menacing, may make the animal retreat. Fighting back with sticks and rocks, or even bare hands, is often effective in persuading an attacking cougar to disengage.^{[5][73]} ... Preceding attacks on humans, cougars display aberrant behavior, such as activity during daylight hours, a lack of fear of humans, and stalking humans.^[110]), 118 (recorded as *Felis concolor azteca* Merriam - Distribution: Statewide except extreme western and northwestern parts; *Felis concolor browni* (Merriam) - Distribution: Southwestern part of the state, and *Felis concolor kaibabensis* Nelson and Goldman - Distribution: Northwestern Arizona, north and west of the Colorado River. Figure 105, Page 245), 145, 148 (color presentation)*

Puma concolor subsp. *azteca* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *browni* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *coryi* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *cougar* (see *Puma concolor* subsp. *couguar*)

***Puma concolor* subsp. *couguar* (Kerr, 1792): North American Cougar**

SYNONYMY: *Felis concolor* subsp. *azteca* Merriam, 1901; *Felis concolor* subsp. *browni* Merriam, 1903; *P.c.* subsp. *azteca* (Merriam, 1901); *P.c.* subsp. *browni* (Merriam, 1903); *P.c. coryi* (Bangs, 1899); *P.c. cougar* (Kerr, 1792); *P.c. hipolestes* (Merriam, 1897); *P.c. improcera* (Phillips, 1912); *P.c. kaibabensis* (Nelson and Goldman, 1931); *P.c. mayensis* (Nelson and Goldman, 1929); *P.c. missoulensis* (Goldman, 1943); *P.c. oregonensis* (Rafinesque, 1832); *P.c. schorgeri* (Jackson, 1955); *P.c. stanleyana* (Goldman, 1938); *P.c. vancouverensis* (Nelson and Goldman, 1932). COMMON NAMES: Adirondack Cougar; American Lion; Baja California Cougar; Brown Tiger; California Lion; Cat-a-Mountain; Catamount; Catamount Cat (a mountain Red Tiger); Cougar; Deer Tiger; Eastern Cougar; Eastern Puma; El Leon (Mexico); Florida Cougar; Florida Panther; Ghost Cat; Indian Devil; Kaibab Cougar; King Cat; Leon de Montana (Hispanic); Mayan Cougar; Mexican Cougar; Mexican Lion; Missoula Cougar; Mountain Lion; Mountain Screamer; North American Cougar; Northwestern Cougar; Oregon Cougar; Painted Cat; Painter; Panther; Puma; Rocky Mountain Cougar; Silver Lion; Sneak Cat; Texas Mountain Lion (*P.c. couguar* (Kerr, 1792)); Vancouver Island Cougar; Wisconsin Cougar; Yuma Cougar; Yuma Mountain Lion; Yuma Puma. HABITS: Feeds on beavers, bighorn sheep, birds, black bears, bobcats, cottontail rabbits, coyotes, deer (its major prey species in Arizona), elk, jackrabbits, javelina, livestock, porcupines, pronghorn, raccoons, skunks and small mammals. Kittens are born in dens located in protected areas such as shallow caves, crevices, downed logs, rock shelters and impenetrable thickets. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: Running should be curtailed in areas where Mountain Lions are known to frequent, a person running may elicit an attack response from a nearby Mountain Lion. Mountain Lions are extremely agile and have great jumping power and have been reported as being able to leap to a height of 18 feet into a tree. *8 (*Puma concolor* (Linnaeus)), 14 (042512 - subsp. *azteca* (Merriam); subsp. *kaibabensis* (Nelson and Goldman); subsp. *stanleyana* (Goldman), color presentation. The Yuma Mountain Lion (*Felis concolor browni*) is included as a separate record.), 42 (062012), 55 (species: recorded as *Felis concolor* Linnaeus. Mountain Lion. Statewide (200 - 8,000 feet).), 65 (species), 73 (species), 85 (052906 - species), 100 (color photograph of species, species record), 106 (062012 - species, includes a listing of subspecies, color presentation of species. Taken from the "Cougar" page: As with many predators, a cougar may attack if cornered, if a fleeing human stimulates their instinct to chase, or if a person "plays dead". Standing still however may cause the cougar to consider a person easy prey.^[109] Exaggerating the threat to the animal through intense eye contact, loud but calm shouting, and any other action to appear larger and more menacing, may make the animal retreat. Fighting back with sticks and rocks, or even bare hands, is often effective in persuading an attacking cougar to disengage.^{[5][73]} ... Preceding attacks on humans, cougars display aberrant behavior, such as activity during daylight hours, a lack of fear of humans, and stalking humans.^[110]), 118 (recorded as *Felis concolor azteca* Merriam - Distribution: Statewide except extreme western and northwestern parts. Figure 105, Page 245 and *Felis concolor browni* (Merriam) - Distribution: Southwestern part of the state. Figure 105, Page 245), 145, 148 (color presentation)*

Puma concolor subsp. *hipolestes* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *improcera* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *kaibabensis* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *mayensis* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *missoulensis* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *oregonensis* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *schorgeri* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *stanleyana* (see *Puma concolor* subsp. *couguar*)

Puma concolor subsp. *vancouverensis* (see *Puma concolor* subsp. *couguar*)

***Puma yagouaroundi* (É. Geoffroy Saint-Hilaire, 1803): Jaguarundi**

SYNONYMY: *Felis yaguarondi* Lacépède, 1809; *Herpailurus yaguarondi* (Lacépède, 1809). COMMON NAMES: Eyra (a name given to the red phase)¹⁰⁶; Gato Colorado (Spanish)¹⁰⁶; Gato Moro (Spanish)¹⁰⁶; Geoffroy's Jaguarundi (*P.y. yagouaroundi* (E. Geoffroy Saint-Hilaire, 1803) - Valid); Guatemalan Jaguarundi (*P.y. fossata* (Mearns, 1901) - Valid); Gulf Coast Jaguarundi (*P.y. cacomitli* (Berlandier, 1859) - Valid); Jaguarundi (a name given to the gray phase, Spanish)¹⁰⁶; Jaguarundi Cat; Panamanian Jaguarundi (*P.y. panamensis* (J.A. Allen, 1904) - Valid); León Brenero (Spanish)¹⁰⁶; Leoncillo ("Little Lion", Spanish)¹⁰⁶; Onza (Spanish)¹⁰⁶; Sinaloan Jaguarundi (*P.y. tolteca* (Thomas, 1898) - Valid); Tigrillo (Spanish)¹⁰⁶. HABITS: Feeds on birds, fish, fruits, small to medium-size mammals, and reptiles. Dens are located in brush, thickets and under downed trees. HABITAT: Within the range of this species it has been reported from woodland, scrub, grassland, desertscrub and wetland ecological formations. *8 (*Herpailurus yaguarondi tolteca*), 14 (042512 - *Herpailurus yaguarondi* subsp. *tolteca* (AZ), 42 (062112), **55** (recorded as *Felis yaguarondi* Fischer. Jaguarundi. Rare in the southern part of the state; no recent records.), 100 (color photograph), 106 (042512 - includes a listing of subspecies, color presentation), **118** (recorded as *Felis yaguarondi cacomitli* Berlandier - Distribution: Rare in southern part of the state. Pages 246-247), 148 (recorded as *Herpailurus yaguarondi*, color presentation)*

Geomyidae: The Pocket Gopher Family

***Thomomys bottae* (Eydoux & Gervais, 1836): Botta's Pocket Gopher**

COMMON NAMES: Bailey's Pocket Gopher (*T.b. lachuguilla* Bailey, 1902 - Invalid?); Botta's Pocket Gopher; Cebolleta Pocket Gopher (*T.b. paguatae* - Invalid?); Cervine Pocket Gopher (*T.b. cervinus* J.A. Allen, 1895 - Invalid?); Desert Pocket Gopher (*T.b. desertorum* Merriam, 1901 - Invalid?); Espanola Pocket Gopher (*T.b. pervagus* Merriam, 1901 - Invalid?); Faw-colored Pocket Gopher (*T.b. cervinus* J.A. Allen, 1895 - Invalid?); Fulvous Pocket Gopher (*T.b. fulvus* Woodhouse, 1852 - Invalid?); Golden Pocket Gopher (*T.b. aureus* J.A. Allen, 1893 - Invalid?); Graham Mountains Pocket Gopher (*T.b. grahamensis* Goldman, 1931 - Invalid?); Guadalupe Pocket Gopher (*T.b. guadalupensis* Goldman, 1936 - Invalid?); Guadalupe Southern Pocket Gopher (*T.b. guadalupensis* Goldman, 1936 - Invalid?); Harquahala Pocket Gopher (*T.b. subsimilis* Goldman, 1933 - Invalid?); Harquahala Southern Pocket Gopher (*T.b. subsimilis* Goldman, 1933 - Invalid?); Hualapai Pocket Gopher (*T.b. hualpaiensis* Goldman, 1936 - Invalid?); Juarez Pocket Gopher (*T.b. toltecus* J.A. Allen, 1893 - Invalid?); Lachuguilla Pocket Gopher (*T.b. lachuguilla* Bailey, 1902 - Invalid?); Mearns' Pocket Gopher (*T.b. mearnsi* Baily, 1914 - Invalid?); Mearns' Southern Pocket Gopher (*T.b. mearnsi* Baily, 1914 - Invalid?); Phoenix Pocket Gopher (*T.b. cervinus* J.A. Allen, 1895 - Invalid?); Pinal Mountains Pocket Gopher (*T.b. pinalensis* Goldman, 1938 - Invalid?); Prospect Valley Pocket Gopher (*T.b. muralis* Goldman, 1936 - Invalid?); Reddish Brown Pocket Gopher (*T.b. fulvus* Woodhouse, 1852 - Invalid?); Roaming Pocket Gopher (*T.b. pervagus* Merriam, 1901 - Invalid?); Ruidosa Pocket Gopher (*T.b. ruidosae* Hall, 1932 - Invalid?); Santa Catalina Southern Pocket Gopher (*T.b. catalinae* Goldman, 1931 - Invalid?); Searchlight Pocket Gopher (*T.b. suboles* Goldman, 1928 - Invalid?); Southwestern Pocket Gopher; Toltec Pocket Gopher (*T.b. toltecus* J.A. Allen, 1893 - Invalid?); Tularosa Pocket Gopher (*T.b. tularosae* Hall, 1932 - Invalid?); Tuza de Botta (Hispanic)¹⁴; Tuza de Botta (Spanish)⁴²; Valley Pocket Gopher; White Pocket gopher (*T.b. albatus* Grinnell, 1912 - Invalid?); Yellow Pocket Gopher (*T.b. aureus* J.A. Allen, 1893 - Invalid?). HABITS: Feeds on bulbs, grasses, herbaceous plants, roots and tubers. Young are born in nests in underground burrows. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042612 - subsp. *actuosus*; subsp. *albatus*; subsp. *alexandrae*; subsp. *alienus*; subsp. *aureus*; subsp. *catalinae*; subsp. *cervinus*; subsp. *collis*; subsp. *connectens*; subsp. *cultellus*; subsp. *desertorum*; subsp. *fulvus*; subsp. *grahamensis*; subsp. *guadalupensis*; subsp. *hualpaiensis*; subsp. *lachuguilla*; subsp. *mearnsi*; subsp. *modicus*; subsp. *morulus*; subsp. *muralis*; subsp. *opulentus*; subsp. *paguatae*; subsp. *pectoralis*; subsp. *peramplus*; subsp. *pervagus*; subsp. *pinalensis*; subsp. *planirostris*; subsp. *planorum*; subsp. *pusillus*; subsp. *rufidulus*; subsp. *ruidosae*; subsp. *suboles*; subsp. *subsimilis*; *toltecus*; subsp. *tularosae*), 42 (062112), **55** (recorded as *Thomomys bottae* (Eydoux and Gervais). Valley Pocket Gopher. Widely distributed throughout the state at all elevations.), 65, 73, 100 (color photograph), 106 (042612 - color presentation), 118 (Distribution: mapping and records show numerous varieties throughout Arizona, only those shown as occurring in Pima County are listed here. *Thomomys bottae catalinae* Goldman - Distribution: Known only from the higher elevations of the Santa Catalina Mountains, Pima County. *Thomomys bottae comobabiensis* Huey - Distribution: Slopes of Comobabi Mountains, Pima County. *Thomomys bottae growlerensis* Huey - Distribution: Known from southwestern Pima County. *Thomomys bottae hueyi* Goldman - Distribution: Known only from the higher elevations in the Rincon Mountains, Pima County. *Thomomys bottae modicus* Goldman - Distribution: Known from the Santa Cruz and Altar Valleys. *Thomomys bottae phasma* Goldman - Distribution:

Known from southeastern Yuma County. *Thomomys bottae proximus* Burt & Campbell - Distribution: Oak Zone of the Santa Rita and Huachuca Mountains. *Thomomys bottae pusillus* Goldman - Distribution: Known only from the region of the type locality [Coyote Mountains, 3,000 feet, Pima County, Arizona]. Figure 46, Page 107), 148 (color presentation)*

***Thomomys bottae* subsp. *modicus* Goldman, 1931 - Invalid?: Botta's Pocket Gopher**

COMMON NAMES: Botta's Pocket Gopher; Southwestern Pocket Gopher; Tuza de Botta (Hispanic)¹⁴; Valley Pocket Gopher. HABITS: The species feeds on bulbs, grasses, herbaceous plants, roots and tubers. Young are born in nests in underground burrows. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042612 - subsp. *actuusus*; subsp. *albatus*; subsp. *alexandrae*; subsp. *alienus*; subsp. *aureus*; subsp. *catalinae*; subsp. *cervinus*; subsp. *collis*; subsp. *connectens*; subsp. *cultellus*; subsp. *desertorum*; subsp. *fulvus*; subsp. *grahamensis*; subsp. *guadalupensis*; subsp. *hualpaiensis*; subsp. *lachuguilla*; subsp. *mearnsi*; subsp. *modicus*; subsp. *morulus*; subsp. *muralis*; subsp. *opulentus*; subsp. *paguatae*; subsp. *pectoralis*; subsp. *peramplus*; subsp. *pervagus*; subsp. *pinalensis*; subsp. *planirostris*; subsp. *planorum*; subsp. *pusillus*; subsp. *rufidulus*; subsp. *ruidosae*; subsp. *suboles*; subsp. *subsimitus*; subsp. *toltecus*; subsp. *tularosae*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Thomomys bottae* (Eydoux and Gervais). Valley Pocket Gopher. Widely distributed throughout the state at all elevations.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (042612 - species, color presentation of species), 118 (recorded as *Thomomys bottae modicus* Goldman - Distribution: Known from the Santa Cruz and Altar Valleys. Figure 46, Page 107), 148 (color presentation of species)*

Heteromyidae: The Kangaroo Rat and Pocket Mouse Family

***Chaetodipus baileyi* (Merriam, 1894): Bailey's Pocket Mouse**

SYNONYMY: *Perognathus baileyi* Merriam, 1894. COMMON NAMES: Bailey Pocket Mouse; Bailey's Pocket Mouse; Raton de Bailey (Hispanic)¹⁴; Ratón-de Abazones Sonorense (Spanish)⁴². HABITS: The species feeds on vegetation, and fruits and seeds of cacti, grasses and other herbs. Nests are located underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, and desertscrub ecological formations. *14 (042612 - subsp. *baileyi* (Merriam)), 42 (062112), 55 (recorded as *Perognathus baileyi* Merriam. Bailey's Pocket Mouse. Widely distributed in the southern part of the state (900 - 4,700 feet).), 65 (genus), 73, 100 (color photograph), 106 (042612 - color presentation), 118 (recorded as *Chaetodipus baileyi baileyi* Merriam - Distribution: Grasslands of southeastern Arizona. Figure 51, Page 133), 148 (color presentation)*

***Chaetodipus baileyi* subsp. *baileyi* (Merriam, 1894) - Invalid?: Bailey's Pocket Mouse**

SYNONYMY: *Perognathus baileyi* subsp. *baileyi* Merriam, 1894 - Invalid?. COMMON NAMES: Bailey Pocket Mouse; Bailey's Pocket Mouse; Bailey's Pocket Mouse; Raton de Bailey (Hispanic)¹⁴. HABITS: The species feeds on vegetation, and fruits and seeds of cacti, grasses and other herbs. Nests are located underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, and desertscrub ecological formations. *14 (042612 - subsp. *baileyi* (Merriam), 42 (062112 - no subspecies listed), 55 (species: recorded as *Perognathus baileyi* Merriam. Bailey's Pocket Mouse. Widely distributed in the southern part of the state (900 - 4,700 feet).), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (042612 - species, color presentation of species), 118 (recorded as *Chaetodipus baileyi baileyi* Merriam - Distribution: Grasslands of southeastern Arizona. Figure 51, Page 133), 148 (color presentation of species)*

***Chaetodipus hispidus* (Baird, 1858): Hispid Pocket Mouse**

SYNONYMY: *Perognathus hispidus* Baird, 1858. COMMON NAME: Hispid Pocket Mouse; Ratón-de Abazones Crespo (Spanish)⁴². HABITS: Feeds on insects (grasshoppers), leaves and seeds. Nests are constructed of grasses and located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042612 - subsp. *hispidus*; subsp. *conditi*), 42 (062112), 55 (recorded as *Perognathus hispidus* Baird. Hispid Pocket Mouse. Locally common in grasslands of southeastern part of the state; an isolated population occurs near Camp Verde (3,200 - 5,000 feet).), 65 (genus), 73, 100, 106 (042612 - includes a listing of subspecies), 118 (recorded as *Perognathus hispidus conditi* Allen - Distribution: Grasslands of southeastern Arizona. Figure 51, Page 132), 148 (color presentation)*

***Chaetodipus hispidus* subsp. *conditi* (J.A. Allen, 1894) - Invalid?: Hispid Pocket Mouse**

SYNONYMY: *Perognathus hispidus* subsp. *conditi* J.A. Allen, 1894 - Invalid?. COMMON NAME: Hispid Pocket Mouse. HABITS: The species feeds on insects (grasshoppers), leaves and seeds. Nests are constructed of grasses and located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042612 - subsp. *hispidus*; subsp. *conditi*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Perognathus hispidus* Baird. Hispid Pocket Mouse. Locally common in grasslands of southeastern part of the state; an isolated population occurs near Camp Verde (3,200 - 5,000 feet).), 65 (genus), 73 (species), 100 (species), 106 (042612 - species, includes a listing of subspecies), 118 (recorded as *Perognathus hispidus conditi* Allen - Distribution: Grasslands of southeastern Arizona. Figure 51, Page 132), 148 (color presentation of species)*

***Chaetodipus intermedius* (Merriam, 1889): Rock Pocket Mouse**

SYNONYMY: *Perognathus intermedius* Merriam, 1889. COMMON NAMES: Black Mountain Pocket Mouse (*C.i. nigrimontis* Blossom, 1933 - Invalid?); Gila Pocket Mouse (*C.i. phasma* Goldman, 1918 - Invalid?); Intermediate Pocket Mouse (*C.i. intermedius* Merriam, 1889 - Invalid?); Raton de Rocas de Bosla (Hispanic)¹⁴; Ratón-de Abazones de Roca (Spanish)⁴²; Rock Pocket Mouse. HABITS: Feeds on seeds. Burrows are dug in soil near to or under rocks. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042612 - subsp. *atar* Dice; *beardi*; subsp. *crititus*; subsp. *intermedius*; subsp. *nigrimontis*; subsp. *phasma*; subsp. *rupestris* Benson; subsp. *umbrosus*), 42 (062112), 55 (recorded as *Perognathus intermedius* Merriam. Rock Pocket Mouse. Widely distributed in rocky areas in the Colorado River valley, western and southern Arizona (120 - 6,000 feet.), 65 (genus), 73 (*Perognathus intermedius*), 100, 106 (042612), 118 (recorded as *Chaetodipus intermedius crinitis* Benson - Distribution: Known from south of the upper Colorado River. *Chaetodipus intermedius intermedius* Merriam - Distribution: Known from Mohave County southward and eastward, across most of the state to Cochise County. *Chaetodipus intermedius nigrimontis* Blossom - Distribution: Known only from the vicinity of the type locality (Black Mountain, 10 mi SW Tucson). *Chaetodipus intermedius phasma* Goldman - Distribution: Known from southern Yuma County and extreme southwestern Pima County. *Chaetodipus intermedius pinicate* Blossum - Distribution: Known from the Pinicate lava area in southern Yuma County. *Chaetodipus intermedius umbrosus* Benson - Distribution: Known from grassland area just south of the Mogollon Rim. Figure 54, Page 141), 148 (color presentation)*

***Chaetodipus intermedius* subsp. *intermedius* (Merriam, 1889) - Invalid?: Intermediate Pocket Mouse**

SYNONYMY: *Perognathus intermedius* subsp. *intermedius* Merriam, 1889 - Invalid?. COMMON NAMES: Intermediate Pocket mouse; Raton de Rocas de Bosla (Hispanic)¹⁴; Rock Pocket Mouse. HABITS: The species feeds on seeds. Burrows are dug in soil near to or under rocks. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042612 - subsp. *atar* Dice; *beardi*; subsp. *crititus*; subsp. *intermedius*; subsp. *nigrimontis*; subsp. *phasma*; subsp. *rupestris* Benson; subsp. *umbrosus*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Perognathus intermedius* Merriam. Rock Pocket Mouse. Widely distributed in rocky areas in the Colorado River valley, western and southern Arizona (120 - 6,000 feet.), 65 (genus), 73 (species, recorded as *Perognathus intermedius*), 100 (species), 106 (042612 - species), 118 (recorded as *Chaetodipus intermedius intermedius* Merriam - Distribution: Known from Mohave County southward and eastward, across most of the state to Cochise County. Figure 54, Page 141), 148 (color presentation of species)*

***Chaetodipus penicillatus* (Woodhouse, 1852): Desert Pocket Mouse**

SYNONYMY: *Perognathus penicillatus* Woodhouse, 1852. COMMON NAMES: Desert Pocket Mouse; Price Pocket Mouse (*C.p. pricei* (J.A. Allen, 1894) - Invalid?); Raton del Desierto (Hispanic)¹⁴; Ratón-de abazones Desértico (Spanish)⁴²; Sonoran Desert Pocket Mouse. HABITS: Feeds on insects, green vegetation and seeds (of broomweed, creosote bush, grasses, greythorn, herbs and mesquite). Nests are made in underground burrows. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *14 (042712 - subsp. *pricei* (J.A. Allen)), 42 (062112), 55 (recorded as *Perognathus penicillatus* Woodhouse. Desert Pocket Mouse. Widely distributed in desert and low grasslands of southern and western Arizona (120 - 5,200 feet.), 65 (genus), 73 (recorded as *Perognathus penicillatus*), 100 (color photograph), 106 (061412 - color presentation), 118 (recorded as *Perognathus penicillatus angustirostris* Osgood - Distribution: Known from southern Yuma County. *Perognathus penicillatus eremicus* Mearns - Distribution: Known from extreme southeastern Arizona. *Perognathus penicillatus penicillatus* Woodhouse - Distribution: Known from southern Mohave and northern Yuma Counties. *Perognathus penicillatus pricei* Allen - Distribution: Known from south-central Arizona and *Perognathus penicillatus sobrinus* Goldman - Distribution: Perhaps occurs in extreme northwestern Arizona. Figure 53, Page 137), 148 (color presentation)*

***Chaetodipus penicillatus* subsp. *pricei* (J.A. Allen, 1894) - Invalid?: Price Pocket Mouse**

SYNONYMY: *Perognathus penicillatus* subsp. *pricei* J.A. Allen, 1894 - Invalid?. COMMON NAMES: Desert Pocket Mouse; Price Pocket Mouse; Raton del Desierto (Hispanic)¹⁴; Sonoran Desert Pocket Mouse. HABITS: The species feeds on insects, green vegetation and seeds (of broomweed, creosote bush, grasses, greythorn, herbs and mesquite). Nests are made in underground burrows. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *14 (042712 - subsp. *pricei* (J.A. Allen)), 42 (062112 - no subspecies listed), 55 (species: recorded as *Perognathus penicillatus* Woodhouse. Desert Pocket Mouse. Widely distributed in desert and low grasslands of southern and western Arizona (120 - 5,200 feet.), 65 (genus), 73 (species, recorded as *Perognathus penicillatus*), 100 (species, color photograph of species), 106 (061412 - species, color presentation of species), 118 (recorded as *Perognathus penicillatus pricei* Allen - Distribution: Known from south-central Arizona. Figure 53, Page 137), 148 (color presentation of species)*

***Dipodomys merriami* Mearns, 1890: Merriam's Kangaroo Rat**

COMMON NAMES: Merriam Kangaroo Rat; Merriam's Kangaroo Rat; Rata de Nopalera Merriam (Hispanic)¹⁴; Rata-canguro de Merriam (Spanish)⁴². HABITS: Feeds on ants, green plant material and seeds (of creosote bush, grama grass, mesquite, ocotillo and purselane). Nests are made in underground burrows often located under bushes. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations.

*14 (042712 - subsp. *ambiguus* (Merriam); subsp. *olivaceus* (Swarth), color presentation), 42 (062112), 55 (recorded as *Dipodomys merriami* Mearns. Merriam's Kangaroo Rat. Widely distributed in western and southern parts of the state (120 - 5,000 feet.), 65 (color photograph), 73, 100 (color photograph), 106 (061412 - includes a listing of subspecies, color presentation), 118 (recorded as *Dipodomys merriami merriami* Mearns - Distribution: Occurs throughout most of the western and southern part of the state. *Dipodomys merriami regillus* Goldman - Distribution: Known from extreme southern Yuma County and *Dipodomys merriami vulcani* Benson - Distribution: Known from northern Arizona north of the Colorado River. Figure 56, Page 145), 148 (color presentation)*

***Dipodomys merriami* subsp. *merriami* Mearns, 1890: Merriam's Kangaroo Rat**

COMMON NAMES: Merriam Kangaroo Rat; Merriam's Kangaroo Rat; Rata de Nopalera Merriam (Hispanic)¹⁴; Rata-canguero de Merriam (Spanish)⁴². HABITS: The species feeds on ants, green plant material and seeds (of creosote bush, grama grass, mesquite, ocotillo and purselane). Nests are made in underground burrows often located under bushes. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042712 - subsp. *ambiguus* (Merriam); subsp. *olivaceus* (Swarth), color presentation of species), 42 (062112), 55 (species: recorded as *Dipodomys merriami* Mearns. Merriam's Kangaroo Rat. Widely distributed in western and southern parts of the state (120 - 5,000 feet.), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (061412 - includes a listing of subspecies, color presentation of species), 118 (recorded as *Dipodomys merriami merriami* Mearns - Distribution: Occurs throughout most of the western and southern part of the state. Figure 56, Page 145), 148 (color presentation)*

***Dipodomys ordii* Woodhouse, 1853: Ord's Kangaroo Rat**

COMMON NAMES: Five-toed Kangaroo Rat; Long-footed Kangaroo Rat (*D.o. longipes* Merriam, 1890 - Invalid?); Mountain Kangaroo Rat (*D.o. montanus* Baird, 1855 - Invalid?); Ord's Kangaroo Rat (*D.o. ordii* Woodhouse, 1853 - Invalid?); Painted Desert Kangaroo Rat (*D.o. longipes* Merriam, 1890 - Invalid?); Rata de Nopalera Ord (Hispanic)¹⁴; Rata-canguero Común (Spanish)⁴²; Richardson's Kangaroo Rat (*D.o. richardsoni* J.A. Allen, 1891 - Invalid?). HABITS: Feeds on fruits, subterranean fungi, insects (grasshoppers and moths), leaves, mosses, needles and seeds. The nest is made in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - subsp. *longipes* (Merriam); subsp. *medius* (Setzer); subsp. *montanus* (Baird); subsp. *ordii*; subsp. *richardsoni* (J.A. Allen)), 42 (062112), 55 (recorded as *Dipodomys ordii* Woodhouse. Ord's Kangaroo Rat. Widely distributed in grasslands in northern and eastern parts of the state (2,700-7,000 feet.), 85 (082608), 100 (color photograph), 106 (042812 - color presentation), 118 (recorded as *Dipodomys ordii ordii* Woodhouse - Distribution: Grasslands of southeastern Arizona. Figure 57, Page 149), 148 (color presentation)*

***Dipodomys ordii* subsp. *ordii* Woodhouse, 1853 - Invalid?: Ord's Kangaroo Rat**

COMMON NAMES: Five-toed Kangaroo Rat; Ord's Kangaroo Rat; Rata de Nopalera Ord (Hispanic)¹⁴. HABITS: The species feeds on fruits, subterranean fungi, insects (grasshoppers and moths), leaves, needles and seeds. The nest is made in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - subsp. *longipes* (Merriam); subsp. *medius* (Setzer); subsp. *montanus* (Baird); subsp. *ordii*; subsp. *richardsoni* (J.A. Allen)), 42 (062112 - no subspecies listed), 55 (species: recorded as *Dipodomys ordii* Woodhouse. Ord's Kangaroo Rat. Widely distributed in grasslands in northern and eastern parts of the state (2,700-7,000 feet.), 73 (species), 100 (species, color photograph), 106 (042812 - species, color presentation of species), 118 (recorded as *Dipodomys ordii ordii* Woodhouse - Distribution: Grasslands of southeastern Arizona. Figure 57, Page 149), 148 (color presentation of species)*

***Dipodomys spectabilis* Merriam, 1890: Banner-tailed Kangaroo Rat**

COMMON NAMES: Bailey Kangaroo Rat (*D.s. baileyi* Goldman, 1923 - Invalid?); Banner-tailed Kangaroo Rat; Kangaroo Rat; Large Kangaroo Rat (*D.s. spectabilis* Merriam, 1890 - Invalid?); Notable Kangaroo Rat; Rata de Nopalera (Hispanic)¹⁴; Rata-canguero Cola de Bandera (Spanish)⁴². HABITS: Feeds on grasses, forbs, succulent plants, insects, rodents and seeds. Nests are made up of chaff, stems and leaves of grass located in underground burrows in firm soils. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - subsp. *baileyi* (Goldman, 1923); subsp. *perblandus*; subsp. *spectabilis*), 42 (062112), 55 (recorded as *Dipodomys spectabilis* Merriam. Banner-tailed Kangaroo Rat. Locally common in grasslands of southeastern Arizona (1,300 - 5,000 feet.), 65 (color photograph), 85 (052906), 100 (color photograph), 106 (042812), 118 (recorded as *Dipodomys spectabilis perblandus* Goldman - Distribution: Known from the grasslands of southern Pinal and Pima County and *Dipodomys spectabilis spectabilis* Merriam - Distribution: Known from the grasslands of Cochise County. Figure 55, Page 143), 148 (color presentation)*

***Dipodomys spectabilis* subsp. *perblandus* Goldman, 1933 - Invalid?: Banner-tailed Kangaroo Rat**

COMMON NAMES: Banner-tailed Kangaroo Rat; Kangaroo Rat; Rata de Nopalera (Hispanic)¹⁴. HABITS: The species feeds on grasses, forbs, succulent plants, insects, rodents and seeds. Nests are made up of chaff, stems and leaves of grass located in underground burrows in firm soils. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - subsp. *baileyi* (Goldman, 1923);

subsp. *perblandus*; subsp. *spectabilis*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Dipodomys spectabilis* Merriam. Banner-tailed Kangaroo Rat. Locally common in grasslands of southeastern Arizona (1,300 - 5,000 feet.), 65 (species, color photograph), 100 (species, color photograph), 106 (042812 - species), **118** (recorded as *Dipodomys spectabilis perblandus* Goldman - Distribution: Known from the grasslands of southern Pinal and Pima County. Figure 55, Page 143), 148 (color presentation of species)*

***Perognathus amplus* Osgood, 1900: Arizona Pocket Mouse**

COMMON NAME: Arizona Pocket Mouse; Coconino Arizona Pocket Mouse (*P.a. ammodytes* Benson, 1933 - Invalid?); Loring Pocket Mouse; Ratón-de Abazones de Arizona (Spanish)⁴²; Sonoran Pocket Mouse (*P.a. taylori* Goldman, 1932 - Invalid?); Wupatki Arizona Pocket Mouse (*P.a. cineris* Benson, 1933 - Invalid?); Yavapai Arizona Pocket Mouse (*P.a. amplus* Osgood, 1900 - Invalid?). HABITS: The species feeds on green plants, insects and seeds. Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - subsp. *ammodytes*; subsp. *amplus*; subsp. *cineris*), 42 (062112), **55** (recorded as *Perognathus amplus* Osgood. Arizona Pocket Mouse. Locally common in desert areas on south-central, western and north-central parts of the state (500 - 5,100 feet.), 65 (genus), 73, 100 (color photograph), 106 (042812), 118 (recorded as *Perognathus amplus ammodytes* Benson - Distribution: Known only from the upper part of the Colorado River; *Perognathus amplus amplus* - Distribution: Known only from the vicinity of Fort Verde, Yavapai County; *Perognathus amplus cineris* Benson - Distribution: Known only from the region of the Wupatki National Monument; *Perognathus amplus jacksoni* Goldman - Distribution: known from central Arizona; *Perognathus amplus pergracilis* Goldman - Distribution: Known from Mojave County south of the Colorado and extreme northern Yuma County [now La Paz County]; *Perognathus amplus rotundus* Goldman - Distribution: Southwestern Yuma County, and *Perognathus amplus taylori* Goldman - Distribution: Known from south central Arizona. Figure 50, Page 129), 148 (color presentation)*

***Perognathus amplus* subsp. *taylori* Goldman, 1932 - Invalid?: Arizona Pocket Mouse**

COMMON NAME: Arizona Pocket Mouse. HABITS: The species feeds on green plants, insects and seeds. Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - subsp. *ammodytes*; subsp. *amplus*; subsp. *cineris*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Perognathus amplus* Osgood. Arizona Pocket Mouse. Locally common in desert areas on south-central, western and north-central parts of the state (500 - 5,100 feet.), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (042812 - species), **118** (recorded as *Perognathus amplus taylori* Goldman. Distribution: Known from south central Arizona. Figure 50, Page 129), 148 (color presentation of species)*

Perognathus baileyi (see *Chaetodipus baileyi*)

Perognathus baileyi subsp. *baileyi* (see *Chaetodipus baileyi* subsp. *baileyi*)

***Perognathus flavus* Baird, 1855: Silky Pocket Mouse**

COMMON NAME: Baird's Pocket Mouse (*P.f. flavus* Baird, 1855 - Invalid?); Baird's Pocket Mouse; Goodpaster's Silky Pocket Mouse (*P.f. goodpasteri* Hoffmeister, 1956 - Invalid?); Hopi Silky Pocket Mouse (*P.f. hopiensis* Goldman, 1932 - Invalid?); Ratón-de Abazones Sedoso (Spanish)⁴²; Silky Pocket Mouse; Springerville Pocket Mouse (*P.f. goodpasteri* Hoffmeister, 1956 - Invalid?). HABITS: Feeds on seeds, nuts and invertebrates (though very few are taken). Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (061412 - subsp. *flavus* (Baird); subsp. *gilvus* (Osgood); subsp. *goodpasteri* (Hoffmeister); subsp. *hopiensis* (Goldman)), 42 (062112), **55** (recorded as *Perognathus flavus* Baird. Silky Pocket Mouse. Locally common in grasslands throughout the state (2,900 - 6,500 feet.), 65 (genus), 73, 100 (color photograph), 106 (061412), 118 (recorded as *Perognathus flavus flavus* Baird - Distribution: Southeastern part of the state. Figure 48, Page 124), 148 (color presentation)*

***Perognathus flavus* subsp. *flavus* Baird, 1855 - Invalid?: Silky Pocket Mouse**

COMMON NAME: Silky Pocket Mouse. HABITS: The species feeds on seeds, nuts and invertebrates (though very few are taken). Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (061412 - subsp. *flavus* (Baird); subsp. *gilvus* (Osgood); subsp. *goodpasteri* (Hoffmeister); subsp. *hopiensis* (Goldman)), 42 (062112 - no subspecies listed), 55 (species: recorded as *Perognathus flavus* Baird. Silky Pocket Mouse. Locally common in grasslands throughout the state (2,900 - 6,500 feet.), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (061412 - species), **118** (recorded as *Perognathus flavus flavus* Baird - Distribution: Southeastern part of the state. Figure 48, Page 124), 148 (color presentation of species)*

Perognathus hispidus (see *Chaetodipus hispidus*)

Perognathus hispidus subsp. *conditi* (see *Chaetodipus hispidus* subsp. *conditi*)

Perognathus intermedius (see *Chaetodipus intermedius*)

Perognathus intermedius subsp. *intermedius* (see *Chaetodipus intermedius* subsp. *intermedius*)

***Perognathus longimembris* (Coues, 1875): Little Pocket Mouse**

COMMON NAME: Arizona Little Pocket Mouse (*P.l. arizonensis* Goldman, 1931 - Invalid?); Little Pocket Mouse; Pima Little Pocket Mouse (*P.l. pimensis* Huey, 1937 - Invalid?); Ratón-de Abazones Menor (Spanish)⁴²; Virgin Valley Pocket Mouse (*P.l. virginis* Huey, 1939 - Invalid?); Yuma Pocket Mouse (*P.l. bombycinus* Osgood, 1907 - Invalid?). HABITS: Feeds on greens and seeds. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *14 (042812), 42 (062112), 55 (recorded as *Perognathus longimembris* (Coues). Little Pocket Mouse. Known from scattered localities in the western part of the state (500 - 4,500 feet.), 65 (genus), 73, 100 (color photograph), 106 (042812 - color presentation), 118 (recorded as *Perognathus longimembris arizonensis* Goldman - Distribution: Known from north-central Arizona north of the Colorado River; *Perognathus longimembris bombycinus* Osgood - Distribution: Known only in western Yuma County; *Perognathus longimembris pimensis* Huey - Distribution: Southcentral part of the state, and *Perognathus longimembris virginis* Huey - Distribution: Known only from northwestern Mohave County. Figure 49, Page 127), 148 (color presentation)*

***Perognathus longimembris* subsp. *pimensis* Huey, 1937 - Invalid?: Pima Little Pocket Mouse**

COMMON NAME: Little Pocket Mouse; Pima Little Pocket Mouse. HABITS: Feeds on greens and seeds. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *14 (042812 - species), 42 (062112 - record of this subspecies), 55 (recorded as *Perognathus longimembris* (Coues). Little Pocket Mouse. Known from scattered localities in the western part of the state (500 - 4,500 feet.), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (042812 - species), 118 (recorded as *Perognathus longimembris pimensis* Huey - Distribution: Southcentral part of the state. Figure 49, Page 127), 148 (color presentation of species)*

Perognathus penicillatus (see *Chaetodipus penicillatus*)

Perognathus penicillatus subsp. *pricei* (see *Chaetodipus penicillatus* subsp. *pricei*)

Leporidae: The Hare and Rabbit Family

***Lepus alleni* Mearns, 1890: Antelope Jackrabbit**

COMMON NAME: Allen's Jack Rabbit (*L.a. alleni* Mearns, 1890); Allen's Jackrabbit (*L.a. alleni* Mearns, 1890); Antelope Jack Rabbit; Antelope Jackrabbit; Liebre Antilope (Spanish)⁴². HABITS: Feeds on cacti, Catclaw Acacia, grasses, herbs and the bark, buds and leaves of mesquite. Young are born in a nest that is usually located above ground. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042912), 42 (062112), 55 (recorded as *Lepus alleni* (Mearns). Antelope Jack Rabbit. Occurs in the central third of the southern half of the state.), 65, 73, 100 (color photograph), 106 (042912 - includes a listing of subspecies, color presentation), 118 (recorded as *Lepus alleni* subsp. *alleni* Mearns - Distribution: Occurs in the central third of the southern half of the state. Figure 31, Page 68), 148 (color presentation)*

***Lepus alleni* subsp. *alleni* Mearns, 1890: Allen's Jackrabbit**

COMMON NAME: Allen's Jack Rabbit; Allen's Jackrabbit; Antelope Jack Rabbit; Antelope Jackrabbit;. HABITS: The species feeds on cacti, Catclaw Acacia, grasses, herbs and the bark, buds and leaves of mesquite. Young are born in a nest that is usually located above ground. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042912 - species), 42 (062112), 55 (species: recorded as *Lepus alleni* (Mearns). Antelope Jack Rabbit. Occurs in the central third of the southern half of the state.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (042912 - species, including a listing of subspecies, color presentation of species), 118 (recorded as *Lepus alleni* subsp. *alleni* Mearns - Distribution: Occurs in the central third of the southern half of the state. Figure 31, Page 68), 148 (color presentation)*

***Lepus californicus* Gray, 1837: Black-tailed Jackrabbit**

COMMON NAMES: American Desert Hare; Arizona Jackrabbit (*L.c. eremicus* J.A. Allen, 1894 - Invalid?); Black-tailed Jack Rabbit; Black-tailed Jackrabbit; Blackeared Jackrabbit (*L.c. melanotis* Mearns, 1890 - Valid); Colorado Desert Jackrabbit (*L.c. deserticola* Mearns, 1896 - Valid); Desert Jackrabbit (*L.c. deserticola* Mearns, 1896 - Valid; *L.c. eremicus* J.A. Allen, 1894 - Invalid?); Great Plains Jackrabbit (*L.c. melanotis* Mearns, 1890 - Valid); "Jackass Rabbit"; Liebre Cola Negra (Hispanic)¹⁴; Liebre Cola Negra (Spanish)⁴²; Texas Jackrabbit (*L.c. texianus* Waterhouse, 1848 - Valid); Western Desert Jackrabbit (*L.c. deserticola* Mearns, 1896 - Valid). HABITS: Feeds on grasses, mesquite leaves and prickly-pear cacti. Young are born in nests located either above or below ground in forms that have been lined with breast hair, after birth the young are moved to separate nests and cared for individually by the female. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042912 - subsp.

melanotis (Mearns); subsp. *texianus* (Waterhouse), color presentation), 42 (062112), 55 (recorded as *Lepus californicus* Gray. Black-tailed Jack Rabbit. Statewide.), 65, 73, 100 (color photograph), 106 (042912 - includes a listing of subspecies, color presentation), 118 (recorded as *Lepus californicus deserticola* Mearns - Distribution: Occurs in the western half of the state; *Lepus californicus eremicus* J.A. Allen - Distribution: Southeastern Arizona, and *Lepus californicus texianus* Waterhouse - Distribution: Occurs in the northeastern quarter of the state. Figure 32, Page 69), 148 (color presentation)*

***Lepus californicus* subsp. *eremicus* J.A. Allen, 1894 - Invalid?: Desert Jackrabbit**

COMMON NAMES: Arizona Jackrabbit; Black-tailed Jack Rabbit; Desert Jackrabbit; "Jackass Rabbit". HABITS: The species feeds on grass, mesquite leaves and prickly-pear cacti. Young are born in nests located either above or below ground in forms that have been lined with breast hair, after birth the young are moved to separate nests and cared for individually by the female. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042912 - subsp. *melanotis* (Mearns); subsp. *texianus* (Waterhouse), color presentation), 42 (062112 - no record of this subspecies), 55 (species: recorded as *Lepus californicus* Gray. Black-tailed Jack Rabbit. Statewide.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (species, includes a listing of subspecies, color presentation of species), 118 (recorded as *Lepus californicus eremicus* J.A. Allen - Distribution: Southeastern Arizona. Figure 32, Page 69), 148 (color presentation)*

***Sylvilagus audubonii* (Baird, 1858): Desert Cottontail**

COMMON NAME: Arizona Cottontail (*S.a. arizonae* (Mearns, 1896) - Valid); Audubon's Cottontail; Cedar Belt Cottontail (*S.a. cedrophilus* (Nelson, 1907) - Invalid?); Colorado Cottontail (*S.a. warreni* Nelson, 1907 - Valid); Conejo del Desierto (Hispanic)¹⁴; Desert Cottontail; Desert Cottontail Rabbit; Lesser Desert Cottontail (*S.a. minor* (Mearns, 1896) - Valid); Little Cottontail (*S.a. minor* (Mearns, 1896) - Valid); New Mexico Cottontail (*S.a. neomexicana* (Nelson, 1907) - Invalid?); Sacramento Valley Cottontail (*S.a. audubonii* (Baird, 1858) - Valid). HABITS: Feeds on green plants, cacti, bark and twigs. Young are born into nests lined with forbs, grasses and the female's fur which are located on the ground and in brush piles, piles of rocks, and burrows abandoned by other animals. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042912 - subsp. *cedrophilus* (Nelson); subsp. *minor* (Mearns); subsp. *neomexicana* (Nelson), color presentation), 42 (062112), 55 (recorded as *Sylvilagus audubonii* (Baird). Desert Cottontail. Common at elevations below 6,000 feet throughout the state.), 65, 73, 100 (color photograph), 106 (042912 - color presentation), 118 (recorded as *Sylvilagus audubonii arizonae* (J.A. Allen) - Distribution: Widely distributed at elevations up to 6,000 feet in the western half of the state; *Sylvilagus audubonii minor* (Mearns) - Distribution: Known only from the southeastern part of the state, and *Sylvilagus audubonii warreni* Nelson - Distribution: Known only from the northeastern part of the state. Figure 34, Page 74), 148 (color presentation)*

***Sylvilagus audubonii* subsp. *arizonae* (Mearns, 1896): Arizona Cottontail**

COMMON NAME: Arizona Cottontail. HABITS: The species feeds on green plants, cacti, bark and twigs. Young are born into nests lined with forbs, grasses and the female's fur which are located on the ground and in brush piles, piles of rocks, and burrows abandoned by other animals. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (042912 - subsp. *cedrophilus* (Nelson); subsp. *minor* (Mearns); subsp. *neomexicana* (Nelson), color presentation), 42 (062112), 55 (species: recorded as *Sylvilagus audubonii* (Baird). Desert Cottontail. Common at elevations below 6,000 feet throughout the state.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (042912 - species, color presentation of species), 118 (recorded as *Sylvilagus audubonii arizonae* (J.A. Allen) - Distribution: Widely distributed at elevations up to 6,000 feet in the western half of the state. Figure 34, Page 74), 148 (color presentation)*

Mephitidae: The Skunk Family

***Conepatus leuconotus* (Lichtenstein, 1832): Common Hog-nosed Skunk**

COMMON NAMES: American Hog-nosed Skunk; Big Thicket Hog-nosed Skunk (*C.I. telmalestes* Bailey, 1905 - Valid: extinct); Common Hog-nosed Skunk; Eastern Hog-nosed Skunk; Hog-nosed Skunk; Hognose Skunk; Mexican Hog-nosed Skunk (*C.I. leuconotus* (Lichtenstein, 1832) - Valid); Rooter Skunk; White-spotted Skunk; Zorrillo Nariz de Puerco (Hispanic)¹⁴; Zorrillo-narigón Norteño (Spanish: applied to *C.I. leuconotus* (Lichtenstein, 1832) - Valid)⁴²; Zorrillo-narigón Occidental (Spanish)⁴². HABITS: Feeds on arachnids, birds, insects, small mammals, mollusks, plant material, reptiles and worms. These skunks take refuge in caves, crevices in rocks and in the ground. Rocky areas are used for denning with the young born beneath rocks, grasses are used for nesting. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (043012 - subsp. *mearnsi* (Merriam); subsp. *venaticus* (Goldman)), 42 (062112), 55 (recorded as *Conepatus mesoleucus* Lichtenstein. Hog-nosed Skunk. Southeastern part of the state (2,000 - 6,000 feet).), 65, 73 (*Conepatus mesoleucus*), 100 (*Conepatus mesoleucus*, color photograph), 106 (043012 - includes a listing of subspecies, color presentation), 118 (recorded as *Conepatus mesoleucus venaticus* Goldman - Distribution: South central and southeastern Arizona. Figure 102, Page 241), 148 (color presentation), 149*

***Conepatus leuconotus* subsp. *leuconotus* (Lichtenstein, 1832): Common Hog-nosed Skunk**

SYNONYMY: *Conepatus leuconotus* subsp. *venaticus* (Goldman, 1922) - Invalid?; *Conepatus mesoleucus* (Lichtenstein, 1832) - Valid; *Conepatus mesoleucus* subsp. *venaticus* Goldman, 1922 - Invalid. COMMON NAMES: Common Hog-nosed Skunk; Hog-nosed Skunk; Hognose Skunk; Mexican Hog-nosed Skunk; Rooter Skunk (Texas); Zorrillo Nariz de Puerco (Hispanic)¹⁴; Zorrillo-narigón Norteño (Spanish applied to *Conepatus mesoleucus*)⁴². HABITS: The species feeds on arachnids, birds, insects, small mammals, mollusks, plant material, reptiles and worms. These skunks take refuge in caves, crevices in rocks and in the ground. Rocky areas are used for denning with the young born beneath rocks, grasses are used for nesting. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (043012 - subsp. *mearnsi* (Merriam); subsp. *venaticus* (Goldman)), 42 (062112), 55 (species, recorded as *Conepatus mesoleucus* Lichtenstein. Hog-nosed Skunk. Southeastern part of the state (2,000 - 6,000 feet).), 65 (species), 73 (species, *Conepatus mesoleucus*), 100 (species record (*Conepatus mesoleucus*), color photograph of species), 106 (043012 - species, includes a listing of subspecies, color presentation of species), 118 (recorded as *Conepatus mesoleucus venaticus* Goldman - Distribution: South central and southeastern Arizona. Figure 102, Page 241), 148 (color presentation of species), 149*

Conepatus leuconotus subsp. *venaticus* (see *Conepatus leuconotus* subsp. *leuconotus*)

Conepatus mesoleucus (see *Conepatus leuconotus* subsp. *leuconotus*)

Conepatus mesoleucus subsp. *venaticus* (see *Conepatus leuconotus* subsp. *leuconotus*)

***Mephitis macroura* Lichtenstein, 1832: Hooded Skunk**

COMMON NAMES: Hooded Skunk; Miller's Skunk (*M.m. milleri* Mearns, 1897 - Valid); Mofeta Rayada (Spanish)¹⁰⁶; Moufette à Capuchon (French)¹⁰⁶; Northern Hooded Skunk (*M.m. milleri* Mearns, 1897 - Valid); Pay (Maya)¹⁰⁶; Southern Skunk; White-sided Skunk; Zorrillo (Hispanic)^{14,106}; Zorrillo-listado del Sur (Spanish). HABITS: Feeds on small birds (and bird eggs), insects and other invertebrates, rodents and plant material (including prickly-pear). The young are born in a dens located in burrows or among rocks. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (043012 - subsp. *milleri* (Mearns)), 42 (062112), 55 (recorded as *Mephitis macroura* (Lichtenstein). Hooded Skunk. Southeastern part of the state (2,000 - 6,000 feet).), 65, 73, 100 (color photograph), 106 (043012 - color presentation), 118 (recorded as *Mephitis macroura milleri* (Mearns) - Distribution: South central and southeastern Arizona. Figure 101, Page 240), 148 (color presentation)*

***Mephitis macroura* subsp. *milleri* Mearns, 1897: Hooded Skunk**

COMMON NAMES: Hooded Skunk; Millers Skunk; Northern Hooded Skunk; Zorrillo (Hispanic)¹⁴. HABITS: The species feeds on small birds (and bird eggs), insects and other invertebrates, rodents and plant material (including prickly-pear). The young are born in a dens located in burrows or among rocks. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (043012 - subsp. *milleri* (Mearns)), 42 (062112), 55 (species: recorded as *Mephitis macroura* (Lichtenstein). Hooded Skunk. Southeastern part of the state (2,000 - 6,000 feet).), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (043012 - color presentation), 118 (recorded as *Mephitis macroura milleri* (Mearns) - Distribution: South central and southeastern Arizona. Figure 101, Page 240), 148 (color presentation of species)*

***Mephitis mephitis* (Schreber, 1776): Striped Skunk**

COMMON NAMES: Arizona Skunk (*M.m. estor* Merriam, 1890 - Valid); Long-tailed Texas Skunk (*M.m. varians* Gray, 1837 - Valid); Mouffette Rayée (French)⁴²; Northern Plains Skunk (*M.m. hudsonica* Richardson, 1829 - Valid); Striped Skunk; Zorrillo Rayado (Hispanic)¹⁴; Zorrillo-listado del Norte (Spanish)⁴². HABITS: Feeds on amphibians, berries, the eggs of ground nesting birds, carrion, crayfish, earthworms, fishes, frogs, fruits, insects (ants, beetles, crickets, grasshoppers, honeybees, wasps), small mammals (mice, moles, rats, squirrels, voles), mollusks, plant material, reptiles, snails and spiders. The young are born in nests made of dried grasses and leaves located in dirt banks, underground burrows abandoned by other animals, downed logs, pits and rock outcrops. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The Striped Skunk is most active dusk through dawn. This species is the chief carrier of rabies in the United States and those active during the daylight hours frequently being found to be rabid. *14 (043012 - subsp. *estor* (Merriam); subsp. *hudsonica* (Richardson); subsp. *variens* (Gray), color presentation), 42 (062112), 55 (recorded as *Mephitis mephitis* (Schreber). Striped Skunk. Statewide (300 - 9,000 feet).), 65 (color photograph), 73, 100 (color photograph), 106 (043012 - includes a listing of subspecies, color presentation), 118 (recorded as *Mephitis mephitis estor* Merriam - Distribution: Statewide. Figure 100, Page 239), 148 (color presentation)*

***Mephitis mephitis* subsp. *estor* Merriam, 1890: Arizona Skunk**

COMMON NAMES: Arizona Skunk; Striped Skunk; Zorrillo Rayado (Hispanic)¹⁴. HABITS: The species feeds on amphibians, berries, the eggs of ground nesting birds, carrion, crayfish, earthworms, fishes, frogs, fruits, insects (ants, beetles, crickets, grasshoppers, honeybees, wasps), small mammals (mice, moles, rats, squirrels, voles), mollusks, plant material, reptiles, snails and spiders. The young are born in nests made of dried grasses and leaves located in dirt banks, underground burrows abandoned by other animals, downed logs, pits and rock outcrops. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The

Striped Skunk is most active dusk through dawn. This species is the chief carrier of rabies in the United States and those active during the daylight hours frequently being found to be rabid. *14 (043012 - subsp. *estor* (Merriam); subsp. *hudsonica* (Richardson); subsp. *varians* (Gray), color presentation of species), 42 (062112), 55 (species: recorded as *Mephitis mephitis* (Schreber). Striped Skunk. Statewide (300 - 9,000 feet).), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (043012 - species, includes a listing of subspecies, color presentation of species), 118 (recorded as *Mephitis mephitis estor* Merriam - Distribution: Statewide. Figure 100, Page 239), 148 (color presentation)*

***Spilogale gracilis* Merriam, 1890: Western Spotted Skunk**

SYNONYMY: *Spilogale putorius* subsp. *gracilis* Merriam, 1890 - Invalid?. COMMON NAMES: Channel Islands Spotted Skunk (*S.g. amphialus* Dickey, 1929 - Valid); Spotted Skunk; Western Spotted Skunk; Zorillo Pinto (Hispanic)¹⁴. HABITS: Feeds on arachnids, berries, birds and bird eggs, carrion, fruits, insects, small mammals, scorpions and seeds. Dens are made in rock crevices and hollow logs. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (043012 - considers *Spilogale putorius gracilis* Merriam is a synonym for *Spilogale gracilis* the Western Spotted Skunk, and *Spilogale putorius leucoparia* is a synonym for *Spilogale putorius* the Eastern Spotted Skunk), 42 (062112), 55 (recorded as *Spilogale putorius* (Linnaeus). Spotted Skunk. Probably statewide (120 - 7,000 feet).), 65 (recorded as *Spilogale putorius*), 73 (recorded as *Spilogale gracilis*), 100 (recorded as *Spilogale gracilis*, color photograph), 106 (043012 - includes a listing of subspecies, color presentation), 118 (recorded as *Spilogale putorius gracilis* Merriam - Distribution: Probably statewide. Figure 99, Page 237), 148 (color presentation)*

Spilogale putorius (see footnotes 14, 55, 65 and 85 under *Spilogale gracilis*)

Spilogale putorius subsp. *gracilis* (see *Spilogale gracilis*)

Molossidae: The Free-tailed Bat Family

***Eumops perotis* (Schinz, 1821): Western Mastiff Bat**

COMMON NAMES: Bonnet Bat; California Mastiff Bat (*E.p. californicus* Merriam, 1890); Greater Bonneted Bat; Greater Mastiff Bat; Greater Western Bonneted Bat; Greater Western Mastiff Bat (*E.p. californicus* Merriam, 1890); Mastiff Bat; Murciélago Mastiff (Hispanic); Murciélago-con bonete Mayor (Spanish); Western Bonneted Bat; Western Mastiff Bat. HABITS: Feeds on crickets, long-horned grasshoppers, moths and other small insects. Roosts in crevices and shallow caves in cliffs and rock walls at lower elevations. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8 (*Eumops perotis californicus*), 14 (050112 - subsp. *californicus*), 42 (062112), 55 (recorded as *Eumops perotis* (Schinz). Western Mastiff Bat. Rare; in small colonies in rock crevices at lower elevations in the western and southern part of the state.), 65, 73, 92, 100 (color photograph), 106 (050112 - color presentation), 118 (recorded as *Eumops perotis californicus* (Merriam) - Distribution: Probably throughout southern Arizona in the Lower Sonoran Life Zone.), 148 (color presentation)*

***Eumops perotis* subsp. *californicus* Merriam, 1890 - Invalid?: Greater Western Mastiff Bat**

COMMON NAMES: Bonnet Bat; California Mastiff Bat; Greater Mastiff Bat; Greater Western Bonneted Bat; Greater Western Mastiff Bat; Mastiff Bat; Murciélago Mastiff (Hispanic)¹⁴; Western Mastiff Bat. HABITS: The species feeds on crickets, long-horned grasshoppers, moths and other small insects. Roosts in crevices and shallow caves in cliffs and rock walls at lower elevations. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050112 - subsp. *californicus*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Eumops perotis* (Schinz). Western Mastiff Bat. Rare; in small colonies in rock crevices at lower elevations in the western and southern part of the state.), 65 (species), 73 (species), 92 (species), 100 (species, color photograph of species), 106 (050112 - color presentation), 118 (recorded as *Eumops perotis californicus* (Merriam) - Distribution: Probably throughout southern Arizona in the Lower Sonoran Life Zone. Figure 29, Page 65), 148 (color presentation)*

***Nyctinomops femorosaccus* (Merriam, 1889): Pocketed Free-tailed Bat**

SYNONYMY: *Tadarida femorosacca* (Merriam) - Invalid?. COMMON NAMES: Palm Springs Free-tailed Bat; Pocketed Free-tailed Bat; Murciélago Cola Libra en Bolsa (Hispanic)¹⁴; Murciélago-cola Suelta de Bolsa (Spanish)⁴². HABITS: Feeds on ants, leafhoppers, moths, wasps and other insects. Roosts in rocky crevices. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050112), 42 (062112), 55 (recorded as *Tadarida femorosacca* (Merriam). Pocketed Free-tailed Bat. Rare; found at lower elevations in the western and southern part of the state.), 100, 106 (050112 - color presentation), 118 (recorded as *Tadarida femorosacca* (Merriam) - Distribution: Probably occurs throughout the Lower Sonoran Life Zone of southern Arizona. Figure 27, Page 63), 148 (color presentation), HR*

***Nyctinomops macrotis* (Gray, 1840): Big Free-tailed Bat**

SYNONYMY: *Tadarida macrotis* (Gray, 1840) - Invalid?; *Tadarida molossa* (Pallas) - Invalid?. COMMON NAMES: Big Free-tailed Bat; Cuban Free-tailed Bat; Murciélago Cola Libre (Hispanic)¹⁴; Murciélago-cola Suelta Mayor (Spanish)⁴²;

Greater Broad-eared Free-tailed Bat. HABITS: Feeds on insects. Roosts in rocky cliffs, crevices, fissures, caves and holes in trees. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050112), 42 (062112), 55 (recorded as *Tadarida molossa* (Pallas). Big Free-tailed Bat. Rare; statewide, mainly at elevations below 5,000 feet.), 73, 100 (color photograph), 106 (050112 - color presentation), 118 (recorded as *Tadarida molossa* (Pallas) - Distribution: Probably occurs throughout the Lower Sonoran Life Zone of Arizona. Figure 28, Page 64), 148 (color presentation), 149*

***Tadarida brasiliensis* (I. Geoffroy, 1824) (subsp. *mexicana* (Saussure, 1860 - Invalid?) is the only subspecies reported as occurring in Arizona): Brazilian Free-tailed Bat**

COMMON NAMES: Brazilian Free-tailed Bat; Guano Bat; Mexican Free-tail Bat; Mexican Free-tailed Bat; Mexican Freetail Bat; Murciélago Braziliiano (Hispanic)¹⁴; Murciélago-cola Suelta Brasileño (Spanish)⁴². HABITS: Feeds on small insects (ants, beetles, dragonflies, flies, leafhoppers, moths, true bugs, wasps). Roosts in caverns; caves; crevices in rocks; fissures in cliffs; buildings; mines, and under bridges. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Bacardi rum features the Mexican free-tailed bat as its icon because of the species pollination of sugar cane as well as for their consumption of insects that damage the sugar cane crop. *8, 14 (050112 - subsp. *mexicana*), 42 (062112), 55 (recorded as *Tadarida brasiliensis* (I.Geof. St.-Hilaire). Mexican Free-tailed Bat. Locally abundant throughout the state, especially at elevations below 5,000 feet.), 65, 73, 92, 100 (color photograph), 106 (050112 - includes a listing of subspecies, color presentation), 118 (recorded as *Tadarida brasiliensis mexicana* (Saussure) - Distribution: Probably statewide in some part of the year. Figure 26, Page 62), 148 (color presentation)*

***Tadarida brasiliensis* subsp. *mexicana* (Saussure, 1860) - Invalid?: Brazilian Free-tailed Bat**

COMMON NAMES: Brazilian Free-tailed Bat; Guano Bat; Mexican Free-tail Bat; Mexican Free-tailed Bat; Mexican Freetail Bat; Murciélago Braziliiano (Hispanic)¹⁴. HABITS: The species feeds on small insects (ants, beetles, dragonflies, flies, leafhoppers, moths, true bugs, wasps). HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050112 - subsp. *mexicana*), 42 (062112 - no subspecies listed), 55 (species: recorded as *Tadarida brasiliensis* (I.Geof. St.-Hilaire). Mexican Free-tailed Bat. Locally abundant throughout the state, especially at elevations below 5,000 feet.), 65 (species), 73 (species), 92 (species), 100 (species, color photograph of species), 106 (050112 - species, includes a listing of subspecies, color presentation of species), 118 (recorded as *Tadarida brasiliensis mexicana* (Saussure) - Distribution: Probably statewide in some part of the year. Figure 26, Page 62), 148 (color presentation)*

Tadarida femorosacca (see *Nyctinomops femorosaccus*)

Tadarida macrotis (see *Nyctinomops macrotis*)

Tadarida molossa (see *Nyctinomops macrotis*)

Muridae: The Mouse and Rat Family

***Mus musculus* Linnaeus, 1758: House Mouse**

COMMON NAMES: House Mouse; Raton Comun (Hispanic)¹⁴; Souris Commune (French)⁴². HABITS: Feeds on insects, plants and seeds almost anything edible. Nests are made up of down, feathers, grass, hair, trash and other soft materials and are located in man-made structures. HABITAT: Within the range of this species it has been reported from areas of human habitation and in lower elevations along roadsides, floodplains, fencerows, ditchbanks, agricultural fields and orchards in the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: **EXOTIC** (native to southern Asia), a destructive animal and a carrier of disease. "Gough Island in the South Atlantic is used by 20 species of seabird for breeding, including almost all of the world's Tristan Albatross (*Diomedea dabbenena*) and Atlantic Petrel (*Pterodroma incerta*). Until house mice arrived on the island in the 19th century with seamen, the birds did not have any mammalian predators. The mice have since grown unusually large and have learned to attack albatross chicks, which can be nearly 1 m tall, but are largely immobile, by working in groups and gnawing on them until they bleed to death. The estimated 700,000 mice on the island kill over one million bird chicks per year.^{[30]-106} *14 (010512), 42 (062112), 55 (recorded as *Mus musculus* (Linnaeus). House Mouse. Introduced; often around dwellings and occasionally occurring as feral populations.), 73, 100, 106 (010512 - includes a listing of subspecies, color presentation), 118 (recorded as *Mus musculus* subsp. - Distribution: **Throughout the state in association with human habitations; many feral populatons are established in various areas.** Page 213), 148 (color presentation)*

***Neotoma albigula* Hartley, 1894: White-throated Wood Rat**

COMMON NAMES: Colorado Valley Woodrat (*N.a. venusta* True, 1894 - Invalid?); La Plata White-throated Wood Rat (*N.a. laplataensis* F.W. Miller, 1933 - Invalid?); Packrat; Rata-cambalachera Garganta Blanca (Spanish)⁴²; Trade Rat; White-throated Packrat; White-throated Wood Rat. HABITS: Feeds on ants, beetles, cacti (flowers, fruits, stems), flowers, forbs, fruits, grasses, juniper, leaves, mesquite (bark, flowers, leaves, seeds), green plant material, reptiles, seeds and yucca leaves. Nests are built under mesquite, cholla and prickly-pear cacti, or in rocky crevices using sticks, pieces of cholla and prickly-pear cacti, and

rubbish, sometimes with underground burrows. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *albigula*; subsp. *laplataensis* F.W. Miller; subsp. *melas* (Dice); subsp. *mearnsi*; subsp. *warreni* (Merriam); subsp. *venusta*, color presentation), 42 (062112), 55 (recorded as *Neotoma albigula* Hartley. White-throated Wood Rat. Widely distributed at elevations below 7,000 feet throughout all of the state south of the Colorado River (120 - 8,000 feet.), 65 (color photograph), 73, 100 (color photograph), 106 (050112 - includes a listing of subspecies, color presentation), 118 (recorded as *Neotoma albigula albigula* Hartley - Distribution: Occurs commonly south of the Mogollon Rim; *Neotoma albigula mearnsi* Goldman - Distribution: Known from southern Yuma County; *Neotoma albigula laplataensis* F.W. Miller - Distribution: Known from northeastern Arizona, and *Neotoma albigula venusta* True - Distribution: Known from western Arizona. Figure 76, Page 193), 148 (color presentation)*

***Neotoma albigula* subsp. *albigula* Hartley, 1894 - Invalid?: White-throated Wood Rat**

COMMON NAMES: Packrat; Trade Rat; White-throated Packrat; White-throated Wood Rat. HABITS: The species feeds on ants, beetles, cacti (flowers, fruits, stems), flowers, forbs, fruits, grasses, juniper, leaves, mesquite (bark, flowers, leaves, seeds), green plant material, reptiles, seeds and yucca leaves. Nests are built under mesquite, cholla and prickly-pear cacti, or in rocky crevices using sticks, pieces of cholla and prickly-pear cacti, and rubbish, sometimes with underground burrows. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *albigula*; subsp. *laplataensis* (F.W. Miller); subsp. *melas* (Dice); subsp. *mearnsi*; subsp. *warreni* (Merriam); subsp. *venusta*, color presentation), 42 (062112 - no subspecies listed), 55 (species: recorded as *Neotoma albigula* Hartley. White-throated Wood Rat. Widely distributed at elevations below 7,000 feet throughout all of the state south of the Colorado River (120 - 8,000 feet.), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (050112 - species, includes a listing of subspecies, color presentation of species), 118 (recorded as *Neotoma albigula albigula* Hartley - Distribution: Occurs commonly south of the Mogollon Rim. Figure 76, Page 193), 148 (species, color presentation of species)*

***Onychomys torridus* (Coues, 1874): Southern Grasshopper Mouse**

COMMON NAMES: Raton Chapulinero del Sur (Hispanic)¹⁴; Ratón-saltamontes Sureño (Spanish)⁴²; Scorpion Mouse; Southern Grasshopper Mouse. HABITS: Feeds on arthropods, beetles, grasshoppers, insects, lizards, scorpions, seeds and small vertebrates including other species of mice. Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *torridus* (Coues)), 42 (062112), 55 (recorded as *Onychomys torridus* (Coues). Southern Grasshopper Mouse. Widely distributed in the western and southern parts of the state (120 - 5,000 feet.), 65 (genus), 73, 100 (color photograph), 106 (050112), 118 (recorded as *Onychomys torridus longicaudus* Merriam - Distribution: Extreme northwestern Arizona; *Onychomys torridus perpallidus* Mearns - Distribution: Western Arizona, and *Onychomys torridus torridus* (Coues) - Distribution: Southeastern quarter of the state. Figure 62, Page 161), 148 (color presentation)*

***Onychomys torridus* subsp. *torridus* (Coues, 1874) - Invalid?: Southern Grasshopper Mouse**

COMMON NAMES: Raton Chapulinero del Sur (Hispanic)¹⁴; Scorpion Mouse; Southern Grasshopper Mouse. HABITS: The species feeds on arthropods, beetles, grasshoppers, insects, lizards, scorpions, seeds and small vertebrates including other species of mice. Nests are located in underground burrows. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *torridus* (Coues)), 42 (062112 - no subspecies listed), 55 (species: recorded as *Onychomys torridus* (Coues). Southern Grasshopper Mouse. Widely distributed in the western and southern parts of the state (120 - 5,000 feet.), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (050112 - species), 118 (recorded as *Onychomys torridus torridus* (Coues) - Distribution: Southeastern quarter of the state. Figure 62, Page 161), 148 (color presentation of species)*

***Peromyscus eremicus* (Baird, 1858): Cactus Mouse**

COMMON NAMES: Anthony Desert Mouse (*P.e. anthonyi* Merriam, 1887 - Invalid?); Anthony's Cactus Mouse (*P.e. anthonyi* Merriam, 1887 - Invalid?); Apache Desert Mouse (*P.e. anthonyi* Merriam, 1887 - Invalid?); Black Mountain Cactus Mouse (*P.e. pullus* Blossom, 1933 - Invalid?); Cactus Mouse; Desert Mouse; Desert White-footed Mouse (*P.e. eremicus* Baird, 1858 - Invalid?); Pinacate Cactus Mouse (*P.e. papagensis* Goldman, 1917 - Invalid?); Raton de Cactaceas (Hispanic)¹⁴; Ratón de Cactus (Spanish)⁴². HABITS: Feeds on flowers, small fruits, insects, green plant material and seeds. Nests are made within the abandoned burrows of other animals, clumps of cacti and among rocks. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *anthonyi* Merriam; subsp. *eremicus*; subsp. *pullus*, color presentation), 42 (062112), 55 (recorded as *Peromyscus eremicus* (Baird). Cactus Mouse. Widely distributed in western and southern Arizona (120 - 6,000 feet.), 65 (genus), 73, 100 (color photograph), 106 (050112 - color presentation), 118 (recorded as *Peromyscus eremicus anthonyi* (Merriam) - Distribution: Southeastern part of the state; *Peromyscus eremicus eremicus* (Baird) - Distribution: Almost all of the western and southern part of the state; *Peromyscus eremicus papagensis* Goldman - Distribution: Known only from the Pinacate lava in southern Yuma County, and *Peromyscus eremicus pullus* Blossom - Distribution: Known only from Black Mountain 10 mi. SSW Tucson, Pima County, Arizona. Figure 67, Page 171), 148 (color presentation)*

***Peromyscus eremicus* subsp. *eremicus* (Baird, 1858) - Invalid?: Desert Mouse**

COMMON NAMES: Cactus Mouse; Desert White-footed Mouse; Raton de Cactaceas (Hispanic)¹⁴. HABITS: The species feeds on flowers, small fruits, insects, green plant material and seeds. Nests are made within the abandoned burrows of other animals, clumps of cacti and among rocks. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - species, subsp. *anthonyi* Merriam; subsp. *eremicus*; subsp. *pullus*, color presentation of species), 42 (062112 - no subspecies listed), 55 (species: recorded as *Peromyscus eremicus* (Baird). Cactus Mouse. Widely distributed in western and southern Arizona (120 - 6,000 feet.), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (050112 - species, color presentation of species), **118** (recorded as *Peromyscus eremicus eremicus* (Baird) - Distribution: Almost all of the western and southern part of the state. Figure 67, Page 171), 148 (color presentation of species)*

***Peromyscus leucopus* (Rafinesque, 1818): White-footed Mouse**

COMMON NAME: Apache Wood Mouse (*P.l. arizonae* J.A. Allen, 1894 - Invalid?); Arizona White-footed Mouse (*P.l. arizonae* J.A. Allen, 1894 - Invalid?); Raton Patas Blancas (Hispanic)¹⁴; Souris à Pattes Blanches (French)⁴²; White-footed Mouse; Wood Mouse; Woodmouse (Texas). HABITS: Feeds on berries, crustaceans, fungi, insects and other invertebrates, nuts, seeds and possibly small vertebrates. Nests are made of shredded bark, feathers, forbs, grasses, hair, leaves, mosses and plant fibers located in concealed places in banks, burrows, cavities in live and dead trees, holes in the ground, under rocks, in shrubs and tree stumps and logs. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: The White-footed Mouse may live to be 8 years of age. *14 (061512 - subsp. *arizonae* (J.A. Allen); subsp. *tornillo* (Mearns)), 42 (062112), **55** (recorded as *Peromyscus leucopus* (Rafinesque. White-footed Mouse. Known from eastern and central parts of the state (2,300 - 6,500 feet.), 65 (genus), 73, 100 (color photograph), 106 (050112 - color presentation), 118 (recorded as *Peromyscus leucopus arizonae* (Allen) - Distribution: Southeastern part of the state and *Peromyscus leucopus ochraceus* Osgood - Distribution: Along the Little Colorado River and an isolated population on the south edge of the Mogollon Rim which probably represents an unnamed race. Figure 70, Page 180), 148 (color presentation)*

***Peromyscus leucopus* subsp. *arizonae* J.A. Allen, 1894 - Invalid?: Arizona White-footed Mouse**

COMMON NAME: Apache Wood Mouse; Arizona White-footed Mouse; Raton Patas Blancas (Hispanic)¹⁴; White-footed Mouse; Wood Mouse. HABITS: Feeds on berries, crustaceans, fungi, insects and other invertebrates, nuts, seeds and possibly small vertebrates. Nests are made of shredded bark, feathers, forbs, grasses, hair, leaves, mosses and plant fibers located in concealed places in banks, burrows, cavities in live and dead trees, holes in the ground, under rocks, in shrubs and tree stumps and logs. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (061512 - subsp. *arizonae* (J.A. Allen); subsp. *tornillo* (Mearns)), 42 (062112 - no subspecies listed), 55 (species: recorded as *Peromyscus leucopus* (Rafinesque. White-footed Mouse. Known from eastern and central parts of the state (2,300 - 6,500 feet.), 65 (genus), 73 (species), 100 (color photograph of species, species), 106 (050112 - species, color presentation of species), **118** (recorded as *Peromyscus leucopus arizonae* (Allen) - Distribution: Southeastern part of the state. Figure 70, Page 180), 148 (color presentation of species)*

***Peromyscus maniculatus* (Wagner, 1845): Deer Mouse**

COMMON NAMES: Arizona Wood Mouse (*P.m. rufinus* Merriam, 1890 - Invalid?); Chihuahua Deer Mouse (*P.m. blandus* Osgood, 1904 - Invalid?); Chihuahua Plains Mouse (*P.m. blandus* Osgood, 1904 - Invalid?); Deer Mouse; Gentle Field Mouse (*P.m. blandus* Osgood, 1904 - Invalid?); Prairie Deer Mouse; Raton Venado (Hispanic); Ratón Norteamericano (Spanish)⁴²; Sonoran Deer Mouse (*P.m. sonoriensis* Le Conte, 1853 - Invalid?); Sonoran White-footed Mouse (*P.m. sonoriensis* Le Conte, 1853 - Invalid?); Souris Sylvestre (French)⁴²; Tawny Field Mouse (*P.m. rufinus* Merriam, 1890 - Invalid?); Tawny White-footed Mouse (*P.m. rufinus* Merriam, 1890 - Invalid?); Wagner's Field Mouse; White-footed Mouse. HABITS: Feeds on bark, berries, bones, centipedes, earthworms, small fruits, fungi, insects, leaves, nuts and snails. Nests are built in buildings, underground burrows, rock crevices debris, in and under logs, and clumps of vegetation. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *blandus* (Osgood); subsp. *rufinus* (Merriam)), 42 (062112), **55** (recorded as *Peromyscus maniculatus* (Wagner). Deer Mouse. Statewide (120 - 11,400 feet.), 65 (genus), 73, 100 (color photograph), 106 (050112 - color presentation), 118 (recorded as *Peromyscus maniculatus blandus* Osgood - Distribution: Extreme southeastern part of the state; *Peromyscus maniculatus rufinus* (Merriam) - Distribution: Higher elevations throughout the state, and *Peromyscus maniculatus sonoriensis* (Le Conte) - Distribution: Grasslands at lower elevations throughout the state. Figure 69, Page 177), 148 (color presentation)*

***Peromyscus maniculatus* subsp. *sonoriensis* Le Conte, 1853 - Invalid?: Sonoran Deer Mouse**

COMMON NAMES: Deer Mouse; Sonoran Deer Mouse; Sonoran White-footed Mouse. HABITS: The species feeds on bark, berries, bones, centipedes, earthworms, small fruits, fungi, insects, leaves, nuts and snails. Nests are built in buildings, underground burrows, rock crevices debris, in and under logs, and clumps of vegetation. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *blandus* (Osgood); subsp. *rufinus* (Merriam)), 42 (062112 - no subspecies listed), 55 (species, recorded as *Peromyscus maniculatus* (Wagner). Deer Mouse. Statewide (120 - 11,400 feet.), 65 (genus), 73 (species), 100 (species, color photograph of species), 106 (050112 - color presentation of species), **118** (recorded as *Peromyscus maniculatus sonoriensis* (Le

Conte) - Distribution: Grasslands at lower elevations throughout the state. Figure 69, Page 177), 148 (color presentation of species)*

***Peromyscus merriami* Mearns, 1896: Merriam's Mouse**

COMMON NAMES: Merriam's Mouse; Mesquite Mouse; Ratón de Merriam (Spanish)⁴²; Sonoyta Desert Mouse. HABITS: Probably feeds on invertebrates and seeds. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (050112), 42 (062112), 55 (recorded as *Peromyscus merriami* Mearns. Merriam's Mouse. Known from scattered localities is Pinal, Pima and Santa Cruz counties (1,600 - 3,600 feet).), 73 (note on species), 100, 106 (061512), 118 (recorded as *Peromyscus merriami merriami* Mearns - Distribution: Known from mesquite bosque situations in southern Arizona. Figure 68, Page 174), 148 (color presentation)*

***Peromyscus merriami* subsp. *merriami* Mearns, 1896: Merriam's Mouse**

COMMON NAMES: Merriam's Mouse; Mesquite Mouse. HABITS: The species probably feeds on invertebrates and seeds. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (050112), 42 (062112 - no subspecies listed), 55 (species, recorded as *Peromyscus merriami* Mearns. Merriam's Mouse. Known from scattered localities is Pinal, Pima and Santa Cruz counties (1,600 - 3,600 feet).), 73 (note on species), 100 (species), 106 (061512 - species), 118 (recorded as *Peromyscus merriami merriami* Mearns - Distribution: Known from mesquite bosque situations in southern Arizona. Figure 68, Page 174), 148 (color presentation of species)*

***Reithrodontomys megalotis* (Baird, 1858): Western Harvest Mouse**

COMMON NAME: Arizona Harvest Mouse (*R.m. arizonensis* Allen, 1895 - Invalid?); Aztec Harvest Mouse (*R.m. aztecus* J.A. Allen, 1893 - Invalid?); Big-eared Harvest Mouse (*R.m. megalotis* (Baird, 1858) - Invalid?); Chiricahua Western Harvest Mouse (*R.m. arizonensis* Allen, 1895 - Invalid?); Ratón-cosechero Común (Spanish)⁴²; Western Harvest Mouse. HABITS: Feeds on arachnids, grasses, insects (larvae and adults) and seeds of grasses, forbs and shrubs. Spherical nests are made of woven plant material and lined with plant fibers and can be located near the ground or above the ground in dense vegetation. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *arizonensis*; subsp. *aztecus* J.A. Allen; subsp. *megalotis*), 42 (062112), 55 (recorded as *Reithrodontomys megalotis* (Baird). Western Harvest Mouse. Statewide (120 - 8,000 feet).), 73, 100 (color photograph), 106 (050112 - color presentation), 118 (recorded as *Reithrodontomys megalotis arizonensis* (Allen) - Distribution: Known only from the region of the type locality (Chiricahua Mountains); *Reithrodontomys megalotis aztecus* (Allen) - Distribution: Extreme northeastern part of state, and *Reithrodontomys megalotis megalotis* (Baird) - Distribution: At medium and low elevations statewide except extreme northeastern part of the state. Figure 64, Page 164), 148 (color presentation)*

***Reithrodontomys megalotis* subsp. *megalotis* (Baird, 1858) - Invalid?: Chiricahua Western Harvest Mouse**

COMMON NAME: Big-eared Harvest Mouse; Western Harvest Mouse. HABITS: The species feeds on arachnids, grasses, insects (larvae and adults) and seeds of grasses forbs and shrubs. Spherical nests are made of woven plant material and lined with plant fibers and can be located near the ground or above the ground in dense vegetation. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *arizonensis*; subsp. *aztecus* J.A. Allen; subsp. *megalotis*), 42 - no subspecies listed), 55 (species, recorded as *Reithrodontomys megalotis* (Baird). Western Harvest Mouse. Statewide (120 - 8,000 feet).), 73 (species), 100 (species, color photograph of species), 106 (050112 - species, color presentation of species), 118 (recorded as *Reithrodontomys megalotis megalotis* (Baird) - Distribution: At medium and low elevations statewide except extreme northeastern part of the state. Figure 64, Page 164), 148 (color presentation of species)*

***Sigmodon arizonae* subsp. *ciengae* A.B. Howell, 1919 - Invalid?: Cienega Cotton Rat**

SYNONYMY: *Sigmodon hispidus* subsp. *ciengae* A.B. Howell, 1919 - Invalid?. COMMON NAMES: Arizona Cotton Rat; Cienega Cotton Rat; Cotton Rat. HABITS: Possibly feeding on berries, carcasses, fruits, insects and seeds. The nests are made of grass. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. *14 (050112 - subsp. *arizonae* (A.B. Howell); subsp. *ciengae* (A.B. Howell); subsp. *jacksoni* (A.B. Howell)), 42 (062112 - no record of this subspecies), 55 (no record of subspecies or species, possibly recorded as *Sigmodon hispidus* Say and Ord. Hispid Cotton Rat. Known from scattered riparian and grassland areas in southern part of the state (120-5,000 feet).), 73 (note on species), 100 (species), 106 (050112 - species, includes a listing of subspecies), 118 (recorded as *Sigmodon hispidus* subsp. *ciengae* A.B. Howell - Distribution: Locally common in southeastern Arizona. Figure 74, Page 188), 148 (color presentation of species)*

Sigmodon hispidus subsp. *ciengae* (see *Sigmodon arizonae* subsp. *ciengae*)

Mustelidae: The Weasel and Allies Family

***Lontra canadensis* (Schreber, 1777): North American River Otter**

SYNONYMY: *Lutra canadensis* (Schreber, 1777). COMMON NAMES: Arizona Otter (*L.c. sonora* (Rhoads, 1898) - Valid); Arizona River Otter (*L.c. sonora* (Rhoads, 1898) - Valid); California Otter (*L.c. brevipilosus* (Grinnell, 1914) - Invalid?); Canadian River Otter (*L.c. canadensis* (Schreber, 1777) - Valid); Carolina Otter (*L.c. lataxina* (Cuvier, 1823) - Valid); Common Otter; Degenerate Otter (*L.c. degener* (Bangs, 1898) - Invalid?); Florida Otter (*L.c. vaga* (Bangs, 1898) - Invalid?); Interior Otter (*L.c. interior* (Swenk, 1920) - Invalid?); Island Otter (*L.c. periclyzomae* (Elliot, 1905) - Valid); Kodiak River Otter (*L.c. kodiacensis* (Goldman, 1935)) - Valid; Loutre de Rivière (French)⁴², Mexican Otter (*L.c. sonora* (Rhoads, 1898) - Valid); Nearctic River Otter (*L.c. lataxina* (Cuvier, 1823) - Valid; *L.c. sonora* (Rhoads, 1898) - Valid); Newfoundland Otter (*L.c. degener* (Bangs, 1898) - Invalid?); North American River Otter; Northeastern Otter (*L.c. hudsonica* (Merriam, 1899 / Desmarest, 1803) - Invalid?); Northern River Otter; Nutria-de Río Norteamericana (Spanish)⁴²; Pacific Otter (*L.c. pacifica* (J.A. Allen, 1898) - Valid); Pah-hua-pe'na (Tewa - Taos Indians)¹⁴; Queen Charlotte Otter (*L.c. periclyzomae* (Elliot, 1905) - Valid); River Otter; Sonora Otter (*L.c. sonora* (Rhoads, 1898) - Valid); Sea-Girt Otter (*L.c. periclyzomae* (Elliot, 1905) - Valid); South East Canadian River Otter (*L.c. lataxina* (Cuvier, 1823) - Valid); South West Canadian River Otter (*L.c. sonora* (Rhoads, 1898) - Valid); Southeastern River Otter (*L.c. lataxina* (Cuvier, 1823) - Valid); Southwestern River Otter (*L.c. sonora* (Rhoads, 1898) - Valid); Texas River Otter (*L.c. texensis* (Goldman, 1935) - Invalid?); Vancouver River Otter (*L.c. vancouverensis* (Goldman, 1935) - Invalid?); Yukon River Otter (*L.c. yukonensis* (Goldman, 1935) - Invalid?). HABITS: Feeds on amphibians, birds, crustaceans, fishes, large aquatic insects, small mammals, aquatic plants and turtles. Nests are made of grasses, leaves, reeds and sticks located in dens dug in banks or within abandoned beaver and nutria dens and man-made structures. HABITAT: Within the range of this species it has been reported from permanently flowing water of streams and rivers, ponds, including beaver ponds, lakes, marshes and cienegas in areas where there is overhanging bank vegetation and haul-out and slide sites for access and where dens can be established in banks in wetland ecological formations within the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: It is believed that it formerly inhabited the Black river, Colorado River, Gila River and Salt River. The historical presence of the River Otter in Pima County is unknown. *Lontra canadensis lataxina* (Cuvier) was introduced into central Arizona during 1981 - 1983. *8 (*Lontra canadensis sonora* Rhoads), 14 (050112 - subsp. *sonora* (Rhoads); subsp. *lataxina* (Cuvier) color presentation), 42 (062112), 55 (recorded as *Lutra canadensis* (Schreber) "Formerly in all of the larger permanent river systems; now rare."), 73 (recorded as *Lutra canadensis*), 100 (recorded as *Lutra canadensis*, color photograph), 106 (050112 - includes a listing of subspecies, color presentation), 118 (recorded as *Lontra canadensis sonora* Rhoads - Distribution: Formerly occurred in the Colorado and Gila rivers and their major tributaries. Today greatly reduced in numbers. Figure 103, Page 242), 148 (color presentation)*

***Lontra canadensis* subsp. *sonora* (Rhoads, 1898): Southwestern River Otter**

SYNONYMY: *Lutra canadensis* subsp. *sonorae* Rhoads, 1898 - Invalid?. COMMON NAMES: Arizona Otter; Arizona River Otter; Common Otter; Mexican Otter; Nearctic River Otter; Pah-hua-pe'na (Tewa - Taos Indians)¹⁴; River Otter; Sonora Otter; South West Canadian River Otter; Southwestern River Otter. HABITS: Feeds on amphibians, birds, crustaceans, fishes, large aquatic insects, small mammals, aquatic plants and turtles. Nests are made of grasses, leaves, reeds and sticks located in dens dug in banks or within abandoned beaver and nutria dens and man-made structures. HABITAT: Within the range of this species it has been reported from permanently flowing water of streams and rivers, ponds, including beaver ponds, lakes, marshes and cienegas in areas where there is overhanging bank vegetation and haul-out and slide sites for access and where dens can be established in banks in wetland ecological formations within the forest, woodland, scrub, grassland and desertscrub ecological formations. NOTES: It is believed that it formerly inhabited the Black river, Colorado River, Gila River and Salt River. The historical presence of the River Otter in Pima County is unknown. *Lontra canadensis lataxina* (Cuvier) was introduced into central Arizona during 1981 - 1983. *8 (*Lontra canadensis sonora* Rhoads), 14 (050112 - subsp. *sonora* (Rhoads); subsp. *lataxina* (Cuvier) color presentation), 42 (062112), 55 (species, recorded as *Lutra canadensis* (Schreber) "Formerly in all of the larger permanent river systems; now rare."), 73 (species, recorded as *Lutra canadensis*), 100 (species, recorded as *Lutra canadensis*, color photograph), 106 (050112 - species, includes a listing of subspecies, color presentation of species), 118 (recorded as *Lontra canadensis sonora* Rhoads - Distribution: Formerly occurred in the Colorado and Gila rivers and their major tributaries. Today greatly reduced in numbers. Figure 103, Page 242), 148 (color presentation)*

Lutra canadensis (see *Lontra canadensis*)

Lutra canadensis subsp. *sonorae* (see *Lontra canadensis* subsp. *sonora*)

***Taxidea taxus* (Schreber, 1777): American Badger**

COMMON NAMES: American Badger; Badger; Berlandier's Badger (*T.t. berlandieri* Baird, 1758 - Valid); North American Badger; Mexican Badger (*T.t. berlandieri* Baird, 1758 - Valid); Tejon (Hispanic)¹⁴; Tejón ("Badger", a name also applied to the Coati, Spanish)¹⁰⁶; Texas Badger (*T.t. berlandieri* Baird, 1758 - Valid); Tlalcoyote (Spanish)^{42,106}. HABITS: Feeds on amphibians, ground dwelling birds (and eggs), carrion, fish, insects, burrowing rodents (moles, voles, gophers, ground squirrels, mice, woodrats, pack rats, prairie dogs, marmots, groundhogs), cottontails, pikas, jackrabbits, skunks, snakes and some plant material such as corn, peas, beans and mushrooms and fungi. Temporary shelter is taken in burrows. The young are born in natal dens in underground burrows. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *berlandieri* (Baird), color presentation), 42 (062112), 55 (recorded as *Taxidea taxus* (Schreber). Badger. Statewide (120 - 7,000 feet.), 65, 73, 100 (color

photograph), 106 (050212 - includes a listing of subspecies, color presentation), **118** (recorded as *Taxidea taxus* - Distribution: Statewide. Figure 98, Page 235), 145, 148 (color presentation)*

***Taxidea taxus* subsp. *berlandieri* Baird, 1858: Berlandier's Badger**

COMMON NAMES: Berlandier's Badger; Mexican Badger; Tejon (Hispanic)¹⁴; Texas Badger. HABITS: The species feeds on amphibians, ground dwelling birds (and eggs), carrion, fish, insects, burrowing rodents (moles, voles, gophers, ground squirrels, mice, woodrats, pack rats, prairie dogs, marmots, groundhogs), cottontails, pikas, jackrabbits, skunks, snakes and some plant material such as corn, peas, beans and mushrooms and fungi. Temporary shelter is taken in burrows. The young are born in natal dens in underground burrows. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *berlandieri* (Baird), color presentation), 42 (062112), 55 (species, recorded as *Taxidea taxus* (Schreber). Badger. Statewide (120 - 7,000 feet.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (050212 - species, includes a listing of subspecies, color presentation of species), 118 (recorded as *Taxidea taxus* - Distribution: Statewide. Figure 98, Page 235), **145** (described the range of *Taxidea taxus berlandieri* Baird as being throughout the state but absent from higher elevations), 148 (color presentation)*

Phyllostomidae: The Leaf-nosed Bat Family

***Choeronycteris mexicana* Tschudi, 1844: Mexican Long-tongued Bat**

COMMON NAMES: Hognose Bat; Hog-nosed Bat; Long-tongued Bat; Mexican Hog-nosed Bat; Mexican Long-tongued Bat; Murciélago Lengua Larga Mexicano (Hispanic)¹⁴; Murciélago Trompudo (Spanish)⁴². HABITS: Feeds on fruits, insects, nectar and pollen. Roosts are located under bridges, and in shallow caves, rock fissures and mine tunnels. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050212), 42 (062112), 55 (recorded as *Choeronycteris mexicana* Tschudi. Mexican Long-tailed Bat. Uncommon; usually found near the fronts of shallow caves and mine tunnels. Known from Pima, Santa Cruz and Cochise counties.), 73, 92, 100 (color photograph), 106 (050212 - color presentation), **118** (recorded as *Choeronycteris mexicana* Tschudi - Distribution: Known only from the southeastern part of the state. Figure 8, Page 33), 148 (color presentation)*

Leptonycteris curasoae subsp. *yerbabuena* (see *Leptonycteris yerbabuena*)

Leptonycteris nivalis (see footnote 55 under *Leptonycteris yerbabuena*)

Leptonycteris nivalis subsp. *nivalis* (see footnote 118 under *Leptonycteris yerbabuena*)

Leptonycteris nivalis subsp. *sanborni* (see *Leptonycteris yerbabuena*)

Leptonycteris nivalis subsp. *yerbabuena* (see *Leptonycteris yerbabuena*)

Leptonycteris sanborni (see *Leptonycteris yerbabuena*)

***Leptonycteris yerbabuena* Martínez and Villa, 1940: Lesser Long-nosed Bat**

SYNONYMY: *Leptonycteris curasoae* subsp. *yerbabuena* Martínez and Villa, 1940; *Leptonycteris nivalis* subsp. *sanborni* Hoffmeister, 1957 - Invalid?; *Leptonycteris nivalis* subsp. *yerbabuena* Martínez and Villa, 1940; *Leptonycteris sanborni* Hoffmeister, 1957. COMMON NAMES: "Leptos" (a name applied by bat enthusiasts); Lesser Long-nosed Bat; Little Long-nosed Bat; Mexican Long-nosed Bat; Murciélago de Sanborn (Hispanic)¹⁴; North American Long-nosed Bat; Sanborn's Long-nosed Bat; Sanborn's Southern Long-nosed Bat; Southern Long-nosed Bat; Yerba Buena Long-nosed Bat. HABITS: Feeds on insects, nectar, pollen and the nectar and soft-bodied fruits of agaves and cacti. Roosts are located in caves, rock crevices, abandoned mines and tunnels. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Long-nosed bats are pollinators of Agaves, Cardons, Organ Pipe Cacti and Saguars. *8, 14 (0502-12 - **Populations may be compromised by roost-site disturbance, loss of food sources and direct killing by humans.**), 35 (**This species is vulnerable to disturbances at roosting sites by cave explorers.**), 42 (062112), 55 (species, recorded as *Leptonycteris nivalis* (Saussure). Long-nosed Bat. Locally common in moist caves. Known from Pinal, Pima, Santa Cruz and Cochise Counties.), 92 (recorded as *Leptonycteris sanborni*), 100 (species, recorded as *Leptonycteris curasoae* and *Leptonycteris nivalis*, color photographs), 106 (050212 - color presentation), 110 (recorded as *Leptonycteris sanborni*), **118** (recorded as *Leptonycteris nivalis nivalis* (Saussure) - Distribution: Known only from the southeastern part of the state. Figure 9, Page 35), 148 (color presentation)*

***Macrotus californicus* Baird, 1857: California Leaf-nosed Bat**

COMMON NAMES: California Big-eared Bat; California Large-eared Bat; California Leaf-nosed Bat; Leaf-nosed Bat; Leafnose Bat; Murciélago-orejón Californiano (Spanish)⁴². HABITS: Feeds on beetles, butterflies, caterpillars, cicadas, crickets, dragonflies, grasshoppers, leafhoppers, moths and other insects. Roosts are located in caves, deep grottos and abandoned mine tunnels. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological

formations. NOTE: **Human disturbance of roosting caves is a major threat.** *8, 14 (050212), 42 (062112), **55** (recorded as *Macrotus californicus* Baird. Leaf-nosed Bat. Locally common in shallow caves, mine tunnels and under bridges. Occurs widely at lower elevations in the western and southern parts of the state.”), 73, 92, 100 (color photograph), 106 (061612 - color presentation), **118** (recorded as *Macrotus californicus* Baird - Distribution: Known from lower elevations in the southern and western parts of the state. Figure 7, Page 32), 148 (color presentation)*

Procyonidae: The Raccoon and Allies Family

***Bassariscus astutus* (Lichtenstein, 1830): Ringtail**

COMMON NAMES: Arizona Ringtail (*B.a. arizonensis* Goldman, 1932 - Valid); Arizona Ring-tailed Cat (*B.a. arizonensis* Goldman, 1932 - Valid); Band-tailed Cat; Cacomistle; Cacomixtle Norteño (Spanish)⁴²; Cat Squirrel; Civet Cat; Common Raccoon-fox; Coon Cat; Gato Minero (Hispanic)¹⁴; Mexican Ring-tailed Cat (*B.a. yumanensis* Huey, 1937 - Valid); Miner’s Cat; Nevada Ring-tailed Cat (*B.a. nevadensis* Miller, 1913 - Valid); Ringtail; Ringtail Cat; Ring-tailed Cat; Tawny Raccoon-fox (*B.a. flavus* Rhoads, 1893 - Valid); Texas Ring-tailed Cat (*B.a. flavus* Rhoads, 1893 - Valid); Yuma Ringtail (*B.a. yumanensis* Huey, 1937 - Valid); Yuma Ring-tailed Cat (*B.a. yumanensis* Huey, 1937 - Valid). HABITS: Feeds on berries, birds, fruits, carrion, crickets, eggs, insects, lizards, small mammals, snakes and spiders. Nests are made of grass located in dens in underground burrows, caves, cliffs, rocky outcrops, cavities in logs, stumps and trees and man-made structures. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8 (subsp. *arizonensis*; subsp. *nevadensis*; subsp. *yumanensis*), 14 (050212- subsp. *arizonensis* (Goldman); subsp. *flavus* (Rhoads), color presentation), 42 (062112), **55** (recorded as *Bassariscus astutus* (Lichtenstein). Ringtail. Statewide (120 - 6,500 feet.), 65 (color photograph), 73, 100 (color photograph), 106 (050212 - includes a listing of subspecies, color presentation), 118 (recorded as *Bassariscus astutus arizonensis* Goldman - Distribution: Statewide except extreme southeastern and southwestern parts; *Bassariscus astutus flavus* Rhoads - Distribution: Extreme southeastern part of the state, and *Bassariscus astutus yumanensis* Huey - Distribution: Southwestern Arizona. Figure 93, Page 227), 148 (color presentation)*

***Bassariscus astutus* subsp. *arizonensis* Goldman, 1932: Arizona Ringtail**

COMMON NAMES: Arizona Ring-tailed Cat; Band-tailed Cat; Cacomistle; Civet Cat; Coon Cat; Gato Minero (Hispanic)¹⁴; Miner’s Cat; Ringtail; Ringtail Cat; Ring-tailed Cat. HABITS: The species feeds on berries, birds, fruits, carrion, crickets, eggs, insects, lizards, small mammals, snakes and spiders. Nests are made of grass located in dens in underground burrows, caves, cliffs, rocky outcrops, cavities in logs, stumps and trees and man-made structures. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050212- subsp. *arizonensis* (Goldman); subsp. *flavus* (Rhoads), color presentation), 42 (062112), 55 (species, recorded as *Bassariscus astutus* (Lichtenstein). Ringtail. Statewide (120 - 6,500 feet.), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (050212 - species, includes a listing of subspecies, color presentation of species), **118** (recorded as *Bassariscus astutus arizonensis* Goldman - Distribution: Statewide except extreme southeastern and southwestern parts. Figure 93, Page 227), 148 (color presentation)*

***Nasua narica* (Linnaeus, 1766): White-nosed Coati**

COMMON NAMES: Antoon¹⁰⁶; Boqueron Coati (*N.n. panamensis* Allen, 1904 - Invalid?); Chula^{14,65}; Chulo¹⁴; Coati (Indian Name)¹⁴; Coati Norteño (Spanish)⁴²; Coatimundi (generally applied to roving male Coati)¹⁰⁶; Cozumel Island Coati (*N.n. nelsoni* Merriam, 1901 - Valid); Dark Coati (*N.n. molaris* Merriam, 1902 - Valid); El Gato Solo (Los Gatos en Familia)¹⁴; Manzanillo Coati (*N.n. molaris* Merriam, 1902 - Valid); Nelson’s Coati (*N.n. nelsoni* Merriam, 1901 - Valid); Pallid Coati (*N.n. molaris* Merriam, 1902 - Valid); Panamanian Coati (*N.n. panamensis* Allen, 1904 - Invalid?); Pizote^{14,106}; Red Coati (*N.n. rufus* Goldman, 1932 - Invalid?); Tamaulipas Coati (*N.n. molaris* Merriam, 1902 - Valid); Tejón (means Badger, but is a name that is also applied to the Coati, Spanish)¹⁰⁶; White-nosed Coati; Yucatan Coati (*N.n. yucatanica* J.A. Allen, 1904 - Valid); Yucatanian Coati (*N.n. yucatanica* J.A. Allen, 1904 - Valid). HABITS: Feeds on the berries of juniper and manzanita, birds, carrion, eggs, fruits, insects (including among others crickets and grasshoppers) and other invertebrates, prickly pear fruit, lizards, small mammals, nuts, snakes, tubers, worms and yucca fruits. Young are born in dens located in caves, crevices in rocks, mines shafts and cavities among tree roots. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - color presentation), 42 (062112), 55 (recorded as *Nasua narica* (Linnaeus). Coati. In woodland situations in the Graham, Chiricahua, Huachuca, Patagonia and Pena Blanca mountains (5,000 to 7,500 feet.), **65** (Reported that “eyewitness accounts by ranchers established that they (*Nasua narica*) were in the Rincon Mountains in what is now part of the Saguaro National Monument in the very early 1900s. Page 42”), 73, 100 (color photograph), 106 (050212 - includes a listing of subspecies, color presentation), 118 (recorded as *Nasua narica pallida* Allen - Distribution: Mountains of southern and southeastern part of the state. Figure 95, Page 230), 148 (color presentation), 149*

***Nasua narica* subsp. *molaris* Merriam, 1902: Manzanillo Coati**

SYNONYMY: *Nasua narica* subsp. *pallida* J.A. Allen, 1904 - Invalid?. COMMON NAMES: Coati (Indian Name)¹⁴; Coatimundi (applied to roving male Coati)¹⁰⁶; Dark Coati; Manzanillo Coati; Pallid Coati; Tamaulipas Coati; Tejón (means Badger, but is a name that is also applied to the Coati, Spanish). HABITS: The species feeds on the berries of juniper and manzanita, birds, carrion, eggs, fruits, insects (including among others crickets and grasshoppers) and other invertebrates, prickly

pear fruit, lizards, small mammals, nuts, snakes, tubers, worms and yucca fruits. Young are born in dens located in caves, crevices in rocks, mines shafts and cavities among tree roots. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - species, color presentation), 42 (062112), 55 (species, recorded as *Nasua narica* (Linnaeus). Coati. In woodland situations in the Graham, Chiricahua, Huachuca, Patagonia and Pena Blanca mountains (5,000 to 7,500 feet).), 65 (species, reported that “eyewitness accounts by ranchers established that they (*Nasua narica*) were in the Rincon Mountains in what is now part of the Saguaro National Monument in the very early 1900s.” Page 42), 73 (species), 100 (species, color photograph), 106 (050212 - species, includes a listing of subspecies, color presentation of species), 118 (recorded as *Nasua narica pallida* Allen - Distribution: Mountains of southern and southeastern part of the state. Figure 95, Page 230), 148 (color presentation), 149*

Nasua narica subsp. *pallida* (see *Nasua narica* subsp. *molaris*)

***Procyon lotor* (Linnaeus, 1758): Common Raccoon**

COMMON NAMES: Ahrah-koon-em (“[the] One Who Rubs, Scrubs, and Scratches with Its Hands”, Proto-Algonquian)¹⁰⁶; Alabama Raccoon (*P.l. varius* Nelson and Goldman, 1930 - Invalid?); Araiguma (transcribed Japanese)¹⁰⁶; Arathkone (transcribed Powhatan)¹⁰⁶; Aroughcun (transcribed Powhatan)¹⁰⁶; Bahama Raccoon (*P.l. maynardi* Bangs, 1898 - Valid); Bahamas Raccoon (*P.l. maynardi* Bangs, 1898 - Valid); Bahamian Raccoon (*P.l. maynardi* Bangs, 1898 - Valid); Baja California Raccoon (*P.l. grinnelli* Nelson and Goldman, 1930 - Valid); Barbados Raccoon (*P.l. gloveralleni* Nelson and Goldman, 1930 - Valid: extinct); California Raccoon (*P.l. psora* Gray, 1842 - Valid); Campeche Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); Coastal Marsh Raccoon (*P.l. lotor* (Linnaeus, 1758) - Valid); Colorado Desert Raccoon (*P.l. pallidus* Merriam, 1900 - Valid); Common Raccoon; Coon (colloquial abbreviation)¹⁰⁶; Costa Rican Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); Desert Raccoon (*P.l. pallidus* Merriam, 1900 - Valid); Dickey’s Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); Eastern Raccoon (*P.l. lotor* (Linnaeus, 1758) - Valid); Florida Raccoon (*P.l. elucus* Bangs, 1898 - Valid); Guadeloupe Raccoon (*P.l. minor* Miller, 1911 - Invalid?); Hernandez Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); Hilton Head Island Raccoon (*P.l. solutus* Nelson and Goldman, 1931 - Invalid?); Isthmian Raccoon (*P.l. pumilus* Miller, 1911 - Valid); Key Vaca Raccoon (*P.l. auspicatus* Nelson, 1930 - Valid); Key West Raccoon (*P.l. incautus* Nelson, 1930 - Valid); Mapache (Spanish: from the Uto-Aztecan, Náhuatl [Aztec] word Mapachitli “[the] One Who Takes Everything in Its Hands”)¹⁰⁶; Mapache Común (Spanish)⁴²; Matecumbe Key Raccoon (*P.l. inesperatus* Nelson, 1930 - Valid); Mexican Plateau Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); Mexican Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); Mississippi Delta Raccoon (*P.l. megalodous* Lowery, 1943 - Valid); Mosómedve (Hungarian)¹⁰⁶; North American Raccoon; Northern Raccoon; Orsetto Lavatore (Italian)¹⁰⁶; Pacific Raccoon (*P.l. pacificus* Merriam, 1899 - Valid); Pacific Northwest Raccoon (*P.l. pacificus* Merriam, 1899 - Valid); Pale Raccoon (*P.l. pallidus* Merriam, 1900 - Valid); Pallid Raccoon (*P.l. pallidus* Merriam, 1900 - Valid); Raccoon; Racoona; Racuno (Hispanic)¹⁴; Ratão-lavadeiro (Portuguese: Portugal)¹⁰⁶; Raton Laveur (French)^{42,106}; Saint Simon Island Raccoon (*P.l. litoreus* Nelson and Goldman, 1930 - Valid); Salvadore Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); San Diego Raccoon (*P.l. psora* Gray, 1842 - Valid); Sleepy Raccoon (*P.l. hernandezii* Wagler, 1831 - Valid); Snake River Valley Raccoon (*P.l. excelsus* Nelson and Goldman, 1930 - Valid); Southwestern Raccoon (*P.l. psora* Gray, 1842 - Valid); Ten Thousand Islands Raccoon (*P.l. marinus* Nelson, 1930 - Valid); Texas Raccoon (*P.l. fuscipes* Mearns, 1914 - Valid); Thousand Island Raccoon (*P.l. marinus* Nelson, 1930 - Valid); Torch Key Raccoon (*P.l. incautus* Nelson, 1930 - Valid); Tres Marias Raccoon (*P.l. insularis* Merriam, 1898 - Valid); Upper Mississippi Valley Raccoon (*P.l. hirtus* Nelson & Goldman, 1930 - Valid); Vancouver Raccoon (*P.l. vancouverensis* Nelson and Goldman, 1930 - Valid); Waschbär (German)¹⁰⁶. HABITS: Feeds on annelid worms, berries, birds, nestlings and eggs, carrion, crayfishes, small fishes, frogs, fruits, insects, small mammals, nuts, shellfish, turtles and turtle eggs and vegetables. Nests are made of leaves located in dens in small caves, amongst boulders, rocky crevices in cliffs and cavities in trees. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Raccoons are never very far from permanent water. *14 (050212 - subsp. *hirtus* (Nelson & Goldman); subsp. *mexicanus* (Baird); subsp. *pallidus* (Merriam)), 42 (062112), 55 (recorded as *Procyon lotor* (Linnaeus). Raccoon. Riparian situations along the Colorado, Little Colorado and Gila river systems and in the grasslands of the southeastern portion of the state (120 - 6,900 feet).), 65 (color photograph), 73, 100 (color photograph), 106 (050212 - includes a listing of subspecies, color presentation), 118 (recorded as *Procyon lotor* subsp. *mexicanus* Baird - Distribution: Southeastern Arizona; *Procyon lotor* subsp. *pallidus* Merriam - Distribution: Northern and Western Arizona. Figure 94, Page 229), 148 (color presentation), 149*

***Procyon lotor* subsp. *hernandezii* Wagler, 1831: Mexican Plateau Raccoon**

SYNONYMY: *Procyon lotor* subsp. *mexicana* Baird, 1858 - Invalid?; *Procyon lotor* subsp. *mexicanus* Baird, 1858 - Invalid?. COMMON NAMES: Hernandez Raccoon; Mexican Plateau Raccoon; Mexican Raccoon; Raccoon; Racuno (Hispanic)¹⁴. HABITS: Feeds on annelid worms, berries, birds, nestlings and eggs, carrion, crayfishes, small fishes, frogs, fruits, insects, small mammals, nuts, shellfish, turtles and turtle eggs and vegetables. Nests are made of leaves located in dens in small caves, amongst boulders, rocky crevices in cliffs and cavities in trees. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Raccoons are never very far from permanent water. *14 (050212 - subsp. *hirtus* (Nelson & Goldman); subsp. *mexicanus* (Baird); subsp. *pallidus* (Merriam)), 42 (062112), 55 (species, recorded as *Procyon lotor* (Linnaeus). Raccoon. Riparian situations along the Colorado, Little Colorado and Gila River systems and in the grasslands of the southeastern portion of the state (120 - 6,900 feet).), 65 (color photograph), 73 (species), 100 (species, color photograph of species), 106 (050212 - species, includes a listing

of subspecies, color presentation of species), **118** (recorded as *Procyon lotor mexicanus* Baird - Distribution: Southeastern Arizona. Figure 94, Page 229), 148 (color presentation), 149*

Procyon lotor subsp. *mexicana* (see *Procyon lotor* subsp. *hernandezii*)

Procyon lotor subsp. *mexicanus* (see *Procyon lotor* subsp. *hernandezii*)

Sciuridae: The Squirrel and Allies Family

***Ammospermophilus harrisi* (Audubon and Bachman, 1854): Harris' Antelope Squirrel**

SYNONYMY: *Citellus harrisi* (Audubon and Bachman, 1854) - Invalid?. COMMON NAMES: Ardilla de Tierra Harris (Hispanic)¹⁴; Ardilla-antilope de Sonora (Spanish)⁴²; Bahia Kino Antelope Squirrel (*A.h. saxicolus* (Mearns, 1896) - Invalid?); Gray-tailed Antelope Squirrel (*A.h. harrisi* (Audubon and Bachman, 1854) - Invalid?); Harris Antelope Squirrel; Harris' Antelope Squirrel; Harris' Antelope-squirrel; Harris's Antelope Squirrel; Rock Spermophile (*A.h. saxicolus* (Mearns, 1896) - Invalid?); Yuma Antelope Squirrel (*A.h. saxicolus* (Mearns, 1896) - Invalid?). HABITS: Feeds on fruits, insects, plants and seeds. Dens are located in underground burrows. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *harrisi*), 42 (062112), **55** (recorded as *Citellus harrisi* (Audubon & Bachman). Harris Antelope Squirrel. Southern and western parts of the state at elevations below 6,500 feet.), 65 (color photograph), 73, 100 (color photograph), 106 (050212 - color presentation), 118 (recorded as *Citellus harrisi harrisi* (Audubon & Bachman) - Distribution: Southern and western Arizona except for most of Yuma County. *Citellus harrisi saxicola* (Mearns) - Distribution: Southwestern Arizona. Figure 38, Page 85), 148 (color presentation), 149*

***Ammospermophilus harrisi* subsp. *harrisi* (Audubon and Bachman, 1854) - Invalid?: Harris' Antelope Squirrel**

SYNONYMY: *Citellus harrisi* subsp. *harrisi* (Audubon & Bachman, 1854) - Invalid?. COMMON NAMES: Ardilla de Tierra Harris (Hispanic)¹⁴; Gray-tailed Antelope Squirrel; Harris Antelope Squirrel; Harris' Antelope Squirrel; Harris' Antelope-squirrel; Harris's Antelope Squirrel. HABITS: The species feeds on fruits, insects, plants and seeds. Dens are located in underground burrows. HABITAT: Within the range of this species it has been reported from the grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *harrisi*), 42 (062112 - no subspecies listed), 55 (species, recorded as *Citellus harrisi* (Audubon & Bachman). Harris Antelope Squirrel. Southern and western parts of the state at elevations below 6,500 feet.), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (050212 - color presentation), **118** (recorded as *Citellus harrisi harrisi* (Audubon & Bachman) - Distribution: Southern and western Arizona except for most of Yuma County, Page 85), 148 (color presentation), 149*

Citellus harrisi (see *Ammospermophilus harrisi*)

Citellus harrisi subsp. *harrisi* (see *Ammospermophilus harrisi* subsp. *harrisi*)

Citellus tereticaudus (see *Spermophilus tereticaudus*)

Citellus tereticaudus subsp. *neglectus* (see footnote 118 under *Spermophilus tereticaudus*)

Citellus variegatus (see *Spermophilus variegatus*)

Citellus variegatus subsp. *grammurus* (see *Spermophilus variegatus* subsp. *grammurus*)

Otospermophilus variegatus (see *Spermophilus variegatus*)

Otospermophilus variegatus subsp. *grammurus* (see *Spermophilus variegatus* subsp. *grammurus*)

***Spermophilus tereticaudus* Baird, 1858: Round-tailed Ground Squirrel**

SYNONYMY: *Citellus tereticaudus* Baird - Invalid?. COMMON NAMES: Ardillón Cola Redonda (Spanish)^{42,106}; Arizona Round-tailed Ground Squirrel (*S.t. neglectus* Merriam, 1889 - Invalid?); Coachella Valley Round-tailed Ground Squirrel (*S.t. chlorus* (Elliot, 1904) - Valid); Dolan Spring Ground Squirrel (*S.t. neglectus* Merriam, 1889 - Invalid?); Neglected Spermophile (*S.t. neglectus* Merriam, 1889 - Invalid?); Round-tailed Ground Squirrel. HABITS: Feeds on the buds of burroweed and mesquite; the leaves of shrubs; the flowers of ocotillo, palo verde, plantain, and saltbush; on the seeds of creosote bush and mesquite, and cacti, grasses, insects (ants, grasshoppers, termites), observed taking Gambel's Quail chicks and visiting road kill. Nests are made of plant fibers and stems and located in dens in underground burrows. HABITAT: Within the range of this species it has been reported from the desertscrub ecological formation. *14 (050212), 42 (062112), **55** (recorded as *Citellus tereticaudus* Baird. Round-tailed Ground Squirrel. Lower Sonoran Life-zone of the western part of the state (below 3,200 feet.), 65, 73, 100 (color photograph), 106 (050212 - includes a listing of subspecies, color presentation), **118** (recorded as *Citellus*

tereticaudus neglectus (Merriam) - Distribution: Lower Sonoran Life Zone of southwestern Arizona. Figure 39, Page 90), 148 (color presentation)*

***Spermophilus variegatus* (Erxleben, 1777): Rock Squirrel**

SYNONYMY: *Citellus variegatus* (Erxleben) - Invalid?; *Otospermophilus variegatus* (Erxleben, 1777) - Invalid?. COMMON NAMES: Ardilla Coluda (Hispanic)¹⁴; Ardillón de Roca (Spanish)⁴²; Black-backed Rock Squirrel (*S.v. buckleyi* Slack, 1861 - Invalid?); Brown-headed Rock Squirrel (*S.v. rupestris*, (J. Allen, 1903) - Invalid?); Buckley's Spermophile (*S.v. buckleyi* Slack, 1861 - Invalid?); Bushy-tailed Spermophile (*S.v. grammurus* (Say, 1823) - Invalid?); Malpais Rock Squirrel (*S.v. tularosae* (Benson, 1932) - Invalid?); Mexican Rock Squirrel (*S.v. variegatus* (Erxleben, 1777 - Invalid?); Rock Squirrel; Say's Rock Squirrel (*S.v. grammurus* (Say, 1823) - Invalid?); Tiburon Rock Squirrel (*S.v. tiburonensis* Jones and Manning, 1989 - Invalid?); Tularosa Rock Squirrel (*S.v. tularosae* (Benson, 1932) - Invalid?); Utah Rock Squirrel (*S.v. utah* (Merriam, 1903) - Invalid?); Varied Squirrel; Walnut Rock Squirrel (*S.v. juglans* (V. Bailey, 1913) - Invalid?). HABITS: Feeds on acorns, berries, small birds, chicks and eggs, carrion, insects, fruits, small mammals, nuts and seeds. Nests are made of leaves, pine needles and plant fibers and located in dens in underground burrows between boulders, rock crevices and talus. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *grammurus* (Say); *tularosae* (Benson), color presentation), 42 (062112), 55 (recorded as *Citellus variegatus* (Erxleben). Rock Squirrel. Statewide, especially at elevations below 6,000 feet.), 65 (color photograph), 73, 100 (color photograph), 106 (050212 - color presentation), 118 (recorded as *Citellus variegatus grammurus* (Say) - Distribution: Statewide, especially common below 6000 feet. Figure 37, Page 82), 148 (color presentation), 149*

***Spermophilus variegatus* subsp. *grammurus* Say, 1823 - Invalid?: Say's Rock Squirrel**

SYNONYMY: *Citellus variegatus* subsp. *grammurus* - Invalid?; *Otospermophilus variegatus* subsp. *grammurus* Say, 1823 - Invalid?. COMMON NAMES: Ardilla Coluda (Hispanic); Bushy-tailed Spermophile; Rock Squirrel; Say's Rock Squirrel. HABITS: The species feeds on acorns, berries, small birds, chicks and eggs, carrion, insects, fruits, small mammals, nuts and seeds burrows. Nests are made of leaves, pine needles and plant fibers and located in dens in underground burrows between boulders, rock crevices and talus. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *grammurus* (Say); *tularosae* (Benson), color presentation), 42 (062112 - no subspecies listed), 55 (species, recorded as *Citellus variegatus* (Erxleben). Rock Squirrel. Statewide, especially at elevations below 6,000 feet.), 65 (species, color photograph of species), 73 (species), 100 (species, color photograph of species), 106 (050212 - species, color presentation of species), 118 (recorded as *Citellus variegatus grammurus* (Say) - Distribution: Statewide, especially common below 6000 feet. Figure 37, Page 82), 148 (color presentation), 149*

Soricidae: The Shrew Family

***Notiosorex crawfordi* (Coues, 1877): Desert Shrew**

COMMON NAMES: Crawford's Desert Shrew (*N.c. crawfordi* (Coues, 1877) - Invalid?); Crawford's Gray Shrew; Desert Shrew; Gray Shrew; Musarana del Deseirto Crawford (Hispanic)¹⁴; Musaraña-desértica Norteña (Spanish)⁴². HABITS: Feeds on centipedes, insects, lizards, small mice, scorpions, sowbugs and spiders. Nests are made of shredded bark and leaves and located in packrat dens or under dead agaves. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *crawfordi*, color presentation), 42 (061712), 55 (recorded as *Notiosorex crawfordi* (Coues). Desert Shrew. Locally common, widely distributed statewide at elevations below 6,000 feet, especially in riparian situations.), 65, 73, 100 (color photograph), 106 (050212 - color presentation), 118 (recorded as *Notiosorex crawfordi crawfordi* (Coues) - Distribution: Probably occurs statewide at elevations below 6000 feet. Figure 5, Page 30), 148 (color presentation)*

***Notiosorex crawfordi* subsp. *crawfordi* (Coues, 1877) - Invalid?: Crawford's Desert Shrew**

COMMON NAMES: Crawford's Desert Shrew; Crawford's Gray Shrew; Desert Shrew; Gray Shrew; Musarana del Deseirto Crawford (Hispanic)¹⁴. HABITS: The species feeds on centipedes, insects, lizards, small mice, scorpions, sowbugs and spiders. Nests are made of shredded bark and leaves and located in packrat dens or under dead agaves. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050212 - subsp. *crawfordi*, color presentation of species), 42 (061712 - no subspecies listed), 55 (species, recorded as *Notiosorex crawfordi* (Coues). Desert Shrew. Locally common, widely distributed statewide at elevations below 6,000 feet, especially in riparian situations.), 65 (species), 73 (species), 100 (species, color photograph of species), 106 (050212 - color presentation of species), 118 (recorded as *Notiosorex crawfordi crawfordi* (Coues) - Distribution: Probably occurs statewide at elevations below 6000 feet. Figure 5, Page 30), 148 (color presentation of species)*

Tayassuidae: The Javelina Family

Dicotyles tajacu (see *Pecari tajacu*)

Dicotyles tajacu subsp. *sonoriensis* (see *Pecari tajacu* subsp. *sonoriensis*)

Pecari angulatus (see footnote 65 under *Pecari tajacu* and/or *Pecari tajacu* subsp. *sonoriensis*)

***Pecari tajacu* (Linnaeus, 1758): Collared Peccary**

SYNONYMY: *Dicotyles tajacu* (Linnaeus, 1758) - Invalid?; *Tayassu tajacu* (Linnaeus, 1758). COMMON NAMES: Báquiro¹⁰⁶; Collared Peccary; Jabalina (Hispanic)¹⁴; Javelina; Mexican Hog; Musk Hog; Pecari de Collar (Spanish)⁴²; Peccary; Pigelina (Arizona); Quenk (Trinidad)¹⁰⁶; Saino¹⁰⁶; Sonoran Collared Peccary (*P.t. sonoriensis* (Mearns, 1897) - Invalid?); Sonora Peccary (*P.t. sonoriensis* (Mearns, 1897) - Invalid?); Texan Collard Peccary (*P.t. angulatus* (Cope, 1889) - Invalid?); Wild Hog; Wild Pig. HABITS: Feeds on agaves, amphibians, berries, bulbs, fruits, fungi, grasses, insects, mesquite beans, nuts, roots, palm nuts, succulent plants, prickly-pear and other cacti, reptiles, rodents, roots, sotol, tubers and worms. Javelina bed down during the day in thick brush and prickly-pear thickets and at night in burrows usually under the roots of trees. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050312 - subsp. *sonoriensis* (Mearns), color presentation), 42 (061712), 55 (recorded as *Tayassu tajacu* (Linnaeus), Javelina. Southeastern and central parts of the state (1,200 - 6,000 feet).), 65 (recorded as *Pecari angulatus*), 73 (recorded as *Dicotyles tajacu*), 100 (recorded as *Tayassu tajacu*, color photograph), 106 (050312 - color presentation), 118 (recorded as *Tayassu tajacu sonoriensis* (Mearns) - Distribution: Southern part of the state. Figure 107, Page 249), 148 (color presentation), 149*

***Pecari tajacu* subsp. *sonoriensis* (Mearns, 1897) - Invalid?: Sonoran Collared Peccary**

SYNONYMY: *Dicotyles tajacu* subsp. *sonoriensis* (Mearns, 1897) - Invalid?; *Tayassu tajacu* subsp. *sonoriensis* (Mearns, 1897) - Invalid?. COMMON NAMES: Collared Peccary; Jabalina (Hispanic)¹⁴; Javelina; Musk Hog; Peccary; Pigelina (Arizona); Sonora Peccary; Sonoran Collared Peccary. HABITS: The species feeds on agaves, amphibians, berries, bulbs, fruits, fungi, grasses, insects, mesquite beans, nuts, roots, palm nuts, succulent plants, prickly-pear and other cacti, reptiles, rodents, roots, sotol, tubers and worms. Javelina bed down during the day in thick brush and prickly-pear thickets and at night in burrows usually under the roots of trees. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050312 - subsp. *sonoriensis* (Mearns), color presentation), 42 (061712 - no subspecies listed), 55 (species, recorded as *Tayassu tajacu* (Linnaeus). Javelina. Southeastern and central parts of the state (1,200 - 6,000 feet).), 65 (species, recorded as *Pecari angulatus*), 73 (species, recorded as *Dicotyles tajacu*), 100 (species, recorded as *Tayassu tajacu*, color photograph of species), 106 (050312 - color presentation of species), 118 (recorded as *Tayassu tajacu sonoriensis* (Mearns) - Distribution: Southern part of the state. Figure 107, Page 249), 148 (color presentation), 149*

Tayassu tajacu (see *Pecari tajacu*)

Tayassu tajacu subsp. *sonoriensis* (see see *Pecari tajacu* subsp. *sonoriensis*)

Ursidae: The Bear Family

Euarctos americanus (see *Ursus americanus*)

Euarctos americanus subsp. *amblyceps* (see *Ursus americanus* subsp. *amblyceps*)

***Ursus americanus* Pallas, 1780: Black Bear**

SYNONYMY: *Euarctos americanus* (Pallas, 1780) - Invalid?. COMMON NAMES: Alexander Black Bear (*U.a. pugnax* Swarth, 1911 - Valid); American Black Bear (*U.a. americanus* Pallas, 1780 - Valid); Awasos (Algonquian: Abenaki)¹⁰⁶; 'Baribal' (French, Italian, Spanish)¹⁰⁶; Black Bear; Blue Bear (*U.a. emmonsii* Dall, 1895 - Valid); British Columbia Bear (*U.a. altifrontalis* Elliot, 1903 - Valid); California Black Bear (*U.a. californiensis* Miller, 1900 - Valid); Cinnamon Bear (*U.a. cinnamomum* Audubon and Bachman, 1854 - Valid); Dall Black Bear (*U.a. pugnax* Swarth, 1911 - Valid); Dall Island Black Bear (*U.a. pugnax* Swarth, 1911 - Valid); Daxpitchée (Siouan: Crow)¹⁰⁶; Desert Black Bear (*U.a. eremicus* Merriam, 1904 - Valid); Eastern Black Bear (*U.a. americanus* Pallas, 1780 - Valid); Emmons Bear (*U.a. emmonsii* Dall, 1895 - Valid); Emmons's Glacier Bear (*U.a. emmonsii* Dall, 1895 - Valid); Everglades Bear (*U.a. floidanus* Merriam, 1896 - Valid); Fighting Bear (*U.a. machetes* Elliot, 1903 - Valid); Florida Black Bear (*U.a. floidanus* Merriam, 1896 - Valid); Floridan Bear (*U.a. floidanus* Merriam, 1896 - Valid); Glacier Bear (*U.a. emmonsii* Dall, 1895 - Valid; *U.a. glacialis* Kells, 1897 - Invalid?); Gv-ni-ge-yo-na (Iroquoian: Tsalagi)¹⁰⁶; Haida Gwaii Black Bear (*U.a. carlottae* Osgood, 1901 - Valid); Hoonaw (Uto-Aztecan: Hopi)¹⁰⁶; Hunter's Bear (*U.a. perniger* J.A. Allen, 1910 - Valid [*U.a. hunteri* Anderson, 1944 - Invalid?]); Jóona (Uto-Aztecan: Mayo [Yoreme])¹⁰⁶; Judumi (Uto-Aztecan: O'odham)¹⁰⁶; Kenai Peninsula Bear (*U.a. perniger* J.A. Allen, 1910 - Valid); Kermode Bear (*U.a. kermodei* Hornaday, 1905 - Valid); Kenai Black Bear (*U.a. perniger* J.A. Allen, 1910 - Valid); Kiááyo (Algonquian: Blackfoot)¹⁰⁶; Kmákan (Yuman: Kiliwa)¹⁰⁶; Louisiana Black Bear (*U.a. luteolus* Griffith, 1821 - Valid); Mahkwa (Algonquian: Kickapoo)¹⁰⁶; Makwa (Algonquian)¹⁰⁶; Makwaa (Algonquian: Ojibwe)¹⁰⁶; Maskwa (Algonquian: Cree)¹⁰⁶; Mato (Siouan: Lakota [Sioux])¹⁰⁶; Mexican Black Bear (*U.a. eremicus* Merriam, 1904 - Valid); Minnesota Black Bear (*U.a. americanus* Pallas, 1780 -

Valid); New Mexico Black Bear (*U.a. amblyceps* Baird, 1859 - Valid); Newfoundland Black Bear (*U.a. hamiltoni* Cameron, 1957 - Valid); North American Black Bear; Northwestern Black Bear (*U.a. altifrontalis* Elliot, 1903 - Valid); Ohio (Uto-Aztec: Guarijío)¹⁰⁶; Ojuí (Uto-Aztec: Tarahumara)¹⁰⁶; Olympic Black Bear (*U.a. altifrontalis* Elliot, 1903 - Valid); Oso Negro (Hispanic)¹⁴; Oso Negro (Spanish)⁴²; Ours Noir (French)⁴²; Queen Charlotte Black Bear (*U.a. carlottae* Osgood, 1901 - Valid); S'eeek (Na-Dené: Tlingit)¹⁰⁶; Shash [Lizhinígíí] (Athabaskan: Navajo)¹⁰⁶; Shoot-zhraií (Athabaskan: Gwich'in)¹⁰⁶; Sonborger's Black Bear (*U.a. americanus* Pallas, 1780 - Valid; *U.a. songborgeri* Bangs, 1898 - Invalid?); Spirit Bear (*U.a. kermodei* Hornaday, 1905 - Valid); S□S (Athabaskan: Carrier)¹⁰⁶; Texan Black Bear (*U.a. luteolus* Griffith, 1821 - Valid); Tlācamāyeh (Uto-Aztec: Náhuatl)¹⁰⁶; Tsah (Athabaskan: Dene)¹⁰⁶; Vancouver Bear (*U.a. vancouveri* Hall, 1928 - Valid); Vancouver Island Black Bear (*U.a. vancouveri* Hall, 1928); Weda' (Uto-Aztec: Shoshone)¹⁰⁶; West Mexico Black Bear (*U.a. machetes* Elliot, 1903 - Valid); Yáaka' (Plateau Penutian: Sahaptian [Nez Perce])¹⁰⁶; Yáka (Plateau Penutian: Sahaptian [Sahaptin])¹⁰⁶. HABITS: Feeds on acorns, ants, beetles, berries, buds, carrion, crickets, currants, fish, fruits, grapes, grubs, insects, leaves, pinyon nuts, prickly-pear fruit, raspberries, sprouts, small to medium-size mammals and other vertebrates and twigs. Shelter is taken in dense cover and they climb trees to escape danger. Nests are made of grasses leaves, mud and sticks located in a den. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: Winnipeg (aka "Winnie" 1915-1934) of "Winnie the Pooh" fame was a female Black Bear cub, and Black Bear cubs were also involved in the naming of Smokey the Bear and the Teddy Bear. *14 (050312 - subsp. *amblyceps* (Baird), color presentation), 42 (061712), 55 (recorded as *Euarctos americanus* (Pallas). Black Bear. Formerly common throughout the mountainous areas of the state, now greatly reduced in numbers and distribution.), 73, 100 (color photograph), 106 (050312 - includes a listing of subspecies, color presentation), 118 (recorded as *Euarctos americanus amblyceps* (Baird) - Distribution: Probably formerly occurred throughout the state, at least in mountainous areas. Figure 91, Page 224), 148 (color presentation), ADS (Bear killed in SaddleBrooke' relatively unafraid' of humans, Wednesday, June 6, 2012, Page A2)*

***Ursus americanus* subsp. *amblyceps* Baird, 1859: New Mexico Black Bear**

SYNONYMY: *Euarctos americanus* subsp. *amblyceps* (Baird, 1859) - Invalid?. COMMON NAMES: Black Bear; New Mexico Black Bear; Oso Negro (Hispanic)¹⁴. HABITS: The species feeds on acorns, ants, beetles, berries, buds, carrion, crickets, currants, fish, fruits, grapes, grubs, insects, leaves, pinyon nuts, prickly-pear fruit, raspberries, sprouts, small to medium-size mammals and other vertebrates and twigs. Shelter is taken in dense cover and they climb trees to escape danger. Nests are made of grasses leaves, mud and sticks located in a den. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050312 - subsp. *amblyceps* (Baird), color presentation), 42 (061712), 55 (species, recorded as *Euarctos americanus* (Pallas). Black Bear. Formerly common throughout the mountainous areas of the state, now greatly reduced in numbers and distribution.), 73 (species), 100 (species, color photograph of species), 106 (050312 - includes a listing of subspecies, color presentation), **118** (recorded as *Euarctos americanus amblyceps* (Baird) - Distribution: Probably formerly occurred throughout the state, at least in mountainous areas. Figure 91, Page 224), 148 (color presentation of species)*

Ursus arctos (see footnotes 14 and 100 under *Ursus arctos* subsp. *horribilis*)

***Ursus arctos* subsp. *horribilis* Ord, 1815: Grizzly Bear**

SYNONYMY: *U.a. apache* Merriam, 1916 - Invalid?; *U.a. arizonae* Merriam, 1916 - Invalid?; *U.a. bairdi* Merriam, 1914 - Invalid?; *U.a. horriaeus* Baird, 1858 - Invalid?; *U.a. kenneerlyi* Merriam, 1914 - Invalid?; *U.a. navaho* Merriam, 1914 - Invalid?; *U.a. perturbans* Merriam, 1918 - Invalid?; *U.a. texensis* Merriam, 1914 - Invalid?; *Ursus horribilis* Ord, 1815 - Invalid?. COMMON NAMES: American Grizzly Bear (*U.a. horribilis* Ord, 1815 - Valid); Apache Grizzly (*U.a. horribilis* Ord, 1815 - Valid); *U.a. apache* Merriam, 1916 - Invalid?; Arizona Brown Bear (*U.a. horribilis* Ord, 1815 - Valid); *U.a. arizonae* Merriam, 1916 - Invalid?; Arizona Grizzly (*U.a. horribilis* Ord, 1815 - Valid); *U.a. arizonae* Merriam, 1916 - Invalid?; Baird Grizzly (*U.a. horribilis* Ord, 1815 - Valid); *U.a. bairdi* Merriam, 1914 - Invalid?; Big Plains Grizzly (*U.a. horribilis* Ord, 1815 - Valid); Brown Bear (*Ursus arctos* Linnaeus, 1758 - Valid); *U.a. arctos* Linnaeus, 1758 - Valid; *U.a. horribilis* Ord, 1815 - Valid; *U.a. pruinosus* Blyth, 1854 - Invalid?); Grizzly; Grizzly Bear (*Ursus arctos* Linnaeus - Valid, 1758; *U.a. horribilis* Ord, 1815 - Valid); Navajo Grizzly (*U.a. horribilis* Ord, 1815 - Valid; *U.a. navaho* Merriam, 1914 - Invalid?); New Mexico Grizzly (*U.a. horribilis* Ord, 1815 - Valid; *U.a. bairdi* Merriam, 1914 - Invalid?); North American Brown Bear; Oso Gris (Hispanic)¹⁴; Silvertip (*U.a. horribilis* Ord, 1815 - Valid); Silvertip Bear; Sonora Grizzly (*U.a. horribilis* Ord, 1815 - Valid; *U.a. kenneerlyi* Merriam, 1914 - Invalid?); Texas Brown Bear (*U.a. horribilis* Ord, 1815 - Valid; *U.a. texensis* Merriam, 1914 - Invalid?); Texas Grizzly (*U.a. horribilis* Ord, 1815 - Valid; *U.a. texensis* Merriam, 1914 - Invalid?). HABITS: The species feeds on berries, carrion, fish (bass, salmon and trout), fungi, grasses, insects (Army Cutworm moths), leaves, large mammals (Bison, Black Bear, Caribou, Deer, Elk, Moose and Mountain Goats) and small mammals (rodents), nuts (Whitebark Pine nuts), roots and sprouts. The Grizzly Bear beds down in depressions in thickets. Dens are excavated from under rocks or located in caves, crevices or hollow trees. HABITAT: Within the range of this species it has been reported from the tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: The last confirmed "kill" in Arizona was made on the slopes of Mount Baldy (Apache County) in the summer of 1939. Pad marks and two-colored, four inch long hairs of a Grizzly Bear were observed in the Sierra Madre of southwestern Chihuahua as late as 1959. Grizzly Bears were killed-off by American immigrants because of the risks posed to humans and livestock. The Grizzly Bear has been EXTIRPATED from Arizona. *14 (050312 - *Ursus arctos* subsp. *horriaeus* Baird, 1858 - Extinct; subsp. *perturbans* Merriam - Extinct), 39 (recorded as *Ursus horribilis* - included the following note when referring to Grizzly Bears in the Tucson Area "Jack O'Connor told us of a kill in

the Catalinas in 1915. Up until 1912, there were quite a few grizzly bears in the Catalinas and also the Galiuros. The Santa Cruz River bottom was a favorite hangout of these bears, all the way from Nogales to the Tucson area. We have a few authentic reports of desert grizzlies, but Jack talked with some old timers who hunted them in the river bottom.” It reported that the majority of grizzly bears in Arizona were found in the east-central part of the state. The bears entire range, however, stretched from Bill Williams Mountain southeast to Springerville, the Chuska Mountains of the Four Corners area, then south to the Chiricahuas, west to Nogales, north using the Santa Cruz River as a western boundary to the Tucson area. Also the Santa Ritas, Catalinas, Galiuros, the Pinals, Sierra Anchas, the Young country of Canyon and Cherry Creeks, the Mazatzals, Pine Mountain, the Bradshaws, Mingus Mountain, the Camp Wood area and Sycamore Canyon, south of Bill Williams Mountain. The following dates of last known “kills” were provided: Arizona on September 13, 1935 (however, there was a possible sighting in 1936); California in August 1922; New Mexico has two “last” kills one in the spring of 1923 and the other in 1933; Texas on November 2, 1890, and Utah on August 22, 1923. A grizzly bear was killed in the Sierra del Pinitos in Sonora Mexico, a few miles southeast of Nogales, Arizona, on June 18, 1955. This booklet included the listing of six subspecies taken in Arizona: *Ursus horribilis apache*, the Apache Grizzly; *Ursus horribilis arizonae* Merriam, the Arizona Grizzly; *Ursus horribilis baird*, the New Mexico Grizzly; *Ursus horribilis kennerlyi*, the Sonora Grizzly; *Ursus horribilis navajo*, the Navajo Grizzly, and *Ursus horribilis texensis*, the Texas Grizzly), 40 (recorded as *Ursus arctos* - Grizzly Bears were historically present in the Rincon and Santa Catalina Mountains and along the Santa Cruz River bottom from Nogales to Tucson.), 42 (061712), 55 (recorded as *Ursus horribilis* Ord. Grizzly Bear. Formerly throughout the mountainous areas of the state, now extinct in Arizona.), 73 (recorded as *Ursus horribilis*), 100 (species, recorded as *Ursus arctos*, color photograph), 106 (050312 - color presentation), 118 (recorded as *Ursus horribilis* - Distribution: Formerly statewide, now extinct in Arizona. Figure 92, Page 225), 139, ADS (Monday, January 30, 2012, Series reminds: Once grizzlies roamed nearby, Section A, Pages 1&4. This article reported that Grizzlies occurred in the Rincon Mountains until the 1920’s. It also reported the trapping and killing of a grizzly in 1921 just south of Rincon Peak at 8,000 feet in elevation.), 148 (color presentation), 149*

Ursus horribilis (see *Ursus arctos* subsp. *horribilis*)

Ursus horribilis subsp. *apache* (see *Ursus arctos* subsp. *horribilis*)

Ursus horribilis subsp. *arizonae* (see *Ursus arctos* subsp. *horribilis*)

Ursus horribilis subsp. *bairdi* (see *Ursus arctos* subsp. *horribilis*)

Ursus horribilis subsp. *kennerlyi* (see *Ursus arctos* subsp. *horribilis*)

Ursus horribilis subsp. *navaho* (see *Ursus arctos* subsp. *horribilis*)

Ursus horribilis subsp. *texensis* (see *Ursus arctos* subsp. *horribilis*)

Vespertilionidae: The Plain-nosed Bat Family

***Antrozous pallidus* (Le Conte, 1856): Pallid Bat**

COMMON NAMES: Big-eared Pale Bat; Desert Bat; Desert Palid Bat (*A.p. pallidus* Le Conte, 1856 - Invalid?); Le Conte’s Palid Bat (*A.p. pallidus* Le Conte, 1856 - Invalid?); Murcielago Palid (Hispanic)¹⁴; Murciélago-desértico Norteño (Spanish)⁴²; Pale Bat (*A.p. pallidus* Le Conte, 1856 - Invalid?); Pallid Bat. HABITS: Feeds on flightless arthropods on the ground, insects, scorpions, lizards and nectar. Roosts under bridges, buildings, in caves, crevices in cliffs, rocky outcrops, under slabs of rocks, hollow trees and tunnels. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050312 - subsp. *pallidus*), 42 (062212), 55 (recorded as *Antrozous pallidus* (Le Conte). Pallid Bat. Locally common throughout the state.), 73, 92 (color photograph), 100 (color photograph), 106 (050312 - color presentation), 118 (recorded as *Antrozous pallidus pallidus* (Le Conte) - Distribution: Statewide. Figure 25, Page 60), 148 (color presentation)*

***Antrozous pallidus* subsp. *pallidus* (Le Conte, 1756) - Invalid?: Pallid Bat**

COMMON NAMES: Desert Palid Bat; LeConte’s Palid Bat; Murcielago Pallid (Hispanic)¹⁴; Pale Bat; Pallid Bat. HABITS: The species feeds on flightless arthropods on the ground, insects, lizards and nectar. Roosts under bridges, buildings, in caves, crevices in cliffs, rocky outcrops, under slabs of rocks, hollow trees and tunnels. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050312 - subsp. *pallidus*), 42 (061712 - no subspecies listed), 55 (species, recorded as *Antrozous pallidus* (Le Conte). Pallid Bat. Locally common throughout the state.), 73 (species), 92 (species, color photograph of species), 100 (species, color photograph of species), 106 (050312 - species, color presentation of species), 118 (recorded as *Antrozous pallidus pallidus* (Le Conte) - Distribution: Statewide. Figure 25, Page 60), 148 (color presentation)*

Corynorhinus townsendii (see *Plecotus townsendii*)

Corynorhinus townsendii subsp. *palleescens* (see *Plecotus townsendii* subsp. *palleescens*)

Dasypterus ega (see *Lasiurus ega*)

***Eptesicus fuscus* (Beauvois, 1796): Big Brown Bat**

COMMON NAMES: Big Brown Bat; Grande Chauve-souris Brune (French)⁴²; Murciélago Cafe' Grande (Hispanic)¹⁴; Murciélago-moreno Norteamericano (Spanish)⁴²; Pallid Brown Bat (*E.f. pallidus* (Young, 1908) - Invalid?). HABITS: Feeds on insects (beetles, moths, mosquitoes, wasps). Roosts under bridges, in buildings, caves, crevices in cliff faces, mines and holes in saguaros and trees. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050312 - subsp. *pallidus* (Young)), 42 (062212), 55 (recorded as *Eptesicus fuscus* (Palisot de Beauvois). Big Brown Bat. Locally common throughout the state.), 73, 92 (color photograph), 100 (color photograph), 106 (050312 - includes a listing of subspecies, color presentation), 118 (recorded as *Eptesicus fuscus pallidus* (Young) - Distribution: Statewide. Figure 20, Page 52), 148 (color presentation)*

***Eptesicus fuscus* subsp. *pallidus* (Young, 1908) - Invalid?: Pallid Brown Bat**

COMMON NAMES: Big Brown Bat; Murciélago Cafe' Grande (Hispanic)¹⁴; Pallid Brown Bat. HABITS: The species feeds on insects (beetles, moths, mosquitoes, wasps). Roosts under bridges, in buildings, caves, crevices in cliff faces, mines and holes in saguaros and trees. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050312 - subsp. *pallidus* (Young)), 42 (061712 - no subspecies listed), 55 (species, recorded as *Eptesicus fuscus* (Palisot de Beauvois). Big Brown Bat. Locally common throughout the state.), 73 (species), 92 (species, color photograph of species), 100 (species, color photograph of species), 106 (050312 - species, includes a listing of subspecies, color presentation of species), 118 (recorded as *Eptesicus fuscus pallidus* (Young) - Distribution: Statewide. Figure 20, Page 52), 148 (color presentation)*

***Euderma maculatum* (J.A. Allen, 1891): Spotted Bat**

SYNONYMY: *Euderma maculata* (J.A. Allen, 1891) - Invalid?. COMMON NAMES: Death's Head Bat; Jackass Bat; Murciélago Pinto (Hispanic)¹⁴; Murciélago Pinto (Spanish)⁴²; Pinto Bat; Spotted Bat; Spotted Great-eared Bat. HABITS: Feeds on insects (mainly grasshoppers and moths). Roosts in cracks and crevices in caves, cliffs and ledges, and under loose rock in rocky situations, possibly in close proximity to water. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTES: This bat is rarely encountered. Riparian habitats seem to be important to this species. *8, 14 (050312 - color presentation), 42 (061712), 55 (recorded as *Euderma maculata* (J.A. Allen). Spotted Bat. Extremely rare; known from four specimens, Maricopa and Yuma counties.), 73, 92, 100 (color photograph), 106 (050312 - color presentation), 118 (recorded as *Euderma maculata* (J.A. Allen) - Distribution: Can be expected almost anywhere in the state although recorded from only four localities. Figure 23, Page 57), 148 (color presentation)*

***Lasionycteris noctivagans* (LeConte, 1831): Silver-haired Bat**

COMMON NAMES: Chauve-souris Argentée (French)⁴²; Murciélago Plateado (Hispanic)¹⁴; Murciélago Pelo Plateado (Spanish)⁴²; Night-wandering Bat; Silver-haired Bat; Silvery-haired Bat; Silverwings. HABITS: Feeds on caddis flies, flies, moths and other insects. Uncommon tree dwelling bat found under bark, in bird nests, dead trees, fissures in rock ledges, tree hollows, and woodpecker holes. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050312), 42 (061712), 55 (recorded as *Lasionycteris noctivagans* (Le Conte). Silver-haired Bat. Uncommon solitary tree-dwelling bat found throughout the state at elevations above 5,000 feet), 73, 92 (color photograph), 100 (color photograph), 106 (050312 - color presentation), 118 (recorded as *Lasionycteris noctivagans* (Le Conte) - Distribution: Probably statewide, at least during certain seasons of the year. Figure 18, Page 48), 148 (color presentation)*

***Lasiurus blossevillii* (Lesson and Garnot, 1826): Western Red Bat**

COMMON NAMES: California Red Bat (*L.b. teliotis* (H. Allen, 1891) - Invalid?); Desert Red Bat; Lesser Red Bat; Murciélago Rojo (Hispanic)¹⁴; Murciélago-cola Peluda de Blossevilli (Spanish)⁴²; Red Bat; Western Red Bat (*L.b. teliotis* (H. Allen, 1891) - Invalid?). HABITS: Feeds on insects (ants, beetles, cicadas, crickets, flies, moths, true bugs). Roosts in the foliage of herbs, shrubs and trees, saguaro boots and sometimes under leaf litter on the ground. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grasslands, desertscrub and wetland ecological formations. NOTES: The Red Bat feeds on moths including many crop pests. In Arizona this bat is associated with riparian corridors and wooded areas. *8, 14 (050312), 42 (061712), 55 (recorded as *Lasiurus borealis* (Muller). Red Bat. Uncommon solitary tree bat throughout the state in the region of trees.), 73 (recorded as *Lasiurus borealis*), 92 (recorded as *Lasiurus borealis*, color photograph of *Lasiurus borealis*), 100 (recorded as *Lasiurus borealis*, color photograph of *Lasiurus borealis*), 106 (050312 - color presentation), 118 (recorded as *Lasiurus borealis teliotis* (H. Allen) - Distribution: Probably statewide in riparian communities of the Upper Sonoran and Transitional Life Zones. Figure 21, Page 54), 148 (color presentation), 149*

***Lasiurus blossevillii* subsp. *teliotis* (H. Allen, 1891) - Invalid?: Western Red Bat**

SYNONYMY: *Lasiurus borealis teliotis* (H. Allen, 1891) - Invalid?. COMMON NAMES: Desert Red Bat; Red Bat; Western Red Bat. HABITS: The species feeds on insects (ants, beetles, cicadas, crickets, flies, moths, true bugs). Roosts in the foliage of herbs, shrubs and trees, saguaro boots and sometimes under leaf litter on the ground. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grasslands, desertscrub and wetland ecological formations. NOTES: The Red Bat feeds on moths including many crop pests. In Arizona this bat is associated with riparian corridors and wooded areas. *8, 14 (050312), 42 (061712 - no subspecies listed), 55 (recorded as *Lasiurus borealis* (Muller). Red Bat. Uncommon solitary tree bat throughout the state in the region of trees.), 73 (recorded as *Lasiurus borealis*), 92 (recorded as *Lasiurus borealis*, color photograph of *Lasiurus borealis*), 100 (recorded as *Lasiurus borealis*, color photograph of *Lasiurus borealis*), 106 (050312 - species, color presentation of species), 118 (recorded as *Lasiurus borealis teliotis* (H. Allen) - Distribution: Probably statewide in riparian communities of the Upper Sonoran and Transitional Life Zones. Figure 21, Page 54), 148 (color presentation of species), 149*

Lasiurus borealis subsp. *teliotis* (see *Lasiurus blossevillii* subsp. *teliotis*)

***Lasiurus cinereus* (Beauvois, 1796): Hoary Bat**

COMMON NAMES: Chauve-souris Cendrée (French)⁴²; Hawaiian Hoary Bat (*L.c. semotus* H. Allen, 1890); Hoary Bat; Murciélago (Hispanic); Murciélago-cola Peluda Canoso (Spanish)⁴². HABITS: Feeds primarily on moths. Roosts in buildings, caves, mines, in dense foliage in shrubs and trees and under leaves on the ground. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050412 - subsp. *cinereus* (Palisot de Beauvois)), 42 (061712), 55 (recorded as *Lasiurus cinereus* (Palisot de Beauvois). Hoary Bat. Uncommon tree dwelling bat found throughout the state in the region of trees.), 73, 92 (color photograph), 100 (color photograph), 106 (050412 - color presentation), 118 (recorded as *Lasiurus cinereus cinereus* (Beauvois) - Distribution: Statewide. Figure 22, Page 55), 148 (color presentation)*

***Lasiurus cinereus* subsp. *cinereus* (Beauvois, 1796): Northern Hoary Bat**

COMMON NAMES: Chauve-souris Cendrée (French)⁴²; Hoary Bat; Murciélago (Hispanic)¹⁴; Northern Hoary Bat; Murciélago-cola Peluda Canoso (Spanish)⁴². HABITS: The species feeds primarily on moths. Roosts in buildings; caves; mines; in dense foliage in shrubs and trees, and under leaves on the ground. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050412 - subsp. *cinereus* (Palisot de Beauvois)), 42 (061712), 55 (species, recorded as *Lasiurus cinereus* (Palisot de Beauvois). Hoary Bat. Uncommon tree dwelling bat found throughout the state in the region of trees.), 73 (species), 92 (species, color photograph of species), 100 (species, color photograph of species), 106 (050412 - color presentation of species), 118 (recorded as *Lasiurus cinereus cinereus* (Beauvois) - Distribution: Statewide. Figure 22, Page 55), 148 (color presentation)*

***Lasiurus ega* (Gervais, 1856): Western Yellow Bat**

SYNONYMY: *Dasypterus ega xanthinus* (Thomas, 1897) - Invalid?; *Lasiurus ega* subsp. *xanthinus* (Thomas, 1897) - Invalid?; *Lasiurus xanthinus* (Thomas, 1897). COMMON NAMES: Murciélago Amarillo (Hispanic)¹⁴; Murciélago-cola Peluda de La Laguna (Spanish)⁴²; Southern Yellow Bat; Western Yellow Bat; Yellow Bat. HABITS: Feeds on insects. Roosts in within dead fronds (skirts) encircling palm trees, in shrubs and trees (Arizona White Oak [*Quercus arizonica*], Arizona Sycamore [*Platanus wrightii*] and Frémont Cottonwood [*Populus fremontii*] and under vines. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. *14 (050412 - recorded as *Lasiurus xanthinus* (Thomas)), 42 (061712), 55 (recorded as *Dasypterus ega* (Gervais). Yellow Bat. Rare; known only from two specimens from Tucson.), 73, 92 (color photograph), 100, 106 (050412 -color presentation), 118 (recorded in the Hypothetical List as *Dasypterus ega xanthinus* Thomas - possibly may occur in southwestern Arizona as it has been recorded from southern California to the west and from Sonora to the southward., Page 258), 148 (color presentation), 149 (recorded as *Lasiurus* (*Dasypterus*) *ega* Gervais, 1856, Southern Yellow Bat; *Lasiurus* (*Dasypterus*) *xanthinus* Thomas, 1897, Western Yellow Bat)*

Lasiurus ega subsp. *xanthinus* (see *Lasiurus ega*)

Lasiurus xanthinus (see *Lasiurus ega*)

***Myotis californicus* (Audubon and Bachman, 1842): California Myotis Bat**

COMMON NAMES: California Bat; California Myotis; California Myotis Bat; Little California Bat (*M.c. californicus* Audubon and Bachman, 1842 - Invalid?); Miotis Californiano (Spanish)⁴²; Murciélago de California (Hispanic)¹⁴; Stephen's Brown Bat (*M.c. stephensi* Dalquest, 1946 - Invalid?). HABITS: Feeds on arachnids and insects. Roosts in crevices and cracks in cliffs and canyon walls, caves, mine shafts and manmade shelters. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8 (*Myotis californicus* N. Miller), 14 (050412 - subsp. *californicus*; subsp. *stephensi* (Dalquest)), 42 (061712), 55 (recorded as *Myotis californicus* Audubon & Bachman. California Myotis. Locally common throughout the state.), 73, 100 (color photograph), 106 (050412 - color presentation), 118 (recorded as *Myotis californicus californicus* (Audubon & Bachman) - Distribution: Eastern and southeastern Arizona, and *Myotis californicus stephensi* Dalquest - Distribution: Northern and western part of the state. Figure 16, Page 45), 148 (color presentation), 149*

***Myotis californicus* subsp. *californicus* Audubon and Bachman, 1842 - Invalid?: California Myotis Bat**

COMMON NAMES: California Bat; California Myotis; California Myotis Bat; Little California Bat; Murcielago de California (Hispanic)¹⁴. HABITS: The species feeds on arachnids and insects. Roosts in crevices and cracks in cliffs and canyon walls, caves, mine shafts and manmade shelters. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8 (species: *Myotis californicus* N. Miller), 14 (051007 - subsp. *californicus* (Audubon & Bachman) and *stephensi* (Dalquest)), 42 (061712 - no subspecies listed), 55 (species, recorded as *Myotis californicus* Audubon & Bachman. California Myotis. Locally common throughout the state.), 73 (species), 100 (species, color photograph of species), 106 (050412 - species, color presentation of species), **118** (recorded as *Myotis californicus californicus* (Audubon & Bachman) - Distribution: Eastern and southeastern Arizona. Figure 16, Page 45), 148 (color presentation), 149*

Myotis ciliolabrum (see *Myotis leibii*)

Myotis ciliolabrum subsp. *melanorhinus* (see footnote 14 under *Myotis leibii*)

***Myotis leibii* (Audubon and Bachman, 1842): Western Small-footed Myotis**

SYNONYMY: *Myotis ciliolabrum* (Merriam, 1886); *Myotis subulatus* subsp. *melanorhinus* (Merriam) - Invalid? ; *Myotis subulatus* subsp. *subulatus* Say - Invalid?. COMMON NAMES: Chauve-souris Pygmée (French)⁴²; Eastern Small-footed Bat (applied to *Myotis leibii*); Eastern Small-footed Myotis (applied to *Myotis leibii* after the splitting of *Myotis subulatus* (Small-footed Myotis) into two species *Myotis ciliolabrum* and *Myotis leibii* in 1984)¹⁴; Least Brown Bat; Miotis Cara Negra (Spanish: applied to *Myotis ciliolabrum*)⁴²; Murcielago Patas Chicas (Hispanic: applied to *Myotis ciliolabrum*)¹⁴; Small-footed Bat; Small-footed Myotis; Western Small-footed Bat (applied to *Myotis ciliolabrum*); Western Small-footed Myotis (applied to *Myotis ciliolabrum* after the splitting of *Myotis subulatus* (Small-footed Myotis) into two species *Myotis ciliolabrum* and *Myotis leibii* in 1984)¹⁴; Western Small-footed Myotis. HABITS: Feeds on flying insects including bugs, flies and moths. Hibernates in caves and mines and roosts under bark, in buildings, rock bluffs, burrows, caves, cavities in cliffs, cracks; rock crevices, holes, mine shafts, hollow trees, and amongst and under rocks, and snags. Den sites may be buildings; caves; under rocks and trees. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: This bat may live to be from 5 to 12 years of age. Populations may be in decline. *8, 14 (061712 - recorded as *Myotis ciliolabrum*: subsp. *melanorhinus* (Merriam); subsp. *subulatus* (Say), color presentation), 42 (061712), **55** (recorded as *Myotis subulatus* Say. Small-footed Myotis. Uncommon but distributed throughout the state.), 100, 106 (061712 - recorded as *Myotis leibii*, color presentation and *Myotis ciliolabrum*, color presentation), **118** (recorded as *Myotis subulatus melanorhinus* (Merriam) - Distribution: Probably at higher elevations throughout the state. Figure 17, Page 46)*

Myotis subulatus subsp. *subulatus* (see *Myotis leibii*)

Myotis subulatus subsp. *melanorhinus* (see *Myotis leibii*)

***Myotis velifer* (J.A. Allen, 1890): Cave Myotis Bat**

COMMON NAMES: Cave Bat; Cave Myotis; Cave Myotis Bat; Mexican Brown Bat; Miotis Mexicano (Spanish)⁴²; Murcielago de Cueva (Hispanic)¹⁴; Southwestern Cave Myotis (*M.v. brevis* Vaughan, 1954 - Invalid?). HABITS: Feeds on small moths and other small insects. Roosts in holes and pockets in caves, crevices, bridges, buildings, abandoned mine shafts, tunnels, and trees. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8 (recorded as *Myotis velifer velifer* (J.A. Allen)), 14 (050412 - subsp. *brevis* (Vaughan); subsp. *incautus* (J.A. Allen)), 42 (061712), **55** (recorded as *Myotis velifer* (J.A. Allen). Cave Myotis. Locally abundant in summer months at lower elevations (below 5,000 feet) throughout the southern and western parts of the state.), 73, 92, 100 (color photograph), 106 (050412 - color presentation), 118 (recorded as *Myotis velifer brevis* Vaughan - Distribution: Probably statewide. Figure 11, Page 37), 148 (color presentation)*

***Myotis velifer* subsp. *brevis* (Vaughan, 1954) - Invalid?: Southwestern Cave Myotis**

COMMON NAMES: Cave Bat; Cave Myotis; Cave Myotis Bat; Mexican Brown Bat; Murcielago de Cueva (Hispanic)¹⁴; Southwestern Cave Myotis. HABITS: The species feeds on small moths and other small insects. Roosts in holes and pockets in caves, crevices, bridges, buildings, abandoned mine shafts, tunnels, and trees. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *14 (050412 - subsp. *brevis* (Vaughan); subsp. *incautus* (J.A. Allen); subsp. *grandis* (Hayward)), 42 (061712 - no subspecies listed), 55 (species, recorded as *Myotis velifer* (J.A. Allen). Cave Myotis. Locally abundant in summer months at lower elevations (below 5,000 feet) throughout the southern and western parts of the state.), 73 (species), 92 (species), 100 (species, color photograph of species), 106 (050412 - species, color presentation of species), **118** (recorded as *Myotis velifer brevis* Vaughan - Distribution: Probably statewide. Figure 11, Page 37), 148 (color presentation of species)*

***Myotis yumanensis* (H. Allen, 1864): Yuma Myotis Bat**

COMMON NAMES: Fort Yuma Bat; Miotis de Yuma (Spanish)⁴²; Murcielago de Yuma (Hispanic)¹⁴; Yuma Myotis; Yuma Myotis Bat. HABITS: Feeds on small soft-bodied insects (mainly moths). Roosts in caves, crevices and swallow nests in cliffs and rocky walls, tree cavities, under bridges and in buildings in close proximity to water. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050412 - subsp. *yumanensis* (H. Allen), color presentation), 42 (061812), 55 (recorded as *Myotis yumanensis* (H. Allen). Yuma Myotis. Locally common, statewide in distribution.), 73, 100 (color photograph), 106 (050412), 118 (recorded as *Myotis yumanensis yumanensis* (H. Allen) - Distribution: Probably statewide at low and medium elevation. Figure 10, Page 36), 148 (color presentation)*

***Myotis yumanensis* subsp. *yumanensis* (H. Allen) - Invalid?: Yuma Myotis Bat**

COMMON NAMES: Murcielago de Yuma (Hispanic)¹⁴; Yuma Bat; Yuma Myotis; Yuma Myotis Bat. HABITS: The species feeds on small soft-bodied insects (mainly moths). Roosts in caves, crevices and swallow nests in cliffs and rocky walls, tree cavities, under bridges and in buildings in close proximity to water. HABITAT: Within the range of this species it has been reported from the forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050412 - subsp. *yumanensis* (H. Allen), color presentation), 42 (061812 - no subspecies listed), 55 (species, recorded as *Myotis yumanensis* (H. Allen). Yuma Myotis. Locally common, statewide in distribution.), 73 (species), 100 (species, color photograph of species), 106 (050412), 118 (recorded as *Myotis yumanensis yumanensis* (H. Allen) - Distribution: Probably statewide at low and medium elevation. Figure 10, Page 36), 148 (color presentation of species)*

***Pipistrellus hesperus* (H. Allen, 1864): Western Pipistrelle Bat**

COMMON NAMES: Canyon Bat (*P.h. hesperus* H. Allen, 1864 - Invalid?); Flittermouse; Murcielago del Poniente (Hispanic)¹⁴; Pipistrello del Oeste Americano (Spanish)⁴²; Swift Bat (*P.h. apus* Elliot, 1904 - Invalid?); Western Bat (*P.h. hesperus* H. Allen, 1864 - Invalid?); Western Pipistrelle; Western Pipistrelle Bat. HABITS: Feeds on insects. Roosts in buildings, rock crevices in canyon walls, caves, cliffs, rocky outcrops, under rocks and in mine shafts. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050412 - subsp. *hesperus*; subsp. *maximus* (Hatfield)), 42 (061812), 55 (recorded as *Pipistrellus hesperus* (H. Allen). Western Pipistrelle. Common throughout the state.), 73, 100 (color photograph), 106 (050412 - color presentation), 118 (recorded as *Pipistrellus hesperus apus* Elliot - Distribution: Southeastern Arizona, and *Pipistrellus hesperus hesperus* (H. Allen) - Distribution: Northern and western Arizona. Figure 19, Page 49), 148 (color presentation)*

Pipistrellus hesperus subsp. *apus* (see *Pipistrellus hesperus* subsp. *hesperus*)

***Pipistrellus hesperus* subsp. *hesperus* H. Allen, 1864 - Invalid?: Western Pipistrelle Bat**

SYNONYMY: *Pipistrellus hesperus* subsp. *apus* Elliot, 1904 - Invalid?. COMMON NAMES: Canyon Bat; Flittermouse; Murcielago del Poniente (Hispanic)¹⁴; Western Bat; Western Pipistrelle; Western Pipistrelle Bat. HABITS: The species feeds on insects. Roosts in buildings, rock crevices in canyon walls, caves, cliffs, rocky outcrops, under rocks and in mine shafts. HABITAT: Within the range of this species it has been reported from forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: This is the smallest of the western bats. *8, 14 (050412 - subsp. *hesperus*; subsp. *maximus* (Hatfield)), 42 (061812 - no subspecies listed), 55 (species, recorded as *Pipistrellus hesperus* (H. Allen). Western Pipistrelle. Common throughout the state.), 73 (species), 100 (species, color photograph of species), 106 (050412 - species, color presentation of species), 118 (recorded as *Pipistrellus hesperus apus* Elliot - Distribution: Southeastern Arizona. Figure 19, Page 49; *Pipistrellus hesperus hesperus* (H. Allen) - Distribution: Northern and western Arizona. Figure 19, Page 49), 148 (color presentation of species)*

***Plecotus townsendii* Cooper, 1837 (subsp. *pallescens* (Miller, 1897) is the subspecies reported as occurring in Arizona): Townsend's Big-eared Bat**

SYNONYMY: *Corynorhinus townsendii* (Cooper, 1837). COMMON NAMES: Lump-nosed Bat; Mule-eared Bat; Murcielago de Townsend (Hispanic); Ozark Big-eared Bat (*P.t. ingens* Handley, 1955); Pale Lumped-nosed Bat (*P.t. pallescens* (Miller, 1897)); Pale Townsend's Big-eared Bat; Pallid Western Big-eared Bat (*P.t. pallescens* (Miller, 1897)); Townsend's Big-eared Bat (*P.t. townsendii* Cooper, 1837); Virginia Big-eared Bat (*P.t. virginianus* Handley, 1955); Western Big-eared Bat; Western Long-eared Bat; Western Lump-nosed Bat. HABITS: The species feeds on small moths and other small insects; roosts on open ceilings in caves and rock shelters, and under bridges and in water diversion tunnels, abandoned mines, mine tunnels and buildings. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: **The Pale Townsend's Big-eared Bat is a rather sedentary species that is extremely sensitive to human disturbance and the vandalism of roost caves.** *14 (061812 - recorded as *Corynorhinus townsendii* subsp. *pallescens* (Miller)), 42 (061812), 55 (recorded as *Plecotus townsendii* (Cooper). Lump-nosed Bat. Locally common throughout the state at elevations above 5,000 feet; rare at lower elevations.), 73, 92 (color photograph), 100 (color photograph), 106 (050512 - recorded as *Corynorhinus townsendii*, includes a listing of subspecies, color presentation), 118 (recorded as *Corynorhinus townsendii pallescens* Miller - Distribution: Probably more or less state wide but more abundant in the Upper Sonoran and Transitional Life Zones. Figure 24, Page 58), 148 (recorded as *Corynorhinus townsendii*, color presentation)*

Plecotus townsendii subsp. *intermedius* (see *Plecotus townsendii* subsp. *pallescens*)

***Plecotus townsendii* subsp. *pallescens* (Miller, 1897): Pale Townsend's Big-eared Bat**

SYNONYMY: *Corynorhinus townsendii* subsp. *pallescens* Miller, 1897; *Plecotus townsendii* subsp. *intermedius* (H.W. Grinnell, 1914). COMMON NAMES: Lump-nosed Bat; Mule-eared Bat; Murcielago de Townsend (Hispanic)¹⁴; Pale Lumped-nosed Bat; Pale Townsend's Big-eared Bat; Pallid Western Big-eared Bat; Western Big-eared Bat; Western Long-eared Bat; Western Lump-nosed Bat. HABITS: The species feeds on small moths and other small insects; roosts on open ceilings in caves and rock shelters, and under bridges and in water diversion tunnels, abandoned mines, mine tunnels and buildings. HABITAT: Within the range of this species it has been reported from tundra, forest, woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: **The Pale Townsend's Big-eared Bat is a rather sedentary species that is extremely sensitive to human disturbance and the vandalism of roost caves.** *14 (061812 - recorded as *Corynorhinus townsendii* subsp. *pallescens* (Miller)), 42 (061812), 55 (species, recorded as *Plecotus townsendii* (Cooper). Lump-nosed Bat. Locally common throughout the state at elevations above 5,000 feet; rare at lower elevations.), 73 (species), 92 (species, color photograph of species), 100 (species, color photograph of species), 106 (050512 - species, recorded as *Corynorhinus townsendii*, includes a listing of subspecies, color presentation of species), **118** (recorded as *Corynorhinus townsendii pallescens* Miller - Distribution: Probably more or less state wide but more abundant in the Upper Sonoran and Transitional Life Zones. Figure 24, Page 58), 148 (recorded as *Corynorhinus townsendii* subsp. *pallescens*, color presentation)*

CLASS OSTEICHTHYES: The BONY FISHES

Cyprinidae: The Minnow Family

***Gila intermedia* (Girard, 1856): Gila Chub**

SYNONYMY: *Gila robusta* subsp. *intermedia* (Girard, 1856). COMMON NAMES: Carpa del Gila (Spanish)⁴²; Gila Chub. HABITS: Feeds on algae, other small fish and insects. Eggs are laid over submerged aquatic vegetation. HABITAT: Lives in along banks (juveniles), deep pools of slow velocity water, small creeks, streams, riffles (juveniles), pools (juveniles), ciénegas, marshes, pool habitats of small streams and springs and artificial impoundments. *8, 14 (050512), 42 (061812), 55, 61, 73, 106 (050512), **HR***

Poeciliidae: The Topminnow Family

***Poeciliopsis occidentalis* subsp. *occidentalis* (Baird and Girard, 1853) - Invalid?: Gila Topminnow**

COMMON NAMES: Gila Topminnow; Sonoran Topminnow. HABITS: The species feeds on algae, bottom debris, crustaceans, detritus, insects and plants. The eggs are fertilized in the female where the young develop and then born live. HABITAT: Lives in marshes; ponds; springs; vegetated backwaters; shallows of rivers and streams, and margins of larger bodies of water. *8, 14 (050512 - subsp. *occidentalis* (Baird and Girard); subsp. *sonorensis* (Baird and Girard)), 35, 42 (061812 - no subspecies listed), 55 (species), 61, 67, 73 (species), 106 (050512 - species, color presentation of species), **HR***

CLASS REPTILIA: The REPTILES

Helodermatidae: The Beaded Lizard Family

It has been suggested that, if bitten by a Gila Monster, you should remove the lizard as soon as possible, irrigate the wound with plenty of water, immobilize the affected limb at heart level, call 911 or 1-800-222-1222 for additional information and/or consider transport to a medical facility, any teeth left in the wound must be removed by a medical professional, ensure that tetanus immunization is up to date, and watch patient for signs and symptoms of infection. *97*

<http://www.pharmacy.arizona.edu/outreach/poison>

If bitten contact the Arizona Poison and Drug Information Center: 1-800-222-1222.

***Heloderma suspectum* subsp. *suspectum* Cope, 1869: Reticulate Gila Monster**

COMMON NAMES: Gila Monster; Reticulate Gila Monster; Lagarto de Gila (Spanish)⁴². HABITS: The species feeds on small birds (and bird eggs), carrion, frogs, insects, lizards, small mammals, snakes and reptile eggs. Reportedly they can climb trees and cacti in search of food. Takes shelter in burrows and crevices. HABITAT: Within the range of this species it has been reported from the woodland, scrub, grassland, desertscrub and wetland ecological formations. NOTE: A venomous lizard.

*14 (061812 - subsp. *cinctum* Bogert and Martin del Campo; subsp. *suspectum* Cope, 1869; separate records, color presentation of subsp. *suspectum*), 37 (species), 42 (061812 - the date shown for the authority for subsp. *suspectum* was Cope, 1896; however, the authority for the species was Cope, 1869), 54, 55, 73 (species), 87, 106 (061812 - species, includes a listing of subspecies, color presentation of species), **WTK** (August 4, 2005)

Teiidae: The Whiptail and Allies Family

Aspidoscelis burti subsp. *stictogrammus* (see *Cnemidophorus burti* subsp. *stictogrammis*)

***Cnemidophorus burti* subsp. *stictogrammus* Burger, 1950: Giant Spotted Whiptail**

SYNONYMY: *Aspidoscelis burti* subsp. *stictogrammus* (Burger, 1950) - Invalid?. COMMON NAME: Giant Spotted Whiptail. HABITS: The species feeds on insects, scorpions and spiders. Takes shelter in underground burrows, piles of debris and under rocks. HABITAT: Within the range of this species it has been reported from the woodland, grassland, desertscrub and wetland ecological formations. *8 (recorded as *Aspidoscelis burti stictogrammus*), 14(050512 - recorded as *Aspidoscelis burti* (Burger, 1938): subsp. *stictogrammus*; subsp. *xanthonotus*, color presentation), 42 (061812), 55 (species), 73 (species), 87, 106 (050512 - no record of subspecies or species; genus, includes a listing of species, color presentation)*

Testudinidae: The Land Tortoise Family

***Gopherus agassizii* [agassizi also observed] (Cooper, 1863): Sonoran Desert Tortoise**

COMMON NAMES: Agassiz's Desert Tortoise; Desert Tortoise; Mohave Desert Tortoise (Mohave population); Sonoran Desert Tortoise (Sonoran population). HABITS: Feeds on cacti (new growth, flowers and fruit), forbs, grasses, Slender Janusia (*Janusia gracilis*) as well as other plants and plant materials. Takes shelter in underground burrows, caliche caves located along washes, and crevices. HABITAT: Within the range of this species it has been reported from the scrub, grassland, desertscrub and wetland ecological formations. *8, 14 (050612 - separate records for the Mohave Desert population and Sonoran Desert population), 42 (061812), 37, 55, 73, 87, 106 (050612 - color presentation. One defense mechanism the tortoise has when it is handled is to empty its bladder. This can leave the tortoise in a very vulnerable condition in dry areas, and they should never be alarmed, handled or picked up in the wild unless they are in imminent danger (like in a road). If they must be handled, and their bladder is emptied, then water should be provided in order to restore the fluid in their body.)*

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FOOTNOTES and REFERENCES

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(2) Physiographic Province Mapping:

Walker, Henry P. and Don Bufkin. 1979. Historical Atlas of Arizona, University of Oklahoma Press, Norman, Page 4A and Map.

(3) Soils Mapping:

Arizona General Soil Map, July 1975, United States Department of Agriculture, Soil Conservation Service and the University of Arizona Agricultural Experiment Station, compiled by J.E. Jay, Y.H. Havens, D.M. Hendricks, D.F. Post and C.W. Guernsey.

Richardson, M.L. and M.L. Miller. March 1974. United States Department of Agriculture - Soil Conservation Service in cooperation with the Pima County Natural Resource Conservation District, Report and Interpretations for the General Soil Map of Pima County, Arizona and General Soil Map Pima County Arizona. Arizona General Soil Map, July 1975, United States Department of Agriculture - Soil Conservation Service and the University of Arizona Agricultural Experiment Station, compiled by J.E. Jay, Y.H. Havens, D.M. Hendricks, D.F. Post and C.W. Guernsey.

(4) Biotic Communities Mapping and Definitions

Ecological formations used in the listings follow those presented in the mapping for the Biotic Communities of the Southwest.

Brown, David E. 1982. Biotic Communities of the American Southwest – United States and Mexico, Desert Plants, Volume 4, Numbers 1-4, Published by the University of Arizona for the Boyce Thompson Southwestern Arboretum, Tucson, Arizona.

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Brown, David E., Charles H. Lowe and Charles P. Pase. June 1980. A Digitized Systematic Classification for Ecosystems with an Illustrated Summary of the Natural Vegetation of North America, United States Department of Agriculture, Forest Service, General Technical Report RM-73

(5) Nomenclature:

for Plants:

Generally follows that presented by The Biota of North America Program of the North Carolina Botanical Garden (BONAP) with A Synonymized Checklist of the Vascular Flora of the United States, Puerto Rico and the Virgin Islands, Full Index 1998.

<http://www.bonap.org/>
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<http://www.ipni.org> [accessed 2004, 2005, 2006]

<http://plants.usda.gov>. National Plant Data Center, Baton Rouge, LA 70874-4490 USA

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Section on Arizona Habitats, The University of Arizona Press, Tucson, Arizona and E. Lendell Cockrum. 1960. The Recent Mammals of Arizona: Their Taxonomy and Distribution, The University of Arizona Press, Tucson, Arizona.

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<http://nmnhp.unm.edu/bisonm/bisonquery.php>

(6) Growth Habits of Plants:

Generally coincides with that presented by the National Plants Database. USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA. Common names identified in the USDA NRCS database have been printed in bold lettering. A few of the plants were not provided with a common name in the USDA NRCS database.

The following sources were used to help identify common names of plants:

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Baboquivari Mountain Plants: Identification, Ecology and Ethnobotany by Daniel F. Austin with linguistic consultant David L. Shaul. 2010. The University of Arizona Press, Tucson, Arizona. *140*

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Historical Common Names of Great Plains Plants *124*

Sonoran Desert Plants An Ecological Atlas, Raymond M. Turner, Janice E. Bowers and Tony L. Burgess. 1995. The University of Arizona. *91 *

Sunset Western Garden Book Kathleen N. Brenzel, 2001, Sunset Publishing Corporation, Menlo Park, California. *18*

Vascular Plants of Ragged Top, compiled by John F. Wiens from 1987 - 2000, The Arizona Native Plant Society, The Plant Press, Volume 25 Number 1, Spring 2001. *102*

(7) Arid Zone Trees, A Resource for Landscape Professionals, dedicated to providing quality trees to the Landscape Industries that are appropriate to the Desert Southwest

<http://www.aridzonetrees.com/index.htm>

(8) Arizona Game and Fish Department. Unpublished abstracts compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ.

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Arachnids: 2004. *Albiorix anophthalmus*, a cave obligate Pseudoscorpion.

Birds: 2003. *Accipiter gentilis*, American Goshawk; 2003. *Aimophila quinquestriata*, Five-striped Sparrow; 2002. *Aimophila ruficeps* subsp. *rupicola*: Yuma Rufous-crowned Sparrow; 2001. *Ammodramus bairdii*, Baird's Sparrow; 2001. *Ammodramus savannarum* subsp. *ammolequus*, Arizona Grasshopper Sparrow; 2001. *Anthus spragueii*, Sprague's Pipit; 2002. *Aquila chrysaetos*, Golden Eagle; 2000. *Asturina nitida*, Northern Grey Hawk; 2001. *Athene cucularia* subsp. *hypugaea*, Western Burrowing Owl; 2001. *Buteo regalis*, Ferruginous Hawk; 2001. *Buteo swainsoni*, Swainson's Hawk; 2005. *Buteogallus anthracinus*, Common Black-hawk; 2003. *Caracara cheriway*, Crested Caracara; 2002. *Ceryle alcyon*, Belted Kingfisher; 2001. *Chloroceryle americana*, Green Kingfisher; 2002. *Coccyzus americanus* subsp. *occidentalis*, Western Yellow-billed Cuckoo; 2001-08-27. *Colinus virginianus* subsp. *ridgwayi*, Masked Bobwhite; 2002. *Dendrocygna autumnalis*, Black-bellied Whistling-duck; 2001. *Dendrocygna bicolor*, Fulvous Whistling-duck; 2002. *Dolichonyx oryzivorus*, Bobolink; 2002. *Egretta thula*, Snowy Egret; 2002. *Elanus leucurus*, White-tailed Kite; 2003. *Empidonax fulvifrons* subsp. *pygmaeus*, Northern Buff-breasted Flycatcher; 2003. *Empidonax hammondi*, Hammond's Flycatcher; 2002. *Empidonax traillii* subsp. *extimus*, Southwestern

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(AHS) Arizona Historical Society

(ANN) Anonymous

(JFW) John F. Wiens

(MBJ) Matthew B. Johnson, Program Manager and Curator of the Desert Legume Program - Boyce Thompson Southwestern Arboretum

(PCM) Personal Communication (Date)

(PDJ) Philip D. Jenkins, Assistant Curator of the University of Arizona Herbarium

(RGM) G. Meades

(TBL) Township Bird Listing

(WTK) William T. Kendall

(ANPS) Arizona Native Plant Society

(KGUN) Channel 9 (ABC - Month Day, Year & Program)

(KOLD) Channel 13 (CBS - Month Day, Year & Program)

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