

A Checklist of the Vascular Flora of Canyon de Chelly National Monument, Apache County, Arizona

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A checklist of the vascular flora of Canyon de Chelly National Monument, Apache County, Arizona¹

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RINK, G. (Northern Arizona University, Department of Biological Sciences, PO Box 5640, Flagstaff, AZ 86001) J. Torrey Bot. Soc. 132: 510–532. 2005—A total of 243 new species records, 60 new generic records, and 11 new family records were documented for Canyon de Chelly National Monument, bringing the known flora of the Monument to 771 species. This work is part of an inventory carried out throughout the National Park Service as part of the Natural Resource Challenge, a legislative and administrative mandate. Four species are on or proposed for the Navajo Nation Endangered Species List. Additions to the flora include *Carex specuicola*, a Listed Threatened species, and *Zigadenus vaginatus*, both on the Navajo Endangered Species List. *Astragalus chuskanus*, *Cirsium chellyense*, *Lupinus caudatus* subsp. *cutleri*, and a white-flowered form of *Mercurialis oblongifolia* are endemic to the Monument and surrounding area.

Key words: Arizona, biological inventory, Canyon de Chelly, flora, rare plants

The purpose of this project was to voucher the flora of Canyon de Chelly National Monument, adding as many new records as possible. This work was completed as part of an inventory effort carried out throughout the National Park Service (NPS) as part of the Natural Resource Challenge, a legislative and administrative mandate. National Park Service researchers (Stuart et al. 2000) estimated that 60 percent of the plant species in Canyon de Chelly were already known. Canyon de Chelly is within the San Juan River drainage, the subject of an ongoing cataloging effort (Heil and O’Kane 2003).

Canyon de Chelly National Monument, part of the Navajo Reservation, in Apache County,

northeastern Arizona (Fig. 1) was established in 1931 to protect significant Anasazi archaeological resources. The Monument encompasses 400 square kilometers (131 square miles) between longitudes 109° 08’ and 109° 33’ N and latitudes 35° 59’ and 36° 18’ W. Canyon de Chelly and its side canyons are incised into the northern portion of the Defiance Plateau at the western edge of the Chuska Mountains (Barnes 1984) on the Colorado Plateau. Spectacular cliffs result from a resistant cap of Shinarump Conglomerate (shale, coarse sandstone and conglomerate) over the more easily eroded De Chelly Sandstone (Pierce 1967, Vandiver 1937). Fine-grained Supai Sandstone, exposed at canyon bottoms in mid-canyon reaches, acts as an aquiclude, blocking the downward flow of water, causing springs and seeps at the surface (Cooley et al. 1969). Thus, the nature of the geologic layers cause water to become available for agriculture, leading to the canyon’s attraction to humans. Volcanic basalts and talus cover small areas at the east end of the Monument. The mouth of the canyon lies at 1680 m (5500 ft) above sea level while upper slopes reach 2320 m (7600 ft). Canyon de Chelly, Canyon del Muerto (a northern tributary), and Monument Canyon (a southern tributary) make up the canyon complex. The canyon mouth is a flat sandy wash margined with low cliff walls set apart by 0.2 to 1 km. Upstream, in much of the canyon system, the slopes and cliff walls attain heights of 250–350 meters (800–1200 ft). Four tributaries enter the canyon complex, draining watersheds of the Chuska Mountains. Tsaile Creek in Canyon del Muerto and Wheatfields, Whiskey, and Crystal Creeks in Canyon de Chelly are perennial most years

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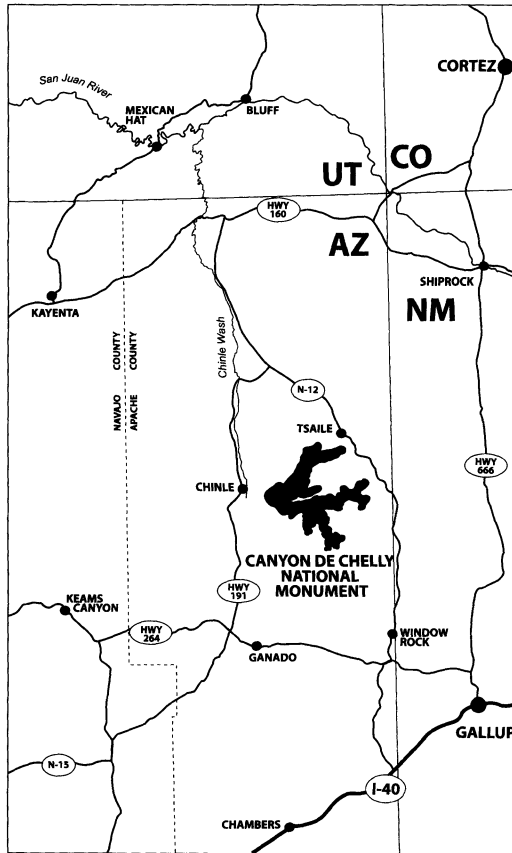


FIG. 1. Canyon de Chelly region.

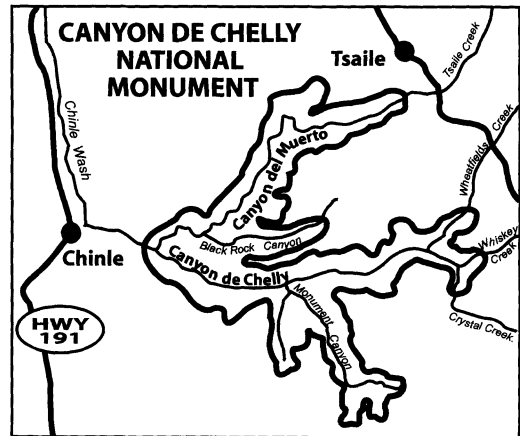


FIG. 2. The canyon system at Canyon de Chelly National Monument.

from where they enter the Monument to mid-canyon reaches (Fig. 2). Chinle Wash drains both canyons.

Canyon de Chelly is in USDA Climate Zone 6 (USDA 2003). Precipitation is quite variable, but averages 246.1mm (9.65 in) per year at the visitor center near the mouth of the canyon. Upper elevations receive more precipitation than the lower canyons. July and August are the wettest months, with thunderstorms and cloudbursts that are highly variable in distribution; one area will receive a heavy rain while an adjacent area remains dry (Green and Sellers 1964, Sellers and Hill 1974).

The canyons have a long history of human disturbance. Betancourt and Davis (1984) found maize and *Cleome* pollen in a 3120 BP packrat midden near the junction of Canyon del Muerto and Canyon de Chelly suggesting an early arrival of agriculture in the canyons. Canyon de Chelly is perhaps most well-known for its Pueblo Period (AD1100–1300) cliff dwellings. Dine (Navajo people) probably began using the Can-

yon de Chelly area during the 1700s (Andrews 1985). Canyon de Chelly has been an important home and agricultural area, and played a significant role as a Dine refuge from both Spanish and American invaders during the late 1700s through the 1800s (Grant 1978). Hill (1938) and Jett and Spencer (1981) documented ditch agriculture in the mid 1800s, a practice that continues in the lower canyons. Fruit orchards date from the early 1700s (Jett 1974, 1977, 1979). In the last few decades, agriculture, grazing, tree planting, erosion control features, motor vehicle travel, and tourism have severely impacted the lower canyons. Upper canyons have been less severely affected. Human settlement, logging, chaining of woodlands, grazing, fuel wood gathering, and some dry-land farming have disturbed rim areas. Tsaile Reservoir, built at the head of Canyon del Muerto in 1963, submerges a small part of the Monument and alters the flow regime of Tsaile Creek (Brugge and Wilson 1976). The diversion for Wheatfields Lake alters the flow regime of Wheatfields Creek above Canyon de Chelly. The US Soil Erosion Service, in concert with the National Park Service, planted thousands of riparian trees, including native willow (*Salix* spp.) and cottonwood (*Populus* spp.), as well as exotic saltcedar (*Tamarix* spp.) and Russian olive (*Elaeagnus angustifolia*), in the canyon bottoms to alter channel geomorphology to increase the size of arable areas, to reduce erosion at archeological sites and to reduce sediment contribution to Chinle Wash (Brugge and Wilson 1976). These plantings began in the 1930s and have severely altered the hydrologic and geomorphic regime of the canyon bottoms

resulting in a rapid transformation of the riparian community that continues to this day (Rink 2003). Canyon de Chelly National Monument is the third most-visited park in the region, after Grand Canyon National Park and Glen Canyon National Recreation Area (Etsitty 1994). Tourism severely impacts park administrative areas, which support dense stands of exotic plants such as Russian knapweed (*Acroptilon repens*), cheat grass (*Bromus tectorum*), barley (*Hordeum murinum*), sweetclover (*Melilotus* spp.), and Russian thistle (*Salsola* spp.) Areas surrounding White House Ruin, Antelope House Ruin, and Mummy Cave Ruin, the three most-visited tourist sites, and the roads to these sites are severely trampled and compacted.

Vegetation ranges from desert scrub and grassland at lower elevations to ponderosa pine (*Pinus ponderosa*) forests and dense stands of sagebrush (*Artemisia tridentata*) at upper elevations. Piñon-juniper (*Pinus edulis*—*Juniperus osteosperma*) woodland and riparian vegetation communities thrive within this range (Halse 1973, Dennis 1975). Douglas-fir (*Pseudotsuga menziesii*) and aspen (*Populus tremuloides*) stands grow on north-facing slopes within the canyons at elevations as low as 1830 m (6000 ft). Piñon-juniper communities are more extensive than any other community type (Harlan and Dennis 1976). Both, the ratio of piñon to juniper and overall cover increase with elevation. Sagebrush occupied 9% of the land above 1900 m (6200 ft) in the 1970s. Upper canyon talus communities include box elder (*Acer negundo*), Gambel oak (*Quercus gambelii*), mockorange (*Philadelphus microphyllus*), fendlerbush (*Fendlera rupicola*), Utah juniper, piñon pine, and Douglas-fir. Lower canyon cliffs and ledges support Utah serviceberry (*Amelanchier utahensis*), scrub oak (*Quercus turbinella*), Utah juniper, piñon pine, mountain mahogany (*Cercocarpus intricatus*), cliffrose (*Purshia stansburiana*), narrowleaf yucca (*Yucca angustissima*), and banana yucca (*Y. baccata*). Shrub-grassland covers lower canyon rims and slopes with species such as saltbush (*Atriplex* spp.), Mormon tea (*Ephedra viridis*), snakeweed (*Gutierrezia sarothrae*), prickly pear and cholla cactus (*Opuntia* spp.), and rabbitbrush (*Chrysothamnus* spp.).

Upper canyon bottom vegetation is diverse and includes box elder, birch (*Betula occidentalis*), alder (*Alnus* spp.), Rocky Mountain juniper (*Juniperus scopulorum*), Gambel oak, and red-osier dogwood (*Cornus sericea*). Lower canyon bottom communities have changed dramati-

cally since the 1970's (Rink 2003). Once bare of vegetation, these areas are now choked with riparian vegetation including Russian olive, which was introduced in 1964, saltcedar which was introduced in the 1930s (Brugge and Wilson 1976), along with willow and plains cottonwood (*Populus deltoides* subsp. *wislizenii*). Minor plant communities occupy hanging gardens, active sand dunes, agricultural, and weedy areas. Hanging gardens may harbor rare or regional endemics including Navajo sedge (*Carex specuicola*), queen thistle (*Cirsium chellyense*), and deathcamas (*Zigadenus vaginatus*), but are dominated by maidenhair fern (*Adiantum capillsveneris*), prevalent in the lower canyons, or columbine (*Aquilegia micrantha*) and monkeyflower (*Mimulus eastwoodiae*), prevalent throughout.

H. E. Bailey and R. Halse were the most important botanical collectors in the Monument during the 1900s. H. E. Bailey (Bailey and Bailey 1941) collected Canyon de Chelly specimens, now at JEPS, while working on the Vegetation Type Map Survey of U.S. National Parks in 1936. Halse (1973) spent 60 days in the field working for the Antelope House Project (Morris 1985) and catalogued 474 botanical entities, including 44 collected by Harlan and Dennis (1976) during their plant geography work at Canyon de Chelly (ARIZ). Halse collected in all of the main canyons at least once, but spent much of his time in lower Canyon del Muerto, close to Antelope House. Later plant collectors included N. Hand (ASC and Canyon de Chelly Herbarium (CACH), D. Demaree (CACH), D. Lindsay and F. Ranzoni (VAS), V.O. Mayes (Mayes and Rominger, 1994 (ASC)), D. Roth of the Navajo Nation Natural Heritage Program (NAVA), and K. Heil (SJNM).

Methods. Where appropriate, I followed the standards for floras as identified by Palmer et al. (1995). The area surveyed was within Canyon de Chelly National Monument as shown on US Geological Survey topographic maps, with boundaries roughly one-half-mile back from the rims of the canyons (Brugge and Wilson 1976; Fig. 2). I documented botanical entities by both database searches and by field collecting, spending 68 days during 2001–2003 (April–November) purposefully searching for rare, exotic, and new plant records. Another 42 days were spent on other projects in the area with plant collecting as a secondary objective. I gave particular attention to riparian areas; steep slopes and cliffs; sand dunes, shale, limestone, and salty sub-

strates; hanging gardens; disturbed areas; moving and still waters; and areas known to be less extensively sampled by previous botanists, including the upper canyons and little-visited side canyons. Particular attention was also given to plant families such as the Boraginaceae, Cactaceae, Chenopodiaceae, Cyperaceae, Juncaceae and Poaceae and aquatic plants and horticultural introductions that are often overlooked.

Specimens were determined using Martin and Hutchins (2001), Wootton and Standley (1915), Barneby (1989), Cronquist (1994), Cronquist et al. (1972, 1977, 1984, 1997), Flora of North America editorial committee (1993–2002), McDougall (1973), Kearney and Peebles (1969), Welsh et al. (1993), Weber and Wittman (1996), and Harrington (1954). Specific groups of plants were determined using Hitchcock (1935), Gould (1951), Barneby (1964) and Rollins (1993). Cultivars were determined using Bailey (1949) and Rehder (1987). The reference collection at ASC was crucial. Experts determined some specimens: M. Baker (Southwest Botanical Research, Chino Valley, Arizona; *Echinocereus*, *Opuntia*), K. Heil (SJNM; *Sclerocactus*), M.C. Fritts (Tucson; *Carex*), R. Dorn, (RM; *Salicaceae*), S. Welsh, (BRY; *Zigadenus*), and M. Windham (UT; ferns). T.J. Ayers, H.D. Hammond, and R. Scott (ASC); N. Morin (Flagstaff Arboretum); and D. Roth (NAVA) aided in other determinations.

Vouchers are curated at ASC, CACH, NAVA, UNM and SJNM. The ASC database at www.nau.edu/~deaver/database.htm contains information related to these collections.

Results. Plants documented for the Monument now include 93 families, 381 genera, 771 species, eight subspecies, 14 varieties, and five hybrids; a total of 797 subgeneric taxa. These numbers reflect subspecific entities only in cases when another subspecific entity within that species was already in the checklist. For example, *Asclepias asperula* (Decne.) Woods. consists of two subspecies, ssp. *asperula* (Decne.) Woods. and ssp. *capricornu* (Woods.) Woods. in Canyon de Chelly, one added to the species count and one in addition to the subspecies count as per Heil and O’Kane (2003). One hybrid was also included in the species count because neither parent is known for the area.

Database searches at ARIZ, ASC, SJNM, NAVA, MNA, UNM, WAAC, and CACH revealed 46 new records. Prior to the addition of specimens from this work, numbers of Canyon

de Chelly specimens at each of these herbaria were: ARIZ, 497, database 50% complete as of March, 2002; ASC, 28, database 10% complete as of March, 2003; CACH, 438, database complete; MNA, 22, database 75% complete as of February, 2003; NAVA, 22, database complete; SJNM, 76, database complete; UNM, five, database 60% complete as of February, 2003. WAAC databases include about 2500 plant specimens related to Canyon de Chelly, including taxa not vouchered elsewhere. Unfortunately provenience was not recorded for most of their specimens, and many are not from Canyon de Chelly. Eleven families, 60 genera, 243 species, three subspecies, seven varieties, and three hybrids were added from 1335 collections.

Discussion. Precipitation at the Canyon de Chelly Visitor Center was 166.6 mm during 2001 and 138.9 mm during 2002, as compared to an average of 241.6 mm. The year 2002 was the driest on record. Drought during the survey probably reduced the likelihood for some species to be seen, but it also allowed for the detection of others that may not have been noted during wetter times. Cacti often bloom more profusely during dry years (D. Pinkava, Arizona State University, pers. comm.) For instance, I noticed *Opuntia X viridiflora* where a knowledgeable local observer had never seen it bloom before, despite having visited the spot regularly over the course of 60 years. Had the plant not been in bloom, I am sure I would not have noticed it.

New records in families and groups deliberately sought are as follows: Boraginaceae-3, Cactaceae-3, Chenopodiaceae-7, Cyperaceae-18, Juncaceae-3, Poaceae-52, aquatics-13, horticultural introductions-15. Twenty-three new records were found during April and October, months when botanists don’t often collect. Eleven new records occurred on substrates that are rare within the Monument, eight in sand dunes, three on shales. I found 14 new records in hanging gardens, 44 in disturbed areas, 68 in little-visited side canyons, and 91 in riparian areas. I found 90 new records during only 12 days of collecting in the uppermost canyons, the most productive areas for finding new botanical entities. After discounting horticultural introductions, seven percent of the new records were of exotics, less than the percentage (10.4) of exotics now known for the Monument. I did not find nearly 100 of the 543 previously recorded subgeneric taxa and I saw 107 of the 254 new records only once. To

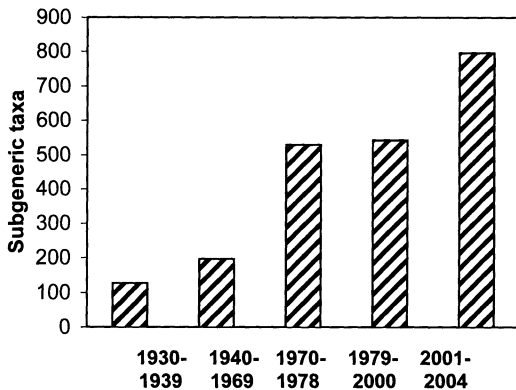


FIG. 3. Subgeneric taxa accumulation, 1930–2004. Subgeneric taxa accumulation was derived by noting the period of the first known collection (as indicated by collector, shown in the checklist preamble) of each subgeneric taxon.

me, this suggests that many botanical entities at Canyon de Chelly are widely scattered or uncommon (in either time or space). Only 125 of the 771 species in the checklist are trees or shrubs which are easily detectable and identifiable all year long. The remaining 646 are herbaceous perennials and annuals that for much of their life cycle are undetectable root crowns or seeds. Low detectability presents difficulties for inventory work in the desert southwest where annuals and herbaceous perennials dominate floras. Figure 3 shows the accumulation of subgeneric taxa from 1930 through 2003. Subgeneric taxa accumulation was derived by noting the period of the first known collection (as indicated by collector, shown in the checklist preamble) of each subgeneric taxon. Halse's (1973), my own, and H.E. Bailey's collections have made the most significant contributions to the checklist.

Four plants on the Navajo Endangered Species List (NESL 2001) have been found at the Monument (NNHP 2005 new records denoted with an asterisk): **Carex specuicola* (ESA Listed Threatened (Federal Register Vol. 50, No 89, 19370–19374), NESL G3, threatened) and **Zigadenus vaginatus* (NESL proposed G4, candidate (2005)) were found only in hanging gardens. *Allium gooddingii* (NESL G3, threatened) and *Cystopteris utahensis* (NESL G4 candidate) have been found only in riparian areas. *Allium gooddingii* has not been found since 1973, and is currently considered extirpated at Canyon de Chelly (D. Roth, Navajo Natural Heritage Program, 2005, pers. comm.)

**Astragalus chuskanus* and a white-flowered population of **Mertensia oblongifolia*, both en-

demically to the Chuska Mountains and Sonsela Buttes, are now vouchered for the Monument. *Cirsium chellyense*, the most common thistle in and around Canyon de Chelly, and *Lupinus caudatus* subsp. *cutleri* are also endemic to the Monument and surrounding area. Native people probably imported *Juglans major* for its edible nuts and dye, *Nolina microcarpa* and **Proboscidea parviflora* for weaving materials, and **Opuntia X viridiflora* for its attractive flowers (Elmore 1943; Whiting 1939). The floras of the two main canyon systems are generally similar, however 80 botanical entities within the Monument have only been found in Canyon de Chelly and its tributaries. Another 60 have only been found in the Canyon del Muerto system. More collecting will yield broader ranges within the Monument, but many botanical entities seem to be restricted to one canyon or the other. *Woodсия neomexicana*, *Aralia racemosa*, *Ratibida columnifera*, *Senecio wootonii*, *Astragalus chuskanus*, *Menodora scabra*, *Parnassia palustris* var. *parviflora*, *Besseyia arizonica*, *Penstemon virgatus*, *Echeandia flavescens*, and *Sorghastrum nutans* are apparently limited to the Canyon de Chelly system. *Picea pungens*, *Chamaechaenactis scaposa*, *Ranunculus longirostris*, *R. macounii*, *Carex specuicola*, *Allium bisceptrum* var. *palmeri*, *A. gooddingii*, and *Torreyochloa pallida* are apparently limited to the Canyon del Muerto system.

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Annotated Checklist of Vascular Plants of Canyon de Chelly National Monument

I arranged this checklist alphabetically by family within the following orders: Pteridophyta, Pinophyta, Magnoliopsida, and Liliopsida. Both scientific names and common names follow Integrated Taxonomic Information System (ITIS 2003). Annotational abbreviations as follows: native (N) vs exotic (E) (follows ITIS), I chose (from ITIS) the single common name that seemed most appropriate, horticultural introduction (H) (pers. obs.); **Abundance** follows Palmer, et al. (1995) as follows: **5**, Abundant, dominant or codominant in one or more common habitats; **4**, Frequent, easily seen or found in one or more common habitats but not dominant in any common habitat; **3**, Occasional, widely scattered but not difficult to find; **2**, Infrequent, difficult to find with few individuals or colonies but found in several locations; **1**, Rare, very difficult to find and limited to one or very few locations or uncommon habitats; **0**, Absent, not found but found in a previous survey from the same or similar sites or was otherwise suspected to occur. **Distribution**; cyn=canyon, CdM=Cyn del Muerto, CdC=Cyn de Chelly, hg=hanging garden, h rep= Halse reported, jct= confluence of CdC & CdM, MC=Monument Cyn, T=Thunderbird Lodge, VC= NPS visitor center, WH=White House Ruin. Specimen citations include a code (as follows) for the collector, and their collection number, where available. **Citations** (Collectors (herbarium where most of their specimens are located, their period of activity)); B=Bailey (JEPS, 1935), Ba= Barr (ARIZ, 1960–1971), Bu=Burgess (ARIZ, CACH, early 1970s), C=Cronyn (CACH, Western Museum Laboratories (WML), late 1930s–1940), Cu=Cutler Goodman, & Payson (CACH, WML, late 1930s), D=Dennis (ARIZ, CACH, early 1970s), De=Demaree (CACH, 1950s–1960), F=Farmer (University of New Mexico (UNM), 1935), h=Halse (ARIZ, ASC, CACH, early 1970s), Ha=Hand (ASC, CACH, 1969), H=Heggie (UNM, 1930s), H=Heil (SJNM, late 1990s to 2000s), H=Hevly (ASC, 1970s), He=Hevron (NAVA, 1990s), K=King (ARIZ, 1938), L=Lindsay (VAS, 1960s), M=Mason (ARIZ, 1950s–1970s), m=Mayes (ASC, NAVA, 1970s), R=Ranzoni (VAS, 1960s), r=Rink (ASC, early 2000s), R=Roth (NAVA, ASC, 1990s to 2000s), V=Van Dender (ARIZ, 1999), W=Western Area Archeological Center, Tucson (WAAC specimen labels often don't include collector name, but were collected in the early 1970s related to the Antelope House Project.) Where no collection number is given, that collection number is unknown. Exhaustive citations are given in Rink (2003).

Aspleniaceae

Asplenium resiliens Kunze. BLACKSTEM SPLEENWORT, N, 2, rock crannies, lower canyons, h11

Dryopteridaceae

- Cystopteris fragilis* (L.) Bernh. BRITTLE BLADDERFERN, N, 0, cracks in walls of upper CdM, h329
- Cystopteris reevesiana* Lellinger. REEVE'S BLADDERFERN, N, 1, cliffs above pool in upper MC, r505
- Cystopteris tennesseensis* Shaver. TENNESSEE BLADDERFERN, N, 0, Tse Taa Ruins, upper CdM, h
- Cystopteris tenuis* (Michx.) Desv. BRITTLE BLADDERFERN, N, 1, rim of Elephant Grass Spring Cyn, r1422
- Cystopteris tenuis* (Michx.) Desv. X *utahensis* Windham & Haufler. BLADDERFERN, N, 1, near top of Wild Cherry Cyn near pool, r1026
- Cystopteris utahensis* Windham & Haufler. UTAH BLADDERFERN, N, 2, cliffs above pools in upper canyons, **R**
- Dryopteris filix-mas* (L.) Schott. MALE FERN, N, 2, cracks in cliffs, lower canyons, h284
- Woodia neomexicana* Windham. NEW MEXICO CLIFF FERN, N, 2, uppermost tributaries to CdC, r595

Equisetaceae

- Equisetum arvense* L. WESTERN HORSETAIL, N, 3, upper cyns & rims, h192
- Equisetum hyemale* L. HORSETAIL, N, 1, Black Rock Cyn, h193
- Equisetum laevigatum* A. Braun. HORSETAIL, N, 0, h rep as common through-out, B356
- Equisetum variegatum* Schleich. ex F. Weber & D.M.H. Mohr. VARIEGATED HORSETAIL, N, 1, dry sandy areas, r1127

Pteridaceae

- Adiantum capillus-veneris* L. MAIDENHAIR FERN, N, 3, seeps in lower cyns, h411
- Cheilanthes feei* T. Moore. SLENDER LIPFERN, N, 3, dry cliffs, B225

Selaginellaceae

Selaginella mutica D.C. Eat. ex Underwood. BLUNTLEAF SPIKEMOSS, N, 3, dry cliffs & slopes, H

Cupressaceae

- Juniperus osteosperma* (Torr.) Little. UTAH JUNIPER, N, 5, through-out, B237
- Juniperus monosperma* (Engelm.) Sarg. ONE-SEED JUNIPER, N, 2, perhaps common through-out, m(ASC)

- Juniperus scopulorum* Sarg. ROCKY MOUNTAIN JUNIPER, N, 4, upper cyns, h787
Juniperus scopulorum var. *viridiflora* D. Hill. (Rehder, 1987) WESTERN RED CEDAR, H, 1, T, r1563
Platycladus orientalis (L.) Franco. ORIENTAL ARBORVITAE, H, 1, T, r1559

Epheceae

- Ephedra cutleri* Peebles. CUTLER'S EPHEDRA, N, 3, probably common at sandy sites, B
Ephedra torreyana Wats. TORREY EPHEDRA, N, 0, perhaps common, undercollected, B234
Ephedra viridis Coville. MORMON TEA, N, 4, lower cyns & rims, B247

Pinaceae

- Picea engelmannii* Parry ex Engelm. ENGELMANN SPRUCE, H, 1, T-bird Lodge, r1955
Picea pungens Engelm. BLUE SPRUCE, N, 1, upper CdM, h755
Pinus edulis Engelm. PINYON PINE, N, 5, through-out, B236
Pinus ponderosa P. & C. Lawson. PONDEROSA PINE, N, 5, middle cyns & upper cyns & rims, h349
Pseudotsuga menziesii (Mirbel) Franco. DOUGLAS FIR, N, 5, upper & middle cyns, B235

Aceraceae

- Acer glabrum* Torr. ROCKY MOUNTAIN MAPLE, N, 3, upper cyns, r496
Acer negundo L. BOX ELDER, N, 5, through-out, h10

Amaranthaceae

- Amaranthus albus* L. PIGWEED, N, 2, disturbed sites, h749
Amaranthus blitoides S. Wats. PROSTATE PIGWEED, E, 3, disturbed sites through-out, h114
Amaranthus hybridus L. SMOOTH AMARANTH, N, 0, h rep as common on cyn floor, h690
Amaranthus palmeri S. Wats. PALMER AMARANTH, N,?, probably common, upper CdM, r1001
Amaranthus powellii S. Wats. POWELL AMARANTH, N, 0, Wheatfields Canyon, h539
Amaranthus retroflexus L. REDROOT AMARANTH, E, 2, dist. sites, upper cyns & rims, r885

Anacardiaceae

- Rhus trilobata* Nutt. SKUNK BUSH, N, 3, through-out, h22
Toxicodendron rydbergii (Small) Greene. POISON IVY, N, 3, through-out cyns, B361

Apiaceae

- Aletes macdougalii* Coult. & Rose. MACDOUGAL'S ALETES, N, 3, <6500', hg and ledges, h46
Cicuta douglasii (DC.) Coult. & Rose. WATER HEMLOCK, N, 0, h rep. as common in upper CdM, h465a
Conioselinum scopulorum (Gray) Coult. and Rose.

- ROCKY MOUNTAIN HEMLOCK PARSLEY, N, 0, h rep. as common in upper CdM, h675
Cymopterus acaulis var. *fendleri* (Gray) Goodrich. FENDLER'S SPRING PARSLEY, N, 3, lower cyns and rims, C
Cymopterus bulbosus A. Nels. BULBOUS SPRING PARSLEY, N, 2, rim of MC and near T, r195
Cymopterus purpurascens (Gray) M.E. Jones. UTAH SPRING PARSLEY, N, 1, upper cyns & rims 6000', C
Cymopterus purpureus S. Wats. PURPLE SPRING PARSLEY, N, 2, upper rims >7000', r364
Ligusticum porteri Coult. & Rose. PORTER'S LIGUSTICUM N, 1, upper cyns, h rep as common, h270
Lomatium nevadense var. *nevadense* (Wats.) Coult. & Rose. NEVADA BISCUITROOT, N, 2, upper CdM & CdC, r153
Lomatium nevadense var. *parishii* (Coult. & Rose) Jepson. PARISH BISCUITROOT, N, 0, upper rims, C
Oxypolis fendleri (Gray) Heller. FENDLER'S COWBANE, N, 0, upper CdM, h465
Pseudocymopterus montanus (Gray) Coult. & Rose. FALSE SPRING PARSLEY, N, 2, upper slopes and cyns, H

Apocynaceae

- Apocynum cannabinum* L. DOGBANE, N, 2, upper cyns, h674

Araliaceae

- Aralia racemosa* L. AMERICAN SPIKENARD, N, 2, upper CdC & Black Rock Cyn., r882

Asclepiadaceae

- Asclepias asperula* subsp. *asperula* (Decne.) WOODSON ANTELOPE HORNS, N, 2, lower cyns & rims, B305
Asclepias asperula subsp. *capricornu* (Decne.) Woodson. ANTELOPE HORNS, N, 0, lower cyns & rims, R
Asclepias engelmannii Woodson. ENGELMANN'S MILKWEED, N, 0, Baby Trail, lower CdM, h424
Asclepias involucreta Engelm. DWARF MILKWEED, N, 1, rims >7000', D
Asclepias subverticillata (Gray) Vail. WHORLED MILKWEED, N, 3, through-out, De
Asclepias tuberosa L. BUTTERFLYWEED, N, 2, upper CdM & upper MC, h280

Asteraceae

- Achillea millefolium* var. *occidentalis* DC. YARROW, N, 4, >6000', h
Acroptilon repens (L.) DC. RUSSIAN KNAPWEED, E, 5, disturbed sites through-out, H
Ageratina herbacea (Gray) King & H.E. Robins. FRAGRANT SNAKEROOT, N, 2, upper cyn slopes, h706
Agoseris glauca (Pursh) Raf. PALE DANDELION, N, 1, rims >7200', r542
Almutaster pauciflorus (Nutt.) A. & D. Löve. ALKALI MARSH ASTER, N, 3, riparian, r1055
Ambrosia acanthicarpa Hook. BURSAGE, N, 3, disturbed sites through-out, h726

- Ambrosia artemisiifolia* L. RAGWEED, N, 1, CdC, r1023
- Antennaria marginata* Greene. WHITE MARGIN PUSSYTOES, N, 2, rocky slopes through-out, h122
- Antennaria parvifolia* Nutt. LITTLE LEAF PUSSYTOES, N, 2, slopes >6000', h930
- Antennaria rosulata* Rydb. KAIBAB PUSSYTOES, N, 3, sage flats >7000', h359
- Arnica chamissonis* var. *andina* (Nutt.) Ediger & Barkl. CHAMISSO ARNICA, N, 1, upper CdM, h477
- Artemisia arbuscula* Nutt. LOW SAGEBRUSH, N, 4, rims >7000', r1491
- Artemisia biennis* Willd. BIENNIAL WORMWOOD, E, 1, shore of Whiskey Reservoir, R10
- Artemisia bigelovii* Gray. BIGELOW SAGE, N, 4, through-out, R10
- Artemisia campestris* var. *scoleriana* (Hook.) Cronq. FIELD SAGEWORT, N, 0, upper MC, h639
- Artemisia carruthii* Wood ex Carruth. CARRUTH'S SAGEWORT, N, 2, upper cyns & rims >7000', r820
- Artemisia dracuncululus* L. FALSE TARRAGON, N, 1, base of Many Skulls Tr, r781
- Artemisia filifolia* Torr. SAND SAGEBRUSH, N, 1, dunes at mouth of Cottonwood Cyn, r1362
- Artemisia frigida* Willd. FRINGED SAGEBRUSH, N, 3, through-out, D
- Artemisia ludoviciana* subsp. *ludoviciana* Nutt. WHITE SAGEBRUSH, N, 0, lower cyns, H
- Artemisia ludoviciana* subsp. *mexicana* (Willd. ex Spreng.) Keck. MEXICAN SAGEWORT, N, 4, through-out cyns, B226
- Artemisia tridentata* Nutt. BIG SAGE, N, 5, >6000', B256
- Baccharis wrightii* Gray. WRIGHT BACCHARIS, N, 1, nr VC, r1951
- Bahia dissecta* (Gray) Britt. RAGLEAF BAHIA, N, 2, >7000, W
- Bidens cernua* L. BUR MARIGOLD, N, 1, Tsaile Lake, r792
- Brickellia brachyphylla* (Gray) Gray. BRACH BRICKELLBUSH, N, 4, slopes through-out, h613
- Brickellia californica* (Torr. & Gray) Gray. CALIFORNIA BRICKELLBUSH, N, 3, slopes through-out, W
- Brickellia grandiflora* (Hook.) Nutt. MOUNTAIN BRICKELLBUSH, N, 3, slopes through-out, h604
- Brickellia microphylla* var. *scabra* Gray. ROUGH BRICKELLBUSH, N, 4, <6500', B243
- Brickellia oblongifolia* Nutt. NARROWLEAF BRICKELLBUSH, N, 0, SW of the VC, R139
- Carduus nutans* L. MUSK THISTLE, E, 2, next to roads and riparian areas through-out, R475
- Chaenactis stevioides* Hook. & Arn. STEVE'S PIN-CUSHION, N, 2, lower rims, D
- Chaetopappa ericioides* (Torr.) Nesom. SMALL-FLOWER ASTER, N, 4, through-out, B214
- Chamaechaenactis scaposa* (Eastw.) Rydb. FULLSTEM, N, 1, CdM rim, Mummy Overlook-Middle Tr., D
- Chrysothamnus depressus* Nutt. DWARF RABBITBRUSH, N, 4, sage flats >6800', R
- Chrysothamnus Greenei* (Gray) Greene. GREENE'S RABBITBRUSH, N, 4, through-out, B101
- Chrysothamnus viscidiflorus* (Hook.) Nutt. YELLOW RABBITBRUSH, N, 3, through-out, probably includes *C. var. stenophyllus*, h
- Chrysothamnus viscidiflorus* var. *stenophyllus* (Gray) Hall. YELLOW RABBITBRUSH, N, 0, S rim CdC, included in above taxon by Cronquist et al (1994), L16
- Cirsium calcareum* (M.E. Jones) Woot. & Standl. CAINVILLE THISTLE, N, 2, hg W of Refuge Rock, H
- Cirsium chellyense* Moore & Frankton. QUEEN THISTLE, N, 3, hg through-out, prev. det. as *C. calcareum*, *C. chuskaense*, endemic to Canyon de Chelley area, h
- Cirsium rothrockii* (Gray) Petrak. ROTHROCK'S THISTLE, N, 1, above Mummy Cave, W
- Cirsium undulatum* var. *tracyi* (Rydb.) Welsh. TRACY'S THISTLE, N, 1, Whiskey Reservoir area, r1439
- Cirsium vulgare* (Savi) Ten. BULL THISTLE, E, 2, through-out, h667
- Cirsium wheeleri* (Gray) Petrak. WHEELER THISTLE, N, 1, Wheatfields Cyn area, r870
- Conyza canadensis* (L.) Cronq. CANADA HORSEWEED, N, 2, riparian through-out, h548
- Crepis occidentalis* Nutt. WESTERN HAWKS-BEARD, N, 2, rims >7100', h324
- Dicoria canescens* Gray. DESERT TWINBUGS, N, 0, lower CdC, M213
- Dicoria canescens* subsp. *brandegei* (Gray) Kartesz, comb. nov. ined. DESERT TWINBUGS, N, 3, near Jct., h810
- Dyssodia papposa* (Vent.) A.S. Hitchc. FETID MARI-GOLD, N, 1, through-out, r1539
- Ericameria nauseosa* (Pallas ex Pursh) Nesom & Baird. GOLDENBUSH, N, 4, through-out, B
- Ericameria nauseosa* var. *bigelovii* (Gray) Nesom & Baird. RUBBER RABBITBRUSH, N, 4, lower rims, B246
- Ericameria nauseosa* var. *glabrata* (Gray) Nesom & Baird. RUBBER RABBITBRUSH, N, 4, lower rims and cyn, L14
- Ericameria nauseosa* var. *hololeuca* (Gray) Nesom & Baird. RUBBER RABBITBRUSH, N, 0, Battle Cove Ruins, h721
- Ericameria nauseosa* var. *oreophila* (A. Nels.) Nesom & Baird. RUBBER RABBITBRUSH, N, 4, lower rims, r975
- Ericameria parryi* var. *howardii* (Parry ex Gray) Nesom & Baird. PARRY'S RABBITBRUSH, N, 2, lower slopes, h
- Erigeron aphanactis* (A. Gray) Greene. BEACH DAISY, N, 0, Battle Cove Ruin, h909
- Erigeron colomexicanus* A. Nelson. RUNNING DAISY, N, 4, through-out, h
- Erigeron concinnus* var. *concinnus* (Hook. & Arn.) Torr. & Gray. NAVAJO DAISY, N, 3, through-out, B209
- Erigeron divergens* Torr. & Gray. SPREADING DAISY, N, 4, through-out, r246
- Erigeron flagellaris* Gray. TRAILING DAISY, N, 4, through-out, B203
- Erigeron formosissimus* var. *formosissimus* Greene. BEAUTIFUL FLEABANE, N, 1, upper MC, riparian, r957
- Erigeron lonchophyllus* Hook. SPEARLEAF DAISY, N, 1, upper CdM, r805

- Erigeron pumilus* Nutt. LOW DAISY, N, 2, mid cyns, r389
- Erigeron speciosus* var. *macranthus* (Nutt.) Cronq. ASPEN DAISY, N, 3, upper cyns, riparian, h473
- Erigeron speciosus* var. *speciosus* (Lindl.) DC. ASPEN DAISY, N, 3, upper cyns, riparian, r725
- Eurybia radulina* (Gray) Nesom. ROUGHLEAF ASTER, H, 1, T, r1404
- Gaillardia pinnatifida* Torr. BLANKETFLOWER, N, 3, lower cyns & rims, h188
- Gnaphalium exilifolium* A. Nels. SLENDER CUDWEED, N, 0, Tsaile Lake spillway, W
- Gnaphalium palustre* Nutt. CUDWEED, N, 1, riparian through-out, r873
- Grindelia nuda* var. *aphanactis* (Rydb.) Nesom. RAYLESS GUMWEED, N, 3, through-out, B350
- Grindelia squarrosa* var. *serrulata* (Rydb.) CURLY-CUP GUMWEED, N, 0, near Antelope House Ruin, h654
- Gutierrezia microcephala* (DC.) Gray. THREADLEAF SNAKEWEED, N, 0, Spider Rock Overlook, R480
- Gutierrezia sarothrae* (Pursh) Britt. & Rusby. BROOM SNAKEWEED, N, 5, through-out, De
- Helianthella microcephala* (Gray) Gray. PURPLE-DISK HELIANTHELLA, N, 4, through-out, h716
- Helianthus annuus* L. ANNUAL SUNFLOWER, N, 2, disturbed sites through-out, h550
- Helianthus petiolaris* Nutt. PRAIRIE SUNFLOWER, N, 2, disturbed sites through-out, h569
- Heliomeris multiflora* Nutt. SHOWY GOLDENEYE, N, 2, >6500', r730
- Heterotheca villosa* (Pursh) Shinners. HAIRY GOLDENASTER, N, 5, through-out, B310
- Hymenopappus filifolius* var. *lugens* Hook. YELLOW CUTLEAF, N, 5, through-out, h204
- Hymenopappus mexicanus* Gray. Mexican WOOLLYWHITE, N, 1, upper MC, r958
- Hymenoxys richardsonii* var. *floribunda* (Gray) Parker. COLORADO RUBBERWEED, N, 5, through-out, De
- Isocoma rusbyi* E. Greene. RUSBY GOLDENBUSH, N, 3, lower rims, R473
- Iva xanthifolia* Nutt. HORSEWEED, N, 0, near Antelope House Ruin, h725
- Lactuca serriola* L. WILD LETTUCE, E, 2, through-out, h559
- Lactuca tatarica* var. *pulchella* (Pursh) Breitung. BLUE LETTUCE, N, 0, upper CdC, h514
- Lygodesmia arizonica* S. Tomb. ARIZONA SKELETONPLANT, N, 1, dunes 2km. S of VC, r487
- Lygodesmia grandiflora* (Nutt.) T. & G. LARGE FLOWER SKELETONPLANT, N, 0, lower rims, D
- Lygodesmia juncea* (Pursh) D. Don ex Hook. RUSH SKELETONPLANT, N, 1, Draper Trail, CdM, r1506
- Machaeranthera canescens* (Pursh) Gray. PURPLE ASTER, N, 4?, through-out, r863
- Machaeranthera canescens* var. *ambigua* B. L. Turner. HOARY TANSY ASTER, N, 3?, Tsaile Lake, r806
- Machaeranthera canescens* var. *aristata* (Eastw.) B.L. Turner. HOARY TANSY ASTER, N, 3?, thruout?, L11
- Machaeranthera grindelioides* (Nutt.) Shinners. RAYLESS ASTER, N, 3, lower cyns & slopes, r366
- Machaeranthera parviflora* Gray. SMALL FLOWER TANSY ASTER, N, 1?, lower cyn, H
- Malacothrix sonchoides* (Nutt.) Torr. & Gray. SOWTHISTLE DESERT DANDELION, N, 2, lower cyns & rims, h869
- Microseris nutans* (Hook.) Schultz-Bip. NODDING MICROSERIS, N, 1, disturbed areas, r1958
- Packera hartiana* (Heller) W.A. Weber & A. Löve. HART'S RAGWORT, N, 2, hg, upper cyns, h201
- Packera multilobata* (Torr. & Gray ex Gray) W.A. Weber & A. Löve. LOBELEAF GROUNDSEL, N, 4, lower elevs, B216
- Packera neomexicana* var. *neomexicana* (Gray) W.A. Weber & A. Löve. NEW MEXICO GROUNDSEL, N, 4, upper elevs, h299
- Pericome caudata* Gray. MOUNTAIN LEAFTAIL, N, 1, upper CdM, h816
- Petradoria pumila* subsp. *graminea* (Woot. & Standl.) L.C. Anders. GIANT ROCKGOLDENROD, N, 3, through-out, esp. lower cyn rims, R144
- Pseudognaphalium canescens* subsp. *canescens* (DC.) W.A. Weber. WRIGHT'S CUDWEED, N, 1, north slope, upper CdM, r1476
- Pseudognaphalium stramineum* (Kunth) W.A. Weber. ANNUAL CUDWEED, N, 1, upper CdM, h666
- Ratibida columnifera* (Nutt.) Woot. & Standl. PRAIRIE CONEFLOWER, N, 1, upper MC, h626
- Rudbeckia laciniata* L. CUTLEAF CONEFLOWER, N, 3, upper cyns, riparian, Bu777
- Sanvitalia abertii* Gray. ABERT CREEPING ZINNIA, N, 1, upper cyns & rims, r930
- Schkuhria multiflora* Hook. & Arn. MANYFLOWER FALSE THREADLEAF, N, 1, upper cyns & rims, W
- Senecio flaccidus* var. *douglasii* (DC.) B.L. Turner & T.M. Barkl. DOUGLAS GROUNDSEL, N, 0?, B
- Senecio flaccidus* var. *flaccidus* Less. THREADLEAF GROUNDSEL, N, 4, lower cyns & rims, B340
- Senecio spartioides* var. *multicapitatus* (Greenm. ex Rydb.) Welsh. BROOMLIKE RAGWORT, N, 0, h rep as scattered through-out cyns, h480
- Senecio spartioides* var. *spartioides* Torr. & Gray. BROOMLIKE RAGWORT, N, 2, upper CdC & rims, r832
- Senecio wootonii* Greene. WOOTON'S RAGWORT, N, 2, upper MC, r489
- Solidago simplex* var. *spathulata* (DC.) Cronq. MT. ALBERT GOLDENROD, N, 1, upper MC rim, r952
- Solidago velutina* DC. SPARSE GOLDENROD, N, 3, through-out, h394
- Sonchus asper* (L.) Hill. PRICKLY SOWTHISTLE, E, 0, lower cyns, B
- Stenotus armerioides* Nutt. THRIFT MOCK GOLDENWEED, N, 3, lower rims, B348
- Stephanomeria exigua* Nutt. SMALL WIRELETTUCE, N, 1, WH Ruin, Ha
- Stephanomeria minor* var. *minor* (Hook.) Nutt. NARROWLEAF WIRELETTUCE, N, 3, slopes through-out, h370
- Stephanomeria pauciflora* (Torr.) A. Nels. BROWN-PLUME WIRELETTUCE, N, 2, upper rims, r1064
- Symphotrichum ascendens* (Lindl.) Nesom. WESTERN ASTER, N, 1, upper CdM, r737
- Symphotrichum falcatum* var. *crassulum* (Rydb.) Nesom. WHITE PRAIRIE ASTER, N, 0, upper MC, h628

- Symphotrichum falcatum* var. *falcatum* (Lindl.) Nesom. WHITE PRAIRIE ASTER, N, 3, through-out, H
- Symphotrichum laeve* var. *laeve* (L.) A. & D. Löve. SMOOTH BLUE ASTER, N, 1, upper cyns, r1314
- Symphotrichum lanceolatum* var. *hesperium* (Gray) Nesom. WHITE PANICLE ASTER, N, 3, mid-upper cyn, h
- Symphotrichum praeltum* var. *praeltum* (Poir.) Nesom. WILLOWLEAF ASTER, N, 0?, h450
- Taraxacum laevigatum* (Willd.) DC. ROCK DANDELION, E, 4, through-out, h28
- Taraxacum officinale* Weber. DANDELION, N, 0, Battle Cove Ruin, h692
- Tetradymia canescens* DC. GRAY HORSEBRUSH, N, 2, upper cyn slopes, D
- Tetranneuris ivesiana* Greene. IVES' FOUR-NERVE-DAISY, N, 3, rims through-out, B249
- Thelesperma megapotamicum* (Spreng.) Kuntz. HOPI TEA GREENTHREAD, N, 2, mid-lower cyns through-out, h392
- Thelesperma subnudum* Gray. NAVAJO TEA, N, 2, mid-lower cyns and rims, R484
- Townsendia exscapa* (Richards.) Porter. STEMLESS TOWNSEND DAISY, N, 0?, m
- Townsendia incana* Nutt. HOARY TOWNSEND DAISY, N, 3, lower cyns and rims, B210
- Townsendia strigosa* Nutt. HOARY TOWNSEND DAISY, N, 0, dunes near VC, h781
- Tragopogon dubius* Scop. GOAT'S BEARD, E, 2, through-out, h rep as common at head of CdM, h267
- Verbesina encelioides* subsp. *exauriculata* (Robins. & Greenm.) J.R. Coleman. GOLDEN CROWN-BEARD, E, 2, through-out, C
- Verbesina microptera* DC. TEXAS CROWNBEARD, N,?, W49057
- Wyethia scabra* Hook. MULES-EARS, N, 1, mesa top, R482
- Xanthium strumarium* var. *canadense* (P. Mill.) Torr. & Gray. CANADA COCKLEBURR, N, 4, through-out, riparian, h409
- Berberidaceae**
- Mahonia repens* (Lindl.) G. Don. CREEPING BERRY, N, 3, through-out, high slopes, h7
- Betulaceae**
- Alnus incana* subsp. *tenuifolia* (Nutt.) Breitung. THIN-LEAF ALDER, N, 2, upper cyns, riparian, r577
- Alnus oblongifolia* Torr. ARIZONA ALDER, N, 2, upper cyns, riparian, h272
- Betula occidentalis* Hook. WATER BIRCH, N, 3, upper cyns, riparian, h272b
- Bignoniaceae**
- Catalpa bignonioides* Walt. SOUTHERN CATALPA, H, 1, Draper Ranch, end of road in CdM, B36
- Boraginaceae**
- Cryptantha bakeri* (Greene) Payson. BAKER CATSEYE, N, 2, upper cyn rims >6900', h rep as common through-out, h112
- Cryptantha cinerea* var. *cinerea* (Greene) Cronq. BOWNUT CRYPTANTHA, N, 3, rky slopes & rip, upper cyns, H
- Cryptantha cinerea* var. *jamesii* Cronq. JAMES CATSEYE, N, probably mis IDed, Cronquist *et al* (1984) say var. *jamesii* doesn't occur here, h887
- Cryptantha confertiflora* (Greene) Payson. BASIN YELLOW CRYPTANTHA, N, 2, lower cyn rims, r394
- Cryptantha crassisejala* (Torr. & Gray) Greene. DEERTONGUE, N, 2, lower cyns, B319
- Cryptantha fendleri* (Gray) Greene. FENDLER'S CRYPTANTHA, N, 1, Wheatfields Cr., r830
- Cryptantha flava* (Nels.) Payson. PLATEAU YELLOW CATSEYE, N, 2, lower sandy rims, K
- Cryptantha fulvocanescens* (Wats.) Pays. TAWNY CATSEYE, N, 2, lower rims, B215
- Cryptantha gracilis* Osterh. NARROWSTEM CATSEYE, N, 3, lower cyns & rims, D
- Cryptantha pterocarya* (Torr.) Greene. WINGNUT CRYPTANTHA, N, 2, mid-lower cyns, D
- Lappula occidentalis* var. *cupulata* (Gray) Higgins. FLAT-SPINE SHEEPBURR, N, 0, NPS housing area, D
- Lappula occidentalis* var. *occidentalis* (S. Wats.) Greene. DESERT STICKSEED, N, 3, through-out, B318
- Lithospermum incisum* Lehm. FRINGED PUCCOON, N, 2, lower cyns, D
- Lithospermum multiflorum* Torr. ex Gray. MANY-FLOWERED STONESEED, N, 2, through-out, h318
- Mertensia oblongifolia* (Nutt.) G. Don. OBLONG-LEAF BLUEBELLS, N, 2, Whiskey Cr, Black Rock Cyn, white-flowered form is endemic to Chuska Mtns/Canyon de Chelly area; r435
- Brassicaceae**
- Alyssum alyssoides* (L.) L. PALE ALYSSUM, E, 0, NPS housing area, h50
- Alyssum minus* (L.) Rothm. ALYSSUM, E, 3, through-out, r183
- Arabis fendleri* (S. Wats.) Greene. FENDLER'S ROCKCRESS, N, 3, through-out, r158
- Arabis perennans* S. Wats. PERENNIAL ROCKCRESS, N, 0, through-out, *Arabis* is in revision, *A. fendleri* & *A. perennans* are often confused. Some of Halse's *A. perennans* specimens at UA may have been annotated to an unknown taxon (P. Jenkins (ARIZ), pers comm), D
- Arabis pulchra* var. *pallens* M. E. Jones. PALE ROCKCRESS, N, 1, Battle Cove Ruin, r290
- Camelina microcarpa* Andrzej. FALSE FLAX, E, 2, through-out, D
- Capsella bursa-pastoris* (L.) Medic. SHEPHERD'S PURSE, E, 2, lower cyn, H rep. as through-out, D
- Cardamine cordifolia* Gray. HEARTLEAF BITTERCRESS, N, 1, Wheatfields Cr, r1328
- Chorispora tenella* (Pallas) DC. BLUE MUSTARD, E, 3, disturbed sites, lower cyns, h218
- Descurainia incana* subsp. *viscosa* (Rydb.) MOUNTAIN TANSY MUSTARD, N, 0, upper CdM, h486
- Descurainia pinnata* subsp. *halictorum* (Cockerell) Detling. WESTERN TANSYMUSTARD, N, 3, disturbed sites, lower cyns, B

Descurainia pinnata subsp. *ochroleuca* (Woot.) De-tling. WESTERN TANSYMUSTARD, N, 3, lower cyns, probably same taxon as *D. p.* subsp. *halictorum*, B341

Descurainia sophia (L.) Webb ex Prantl. FLAXWEED TANSY MUSTARD, N, 3, mid-lower cyns, h16

Dimorphocarpa wislizeni (Engelm.) Rollins. SPIC-TACLEPOD, N, 2, sandy areas, lower cyns, r275

Draba cuneifolia var. *cuneifolia* Nutt. ex Torr. & Gray. WEDGELEAF DRABA, N, 3, through-out, h19

Draba nemorosa L. WOODLAND DRABA, N, 2 upper Black Rock and MC; r437

Draba petrophila var. *petrophila* Greene. SANTA RITA MOUNTAIN DRABA, N, 1, horse trail into Coyote/Wheatfields confluence; r594

Erysimum capitatum (Dougl. ex Hook.) Greene. WESTERN WALLFLOWER, N, 2, through-out cyns, riparian, D

Erysimum repandum L. REPAND WALLFLOWER, E, 0, NPS housing area, h778

Lepidium densiflorum Schrad. PEPPERWEED, N, 3, mid-lower cyns, B317

Lepidium montanum Nutt. MOUNTAIN PEPPERWEED, N, 0, lower cyns, probably var. *jonesii*, D

Lepidium montanum var. *jonesii* (Rydb.) C.L. Hitchc. JONES PEPPERWEED, N, 2, lower cyns, r281

Lepidium perfoliatum L. CLASPING PEPPERWEED, E, 2, lower cyns, h378

Lesquerella intermedia (S. Wats.) Heller. SANTA FE BLADDERPOD, N, 0, Tsaile Lake, h915

Lesquerella rectipes Woot. & Standl. STRAIGHT BLADDERPOD, N, 3, through-out, B355

Physaria newberryi Gray. NEWBERRY'S TWIN-POD, N, 1, below Two-Hole Ruin, CdC, r168

Rorippa sinuata (Nutt.) Hitchcock. SPREADING YELLOWCRESS, N, 1, dry cattle tanks nr park housing, r1959

Rorippa sphaerocarpa (Gray) Britt. ROUND FRUIT YELLOWCRESS, N, 1, upper CdM and MC, h633

Rorippa tenerrima Greene. MODOC YELLOWCRESS, N, 1, lower Wheatfields, r872

Rorippa teres (Michx.) R. Stuckey. SOUTHERN MARSH YELLOWCRESS, N, 0, H rep as common in upper cyns, h468

Sisymbrium altissimum L. TUMBLE MUSTARD, E, 3, lower cyns, Ha

Stanleya pinnata (Pursh) Britt. DESERT PRINCE'S PLUME, N, 1, mid CdC, h888

Streptanthella longirostris (Wats.) Rydb. LONGBEAK FIDDLE MUSTARD, N, 3, lower cyns & rims, h38

Streptanthus cordatus Nutt. HEARTLEAF TWIST-FLOWER, N, 3, lower cyns & rims, D

Thelypodium wrightii Gray. WRIGHT'S THELYPODY, N, 2, MC and lower CdC, h600

Thlaspi montanum var. *montanum* L. ALPINE PENNYCRESS, N, 2, upper cyns, h313

Cactaceae

Echinocereus coccineus Engelm. SCARLET HEDGEHOG CACTUS, N, 0, Sliding House Overlook, H

Echinocereus fendleri (Engelm.) F. Seitz. FENDLER HEDGEHOG CACTUS, N, 2, rims through-out, h248

Echinocereus triglochidiatus Engelm. CLARETCUP

HEDGEHOG, N, 3, rims through-out, likely *E. t.* var. *mojavensis*, h103

Echinocereus triglochidiatus var. *mojavensis* (Engelm. & Bigelow) L. Benson MOHAVE HEDGEHOG CACTUS, N, 3, rims through-out, r385

Escobaria vivipara var. *vivipara* (Nutt.) Buxbaum. SPINYSTAR, N, 3, rims >6800', h822

Opuntia erinacea Engelm. & Bigelow ex Engelm. GRIZZLYBEAR PRICKLYPEAR, N, 4, lower cyns, r310

Opuntia fragilis (Nutt.) Haw. FRAGILE CACTUS, N, 2, upper cyns & rims, r1045

Opuntia macrorhiza Engelm. GRASSLAND PRICKLYPEAR, N, 1, upper cyns, h820

Opuntia phaeacantha Engelm. BROWNSPINE PRICKLYPEAR, N, 4, lower cyns, Bu763

Opuntia polyacantha var. *polyacantha* Haw. HAIR-SPINE PRICKLYPEAR, N, 3, lower cyns, B373

Opuntia whipplei Engelm. & Bigelow. WHIPPLE'S CHOLLA, N, 4, through-out, B116

Opuntia X viridiflora Britt. & Rose (pro sp.) RAT-TAIL CHOLLA, H?, 1, fenceline at Standing Cow Ruin, CdM; r1290

Sclerocactus whipplei (Engelm. & Bigelow) Britton. WHIPPLE'S FISHHOOK CACTUS, N, 2, lower cyns & rims, Bu761

Campanulaceae

Campanula parryi Gray. HAREBELL, N, 3, uppermost cyns and hgs, h460

Cannabinaceae

Humulus lupulus var. *lupuloides* E. Small. ARIZONA HOPS, N, 2, lower cyns, h481

Capparaceae

Cleome serrulata Pursh. ROCKY MOUNTAIN BEE-PLANT, N, 4, lower cyns, B274

Caprifoliaceae

Lonicera korolkowii Stapf. BLUELEAF HONEY-SUCKLE, H, 1, T, r1141

Symphoricarpos oreophilus Gray. MOUNTAIN SNOWBERRY, N, 3, slopes, upper cyns, h934

Caryophyllaceae

Arenaria eastwoodiae var. *eastwoodiae* Rydb. EASTWOOD SANDWORT, N, 2, sandy soils, lower slopes, Ha

Arenaria eastwoodiae var. *adenophora* Kearney & Peebles. EASTWOOD SANDWORT, N, 0, Battle Cove Ruin, h116

Arenaria fendleri var. *fendleri* Gray. FENDLER'S SANDWORT, N, 2, upper cyns, r837

Arenaria fendleri var. *brevifolia* (Maguire) Maguire. FENDLER'S SANDWORT, N, 3, slopes through-out, h357

Arenaria lanuginosa subsp. *saxosa* (Gray) Maguire. SPREADING SANDWORT, N, 2, cyns through-out, W

Arenaria serpyllifolia L. THYMELEAF SANDWORT, E, 0, near Sliding House Overlook, H

- Cerastium beeringianum* Cham. & Schlecht. CHICK-WEED, N, 1, upper CdM, r1355
Cerastium fontanum subsp. *vulgare* (Hartman) Greuter & Burdet. BIG CHICKWEED, E, 2, CdM, h290
Cerastium glomeratum Thuill. STICKY CHICKWEED, E, 1, upper CdM; r631
Pseudostellaria jamesii (Torr.) W.A. Weber & R.L. Hartman. STICKY STARWORT, N, 2, upper cyns, h274
Silene antirrhina L. CATCHFLY, N, 1, Wheatfields Cyn, r856
Silene laciniata Cav. CARDINAL CATCHFLY, N, 2, upper cyns, h515
Silene menziesii Hook. MENZIE'S CATCHFLY, N, 2, upper cyns, r499
Spergularia salina J.& K. Presl. SALT SANDSPURRY, N, 1, WH Ruins & cyn mouth, B325

Celastraceae

- Paxistima myrsinites* (Pursh) Raf. BOXLEAF, N, 1, Nest Mtn., r535

Ceratophyllaceae

- Ceratophyllum demersum* L. COMMON HORNWORT, N, 2, upper CdM & MC, aquatic, r524

Chenopodiaceae

- Atriplex argentea* Nutt. SILVERSCALE SALTBUCH, N, 0,?, De 42795
Atriplex canescens (Pursh) Nutt. FOURWING SALTBUCH, N, 4, lower cyns & rims, R134
Atriplex confertifolia (Torr. & Frem.) S. Wats. SHADSCALE, N, 4, lower cyns & rims, B349
Atriplex obovata Moq. MOUND SALTBUCH, N, 0, lower cyns & rims, h602
Atriplex rosea L. REDSCALE SALTBUCH, E, 0, h rep as common at mouth of Far Spiral Cyn, h738
Bassia hyssopifolia (Pallas) Kuntz. SMOTHER WEED, E, 1, below jct., H
Chenopodium album L. LAMBSQUARTERS, N, 2?, Bat Cyn above falls, r923
Chenopodium berlandieri Moq. NETSEED LAMBSQUARTERS, N, 2, through-out, h130
Chenopodium botrys L. JERUSALEM OAK, E, 1, below jct., r789
Chenopodium fremontii S. Wats. FREMONT GOOSEFOOT, N, 2, through-out, r736
Chenopodium glaucum L. OAK-LEAF GOOSEFOOT, E, 0, Wheatfields Cyn, h528
Chenopodium graveolens Willd. FETID GOOSEFOOT, N, 2, through-out, r1000
Chenopodium leptophyllum (Moq.) Nutt. ex S. Wats. NARROWLEAF GOOSEFOOT, N, 3, through-out, r787
Chenopodium rubrum L. RED GOOSEFOOT, N, 2, lower cyns, H
Corispermum americanum var. *americanum* (Nutt.) Nutt. AMERICAN BUGSEED, N, 3, lower cyns, r1474
Cycloloma atriplicifolium (Spreng.) Coult. WINGED PIGWEED, N, 2, lower cyns, r788
Kochia scoparia (L.) Schrad. KOCHIA, E, 3, disturbed sites, lower cyns, R4
Krascheninnikovia lanata (Pursh) A.D.J. Meeuse & Smit. WINTERFAT, N, 3, lower cyns, R135

- Monolepis nuttalliana* (Schult.) Greene. NUTTALL'S POVERTY WEED, N, 2, through-out, h881
Salsola kali L. RUSSIAN THISTLE, E, 4, through-out, B338
Salsola tragus L. PRICKLY RUSSIAN THISTLE, E, 1, upper MC, probably same as *S. kali* above, r901
Sarcobatus vermiculatus (Hook.) Torr. GREASEWOOD, N, 3, lower cyns, B347
Suaeda moquinii (Torr.) Greene. ALKALI SEEPWEED, N, 0, south of NPS housing area, White House Ruins, L7

Clusiaceae

- Hypericum scouleri* Hook. SCOULER ST. JOHN-SWORT, N, 0, upper CdM, h462

Convolvulaceae

- Calystegia macounii* (Greene) Brummitt. MACOUN'S FALSE BINDWEED, N, 0, upper CdM, h485
Convolvulus arvensis L. FIELD BINDWEED, E, 3, disturbed sites through-out, h52
Evolvulus nuttallianus J.A. Schultes. PROSTRATE EVOLVULUS, N, 0, Black Rock Cyn & talus slopes nr. Spider Rock, R146
Ipomoea costellata Torr. crestrub MORNINGGLORY, N, 1, S Rim Dr .5 mile E of VC; r1406

Cornaceae

- Cornus sericea* L. REDOSIER DOGWOOD, N, 3, upper cyns, h191

Cucurbitaceae

- Citrullus lanatus* var. *lanatus* (Thunb.) Matsumura & Nakai. WILD WATERMELON, H, 0, Antelope House Ruin, h610
Cucurbita foetidissima Kunth. BUFFALO GOURD, N, 3, lower cyns, h565
Cucurbita moschata (Duchesne ex Lam.) Duchesne ex Poir. CROOKNECK SQUASH, H, 1, S Rim Dr W of Tunnel Tr., r1531

Elaeagnaceae

- Elaeagnus angustifolia* L. RUSSIAN OLIVE, H, 5, through-out, riparian, mainly lower cyns, H

Euphorbiaceae

- Chamaesyce fendleri* (Torr. & Gray) Small. FENDLER'S SANDMAT, N, 3, lower cyns & rims, h53
Chamaesyce glyptosperma (Engelm) Small. RIBSEED SANDMAT, N, 3, lower cyns, h511
Chamaesyce serpyllifolia (Pers.) Small. THYMELEAF SANDMAT, N, 3, through-out, h545
Croton texensis (Klotzsch) Muell.- Arg. TEXAS CROTON, N, 4, lower cyns & rims, R25
Euphorbia brachycera Engelm. HORNED SPURGE, N, 2, upper CdC and Whiskey Cr area, h524
Tragia ramosa Torr. NOSEBURN, N, 3, slopes, lower cyns, h90

Fabaceae

- Astragalus brandegei* Porter. BRANDEGEE'S MILK-VETCH, N, 1, Whiskey Res. shoreline, r571

- Astragalus calycosus* Torr. ex S. Wats. TORREY'S MILKVETCH, N, 2, lower rims, B217
- Astragalus ceramicus* Sheldon. PAINTED MILKVETCH, N, 2, sandy areas, lower cyns & rims, r214
- Astragalus chuskanus* Barneby & Spellenberg. SAN JUAN MILKVETCH, N, 1, Whiskey Cr & upper CdC endemic to Chuska and Tunitcha Mtns, r671
- Astragalus humistratus* var. *humivagans* (Rydb.) Barneby. GROUND COVER MILKVETCH, N, 1, upper Wheatfields, r860
- Astragalus kentrophyta* var. *elatus* S. Wats. TALL SPINY MILKVETCH, N, 2, slopes, mid cyns, Cu
- Astragalus lentiginosus* Dougl. ex Hook. FRECKLED MILKVETCH, N, probably var. *diphysus*, h
- Astragalus lentiginosus* var. *diphysus* (Gray) M.E. Jones. FRECKLED MILKVETCH, N, 3, through-out, B220
- Astragalus lonchocarpus* Torr. RUSHY MILKVETCH, N, 2, slopes & rims through-out, r397
- Astragalus missouriensis* var. *mimetus* Barneby HORN LOCO MILKVETCH, N, 2, mid cyns, r532
- Astragalus mollissimus* var. *thompsoniae* (S. Wats.) Barneby. THOMPSON'S WOOLY MILKVETCH, N, 3, through-out, B218
- Astragalus nuttallianus* DC. Nuttall. MILKVETCH, N, 2, mid cyn bottoms, h797
- Astragalus scopulorum* T.C. Porter. ROCKY MOUNTAIN MILKVETCH, N, 1, upper CdM, r350
- Astragalus wingatanus* S. Wats. FORT WINGATE MILKVETCH, N, 2, upper rims, r323
- Calliandra humilis* Benth. MOUNTAIN CALLIANDRA, N, 1, rim above MC, r961
- Dalea candida* var. *oligophylla* (Torr.) Shinners. WHITE PRAIRIE CLOVER, N, 2, lower cyns, R468
- Gleditsia triacanthos* L. var. *inermis* Willd. HONEY-LOCUST H, 1, bottom of Twin Trail & T, r1292
- Glycyrrhiza lepidota* Pursh. LICORICE, N, 2, mid-lower cyns & rims, Ba
- Hedysarum boreale* Nutt. NORTHERN SWEETVETCH, N, 2, slopes, mid cyns, r368
- Lathyrus eucosmus* Butters & St. John. BUSH PEAVINE, N, 2, mid-upper cyns, h210
- Lathyrus graminifolius* (S. Wats.) White. GRASSLEAF PEAVINE, N, 0, Antelope House Trail Cyn, h137
- Lotus plebeius* (Brand) Barneby. LONG-BRACT BIRD'S-FOOT-TREFOIL, N, 1, upper CdM; r351
- Lotus wrightii* (Gray) Greene. WRIGHT'S DEERVETCH, N, 2, upper cyns, h316
- Lupinus brevicaulis* Wats. SHORTSTEM LUPINE, N, 2, sage flats mid-upper rims, h847
- Lupinus caudatus* subsp. *cutleri* (Eastw.) Hess & D. Dunn. CUTLER'S SPURRED LUPINE, N, 3, upper terraces in mid cyns, endemic to the area, h271
- Lupinus kingii* S. Wats. KING'S LUPINE, N, 2, upper cyns & rims >7000', r817
- Medicago lupulina* L. BLACK MEDIC, E, 4, through-out, Ha
- Medicago polymorpha* L. BUR CLOVER, E, 1, upstream of Baby Tr, CdM, r283
- Medicago sativa* L. ALFALFA, H, 4, through-out, h499
- Medicago sativa* subsp. *falcata* (L.) Arcang. ALFALFA, H, 3, lower canyons, r768
- Melilotus alba* Desr. WHITE SWEETCLOVER, E, 3, through-out, B
- Melilotus officinalis* (L.) Lam. YELLOW SWEETCLOVER, E, 3, through-out, Melilotus may have been introduced as a crop for making hay, B303
- Oxytropis lambertii* Pursh. LAMBERT LOCOWEED, N, 1, upper CdC >6900', r835
- Parryella filifolia* Torr. & Gray ex Gray. DUNE BROOM, N, 1, bottom of Tseh Ya Kin Cyn, r1512
- Pediomelum megalanthum* (Woot. & Standl.) Rydb. IN-TERMOUNTAIN INDIAN BREADROOT, N, 1, shaly slope, head of Yellow Coyote Wash, r211
- Psoraleidium lanceolatum* (Pursh) Rydb. DUNE SCURFPEA, N, 3, upper terraces, mid cyns, h249
- Psoraleidium tenuiflorum* (Pursh) Rydb. SCURFPEA, N, 1, Wheatfields Cr. & slopes east of Coyote Cr, r841
- Robinia pseudo-acacia* Linnaeus. BLACK LOCUST, H, 1, Draper Ranch, end of road in CdM, r1189
- Spartium junceum* L. SPANISH BROOM, H, 1, T, r1294
- Trifolium longipes* Nutt. LONGSTALK CLOVER, N, 3, mid-upper cyns, riparian, r341
- Trifolium repens* L. WHITE CLOVER, E, 3, cyns through-out, Ha
- Vicia americana* Muhl ex Willd. AMERICAN DEERVETCH, N, 2, upper cyns, h210a

Fagaceae

- Quercus gambelii* Nutt. GAMBEL OAK, N, 5, through-out, L26
- Quercus turbinella* Greene. SCRUB OAK, N, 4, lower cyns & rims, B244
- Quercus X pauciloba* Rydb. (pro sp.) WAVYLEAF OAK, N, 2, lower cyns & rims, B380

Fumariaceae

- Corydalis curvisiliqua* subsp. *occidentalis* (Engelm. ex Gray) W.A. Weber. CURVEPOD FUMEWORT, N, 2, through-out, B365

Gentianaceae

- Centaurium calycosum* (Buckl.) Fern. ARIZONA CENTAURY, N, 0, lower cyns, riparian, R467
- Frasera paniculata* Torr. UTAH ELKWEED, N, 1, north rim road, W
- Frasera speciosa* Dougl. ex Griseb. DEERS EARS, N, 2, through-out, D
- Gentianella amarella* subsp. *acuta* (Michx.) J. Gillett. AUTUMN DWARF GENTIAN, N, 1, Whiskey Cr, r1054

Geraniaceae

- Erodium cicutarium* (L.) L'Her. ex Ait. FILAREE, E, 4, through-out, B342
- Geranium caespitosum* var. *caespitosum* James. PINEYWOODS GERANIUM, N, 2, upper cyns, h635
- Geranium lentum* Woot. & Standl. MOGOLLON GERANIUM, N, 3, upper cyns, h338
- Geranium richardsonii* Fisch. & Trautv. RICHARDSON'S GERANIUM, N, 2, upper cyns, h338a

Grossulariaceae

Ribes cereum Dougl. WAX CURRANT, N, 2, upper CdC > 6900', r550

Ribes leptanthum Gray. TRUMPET GOOSEBERRY, N, 3, through-out, h9

Haloragaceae

Myriophyllum sibiricum Komarov. MILFOIL, N, 3, upper CdM, aquatic, r603

Hydrangeaceae

Fendlera rupicola Gray. FENDLERBUSH, N, 3, slopes, lower cyns, B223

Phacelia microphyllus Gray. LITTLELEAF MOCKORANGE, N, 3, slopes, through-out, Cu

Hydrophyllaceae

Nama dichotomum (Ruiz & Pavón) Choisy. WISHBONE FIDDLELEAF, N, 2, upper cyns & rims, r1413

Nama retrorsum J.T. Howell. BETATAKIN FIDDLELEAF, N, 2, sandy areas, lower cyns & rims, h563

Phacelia alba Rydb. WHITE PHACELIA, N, 1, Whiskey Cr, h516

Phacelia crenulata var. *corrugata* Torr. ex S. Wats. CATERPILLARWEED, N, 3, lowermost rims, h55

Phacelia ivesiana Torr. IVES' PHACELIA, N, 2, lower rims < 6500', D

Juglandaceae

Carya illinoensis (Wangenh.) K. Koch. PECAN, H, 1, Draper Ranch, end of road in CdM, r1190

Juglans major (Torr.) Heller. ARIZONA BLACK WALNUT, H, 2, lower cyns, h105

Lamiaceae

Agastache pallidiflora (Heller) Rydb. BILL WILLIAM HYSSOP, N, 0, probably ssp as below, h634

Agastache pallidiflora subsp. *neomexicana* (Briq.) Lint & Epling. NEW MEXICAN GIANT HYSSOP, N, 2, upper CdC > 7000', r818

Dracocephalum parviflorum Nutt. AMERICAN DRAGONHEAD, N, 2, mid cyns, B

Hedeoma drummondii Benth. DRUMMOND'S FALSE PENNYROYAL, N, 3, through-out, B354

Hedeoma oblongifolia (Gray) Heller. FALSE PENNYROYAL, N, 1, west slopes of Pine Tree Cyn, W

Marrubium vulgare L. HOREHOUND, E, 3, lower cyns, De

Mentha arvensis L. FIELD MINT, N, 2, Tsaille Lake to mouth of cyns, L34

Monarda fistulosa var. *menthifolia* (Graham) Fern. WILDBERGAMOT BEEBALM, N, 3, upper cyns, h474

Perovskia atriplicifolia Benth. H, 1, T, r1295

Poliomintha incana (Torr.) Gray. ROSEMARY MINT, N, 2, sandy sites, lower cyns, r227

Prunella vulgaris L. SELFHEAL, N, 2, upper cyns, h276

Salvia reflexa Hornem. BLUE SAGE, N, 2, Tsaille Lake to confluence, r1479

Stachys rothrockii Gray. ROTHROCK'S HEDGE-NETTLE, N, 2, upper CdC, h530

Lemnaceae

Lemna minor L. COMMON DUCKWEED, N, 3, upper CdM, aquatic, r965

Linaceae

Linum aristatum Engelm. BRISTLE FLAX, N, 0, rim, upper CdM, h339

Linum australe Heller. SOUTHERN FLAX, N, 2, through-out, r559

Linum lewisii Pursh. BLUE FLAX, N, 2, upper cyns & rims > 6500', h917

Linum puberulum (Engelm.) Heller. DESERT FLAX, N, 2, lower cyns & rims, D

Loasaceae

Mentzelia albicaulis Dougl. WHITE BLAZINGSTAR, N, 2, rims through-out, h900

Mentzelia multiflora (Nutt.) Gray. DESERT BLAZINGSTAR, N, 2, sandy sites, lower cyns, r276

Mentzelia pumila Nutt. ex Torr. & Gray. DWARF BLAZINGSTAR, N, 2, sandy sites, lower rims, h63

Mentzelia rusbyi Woot. RUSBY'S BLAZINGSTAR, N, 1, NE of Whiskey Reservoir, r1080

Malvaceae

Malva neglecta Wallr. CHEESEWEED, E, 2, lower cyns & slopes, W

Sphaeralcea ambigua Gray. DESERT GLOBEMALLOW, N, 0, WH Ruin, B

Sphaeralcea coccinea (Pursh) Rydb. COPPER MALLOW, N, 3, lower cyns & rims, B204

Sphaeralcea fendleri Gray. FENDLER'S GLOBEMALLOW, N, 3, mid-lower cyns & rims, B276

Sphaeralcea hastulata Gray. SPREADING GLOBEMALLOW, N, 0, NPS housing area, h59

Sphaeralcea incana Torr. ex Gray. GRAY GLOBEMALLOW, N, 1, White Sands Tr, r717

Sphaeralcea leptophylla (Gray) Rydb. SCALY GLOBEMALLOW, N, 2, dunes south of VC, R154

Sphaeralcea parvifolia A. Nelson. SMALLFLOWER GLOBEMALLOW, N, 2, lower cyns, L35

Monotropaceae

Pterospora andromedea Nutt. WOODLAND PINE-DROPS, N, 1, spring at top of TR124 upper CdC, r1379

Moraceae

Morus alba L. WHITE MULBERRY, H, 1, Sliding Rock & Antelope House Ruins, h876

Nyctaginaceae

Abronia elliptica A. Nels. FRAGRANT WHITE SAND VERBENA, N, 2, sandy sites, lower cyns, B336

Abronia fragrans Nutt. ex Hook. SWEET SANDVERBENA, N, 1, sandy sites, Cottonwood Cyn, r277

- Boerhavia spicata* Choisy. CREEPING SPIDERLING, N, 3, lower cyns & rims, h658
Mirabilis decipiens (Standl.) Standl. BROADLEAF FOUR-O'CLOCK, N, 2, upper cyns, r963
Mirabilis linearis (Pursh) Heimerl. NARROWLEAF FOUR-O'CLOCK, N, 2, through-out, h491
Mirabilis multiflora (Torr.) Gray. COLORADO FOUR O'CLOCK, N, 2, through-out, R466
Mirabilis oxybaphoides (Gray) Gray. SPREADING FOUR-O'CLOCK, N, 2, cyns through-out, h
Tripterocalyx carnea var. *wootonii* (Standl.) L.A. Gal. WOOTON SANDPUFFS, N, 2, sandy sites, lower cyns, B315

Oleaceae

- Forestiera pubescens* var. *pubescens* Nutt. DESERT OLIVE, N, 3, through-out, B228
Fraxinus anomala Torr. ex S. Wats. SINGLELEAF ASH, N, 1, S Rim road .5 km east of VC & WH Tr, B
Fraxinus sp. L. ASH, H, 1, T, r1966
Ligustrum sp. PRIVET, H, 1, T, r1566
Menodora scabra Gray. ROUGH MENODORA, N, 2, upper CdC & rim above Whiskey Cr, r456

Onagraceae

- Calylophus lavandulifolius* (Torr. & Gray) LAVENDER CALYLOPHUS, N, 2, lower south rim, B208
Epilobium ciliatum Raf. FRINGED WILLOW HERB, N, 3, cyns through-out, riparian, h463
Gaura coccinea Nutt. ex Pursh. SCARLET GAURA, N, 2, sage flats above CdC >7000', r662
Gaura hexandra subsp. *gracilis* (Woot. & Standl.) Raven & Gregory. HARLEQUIN BUSH, N, 0, upper MC, h644
Gaura mollis James. VELVETWEED, N, 2, lower cyns & rims, h408
Gayophytum diffusum subsp. *parviflorum* Lewis & Szwedkowski. SPREADING GROUNDSTOKE, N, 1, upper Wheatfields Cyn, r836
Gayophytum ramosissimum Torr. & Gray. PINYON GROUNDSTOKE, N, 1, near head of Black Rock Cyn, r429
Oenothera albicaulis Pursh. WHITE-STEM EVENING PRIMROSE, N, 3, mid-lower cyns & rims, B273
Oenothera caespitosa subsp. *caespitosa* Nutt. TUFTED EVENING PRIMROSE, N, 0, lower cyns, B274
Oenothera caespitosa subsp. *marginata* (Nutt. ex Hook. & Arn.) Munz. TUFTED EVENING PRIMROSE, N, 2, mid cyns, B
Oenothera caespitosa subsp. *navajoensis* W.L. Wagner, Stockhouse & Klein. NAVAJO EVENING-PRIMROSE, N, 0, base of Spider Rock, h214
Oenothera coronopifolia Torr. & Gray. CROWNLEAF EVENING PRIMROSE, N, 2, Wheatfields & Coyote Creeks, r558
Oenothera elata subsp. *hookeri* (Torr. & Gray) W. Dietr. & W.L. Wagner. HOOKER'S EVENING-PRIMROSE, N, 2, upper CdM, h490
Oenothera flava (A. Nels.) Garrett. YELLOW EVENING-PRIMROSE, N, 3, upper cyns & rims, B325
Oenothera pallida Lindl. PALE EVENING PRIM-

ROSE, N,?, likely subsp. *runcinata* or *trichocalyx*, Ha

- Oenothera pallida* subsp. *runcinata* (Engelm.) Munz & W. Klein. PALE EVENING PRIMROSE, N, 0, WH Tr, Ha
Oenothera pallida subsp. *trichocalyx* (Nutt.) Munz & W. Klein. PALE EVENING PRIMROSE, N, 2, dunes 1 mile south of VC, r306

Orobanchaceae

- Orobanche fasciculata* Nutt. PURPLE BROOMRAPE, N, 1, rim of MC, H rep common on rims through-out, C
Orobanche ludoviciana subsp. *multiflora* (Nutt.) Collins, comb. nov. ined. MANYFLOWERED BROOMRAPE, N, 1, rims through-out, D

Oxalidaceae

- Oxalis decaphylla* Kunth. TENLEAF WOODSORREL, N, 2, through-out, r866

Pedaliaceae

- Proboscidea parviflora* (Woot.) Woot. & Standl. DEVIL'S CLAW, N, 2, lower cyns, r1108

Plantaginaceae

- Plantago argyraea* Morris. SALTMEADOW PLANTAIN, N, 2, mid-upper cyns, h543
Plantago eriopoda Torr. ALKALI PLANTAIN, N, 2, mid-lower cyns, Ba
Plantago lanceolata L. LANCELEAF PLANTAIN, N, 3, through-out cyns, riparian, L38
Plantago major L. BROADLEAF PLANTAIN, N, 3, through-out cyns, riparian, He
Plantago patagonica Jacq. WOOLY PLANTAIN, N, 3, upper terraces, mid-lower cyns, B313

Polemoniaceae

- Eriastrum diffusum* (Gray) Mason. DIFFUSE ERIASTRUM, N, 1, sandy site lower peninsula, r250
Gilia inconspicua (Sm.) Sweet. SHY GILIA, N, 3, through-out, r164
Gilia leptomeria Gray. SAND GILIA, N, 0, between NPS housing & dunes, D
Gilia ophthalmoides Brand. EYED GILIA, N, 0, lower cyns, h125
Gilia sinuata Dougl. ROSY GILIA, N, 0, lower cyns, D125
Ipomopsis aggregata (Pursh) V. Grant. SCARLET GILIA, N, 3, lower cyns & slopes, B36
Ipomopsis gunnisonii (T. & G.) V. Grant. SAND-DUNE SKYROCKET, N, 0, sandy sites, lower cyns & rims, D
Ipomopsis longiflora (Torr.) V. Grant. WHITEFLOWERED GILIA, N, 2, sandy sites, lower cyns, Cu
Ipomopsis multiflora (Nutt) V. Grant. MANYFLOWERED GILIA, N, 2, upper cyns & rims, h817
Ipomopsis polycladon (Torr.) V. Grant. SPRAWLING SKYROCKET, N, 2, sandy sites, lower south rim, D
Ipomopsis pumila (Nutt.) V. Grant. DWARF GILIA, N, 0, lower rims, D
Leptodactylon pungens Torr.) Torr. ex Nutt. COM-

MON PRICKLYGILIA, N, 3, lower cyns & slopes, B222

Phlox austromontana Coville. DESERT PHLOX, N, 3, slopes, lower cyns, h35

Phlox gracilis (Dougl.) Greene. SLENDER PHLOX, N, 2, upper cyns, h198

Phlox hoodii Richards. HOOD'S PHLOX, N, 1, Navajo Fortress, W

Phlox longifolia subsp. *brevifolia* (Gray) Mason. LONGLEAF PHLOX, N, 0, near Spider Rock Overlook, h771

Phlox longifolia subsp. *longifolia* Nutt. LONGLEAF PHLOX, N, 2, mid cyns, C

Polemonium foliosissimum var. *foliosissimum* Gray. TOWERING JACOBS LADDER, N, 1, upper Wheatfields Cr, r829

Polygonaceae

Eriogonum alatum Torr. WINGED BUCKWHEAT, N, 3, rims through-out, C

Eriogonum cernuum Nutt. NODDING BUCKWHEAT, N, 2, upper cyns & rims, h910

Eriogonum corymbosum Benth. CRISPLEAF BUCKWHEAT, N, 1, S Rim Dr 1 km east of VC, r1405

Eriogonum microthecum Nutt. SLENDER BUCKWHEAT, N, 3, rims & slopes through-out, R159

Eriogonum racemosum Nutt. REDROOT BUCKWHEAT, N, 3, upper cyns & rims >6500', h519

Eriogonum shockleyi S. Wats. SHOCKLEY'S BUCKWHEAT, N, 1, floor of CdC, R463

Eriogonum umbellatum var. *cognatum* (Greene) Reveal. SULPHUR-FLOWER BUCKWHEAT, N, I have found no reference separating this from *E. u.* var. *subaridum* below, h522

Eriogonum umbellatum var. *subaridum* S. Stokes. SULPHUR-FLOWER BUCKWHEAT, N, 2, upper cyns & rims, r677

Polygonum aviculare L. PROSTRATE KNOTWEED, E, 2, cyns through-out, h129

Polygonum convolvulus L. BLACK BINDWEED, E, 1, upper CdM, r998

Polygonum douglasii subsp. *johnstonii* (Munz) Hickman. JOHNSTON KNOTWEED, N, 2, upper cyns and rims, r446

Polygonum lapathifolium L. SMARTWEED, N, 1, Tsaile Lake discharge area, r970

Polygonum ramosissimum Michx. TALL KNOTWEED, N, 1, Wheatfields Cyn, r842

Rumex aquaticus var. *fenestratus* (Greene) Dorn. WESTERN DOCK, N, 1, through-out CdM, r292

Rumex crispus L. CURLY DOCK, E, 3, through-out, B368

Rumex salicifolius var. *mexicanus* (Meisn.) C.L. Hitchc. MEXICAN DOCK, N, 2, upper CdC & Black Rock Cyn, r1052

Portulacaceae

Portulaca halimoides L. SILK-COTTON PURSLANE, N, 2, through-out, r1415

Portulaca oleracea L. COMMON PURSLANE, E, 2, through-out, h715

Talinum brevifolium Torr. PYGMY FAMEFLOWER, N, 2, rims <6800', h815

Talinum confertiflorum Greene. NEW MEXICAN FAMEFLOWER, N, 2, upper rims >6800'; r946

Primulaceae

Androsace occidentalis Pursh. WESTERN ROCK JASMINE, N, 1, rim near head of Poison Ivy Cyn, r360

Androsace septentrionalis subsp. *subulifera* (Gray) G.T. Robbins. PIGMYFLOWER ROCKJASMINE, N, 3, through-out, D

Ranunculaceae

Actaea rubra subsp. *arguta* (Nutt.) Hultén. RED BANE BERRY, N, 0, upper MC, h636

Aquilegia chrysantha Gray. GOLDEN COLUMBINE, H, 1, T, r1952

Aquilegia elegantula Greene. WESTERN RED COLUMBINE, N, 1, upper east arm of MC, r509

Aquilegia micrantha Eastw. MANCOS COLUMBINE, N, 3, hg through-out, h245

Ceratocephala testiculata (Crantz) Bess. BUR BUTTERCUP, E, 4, through-out, h756

Clematis columbiana (Nutt.) Torr. & Gray. ROCK CLEMATIS, N, 1, steep, forested slope in Poison Ivy Cyn, r355

Clematis hirsutissima var. *hirsutissima* Pursh. HAIRY CLEMATIS, N, 1, Wheatfields Creek, r855

Clematis ligusticifolia Nutt. VIRGINS BOWER, N, 3, cyns & slopes through-out, B382

Delphinium nuttallianum Pritz. ex Walp. LOW LARKSPUR, N, 3, mid-upper cyns & rims >6500, B201

Delphinium scaposum Greene. BARESTEM LARKSPUR, N, 3, lower cyns & rims <6000', h845

Myosurus apetalus var. *borealis* Whitemore. BRISTLY MOUSETAIL, N, 1, upper cyns & rims, h769

Myosurus cupulatus Wats. ARIZONA MOUSETAIL, N, 0, rim of upper CdM, h922

Ranunculus aquatilis L. WATER BUTTERCUP, N, 0, upper cyns, aquatic, h302

Ranunculus cymbalaria Pursh. ALKALI BUTTERCUP, N, 3, cyns through-out, B277

Ranunculus longirostris Godr. LONGBEAK BUTTERCUP, N, 3, upper CdM, aquatic, r602

Ranunculus macounii Britt. MACOUN'S BUTTERCUP, N, 2, upper CdM & near cyn mouth, h86

Ranunculus sceleratus var. *multifidus* Nutt. BLISTER BUTTERCUP, N, 2, cyns through-out; r1141b

Thalictrum dasycarpum Fisch. & Avé-Lall. PURPLE MEADOWRUE, N, 0, S Rim Dr ¼ mi ESE of T, H

Thalictrum fendleri Engelm. ex Gray. FENDLER'S MEADOW-RUE, N, 3, cyns through-out, B323

Rhamnaceae

Ceanothus fendleri Gray. FENDLER'S CEANOTHUS, N, 1, upper cyns & rims, r892

Rosaceae

Agrimonia striata Michx. ROADSIDE AGRIMONY, N, 0, upper MC, h625

Amelanchier alnifolia var. *alnifolia* (Nutt.) Nutt. ex M. Roemer. SASKATOON SERVICEBERRY, N, 2, upper cyns, r1231

Amelanchier utahensis var. *utahensis* Koehne. UTAH SERVICEBERRY, N, 4, through-out, B241

Argentea anserina (L.) Rydb. SILVERWEED CINQUEFOIL, N, 2, cyns through-out, r561

- Cercocarpus intricatus* S. Wats. LITTLELEAF MOUNTAIN MAHOGANY, N, 4, rims and slopes <6500', B252
- Cercocarpus ledifolius* var. *intermontanus* N. Holmgren. CURL LEAF MOUNTAIN MAHOGANY, N, 2, lower rims and slopes <6400', r692
- Cercocarpus montanus* Raf. MOUNTAIN MAHOGANY, N, 4, through-out, B239
- Cotoneaster horizontalis* Dcne. ROCKSPRAY COTONEASTER, H, 1, T, r1564
- Dasiphora floribunda* (Pursh) Kartesz, comb. nov. ined. SHRUBBY CINQUEFOIL, N, 1, hg on N side of Coyote Cr., r1309
- Fallugia paradoxa* (D. Don) Endl. ex Torr. APACHE PLUME, H, 1, T, r1293
- Fragaria virginiana* subsp. *glauca* (S. Wats.) Staudt L. VIRGINIA STRAWBERRY, N, 2, upper SW arm of MC, r491
- Holodiscus dumosus* (Nutt. ex Hook.) Heller. ROCK SPIREA, N, 2, cyns through-out >6200', h464
- Malus pumila* Mill. COMMON APPLE, H, 4, lower cyns, h807
- Potentilla crinita* Gray. BEARDED CINQUEFOIL, N, 1, upper CdC, h352
- Potentilla pensylvanica* L. PRAIRIE CINQUEFOIL, N, 2, upper CdC, r665
- Prunus armeniaca* L. APRICOT, H, 3, lower cyns, r1183
- Prunus persica* (L.) Batsch. PEACH, H, 4, lower cyns, h806
- Prunus virginiana* L. CHOKECHERRY, N, 3, upper cyns, h309
- Purshia stansburiana* (Torr.) Henrickson. STANSBURY CLIFFROSE, N, 4, through-out, B224
- Purshia tridentata* (Pursh) DC. ANTELOPE BITTERBRUSH, N, 1, Whiskey Cr., r674
- Rosa woodsii* var. *ultramontana* (S. Wats.) Jepson. WOOD'S ROSE, N, 3, through-out, h189
- Rubus idaeus* subsp. *strigosus* (Michx.) Focke. RED RASPBERRY, N, 2, upper cyns, h484
- Rubus parviflorus* Nutt. THIMBLEBERRY, N, 1, upper CdM, r656

Rubiaceae

- Galium boreale* L. NORTHERN BEDSTRAW, N, 1, upper CdM, h rep as common, h308
- Galium triflorum* Michx. FRAGRANT BEDSTRAW, N, 1, hg, Whiskey Creek, h332
- Galium wrightii* Gray. WRIGHT BEDSTRAW, N, 4, through-out. Ba61

Salicaceae

- Populus alba* L. WHITE POPLAR, H, 1, Draper Ranch, end of road in CdM, B
- Populus angustifolia* James. NARROWLEAF COTTONWOOD, N, 2, cyns >6200', B
- Populus deltoides* subsp. *wislizeni* (S. Wats.) Eckenwalder. RIO GRANDE COTTONWOOD, N, 5, cyns through-out, B376
- Populus fremontii* S. Wats. FREMONT COTTONWOOD, H, 1, T, r1558
- Populus nigra* L. LOMBARDY POPLAR, H, 1, Campground and VC, r1219
- Populus tremuloides* Michx. QUAKING ASPEN, N, 3, cyns >6500', h355

- Populus X acuminata* Rydberg. LANCELEAF COTTONWOOD, N, 2, mid cyns, h195
- Salix amygdaloides* Anderss. PEACHLEAF WILLOW, N, 4, mid-lower cyns, B352
- Salix bebbiana* Sarg. BEBB'S WILLOW, N, 1, upper CdM, r620
- Salix exigua* Nutt. COYOTE WILLOW, N, 5, cyns through-out, B338
- Salix gooddingii* Ball. GOODDING WILLOW, N, 2, lower cyns, B
- Salix laevigata* Bebb. RED WILLOW, N, 2, through-out, Cu
- Salix lasiolepis* Benth. ARROYO WILLOW, N, 2, mid-upper cyns >6200', r156

Santalaceae

- Comandra umbellata* subsp. *pallida* (A. DC.) Piehl. BASTARD TOADFLAX, N, 2, through-out?, h240

Saururaceae

- Anemopsis californica* (Nutt.) Hook. & Arn. YERBA MANSA, N, 3, cyn bottoms below Jct, R41

Saxifragaceae

- Heuchera parvifolia* var. *flavescens* (Rydb.) Rosendahl, Butters & Lakela. LITTLEFLOWER ALUMROOT, N, 2, upper slopes, h279
- Heuchera rubescens* var. *versicolor* (Greene) M.G. Stewart. PINK ALUMROOT, N, 1, hg in lower Wheatfields Cr, r877
- Lithophragma tenellum* Nutt. SLENDER WOODLANDSTAR, N, 1, SE arm of MC, r520
- Parnassia palustris* var. *parviflora* (DC.) Boivin. SMALLFLOWER GRASS OF PARNASSUS, N, 1, hg in lower Wheatfields Cr, h451

Scrophulariaceae

- Besseyia arizonica* Pennell. ARIZONA CORALDROPS, N, 2, rims above upper CdC under ponderosa pine, H
- Castilleja applegatei* subsp. *martinii* (Abrams) Chuang & Heckard. DESERT INDIAN PAINTBRUSH, N, 2?, through-out, B211
- Castilleja angustifolia* (Nutt.) G. Don. NORTHWESTERN PAINTBRUSH, N, 0, lower cyns, h165
- Castilleja integra* Gray. SQUAWFEATHER, N, 2, upper rims >6800', h294
- Castilleja linariifolia* Benth. WYOMING PAINTBRUSH, N, 2, cyns through-out, L45
- Castilleja minor* (Gray) Gray. ALKALI INDIAN PAINTBRUSH, N, 0, near WH Ruin, R44
- Cordylanthus wrightii* Gray. WRIGHT BIRD'S-BEAK, N, 2, rims >6400', R163
- Mimulus eastwoodiae* Rydb. CRIMSON MONKEYFLOWER, N, 3, hg through-out, B
- Mimulus glabratus* Kunth. ROUND-LEAF MONKEYFLOWER, N, 2, upper cyns, r688
- Mimulus guttatus* DC. SEEP MONKEYFLOWER, N, 2, upper cyns, R164
- Mimulus rubellus* Gray. LITTLE REDSTEM MONKEYFLOWER, N, 1, rim above Black Rock Cyn, r444

- Orthocarpus luteus* Nutt. YELLOW OWLCLOVER, N, 0, head of MC, h549
Orthocarpus purpureoalbus Gray ex S. Wats. PURPLE OWLCLOVER, N, 3, upper rims & cyns, r642
Pedicularis centranthera Gray. DWARF LOUSEWORT, N, 2, lower rims, h837
Penstemon barbatus subsp. *trichander* (Gray) Keck. BEARDLIP PENSTEMON, N, 2, through-out, R165
Penstemon comarrhenus Gray. DUSTY PENSTEMON, N, 1, rim above CdM, h461
Penstemon lentus Pennell. HANDSOME PENSTEMON, N, 1, CdM upstream of Middle Trail Cyn, r384
Penstemon linarioides Gray. CREEPING PENSTEMON, N, 3, mid-upper cyns & rims, h266
Penstemon ophianthus Pennell. ARIZONA BEARDTONGUE, N, 3, cyns & rims >6000', h333
Penstemon strictiformis Rydb. MANCOS PENSTEMON, N, 1, lower Bat Cyn, r480
Penstemon strictus Benth. ROCKY MOUNTAIN PENSTEMON, N, 2, sage flats >7000', C
Penstemon virgatus Gray. UPRIGHT BLUE BEARDTONGUE, N, 1, uppermost MC >7000', h621
Veronica americana Schwein. Ex Benth. AMERICAN SPEEDWELL, N, 2, through-out cyns, R166
Veronica anagallis-aquatica L. WATER SPEEDWELL, N, 3, through-out cyns, h70
Veronica peregrina L. NECKWEED, N, probably ssp *xalapensis*, D
Veronica peregrina subsp. *xalapensis* (Kunth) Pennell. NECKWEED, N, 2, through-out >6000', r230
Veronica serpyllifolia L. THYMELEAF SPEEDWELL, N, 1, upper CdM, r661

Solanaceae

- Chamaesaracha coronopus* (Dunal) Gray. GREEN FALSE NIGHTSHADE, N, 2, through-out, R167
Datura wrightii Regel. SACRED DATURA, N, 2, lower cyns, B370
Lycium pallidum Miers. PALE WOLFBERRY, N, 2, lower cyns, B308
Nicotiana attenuata Torr. ex S. Wats. COYOTE TOBACCO, N, 0, through-out cyns, R47
Nicotiana obtusifolia var. *obtusifolia* Mertens & Galeotti. DESERT TOBACCO, N, 2, lower cyns, h655
Physalis hederifolia var. *fendleri* (Gray) Cronq. FENDLER GROUNDCHERRY, N, 2, lower CdC, R48
Physalis hederifolia var. *hederifolia* Gray. IVYLEAF GROUND CHERRY, N, 1, upper Bat Cyn, Tunnel Cyn, r927
Physalis longifolia Nutt. COMMON GROUNDCHERRY, N, 0, in field near Twin Tr, CdM, m
Solanum elaeagnifolium Cav. WHITE HORSENETTLE, E, 3, disturbed sites, esp. lower cyns & rims, H
Solanum jamesii Torr. WILD POTATO, N, 2, through-out, h724
Solanum rostratum Dunal. BUFFALOBUR, N, 3, disturbed sites, through-out, R470
Solanum triflorum Nutt. CUTLEAF NIGHTSHADE, N, 2, upper cyns & rims, R

Tamaricaceae

- Tamarix chinensis* Lour. SALT CEDAR, E, 5, through-out, L49
Tamarix parviflora DC. SALT CEDAR, E, 5, only at canyon mouth, r1121

Ulmaceae

- Celtis laevigata* var. *reticulata* (Torr.) L. Benson. NETLEAF HACKBERRY, N, 3, lower cyns, B334
Ulmus americana L. AMERICAN ELM, N, 0, CdC near mouth of Wild Cherry Cyn, h877
Ulmus pumila L. SIBERIAN ELM, E, 3, through-out, B

Urticaceae

- Parietaria pensylvanica* Muhl. ex Willd. PENNSYLVANIA PELLITORY, N, 2, rock overhangs, upper cyns, W
Urtica dioica subsp. *gracilis* (Ait.) Seland. STINGING NETTLE, N, 2, cyns through-out, h437

Valerianaceae

- Valeriana acutiloba* Rydb. CORDILLERAN VALERIAN, N, 1, upper slopes & rims, r152

Verbenaceae

- Caryopteris X clandonensis* hort. ex Rehd. CARYOPTERIS, H, 1, T, r1569
Verbena bracteata Lag. & Rodr. PROSTRATE VERBENA, N, 3, disturbed sites lower cyns, R
Verbena macdougalii Heller. MACDOUGAL VERBENA, N, 2, disturbed sites, upper cyns & rims, h472

Violaceae

- Viola sororia* Willd. COMMON BLUE VIOLET, N, 1, upper CdM & MC, h321

Viscaceae

- Arceuthobium divaricatum* Engelm. PINYON DWARF MISTLETOE, N, 2?, middle rims, B250
Phoradendron juniperinum Engelm. ex Gray. JUNIPER MISTLETOE, N, 0, through-out, B233

Vitaceae

- Parthenocissus vitacea* (Knerr) A.S. Hitchc. VIRGINIA CREEPER, N, 3, through-out, B358
Vitis arizonica Engelm. ARIZONA GRAPE, N, 3, cyns through-out, B

Zygophyllaceae

- Kallstroemia californica* (Wats.) Vail. CALIFORNIA CALTROP, N, 0, CdM downstream of Antelope House Ruin, h653
Tribulus terrestris L. PUNCTUREVINE, E, 3, disturbed sites, lower cyns, h rep in NPS housing area, h701

Agavaceae

- Yucca angustissima* Engelm. ex Trel. NARROWLEAF YUCCA, N, 4, through-out, h121

Yucca baccata Torr. BANANA YUCCA, N, 4, through-out, B219

Commelinaceae

Tradescantia occidentalis var. *occidentalis* (Britt.) Smyth. PRAIRIE SPIDERWORT, N, 2, lower cyns, R462

Tradescantia pinetorum Greene. PINEWOODS SPIDERWORT, N, 1?, upper rims >7000', h638

Cyperaceae

Carex aurea Nutt. GOLDEN SEDGE, N, 3, hg through-out, r377

Carex chihuahuensis MacKenzie. CHIHUAHUAN SEDGE, N, 1, hg mouth of Cottonwood Cyn; r1358

Carex duriuscula C. A. Mey. NEEDLELEAF SEDGE, N, 3, cyns through-out, r332

Carex filifolia Nutt. THREADLEAF SEDGE, N, 1, Wide Rock Butte, W

Carex foenea var. *foenea* Willd. DRYSPIKE SEDGE, N, 2, riparian sites through-out, B369

Carex geophila Mackenzie. WHITE MOUNTAIN SEDGE, N, 1, upper CdC, r154

Carex interior Bailey. INLAND SEDGE, N, 1?, upper Black Rock Cyn, r436

Carex meadii Dewey. MEAD SEDGE, N, 1, hg above Coyote Cr; r1315

Carex microptera MacKenzie. OVALHEAD SEDGE, N, 0, upper CdM, h326

Carex nebrascensis Dewey. NEBRASKA SEDGE, N, 1, where road crosses Coyote Cr, r1255

Carex occidentalis Bailey. WESTERN SEDGE, N, 2, cyns through-out, h185

Carex pachystachya Cham. ex Steud. CHAMISSO SEDGE, N, 1, upper CdM; r615

Carex pellita Muhl ex Willd. WOOLLY SEDGE, N, 2, mid-upper cyns >6200', h327

Carex praegracilis W. Boott. SLIM SEDGE, N, 2, cyns through-out, r1163

Carex specuicola J.T. Howell. NAVAJO SEDGE, N, 2, 4 hgs in CdM, r258

Carex vallicola Dewey. VALLEY SEDGE, N, 1, upper cyns, r346

Cyperus fendlerianus Boeckl. FENDLER'S FLAT-SEDGE, N, 1, rocky S slope in upper Wheatfields Cr, r858

Cyperus schweinitzii Torr. SAND FLAT SEDGE, N, 1, E rim of Elephant Spring Cyn; r1421

Cyperus squarrosus L. AWNED FLAT SEDGE, N, 1, rim above jct of MC and CdC, r1428

Eleocharis engelmannii Steud. ENGELMANN'S SPIKERUSH, N, 1, upper CdC; r185

Eleocharis palustris (L.) Roemer & J.A. Schultes. COMMON SPIKERUSH, N, 3, through-out cyns, h176

Schoenoplectus acutus var. *acutus* (Muhl. ex Bigelow) A. & D. Löve. HARDSTEM BULRUSH, N, 1, 1 km below Tsaile Dam in CdM, r614

Schoenoplectus americanus (Pers.) Volk. Ex Schinz & R. Keller. AMERICAN BULRUSH, N, 3, through-out, H

Schoenoplectus pungens (Vahl) Palla. COMMON THREESQUARE, N, 2, through-out cyns, r387

Scirpus microcarpus J. & K. Presl. PANICLED BULRUSH, N, 2, upper CdM & at spring at top of Tr 124 in CdC, h325

Scirpus pallidus (Britt.) Fern. PALE BULRUSH, N, 1, Wheatfields Cyn, r1340

Iridaceae

Iris missouriensis Nutt. ROCKY MOUNTAIN IRIS, N, 2, rim above upper MC, r541

Sisyrinchium demissum Greene. DWARF BLUE-EYED GRASS, N, 2, wet places, upper cyns, h281

Juncaceae

Juncus balticus var. *montanus* Engelm. MOUNTAIN RUSH, N, 0, lower CdC, Ha

Juncus bufonius L. TOAD RUSH, N, 2, through-out cyns, h145

Juncus ensifolius Wikstr. SWORDLEAF RUSH, N, 2, CdM, h186a

Juncus interior Wieg. INLAND RUSH, N, 2?, Pine Tree Cyn, CdM, W

Juncus longistylis Torr. LONGSTYLE RUSH, N, 2, upper cyns, r345

Juncus mexicanus Willd. ex J.A. & J.H. Schultes. MEXICAN RUSH, N, 2, rims and cyns >5900', r231

Juncus saximontanus A. Nels. ROCKY MOUNTAIN RUSH, N, 1, Antelope House Tr, h186a

Juncus tenuis Willd. FIELD RUSH, N, 2, rims and cyns >6200', r991

Juncus torreyi Coville. TORREY RUSH, N, 2, Tsaile Dam discharge area & hg in side cyn below WH Ruin, W

Liliaceae

Allium bisceptrum var. *palmeri* (S. Wats.) Cronq. ASPEN ONION, N, 2, upper CdM, h920

Allium cernuum var. *obtusum* Cockerell ex J.F. Macbr. NODDING ONION, N, 2, upper cyns & rims >7000, h546

Allium geyeri Wats. GEYER'S ONION, N, 2, upper CdC & rims >7000, h620

Allium gooddingii Ownbey. GOODDING'S ONION, N, 0, upper CdM, h471

Allium macropetalum Rydb. LARGEFLOWER ONION, N, 1, above pouroff on rim of Elephant Spring Cyn, r1419

Asparagus officinalis L. ASPARAGUS, E, 1, disturbed sites, lower cyns, h138

Calochortus aureus S. Wats. SEGO LILY, N, 3, rims through-out, D

Calochortus gunnisonii S. Wats. GUNNISON'S MAR-IPOSA LILY, N, 2, rim above CdM, h311a

Disporum trachycarpum (S. Wats.) Benth. & Hook. f. ROUGHFRUIT FAIRYBELLS, N, 0, upper CdM, h269

Echeandia flavescens (J.A. & J.H. Schultes) Cruden. TORREY'S CRAGLILY, N, 2, P-J rims above CdC, r1416

Maianthemum racemosum (L.) Link. WESTERN SOLOMON'S-SEAL, N, 2, mid cyn side cyns, h300

Maianthemum stellatum (L.) Link. FALSE SOLOMON'S-SEAL, N, 2, mid cyn side cyns, h211

- Nolina microcarpa* Wats. SACAUISTA, H, 1, base of Face Rock, h892
Zigadenus paniculatus (Nutt.) S. Wats. FOOTHILL DEATHCAMAS, N, 2, upper CdM & rims above CdM, h312
Zigadenus vaginatus (Rydb.) Macbr. SHEATHED DEATHCAMAS, N, 2, 4 hgs in CdC & at Jct, r1312

Orchidaceae

- Epipactis gigantea* Dougl. ex Hook. STREAM ORCHID, N, 3, hgs through-out, Bu717

Poaceae

- Achnatherum lettermanii* (Vasey) Barkworth. LETTERMAN NEEDLEGRASS, N, 1, Gopher Spring area, MC, r910
Achnatherum hymenoides (Roemer & J.A. Schultes) Barkworth. INDIAN RICE GRASS, N, 3, lower cyns & rims, B254
Achnatherum scribneri (Trin. & Rupr.) Barkworth. SCRIBNER NEEDLEGRASS, N, 1, mesa above Wheatfields Cyn, r890
Achnatherum speciosum (Trin. & Rupr.) Barkworth. DESERT NEEDLEGRASS, N, 2, lower CdM, D
Agropyron desertorum (Fisch. ex Link) J.A. Schultes. DESERT WHEATGRASS, E, 2, rims >6900, h330
Agrostis exarata Trin. SPIKE BENTGRASS, N, 0, upper CdM, h492
Agrostis gigantea Roth. REDTOP, E, 2, through-out, Bu779
Agrostis scabra Willd. ROUGH BENTGRASS, N, 0, upper MC, h627
Agrostis stolonifera L. REDTOP, N, 2, near cyn mouth, r1354
Alopecurus aequalis Sobol. SHORT FOXTAIL, N, 2, upper CdM >6800', h310
Apera interrupta (L.) Beauv. SILKY BENTGRASS, E, 2, through-out cyns; r245
Aristida purpurea var. *fendleriana* (Steud.) Vasey. FENDLER 3-AWN, N, 3, lower rims, B300
Aristida purpurea var. *longiseta* (Steud.) Vasey. FENDLER 3-AWN, N, 3, lower cyns & rims, B386
Aristida schiedeana var. *orcuttiana* (Vasey) Allred & Valdés-Reyna. ORCUTT'S 3-AWN, N, 2, lower cyns <6500', r772
Avena fatua L. WILD OATS, E, 2, lower cyns, r1956
Beckmannia syzigachne (Steud.) Fern. SLOUGH GRASS, N, 1, Wheatfields Creek, r1325
Blepharoneuron tricholepis (Torr.) Nash. PINE DROPSEED, N, 2, rims>6800', r943
Bothriochloa barbinodis (Lag.) Herter. CANE BLUESTEM, N, 2, lower cyns, h506
Bouteloua aristoides (Kunth) Griseb. NEEDLE GRAMA, N, 2, lower cyns; r1472
Bouteloua barbata Lag. SIXWEEKS GRAMA, N, 2, lower cyns<6000', r937
Bouteloua curtipendula (Michx.) Torr. SIDE OATS GRAMA, N, 3, through-out, L29
Bouteloua eriopoda (Torr.) Torr. BLACK GRAMA, N, 2, mid cyns, r1103
Bouteloua gracilis (Willd. ex Kunth) Lag. ex Griffiths. BLUE GRAMA, N, 5, through-out, B206
Bromus anomalus Rupr. ex Fourn. NODDING BROME, N, 1, Wheatfields Cr, r822
Bromus arvensis L. FIELD BROME, E, 0, lower cyns, Ha
Bromus carinatus Hook. & Arn. MOUNTAIN BROME, N, 1, Crack in Rock Tr; CdM, r296
Bromus ciliatus L. FRINGED BROME, N, 2, MC, h619
Bromus commutatus Schrad. HAIRY CHESS, E, 2, upper CdM; r646
Bromus frondosus (Shear) Woot. & Standl. WEEPING BROME, N, 0, upper CdC, h540
Bromus inermis Leyss. SMOOTH BROME, N, 2, Whiskey Cr, r676
Bromus japonicus Thunb. ex Murr. JAPANESE BROME, E, 2, lower cyns, D
Bromus marginatus Nees ex Steud. MOUNTAIN BROME, N, 0, Far Spiral Cyn, h583
Bromus racemosus L. BALD BROME, E, 1, near mouth of cyn; r1272
Bromus rigidus Roth. RIPGUT BROME, E, 4, lower cyns, H rep at Antelope House Ruin, h723
Bromus rubens L. RED BROME, E, 1, lower cyns, F
Bromus tectorum L. CHEAT GRASS, E, 4, through-out, B344
Calamagrostis stricta subsp. *stricta* (Timm.) Koel. SLIMSTEM REEDGRASS, N, 1, Whiskey Cr, r683
Cenchrus longispinus (Hack.) Fern. BURGRASS, N, 0, lower cyns, h
Cenchrus spinifex Cav. FIELD SANDBUR, N, 2, disturbed sites, lower cyns, L30
Chloris verticillata Nutt. WINDMILLGRASS, N, 2, lower cyns, B364
Chloris virgata Sw. FEATHER WINDMILL GRASS, E, 1, campground, r1552
Cynodon dactylon (L.) Pers. BERMUDAGRASS, E, 2, disturbed sites, lower cyns; h rep as common, h162
Dactylis glomerata L. ORCHARDGRASS, E, 2, through-out, D
Dichanthelium acuminatum var. *fasciculatum* (Torr.) Freckmann. WESTERN PANICGRASS, N, 2, through-out cyns, r684
Distichlis spicata (L.) Greene. SALTGRASS, N, 3, below Jct, L31
Echinochloa crus-galli (L.) Beauv. BARNYARD GRASS, E, 0, h rep as common through-out, h536
Elymus canadensis L. CANADA WILDRYE, N, 2, through-out cyns, h412
Elymus elymoides subsp. *brevifolius* (J.G. Sm.) Barkworth, comb. nov. ined. SQUIRRELTAIL, N, 3, through-out, B205
Elymus trachycaulus subsp. *trachycaulus* (Link) Gould ex Shinners. SLENDER WHEATGRASS, N, 2, through-out, B
Enneapogon desvauxii Desv. ex Beauv. FEATHER PAPPUSGRASS, N, 1, lower rims, r1463
Eragrostis cilianensis (All.) Vign. ex Janchen. LOVEGRASS, E, 2, cyns through-out, W
Eragrostis mexicana (Hornem.) Link. Mexican LOVEGRASS, N, 2, lower cyns & rims, r1406
Eragrostis pectinacea (Michx.) Nees ex Steud. PURPLE LOVEGRASS, N, 2, lower cyns & rims <6800', H
Eremopyrum triticeum (Gaertn.) Nevski. ANNUAL WHEATGRASS, E, 1, campground, r193
Erioneuron pilosum (Buckl.) Nash. HAIRY TRIDENS, N, 0, S Rim near Wild Cherry Cyn, B377

- Glyceria striata* (Lam.) A.S. Hitchc. FOWL MAN-
NAGRASS, N, 2, upper cyns >6500', h307
- Hesperostipa comata* subsp. *comata* (Trin. & Rupr.)
Barkworth. NEEDLE AND THREAD, N, 2,
through-out, B
- Hesperostipa neomexicana* (Thurb. ex Coult.) Bark-
worth. NEW MEXICO NEEDLEGRASS, N, 2,
through-out, B299
- Hordeum jubatum* L. LITTLE BARLEY, N, 2, dis-
turbed sites, lower cyns, Ha
- Hordeum murinum* subsp. *glaucum* (Steud.) Tzvelev.
SMOOTH BARLEY, E, 3, disturbed sites, lower
cyns, r300
- Hordeum murinum* subsp. *leporinum* (Link) Arcang.
LEPOR BARLEY, E, 0, H rep as common in low-
er cyns, h40
- Hordeum pusillum* Nutt. HARE BARLEY, N, 3, lower
cyns, B298
- Koeleria macrantha* (Ledeb.) J.A. Schultes. JUNE
GRASS, N, 3, upper rims >7000', h304
- Leptochloa fusca* subsp. *fascicularis* (Lam.) N. Snow.
BEARDED SPRANGLETOP, N, 1, campground;
stock pond above Pine Tree Cyn, r1514
- Lolium arundinaceum* (Schreb.) S.J. Darbyshire.
TALL FESCUE, E, 2, through-out, h
- Lolium pratense* (Huds.) S.J. Darbyshire. MEADOW
FESCUE, E, 2, upper cyns, h328
- Lycurus phleoides* Kunth. WOLFTAIL, N, 2, lower
rims <6000', H
- Monroa squarrosa* (Nutt.) Torr. FALSE BUFFALO-
GRASS, N, 2, rims through-out, h874
- Muhlenbergia andina* (Nutt.) A.S. Hitchc. FOXTAIL
MUHLY, N, 2, hg in lower cyns, r381
- Muhlenbergia arsenei* A.S. Hitchc. NAVAJO MUHLY,
N, 1, rim above Elephant Spring Cyn, r1420
- Muhlenbergia asperifolia* (Nees & Mey.) Parodi. AL-
KALI MUHLY, N, 2, through-out, h128
- Muhlenbergia curtifolia* Scribn. LOW MUHLY, N, 3,
hg <6000', h614
- Muhlenbergia depauperata* Scribn. SIXWEEKS
MUHLY, N, 2, middle rims, r1412
- Muhlenbergia filiformis* (Thurb. ex S. Wats.) Rydb.
PULLUP MUHLY, N, 1, Coyote Cr, r1300
- Muhlenbergia minutissima* (Steud.) Swallen. ANNU-
AL MUHLY, N, 2, through-out?, r1444
- Muhlenbergia montana* (Nutt.) Hitchc. MOUNTAIN
MUHLY, N, 2, rims >6800', r859
- Muhlenbergia pauciflora* Buckl. NEW MEXICO
MUHLY, N, 3, slopes <6500', r415
- Muhlenbergia peruviana* (Beauv.) Steud. PERUVIAN
MUHLY, N, 0, mouth of Black Rock Cyn, h442
- Muhlenbergia porteri* Scribn. ex Beal. BUSH MUH-
LY, N, 1, lower CdC, likely more common, r1520
- Muhlenbergia pungens* Thurb. SANDHILL MUHLY,
N, 0, lower rims, R732
- Muhlenbergia racemosa* (Michx.) B.S.P. GREEN
MUHLY, N, 3, mid cyns, h681
- Muhlenbergia repens* (J. Presl) A.S. Hitchc. CREEP-
ING MUHLY, N, 1, upper CdC; r165
- Muhlenbergia thurberi* Rydb. Thurber. THURBER
MUHLY, N, 2, hg, mid cyns, r917
- Muhlenbergia wrightii* Vasey ex Coult. SPIKE MUH-
LY, N, 3, sage flats >7000', h632
- Nassella viridula* (Trin.) Barkworth. GREEN NEED-
LEGRASS, N, 1, head of Whiskey Cr, r1318
- Panicum bulbosum* Kunth. BULB PANICGRASS, N,
1, CdC & its rims, r911
- Panicum capillare* L. WITCHGRASS, N, 2, through-
out, h608
- Panicum obtusum* Kunth. VINE MESQUITE, N, 1,
lower CdM, r1532
- Pascopyrum smithii* (Rydb.) A. Löve. WESTERN
WHEATGRASS, N, 3, through-out, D
- Phragmites australis* (Cav.) Trin. ex Steud. COMMON
REED, N&H, 3, lower cyns, H
- Piptatherum micranthum* (Trin. & Rupr.) Barkworth.
LITTLESEED RICEGRASS, N, 2, slopes
>7000', D
- Pleuraphis jamesii* Torr. GALLETA, N, 3, through-out,
Ha
- Poa annua* L. ANNUAL BLUE GRASS, E, 1, SE arm
of MC, r514
- Poa bulbosa* L. BULBOUS BLUE GRASS, E, 1, low-
er cyns, r244
- Poa compressa* L. FLATSTEM BLUEGRASS, N, 3,
cyns through-out, h109
- Poa fendleriana* (Steud.) Vasey. MUTTON GRASS,
N, 4, through-out, h3
- Poa glauca* Vahl. GLAUCOUS BLUEGRASS, N, 0,
fence at Newspaper Rock, h183
- Poa nemoralis* L. FOREST BLUE GRASS, N, 1, up-
per Black Rock Cyn, r434
- Poa pratensis* L. KENTUCKY BLUEGRASS, N&E,
3, through-out, D
- Poa secunda* J. Presl. BIG BLUEGRASS, N, 0, near
mouth of cyn, H
- Polypogon interruptus* Kunth. DITCH POLYPOGON,
E, 3, lower cyns, B309
- Polypogon monspeliensis* (L.) Desf. RAB-
BIT'SFOOTGRASS, E, 2, lower cyns, Ha
- Polypogon viridis* (Gouan) Breistr. WATER BENT-
GRASS, E, 2, through-out CdM, h423
- Puccinellia distans* (Jacq.) Parl. SPREADING AL-
KALI GRASS, N, 3, mid-lower cyns, h
- Puccinellia fasciculata* (Torr.) Bickn. SALTGRASS
ALKALIGRASS, N, 1, lower cyns; r1132
- Puccinellia nuttalliana* (J. A. Schultes) Hitch. NUT-
TALL ALKALIGRASS, N, 2, lower cyns, h131
- Schedonnardus paniculatus* (Nutt.) Trel. TUMBLE
GRASS, N, 1, sage flats above Wheatfields Cyn,
r1032
- Schizachyrium scoparium* (Michx.) Nash. LITTLE
BLUESTEM, N, 3, through-out, h558
- Setaria macrostachys* H. B. K. BRISTLEGRASS, N,
1, Crack in Rock Tr, r472
- Setaria viridis* (L.) Beauv. BOTTLE GRASS, E, 2,
VC, campground & T, W
- Sorghastrum nutans* (L.) Nash. INDIANGRASS, N, 1,
hgs in CdC >6200', r1311
- Spartina gracilis* Trin. ALKALI CORDGRASS, N, 1,
lower CdC, V99-301
- Sphenopholis obtusata* (Michx.) Scribn. PRAIRIE
WEDGEGRASS, N, 0, seep at top of Antelope
House Tr, h363
- Sporobolus airoides* (Torr.) Torr. ALKALI SACATON,
N, 3, lower cyns & rims, B
- Sporobolus contractus* A.S. Hitchc. SPIKE DROP-
SEED, N, 2, mid-lower cyns, r1372
- Sporobolus cryptandrus* (Torr.) Gray. SAND DROP-
SEED, N, 2, upper slopes & rims, Cu
- Sporobolus flexuosus* (Thurb. ex Vasey) Rydb. MESA
DROPSEED, N, 2, lower cyns, r1461
- Sporobolus giganteus* Nash. GIANT DROPSEED, N,
1, sandy site at mouth of Cottonwood Cyn, r1363

Stipa lettermannii Vasey. NEEDLEGRASS, N, 1, rim above upper CdC, r1251

Thinopyrum intermedium (Host) Barkworth & D.R. Dewey. INTERMEDIATE WHEATGRASS, E, 1, Tsaile Lake discharge area, r1484

Thinopyrum ponticum (Podp.) Z.-W. Liu & R.-C. Wang. RUSH WHEATGRASS, E, 1, Tsaile Lake discharge area, W

Torreyochloa pallida var. *pauciflora* (J. Presl) J.I. Davis. PALE FALSE MANNAGRASS, N, 1, Tsaile Lake discharge area, r1267

Vulpia myuros (L.) K.C. Gmel. FOXTAIL FESCUE, E, 2, through-out, r1278

Vulpia octoflora var. *hirtella* (Piper) Henr. SIX-WEEKS FESCUE, N, 2, through-out, D

Zea mays L. CORN, H, 5, lower cyns & rims, W

Potamogetonaceae

Potamogeton foliosus Raf. LEAFY PONDWEED, N, 1, Tsaile Lake discharge area, r1478

Typhaceae

Typha angustifolia L. NARROWLEAF CATTAIL, E, 0, end of road in Black Rock Cyn, F(CACH)

Typha latifolia L. BROADLEAF CATTAIL N, 2, cyns through-out, h453