



The Plant Press

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A Sense of Place in South Phoenix

by Wendy Hodgson, AZNPS Board of Directors

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*Wild in the City
Yard Tour*

**Saturday, April 12, 2008
in Tucson (see page 5)**

I've made South Phoenix my home for nearly 25 of my 39 years of living in Arizona. It's an eclectic neighborhood, filled with all sorts of people representing great ethnic diversity and lifestyles. One such lifestyle in South Phoenix is living in a rural setting within six miles of the fifth largest city in the country — a lifestyle many of us are valiantly trying to preserve.

Four years ago, while driving up to the Grand Canyon, I noticed a "for sale" sign in front of a completely restored little stucco house that was built in 1944. However, its one-acre yard was far from being restored and it was evident that it received much abuse from former tenants. Once home to many mature saguaros, hundreds of creosote bushes, bursage, palo verde and ironwood trees, I was now staring at a denuded, wounded habitat that begged for TLC and rejuvenation. No birds, no lizards — nothing but a nicely restored house sitting on barren soil supporting a few mature trees, spared creosote bushes and near-death bursage. Never one to resist a challenge while seeing the potential this lot offered, I soon found myself signing closing papers. As importantly, I saw this as an opportunity for me to truly *live* in the desert, be surrounded by it — I did not have to drive elsewhere for its experience.

Unfortunately, I took only a few photographs before I began transforming the landscape (words for the wise — take "before" pictures while doing major work such as this). There were no plants in the front or sides of the house except for a few creosotes and one large velvet mesquite tree; large hedgehog cacti were spared in the front yard (here a number of mature saguaros were apparently felled at the expense of someone's amusement). In the back half of the property creosotes and a large littleleaf palo verde and ironwood were



top to bottom Home with re-vegetated landscape (2007, note numerous grass plantings) and home before landscape restoration, devoid of much vegetation (2005).



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Special thanks from the editors to all who contributed time and efforts to this issue.

President's Note

by Barbara G. Phillips bgphillips@fs.fed.us

Coconino, Kaibab and Prescott National Forests, Flagstaff

Ah, Spring! Birds singing in my spruce and boxelder trees, plants valiantly rebounding from under snowbanks three feet deep (a welcome return to the “winters of old” for a cross-country skiing lover like me, don't get me wrong!). Now, however, I am eagerly looking forward to welcoming spring in my native wildflower gardens. Will plants have survived being buried for 3 months? What new species can I add to make the new “canyon” habitat in my backyard more diverse and attractive to birds, butterflies, and other creatures?

I hope you will find this issue of *The Plant Press* as inspirational and informative as I have. It takes you to some very successful wildflower gardens of our members. From Wendy Hodgson's wonderful restoration of a denuded, abused yard in South Phoenix, to Cynthia Reiners' re-design of a Tucson xeriscape, and then to Gwen Waring's cheerful welcoming of adventives to her existing native meadow species, each author describes in her own words the reasoning and hard work behind their successes. Each offers tips on the challenges and rewards of design, soils, water, native plants, wildlife, and how to overcome “failures.”

The Arizona Native Plant Society's “Wild in the City Yard Tour” — April 12th in Tucson — sounds like an excellent opportunity to meet experienced native plant enthusiasts and wildlife experts. Lots of suggestions for how homeowners can reconnect yards to the wildlife spaces will be provided. Flagstaff had such a tour last year and it was a resounding success (see Elaine Ferris's article). Kendall Kroesen, Tucson Audubon Society, describes how Audubon is issuing an invitation for like-minded groups like the Arizona Native Plant Society to join with their Urban Habitat Program promoting the vision of sustainable urban landscapes and bird populations.

These articles provide alternatives to xeriscaping of yards, supposedly for fire-resistance, or to save water. Such landscapes usually provide little or no habitat value for wildlife and, frankly, are too austere for my taste. Carianne Funicelli, former AZNPS Conservation Chair, encourages members to work with homeowner associations to educate them about the values of native plants.

Welcome to our new chapter presidents, Doug Green, Shawn Pollard, and Douglas Ripley. We look forward to your input in your local chapters and at the AZNPS Board meetings.



A Sense of Place *continued*

likewise spared. Four truckloads of debris were hauled out and areas where someone dumped oil were cleaned up. Because the property slopes towards the house, two long ditches were excavated on two sides of the house to keep it from being flooded. There was extensive damage to the mesquite's roots, but following careful pruning and watering, the tree is now thriving. I transformed these ditches into desert washes. The larger areas presented greater challenges since I find working on a large palette is more difficult. Therefore, I divided the area into smaller, more workable areas from which I could design (my idea of designing is sitting outside with a glass of wine and coming up with spontaneous ideas). Being that the desert near my home is my inspiration, I am trying my best to replicate it (with some artistic license), a task not easy for anyone to do, especially when there are budget and time constraints. My emphasis is to include larger trees, including ironwood, littleleaf and blue palo verdes, catclaw acacia, palo blanco, palo brea, velvet mesquite, honey mesquite and screwbean mesquites intermixed with shrubs and subshrubs including ocotillo, fairy dusters, bursages, brittlebush and creosotes. Plants were placed with respect to the habitats (wash, open flats, slopes) with which they are associated in the wild. With more plants and subsequent watering, there has occurred more recruitment from seeds. A number of creosotes and bursage that germinated from seed have reached maturity in just a few years. Being especially fond of cacti and agaves, numerous plants, many of which were salvaged, are part of my home now and include chollas, barrel cacti, baby saguaros, mammillarias, hedgehogs, prickly pears, Arizona queen of the nights, organ pipes, senitas, agaves, yuccas, nolinias and sotols. I have also included numerous Arizona native grasses, providing a softer feel to the landscape. I have always liked small nooks from which one could read, relax or entertain and have included such shady places of respite. Most of the plants are on drip irrigation, and I look forward to weaning



them off this watering system soon. Rock-lined paths (from rocks retrieved from all of the plant holes I have dug) take one to these shady places, one of which includes a fire pit large enough to roast agaves! Lighted bridges cross the washes. Future plans include planting more trees and shrubs, annual wildflowers, creating more relief with soil and boulders, increasing the size of the vegetable garden, enclosing the back patio, and developing a low, rammed earth wall with arches.

In only four years, my modest patch of denuded landscape has been transformed into a living, vibrant desert community, providing habitat for far more bird, lizard and snake species, insects and even a few cottontails. And I finally feel like I actually live in the desert. A garden using xeriscape methods does not have to result in a zero landscape. Token cacti planted in a sea of river rock or gravel does nothing for the development of a small habitat for birds, plants and other wildlife, no matter how small or seemingly insignificant. There are so many plants appropriate for our yards, whether one calls home Flagstaff, Prescott, Yuma, Phoenix, Tucson, Sierra Vista or places in between. Numerous books, organizations and institutions are dedicated to native plants; nurseries are continuing to offer a greater selection. As quantity and quality of water issues continue to be more paramount, expect native plant information and offerings to expand.



Some of the plants I have added in 3-1/2 years:

- 13 ocotillos (*Fouquieria splendens*)
- 14 ironwood trees (*Olneya tesota*)
- 7 blue palo verdes (*Parkinsonia florida*)
- 10 littleleaf palo verdes (*Parkinsonia microphylla*)
- 3 netleaf hackberry trees (*Celtis laevigata* var. *reticulata*)
- 14 triangle leaf bursage (*Ambrosia deltoidea*)
- 11 giant bursage (*Ambrosia ambrosioides*)
- 8 velvet mesquites (*Prosopis velutina*)
- 5 palo brea trees (*Parkinsonia praecox*)
- 9 saguaros (*Carnegiea gigantea*)
- 9 palo blanco trees (*Acacia willardiana*)
- 3 chuckwalla delights (*Bebbia juncea*)
- 11 chuparasos (*Justicia californica*)

In addition, numerous agaves, barrel cacti, organ pipe cactus, chollas, prickly pears, sumacs, sacred datura, yuccas, nolinias, penstemons, grasses, and other shrubs and herbaceous perennials have been added.



clockwise from page 2 Restored wash with San Carlos mallow (*Gossypium harknessii*), Wright's sporobolus (*Sporobolus wrightii*), purple three-awn grass (*Aristida purpurea*), sacred datura (*Datura wrightii*), (*Muhlenbergia emersleyi*), deer grass (*Muhlenbergia rigens*) and sideoats grama (*Bouteloua curtipendula*); three years prior area was devoid of vegetation.

Northeast side of house with ironwood (*Olneya tesota*), sacred datura (*D. wrightii*), sideoats grama (*B. curtipendula*), chuparosa (*Justicia californica*), creosote bush (*Larrea tridentata*) and desert marigolds (*Baileya multiradiata*); three years prior, this area was devoid of any vegetation except for a few creosote bushes.

Ocotillo (*Fouquieria splendens*), creosote (*L. tridentata*), triangle-leaf bursage (*Ambrosia deltoidea*), sideoats grama (*B. curtipendula*), deer grass (*M. rigens*), bull grass (*M. emersleyi*) and hedgehog cactus (*Echinocereus engelmannii*); this area was previously trashed and nearly devoid of plants.

CONSERVATION COMMITTEE UPDATE

The Conservation Committee: Statewide

by Greta Anderson, AZNPS Conservation Chair conservation@aznps.org

The Conservation Committee has been working hard in southern Arizona to do outreach, active restoration, and raise community awareness of the importance of native species in a healthy landscape. But what about the rest of the state? Is the Conservation Committee active statewide? Yes!

All chapter activities that promote native plants and ecosystem restoration can be considered conservation actions. In Northern Arizona, AZNPS's work with groups such as the Northern Arizona Native Seed Alliance to develop native seed resources and knowledge for restoration is a conservation action. The San Francisco Peaks Weed Management Area and the Northern Arizona Weed Council team up with AZNPS to stop the spread of invasive species, and that is conservation work, too. Each chapter surely has actions that "count" as "conservation" work. You just need to let us know about it, and we'll get it in our monthly notes, meeting agenda, and reports to the Board. We'd love to hear more about what everyone else is doing.

Here in southern Arizona, a lot of our Tucson chapter work overlaps with the conservation committee, making it hard to distinguish sometimes between chapter and committee activities. We don't worry about that too much, though, since we're just committed to getting the job done. However, having a separate conservation committee is

important, and it helps us interface with other conservation groups when it comes to sign-on letters about environmental concerns. If you have any questions about what is conservation committee business and what should be brought to your chapter, just ask.

The Conservation Committee's big event in Tucson this spring is the "Wild in the City" Yard Tour, highlighting native wildlife habitats in backyard gardens. This project was spearheaded by Julia Fonseca and a small subcommittee has been working for almost a year to bring this to fruition. On Saturday, April 12, six showcase gardens will be open to the public and members, experts, gardeners, and botanists will be on hand to answer questions about gardening for pollinators, herpetofauna, and native frogs and fish. More information can be found on the next page, in the latest edition of *Happenings*, or online on the beautiful www.aznps.org website. This is a benefit for the Conservation Committee, so help us spread the word about this great learning opportunity. Even experienced desert gardeners will learn something new.

This is just one of the many things **YOUR** Conservation Committee is involved in. If you want to join us or just get on our mailing list, contact conservation@aznps.org. We typically meet on the fourth Wednesday of each month in the Tucson area.



Support AZNPS Conservation *and* make a friend's day when they open their snailbox!

Box of 10 Jaguar Notecards (blank): \$16

You will love sending these colorful and meticulously designed cards to your friends and family... And knowing that 100% of card sales benefit the AZNPS Conservation Committee.

Prescott artist Carolyn Schmitz donated the image of her original painting to support AZNPS. To see the other creatures in Carolyn's magical world, visit www.desertdada.com.

Please support the AZNPS Conservation Committee and their work!

Wild in the City Yard Tour

Saturday, April 12, 2008

Do you want to recreate your yard as native wildlife habitat in the city?

Attend the Arizona Native Plant Society's yard tour and meet with experienced owners and wildlife experts! Hear about Tucson Audubon's urban wildlife restoration effort, and see how you can reconnect your yard to larger wildlife spaces in Pima County.

All sites will include plant lists. The six featured gardens include:

- Gardens for butterfly, moth and other pollinators,
- Backyard ponds for native frogs and fish,
- Native desert tortoise foods and the tortoise adoption program,
- How to create lizard habitat in your yard,
- and Native desert and riparian bird habitat

You can buy tickets the day of the event at The Nature Conservancy campus at 1510 E. Fort Lowell, anytime after 11am on Saturday. The event runs until 4pm. A tour fee (\$6 for individuals, or \$10 per group of two or more) covers the cost of plant lists for each site, and will assist efforts of the Arizona Native Plant Society's Conservation Committee (see box to left for more information on the wonderful work they are doing).

Additional information is posted at the AZNPS website: aznps.org/chapters/tucson.html; you may also contact Julia Fonseca at 792-2690.



☆ Our Featured Yards:

The Nature Conservancy: This is the suggested starting location for the AZNPS yard tour. The campus has been retrofitted with streetside and rooftop water harvesting features leading to native plantings. The mature parts of the site are well-known for their spring wildflowers and coveys of quail among native creosote and prickly pear. The Arizona Native Plant Society will be on hand at this site and others to assist you with your questions and provide information, including a plant list. Tucson Audubon Society will join us here to talk about urban wildlife habitat restoration. Learn the recipe for urban lizard habitat at 1:30 and 2:30pm.

Home Site 1: This midtown urban lot once featured oleander and non-native African sumac like so many other Tucson homes. After removing these non-native plants, the owner and horticulturalist used southwestern desert plants and found objects to create habitat for many birds and lizards in a beautiful and varied setting, on a modest landscaping and water budget. This yard won the 2006 Arizona Water Department/Tohono Chul Xeriscape award for 'Best Use of Sonoran and Chihuahuan Natives', Homeowner Category.

Home Site 2: This southside yard shows an astonishingly rapid turnaround from bare suburban lot to wild pollinator garden and wetland habitat for native frogs and fish. The owner-artist has used native plants to create a vibrant palette of colors and textures. The challenges included learning to choose plants native to and tolerant of the heavy floodplain soils of the Santa Cruz River.

Home Site 3: This central yard is "Totally Tucson": all plants are native to the Tucson Basin and arranged with care by this award-winning landscape designer-owner. Learn how you can create a place for many bird and lizard species, in particular. Read more about the owner's landscape ethic at gardeningsights.com. He is the winner of the "best native plants" and "best water harvesting" awards for 2007 in the annual Xeriscape contest.

Desert Survivors: This native plant nursery now features gardens for moths, butterflies and other insects where you can see mature plant specimens and their pollinators. Come see a recreated area of the Santa Cruz River floodplain, and hear about native bees from an insect expert! www.desertsurvivors.org/

Home Site 4: This west side yard includes a garden of native plants that provide food for desert tortoises. Learn how you can use native plants and new designs for tortoise burrows to create ideal conditions for adoptive tortoises. This home also features worm composting, rock piles for lizards, and native plants and other habitat features for birds. The owner, an urban wildlife specialist, will be on hand to answer questions, along with members of AZNPS.



A Native Plant Garden in a Neighborhood of Exotic Plants

by Cynthia Place Reiners, Tucson, Arizona

In June 2006, my husband was suddenly transferred to Tucson from Denver, Colorado. We intentionally selected a home with one characteristic considered a drawback to most potential purchasers, but a welcome challenge for me: a 3,000-sq. ft. backyard containing nothing but crushed gravel mulch and a poured concrete patio. This was my first chance to design an entire landscape from scratch. Within this neighborhood of predominantly exotic plants, my objective was to create a backyard garden of mostly native plants attractive to a wide range of animal life which will also be considered a desirable asset for resale in three to five years.

My previous gardening and design experiences are nothing if not diverse. Our Southern California yard was filled with the exotic flowering trees and shrubs so beloved of immigrants at the turn of the last century, plus a large vegetable garden. In a Virginia suburb of Washington, D.C., restoration of a long-neglected second growth forest and creation of a pollinator garden were the main activities. In Denver, the typical mature landscape of Kentucky blue grass and overgrown foundation shrubs was extensively redeveloped according to xeriscape principles. Numerous short grass prairie plants rescued from development were incorporated. The fact that all of these gardens were already fully planted out conferred two important advantages: I could

learn about the plants in place before making changes, and utilize a piece-meal, gradual approach, performing most of the labor myself.

In Tucson, all of the plants and horticultural practices were new to me. Due to our



relatively short time-frame, we decided to hire out the installation according to my landscape design. My immersion in the plants of the Tucson Valley and foothills kept me busy during the first several months of relocation adjustment. The drip irrigation and plants were installed in two waves, in February and March 2007.

The starting point

This is a very high turnover neighborhood due to the proximity of the Air Force base. Front yard trees planted by the developer are primarily South American mesquite, African sumac, and Eucalyptus. Most adjacent backyards include turf grass, citrus trees, bougainvillea, Mexican fan palms, oleander, roses, lantana, and a number of now-dead exotic deciduous trees. There are no watering restrictions in place.

Due to topography, our lot is unusually large and irregularly shaped. It features the “rabbit warren” style of development, 5- and 6-foot high cinder block walls, with the houses set very close together except for the depth of our backyard. For some reason, none of our neighbors have planted screening-height shrubs on their side of the wall, so we have a clear view into their backyards. During the monsoon season we discovered there was no drainage from the back to the front, such that the house was surrounded on three sides by fairly deep standing water.

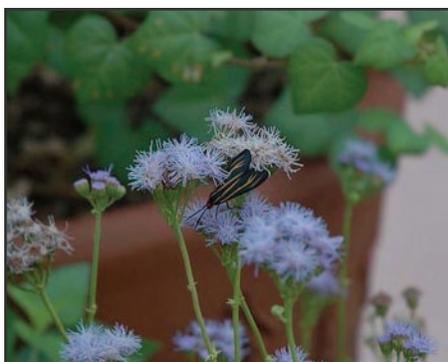
Nearby (but not immediately adjacent) a very large natural area provides a good reservoir for seeds and animals. Useful plants in adjacent neighbors’ yards include *Yucca elata*, nesting site of the cactus wrens; citrus trees, roosting site of numerous bird species and host plant for larva of Giant Swallowtail butterfly; *Caesalpinia mexicana*, nectar plant for numerous large-sized butterflies; and a dead tree used as a perch by an extremely territorial Costa’s hummingbird.

There is NO SHADE anywhere in the east-facing backyard until mid-afternoon in summertime. Backyard access is limited to one narrow side gate and one sliding glass door from the living room, with additional visibility from windows in the master bedroom.

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Dragonfly.
Ctenucha venosa on *Eupatorium greggi*.
Cloudless sulphur chrysalis under table.
Cicada hunter wasp excavating under *Asclepias subulata*.



Design objectives

To satisfy my own interests, I used mostly drought-adapted, locally native plants, with a high level of biodiversity, attractive year-round to pollinators, birds and other wildlife. For enhanced resale value, I made this a child-, pet- and maintenance-friendly landscape by limiting or avoiding plants with thorns and stickers, poisonous seeds, high allergen levels and irritants; and maintained the option of a play area and/or turf grass in the center of the large lot. I screened views of neighbors' yards and a nearby shopping center and also provided light shade, while maintaining everyone's mountain views. I incorporated xeriscape and landscape design principles to minimize irrigation and maximize attractiveness to a potential future buyer, despite use of unfamiliar plants. And in all decisions, I considered cost, effort and satisfaction of each component relative to my short residency and potential resale value.

The Plan

There are three separate planted sections of the garden, differentiated by color scheme plus requirements for water and sunlight. These are grouped around a large interior oval, covered in very tiny gravel, suitable for walking, playing and pet use.

Additional groupings of pots are placed near the patio. These include all of the cacti, agave and yuccas with spines and sharp points, so that they can easily be removed if desired by a future owner. Other pots contain plants to attract birds and pollinators close to the living space, especially where visible from the living room. The small south-facing patio provides a sunny and frost-protected location for winter-blooming plants for resident pollinators.

The three planted sections and pots are on four different drip irrigation lines. A fifth irrigation line has been terminated near the gravel oval, should a future owner wish to install turf grass in the oval.

The original crushed rock has been retained to mulch the plantings, and a series of subtle swales and berms for rainwater retention has been created, needing further adjustment with more rain storms.

A lath patio cover to shade the master bedroom windows, and provide light shade for potted plants is currently in HOA review.

Section 1: South-facing, 6-foot wall, closest to house and patio, low water. This hummingbird garden features hot primary colors and trumpet-shaped flowers. The wall provides a heat sink to keep more tender plants blooming as long as possible through winter months. The transition is marked with one *Eysenhardtia orthocarpa* to add height and balance. *Dodonea viscosa* on the wall adjacent to the patio reduce heat and glare. Full sun potted plants are also located here adjacent to the patio.

Section 2: West-facing, 6- and 5-foot walls, farthest from house, very low water. These are plants most adapted to drought and reflected heat and light. Once established, they could survive without supplemental irrigation if necessary, although not be as



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Gray hairstreak on *Asclepias*.

Cloudless sulphur caterpillar on *Senna leptocarpa*.



attractive. Evergreen shrubs screen the wall and view of the shopping center but not of the Rincon Mountains, and provide a viewing background. These include a *Celtis pallida*, the only in-ground plant with thorns but justified by its value to wildlife. It is carefully buffered with lower plants in front to protect people from thorns, and allowed sufficient room so that pruning would not be required. *Leucophyllum frutescens* 'Compacta'; *Rhus virens* complete the wall. The transition is again marked with two *Eysenhardtia orthocarpa* on north-facing wall, providing light shade to the edge of the gravel oval but thin enough to not block neighbor's mountain view.

Section 3: North-facing, some shade from 5-foot wall and neighbors' trees, down-slope moisture collection, low to moderate moisture. This section, most visible from the living room, features cool pink, blue, and purple colors, and plants requiring some protection from afternoon sun. One *Lysiloma microphylla* provides shade to the edge of the gravel oval, and its total size will probably be limited by frost in this location. Two *Chilopsis linearis* shade the windows of the house. The potted plants adjacent to the patio in this section require some shade and low to moderate water.

Selected design elements

To create sense of discovery in this very large space, access to the gravel oval is via two wandering paths from either corner of the patio. The view from the house and patio is limited by center-front plantings. One visitor described the effect as walking into another room.

continued next page

A Native Plant Garden *continued*

The space is further divided by single-species groupings of medium-sized evergreen shrubs and perennials extending out perpendicularly from the north and south walls. These add mass, break up long sections of planting and provide a visual backdrop for flowers. Examples include *Chrysactinia mexicana*, *Eriogonum fasciculatum* v. *polifolium*, *E. wrightii*, *Ericameria laricifolia*, and *Salvia greggi*. Three *Asclepias subulata* provide evergreen structural anchors on the NW, SW and SE edges of the oval. Fortunately, I had the opportunity to survey Tucson Botanical Gardens after the January 2007 freeze to ensure that enough truly evergreen plants would be included for this 2,900-ft. elevation.

From the living room, a wonderful morning backlit view is created by a mass of *Sporobolus airoides* in front of three *Acacia angustissima* anchoring the NE edge, and of *Muhlenbergia capillaris* in the SW section. (The acacia are cold deciduous, however). Together with some *Digitaria californica* and the volunteer *Bouteloua* ssp. and excessively vigorous *Aristida* ssp., the grasses provide a contrasting light texture and interesting movement during the frequent breezes, especially during the relatively bare winter months.

Garden sculptures, my husband's principle backyard interest, add structure during the bare months. We will fill in some of the border edges with sunken rock clusters to help define the edge and provide more micro-habitats. The far end of the gravel oval would be the perfect location for a small ramada and some brightly painted furniture, but unfortunately that great idea does

not meet the cost/benefit requirement for our short tenure here.



Results

The ability of this first-year garden to attract butterflies and moths, hummingbirds, plus a wide variety of other arthropods, birds, lizards, etc., wildly exceeded my expectations. As I consulted the same literature as would other readers of *The Plant Press*, a detailed plant list is not included, but just a few highlights.

The caterpillars of pipevine swallowtails and fritillary ssp. ate their respective *Aristolochia watsonii* and *Passiflora* ssp. to the ground, not once but several times. I finally had to screen the plants off on a rotating basis to ensure they could grow back. As this garden is just a tiny island of native plants in a relatively large sea of exotics, I was amazed how the female butterflies could find those vines against the backdrop of crushed rock.

The *Asclepias linaria* has pretty much died off, for reasons unknown to me. The lesser known *A. angustifolia* didn't like where it was originally planted, but has happily reseeded itself, (together with *Justicia sonora*), in the driest areas. With 3,000-sq. ft. of crushed rock to cover, the volunteers are greatly appreciated. They are heavily visited not only by Queen butterflies, but many other butterflies and smaller arthropods, well into the cold season.

Senna leptocarpa on the south-facing wall was extremely successful in attracting both cloudless sulphur and sleepy orange butterflies. The green metallic frame on the underside of our glass-topped patio table became a favored location for their pupas.

The *Lagascea dicipiens* was too successful in attracting the Bordered Patch, as the caterpillars skeletonized about 60% of the leaves. Fortunately it was planted in a somewhat hidden back corner.

The grouping of pots closest to the living room window was both visually beautiful and extremely attractant. *Muhlenbergia dumosa* provided a bit of shade for *Justicia spicigera* and *Salvia coccinea*, which reseeded vigorously. *Eupatorium greggii* was planted in-ground on the protected side of the pots. Annual dwarf sunflowers and tithonia, and volunteer dyssodia, asclepias and viguiera added yet more color in this area of greatest moisture. Lesser goldfinches, hummingbirds, many species of butterflies and several day-flying veined *Ctenucha venosa* moths consistently frequented this area, and were easy and fun to watch.

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Tarantula hawk on *Eysenhardtia orthocarpa*.
Carpenter bee vibrating on flower.
Queen butterfly on milkweed.

Create your own native herbal garden

by Jessa Fisher nightbloomingcactus@yahoo.com Flagstaff Chapter President

Almost anyone who has ever had a garden has experimented with planting culinary herbs. Common herbs such as chives, rosemary, dill, sage, basil, fennel, thyme, and oregano are easy, fun to grow, widely available in starts or seeds, hardy, fragrant, and best of all delicious! If you are a little bit more experienced, you might have tried growing your own medicinal plants to use. Popular medicinals include comfrey, lemon balm, boneset, passionflower, and tansy, amongst many others. These plants are not only beautiful but are helpful first aid medicines.

Did you know that there are many native culinary and medicinal herbs as well? Many of these have been cultivated, and others are perfectly suited to the dry and hot growing conditions of Arizona. Local native plant nurseries will be able to supply you with plants you need to complete your ethnobotanical garden. Here are some suggestions to get you started.

Northern Arizona:

Arnica *Arnica cordifolia*—Use the aerial parts of this shade-loving mountainous plant for sprains, torn ligaments, or sore muscles (**external use only**). It has bright yellow aster-like flowers.

Hops *Humulus lupulus*—This trailing vine thrives in moist shady areas. It is a gentle sedative in tea form, or can be used to brew beer.

Nodding onion *Allium cernuum*—The faint pink firecracker of flowers on this plant are very elegant. The bulb and leaves are edible and nutritious.

Yarrow *Achillea millefolium*—Our native yarrow is easy to grow with a long flowering season. The flowers and leaves make a wonderful tea for fevers, can be used as a dye plant, and are also used to stop bleeding.

Yerba manzo *Anemopsis californica*—This plant likes well-protected moist areas. Its beautiful white flowers, leaves and roots are valued by indigenous tribes of the southwest for their antibiotic and disinfectant qualities.

Southern Arizona

Antelope horns *Asclepias asperula*—The roots of this showy perennial flower are useful for dry coughs and colds, and in large doses as a laxative.

California poppy *Eschscholtzia californica*—A stunning orange beauty, which flowers prolifically. Use our native poppy as a mild sedative and to calm nerves.

Desert lavender *Hyptis emoryi*—This purple-flowered representative of the mint family will grow as a fair-sized shrub. It is a mild sedative as a tea, and externally can be applied to soothe burns or cuts.

Mormon tea *Ephedra* spp.—This ancient coniferous shrub features scales for leaves and long narrow stems. It is a great coffee substitute, and is much milder and safer than the Chinese species, which is used as an appetite stimulant and bronchial dilator.

When using your own herbs, always make sure you have the correct plant and full preparation instructions. Enjoy the colors, smells, tastes, and healing effects of these native herbs! For more information, reference these books:

Busco, J. and N.R. Morin. 2003. *Native Plants for High-Elevation Western Gardens*. Fulcrum Publishing, Golden, CO. 352 pp.

Kane, C. 2006. *Herbal Medicine of the American Southwest: A Guide to the Identification, Collection, Preparation, and Use of Medicinal and Edible Plants of the Southwestern United States*. Lincoln Town Press, Tucson, AZ. 307 pp.

Moore, M. 2003. *Medicinal Plants of the Mountain West*. Museum of New Mexico Press, Santa Fe, NM. 351 pp.

A Native Plant Garden *continued*

Unexpectedly, the greatest admirers of my new garden are a group of neighborhood middle school girls, who like to come over and look for interesting arthropods and lizards. We have a good time with the magnifying glass, field guides and camera.

Looking ahead

My greatest challenge continues to be providing the correct amount of water to this great diversity of plants. Initially I was concerned about keeping them alive during the first year; and then for many plants it was keeping them at their intended size! Water adjustments are trickier when the emitters are buried back at the main line.

The main thing I would have done differently about irrigation is ask the installers to run perpendicular main lines for the perennials out into the beds to make it easier to add more plants. Moving the heavy gravel mulch and digging the heavy soil for holes and irrigation line trenches means I have to be much more conscious of the physical cost of new plantings. It does, however, cut down on impulse buying at plant sales.



Native Plants in Northern Arizona Neighborhoods

by Gwendolyn Waring, Flagstaff, Arizona

There is nothing more pleasant than thinking about landscaping: it is an artistic experience for most of us, and has become all the more satisfying in recent years as we have become increasingly interested in landscaping with native plants. This new dimension to landscaping provides a connection to this planet that we can all use. And during the prolonged drought that much of the country has experienced during the last ten years, we've also had to become even more savvy by incorporating more drought-tolerant native plants into our gardens. As we enter a new era requiring greater conservation of natural resources for practical as well as moral reasons, creating gardens with less water is a pretty cool challenge that will help us sharpen our conservation skills in general. Historically it has been estimated that Americans used up to 60% (!!)

of their water budgets on watering their Kentucky bluegrass lawns. Even without a drought, that seems like a pretty outrageous thing to do. As a starting point it is important to be mindful of the fact that not all native plants are drought-hardy. I was reminded of this last summer after hearing a neighbor complain about how much he had to water a red-osier dogwood in his yard. He had planted it in a pretty exposed site. In northern Arizona a good place to see this plant growing naturally is in the Oak Creek drainage. It likes lots of water. Frankly the same goes for most penstemons. As wonderful as they are in the garden, I find that they take more water than I like to send their way. As you shop for landscaping plants, be sure to ask about water requirements.



above Indian paintbrush, *Castilleja* sp.

It's an exciting time to be gardening. There is a greater array of plants available than ever, making it possible to make a landscape that is pretty and hardy.

My strategy for developing the native landscape in my yard has taken shape over many years and has involved a great deal of trial and error. I have three types of gardens in my yard. The harshest is a south-facing stretch along my street, and it provides the most interesting challenge for me. It is my laboratory garden. It bakes all summer, and I have to drag the hose a ways through the yard to get to it, so I only water it about two or three times each year. Plants that have come and

gone from it include penstemons, such as Rocky Mountain penstemon and mat penstemon, which is so common in meadows around Flagstaff, coral root, and more species than I care to remember. Over time I have found that native grasses, including muttongrass and blue grama, are quite happy there, as are spreading goldenrods. A favorite is a red-flowered variety of blanket-flower. This species grows naturally up on the Navajo Reservation, in the cold desert. It blooms all

continued next page



above Pressed samples of *Vicia americana* (American vetch), Arizona honeysuckle, and blue flax.

Native Plants in Northern Arizona Neighborhoods

continued

summer in my garden and is lovely. A monsoon-loving four o'clock with fuchsia flowers is gradually spreading here. Recently a spike buckwheat volunteered and has stayed on. That was quite a treat, since they are so interesting ecologically. I also introduced a few pads of our local yellow-flowered prickly pear and they are really

taking off. I was a little ambivalent about adding a spiny species to my garden, but they certainly do discourage dogs from stopping by. Their flowers come and go rather quickly, so they may not be for everyone. I like their blue-greenness, though, and am contemplating what other plant might be a complement to that. For a little fall color, I have added white aster, purple aster, and the ubiquitous showy golden-eye and found them very happy in this exposed site. The result of all this is an emerging garden that is very dynamic and full of surprises. It contains an array of colors and textures. I am constantly throwing in seeds that I've collected while walking, so it is an ongoing process.

Across the driveway in this harsh front section, a rabbitbrush and several Apache plumes are thriving. They get a little afternoon shade, so I have never had to water them. Each fall a zillion migrating painted lady butterflies, as well as bees and large, colorful tachinid flies, visit the rabbitbrush's copious flowers. Apache plume blooms all summer long.

The second garden in my yard is a large rock garden. I incorporated wonderful, large basalt boulders that step down in long terraces. I water this garden maybe six times a year. This garden has geranium-leaf delphinium, more goldenrods, penstemons, New Mexican checkermallow, pine-leaf penstemon, shrub cinquefoil, Rocky mountain penstemon, mat penstemon, scarlet bugler, scarlet gilia, wild cinquefoil, wild geranium, and all the fall flowers, and shrubs including skunkbush, fernbush, Fendler's buckbrush, mountain mahogany, wax currant, and shrub cinquefoil. Shrub cinquefoil grows naturally in the San Francisco Peaks (they cover the foothills at 8500 feet near Fern Mountain), so they are a bit challenged in this garden yard. But the monsoon rains set them right. The key to the success of this rock garden is the rocks themselves. They hold in a great deal of moisture, allowing these water-loving species to make it. Through the middle of the garden, I have laid down slabs of flagstone and most plants volunteer in the interspaces and thrive there.



left to right Thruer's potentilla and dayflower (*Commelina dianthifolia*).

Finally, I have a set of small, rock-cement planters that surround our deck in the backyard. This is a classic water-hogging garden and I have mixed feelings about it. During the oh-so-challenging month of June, I water it every week. In this bed I grow many, many species of local penstemons, the beautiful dayflower, the red-flowered Thruer's cinquefoil, New Mexican checkermallow, Hooker's primrose, Arizona honeysuckle tucked in the shade, and mock-orange for its wonderfully fragrant flowers. I have included all of the fall composites (Sunflower Family), though they have to be managed or they will take over. I have planted sedges in this garden because I like their bright green color.

Outside the gardens most groundcover is native grasses. I lucked out in the back yard as it is a native meadow of muttongrass, kind of a relict of what the area used to be like before it was developed. I simply weed it and occasionally rake out dead leaves. In the front, I made a meadow with native blue grama grass. This warm season species doesn't really green up until monsoons start, but its soft greenness then is worth the wait. Buffalo grass, more of a plains states native, can be added to these meadows and helps to fill in spaces.

I find that monsoon season is the best time to establish new plants or meadows around Flagstaff. If you have the site and seeds or plants ready by late June you may not have to water at all, which is worth a bunch of karmic credit.

Many local nurseries now sell a great variety of native plants. Try to get local varieties if you can. That way, we can all be stewards of this wonderful region. Many botanical gardens and arboreta have regularly-scheduled native plant sales that showcase a diversity of species that will grow well in the local area. And AZNPS is now sponsoring native plant garden competitions and tours where participants can garner lots of useful information while talking to other homeowners.



Native Wildflowers are Weeds?

The need for a paradigm shift for neighborhood associations

by Carianne Funicelli, Tucson, Arizona

In a mass-graded “master-planned” community of tile-roofed homes, complete with the requisite golf course in the Tucson basin, an unlikely gem awaits winged visitors. A garden oasis for native plants and wildlife thrives amidst a sea of yards with carefully raked gravel and gumdrop-shaped shrubbery. Every spring and summer, over 50 species of native perennial plants burst into flower, attracting over 20 species of butterflies. Couch’s spadefoots (a native amphibian) have taken up residence in the small pond, and over 30 species of birds flock to this haven of isolated habitat. This garden is so impressive that it was recently featured in *Phoenix Home & Garden* magazine — a testament to the ability of the garden’s designers to look past the status quo of sterile Texas ranger and gravel landscapes as the only option for today’s desert neighborhoods.

Most people agree that this professionally landscaped garden is attractive; to boot it is a boon to the depauperate natural resources that remain in the area. But the Home Owner’s Association (HOA) does not approve. Even though the HOA approved the landscape plan in 2000, they have issued citations to the owner on two separate occasions for non-compliance with vague covenants, conditions & restrictions (CC&Rs) regarding weeds and yard debris. The HOA view is that “wildflowers are weeds,” even though they are not able to define for residents what they mean by “wildflowers” or “weeds.” They publicized this view in the neighborhood newsletter:

These particular flowers are beautiful when they are in bloom but with many drawbacks. Once they have flowered, they die and look like a weed. They are also very contagious. Their



seeds spread and the next thing you know, everyone on the block has wild flowers whether they want them or not...Be pro-active and spray them now before the rains hit...

Although this view is startling enough to native plant lovers, it should be noted that the garden in question contains only perennials. The homeowner has made presentations on four occasions to HOA officials regarding the terminology; she should know what a weed is since she has been recognized as a “Weed Manager of the Year” by the Southwest Vegetation Management Association for her tireless work in protecting the Sonoran Desert from the onslaught of invasive African grasses.

How can a landscape that is recognized as a beautiful example of urban wildlife gardening also be the bane of an HOA? How can Arizona Native Plant Society work with Home Owners Associations to educate them about the value of native plants in our landscapes?

Although many HOAs are embracing and encouraging the use of native plants in their landscaping palettes, there remains quite a bit of confusion about exactly which species are appropriate and what constitutes a “weed”. Many times, HOAs are relying upon misinformation and lists of approved and/or prohibited plants that were not compiled by botanically knowledgeable people, or that were developed for different uses. This can result in the inclusion of invasive ornamentals and potentially valuable native species being overlooked. For example, many communities and municipalities rely upon the Arizona Department of Water Resource’s *Low Water and Drought Tolerant Species Lists* (www.azwater.gov/dwr/Content/Find_by_Program/Drought_and_Conservation/LowWaterPlantLists/default.htm) for absolute guidance, but this list may not meet the exact needs of a community. AZNPS regularly submits nominations for invasive ornamental species to be removed from this list, but even if those nominations are accepted (which historically they have not been), the improvements may be moot since communities may be working from an old version of the list.

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Rainwater-based Habitat Landscaping:

Declining Bird Populations and an Abundance of Backyards

by Kendall Kroesen, Restoration Program Manager, Tucson Audubon Society

Introduction

A curved-billed thrasher works the soil around the edge of my patio, “thrashing” its bill left and right to expose insects and seeds. Mulch gets tossed up onto the patio, so I’ll have to sweep again. But it’s worth the show. Its lively “whit-wheet” wakes up the quiet neighborhood.

The thrasher nests a couple houses down in a large cholla in a neighbor’s yard. Now that I know the kind of structure it likes to nest in, I’ll try to provide that in my yard. Meanwhile, I’m glad to know my yard is helping to feed a new generation.

I want to make my land in central Tucson, all 0.2-acre, a place that is useful to birds. We have learned that many other people want to do the same. That, in addition to declining bird populations, is why Tucson Audubon Society is developing an urban habitat program.

Birds provide us with so many things when we pay attention to them, from aesthetic pleasures to natural history lessons. They add an extra level of pizzazz to even the most aesthetically designed backyard. Greater bird diversity indicates a healthier local urban ecology. Birds, along with all other backyard life, play ecological roles. I’m happy to have white grubs in my backyard as food for birds, but I wonder if they would get a bit out-of-control without the thrashers. Birds are important to science too; many scientific discoveries have been made from studies of birds.



Native Wildflowers are Weeds? *continued*

AZNPS is pleased to review community plant species lists and suggest changes that may be more in harmony with a communities’ particular location and challenges. In addition, the AZNPS Conservation Committee has a 30–45 minute slideshow in conjunction with the *Grow Native: Don’t Plant a Pest* campaign, and volunteers are available to make presentations to HOA groups to educate them about the topic. Contact conservation@aznps.org for details or if you would like to participate in this program as a native plant ambassador.



If you are experiencing unfair treatment from your HOA regarding native plants or any other concern, here are resources that may be helpful in getting specific answers to your questions (courtesy James Sandefer, *Explorer News*, 4.11.07):

- Arizona Office of Administrative Hearings: (602)542-9826 / www.azoah.com
- American Homeowners’ Resource Center: (949)366-2125 / www.ahrc.com
- Coalition of HomeOwners for Rights & Education: www.chore.us
- Citizens for Constitutional Local Government: (602)228-2891 / www.pvtgov.org

For birders who make lists, birds provide another line on the life list or the yard list!

Birds work for people in other ways too. Approximately 1.5 million people take part in wildlife watching in Arizona (U.S. Fish & Wildlife Service, 2001). In 2001 wildlife watching (much of which is bird watching) generated \$1.5 billion in total economic impact for Arizona (Southwick Associates, 2003). This is a real part of the economy, and one that relies on healthy wildlife populations.

So there are many reasons to encourage backyard birds. But ultimately they don’t exist *for us*; they just exist! As we destroy those habitats upon which they depend, we have a responsibility to ensure that they do not disappear, and that means providing places for them to live and food for them to eat in the places where we live.

Population Declines

The National Audubon Society and the American Bird Conservancy publish a “Watchlist” of bird species that are in decline and need conservation help. Of the 178 species on the list for the continental U.S., 48 are found in Arizona (az.audubon.org/BirdSci_AZWatchList.html). In Tucson these include Costa’s Hummingbird and Gilded Flicker, and along our desert washes Bell’s Vireo, Lucy’s Warbler and Abert’s Towhee. In addition, a number of other species that were formerly considered “common” are in decline. Tucson’s Verdins and Phainopeplas are among them.

Locally, the University of Arizona-based Tucson Bird Count (TBC), one of the most comprehensive urban bird studies in the world, has documented the absence of many desert species in the more heavily populated central Tucson area. Species like Gambel’s Quail, Black-tailed Gnatcatcher, Gilded Flicker, Ash-throated Flycatcher, Lucy’s Warbler, Northern Cardinal, and Black-throated Sparrow are all scarce in the places where humans live most densely (www.tucsonbirds.org).

How should we support bird populations? We believe we should concentrate human development in some areas and preserve other large, unfragmented tracks of natural land to maintain healthy ecological systems. However, we also believe that we should reconcile developed areas as best as possible with the needs of wildlife (Rosenzweig, 2003).

Many household measures can help. Being conservative with water and energy, avoiding chemical fertilizers, herbicides, and pesticides, and buying local products all minimize our ecological footprint. See National Audubon Society’s *Audubon at Home* program (www.audubon.org) for more and visit Tucson

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Rainwater-based Habitat Landscaping *continued*

Audubon's website (www.tucsonaudubon.org) for an *Audubon at Home* brochure specific to the Sonoran Desert.

Along with these measures, we can also create habitat in urban areas, which increases the diversity of birds supported by our neighborhoods.

Tucson Audubon's Urban Habitat Program

For the foreseeable future, most neighborhoods in cities like Tucson will continue to contain urban lots ranging from one-tenth of an acre to several acres. Most of these lots—homes, businesses, places of worship—can support more wildlife than they do currently.

Tucson Audubon is promoting a vision of sustainable urban landscapes and bird populations, and Tucson is well adapted for it. Many Tucsonans are already aware of the richness of wildlife in their area. They also know about the particular challenges of living in the desert, like the scarcity of water and the extremes of hot and cold, wet and dry, that we experience. They are familiar with the concept of xeriscaping.

We think Tucsonans are ready to take the next step: "rainwater-based habitat landscaping." Currently many xeriscapes consist of decorative rock that provides little or no habitat value for wildlife. These serene, often convex landscapes repel rainwater, making it necessary to supply scarce and valuable potable water even to the few drought-tolerant plants that dot the landscape. All too often the few plants in these "rockscapes" are non-natives that provide, on average, less survival value to birds than natives.

Instead, we are talking about landscapes that have lush thickets of native plants. In these landscapes, plants are installed in combinations and densities that provide food, shelter and nesting opportunities for wildlife. These landscapes have both species diversity and structural diversity. Landscapes are concave rather than convex, and capture rainwater in microbasins and swales, where it infiltrates and is stored for use by plants. An example of this landscaping can be found in the front yard of Tucson Audubon's University Boulevard Nature Shop.

A wide variety of native plants currently are available from nurseries and in commercially available seed mixes. As the interest in landscaping with natives grows, so will the available palette. Native plants are compatible with sophisticated landscape designs as well as more rustic, or naturalistic ones.

Rainwater harvesting urban habitats are as important for water conservation as they are for birds. It is estimated that 60% of the metropolitan water supply in Arizona goes into irrigating landscapes (Water Education Foundation, 2007). The amount may be less for Tucson, where xeriscaping is the standard (Phillips et al., 2005, estimates the figure for Tucson at 30-50%). Rainwater harvesting is quickly becoming accepted by Tucsonans, and many guides to implementation are available (Lancaster, 2006; Phillips, 2005).

Rainwater harvesting habitat landscapes use as little, perhaps less, irrigation water as rockscapes, because they collect runoff from gutters and hardscape and direct it toward low-lying planting areas. A cistern may be added to hold roof runoff for use in drier times. Many native plant landscapes should be able to survive on rainwater alone after becoming established, with perhaps some additional irrigation in times of unusual drought.

Particular plant associations (combinations of plants) may be particularly helpful for birds. For example, a landscape with a leguminous tree could help keep soil nitrogen levels high, which could benefit shrubs and grasses. If the legume were a mesquite tree (*Prosopis velutina*) hosting a desert mistletoe (*Phoradendrum californicum*), it would benefit Phainopeplas, which eat the mistletoe berries. Fruit-bearing mid-story shrubs like graythorn (*Ziziphus obtusifolia*), desert hackberry (*Celtis pallida*) and wolfberry (*Lycium* spp.) provide food and dense, protective cover that attract many species of birds. Understory grasses or annual wildflowers would attract hummingbirds and other pollinators, and their seeds would provide food for sparrows and doves. Birds perching in the tree will ingest and defecate seeds, adding both to soil nutrients and to reseeded of plants.

Habitat landscapes may even be targeted to help certain bird species. For example they might provide enough ground cover so Gambel's Quail can find shelter and build nests. Will Turner's dissertation, based on early data from the TBC, suggests that neighborhoods that increase Sonoran desertscrub cover to just 10% could be recolonized by Gambel's Quail (Turner, 2003). Neighborhoods might use other strategies to provide nesting opportunities for Ash-throated Flycatchers or other species. They might emphasize native flowers used by hummingbirds and other pollinators.

The TBC not only supplies us with baseline bird population data that shows us where to begin, but it can potentially help us track how populations may change as habitat is created in the urban area. We hope to work with the TBC to create an evaluation program.

To transform Tucson's urban habitat it will be necessary to engage a wide spectrum of the community. Homeowners, homeowners' associations, neighborhood associations, business groups and churches are obvious places to start. We are also approaching the landscape design community regarding a program in which landscape designers would be certified by Tucson Audubon to design habitat landscapes, which in turn would be certified as habitat by Tucson Audubon. We will reach out to government agencies that manage urban public lands. Finally, we will work with plant nurseries to make sure that as wide a range of native plants as possible is available to the public.

Conclusion

Creating urban habitat can do more than just lessen our ecological footprint and support populations of birds. It can provide practical educational opportunities about plants and wildlife and engage more people, especially kids, with the natural world. There will be more outdoors places for kids to explore,

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An exciting time for Arizona botany

by Wendy Hodgson, Education & Outreach Committee Chair

This is an exciting time for Arizona botany. Not only are we experiencing a remarkable spring wildflower display, there are so many exciting projects and opportunities for professional and amateur botany enthusiasts. This year kicked off with another very successful Arizona Botany Conference at the Desert Botanical Garden, with well over 120 participants. We were treated to excellent presentations by Exequiel Ezcurra, Elizabeth Arnold, Tim Reeves, Marty Wojciechowski, and Kathy Rice on such diverse topics as plant reproduction strategies in cacti, Four Corners ferns, the wonderfully diverse world of fungi, origin and diversification of legumes and the plant *ex-situ* conservation program at the DBG, identifying successes and challenges faced in rare plant conservation. Short presentations were also well-received: Frank Reichenbacher's and Linda Reeves' updates on Tumamoc Globeberry and the San Juan Flora, respectively, Scott Bates' continuing discussion of fungi (I am newly appreciative of fungi!), and Kate Watters' discussion of what the Grand Canyon Trust is, its goals and how volunteers can assist in helping protect and restore the land. Richard Felger presented the Arizona Botanist Lifetime Achievement Award to Mark Dimmitt and Tom Van Devender, recognizing both for their distinguished careers and contributions to botany of the Southwest. The meeting was dedicated to Ferrel Secakuku, Hopi elder and 2007 meeting participant, who passed on in

2007; Jessa Fisher presented a tribute to Ferrel, sharing her fond memories of a person who had a tremendous impact on her and others' lives. Excellent field trips were offered, many thanks to Phyllis Hogan and Theodora Homewytewa, Richard Felger, Raul Puente and Kathy Rice. Gloria Ekland, DBG Education Department, provided a diverse array of desert edibles, sharing, too, her stories about the different plants. The conference was another wonderful experience, providing opportunities for sharing knowledge, visiting with friends and making new acquaintances for all.

The Plant Atlas Project of Arizona, better known as PAPAZ, continues to develop. Areas in northern and southern Arizona have already been identified as potential targets for a thorough documentation of their plants by volunteers, including opportunities provided by Grand Canyon Trust as discussed by Kate Watters. A Powerpoint presentation about PAPAZ has been developed; its debut was 5 March in Tucson. With such programs as our Annual Conference, PAPAZ, chapter meetings, interpretive displays and hikes and workshops, we continue to educate others and ourselves about the amazing plants and plant communities we are so fortunate to experience. We are all educators and it all starts with ourselves — even in our own backyard.

Rainwater-based Habitat Landscaping *continued*

helping to counter “nature-deficit disorder” (Louv, 2005). Thriving pocket landscapes add to the quality of our daily lives creating greater interest in our immediate environs.

Urban habitat creation in Tucson, and in other Arizona urban areas, will be an ongoing project. Our knowledge about what works will evolve, new strategies for supporting special species will emerge, and our constructed urban landscape will continue to be refined. Members of the Arizona Native Plant Society can be of particular help in the growth and evolution of this effort. No single person or organization possesses all the knowledge that will be of use and this vision offers true opportunities for partnerships. You can contribute by contacting the author with information you think will be useful. Particularly useful at this stage would be to build our database about plants, plant associations, and other landscape features that birds and other small urban wildlife find useful.



Acknowledgements

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Flagstaff Chapter AZNPS Native Plant Garden Competition & Tour 2007

by Elaine Ferris, Flagstaff, Arizona

In the AZNPS Flagstaff Chapter each winter, creative minds search many areas for program ideas. We delve into articles on what is happening in the environment, what is going on in the community, and we reread the AZNPS mission statement: To promote knowledge, appreciation, conservation, and restoration of Arizona native plants and their habitats.

In 2007, our minds clicked onto: "AZNPS promotes the use of native species in residential and commercial landscapes." *Voila!* The idea for a native plant garden competition sprang into prominence as a great program for the August meeting. The Flagstaff Xeriscape Council, a startup from a chapter program on water usage, had sponsored a xeriscape garden contest the year before and would be running it again in 2007. So, with the theme of water conservation and sustainable environments, native plants were a natural fit.

A five-person panel of working judges was assembled whose skills encompassed: knowledge of native plants, garden design, digital photography, power point presentation, publicity and general public relations.

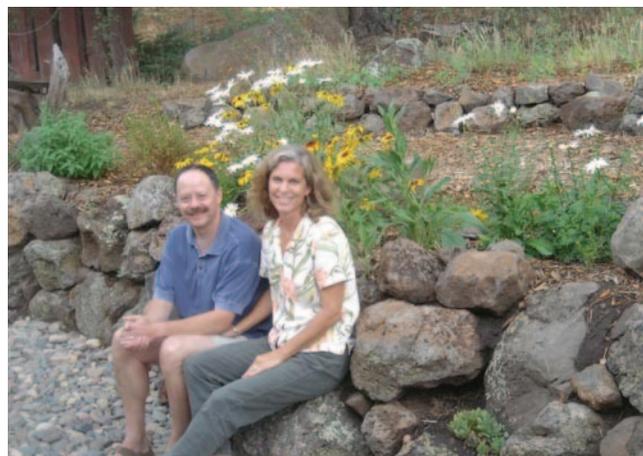
The AZNPS competition, open to gardens in Greater Flagstaff, was announced with general guidelines. The xeriscape contest was limited to the city per their grant specifications. Gardeners agreed to participate in the Flagstaff Chapter August members program and to have their gardens open for a chapter field trip the Sunday following the awards ceremony and for publicity purposes.

Entrants were contacted and garden visits scheduled. As the gardens occurred county-wide, myriad microclimates and land formations were encountered. Each garden was different, each portraying its owners' creativity and love for their plants. We met with urban forest glades, small plots divided into garden rooms, a wide-open field covered with island mounds of Sunset Crater penstemons and showy four o'clocks. There were French drains and rain barrels, steep terraces and clumped native grasses niched into lichen-covered malpais rocks, manicured berms and drifts of

Entrants

Professional: Robert Chambers, John Taylor, and Aure Giorgi of Taylor Bird Enterprises: She Doc Garden (winner); Pieter Schaafsma of Schaafsma Design: Garden at the McMillan House; Pieter Schaafsma of Schaafsma Design: Babbitt's Wholesale (runner up).

Non-professional: Ken Cole, Carol Hart, Pam Koch, Alan Petersen, Kathleen Satterfield (runner-up), Skye Sieber, Tom and Kay Whitham (winners), Sue and Steele Wotkyns.



top to bottom

A water feature made from reused steel containers at the Taylor Bird Enterprises She Doc Garden, winner of the professional category.

AZNPS members Sue and Steele Wotkyns at their wildflower garden, perfect for summer entertaining.

pink and white echinacea along a fence line.

The awards ceremony was opened with a welcoming greeting and a reading of the beautifully crafted proclamations by the Mayor and the Board of Supervisors, which now are on display at the NAU Deaver Herbarium. Each gardener was introduced, said a few words about his/her garden and what determined plant selection, then was presented with a thank-you certificate and an AZNPS Northern Arizona Native Plants poster for entering the competition. A Powerpoint presentation illustrating significant features of each garden was shown. Awards were presented to the first and second place winners in each category.

The tour, "Celebrating Conservation," ran from 11am to 2pm. Feedback on the tour was excellent, with up to 100 visitors converging on a site. Gardeners were enthusiastic, greeting visitors with refreshments and answering endless questions.

The Flagstaff garden club president emailed this feedback: "Loved the tour! A quick note to tell you how much I enjoyed the Xeric tour. All the homeowners we visited were excited, welcoming and informative. Because there were gardens in all

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BOOK REVIEW

Volumes 24 & 25 of *Flora of North America (Flora)*

by C. Douglas Green, Phoenix Chapter President

This review is long overdue because Volume 25 was published by Oxford University Press in August of 2003, while Volume 24 was released in March, 2007. No, these are not misprints. This is not unusual with the *Flora*, since the volumes are not necessarily printed in succeeding numerical order — for whatever reason(s).

So, Volume 25 hit our botanical circles first with Part Two on *Poaceae*—i.e., the Grass Family. Most all species are illustrated, and very well done by their Chief Illustrator, Linda Vorobik and her staff. There were a couple of editing misplacements discovered after publication. However, their illustrations compare very favorably with those old standbys, *Manuals of the Grasses of the United States*, Volumes One and Two (*Manuals*). I found it most interesting that the newest volume 24 dedicates the two *Poaceae* volumes to A.S. Hitchcock and Agnes Chase with this inscription — “To the two giants on whose shoulders, we stand.” This is a very fitting tribute.

Following that is an historical introduction that describes the massive undertaking of Hitchcock and Chase, and their pursuit of excellence in putting together the two volumes of the *Manuals* in the early years of the twentieth century. It is almost unbelievable what Hitchcock and Chase accomplished in the field of grasses and with the *Manuals* “without the assistance of digital technology” — so says Mary Barkworth, the *Flora* editor.

Continuing on with the review of Volume 25, I found that the distribution maps were very well done, and more extensive than Hitchcock and Chase. They were more detailed, as to the expected locations of almost all species studied by the *Flora*. Again, however, there were editing misplacements.

The taxonomic efforts put forth by the contributing editors/authors were indeed noteworthy. The grass descriptions

are very complete at the family, subfamily, tribe, genus and species levels. The keys are right on and especially accurate. But once again, there were editing misfortunes particularly in the *Danthonia*, *Amphicarpum*, and *Spartina* genera. All corrections have been made available via Oxford’s website.

All in all, I’m most impressed with Volume 25, and particularly with the Arizona grasses presentations, which is my primary interest. Volume 25 deals with 733 species of grasses, of which 489 are native to the *Flora* region and 237 were/are introduced species. So it is the most complete tome on Grasses of North America to be had, and certainly has made Hitchcock and Chase’s *Manuals* outdated, but it is still respected as a field manual. Volume 24, i.e. Part One of *Poaceae*, deals with approximately 650 species of grasses and 113 genera.

Both Volumes 24 & 25 cover about 1373 species of grasses, while the genera count is 236. Concerning “native grasses,” the count is 136 genera and 895 species. So, through extrapolation, the *Flora* deals with approximately 100 non-native species. Some might question, why so much space given to non-natives? The editors of the *Flora* feel that we must know the enemy, as well as the friendlies — i.e., the good guys versus the bad guys! For those in the weed management circles, there seems to be agreement with this stand. If we recall, Hitchcock and Chase gave a great deal of attention to both native and non-native species — for much the same reasons as the *Flora*.

As of this date [end of March, 2007, ed.], there have not been any massive reports of editorial/authorial mishaps with Volume 24 — as was the case with Volume 25. And in this regard, there is a section in Volume 24 (pages 790-93) that is devoted to: “Volume 25—Additions, Corrections and Comments” — which has a number of additional addenda. So the beat goes on! It would appear that the *Flora* did get better in its accuracies from Volume 25 to Volume 24.

In summary, the *Flora* has done a creditable job in producing these two *Poaceae* volumes, and finally agrostologists have a source of information that has been updated and made more complete than the Hitchcock and Chase efforts of the past. But it took 1694 pages — with lots more verbiage per page — to get the job done by the *Flora*. I, too, stand in amazement in regard to the works of Hitchcock and Chase of 1935 and earlier. I will indeed use the *Flora on Poaceae*, but I don’t dare discard Hitchcock and Chase’s *Manuals*, even though they are dog-eared, falling apart, and held together by rubber bands and Scotch Magic Mending Tape. After all, I have better than 25 years of handwritten information and actual specimens tied up in the 1051 pages of these treasured tomes, i.e., a partial lifetime dedicated to the study and enjoyment of North American grasses.

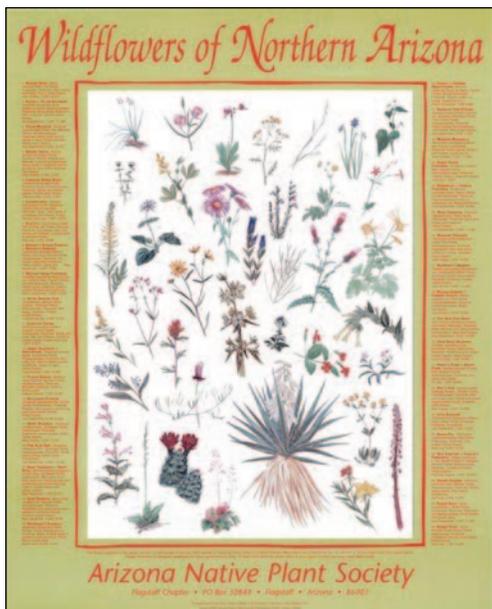
Flagstaff Chapter Native Plant Garden Tour & Competition

continued

parts of greater Flagstaff, there was variety in gardening issues.”

The “Fragrance of Flagstaff” celebration continued through September with the county fair and library displays. Because it was such a success, the judging committee — Dorothy Lamm, Elaine Ferris, Jessa Fisher and Ellen Dorn — has decided to have a 2008 contest following the same format so please read your future AZNPS print and email material for more information on how to enter and when the events will be.





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Great Publications

The Arizona Register of BIG TREES

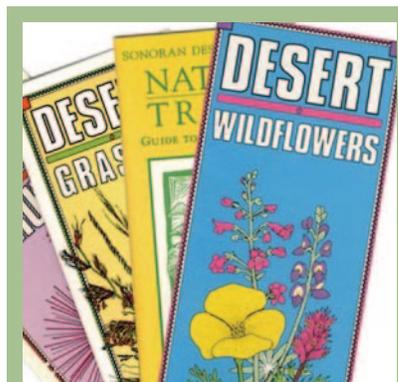
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AZNPS is contributing to the printing of this new effort to make available editions of the new updated *Arizona Flora*, as they are published, to libraries.

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Would you like to take a more active role in protecting Arizona's native plants? There are open Board positions — please contact any of the above board members for more information on how you can get involved. You can also contact your local chapter (see back cover) for local volunteer opportunities.



The Arizona Native Plant Society

Upcoming Issue

Biodiversity: Resiliency in Our Native Ecosystems

Contact *The Plant Press* Technical Editor, Barbara Phillips, at **bgphillips@fs.fed.us** for more information on contributing articles, illustrations, photos, or book reviews on this topic... as well as themes you'd like to see us cover in future issues.

The Plant Press is a benefit of membership in the Arizona Native Plant Society. Suggestions are welcome for book reviews, and articles on plant use, conservation, habitats, and invasive species

New Members Welcome!

People interested in native plants are encouraged to become members. People may join chapters in either Phoenix, Flagstaff, Prescott, Tucson, Yuma, or may choose not to be active at a chapter level and simply support the statewide organization. For more information, please write to AZNPS at the address below, visit the AZNPS website at www.aznps.org, or contact one of the people below.

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