

The Plant Press

THE ARIZONA NATIVE PLANT SOCIETY

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THE WOLFBERRY

Gary Bachman

It really was my intention to sort out those confusing, pesky wolfberries (*Lycium spp.*). My goal was to develop an easy-to-follow method to definitively sort out the dozen or so species that reside in Arizona. My excuse for not doing this is that the rains did not cooperate, and most wolfberry plants were barren, stiff, with few leaves clinging to dark stems. Botanists admit it is impossible to tell the *Lyciums* apart without flowers. The rains bring the flowers, and without rain there were few flowers to check the methodology I was set to discover.

So, instead, I will write about this rather common and undistinguished shrub, which is dispersed across the diverse habitats of the southwest deserts up into the higher elevations. And I will try to understand why this classically trained ornamental horticulturist appreciates this underutilized plant.

The Wolfberry is found in nearly all desert habitats, from low washes to higher altitudes. Common as these species are, the habitats they inhabit tend to overlap. For example, there are six species that are found in Organ Pipe National Monument. I remember Sue Rutman, botanist at the Monument, stating that four of the species can be found in the vicinity of the Ajo Mountains.

Lyciums are in the Solonaceae family. The flowers and fruit resemble small tomatoes. They are often called "tomatillos," but should not be confused with the "husk tomato" or *Physalis spp.* that also are Solanaceae members.

While some species are noted for particular qualities, some tend to overlap. *Lycium exsertum* has pendulous bell shaped corollas, with protruding stamens or styles. *Lycium fremontii* is similar to *L. exsertum*, but the stamens protrude less, flowers are not as pendulous and the calyx tube is more elongated. Both species tend to have leaves that are stiff and hairy. Flowers may be white tending to purplish. There may be four or five calyx lobes.

So perhaps it is this ambiguity that is both fascinating and challenging. These are very attractive plants. The flowers, as mentioned before, may be white or purple. Fruits are usually bright red and can be

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PRESIDENT'S MESSAGE

Barb Skye

Dear ANPS Folks:

The summer heat entices many desert dwellers to enjoy siestas. In contrast, many Arizona Native Plant Society members are missing their siestas this summer. Behind-the-scenes action is keeping many of us in high gear protecting native plants.

During state meeting month in July, Arizona Native Plant Society (ANPS) will officially celebrate its 25th anniversary in the (cool!) Colorado Plateau area. "Native Plants of Northern Arizona" and "Restoration of Regional Habitat" are this year's themes.

ANPS now has three regional chapters: Northern (Flagstaff), Central (Phoenix), and Southern (Tucson). Now members in surrounding areas will receive their regional newsletter in addition to the state newsletter. We will continue to offer field trips throughout Arizona and beyond! Our goal is to encourage even more Arizona Native Plant Society activities and to provide additional membership support.

Look for the beautiful new ANPS brochure due out this summer. Designer Paul Mirocha has incorporated Margaret Pope's exquisite *Peniocereus greggii* artwork on the new cover. Linda Brewer kindly updated her original graphic design work for the brochure.

The new "Wildflowers of Northern Arizona" poster will soon be available. Three years in the making, the poster features the beautiful work of Zachery Zdinak, wildlife illustrator, naturalist, and resident of Flagstaff. To order, please contact George Virtes at azgvandgv@aol.com, or send a request to ANPS at P.O. Box 41206, Tucson, AZ 85717. Posters will also be sold at ANPS Northern Arizona Chapter meetings, and on the ANPS website at www.aznps.org

I encourage you all to fully enjoy the benefits of ANPS membership by participating in volunteer opportunities, conservation projects, chapter meetings, field trips and other educational events. Our organization continues to gain strength as we encourage members to join in the fun!

Three cheers for Arizona's native plants!

Barb Skye
ANPS State President

SONORAN TREES FOR LANDSCAPE USE

Richard S. Felger, Matthew B. Johnson,
& Michael F. Wilson



Carl Sauer said, "Man is the enemy of the tree," however, we all like and need trees. The density and diversity of trees drops off sharply in increasingly arid regions of the world. Yet, the Sonoran Desert (along with the Namib Desert) has the highest diversity of tree species of any desert region in the world. A land of extremes, the state of Sonora, Mexico includes the northern limits of tropical deciduous forest and thorn scrub, as well as some of the most arid desert regions of North America. Sonoran climate ranges from nearly frost-free dry tropical to temperate climates, and from moist canyons and mountaintops to desert. Across this enormous environmental gradient are 285 species of trees that represent about 6% of the total flora of the state. Generally arid, Sonora supports diverse forests in the wetter areas and ever fewer trees in the drier regions. Vast treeless areas exist in the very driest places of the Gran Desierto near the head of the Gulf of California. Many of the tree species have both local and widespread horticultural value, and many of them already grace arid landscapes in the Sonoran region, as well as elsewhere in the world. Here are a few examples of Sonoran trees with horticultural potential:

Subtropical Sonoran Trees:

Aphananthe monoica (Ulmaceae, Elm Family). A splendid, very large shade tree with very attractive, shiny green elm-like leaves. A tropical species probably not frost tolerant in Tucson, but untested. Native to deep canyons in southeastern Sonora supporting tropical, evergreen vegetation.

Brahea aculeata (Arecaceae or Palmae, Palm Family). Sonoran hesper palm. Small to medium-sized palm with a slender trunk. Slow growing to 10-15 feet tall, and eventually reaching more than 30 feet tall. Bluish green leaves. Attractive fragrant white mass of flowers in spring or summer. Frost tolerant in Tucson. Native to tropical deciduous forest and oak woodland in southeastern Sonora. The advantage of these *Brahea* species is that they stay small for a long time and are suitable for moderate-sized spaces.

Brahea nitida

(Arecaceae or Palmae, Palm Family). Graceful palm with a relatively slender trunk. Slow growing. Leaves are relatively flat. Exceptionally beautiful shiny leaves with green on top and bluish color on the underside. Spineless petioles. Great accent plant. Excellent for partial shade or full sun. Slightly tender in Tucson, excellent for Phoenix.

Caesalpinia platyloba (Fabaceae, Legume Family).

Small tree with a spreading crown. Root system is not invasive. Nearly evergreen. Attractive form with heavy foliage. Frost tolerant to 25 degrees F. Thrives in the desert with irrigation. Grows rapidly and easily. A tree for small spaces. Tropical deciduous forest.

Cordia sonorae (Boraginaceae, Borage Family).

Small, nearly evergreen tree. Roots are not invasive. Glossy green foliage. Showy white flowers in early summer. Very fragrant. Thrives in desert regions. Frost tolerant to about 25 degrees F. Small fruits, and unlike *C. boissieri*, it is not messy. A tree for small spaces. Native to tropical deciduous forest and southern margin of the Sonoran Desert.

Crateva palmeri (Capparaceae, Caper Family).

Large shrub or small tree. Rounded crown; dense shade; nearly evergreen. Flowers are large, attractive, and strange. Unusual edible fruits. Probably frost sensitive in Tucson. Thornscrub in extreme southern Sonora.

Fouquieria macdougalii (Fouquieriaceae, Ocotillo Family).

Tree Ocotillo; ocotillo macho, jabolcillo. A striking landscape plant. Small, spiny tree with thick trunks and photosynthetic bark. Brilliant red flowers. Drought tolerant. Frost damage below 25 degrees F. Thrives in full desert sun. Suitable container plant and can be used for bonsai. Survives watering neglect. Can be fast growing. Propagated by seed or cuttings. Southern part of Sonoran Desert to tropical deciduous forest.

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Sonoran Trees (cont'd. from page 3)

Guajacum coulteri (Zygophyllaceae, Caltrop Family) *Guayacán*. Large shrub or small tree. Slow growing. Dark green foliage. Spectacular mass flowering of indigo blue in hottest, driest weather. Fruits are orange with bright red arils. Frost damage below 30 degrees F. Heat and drought tolerant. Closely related to *lignum vitae*, one of the world's hardest and densest woods. Suitable for Phoenix and protected areas in Tucson. Southern part of Sonoran Desert to tropical deciduous forest.

Hintonia latiflora (Rubiaceae; Coffee Family).

Copalquin, amargo. Small, slender tree with soft, light green foliage that turns plum color in cooler weather. Spectacular large, white, fragrant flowers in summer. Used medicinally in Mexico. Frost damage below 25 degrees F. Attains 15-20 feet in height. Highly recommended for protected niches such as entrance ways and patios in Tucson and moderately protected niches in Phoenix. Southern edge of Sonoran Desert to tropical deciduous forest.

Ipomoea arborescens

(Convolvulaceae, Morning Glory Family). Tree morning glory, *palo santo*. Unique, fast-growing tree. Trunk very thick, whitish and with very soft wood. Cold and drought deciduous. Bears showy white flowers in winter and spring. Heat loving and drought tolerant. Branches may twine if they touch a chain-link fence. Frost tender but survives in protected areas in Tucson. Does not do well in containers; can grow about 6 feet per year with sufficient water. Southern part of Sonoran Desert to tropical deciduous forest; several ecotypes, subspecies or perhaps more than one species in Sonora.

Tabebuia chrysantha (Bignoniaceae, Bignonia Family). Yellow amapa, *amapa amarilla*. Slender hardwood tree. Cold and drought deciduous. Brilliant mass of yellow flowers in late winter or spring. Frost sensitive but should be suitable for

Phoenix. Tropical deciduous forest. One of the most spectacular flowering tree anywhere.

Tabebuia impetiginosa. Pink amapa, *amapa*. Medium to large tree. Mass of bright rose-pink flowers in winter to spring. A few large specimens can be found in Phoenix. Frost sensitive. Tropical deciduous forest.

Mild Temperate Sonoran Trees:

Berberis longipes (Berberidaceae, Barberry

Family). Madrean tree mahonia, *palo amarillo*. Mountain tree 20-30 feet tall with dense, evergreen foliage. Large, pinnate leaves are relatively soft and not spiny. Appears to be slow growing and heat tolerant. Frost tolerant to 20 degrees F. Plant on north side of buildings. Oak woodland.

Buddleja cordata

(Buddlejaceae, Butterfly-bush family). Mexican tree buddleja, *tepozana*. Large, heavy trunked tree. Evergreen and fast growing. Large, bicolored leaves and small yellow flowers. Frost and heat tolerant, but not drought tolerant. Worthy of cultivation in suitable situations. Pine-oak forest.

Clethra mexicana

(Clethraceae). Shrub to large tree. Evergreen. Large, simple, thick, oak-like leaves. Small fragrant flowers. Tree with lovely architecture of open canopy. Appears to thrive in shade to full sun. Tolerates frost in Tucson. Oak woodland.

Magnolia pacifica subsp. *tarahumara*

(Magnoliaceae, Magnolia Family). Tarahumara magnolia. Very large evergreen tree with dense foliage. Leaves somewhat bluish. Large showy white flowers. Grows well in cultivation in southern California and should do well in southern Arizona. A riparian high-water use tree, suitable for places with ample water.

cont'd. on page 5



Caesalpinia platyloba: a graceful tree for small areas.

Sonoran Trees (cont'd. from page 4)

Populus brandegeei (*P. monticola*; Salicaceae, Willow family). Hardwood, white-barked poplar. Related to aspen. Large, riparian tree. Winter deciduous. Frost and heat tolerant, but requires generous water. Spectacular tree for well-watered situations. Riparian habitats in thornscrub, tropical deciduous forest, and lower oak zones.

Quercus spp. (Fagaceae, Oak Family). Oaks, robles. Twenty-one oak species occur in the mountains of Sonora. Few have been tested horticulturally. They require moderate to generous watering in desert areas, and most show frost tolerance.

Quercus albocincta. Small tree. Drought deciduous in late spring, but nearly evergreen in cultivation. Large, thin, glossy leaves; whitish to pink new growth; tolerates low 20°s F. Highly recommended for cultivation.

Quercus mcvaughii. Large, heavy trunked tree. Large, thick leaves. Red, felty new growth. Extends to high elevations with severe freezing.

Quercus tarahumara. Tarahumara oak. Small to sometimes large trees. Tough, evergreen dinner plate-sized leaves that when upturned, collect water. Unknown in cultivation. A spectacular tree worthy of experimentation; probably suitable to areas above the desert.

Quercus viminea. Madrean willow oak. Small to large tree that is graceful, slender, and evergreen. Glossy green, slender leaves. Frost and heat tolerant. Related to Emory Oak.

Sonoran Desert Trees:

Brahea brandegeei (*B. elegans*, Arecaceae or Palmae). Desert hesper palm. Robust, tough palm. Trunk develops slowly but eventually becomes tall. Leaves are variable: bluish to silvery or dull green. Mass flowering, mostly in late spring. Thrives in full sun. Frost tolerant throughout the Sonoran Desert. Root grows deep and very fast.

Haematoxylum brasiletto (Fabaceae). Brazilwood, brasil. Rigid, spiny, drought and cold deciduous tree or shrub. Irregular trunk resembles stalactites in

form. Yellow clusters of flowers. Reddish to orange fall color. Frost tolerant to 25 degrees F. Heat loving. Good patio tree for its interesting trunk.

Havardia mexicana (Fabaceae). Mexican ebony, chino. Graceful, bluish, cold and gradually drought deciduous tree with spreading canopy. Hardy to 14 degrees F. Prefers deep soils.

Maytenus phyllanthoides (Celastraceae, Staff-tree Family). Mangle dulce. Thick-leaved, semi-succulent shrub or small tree with crooked branches and trunk. Salt-, drought- and heat-tolerant. Frost tolerant to 20 degrees F. An excellent dense screen or hedge.



Quercus albocincta: oak often found on hot and dry rocky slopes.

Piscidia mollis (Fabaceae). Fish poison tree. Spineless. Dense foliage. Oak-like legume. Nearly evergreen with pinkish flowers and soft, silvery new foliage. Slow growing. Frost tolerant to less than 25 degrees F.

Sabal uresana (Arecaceae or Palmae). Sonoran palmetto. Spectacular large palm with huge bluish leaves and spineless petioles. Frost tolerant throughout the Sonoran desert. Suitable for large areas. Should be planted in the ground early because of deep roots.

Vauquelinia californica subsp. **sonorensis** (Rosaceae, Rose Family). Sonoran rosewood. Large shrub to tree. Evergreen. Dense foliage. Attractive bicolored slender leaves. Heat and frost tolerant. Deserves wide cultivation. Considerably faster-growing in the Sonoran Desert than other western rosewoods.

Suggested reading:

Felger, Richard S., Matthew B. Johnson, and Michael F. Wilson. 2001. *Trees of Sonora, Mexico*. Oxford University Press, New York.

Jones, Warren D., and Charles Sacamano. 2000. *Landscape Plants for Dry Regions*. Fisher Books. Tucson.

Turner, Raymond M., Tony L. Burgess, and Janice E. Bowers. 1995. *Sonoran Desert Plants, an ecological atlas*. U. of Arizona Press, Tucson.

Wolfberry (cont'd. from page 1)

small ovals or globose. The habit may be tight and stiff in form, with spine-like branches pointing up and out as in *L. exsertum*. On the other hand, cane-like branches may be randomly thrust in arches as in *L. berlandieri*.

The flowering, fruiting and growth respond to rains. Winter rains will produce flowers in February, and fruits in March and April. In reality, flowers and growth can come at any time of the year, and stems will remain bare of leaves and flowers waiting for the rain.

There is more to the wolfberry flower. *L. berlandieri* is "heterostylous," possessing "thrum" and "pin" flowers. Thrum flowers have long stamens and short styles, while pin flowers have short stamens and long styles. This device promotes cross-pollination, which increases diversity.

While my intention is to promote wider use of wolfberries as landscape plants, there is a long-standing association between wolfberries and local civilizations. *Lycium pallidum* is an exceptionally unambiguous wolfberry, with creamy inch-long flowers and largish red fruit. There is a well-known association between this species and prehistoric ruins in the Four Corners and Pueblo Province areas. The collection of fruit and the favorable conditions of disturbed soils in the ruins have led to their widespread appearance amongst the ruins.

There is a similar association in Tucson. Peter Gierlach collected hardwood cuttings from *L. fremontii* growing at the base of A-Mountain. These were propagated, potted on, and are now available for sale at Desert Survivors Nursery. The plants that I have purchased and planted in my yard are quite likely clones of wolfberry plants whose

ancestors were cultivated or at least used for food amongst the villages located at A-mountain.

Ethnobotanists describe the collection and use of berries by the local native populations until very recent times. Gary Nabhan describes trade in 10 lb. sacks of berries on the Tohono O'Odham Nation as recently as the 1980's. The fruits were used in soups, stews, syrups, sauces and beverages. They were preserved and eaten raw.



The Wolfberry

Mockingbirds and Curve-billed Thrashers in urban areas, and Phainopeplas in rural areas also enjoy the berries. Hummingbirds and bees visit the flowers.

The wolfberry is underutilized and unappreciated in our landscape. Several species can be purchased from time to time at local plant sales. While a drip irrigation regimen may be appreciated by the wolfberry, watering is

only needed to establish the plant. This is a plant that can fill corners, provide screening, or hide a wall. I like it up front, bare stems and all. Some prefer it tucked into a corner, out of sight during those dry periods. This is not a plant that can be disciplined into a formal hedge.

Gary Nabhan expressed hopes that one species could be cultivated for food. While I agree with his sentiment, let's hope that the ornamental horticulturists do not discover a large flowering, colorful sport, or a reliable form that then becomes as ubiquitous as the Oleander. The beauty of the wolfberry is the uniqueness and perhaps indeterminate qualities and forms of each plant, their adaptation to the challenging soils and climate of the desert, and the multiple functions that they have historically performed.

Wolfberry (cont'd. from page 6)

Many thanks to Bill Singleton who contributed the wolfberry illustration. Look for his plant illustration workshops at the Chiricahua Workshop over Labor Day weekend.

Bibliography

Benson, Lyman and Darrow, Robert. The Trees and Shrubs of the Southwestern Deserts. University of Arizona, Tucson and University of New Mexico, Albuquerque. 2nd edition. 1954.

Bowers, Janice. Checklist of Vascular Plants of Organ Pipe Cactus National Monument, Arizona. Southwest Park and Monuments Association, Tucson, Arizona 1985.

Bowers, Janice. Shrubs and Trees of the Southwest Deserts. Southwest Parks and Monuments Association, Tucson, Arizona. 1993

Dunmore, William and Tierney, Gail. Wild Plants and Native Peoples of the Four Corners. Museum of New Mexico Press, Santa Fe. 1997.

Epple, Anne Orth. Field Guide to Plants of Arizona. LewAnne Publishing, Mesa. 1995.

Hodgson, Wendy. Food Plants of the Sonoran Desert. University of Arizona, Tucson. 2001

Rea, Amando. At the Deserts Green Edge. University of Arizona, Tucson. 1997.

**NEW POSTER
of Northern Arizona Wildflowers**



Check the ANPS website www.aznps.org or write to ANPS for information on how to order the new Wildflowers of Northern Arizona poster that will be available soon!

**HAPPY 25th ANNIVERSARY
to the
Arizona Native Plant Society !**

OCOTILLO FENCING

PART 1: ETHICS & AESTHETICS

Karen Louise Enyedy



As I sit to write about the use of ocotillo fencing in the Southwest, visions of a bamboo fence in Japan flood my mind. I

saw this fence during a recent visit to Kyoto, where it bordered a long pathway leading to Tenryu-ji Temple. The bamboo material harmonized with bamboo plants growing nearby, accentuating the fence's natural allure and its simple, elegant design.

Picture a framework of corner posts and fence rails made from lengths of robust bamboo. Tied to this, with sisal twine,

was an upright "thatch" made from tightly spaced, five-foot lengths of thin, brushy-topped bamboo branches. In stunning contrast to tones of tan-ish green in the bamboo, the sisal ties were dyed jet black — forming a color palette I came to identify with Japan. Walking the length of this fence, and contemplating bamboo, my sense of connection to this eastern place deepened. It all brought me to consider how, in our region of the country, *ocotillo*

fences heighten aesthetic sensibilities for *western* places. And it rekindled an internal dialogue I'd been having about the ethics and aesthetics of ocotillo fencing.

There was a time when the sight of any ocotillo fence gladdened my heart. But these days I feel uneasy when I see one, wondering how the ocotillo was acquired and guessing it probably was harvested from the wild. I have trouble imagining that wild harvesting of ocotillo would be sustainable, for ocotillo is very slow growing. Good plant candidates for sustainable building materials are fast

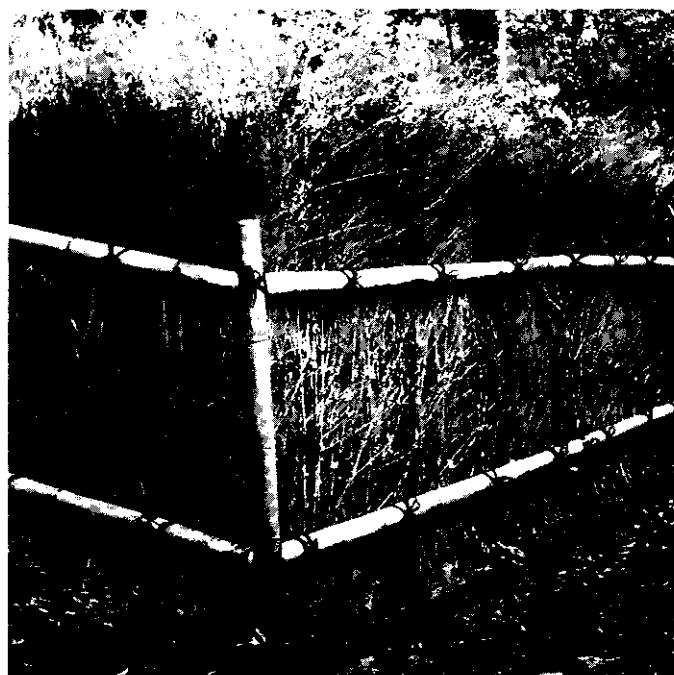
growing, like bamboo, and are usually raised commercially. These concerns aside I admit my own desire for an ocotillo fence, gracing the desert landscape of my dreams.

Traditionally in the Southwest, ocotillo was used in various ways by *O'odham* and other native peoples, and then later adopted as fencing material by Hispanic and Anglo settlers. The ocotillo fence grew to become something of an icon over the years, symbolizing desert appreciation. Having one became a way to boast: "This is the desert, not Des Moines; and I wouldn't trade it!" Admiration for

ocotillo, and other desert "woods" such as cholla, saguaro and cardon, reflects a growing national interest in regionalism or "sense of place." In recent years, desert woods have been fashionably incorporated — both as decorative accents and as primary material — in furnishings that range from picture frames to lamp stands to armoires. But considering the Southwest's population boom over the past half-century and the resultant loss of desert land for development, today's use of ocotillo and other desert woods

must be questioned, no matter how aesthetic or culturally desirable.

The use of indigenous materials for construction — whether derived from plants, soil or stone — demands thoughtful consideration. A sustainable way to acquire an ocotillo fence is to root cuttings of ocotillo, plant them in the ground along a projected fence line, and wait for them to grow. The wait will be long however, their growth barely noticeable for the first ten or so years. During their second decade in the ground, ocotillo cuttings generally take off and grow faster, eventually reaching a



Ocotillo Fencing (cont'd. from page 8)

height desirable for fencing. Although requiring much patience, this technique has the best chance of attaining the genuine "living fence" of desert fame — showing orange-red blooms above green leaved stems following rain.

But what about "ready-to-install" ocotillo fencing — cut stems wired together and sold in panels or rolls by those who trade in desert woods? Much of the ocotillo for such ready-made fencing is imported from Mexico, sometimes legally and other times illegally. Some amount also comes from private lands in the U.S., from which it is legal to cut and sell ocotillo. Also it is likely that some U.S. ocotillo

is poached, either from public lands or from tribal or private lands posted against trespass. As advocates for *conservation* as well as *use* of native plants, ANPS members must ask: Where does the ocotillo on the market come from? If from the wild, is it legally collected? And if so, is the harvest sustainable?

In part two of this article, which I hope to have ready for the next issue of *The Plant Press*, I will explore these questions in greater depth. If you have information to share about the trade in ocotillo or other desert woods, please contact me via e-mail at envedykb@realtime.net or by phone at 512.457.9737; or write to me at 1411 W. 29th Street, Austin, Texas 78703.

A WARM WELCOME to New Desert Botanical Garden Executive Director



In the company of cacti, cats and quail, Ken Schutz has been spending the last year becoming "desert-adapted" to the Phoenix area as the Desert Botanical Garden's tenth Executive Director. Living in the Desert House on the Garden's grounds, he is impressed by the ease and transparency of his home's energy- and water-saving features, and his 360-degree view of natural desert. He doesn't mind his typical rush hour of a bevy of quail crossing his path on his trek to the office.

An avid gardener from Blacksburg, Virginia, Ken feels fortunate to be able to combine his love of gardening with his new job. He says, "For more than twenty years I have worked for mission-driven cultural institutions — including ten years in marketing and fund-raising at the Baltimore Zoo, and eight years as the executive director of the Science Museum of Western Virginia. During that time, I always found solace and relaxation in one particular pastime — gardening. My passion for environmental education and conservation, and my sheer delight at sinking my hands into fertile soil and watching a garden grow, are now married in one fantastical endeavor called — ever so inadequately — my job."

You can contact Ken at kschutz@dbg.org

All of us at ANPS wish you good fortune ... and fun ... in your new role, Ken!



*Ken at work,
sinking his hands
a welcome
jackhammer into
the local soil*



YOUR IDEAS DECIDE NOXIOUS WEEDS

Ed Northam & Sherry Blatner

On 22 March 2002,
the Arizona

Administrative Register contained a "Notice of Rulemaking Document Opening" for Department of Agriculture noxious weed regulatory rules R3-4-244 and R3-4-245. The Department of Agriculture, by opening this document, proposes to (1) add species to the rules, (2) correct and update taxonomic designations, and (3) change definitions. They will also consider combining "Regulated" and "Restricted" lists into one list entitled "Regulated." Publication of this notice sets a timeline not to exceed one year for filing proposed changes with the office of Arizona Secretary of State.

After filing the proposed rulemaking changes, another public comment period of at least 30 days opens. Due to public interest concerning noxious weed regulations, Arizona Department of Agriculture will hold oral proceedings on this rulemaking within that 30-day period.

During the one-year timeframe in which proposed changes to rules 244 and 245 are being developed, the public is free to discuss the proposed changes with the Arizona Department of Agriculture. Individual citizens, organizations, businesses and local or federal government personnel are encouraged to express opinions, suggest additions or note criticisms concerning noxious weed lists, enforcement policies and definitions within these regulatory rules.

The latest date is 15 March 2003 for submitting comments during the informal discussion period. This will give the Department a few days to finalize the proposed rule. However, if Arizona citizens favorably receive rule revisions and additions during public discussion, proposed rules could be filed in less than one year. The Arizona Department of Agriculture is planning to have a draft of R3-4-244 and -245 available for public review and consideration at the statewide November 2002 annual Southwest Vegetation Management Association meeting in Chandler. Informal citizen

comments will be accepted for an additional 5 months commencing 1 June 2002.

A formal thirty-day public comment period for this round of noxious weed rulemaking will open after the proposed revisions of rules R3-4-244 and -245 are published by the office of Arizona's Secretary of State in the Arizona Administrative Register. Under current plans, a revised document for noxious weed rules will be filed sometime between 8 Nov. 2002 and 21 Mar. 2003.

Final decisions to process proposed rule changes for regulatory matters reside within the jurisdiction of the Arizona Department of Agriculture and are authorized by the director, Sheldon Jones. After the formal one-month comment period, the Department addresses any additional comments it receives, and the Director determines if a Supplemental Proposed Rulemaking is necessary or if he wishes to continue forward with the proposed rule. Upon his signature, the Final rule is submitted to the Governor's Regulatory Review Council for inclusion on its agenda. If approved by the Council, the rule is filed with the Arizona Secretary of State and becomes law.

Send comments to the following Department of Agriculture representatives:

Dr. Ed Northam - Noxious Weed Program
Coordinator
602/542-3309
ed.northam@agric.state.az.us

Sherry Blatner - Rules Specialist
602/542-0962
sherry.blatner@agric.state.az.us

David Madison - Plant Quarantine/Nursery
Programs Manager
602/542-0995
david.madison@agric.state.az.us

Noxious Weeds (cont'd. from page 10)

Additional species being evaluated for designation as noxious weeds include:

Ailanthus altissima (Mill.) Swingle - tree of heaven
Arundo donax L. - giant reed
Brassica tournefortii Gouan - African mustard
Carduus nutans L. - musk thistle
Centaurea melitensis L. - Malta starthistle
Cirsium vulgare (Savi) Tenore - bull thistle
Elaeagnus angustifolia L. - Russian olive
Lepidium latifolium L. - perennial pepperweed
Myriophyllum aquaticum (Vell.) Verdc. - parrotfeather
Myriophyllum spicatum L. - Eurasian watermilfoil
Pennisetum ciliare (L.) Link - buffelgrass
Pennisetum setaceum (Forsk.) Chiov - fountaingrass
Pentzia incana (Thurb.) O. Kuntze - Karoobush
Rubus discolor Weihe & Nees - Himalaya blackberry
Salvia aethiopsis L. - Mediterranean sage
Tamarix L. spp. - saltcedar and tamarisks

Names of Arizona's current noxious weed species can be viewed on the Department of Agriculture website at

<http://agriculture.state.az.us/psd/quarantine2.htm>
and
<http://agriculture.state.az.us/PSD/quarantine5.htm>

Please Note: If anyone has other non-native invasive plants that they feel should be listed, or believe a weed on the current lists should not be regulated, or disagree with proposed additions to our lists, please send your comments to one of the individuals listed above. The mailing address for Arizona Department of Agriculture is 1688 W. Adams, Phoenix, AZ 85007

EVENTS CALENDAR

July 11-14, 2002. Wild Ones 2002 National Conference.

Low-Maintenance Landscaping with Native Plants. Fawcett Center, 2400 Olentangy River Road, Columbus, Ohio. For home gardeners and landscapers of corporate and public places. Keynote address: Andy Wasowski, The Landscaping Revolution. \$40 - 50. Free parking. Detailed program information, registration form, and membership applications: www.for-wild.org, dilley.2@osu.edu, 614.939.9273

*Submitted by Clyde Dilley, Chair
Wild Ones 2002 National Conference Committee
dilley.2@osu.edu*

August 6-10, 2002. Association of Professional Landscape Designers Annual Conference.

Crowne Plaza, Seattle, Washington. "The philosophy behind the conference is to promote the idea that designed landscapes should express both the character of the land where they are built and of the communities who use them. The conference will incorporate many disciplines, from ecology to history to art. We will focus on how these elements have shaped the design and style of the gardens of the Pacific Northwest and how these same factors can be used anywhere we work as designers."

Contact APLD staff at 717.238.9780 or info@apld.org, or visit the website at www.apld.org

August 30-September 2 (Labor Day weekend). ANPS Chiricahua Workshop.

Southwest Research Station, Portal, AZ. Hospitality from Wade and Emily, beautiful weather (and maybe a storm), hikes, field trips, presentations, stories, good company, good food, and research facilities (Wade promises to make this available). A \$50 per person deposit by July 20 holds registration on a first-come first-serve basis; first preferences for current ANPS members. Contact Gary Bachman at 520.795.6787, vallevista@theriver.com or Debra Raeber at debraraeber@yahoo.com

Submitted by Gary Bachman

September 12-13, 2002. Southwest Horticultural Trade Show, sponsored by the Arizona Nursery Association.

Phoenix Civic Plaza, downtown Phoenix. Keynote speaker is Ken Schutz, Executive Director of Desert Botanical Garden. Positioned as regional rather than Arizona-focused, the show will feature nearly 200 exhibitors and talks by experts in plant problem diagnosis, pesticide use and integrated pest management, landscape

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Events Calendar (cont'd. from page 11)

design with maintenance in mind, water features, pots and containers in the landscape, urban tree challenges, reading landscape blueprints, proper shrub maintenance, irrigation and water management issues. Contact the Arizona Nursery Association at 480.966.1610, azna@primenet.org or visit the website at www.azna.org

October 20-November 2, 2002. International Plant Propagation Society's 43rd Western Region Conference.

Sheraton Mesa Hotel & Convention Center, Mesa, AZ. The theme, "Seek and Share — a Southwestern Approach" highlights talks on propagation, new propagation technology, aeroponic systems, and tissue culture — hybrid systems. Dr. Joseph McAuliffe, Research Ecologist at Desert Botanical Garden is the keynote speaker. Contact Dr. Sheila Bhattacharya at sheila@vp-nurseries.com or 480.917.9847. Or visit the IPPS website at www.ipps.org

CERTIFICATE IN DESERT LANDSCAPING

The Desert Landscaper School at the Desert Botanical Garden in Phoenix is opening enrollment to prospective students for the sixth annual program that will begin in September. In three 10-week sessions, participants gain knowledge about desert-adapted plants from practicing professionals, and hands-on guidance and experience in:

- Tree planting and pruning principles,
- Soils and fertilizers,
- Integrated pest management,
- Irrigation installation,
- Plant botany and propagation,
- Landscape design, and ultimately,
- Landscape installation at a Habitat for Humanity site.

Students who successfully complete the 30-week training receive a Desert Landscaper Certificate. The program will be of interest to people who are considering a career change or who are interested in applying professional practices to landscape installation and maintenance. The program has recently been accredited by one of ten Maricopa Community Colleges, so students will earn 7 college credits after successfully completing 30 weeks of training. For more information about the program, contact Diane Barker at the Desert Botanical Garden, 480.481.8161.

ANPS AWARDS TWO PUBLICATION GRANTS

The ANPS Board members selected two projects to receive support from the ANPS Publication Grants program:

Common Forest Plants of Northern Arizona Mountains, by Judith Springer, et. al., editor

Two illustrations: *Passiflora arida* and *Passiflora foetida* var. *arizonica*, by Douglas Goldman, article author, Cornell University, Plant Biology Department.

Congratulations, and good luck to all!

NEWS FROM CONFERENCES PAST

“Enhancing Your Landscape” Conference

Presented by the Desert Landscaper School and Desert Botanical Gardens, March 22, 2002

The Desert Botanical Garden (DBG) and the Garden’s Desert Landscaper School program held “Enhancing Your Landscape” Conference in Phoenix on March 22 at DBG’s new meeting facility, Dorrance Hall. More than 130 attendees heard from five speakers:

- What’s New in Desert Plants,
Robb Palfreyman, V&P Nursery
- Desert Illumination,
Dan Latin, Vista Outdoor Lighting
- Drip Irrigation Design,
Robb Kowalewski, Rain Bird Corp.
- The Hard and the Soft of It,
Christy Ten Eyck, Ten Eyck Landscape Architects, Inc.
- The S & T of Saguaro Culture,
César Mazier, Desert Botanical Garden

For information on next year’s conference, tentatively scheduled for March 2003, contact Diane Barker at 480.481.8161

The 11th annual Desert Horticulture

Conference drew over 400 people to the Tucson Convention Center on May 17, 2002. Attendees were able to choose among 18 different talks by experts that were organized by three tracks: maintenance, production, and design. On view at display booths were products and services. For attending the event, participants could earn Continuing Education Units (CEUs) for a license from the Structural Pest Control Commission, or for Certified Arborists and Certified Tree Workers from the International Society of Arboriculture. To learn about next year’s conference, tentatively scheduled for May 16th, please visit the website http://ag.Arizona.edu/desert_hort/ or contact Libby Davison at 520.621.1582

Maintenance Sessions:

1. Managing Vertebrate Pests in Desert Landscapes, Larry Sullivan, UA Cooperative Extension
2. Methods of Measuring Water Use, Ed Martin,

UA Maricopa Cooperative Extension

3. How Trees Grow, Dennis Swartzell, Director, UNLV Grounds and Arboretum
4. Tree Care Basics Every Arborist Should Know, Mike Neal, Arborist for Arizona Public Service, Phoenix
5. Diseases of Xeric Landscape Plants, Dr. Mary Olsen, UA Pima Cooperative Extension
6. Weed Control in Turfscapes, Dr. David Kopec, Karsten Turf Center, Plant Sciences, UA Cooperative Extension

Production Sessions:

1. Breeding of Trichocereus Hybrids, Dr. Mark Dimmitt, Arizona Sonora Desert Museum
2. Salinity Tolerance of SW Ornamental Plants in Production, Dr. Ursula Schuch, UA Cooperative Extension, Plant Sciences Dept.
3. Large Cactus Salvage & Production, Peter Kool, American Desert Plants, Tucson
4. Greenhouse Environmental Control & Troubleshooting, Dr. Gene Giacomelli, Ag & Biosystems Engineering, UA
5. Best Management Practices (BMPs) for Nurseries in the 21st Century, Dr. Darren Haver, University of CA, Riverside
6. Trees of Sonora with Potential for Landscape Use, Dr. Richard Felger, Drylands Institute [Environmental Research Labs, P.O. Box 210458, Tucson]

Design Sessions:

1. Designing for Maintenance of Large Public Spaces – Panel Discussion, Tom Ellis, UA Facilities Management & Barb Skye, Pima Community College
2. Nature by Design: Concepts from a Flora, Betsy Lewis, Office of Arid Land Studies, UA
3. Creating an Allergy-free Landscape, Tom Ogren, author of Allergy-free Gardening, San Luis Obispo, CA
4. Specifications on Saguaro Transplanting, César Mazier, Desert Botanical Gardens
5. Use More Mulches! Materials, Uses, Advantages, John Begeman, Pima County Cooperative Extension
6. Creating the New Wildflower Garden at Desert Botanical Gardens, Elaine McGan, Exhibits Director and Wendy Hodgson, Curator, Desert Botanical Gardens

REGIONAL NEWS

Ana Novak, Northern AZ Chapter President

The Flagstaff Chapter (now the Northern Arizona Chapter) has undergone revitalization over the past year largely due to the activities of our board members. When I became the President three years ago, it seemed that the entire load of running the chapter rested solely on the shoulders of the President. I tried handling chapter duties alone that first year with varying degrees of success and a great deal of frustration.

Member Highlights: The following year, I solicited assistance from the membership and boy, did I get it! Who are these wonderful volunteers who have made my life so much easier by contributing greatly to the success of our chapter?

LEE DITTMANN, Newsletter Editor - revamped our one-page bulletin into a multi-paged newsletter, and tirelessly pursued interesting articles, puzzles, etc.

MARISA HOWE, Program Coordinator - not only recruits interesting speakers for our lecture series but coordinates the plant walks as well! Flagstaff has a wealth of knowledgeable botanists, both professional and amateurs. We are tapping into this pool of expertise! This year, Marisa has opened new venues of plant exploration by recruiting chapter member RANDY SCOTT to lead a plant bike ride! Although this has yet to pass, interest had been high among the membership! Good luck out there in the forests Randy!

ELAINE FERRIS, Publicity Coordinator - Found at conferences, seminars, fairs, plant sales, and just about anywhere plant enthusiasts may be, Elaine tirelessly promotes our mission and merchandise, often single-handedly! Good job Elaine!

KIRSTEN SWINSKI, Membership Secretary - keeps track of our membership, welcomes new members, reminds us of past dues accounts(?) and assists in many other capacities!

H. DAVID HAMMOND, Treasurer - keeps track of our bank records! Wordlessly handing over money when needed. Relentlessly hounding me to acquire more as our balance decreases!

Each brings their own brand of enthusiasm and

coordinates a different aspect of our chapter. To all of you . . . *a great big thanks!*

But, there are still two seats I'd like to fill before I step down: I'd like to see someone take an interest in reporting issues concerning rare and endangered plants in Northern Arizona AND someone to keep us informed about invasive species issues. Please contact me at novakana44@yahoo.com or by phone at 928.525.3659.

Activities: After three years of hard work, our new poster "Wildflowers of Northern Arizona" is close to completion. The paintings by artist ZACK ZDINAK are exquisite in their detail, the composition divine. We look forward to its official unveiling in the near future. Keep an eye out for our next joint venture. We're talking to Zack about marketing note cards and/or brochures using his paintings!

Our chapter is also actively involved in the community. MAR-ELISE HILL has been coordinating with the Parks and Recreation Department on the adoption of a pond garden in the newly established Willow Bend Environmental Education Center. Chapter members will be involved in selecting plants, planting them, and maintaining a 'weed-free' garden for the next two years.

Our members have also assisted Forest Service personnel with data collection on projects such as population surveys for *Hedeoma diffusion* and *Clematis hirsutissima*, and eradication projects of noxious weeds such as Mediterranean sage. Most recently, KIRSTEN SWINSKI is coordinating with Daniel Murray of the Parks and Recreation Department regarding an inventory of plants along Pumphouse Wash, just south of Flagstaff in the residential community of Kachina Village. The survey is being conducted as part of a larger revegetation project. Goals include enhancement of wildlife habitat and preservation of the greater watershed.

I am also very excited about the redistricting of the state chapters into three main regions. Welcome aboard Prescott!! Please submit your suggestions for plant walks, speakers, or activities to any Chapter board member (check out the next issue of *Townsendia* for listings!). I'd really like to see more interaction between our communities.

BOOK REVIEWS

The Cactus Family by Edward F. Anderson. Timber Press. 2001. Hardcover. \$99.95.

This is the mother of all cactus books, recently released by Timber Press. The author was the senior research botanist at the Desert Botanical Garden, and author of Peyote: The Divine Cactus and Plants and People of the Golden Triangle.

Nearly 2000 species from 125 genera are detailed in a scientifically accurate, but readable volume that is attractive, comprehensive, and impressively constructed. Dedicated to Lyman Benson, another master of desert botany, this book is the result of Edward F. Anderson's years of love and fascination with plants of the world's deserts.

The first 100 pages are clearly an overview, but they might otherwise comprise an entire book: descriptions of what makes cacti unique; why they are grouped botanically; ethnobotany and human uses; conservation and ecological issues; instructions on cultivation and propagation. In addition, a detailed section on classification problems and taxonomic issues explains some of the difficulties in identification. A list of botanical gardens and herbaria that specialize in cacti is included.

The balance of the 800-page book is the species descriptions — over 1800 of them! Many species have been reclassified. Clear photos assist in understanding, and detailed maps help with locating native ranges. It is overwhelming to consider all the photos that may have been taken, all the research investigated, all the experts consulted, all the air miles and land miles. This is the ultimate book for the serious botanist or cactus connoisseur. It will be the standard for years to come.

Submitted by Elizabeth Davison, Department of Plant Sciences, University of Arizona. Previously published in Southwest Horticulture, an Arizona Nursery Association magazine.

Saguaro the Desert Giant by Anna Humphreys and Susan Lowell. Rio Nuevo Publishers. Tucson. 2002. 60 pages. \$10.95.

This beautifully illustrated book combines botanical, ethnobotanical, and historical

information in a way that will appeal to the general reader as well as please the more technically inclined. The

book begins with information about the large columnar cacti and goes on to talk about the life cycle of the saguaro, with emphasis on the interrelationships with birds and other desert critters. One section discusses the various stages in the year of a saguaro. The relationship of saguaros with ancient and modern cultures is well described and accompanied by fine historic and modern photos and drawings. Unusual in a book of this type, the authors provide information about the legal rights of the saguaro early in the book. This easily affordable book would make a wonderful gift for friends and family and can be appreciated both by adults and inquiring older children.

Submitted by Barbara Tellman

Allergy-free Gardening: The Revolutionary Guide to Healthy Landscaping by Thomas Leo Ogren. Ten Speed Press. 2000. Soft cover. 268 pages. \$19.95

If sneezing, a runny nose, red or watery eyes, stuffy ears, or a scratchy throat sound all too familiar, this book was written for you.

Tom Ogren, a husband who empathized with his wife's seasonal sufferings, noted and acted upon the lack of interdisciplinary sharing of data between plant and medical specialists. This book documents the results of his systematic research to identify plants that cause allergies.

According to the National Institute of Allergy and Infectious Diseases, more than 35 million people suffer from chronic sinus problems. And over 50 million suffer from hay fever. An 8-year study conducted in The Netherlands revealed a link between pollen and death. On high-pollen days, deaths from heart attacks increased 5%, deaths due to chronic lung disease increased 15%, and deaths attributed to pneumonia increased 17%. Ogren's book offers a

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Book Reviews (cont'd. from page 15)

plausible explanation of these health statistics, and some possible remedies. Allergy-free Gardening provides a useful tool to gardeners who can now make informed choices about plants and where they place them in beautifying their landscapes.

Ogren gathered his data from subjects who were tested for allergic reaction from holding plants and receiving scratch tests. The result is a list of thousands of popular domestic and international plants, rated according to Ogren's OPALS (Ogren Plant-Allergy Scale) classification scheme based on 100 different factors. Plants that frequently cause allergic reaction and are compared according to others sharing the same form (trees, shrubs, etc.) earn a rating of 10, whereas plants that cause itching or rash but not reactions to pollen earn a rating of 4 to 5. Because of Ogren's OPALS system, the U.S. Department of Agriculture is now able to include an allergy component in its Urban Forestry Effects Model, a system that rates entire landscapes.

Ogren theorizes that males of dioecious (separate sexed) plants cause more allergies than monoecious

ones, because male plants must vigorously broadcast pollen to females. In a drive around Tucson before his speaking engagement at the Desert Horticultural Conference in May, Ogren found that the local landscape bore an inordinate representation of male dioecious trees. It mirrored the situations he observed in cities along his lecture circuit with high numbers of allergy sufferers. He suspects the imbalance is due to industry promoting low maintenance gardens, as female plants produce and drop fruit that is messy.

While it is prudent to approach health topics researched by non-medically trained personnel with a certain degree of caution, it may be worth the time to experiment with Ogren's findings. He has attempted objectivity in his approach to his subject, collected voluminous data over a respectable period of time, and devised an impartial classification scheme that may prove physically comforting to allergy-suffering plant lovers. To learn more, visit www.allergyfreegardening.com or www.allergyfreegarden.com, or contact the author at tloallergyfree@earthlink.net

NEW ANPS BOARD MEMBERS

At the State Meeting in Flagstaff, ANPS members elected four new Board Members:

Muffin Burgess brings a wealth of professional and personal experience. She is the Greenhouse Manager at Tohono Chul Park and previously worked at the Arizona-Sonora Desert Museum as a coordinator for educational programs. Because of her skills as a teacher, gardener, and desert naturalist, she is a local legend in the Tucson area.

Dr. Nancy Morin is the Executive Director of The Arboretum at Flagstaff and was the former Executive Director of The American Association of Botanic Gardens and Arboreta (AABGA). Dr. Morin has served on several boards, including the Board for The Center for Plant Conservation (CPC). She was instrumental in initiating the *Flora of North America*, and continues to serve as editor for this extensive book project. Nancy is a true leader in education, plant conservation, and botanic garden management.

Dr. Brad Fiero is Chair of the Department of Biology at Pima Community College, West Campus. He holds a Doctor of Arts in Biology from Idaho

State University, a Master of Science in Wildlife Sciences from Oregon State University at Corvallis, and a Bachelor of Science in Wildlife Biology from Colorado State University at Fort Collins. Brad has over 14 years of teaching experience and is well appreciated by his students. He has a strong interest in Arizona's native flora and fauna, in grant writing, and in Web development. Throughout his teaching career, Brad has served on numerous education committees.

Priscilla Titus is an ecologist with more than 15 years of professional experience. She is currently employed by SWCA Environmental Consultants in Tucson. Priscilla has traveled and enjoyed plants and natural habitats throughout the southwestern, Pacific Northwest, and southeastern United States. She formerly served as an Earthshare board member and representative for the Washington Native Plant Society. After moving to Tucson in 2000 with her husband Jon, an ecology professor at Biosphere 2, Priscilla quickly grew to know and love the Sonoran Desert. Currently, she conducts volunteer monitoring and research for a variety of agency and non-profit groups, and has a special interest in cienega and riparian habitat restoration.

COMMUNITY GARDENS

The Gardens at Carefree Town Center (The Gardens CTC) is a three-plus acre botanic garden located in an urban setting in the heart of Carefree, AZ and its surrounding streetscapes. Framed by the majestic backdrop of Black Mountain and the Desert Foothills of Tonto National Forest, The Gardens CTC include purposeful landscape, an amphitheater, public use areas, the historic Carefree Sundial and a collection of plants adapted and specific to the Arizona Uplands of the Sonoran Desert.

The mission of The Gardens CTC is:

1. To showcase, study, manage, and collect plant materials that are native and adapted to this elevation and botanic environment through specimen gardens and other appropriate displays and exhibits;
2. To provide education about the collection and related species for Desert Foothills residents of all ages, including relevant issues such as water conservation and stewardship toward the ecology of the Arizona Uplands of the Sonoran Desert; and
3. To promote The Gardens CTC as a cultural hub for historical and artistic events, capitalizing on original cultures of the Desert Foothills, the Carefree Sundial, local art and musical organizations, and events appropriate to the changing seasons.

Conceived during Carefree's downtown beautification project, The Gardens CTC became a reality when the town council unanimously approved its name in January. Pamela Slate, horticultural coordinator, and Kent Newland, water resource specialist with the City of Phoenix, are spearheading the effort that will provide the area with a one-of-a-kind demonstration area on local ecology. The initial planting of The Gardens CTC will consist of more than 30 varieties of desert-adapted plants, arranged in theme gardens: Arizona Native Plants, Cacti and Succulent Specimens, Desert Foothills Specific Plants, Herbs, and Wildflowers.

Maricopa County experts will bring horticultural information to interested Desert Foothills residents. Topics covered in these free Saturday morning seminars will include cacti and succulents, trees of the Arizona Uplands and their proper care, vegetable gardening, citrus, irrigation issues, agaves and related plants, seasonal color in the landscape, and wildflowers. Future plans at The Gardens CTC include a community outreach program, publications, an interpretive trail, and a docent program.

Participation by community members will be important in advancing the project. In addition to planting and maintaining the area, volunteers are needed for grant writing, public donations, special events, and record keeping. Contact Pamela Slate at 480.488.8453 to learn more about the opportunities.

ARIZONA THIRD IN U.S. FOR BIG TREES

After Florida and California, Arizona boasts the most (70) of America's largest trees, according to the 2002-2003 National Registry of Big Trees. The list of 826 trees was released in April by American Forests, a non-profit organization that has updated and published native and naturalized tree species every two years since 1940. To be considered for the list, a tree must be at least 13 feet tall with a circumference of at least nine inches.

Of the 70 trees listed, the state's biggest is the *Populus fremontii* var. *fremontii* that reaches 92 feet in height and 504 feet in diameter with a 108-foot crown. It is located in Patagonia, San Jose de Sonoita. The next largest tree, *Eucalyptus camaldulensis*, is located on private property in Santa Cruz Flats. Arizona's third largest tree, nominated for the list by Ken Morrow (ANPS State Vice President), is a *Platanus wrightii*, located in the Aravaipa Canyon Wilderness that is managed by the Bureau of Land Management.

ANPS MERCHANDISE

ANPS booklets, posters and T-shirts are available from local chapters or by mail order.

In addition, posters are available at Saguaro Park - East and West, Tohono Chul Park, the Audubon Society, Arizona Sonora Desert Museum, Organ Pipe National Monument, Boyce Thompson Arboretum, and Desert Botanical Garden (obtain through Kathy Rice, Phoenix Chapter President, who works there.)

ANPS Booklets

Prices per booklet ordered:

Quantity

1-9	\$2.00 each
10-49	\$1.50 each
50+	\$1.00 each

(Please note: bare-bones prices are the same for members and non-members).
Shipping and handling for an additional charge dependent on the size of the order.

ANPS T-shirts

Sizes: Small, Medium, Large, X-Large

Colors: White, Mint, Cobble

Cost: \$16.00 each (non-members)
\$14.00 each (members)

Shipping
and Handling: \$2.75 each

Irregular shirts (some cobble shirts have discoloration on the back)
\$10.00 (bare-bones prices are the same for members and non-members)

ANPS Posters

Retail:

\$14.00 each (non-members)

\$12.00 each (members)

Shipping and Handling:

\$2.50 each

Wholesale:

1-9 \$10.00 each

10-49 \$8.00 each

50+ \$7.20 each

Shipping and handling are an additional charge depending on the size of the order.

Contact ANPS for specifics on shipping costs. Send orders to:
ANPS, P.O. Box 41206, Tucson AZ 85717.

Ordering information can also be found on the ANPS website at www.aznps.org

BOARD & VOLUNTEER PROFILES

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Deena Fishbein, MBA, CPA	Accountant
Bill Feldman	Former Past President
Dennis Swartzell	Board Advisor
Antoinette Segade	Photographer

The Plant Press is published three times a year and is a benefit of membership in the Arizona Native Plant Society.

Good luck, Barbara! *Many thanks to Barbara Tellman, for her years of ideas, talent, and dedication to the Plant Press. We all wish you the very best in your retirement!*

Thank you Contributors! *Many thanks to the authors, illustrators, and photographers who contributed to this issue. The knowledge you have shared with ANPS members is valuable and very much appreciated!*

NEW MEMBERS WELCOME

People interested in native plants are encouraged to become members. People may join chapters in Central, Northern, or Southern Arizona, or may be members only of the statewide organization. For more information, write to ANPS at the address below, visit the ANPS website at www.aznps.org, or contact one of the people below.

State President	Barb Skye	520.740.1981
State Vice President	Ken Morrow	602.828.8265
Northern AZ Chapter President	Ana Novak	928.525.3659
Central AZ Chapter President	Kathy Rice	602.808.9304
Southern AZ Chapter President	Jeff Kreamer	520.318.0914

Membership Form

Name
Address

City

Phone Number

State

Zip

Chapter preferred: State Central Northern Southern

Enclosed: \$ 15 Student/Senior \$ 20 Individual or Family
 \$ 25 Organization \$ 50 Commercial/Sponsor
 \$100 Patron

Mail to: Arizona Native Plant Society
P.O. Box 41206
Tucson AZ 85717
www.aznps.org

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Please check your address label to make sure you are current with your membership.

If the year in the upper right-hand corner is prior to 2002, please be sure to renew so you stay current with ANPS news!