



Sego Lily



Newsletter of the Utah Native Plant Society

VOLUME 25, ISSUE 1

JAN/FEB 2002



Plant Profile: Rock Sandwort

By Susan Meyer

For a plant that is shapely and well-behaved in the garden, that thrives on neglect, and that looks good in any season, a great choice is rock sandwort, *Arenaria macradenia*. Also known as cliff sandwort, desert sandwort, and shrubby sandwort, this elegant plant is rarely seen in cultivation, but deserves to be much more widely used. A quick web search yielded no suppliers of seeds or plants of this species, so the opportunity is clearly there for someone to introduce this sturdy and carefree but beautiful wildflower to the xeriscape trade.



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Plant Profile: Rock Sandwort

Attention all Complimentary Newsletter Subscribers.

UNPS Article in Utah Society for Environmental Education

Groping Towards a Native Plant Aesthetic

UNPS Membership Fees Increase

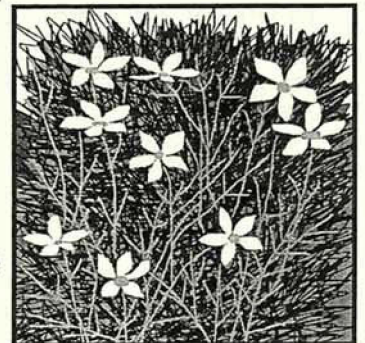
Native Plants Coming to Salt Lake County

Utah Native Plant Society Posters

Events and Activities

Breeding Better Plants for Military Bases

In early to midsummer, the abundance of white star-shaped flowers of this rounded subshrub seem to be dancing in a cloud over the diminutive needle-like foliage. The effect is somewhat like baby's breath, a distant cousin, but more graceful and delicate. The half inch flowers are followed by small, straw-colored seed heads that open at the tip like a crown. These add fall and winter interest, along with the bluish evergreen leaves that are mostly clustered above the woody base. This plant has shown little tendency to seed itself in gardens, so it is okay to leave the seedheads on the plant.



As its name would suggest, rock sandwort is almost always found growing among the rocks. It is a relatively common plant throughout the Mojave Desert and the southern Great Basin, reaching its north-

Rock Sandwort (cont.)

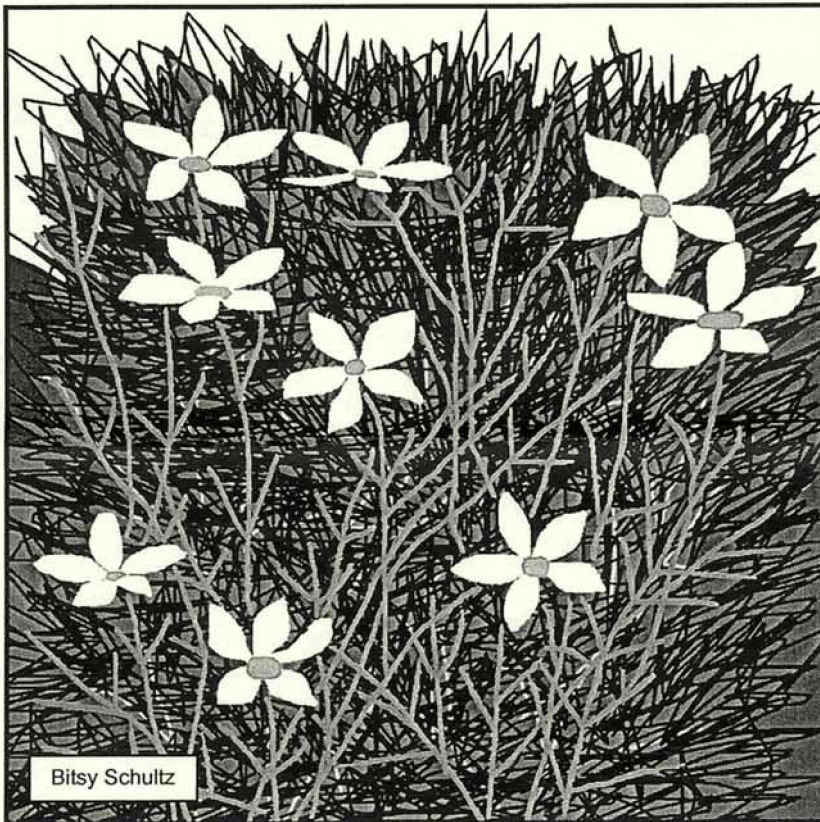
eastern geographic limits in our own Wasatch Mountains. It is most common in the pinyon-juniper woodlands of the foothills, but can be found over a wide range of habitats from creosote bush shrubland in the south to the high mountains of the north, even up into the alpine zone. The common thread is the requirement for open, rocky ground.

In the garden, this plant does just fine in ordinary soil, but it does need full sun and reasonably good drainage as well as some elbow room to look its best. It grows to about a foot tall including the flowering stalks and may be as wide as two feet in a good year, too big to fit in as a dwarf in a rock garden setting. We have planted it to stunning effect with the clump-forming yellow James buckwheat (*Eriogonum jamesii*), which is about the same size and has a similar flowering season. Rock sandwort has many close relatives in the genus *Arenaria* that are smaller and better suited to the traditional rock garden setting, but few if any have the large flowers and showy habit of their larger cousin.

Given its wide altitudinal and geographic range, we expect rock sandwort to be fully cold hardy in northern Utah. On the Wasatch Front, it requires little or no supplemental water after establishment, but it can tolerate a modicum of watering as long as the site is well-drained. It begins flowering the year after outplanting and appears to be long-lived in cultivation, as would be expected from its woody character. Plants at the Wasatch Heritage Garden in Provo are still looking great and going strong after four years of benign neglect. We have watered them exactly once during

each of the last two exceptionally dry summers, and we have not lost any plants yet.

Rock sandwort is easily propagated from seed. The seeds ripen in high summer, and are held on the plant in the erect fruits (capsules). Seeds can be shaken from the capsules if the tips are open, or the capsules can be clipped or stripped from the stalks and allowed to open after further opportunity to dry in the bag, as long as they are already straw-colored when stripped. The seeds are black and flattened, resembling little



ears perhaps an eighth of an inch long. They may be nondormant and readily germinable, or they may require a short period (4-6 wks) of moist chilling (between damp paper towels in a plastic bag in the hydrator of your refrigerator) to become germinable. They will germinate in chilling, so be sure to check them often to avoid long, stringy radicles (seedling roots) that are hard to plant without damage. The seedlings are grasslike and bright green.

They grow quickly and develop the characteristic waxy bluish foliage within a few weeks. They will be ready to harden and plant out within about three months of sowing, but are quite tolerant of being held indefinitely in small containers, perhaps because of the similarity to being crowded into a rock crevice.

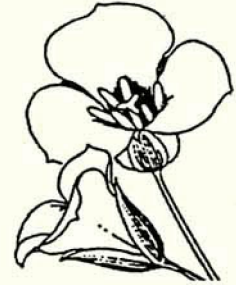
The most frustrating thing about this plant may simply be its lack of availability, but we are hoping that local growers will respond to the call and make sure that this fine plant is ready to join the ranks of great perennials with a distinctly Inter-mountain flavor, in time to meet the demand that will surely be there, once the secret is out.

Attention All Complimentary Newsletter Subscribers!

The Utah Native Plant Society is updating its complimentary subscription list. Anyone, such as a library or native plant society, that currently receives the UNPS newsletter, the *Sego Lily*, free of charge must contact the Society in order to continue receiving the newsletter. No response equals no subscription.

Please contact Abby Moore at: A.moore@m.cc.utah.edu
Or write to:

Utah Native Plant Society
Complimentary Subscriptions
P.O. Box 520041
Salt Lake City, UT 84152-0041



UNPS Article in Utah Society for Environmental Education

Utah Society for Environmental Education (USEE) chose our organization to focus on this month for their newsletter. This is the article that Mindy Wheeler wrote for them.

The Utah Native Plant Society (UNPS) strives toward our mission through the coordination of several committees:

Horticulture- Through Native Plant Propagation Workshops and 'Heritage Gardens,' this committee has been extremely industrious in educating the public about the beauty and practicality of using native plants for landscaping purposes. So far, there have been 10 gardens installed throughout the state that boast the beauty of the plants found in the 'backyards' of Utah. Our website (www.unps.org) has plant lists of these gardens, photos of

some of the species, and names of nurseries that will supply these treasures!

Education- This group is committed to dispersing information about the wonders of the native plant world of Utah to the public by supporting seminars, workshops and serving as liaisons to educators who wish to share their enthusiasm about native plants to the next generation.

Conservation This committee is devoted to raising awareness about the delicate state of our precious native plant populations of Utah through plant salvage efforts and protecting rare species.

Invasive species- 'The Weed Warriors.' This group strives to raise awareness regarding the silent invasion of non-native

species that effectively suffocate the indigenous vegetation of the area. The main foci of this group have been community 'weed pulls' and educating the public about these unwelcome invaders and the chaos they cause in the ecosystem.

Communication- This committee is dedicated to assuring that all our members are abreast of upcoming events and other issues through our bi-monthly newsletter-The Sego Lily. These folks are also responsible for the upkeep of our informative website.

If you wish to get involved or get more information on the Utah Native Plant Society, please call 801-699-5459 and ask for Mindy or visit our website and contact us from there!

Groping Towards a Native Plant Aesthetic

By Bitsy Schultz and Susan Meyer

When we gave Roger Kjelgren of the USU Center for Water Efficient Landscaping this title for our presentation at his August 2001 symposium on landscaping with native plants, he might have been a little worried about just exactly what we were proposing to do. We were tired of hearing from landscape professionals that native plants should not be used in yards because they "don't look good." So the idea behind this session was to explore how people develop their ideas of what "looks good," and how that connects to their experience of native plants.

As it turned out, the freewheeling interactive discussion was a good way to get everybody focused on the problem, namely how to translate the stunningly beautiful natural landscapes of wild Utah into something that will fit into the more modest landscape scale of peopled spaces. The majority of the hundred plus participants were Utahns raised in rural areas or small towns, with only a sprinkling of folks from other places or from cities. Only about a quarter of the attendees were landscape or horticulture professionals. In other words, the views expressed were largely those of just regular folks, not experts or out-of-state subversives.

We started out by contrasting the native plant look with the more lush, flamboyant aspect of typical water-intensive European ornamentals. Few people know the names of many native plants or are able to distinguish them from weeds, whereas they learn to recognize and name familiar cultivated plants from childhood. Natives often have smaller leaves and flowers and shorter flowering times, and they lack the 'bred' look and the long history in cultivation.

We opened the group discussion by asking people to talk about their earliest memories of specific plants. Many of the plants mentioned were familiar ornamentals--peonies, snapdragons, honeysuckle, lilac--and many had features such as distinctive fragrance or an element of play. A few were weeds-- dandelions with seed

head puffs, for example. Some were wild plants--sunflowers with their resinous scent and association with the edges of civilization, sagebrush and the way it smells after rain, delicate wild azalea, cattails in winter, massive bur oak, coastal redwoods and the way they create a timeless world beyond humans. A common theme was that the plants were distinctive and clearly recognizable, and that they often engaged different senses, especially the sense of smell.

We then asked people to tell us about their favorite native plants or native plant landscapes. The responses were remarkably diverse, from the wall to wall polychrome wildflower displays at Albion Basin, Ben Lomond Peak, and Brian Head to the stark but serene salt desert landscapes north of the Great Salt Lake or along the Price-Green River highway. The silvery sheen of fruiting mountain mahogany stands in Millcreek Canyon, the multicolored flowers of prickly pears in the San Rafael Swell, the winter river bottoms of Cache Valley, the gnarly timberline conifers of the high Uintas, each had its proponents. Two favorite landscape themes that were echoed several times were aspen forests with their wonderful light in every season, and pinyon-juniper woodland, with twisted trunks, rocks, desert grasses, and brightly colored flowers like penstemon, paintbrush, and sandverbena. Interestingly, more people thought of favorite landscapes than specific native plants.

We discovered through this exercise that much of the effect of plants and landscapes on people operates through feeling. The question of how to create this feeling of a wild place in a landscape was the subject of our subsequent discussion. The issue of design was central. We were influenced in our direction by the example set by Darrel Morrison, the landscape architect who designed the Ladybird Johnson Wildflower Center in Austin, Texas. His design captures the essence of the east Texas hill country in a setting that is at the same time supremely civilized. Darrel, who is creating the design for the new Utah Botanical Center in Kaysville, had presented his ideas on designing with nature earlier in the program.

One of the first ideas to emerge in our discussion was that the use of native plant species is more or less independent of the design, in the sense that natives can be used in garden designs that run the gamut of orderliness from natural to extremely formal. Some natives, such as curleaf mountain mahogany, are more suitable for the formal look than others. Some people felt that the first priority is a good design, of whatever school--that the plants then enhance the design. Others were more of the opinion that you start with the plants you'd like to use, then work out a harmonious design that incorporates them. But all agreed that the design needs to have good structure and good spatial configuration, so that it leads people in and makes them feel like they are entering a place, not a mass of confusion.

One model we discussed that probably goes back to our very early days on the African savannahs is the idea of the 'haven and view', a design that creates a place that feels safe and enclosed but that has a view out to a larger, open space.

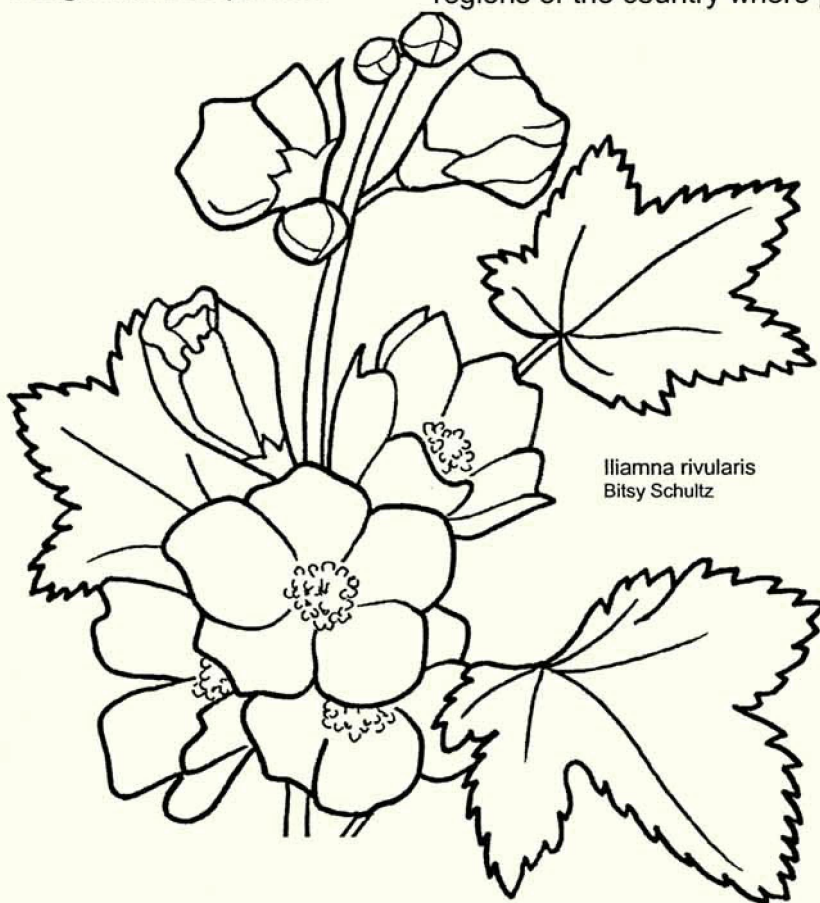
A second concept we explored was the idea of negative space, or a backdrop--this role is often filled by water-guzzling lawn, but we were looking for alternatives. Giving the landscape 'good bones' through the use of rock, paths, and other hardscape features was one approach. Another was to find alternative plants that could fill the role of 'ground cover'. A third idea that generated a lot of interest was the notion that structural diversity and relief, even on a small scale, that echo the rhythms of larger landscapes can be remarkably effective in creating the feeling of a wild place. The dry streambeds that often appear in xeris-

cape gardens represent an attempt to imitate nature in this way. Finally, we reminded ourselves that a native garden, like any garden really, is not a 'set piece', but will continue to change through time.

Our task as gardeners is to guide that change in aesthetically satisfying directions.

The questions finally came down to two: where to get the natives to plant and where to get the good designs. The group came up with the following points: 1. We can look for inspiration to other regions of the country where people are further

along this path of rediscovering the virtues of the local. 2. To get our native plants into the nursery trade, people must ask for them. It helps if public and corporate landscape projects lead the way, to create a market that can sustain native plant suppliers as well as provide demonstration areas where people can see the plants in landscape use. 3. We also need better public relations--a picture here is worth a thousand words--as well as better sources of local



Iliamna rivularis
Bitsy Schultz

information. 4. We need to encourage people to set an example in their neighborhoods by creating beautiful native plant landscapes in their own yards. The positive response to this can be quite gratifying, especially if it is tied to education about the low water requirements of these alternative landscapes. 5. The problem of design will be greatly alleviated once there are more good examples to use as guidance. We expressed the hope that Utah regional landscapes will be the inspiration for the look of the future in our area.

Membership Fees Increase!

Due to increased newsletter printing costs, yearly dues for Utah Native Plant Society memberships will be increased. Current members pay increase upon renewal of subscription. Effective January 1, 2002.

Student	\$9.00
Senior	\$12.00
Individual	\$15.00
Household	\$25.00
Sustaining	\$40.00
Supporting Org.	\$55.00
Corporate	\$250.00
Lifetime	\$250.00



Native Plants Coming to Salt Lake County

Wildland Nursery and Great Basin Natives are teaming up to open the "**Garden Niche**", a native and adapted plant nursery, in the Salt Lake valley in the spring of 2002! The selection of native and adapted grasses, wildflowers, shrubs and trees shall be unequalled within the Intermountain area. The store is intended to be both a retail and wholesale outlet for those who wish to set the native plant landscape trend in their neighborhood as well as those who need native plants for their reclamation, mitigation or large landscaping projects. The Garden Niche is also positioned to do contract growing for customers with unique needs.

Judging by the overwhelming response of a some native plant sales in the valley, both Wildland Nursery and Great Basin Natives felt the demand existed for a more steady supply of native and adapted plants. It was also noted at these sales that people are starved for information regarding the design, installation, care and maintenance of native plant landscapes. As a result, the owners of the Garden Niche intend to hold workshops at their new location to address these questions to reduce the public's hesitance to convert their traditional landscapes to more diverse, ecologically suitable landscapes.

Please feel free to contact Janett Warner at janett@wildlandnursery.com or 435-527-1234 for more information. Look for more information in the next issue of the *Sego Lily*.

UNPS Posters for Sale

Both to increase public awareness and appreciation for Utah's unique flora and to help fund our efforts, the Utah Native Plant Society first published the very popular Utah Wildflowers poster in 1988 and later the Threatened and Endangered Plants of Utah poster in 1995.

These high quality, picture frame worthy posters can be used in a wide variety of settings and make a perfect gift. They are ideal for classrooms or school hallways, and commonly they find their way into offices, living rooms, dens, kitchens and generally anywhere that native plant enthusiasts and enthusiasts-to-be are known to occur!

Both posters are full color works that contain botanically accurate illustrations by artist (and UNPS member) David W. Gardner with calligraphy by Pamela Johnson. The Utah Wildflowers poster is approximately 23"x34" and depicts 28 species. The Threatened and Endangered Plants of Utah poster is 24"x32" and contains 20 of our species listed as endangered or threatened under the Endangered Species Act.

How to order:

These posters can be purchased by filling out a form online at the Utah Native Plant Society's website: www.unps.org. You can do everything online and expedite your order by paying via PayPal, or send a check to:

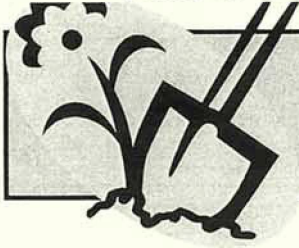
Posters
Utah Native Plant Society
P.O. Box 520041
Salt Lake City, UT 84152



Utah Wildflowers Poster

Cost:

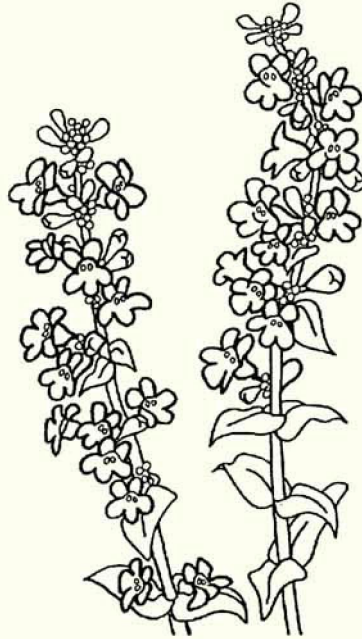
The cost of the *Utah Wildflowers* poster is \$12.00 each; cost for the *Threatened and Endangered Plants of Utah* poster is \$10.00 each. UNPS members receive a 10% discount. All proceeds are used solely to further the goals of UNPS, which focus on the conservation and appreciation of Utah's native plant species (UNPS is a qualifying 501(c)(3) non-profit organization). Shipping for first class mail is \$3.00 per two posters.



Events and Activities

Passionate about Penstemons!

Wednesday, January 23, 7 p.m. Red Butte Garden. Join Panayoti Kelaidis, famed garden and plant explorer, as he share his knowledge penstemons. These drought tolerant, easy to grow plants are a must for the Utah garden. With over 270 native North American species, 69 of which are native to Utah, the variety of their color, form, and season of bloom is unsurpassed by any other perennial. Nonmember \$7, Members \$5. Pay at the door.



Landscaping with Natives Seminar

Tuesday, January 29 7:00 p.m. Park City Library (1255 Park Ave.), Room 209 Mindy Wheeler will talk about the do's and don't's of landscaping with native plants. Contact Abby Moore (435-649-8859, a.moore@m.cc.utah.edu) for more information.

Invasive Plant Species Workshop and Weed Science Society of America Annual Meeting

February 10-13, 2002. Reno, NV. Intermountain Native Plant Summit. By Laurel Potts of Central Rockies Society of Ecological Restoration. Use of native seed is a foundational element of many restoration, mitigation and landscaping projects. On October 31, 2001 an Intermountain Native Plant Summit in Boise Idaho brought together many representatives of government agencies as well as

participants from the seed and nursery industries. Key topics included: Historical trends in the use of seeds by land management agencies, recent trends in the western native plant seed industry, DNA fingerprinting for determination of genetic diversity and provenance, and native plant market study. On November 1st the meeting continued with workshops covering areas of increasing seed stocks, a networking website, and seed germination and testing. The latter workshop addressed vital issues of selecting high quality seed sources adapted to a variety of planting site conditions which is critical for success of wildland seeding efforts. The ability to determine the ranges of adaptability and develop seed transfer guidelines for individual species is important to afford better marketing of native plant materials. Discussion also centered around the difficulty of developing procedures for testing seed quality of native revegetation species because of the diversity of taxa and the variability of factors such as morphology, dormancy and germination even among populations of the same species. Additional topics included creating amore uniform system whereby collection permits can be obtained from various federal agencies, and developing a database that addresses the reproductive biology of native species and their genetic variability. For more information contact Tom Jones at tom-jones@cc.usu.edu. Your chance to get out of the city during the Olympics, and for such a great purpose!! For more information visit: www.wssa.net

Waterwise Landscaping Class

Wednesday, March 6, 7-9 p.m. Red Butte Garden. Utah residents are becoming more concerned and aware of wasteful water use. Join Jim Knopf, Landscape Architect and author of several waterwise landscaping books as he shares how to create beautiful and waterwise landscapes. Nonmembers \$7, Members \$5, Pay at the door.

High Altitude Revegetation Workshop

March 6-8, 2002. Fort Collins, CO. This conference only occurs once every two years, so don't miss this

one and keep up with the latest developments and research dealing with restoration issues in the western United States. For more information go to www.highaltitudeveg.com/har/. When you get to the site click on "EVENTS". Also, people can obtain information from the committee secretary, Gary Thor at Garythor@lamar.colostate.edu.

Western Society for Weed Science Annual Conference

March 11-14, 2002. Salt Lake City, Utah. Keep up with the latest in weed control in western North America. Lots of great talks and networking. For more information visit the WSWs website at: www.wsweedscience.org

Utah Heritage Garden Propagation Workshops

March 16. The Fourth Annual Utah Heritage Garden Native Plant Propagation Workshop will be offered in two separate sessions in Provo on Saturday, March 16. Space is strictly limited, so get your registration in early! Send a check for \$10 per person along with contact information for confirming your space to: Susan Meyer, 412 East Salem Hills Circle, Elk Ridge UT 84651. The workshops will take place at the USFS Shrub Sciences Laboratory Greenhouses, 735 North 500 East, just south of the BYU campus, from nine to eleven am (morning session) and from one to three pm (afternoon session). Each participant will receive a planter box and seeds for taking home to grow plants, as well as an informative hand-out.

Those of you in other chapters who would like to have a propagation workshop in your area are welcome to organize one. You would be able to pick up the planter boxes, seeds, and handouts for your workshop in Provo, as long as it takes place after February 15 and we have a month of lead time to prepare materials. We would need to be reimbursed for these supplies from your registration fees. Please contact Susan Meyer (801-423-2603; se-meyer@sisna.com) soon if you are interested.

Water Conserving Plants Class

March to May. Jess Wagstaff, retired USDA poisonous plant expert, and the Utah Valley Chapter have teamed together to organize a UVSC continuing education class called **Water Conserving Plants**. Emphasis throughout will be on water conservation. This class will be a combination of lectures on Wednesday evenings and 4 Saturday workshops and field trips. The lectures will be held in Pleasant Grove, with location to be announced in the UVSC Discovery catalog. The first class is on March 13 and scheduled from 7-9 pm. The final field trip is scheduled for Saturday, May 18.

Lectures include the following topics: Introduction by Jess Wagstaff, Nomenclature and Taxonomy of native and other water conserving plants, by Renee Van Buren, Utah Valley State College Biology Department, Xeric Landscaping by Paula Mohadjer, Jordan Valley Water Conservancy District, Sources of Native and Xeric Plants, Xeric plants and the environment by Stan Kitchen, Shrub Sciences Lab, Public Policy Implications and Use of Native and Xeric Plants on Public Land, speaker TBA, Commercial sources of plants, speakers TBA, Roundtable Discussion of Challenges in the Use of Native Plants, including but not limited to weeds, fire, deer, toxic plants.

Saturday events include: Workshop on Propagation of Utah Native plants, by Susan Meyer, Tour of Commercial Grower, Tour of Xeric Gardens at Jordan Valley Water Conservancy District by Paula Mohadjer, Rush Valley tour, including examples of poisonous plants, good rock garden plants, examples of weed invasion, salt desert and sagebrush ecosystems.

Cost of the class is \$55. Registration is through UVSC Continuing Education. Participants will use private vehicles for field trips. For more details call Jess Wagstaff, 785-5660 or email him at djwagstaff@att.net.

Design Basics for Waterwise Landscapes

Saturday, April 20, 10-noon. Jordan Valley Water Conservancy District, 8215 S 1300 W. Don't miss this free workshop by Stephanie Duer, Conservation Coordinator for Salt Lake City and experienced landscape designer and horticulturist. Learn the basic landscape design principles for your home landscape. Includes incorporating Utah native plants! Due to limited space, please RSVP 1-877-728-3420.

Events and Activities (cont.)

Gorgeous Utah Native Plants in the Landscape

Thursday, June 6, 7-8:30 p.m. Jordan Valley Water Conservancy District, 8215 S 1300 W. Back by popular demand! Susan Meyer, President of the Utah Native Plant Society, is once again teaching her acclaimed Native Plants in the Landscape workshop. Great slides and a wealth of information! Due to limited space, please RSVP 1-877-728-3420.

Society for Range Management 2002 Annual Meeting

February 13-18. **Great Rivers, Great Plains, Great Opportunities, Where the Rivers meet the Plains.** Kansas City, Missouri. Go to <http://www.srm.org> and click on upcoming meetings for more information

2002 SER Conference: A Convocation: Understanding and Restoring Ecosystems

August 4-9, 2002. Tucson, AZ. This is a joint conference with SER and Ecological Society of America. Both organizations are putting together shared and unique sessions, symposia, workshops and fieldtrips!

Utah Valley Chapter News

A new Heritage Garden was installed in September at Vivian Park in Provo Canyon, which is the western terminus for the Heber Creeper. This is a Utah County Park project, and our chapter provided most of the plants, with Susan Meyer and Bitsy Schultz providing the expertise and design in cooperation with instigator and Master Gardener Brian Beaumont, a Utah County Parks employee. A three-sided kiosk is located at the entrance to the garden and includes information on landscaping with Utah native plants. The new demonstration garden showcases Wasatch Front canyon flora. It will be maintained by Utah County.

Chapter Meeting. The Utah Valley Chapter met in late October for a chapter meeting, potluck supper and program. Cathy Silcox and Franci Delong, professional landscape designers, and Master Gardener Lyle Jenkins gave presentations on home landscaping with native plants. We had several newcomers at this meeting and a lot of interest. The outgoing officers were all re-elected.

Rock Canyon Restoration. The restoration project is proceeding more or less on schedule; we are learning a lot about weed control! The transplants put in last spring did very well, with a high rate of survival and lots of growth. We are growing 8000 plants to transplant this spring. Funding for this project is through the Sant Foundation and BYU, the Uinta National Forest, the city of Provo, and the Shrub Sciences Lab. Closely connected but separate projects are the demonstration Heritage Garden in the Rock Canyon Trailhead Park, which was initially installed 3 years ago and is undergoing expansion, and the Trailhead Arboretum, which is being improved under a grant from the Arbor Day Foundation. If you are interested in being involved, please call our volunteer coordinator for Rock Canyon, Becky Wilde Peterson at 801-360-3625 or email Phil Allen at phil_allen@byu.edu.



The campaign against Yellow Starthistle is proceeding apace. The past year, handbills describing this noxious weed were included in the utility billings for communities in northeast Utah County. More than 50 people responded with reports of this weed in their yards or neighborhoods, allowing us to pinpoint most of the occurrences. This coming year we will work with the County Weed Commissioner to spray most if not all of these occurrences in time to prevent seedset. We are also networking with concerned landowners in other parts of northern Utah with the eventual goal of eliminating this species before it can overtake foothills plant communities. If you are interested in joining this effort, please call Susan Garvin at 801-356-5108 or email her at sgarvin@fs.fed.us.

Spring Overnight Field Trip. Plans are in the works to make a weekend trip to Red Canyon, just west of Bryce Canyon, at the end of May or first of June. If you are interested, call Susan Garvin, 801-356-5108 or email sgarvin@fs.fed.us.

Calling all members, we need your help!

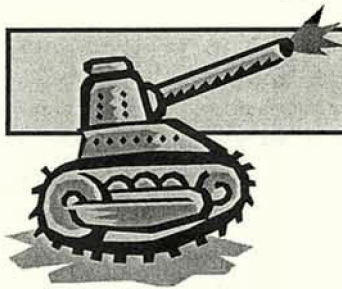
By Glen Lyon and Mindy Wheeler

The Utah Native Plant Society has been asked to assist with an upcoming book called "50 Best Wildflower Hikes in Utah." A professional photographer along with Westcliffe publishers has requested our assistance to find the most florally scenic hikes in the state of Utah. The UNPS seemed like the best choice to the photographer and the publisher because we can help schedule the hikes to assure the most brilliant blooming displays and can help verify the botanic names of the plants along the way. In addition to being a wonderful instigator to schedule some excellent wildflower hikes for our members, the publisher has guaranteed the UNPS royalties from the sale of each book! We are asking **all** members from **throughout** the state to give some thought regarding their favorite wildflower hike, send them in to Glen Lyon (gelyon@xmission.com) and we will get back to you! For the full story, see the article below from Glen Lyon!

One day in November, I received a very interesting telephone call from Scott Smith. Scott is a nature photographer who lives in Logan, Utah. Scott said that Westcliffe Publishers (<http://www.westcliffepublishers.com>) had contacted him and asked him to create a book entitled "Utah's Best Wildflower Hikes". Scott explained to me that he didn't feel comfortable enough with his taxonomic and writing skills to do the project alone and asked me if I would be interested in authoring the book. I was very interested in the opportunity. As Scott described the expected content, style, and format of the book, I became more interested. However, the amount of time and travel required soon became apparent. Scott explained further that the book would need to cover approximately fifty hikes throughout Utah and be completed within two growing seasons. I realized that I simply did not have the time to conduct

and write fifty hikes throughout Utah within two growing seasons. At that point, I wondered if perhaps any UNPS members would be interested in becoming contributing authors. UNPS members would be the authors, Scott would be the photographer, and I would be the editor. Scott thought it was a great idea. Since that day in November, Scott has spoken with Westcliffe Publishers who also think it's a great idea. The UNPS name on the book would add credibility and probably increase book sales. Scott and I have both spoken with Mindy Wheeler, UNPS Board of Directors member, who has in turn spoken with other UNPS board members. Board members seem to like the idea. I think it's a great opportunity for UNPS members to get outdoors, travel some, take a hike, write about it, and be a part of writing a book. Royalties from book sales would also benefit the UNPS.

With that said, my question to members is: "Who's interested?" Are you willing to commit to taking a hike or maybe a few hikes and write about them? If so, send me an email at gelyon@xmission.com or call me at 435-245-5139. I will do my best to coordinate efforts between the UNPS, UNPS chapters, UNPS members, Scott Smith, and Westcliffe Publishers. An example of the book's expected content, style, and format is "Colorado's Best Wildflower Hikes Vol. 1: The Front Range", text by Pamela Irwin and photography by David Irwin. With Westcliffe Publishers' permission, I've scanned the pages describing one of the hikes and posted them at <http://www.xmission.com/~gelyon/book.htm> for your reference.



Breeding Better Plants for Military Bases

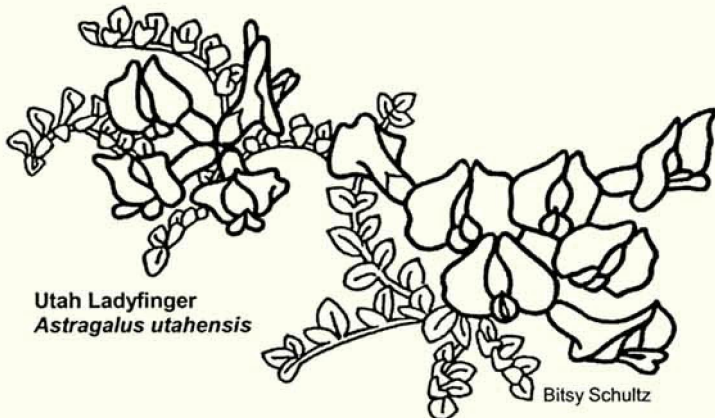
November 9, 2001. ARS News Service. Agricultural Research Service, USDA. For plants on a military training site, getting run over by an

assortment of hefty, wheeled or tracked vehicles is all in a day's work. But, the Army has a secret weapon for restoring and revegetating these sites when training maneuvers are over. The military has enlisted the help of a team of Agricultural Research Service plant geneticists, led by Kay H. Asay, to develop training-resilient plants. Now in its sixth year, the project is based at the ARS Forage and Range Research Laboratory in Logan, Utah. It is funded by ARS and the Department of Defense's Strategic Environment Research and Development Program, Washington, D.C. Asay and colleagues are developing improved lines of native and introduced grasses. The new plants are better able to withstand trampling by soldiers and grinding and crushing by vehicles. Military training installations are some of the most intensively used lands in the United States. Antonio J. Palazzo, who works at the U.S. Army's Cold Regions Research and Engi-

neering Laboratory, Hanover, N.H., recruited Asay and colleagues because of their impressive track record. The Logan work has resulted in new plant varieties that stabilize erosion-prone slopes, landscape roadsides and provide forage for livestock and wildlife. Several of the Logan varieties are among the best performers in tests at the Yakima Training Center in central Washington, and Fort Carson, south of Colorado Springs, Colo. The findings from these sites should be applicable to many other military bases throughout the West. At Yakima, Snake River wheatgrass has been the top-performing native grass. Logan scientists are working to make it even more resilient. Meanwhile the scientists are working at Fort Carson to improve native western wheatgrass. Other work at Fort Carson is yielding a promising blend that combines the Logan lab's RoadCrest crested wheatgrass and the lab's Bozoisky Russian wildrye with the Army's mix of natives like slender wheatgrass, Indian ricegrass, sideoats grama and lovegrass. ARS is the chief research branch of USDA. The ARS Forage and Range Research Laboratory is on the web at: <http://www.usu.edu/~forage/frll.htm>

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VOLUME 25, ISSUE 2

MAR/APR 2002

Interagency Botany Project Continues to Benefit Federal Agencies and Rare Plant Species

By Deborah J. Clark, Bureau of Land Management, 150 East, 900 North, Richfield, Utah 84701

This is a sequel to the article printed in the Jan/Feb 2001 issue of the *Seigo Lily*. In 2000, Capitol Reef National Park (CARE) received funding for a three-year rare plant species inventory through the National Park Service (NPS). In 2001, CARE received a \$1,000 grant from the Utah Native Plant Society to assist with this project. CARE used the grant money to hire a student from Southern Utah University to work on the field crew. This article will report a summary of our findings from last years' field season.



MAR/APR 2002

Interagency Botany Project Continues to Benefit Federal Agencies and Rare Plant Species

Keep off the Grass!

2nd Notice to All Complimentary Subscriptions

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Biocontrol Beetles Set Free to Tackle Saltcedar

As mentioned in the earlier article, the Bureau of Land Management (BLM), U.S. Forest Service, Dixie National Forest (DNF), Fishlake National Forest (FNF), and CARE share management responsibilities for many of the same Threatened, Endangered & Sensitive plant species (TE&S). To enable each of these agencies to better manage their shared TE&S species, they decided to create an interagency botany position and hire an employee to survey and/or monitor for these species throughout their ranges, regardless of agency boundaries. A BLM employee was hired and stationed at CARE to act as project leader for this three-year project. Through the interagency agreement, the agencies are able to pool funding in order to extend surveys onto federal lands adjacent to CARE. This has expanded the scope of the NPS project to include FNF, DNF and BLM adjacent to CARE.

The study

The primary purposes of this project are to (1) conduct intensive surveys for target species on potential habitat within and adjacent to CARE, and (2) determine potential for impact by visitor, recreational or livestock use if possible. The 2001 field season focused on the following species; *Gilia tenuis*, *Erigeron maguirei*, *Erigeron abajoensis*, *Erigeron awapensis*, *Townsendia aprica*, *Sclerocactus wrightiae*, *Astragalus harrisonii*, *Cymopterus beckii*, *Gilia caespitosa*, *Hymenoxys acaulis var. nana*, *Thelesperma subnudum var. alpinum*, *Spiranthes diluvialis*, *Habenaria zothecina*, and *Salix arizonica*. Additional tasks were to continue annual monitoring of targeted species on both CARE and BLM and to continue surveys for the suite of Tushar endemics on

Interagency Botany Project Continues to Benefit Federal Agencies and Rare Plant Species (cont.)

FNF. Later in the season we were asked to assist DNF with surveys for an endemic species, *Potentilla angelliae*, on Boulder Mountain. During all these surveys, crews looked for other TE&S species when we were in appropriate habitats.

Surveys were conducted for the target species from March through September when the majority of plants were in full bloom to ensure proper plant identification and increased survey accuracy. We began in the early spring at lower elevations and as the season progressed we moved to higher elevations thus ensuring proper search times for each species. Each area was surveyed by walking wandering transects through all accessible areas and/or by using binoculars to search cliff-faces. Surveys for *Sclerocactus wrightiae* in the southern end of CARE were conducted from horseback since there was such a large area to cover. For future reference, crews noted on maps all areas surveyed regardless of findings.

For each new occurrence of a species, crewmembers completed a modified version the Utah Natural Heritage Division Site Visit Account Survey Form, took photographs, and mapped its location on 7.5' quadrangle maps. Wherever possible, a Global Positioning System was used to map the precise location of each new occurrence. All new localities will be entered into each agency's Geographic Information System along with a summary of data about the locality. This ensures long-term retrieval capabilities for future resource managers.

Survey results

In 2001, the crew consisted of the interagency biologist employed by BLM; a seasonal crew leader and five seasonal crewmembers employed by CARE; a seasonal biological technician from DNF; and three biological technicians from FNF (names of field crew listed at the end of the article). The technicians from both DNF and FNF worked intermittently with the crew primarily when the crew was working on the respective Forests. The FNF Ecologist, CARE Chief of Resources and BLM Biologist also assisted with surveys in specific locations. Surveys began on March 20 and continued through September 20, 2001. We surveyed approximately 10,320 acres (excluding the Tushar Mountains) of potential habitat and recorded 75 new site locations for 20 of the target species. Twelve additional sites were revisited and documented for three species. Table 1 lists species found by agency and number of site locations.

Fishlake National Forest provided additional funding to support the field crew to work in the Tushar Mountains and to survey for Arizona willow in the Monroe Mountains. We spent the week of July 23, 2001 in the Tushar Mountains and several days in August in the Monroe Mountains. Dixie National Forest provided a field crew to work with the NPS crew leader to survey for *Potentilla angelliae* on Boulder Mountain. This work was done the week of August 6, 2001.

Calendar year 2001 was an excellent year for surveys since the previous fall and winter were wet with record snowfalls in the project area. All species targeted for surveys bloomed, often for extended time periods. In fact, a fall reconnaissance trip was planned in the San Rafael Swell to review

an area for *Gilia tenuis*, and three new sites were found with *Gilia tenuis* in bloom.

Partnerships

Each of the participating agencies used the inter-agency agreement to pool funding for this project. This enabled them to extend surveys onto federal lands adjacent to CARE and to expand the scope of the NPS project to FNF, DNF and BLM. For Fiscal Year 2001, NPS contributed \$53,000, BLM contributed \$26,000, DNF contributed \$7,200 and FNF contributed \$12,000. Capitol Reef Natural History Association (CRNHA) is very supportive of natural resource issues within CARE and joined the agencies in support of the project by donating \$4,000 this year also. Utah Native Plant Society (UNPS) also joined the agencies in support of this effort with a \$1,000 grant. The non-federal dollars from CRNHA and UNPS enabled FNF, DNF and BLM to obtain cost share dollars from their budgets and enabled CARE to hire an additional crew member and to purchase field equipment to improve the quality of work accomplished.

Conclusions

Work accomplished during this field season resulted in the discovery and documentation of several new localities for 20 TE&S species. Some of the target species were recorded for the first time on FNF and DNF, confirming that more work needs to be done before these species ranges and niches are completely understood. Individual species reports summarizing findings this year will be submitted to each agency (if the species is located on that agency's land), Utah Natural Heritage Division and FWS.

The creation of this interagency crew has proven beneficial to all participating agencies. There are numerous TE&S plant species whose distributions overlap agency jurisdictions, so it is to the mutual scientific and economic benefit of the agencies to manage these TE&S species cooperatively on an ecosystem basis. Fieldwork is conducted throughout the range of each target species regardless of agency boundaries, so a more accurate picture of the species and its habitat requirements is gained.

Information gathered during this three-year study enables the participating agencies to meet legal requirements of the Endangered Species Act, comply with NPS, BLM and USFS management policies, and address Government Performance and Results Act goals. Knowledge gained about these species and their specific habitat requirements will enable federal officials to ensure that these plants are protected and will assist in predicting which areas may contain additional occurrences. Results from this study will also help in determining which species should be monitored to determine impacts.

Field Crew Members for the 2001 season; Shirley Bell, Shanna Ray Brown, Deborah Clark, Keith Durfey, Chris Groebner, Gary Lenhart, Erin Magoon, Terry Miller, Zachary Miller, Phil Scarry, Amy Schwarzbach, David Tait, and Kyle Wheeler.

Table 1. List of TE&S species found in 2001, by agency and number of sites.

Species	Status	Agency	# of Sites
<i>Astragalus asclepioides</i>	G4/S3S4	BLM	1
<i>Astragalus consobrinus</i>	G2G3/S2S3	BLM	1
<i>Cymopterus beckii</i>	G2G3/S2S3	CARE	6
<i>Erigeron maguirei</i>	Threatened	BLM/CARE	8
<i>Eriogonum corymbosum</i> var. re-	G3/S1	FNF	1
<i>Gilia caespitosa</i>	G2/S2	CARE/FNF	6
<i>Gilia tenuis</i>	G1/S1	BLM	11
<i>Habenaria zothecina</i>	G2/S2	DNF/CARE	3
<i>Lomatium junceum</i>	G3/S3	FNF	1
<i>Opuntia basilaris</i> var. <i>heilii</i>	G5/T2T3/S2S3	BLM	1
<i>Pediocactus despainii</i>	Endangered	BLM	1
<i>Pediocactus winkleri</i>	Threatened	CARE	1
<i>Physaria acutifolia</i> var. <i>purpurea</i>	G5/T2/S2	FNF	1
<i>Potentilla angelliae</i>	G1/S1	DNF	8
<i>Salix arizonica</i>	G3/S2	FNF	3
<i>Sclerocactus wrightiae</i>	Threatened	BLM/CARE	21
<i>Sphaeralcea psoroloides</i>	G2/S2	BLM	2
<i>Thelesperma subnudum</i> var.	G5/T2/S2	FNF	4
<i>Townsendia aprica</i>	Threatened	BLM/CARE/DNF	6
<i>Xylorhiza confertifolia</i>	G1G2/S1S2	DNF	1
Total			87

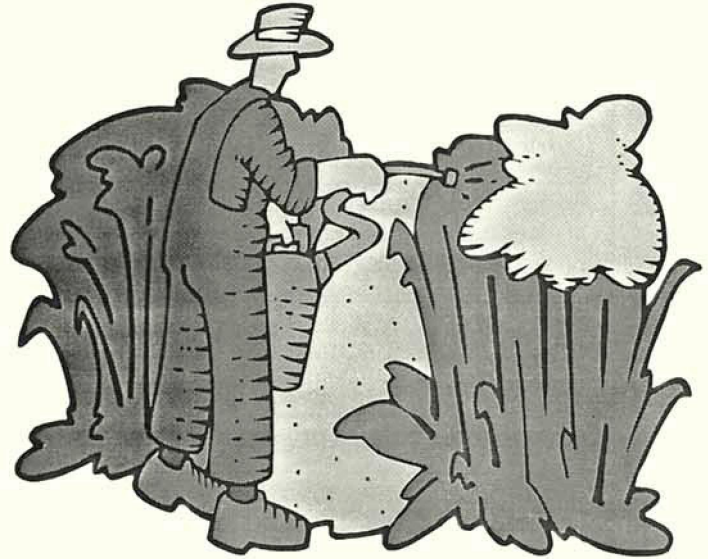




Keep Off the Grass!

From the Native Plant Society of New Mexico Newsletter, excerpt from the Nov/Dec 2001 issue of Sierra Magazine.

What began as an anti-lawn party has become a mini-revolution. In May 1991, the Montreal suburb of Hudson passed a law banning the "cosmetic" use of pesticides within town boundaries-making it illegal to douse those dandelions in the garden or on private lawns. Recreational facilities such as parks and golf courses were also restricted from using pesticides. TruGreen Chemlawn and Spray Tech, two pesticide-application companies, didn't care for the ruling and challenged the law, taking it all the way to Canada's Supreme Court. This summer it became official: The high court ruled that municipalities across the country now have a right to ban pesticide use on public and private property.



And for good reason: Of the 36 most commonly used lawn pesticides, 13 have been found to cause cancer, 14 cause birth defects, 15 have been linked to liver or kidney damage, and 21 damage the nervous system.

2nd Notice: All Complimentary Newsletter Subscribers!

The Utah Native Plant Society is updating its complimentary subscription list. Anyone, such as a library or native plant society, that currently receives the UNPS newsletter, the **Sego Lily**, free of charge must contact the Society in order to continue receiving the newsletter. No response equals no subscription.

Please contact Abby Moore at: A.moore@m.cc.utah.edu
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Fungi Can Whack Invasive Weeds

American farmers and homeowners spend millions combating weeds and other alien organisms introduced from foreign countries. With the increase in international commerce and trade, the number of alien species becoming established in this country is growing every year.

"Luckily, fungi provide a vast arsenal of ammunition to control noxious weeds—both established and newly arrived—that invade roadsides, rangelands, and waterways and crowd out useful and native plants," says mycologist Amy Y. Rossman. She heads the Agricultural Research Service's Systematic Botany and Mycology Laboratory in Beltsville, Maryland.

Fungi are among the most biologically diverse organisms on Earth. Once discovered and characterized, many previously unknown species can be put to work. Thanks to research at Rossman's lab, ARS scientists at several U.S. laboratories are testing the effectiveness of three new fungus species as biocontrols for some of the United States' major invasive weeds: ragweed, purple loosestrife, kudzu, and morningglory.

Mycologist David F. Farr is curator of ARS' U.S. National Fungus Collections, maintained at Beltsville. A systematist, Farr probes the collection's 1 million fungal specimens to discover, name, scientifically describe, and classify agriculturally important fungi.

"Once these organisms are characterized, their weed-control potential can be tested in field and lab experiments," says Farr. He recently discovered several fungi—two new to science—that may offer nonchemical control of these four weeds

An Irritant Wherever It Grows

"Ragweed, *Ambrosia artemisiifolia*, is a noxious plant that infests thousands of acres of arable land worldwide and causes allergic reactions—often seasonal—in many people," says Farr. "Its

pollen causes irritated eyes, runny noses, and general discomfort for many sufferers.

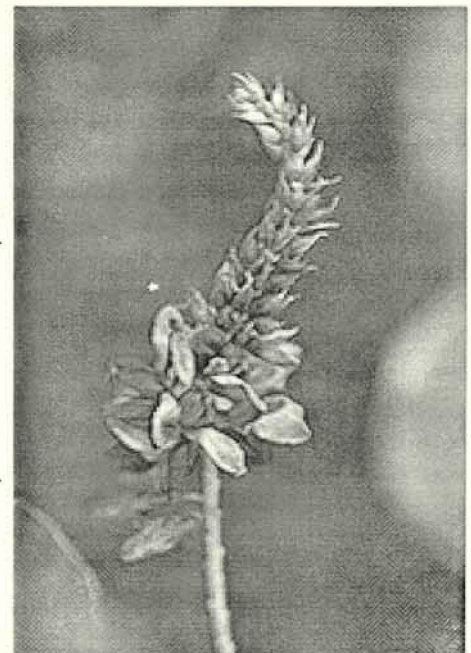
"Last year, scientists in Hungary—where ragweed is even more of a problem—reported that they had found a fungus, possibly a *Septoria*, that was pathogenic to ragweed. It causes leaves to die and kills some plants, probably by entering through leaf pores."

After searching the literature and fungus collection, Farr determined that this beneficial species of *Septoria* is also found in the United States, though not previously described anywhere. Using molecular sequencing, he characterized it, named it *S. epambrosiae*, and illustrated it. Then he showed it to be distinct from three other related, known *Septoria* species.

"Scientists will use this information to communicate about the new fungus in developing it as a biocontrol agent for ragweed," says Farr.

Garden Plant Gone Wild

One of the other fungi that Farr discovered was one that attacks purple loosestrife, *Lythrum salicaria*. "This perennial garden plant has become a noxious weed and is spreading rapidly throughout North America," says Farr. "Native to Europe and Asia, purple loosestrife grows and reproduces prolifically in wetlands and other moist habitats. It's degrading



Fungi Can Whack Invasive Weeds (cont.)

the quality of thousands of acres of wetlands, becoming the dominant vegetation by outcompeting native plants that provide critical food, shelter, and breeding areas for wildlife."

After careful examination of form and structure and DNA sequencing, Farr was able to determine the molecular fingerprint of the fungus—also new to science.

"We described, illustrated, and named it *Harknessia lythrii*," says Farr. "Many species of *Harknessia* are host specific—but not all of them—so scientists need to ensure that this fungus attacks only purple loosestrife."

Kudzu—A Colossal Creep

Plant pathologist C. Douglas Boyette at ARS' Southern Weed Science Research Unit, Stoneville, Mississippi, recently discovered that the sicklepod fungus *Myrothecium verrucaria* is also an effective bioherbicide for controlling kudzu. This fast-growing, nonnative weed covers more than 7 million acres of the South.

"Kudzu resembles a giant beanstalk," says Boyette. "It spreads at a rate of about 120,000 acres a year, reducing land productivity. Homeowners have a hard time controlling this vine, which grows up the sides of buildings, along fences, and on trees and telephone poles. Control costs increase by nearly \$6 million each year."

In greenhouse and small field plot studies, Boyette and ARS plant pathologist Hamed K. Abbas found that the *Myrothecium* bioherbicide killed 100 percent of kudzu weeds treated at different growth stages and under varying physical and environmental conditions. It should provide a good nonchemical control alternative, since one spray treatment kills leaves and stems and appears to invade the roots. This research was done in collaboration with Louisiana Tech University-Ruston.

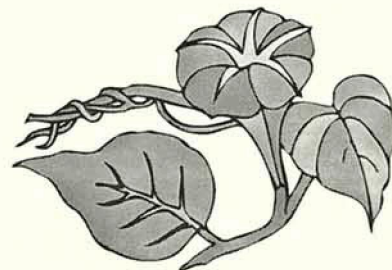
The Stoneville researchers are doing extensive toxicological studies on the fungus and are looking for a company to license the patented kudzu-control technology.

Quarantine and Morningglories

Farr recently collaborated with ARS plant pathologist Douglas G. Luster, who is at the ARS Foreign Disease-Weed Science Research Unit in Frederick, Maryland, on the systematics of a different strain of *M. verrucaria*. With four microbial containment greenhouses, this unit is the nation's largest facility for studying whole plants under quarantine conditions.

Scientists there have developed techniques to monitor biocontrol agents after release into the environment. They use the polymerase chain reaction, amplified fragment length polymorphism, DNA sequencing, molecular marking, and other sensitive technologies to detect and identify a weed pathogen's unique genetic fingerprint. This lets them differentiate strains of the same fungal species.

"DNA fingerprinting also helps scientists keep close tabs on spore growth and spread, host range, and effectiveness of biocontrol pathogens like *Myrothecium* once they've been released," Luster says. They've fingerprinted several strains of this soil fungus that kill morningglories, a weed that plagues sugarcane growers.



Native Plant Propagation Workshops

Hands-on Experience with Growing Utah Native Wildflowers, Shrubs, and Ornamental Grasses from Seed



These workshops are part of the UNPS Heritage Garden Program, which has the goal of increasing love and knowledge of native plants through horticulture. Participants will receive information on native plant horticulture and will have the opportunity to take home planted seeds and watch them grow.

Send a **\$10** check to the contact listed for the workshop you will be attending or call for more information.

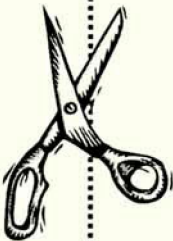
	Salt Lake Workshops	Provo Workshops	Park City Workshops
Date and Time	Two workshops: Saturday, March 9, 9:00 am to 12 pm Saturday, March 9, 12 noon to 3 pm	Two workshops: Saturday, March 16, 9 am to 11 am Saturday, March 9, 1pm to 3 pm	One workshop: March 2, 1:00 p.m.
Location	Liberty Park Greenhouse (enter on the west side), 700 E between 900 and 1300 S	USFS Shrub Sciences Laboratory Greenhouses, 735 North 500 East	Park City (call Dave or Mindy for more information)
Contact	Therese Meyer, 801-272-3275, 2931 E. Tolcate Lane, Holladay, UT 84121	Susan Meyer, 412 East Salem Hills Circle, Elk Ridge UT 84651	Dave Gardener 435-649-3355 or Mindy Wheeler 801-

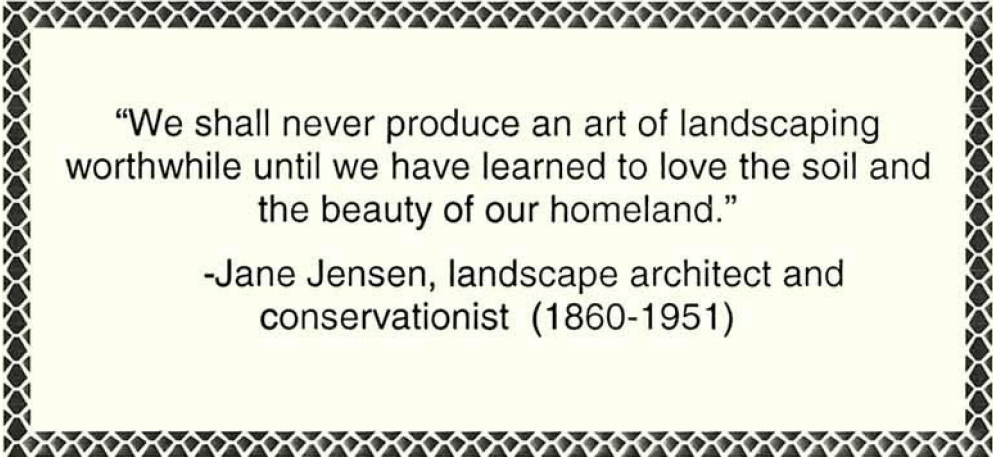
Native Plant Propagation Workshops

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Workshop location, date and time you will be attending _____





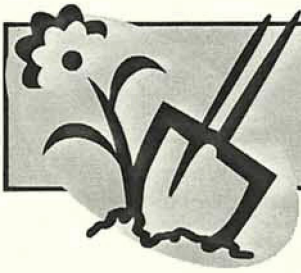
“We shall never produce an art of landscaping worthwhile until we have learned to love the soil and the beauty of our homeland.”

-Jane Jensen, landscape architect and conservationist (1860-1951)



“Whatever its condition, the environment is, after all, a reflection of ourselves, our tastes, our aspirations, our successes, and our failures.”

-Lady Bird Johnson



Events and Activities

Western Society for Weed Science Annual Conference

March 11-14, 2002. Salt Lake City, Utah. Keep up with the latest in weed control in western North America. Lots of great talks and networking. For more information visit the WSWs website at: www.wsweedscience.org

Water Conserving Plants Class

March to May. Jess Wagstaff, retired USDA poisonous plant expert, and the Utah Valley Chapter have teamed together to organize a UVSC continuing education class called **Water Conserving Plants**. Emphasis throughout will be on water conservation. This class will be a combination of lectures on Wednesday evenings and 4 Saturday workshops and field trips. The lectures will be held in Pleasant Grove, with location to be announced in the UVSC Discovery catalog. The first class is on March 13 and scheduled from 7-9 pm. The final field trip is scheduled for Saturday, May 18.

Lectures include the following topics: Introduction by Jess Wagstaff, Nomenclature and Taxonomy of native and other water conserving plants, by Renee Van Buren, Utah Valley State College Biology Department, Xeric Landscaping by Paula Mohadjer, Jordan Valley Water Conservancy District, Sources of Native and Xeric Plants, Xeric plants and the environment by Stan Kitchen, Shrub Sciences Lab, Public Policy Implications and Use of Native and Xeric Plants on Public Land, speaker TBA, Commercial sources of plants, speakers TBA, Roundtable Discussion of Challenges in the Use of Native Plants, including but not limited to weeds, fire, deer, toxic plants.

Saturday events include: Workshop on Propagation of Utah Native plants, by Susan Meyer, Tour of Commercial Grower, Tour of Xeric Gardens at Jordan Valley Water Conservancy District by Paula Mohadjer, Rush Valley tour, including examples of poisonous plants, good rock garden plants, examples of weed invasion, salt desert and sagebrush ecosystems.

Cost of the class is \$55. Registration is through UVSC Continuing Education. Participants will use private vehicles for field trips. For more details call Jess Wagstaff, 785-5660 or email him at djwagstaff@att.net.

Design Basics for Waterwise Landscapes

Saturday, April 20, 10-noon. Jordan Valley Water Conservancy District, 8215 S 1300 W. Don't miss this free workshop by Stephanie Duer, Conservation Coordinator for Salt Lake City and experienced landscape designer and horticulturist. Learn the basic landscape design principles for your home landscape. Includes incorporating Utah native plants! Due to limited space, please RSVP 1-877-728-3420.

Gorgeous Utah Native Plants in the Landscape

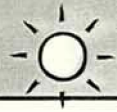
Thursday, June 6, 7-8:30 p.m. Jordan Valley Water Conservancy District, 8215 S 1300 W. Back by popular demand! Susan Meyer, President of the Utah Native Plant Society, is once again teaching her acclaimed Native Plants in the Landscape workshop. Great slides and a wealth of information! Due to limited space, please RSVP 1-877-728-3420.



2002 SER Conference: A Convocation: Understanding and Restoring Ecosystems

August 4-9, 2002. Tucson, AZ. This is a joint conference with SER and Ecological Society of America. Both organizations are putting together shared and unique sessions, symposia, workshops and fieldtrips!

God's Take on Lawns



Imagine the conversation The Creator might have had with St. Francis on the subject of lawns:

GOD: Frank, you know all about gardens and nature. What in the world is going on down there in the Midwest? What happened to the dandelions, violets, thistle and stuff I started eons ago? I had a perfect, no-maintenance garden plan. Those plants grow in any type of soil, withstand drought and multiply with abandon. The nectar from the long lasting blossoms attracts butterflies, honey bees and flocks of songbirds. I expected to see a vast garden of colors by now. But all I see are these green rectangles.

ST. FRANCIS: It's the tribes that settled there, Lord. The Suburbanites. They started calling your flowers "weeds" and went to great lengths to kill them and replace them with grass.

GOD: Grass? But it's so boring. It's not colorful. It doesn't attract butterflies, birds and bees, only grubs and sod worms. It's temperamental with temperatures. Do these Suburbanites really want all that grass growing there?

ST. FRANCIS: Apparently so, Lord. They go to great pains to grow it and keep it green. They begin each spring by fertilizing grass and poisoning any other plant that crops up in the lawn.

GOD: The spring rains and warm weather probably make grass grow really fast. That must make the Suburbanites happy.

ST. FRANCIS: Apparently not, Lord. As soon as it grows a little, they cut it—sometimes twice a week.

GOD: They cut it? Do they then bale it like hay?

ST. FRANCIS: Not exactly, Lord. Most of them rake it up and put it in bags.

GOD: They bag it? Why? Is it a cash crop? Do they sell it?

ST. FRANCIS: No, Sir. Just the opposite. They pay to throw it away.

GOD: Now let me get this straight. They fertilize grass so it will grow. And when it does grow, they cut it off and pay to throw it away?

ST. FRANCIS: Yes, Sir.

GOD: These Suburbanites must be relieved in the summer when we cut back on the rain and turn up the

heat. That surely slows the growth and saves them a lot of work.

ST. FRANCIS:

You aren't going to believe this, Lord. When the grass stops growing so fast, they drag out hoses and pay more money to water it so they can continue to mow it and pay to get rid of it.

GOD: What nonsense! At least they kept some of the trees. That was a sheer stroke of genius, if I do say so myself. The trees grow leaves in the spring to provide beauty and shade in the summer. In the autumn they fall to the ground and form a natural blanket to keep moisture in the soil and protect the trees and bushes. Plus, as they rot, the leaves form compost to enhance the soil. It's a natural circle of life.

ST. FRANCIS: You better sit down, Lord. The Suburbanites have drawn a new circle. As soon as the leaves fall, they rake them into great piles and pay to have them hauled away.

GOD: No. What do they do to protect the shrub and tree roots in the winter and to keep the soil moist and loose?

ST. FRANCIS: After throwing away the leaves, they go out and buy something which they call mulch. They haul it home and spread it around in place of the leaves.

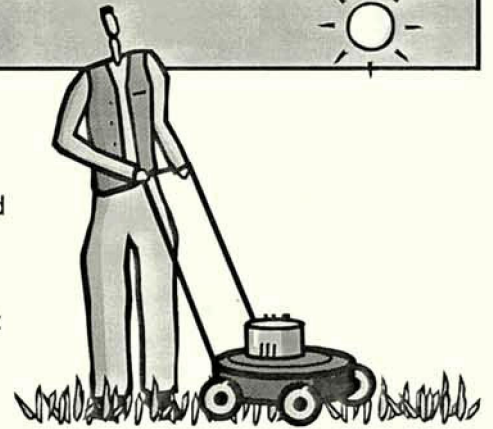
GOD: And where do they get this mulch?

ST. FRANCIS: They cut down trees and grind them up to make the mulch.

GOD: Enough. I don't want to think about this anymore. St. Catherine, you're in charge of the arts. What movie have they scheduled for us tonight?

ST. CATHERINE: "Dumb and Dumber", Lord. It's a really stupid movie about...

GOD: Never mind, I think I just heard the whole story from St. Francis.



From the internet, Infomaniac.

Biocontrol Beetles Set Free to Tackle Saltcedar

By Kathryn Barry Stelljes
May 22, 2001

Chinese leaf beetles (*Diorhabda elongata*) are beginning official duty as the first biological control agents released into the environment against saltcedar (*Tamarix* spp.).

These invasive trees, which can grow up to 30 feet tall, infest more than 1 million acres along western waterways. In addition to crowding out native plants, saltcedar can increase soil salinity, divert natural streamflow and increase wildfire frequency.

Unprecedented monitoring of the beetle and its impacts began in July 1999, when the insects were put out in large cages at 10 locations in six western states.

Scientists first released the beetles from field cages last week near Seymour, Texas, and Pueblo, Colo. They plan to make other releases near Bishop, Calif.; Fallon, Lovelock and Schurz, Nev.; Delta, Utah; and Lovell, Wyo. Additional nursery cages are being established at new sites near Woodland and King City, Calif.

Biological control agents are often released directly into the environment. In this case, the U.S. Department of Agriculture and cooperating scientists are watching these beetles closely to ensure their establishment and to evaluate their impact, population growth and safety.

This information has been used to ensure that the biocontrol project protects all native species in the area, including the southwestern willow flycatcher,

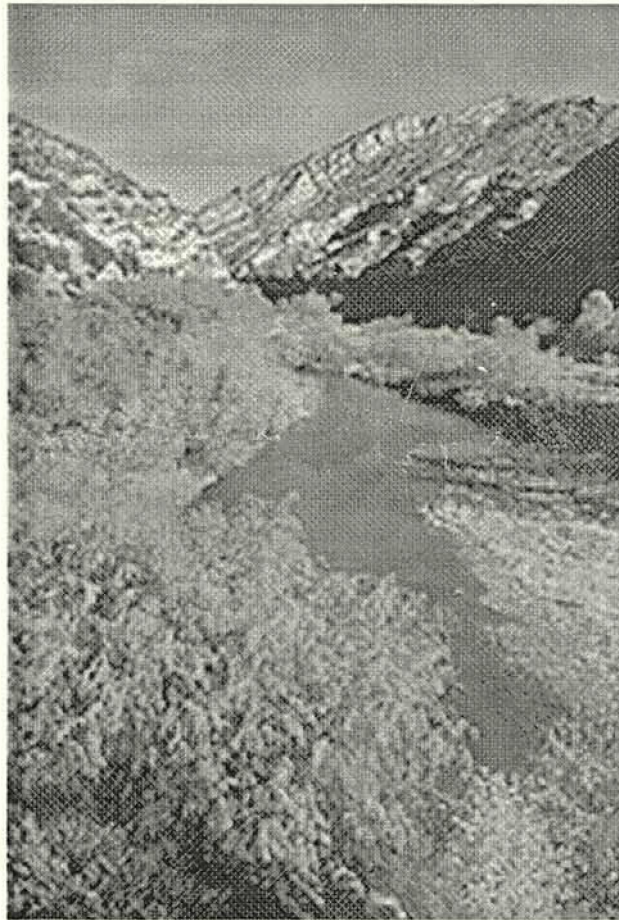
Empidonax traillii extimus. In some locations, these endangered birds nest in saltcedar that has crowded out their native willow nesting sites.

Biological control is expected to slowly reduce saltcedar, allowing beneficial plant and animal species to reestablish in severely infested areas. Other planned activities include continued monitoring

of the insects, plants and associated wildlife, and studies to facilitate revegetation with native plants.

The project, initiated and coordinated through USDA's Agricultural Research Service, operates in conjunction with a consortium of more than 30 federal, state, and local agencies; universities; and private organizations. The team received a \$3 million grant in 2000 from the USDA's Initiative for Future Agriculture and Food Systems for work on a complex of invasive weeds, including saltcedar.

ARS is USDA's chief scientific research agency.

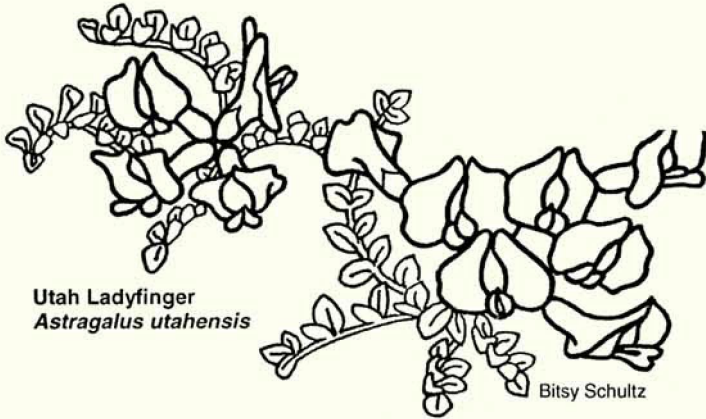


Scientific contacts: C. Jack DeLoach, ARS Grassland, Soil and Water Research Laboratory, Temple, Texas, phone (254) 770-6531, fax (254) 770-6561, deloach@brc.tamus.edu; Raymond I. Carruthers, Exotic and Invasive Weeds Research Unit, ARS Western Regional Research Center, Albany, Calif., phone (510) 559-6127, fax (510) 559-6123, ric@pw.usda.gov.



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Astragalus utahensis

Bitsy Schultz

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Many thanks to Xmission for sponsoring the Utah Native Plant Society website.

Please direct all suggestions, articles and events for the newsletter to Paula Mohadjer at paulam@jvwcd.org. **Deadline for next issue is Feb 15.**

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Sego Lily



Newsletter of the Utah Native Plant Society

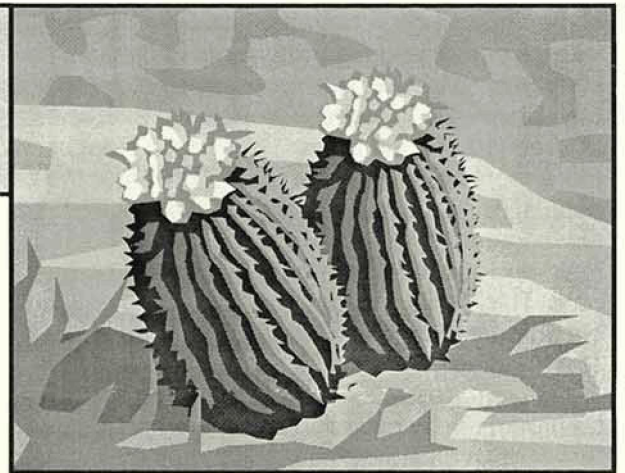
VOLUME 25, ISSUE 3

MAY/JUNE 2002

Sego Lily and Cactus Refuge Populations

By Jeff Mitchell

Utah has several endemic species of cactus, which means that they occur nowhere else in the world. Because of limited distribution and rarity, these cacti become prized possessions for cactus hobbyists and merchandise for commercial collectors. A number of these plants have been listed as endangered or threatened under the Endangered Species Act. Even so, illegal collection still occurs as en-



forcement agencies do not have ability to fund adequate enforcement over the remote areas where these plants live.

For the last several years, I have been cultivating native Utah cactus and propagating them with the intent of making these interesting cacti available to the public without having to resort to collection from habitat. By mass producing these plants, I hope to drive the cost of buying cultivated plants below the costs required in collection, thus eliminating any profit motive from collection.

There are several constituencies that want these plants, and their needs need to be accommodated by any propagation plan. The least fussy constituency doesn't really care where the plant comes from. All they want is a plant for their windowsill. These are the easiest to handle. Cactus enthusiasts, researchers, and people involved with habitat restoration would want seeds or plants from specific areas, and they want the material to be genetically representative of a particular population. This segment of demand can be supplied from refuge populations.

A refuge population is a group of plants which is genetically representative of a population in the wild, but which is grown at a location away from the wild populations. A refuge population can serve as a backup for the natural



MAY/JUNE

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Sego Lily and Cactus Refuge Populations

populations, provide seed for restoring areas from which a species has been extirpated, and for providing researchers and hobbyists with a source of genetically representative material from a particular location.

While some endangered and threatened cacti are available from commercial sources, the numbers of cacti used as seed producers are not typically genetically representative and may represent only 10-30 plants. This is better than nothing, and would satisfy people who want the plants for their windowsill. But it is certainly not optimal for the hobbyists, researchers and folks doing habitat restoration. The question then becomes how to get a representative parent population without further endangering plants in habitat. The answer is to collect seed which is much more abundant than plants. So the idea is to collect a small percentage of seed (10 percent or less) from each plant in a larger more representative population. The larger the parent population, the better the representation. While gathering the seed, the remaining seed can be placed in strategic microhabitats where they are more likely to germinate. This would be done to offset the relatively negligible amount taken for cultivation. A brood stock with several hundred plants cultivated from these seeds can then be established. Further genetic representation can be brought in by pollinating cultivated plants from plants flowering in habitat without taking any more plants or seeds.

Ok, that is the theory. How is it working out with *Pediocactus despainii*?

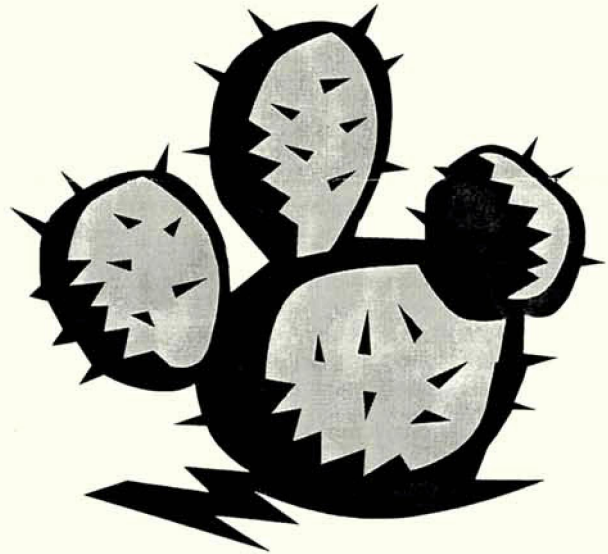
Pediocactus despainii is an endangered endemic from the San Rafael Swell in Emery County in central Utah. I have successfully grown *Pediocactus despainii* from seed and have several hundred seedlings. These seedlings are not genetically representative as the parents probably number less than 20 plants. It is a good start, however.

My germinating facility holds 472 cell flats of seeds and plants which grow under 8 F40CW fluorescent bulbs. This will be expanded to a total of 8 trays in the near future.

The first planting was in November 2000, and 88 of 128 sprouted. 48 died due to moisture retention in the soil. The remaining 40 were placed outside during summer 2001, survived, and were repotted into 4" pots in March 2002 and are growing rapidly. The second planting was in March 2001. 225 of about 500 sprouted. Only 2 died. The third planting was done in January 2002. 90 of 300 sprouted. 0 died.

The second and third plantings have been moved outdoors from my fluorescent germinating rack. The seedlings have been placed under two window screens to provide shade from direct sun until they can adapt to the brighter light.

Hopefully, I will have the first and second plantings in flower by spring 2004. At that point these non-representative plants will be producing thousands of seeds which can then be cultivated for sale. The proceeds would be used to finance expansion of a non-profit organization dedicated to mass producing endangered plants with the intent to reduce collection pressure on plants in the wild. I'm also hoping to develop a working relationship with the Fish and Wildlife Service to be able to set up refuge populations which can be used for restoration of damaged areas and potentially some expansion of populations into adjacent similar habitats in the wild. I am in the process of cultivating additional species and hope to report on those at some time in the future.



If any of you have seeds you would like to donate to this project with or without location data, or have any questions, contact me at mhedgies@hotmail.com. If seeds are of endangered or threatened plants, they need to be cultivated or otherwise legally acquired.

About the author: Jeff Mitchell was formally trained in computer science, and has had an interest in biological and natural sciences all of his life. He has been working with native Utah cacti for the since 1996. He is currently working on propagating 11 species of native cacti with others in the works.

2nd Annual Native Plant Sale at REI

Saturday, May 11, 10:00 a.m. to 4:00 p.m.

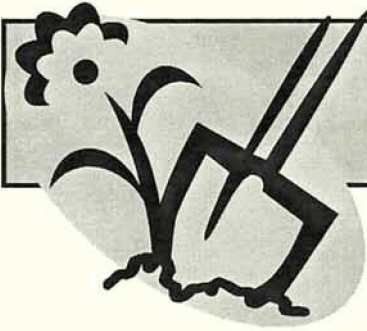
Meet us in the parking lot at the REI store at 3285 East 3300 South in Salt Lake City. This event will feature a grand assortment of native plants and seeds for sale as well as posters and possibly other items. We will have plants we have produced, and several nurseries will be participating as well. Plant sale proceeds will be used to support the UNPS Heritage Garden program.

Tony Frates and other UNPS members:

I would like to thank your organization for the work which has been completed in the past. I have worked in Washington County since the late 70's and do remember the progress for T&E plants which was made. I would like to update you on the progress which has recently been made on the dwarf bear-claw poppy. The following actions have been taken: The last several years a trail system has been developed in the Red Bluff Poppy Habitat and Stucki Springs Holmgren Milkvetch Habitat to centralize mountain biking activities and control OHV use. Along with the trail system, a bike patrol has been established to provide emergency care to bikers when needed and to monitor OHV activities. Patrol members are equipped with cellular phones so law enforcement authorities can be notified on any OHV activities. Also restoration work has been completed by our office and several Americorp Crews to erase unwanted trails, and other surface disturbances (approximately 10 acres of restoration each of the past 3 years). We have completed an exchange with the State of Utah on poppy habitat in the Webb Hill Population (south of Brigham Road). This exchanged consolidated the better habitat in this area and provided for an addition of approximately 80 acres poppy habitat. The past several years we have completed approximately 8 miles of protective fencing for the poppy. The following populations are now fenced from OHV and other surface disturbing activities: Shinob Kibe, Webb Hill (both north and south of Brigham Road), Red Bluff. The St. George Field Office (BLM) has completed a land use plan (1999) which provides a number of protective measures for T&E and BLM Sensitive Plan Species. The Warner Ridge and Red Bluff Habitats were designated Areas of Critical Environmental Concern. This year we will be completing protective fencing on 1 or 2 Shem Milkvetch Populations to restrict OHV and livestock grazing use. Also we will need some of the existing fenced areas patrolled and fence maintenance completed. We would like to work with your local Chapter on completing some of this work. I look forward to hearing from you. Bob Douglas Wildlife Biologist St. George Field Office 435-688-3204.

The Garden Niche Opens in Sandy!!!

Going native at long last, there will be a nursery in the Salt Lake area specializing in Utah native plants: The Garden Niche will open in Sandy on Monday, April 22. It is not a total coincidence that this is also Whole Earth Day. Our goal and purpose will be to provide plants that can grow in harmony with our other natural resources, rather than opposing them. Native plants are adapted to our climate; hot and dry in the summer, cold and wet in the winter. They do not suffer from the many pests and diseases that occur on tender exotics, so the pesticides are not needed. They thrive, in their own hardy fashion, with little or no added fertilizers, soil conditioners, or extra water. We have chosen water-thrifty plants for their unique beauty and usefulness in habitat creation for birds, butterflies, and native bees. Some examples: Cliffrose and Bitterbrush are medium-sized shrubs with cream-colored, wonderfully fragrant flowers like small simple roses that will perfume your yard. Pinyon pine is a slow-growing native pine that can produce pounds of delicious nuts in the Fall, and the bluejays know all about it. Dorr's sage is a petite shrub with fragrant leaves and lovely purple-blue flowers. The garden staff will be able to assist in design and plant choice, including modification of watering regimens to conserve during the continuing drought. The principal nurseries supplying stock for The Garden Niche are Janett Warner's Wildland Nursery in Joseph, Utah, and Merrill and Robert Johnson's Great Basin Natives in Holden, Utah. The Garden Niche is located at 10650 South, 700 East, Sandy, Utah 84091. The phone number is (801) 523-5020. Hours will be 10-6, Monday through Saturday.



Events and Activities

Waterwise Landscaping Class

May 7 and 14, 6 to 8 p.m. Red Butte Garden. This two night class will focus on all aspects of waterwise landscaping, from proper design, irrigation technologies and drought tolerant plant selection.

Utah Native Plants in the Landscape

May 18, Red Butte Garden, Lecturer: Paula Mohadjer. For more information call 581-IRIS. \$5 or free with garden admission price.

Upcoming Field Trip to Farmington Canyon

July 13th – Set this date aside for a great field trip up Farmington Canyon with Forest Service Ecologist Wayne Padgett. Details will follow in the next Segó Lily as to where and when to meet and what to expect from this spectacular trip.

Albion Basin Wildflower Walk

July 27th - Wildflower walk at Albion Basin! If you have not seen this gem in the height of summer, it is an absolute must! (Even if you have seen it, it's time to go again!) The display of wildflowers is astounding! Steve Jensen and Ann Crawley will lead this interpretive hike and answer any questions about the wildflowers, wetland characteristics and geomorphology. The two leaders completed a study in this area a few years ago, so they are very familiar with many aspects of Albion Basin. This promises to be a magnificent tour lasting about 4 hours. Meet at the parking lot of Goldminer's Daughter at the base of Alta Ski Area at 10 am and carpool it from there. The tour should end at about 2 pm. For further information, call Mindy Wheeler at 699-5459.

Utah Native Plants in the Landscape

Thursday, June 6, 7-8:30 p.m. Jordan Valley Water Conservancy District, 8215 S 1300 W. Back by popular demand! Susan Meyer, President of the Utah Native Plant Society, is once again teaching her acclaimed Native Plants in the Landscape workshop. Great slides and a wealth of information! Due to limited space, please RSVP 1-877-728-3420.

Garden Fair Days at Jordan Valley Water

June 8 and July 13. 8:00 a.m. to noon. Jordan Valley Water Conservancy District. The Garden Fair includes "Ask an Expert" information booths such as the Utah Native Plant Society, Center for Water-Efficient Landscaping, and Utah Water Conservation Forum, food vendors, and Waterlou entertainment. This will also be a great opportunity to pick up some of our beautiful native plants, because ALL of Utah's native plant and seed sellers will be there: Wildland Nursery, Great Basin Natives, Utah Wildflower Seeds, High Desert Gardens, and Paul Ames' seeds. JVVCD, 8215 S 1300 W, West Jordan. For more information call Paula at 565-4300.

Landscaping with Utah Native Plants Class

June 13 and 14. University of Utah Lifelong Learning class that will be held at Jordan Valley Water Conservancy District, 8215 S 1300 W. What better place to find plants that fit into your landscape than the natural environment around you? We'll cover which plants are native to Utah, sources for purchasing native, soils and irrigation and maintenance. Garden walks will expose you to many examples. \$49. To register call 587-5433.

Waterwise Gardening Basics in the Demonstration Garden

June 20, Thursday 6-7:30. Paula Mohadjer, Conservation Horticulturist, JVVCD. This class will be held at the JVVCD Conservation Demonstration Gardens, 8215 S 1300 W, West Jordan, for hands-on learning about waterwise gardening. Topics will include irrigation technologies, waterwise design, and proper plant selection. Free. As space is limited, please register at 565-4300.

Red Canyon Field Trip

The plans are still developing for a weekend at Red Canyon; I have info on a Bristlecone Pine forest in the area, and we have several members who know the endemics there. I can't get reservations at the campgrounds, but the person I talked to thought there shouldn't be a problem getting sites, except on Memorial Day weekend.

So I am scheduling the trip for a weekend between May 17 and June 15 (excluding Memorial Day) and the exact date will be set after I get a final response from members. Currently the idea is to have one or two group hikes on Saturday, and a potluck supper afterwards. The campground sounds nice and fully developed, including showers; see the website at

<http://www.fs.fed.us/dxnf/campground/redcanyon.html>.

There is also a commercial campground nearby with some cabins. See http://www.redcanyon.net/rc_rvpark/

Please respond to sgarvin@fs.fed.us or Susan Garvin, 801-356-5108 by May 10, and I will send you information on the plans as they develop. Also indicate if you'd like to participate in the potluck.

Great Perennials for Waterwise Landscaping

July 13, Saturday 10-noon. Jordan Valley Water Conservancy District. Lecturer: Franci DeLong, Xeriscape Design. Are you looking for some beautiful, long blooming, low-water and low maintenance perennials to use in your garden this year? This talk will give you a large palate to choose from and you'll see how they've been used in some of our local landscapes. Free. As space is limited, please register at 565-4300.

Trees and Shrubs for Waterwise Landscaping

August 15, Thursday 7-8:30 p.m. Jordan Valley Water Conservancy District. Lecturer: Doug Kilgren, City of Sandy Water Conservation Coordinator. Different waterwise trees and shrubs that can be incorporated in residential landscapes; both hard to find natives and ones found at the local garden center. Free. As space is limited, please register at 565-4300.

Ornamental Grasses

September 21, Saturday 10-noon. Jordan Valley Water Conservancy District. Lecturer: Julie Rotolo, Assistant Horticulturist. Learn about beautiful, drought tolerant ornamental grasses. This class will be held at the JWCD Conservation Demonstration Gardens so the grasses can be viewed in a garden setting. Free. As space is limited, please register at 565-4300.

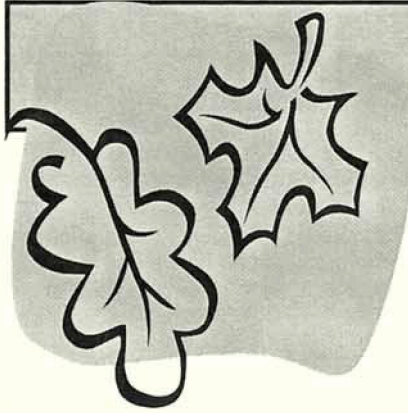
Dwarf Bear Claw Poppy

Dwarf Bear Claw Poppy to Benefit from grazing buyout The Grand Canyon Trust and The Nature Conservancy of Utah are fundraising for the purchase from a local Washington County, Utah rancher of the BLM grazing permit overlaying one of the largest remaining populations (Red Bluff) of the endangered Dwarf Bear Claw Poppy (*Arctomecon humilis*) south and west of St. George. TNC of Utah is attempting to raise \$8,000 as its share of the acquisition cost of cattle permits. If you are interested in contributing to this effort, contact Elaine York at (801) 531-0999 or at 0000,0000,8000eyork@tnc.org.

Zion National Park—What's up and Blooming!

under the "Southern Chapter" page that the Zion NP "What's up and blooming" link has been updated to include links to photographs for most of the plant species that are mentioned. The link is off of the Southern Chapter page or you can get there directly by navigating to: http://www.unps.org/zion/zion_index.html

UNPS is providing the resources to publish and maintain the information under its web site as a public service. UNPS member Margaret Malm is the author of actual material. I am doing the web work. Tony WASHINGTON COUNTY RARE PLANTS by Tony Frates As a part of an inquiry we made recently concerning the status of BLM related activities concerning endangered plant species in Washington County (including the ongoing plight of *Arctomecon humilis* aka dwarf bearclaw poppy which has long been the focus of various UNPS conservation actions and sponsored research projects), we received the following reply from Mr. Bob Douglas of the BLM's St. George Field Office which he has granted us with permission to reprint. We are extremely encouraged by the positive actions that have been taken and are being planned by the BLM and, through primarily our Southern Chapter, hope to foster a stronger working relationship and assist the St. George Field Office as appropriate and feasible in conjunction with rare plant related projects.



Chapter News

Cache Chapter

Despite the thick snow which lasted well into March, northern Utah's UNPS chapter eagerly anticipated greener times. We sponsored yet another sellout Native Plant Propagation Workshop on March 2nd. Participants have been reporting great success with this year's selections and are looking forward to planting them out. The USU Herbarium staff also gave us the red carpet treatment on our March 12th tour. We not only were able to (encouraged to!) pore through the samples collection, we saw how they are processed, the extensive library used in their research, the large slide collection, and even an online tour of their continuing database compilation. Oh, and those snacks! Thanks, Mary, Michael, and Ali.

Just a week later, instead of gleefully exploring the Herbarium treasures, we sat stunned by Dr. Steven Dewey's Invasive Weeds presentation. The threat these weeds pose for Utah's natives cannot be over-estimated – millions of acres in the West have already been lost to them. Indeed, Dr. Dewey has particular concern for areas such as Logan Canyon's Franklin Basin, where he has found evidence of weed invasion along trails popular with snowmobilers and ATV riders. Coincidence? We wonder.

In April, things really start to get busy for us. On April 18th, we'll have a tour of the Logan High School Strawbale Greenhouse (6:00 pm at Logan High School, 162 W 100 S. The greenhouse is located in the far southwestern corner of the west parking lot, behind the storage barn.) Here's a great opportunity to see the building method everyone's talking about. A year ago, students and community members built Logan's first (legal) strawbale structure - a greenhouse - on the grounds of Logan High School. Jack

Greene, UNPS member, LHS science teacher, and project leader, will show us around. Jack will also lead us on May 9th for an evening hike in Smithfield Canyon (6:00 pm at the Birch Creek trail in Smithfield Canyon. Call 435-258-0303 for more detailed directions.) This time, we'll be walking up Birch Creek to see early spring flora, with an emphasis on ethnobotanical lore.

In mid-May we will offer the outing/workshop *Identifying Northern Utah's Natives*. Mary Barkworth, USU Herbarium Director, will lead this oft-requested outing for all ages and skill levels. Class size is limited to 15, so call early. (May 18th, 1:00 pm, probably Green Canyon. Small fee, about \$1-\$2, to cover cost of hand-outs. Call 258-0303 for more information or to register.) We hope to offer this class throughout the year, so stay in touch!

Southern Utah Chapter

The Southern Utah Chapter of UNPS has been busy the last few months. We have had several work days and have the Heritage Garden for Three Falls Elementary well under way. We have the drip system in and working. We had a special planting day with help from the 3rd grade classes at the school. The native plants which were provided by Zion National Park and the Utah Native Plant Society are starting to grow. We even have an Indian Paintbrush blooming!





UNPS Spring Grant Recipients

By Larry Meyer

The Utah Native Plant Society has a long history of awarding grants for the advancement of the goals of the Society. The first was over 15 years ago for the study of the dwarf bearclaw poppy (*Arctomecon humilis*). Recently we have been awarding several grants per year. The fruits of the projects can be seen in the *Sego Lily*; it is a requirement that the awardee publish an article here as a condition of the grant. This spring session there were three awardees who span the areas of basic research, field research and service projects.

The first award is going to Julie P. Rieder who is pursuing her doctoral degree in ecology at Utah State University. Her research involves the non-native plant, yellow starthistle (*Centaurea solstitialis*), a project titled "Yellow starthistle: An Investigation of Invasion Processes." She will investigate the mechanisms governing invasion and the susceptibility of plant communities to invasion. Her main objective is to contribute to our understanding of invasive weeds by investigating two phases of the yellow starthistle invasion process: initial colonization and subsequent encroachment. Her goal is to shed light on the mechanisms driving susceptibility of native communities to invasion by yellow starthistle. The research will be conducted in a yellow starthistle infested field at the Lindquist Memorial Gardens of the Wasatch in South Ogden, Utah. It will address the following question: How does proximity to a yellow starthistle patch, disturbance, nutrient availability, and seed rain of yellow starthistle influence the ability of yellow starthistle to colonize a native plant community?

The second award was to Thomas O. Clark, Chief of Resource Management & Science at Capitol Reef National Park for a regional inventory of endangered plants in south central Utah. The objectives of this project are to; 1) conduct a regional endangered plant inventory to have accurate data on locations of these rare and endangered plant species both within and adjacent to CARE and, 2) to help develop monitoring criteria and standards for the listed species. The specific species to be studied are:

Barneby reed-mustard (<i>Schoenocrombe barnebyi</i>)	Endangered
Jones cycladenia (<i>Cycladenia humilis</i> var. <i>jonesii</i>)	Threatened
Last Chance townsendia (<i>Townsendia aprica</i>)	Threatened
Maguire's daisy (<i>Erigeron maguirei</i>)	Threatened
Western nodding ladies-tresses (<i>Spiranthes diluvialis</i>)	Threatened
Winkler cactus (<i>Pediocactus winkleri</i>)	Threatened
San Raphael cactus (<i>Pediocactus despainii</i>)	Endangered
Wright fishhook cactus (<i>Sclerocactus wrightiae</i>)	Endangered

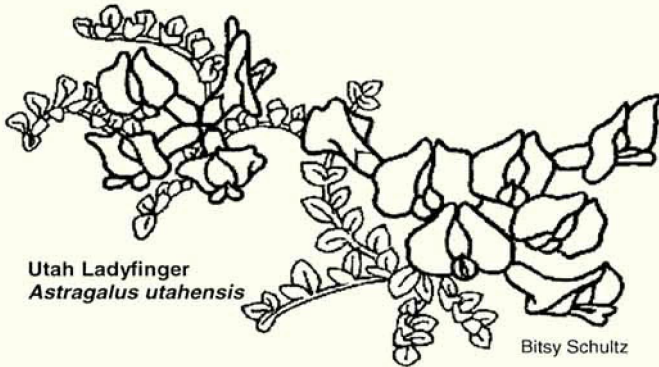
An additional species, *Gilia caespitosa*, is a candidate for listing. This project will map all known populations of these species in the Capitol Reef National Park and on adjacent BLM and FS lands. It will overlay known population locations with soil types, geologic formations, slope, and elevations to create a profile of potential habitat. Funding received through this Grant-In-Aid Program would be used to help fund a student through the federal Student Trainee Employee Program (STEP). The purpose of this program is to employ students majoring in appropriate programs to teach them about working for the federal government and give them the opportunity to learn more about their selected major in a work environment.

The third award goes to Tamara Naumann to fund a Natural Resource Internship at Dinosaur National Monument. The intern will be working with several projects over the summer. The first is a Volunteer Weed Warrior Program—this program focuses on education and volunteer service. Last year, the park worked with 768 volunteers, who donated 1,888 hours of service toward removing invasive tamarisk, perennial pepperweed and leafy spurge from the park. The second main project is Native Plant Propagation and Restoration. The intern will maintain a small nursery and demonstration garden, propagate new plants, collect native seed and work with other staff on restoration and education projects.

The funds for these grants come from poster sales and some from dues. Increasing costs for mailing and photocopying use an increasing percentage of dues money. New membership forms will have a spot for an additional donation to help fund our programs. The UNPS is increasingly active in initiating demonstration native, low water gardens through our heritage garden program, funding grants such as these and advancing the weed warrior program to try to eliminate invasive exotics that threaten our natives. We are an IRS approved charity and any donation is fully tax deductible. If you think these programs which directly benefit the Utah community are worthwhile, please consider a donation to our grant fund when you renew. If you really like these programs, send your check now! Thank you.

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Susan Garvin: 356-5108
Larry Meyer: 272-3275
Or write to: unps@unps.org

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www.unps.org

Many thanks to Xmission for
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Please direct all suggestions,
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at paulam@jvwcd.org. **The
deadline for next issue is
June 14.**

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Canyonlands: Karen Dohrenwend &
Sarah Haffron
Central Utah Chapter
Mountain: Abby Moore
Price: Mike Hubbard
Salt Lake: Mindy Wheeler
Southern Utah: Mike Empey
Utah Valley: Phil Allen

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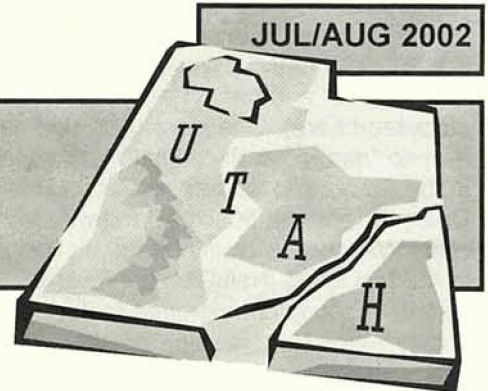
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VOLUME 25, ISSUE 4

JUL/AUG 2002

Creating a Sense of Place



By David Salmon, High Country Gardens

While native plants have always had a small but devoted following, both the general gardening public and mainstream horticulture have overlooked our native flora for years. Why is this so? Perhaps because familiarity breeds contempt, and people equate the plants they see growing naturally in the fields and roadsides with "weeds". Perhaps it stems from our infatuation with the English garden--borrowing heavily from English plant lists has resulted in their overshadowing our own native species.

Whatever the reason for their omission, the past decade has seen an explosion of interest in native plants. As growers respond to this renewed interest by improving growing techniques and offering a larger variety of natives from all parts of the United States, these once-forgotten beauties are beginning to find their rightful home in our gardens and landscapes.



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We should start by examining the term "native" more closely. For many purists, "native" is defined as any plant found growing naturally within an arbitrary distance of their home. Others would consider "native" plants to be any plant found growing naturally within their state. But narrow definitions are limiting. Because plants don't read maps, decisions as to "native" or "non-native" based on these criteria can be artificial. I like to define "native" as any plant growing in North America.

Now that we have gotten the "is it native?" decision out of the way, we can move on to more important information. I find that using natives in the garden works best by grouping plants according to the regions in which they are found and then into subgroups according to their specific habitat within that region. For example, a certain group of plants could be referred to as Short Grass prairie natives. Within the Short Grass prairie there are numerous plant habitats such as riparian (stream side), limestone hills and outcroppings, sand hills and many others. Data as to the place of origin

Creating a Sense of Place (cont.)

(state, county and altitude) gives the collector of native plants additional important information. By using this broad definition as to what is native, geographic and habitat information can then be used to decide how to group native plants with compatible companions in the garden.

How we incorporate native plants into our home or commercial landscapes is open for interpretation. There are three predominant methods of landscaping with natives: "natural landscaping", "gardening with natives" and habitat restoration (which won't be discussed here). One increasing popular style is termed "natural landscaping." This style is championed in the Southwest by authors Judith Philips ("Natural by Design"), and the husband and wife team of Sally and Andy Wasowski ("Native Gardens for Dry Climates"). In the Mid West, Neil Diboll of Prairie Nursery in Wisconsin has long championed restoring tall grass prairie in commercial and residential settings.

Each region of the country has a certain look and feel to its native terrain. A natural landscape artfully incorporates the native trees, shrubs and wild flowers of the area in such a way that it enhances the beauty of the building or home while blending in with its natural surroundings. When you stand in that yard and look around, you should be able to identify the region in which you are standing based on the plants that have been used. This is what is often meant by "sense of place." On the other hand, the typical generic landscape of blue grass and clipped Yew hedges fails to convey a regional feel and seems more like a national franchise than something with regional flavor.

Because gardening with native plants means different things to different people, it is helpful to specify your aims. For native plant enthusiasts this could mean re-creating a native-only grouping of species from their immediate area. Re-creating regional groups of native plants from different areas of the country is also popular. For example, in my rock gardens I've planted small separate sections with groups of plants from UT, NV, eastern CA, and northern AZ. Gardeners with shady properties often love to garden with woodland native species. Serious plant collectors will collect all the species within a given genus, or use plants of the same species collected from different locations as a way to study a given genus or species in more detail. Other styles of gardening like xeriscaping use native plants as part of the larger objective, which is to achieve a regionally appropriate, low maintenance, low water use design. In xeriscaping, natives can be used exclusively or in combination with other

"adaptive plants" (plants from other parts of the world that grow equally well in their new home.)

However you decide to incorporate natives into your garden or landscape, their use has numerous benefits. Many native plants are incredibly beautiful and interesting to grow. Using them in our gardens helps us appreciate and understand our natural plant heritage. Native plants are adapted to difficult growing conditions and are genetically programmed to survive in their native habitats or similar environments. When well matched to their growing environment, their use will create a more sustainable landscape that requires less maintenance and uses fewer chemicals and fertilizers. Native plants also provide local birds, insects and other animals appropriate food and shelter. Gardening with native plants can also help sustain the populations of rare or threatened plants that may be disappearing in habitat due to human activities. This concept is known as "conservation through propagation". For example, the spectacular Texas native, *Salvia penstemonoides* was thought to be extinct, but the plant was recently re-discovered and introduced back into cultivation by the Lady Bird Johnson Wildflower Center. It is now becoming more widespread as gardeners have anxiously welcomed this beauty into their gardens.

From the vast numbers of native species that can be found coast to coast, we need to distill out the most ornamental and adaptable species for use in our gardens and landscapes. This has been a focus of the High Country Gardens catalog since its inception. This search has been facilitated by our location in Santa Fe, located as it is at the intersection of three different regions: the short grass prairie of the Great Plains, the southern tip of the Rocky Mountains and just to the north of the vast Chihuahuan desert of Mexico, west Texas and southern New Mexico. Being located in a USDA zone 5/6 area, the attribute of cold hardiness has been at the top of our list of criteria when looking for outstanding plants from all three of these regions. We are also finding many excellent species from high altitude areas of northern Mexico, the Sierras of eastern California and the Great Basin area of Utah, Nevada and Arizona. Natives from the Midwest and eastern United States have demonstrated excellent adaptability to our local growing conditions as well.

High Country Gardens has a full catalog of drought-tolerant plants for the Western garden. Visit their site at <http://highcountrygardens.com>. To subscribe to the free e-zine "Xeriscape Gardening News," send blank e-mail to join-gardens@lists.highcountrygardens.com.

The Utah Heritage Gardens Come of Age!



By Susan Meyer and Bitsy Schultz

Back in the spring of 1998, the Heritage Garden Program was just a gleam in its mothers' eyes. We had a lot of very interesting plants that we'd never tried in a garden setting before, and a willing partner with a fine site for a native plant demonstration garden, teacher Darrin Johnson at Wasatch Elementary School in Provo. We planted the Wasatch garden four years ago this June, and just as the plants there have continued to grow and prosper, so has the Utah Heritage Garden Program that was founded with that first planting. The number of successful Utah Heritage Gardens has increased each year, and the reach of the program has extended now from Logan on the north to Hurricane and Bluff on the south, with a total of twenty-three gardens to be in place by summer's end. And, to cap off a busy spring this year, the Wasatch Heritage Garden itself has undergone a major expansion, from about 3,000 to almost 5,000 square feet.

As the Utah Heritage Garden Program has increased in size and complexity, the role of UNPS, and of these two garden moms particularly, has undergone a gradual change. We still provide some vital support services to incipient and existing gardens. These include design advice, plants, signage, and interpretive materials. But we can no longer personally oversee the planting and maintenance of so many gardens—we must rely on local 'gardening angels', usually the people who first came to us with their requests for help with gardens, to carry out the long term goals at each garden site. One of the real pleasures for us has been connecting up with so many great people who have been willing to take on the cause and make it their own. The result is a series of gardens that are very different from each other, as factors such as climate, site constraints, and intended function interact with the unique vision of particular individuals.

Once all these new gardens are actually in the ground, very soon now, it will be time for us to focus once more on the ultimate goal for these gardens, namely educating people about Utah native plants and their use in water-conserving landscaping. This means updating the Heritage Garden section of our website, not only with detailed information and plant lists for each garden, but also the plant database section, where people can see photos of the plants and get information on their use and culture. We have already posted our list of local suppliers of native plants and seeds, as well as our Beginner's Guide to Gardening

with Natives. This is just the beginning of our expanded Heritage Garden webpage. By the end of summer, we hope to post interactive materials on designing home landscapes using Utah native plants in combination with the principals of xeriscaping, complete with some 'virtual front yards' to show how these designs might actually look.

For now, though, our best examples of landscape designs using native plants are the heritage gardens themselves. Many of the older heritage gardens are definitely worth a visit this June—these include gardens at Wasatch Elementary School and at Rock Canyon Trailhead Park in Provo, on the University of Utah Mallway, and at 46 East 300 South in Price. There are also established heritage gardens at Jackson and Ensign Elementary Schools in Salt Lake, at the Layton Heritage Museum, and at Benson Grist Mill Historic Park in Stansbury Park, and in Park City. Gardens planted in 2001 at Vivian Park in Provo Canyon, at Iron Mission State Park in Cedar City, and at Three Falls Elementary School in Hurricane are also beginning to come into their own.

Now for the 2002 heritage gardens—there are eleven new gardens, almost doubling the size of the program. Two of these gardens have already been in existence for two years or more, but have chosen to affiliate formally with the program this year—these are at Utah Valley State College in Orem and at Canyon Rim Elementary School in Salt Lake. Several of the other new gardens are also located at schools: Escalante High School in Escalante, East Carbon High School in Sunnyside, Our Lady of Lourdes Elementary School in Salt Lake, Cache Valley Learning Center in Logan, and Bluff Elementary School in Bluff. This last garden is particularly interesting in that it will feature bilingual signage and ethnobotanical interpretive literature to honor the largely Navajo student body there. The other four new gardens are being sponsored by local government entities in Moab, Boulder, Tooele, and Sandy—see Doug Kilgren's article in this issue for more on the new heritage garden at Sego Lily Gardens.

The Heritage Garden Program would never have grown so quickly or so well without the generous support of several people and organizations. A grant from the USDA Bureau of Reclamation has made it possible to provide signage and interpretive materials for each garden, as well as to develop various aspects of the website. The USDA Forest Service Shrub Sci-

Utah Heritage Gardens (cont.)

ences Laboratory in Provo has graciously provided excellent rearing facilities for the many thousands of plants grown for heritage garden projects over the years. Janett Warner (Wildland Nursery), Brent Collett (formerly of the Thanksgiving Point Production Greenhouses), and Roger Kjelgren (Center for Water Efficient Landscaping at USU) have also donated many fine plants for garden projects.

The program has received quite a bit of press coverage, including full page color spreads in the Salt Lake Tribune last summer and the Price Sun-Advocate a few weeks ago, as well as articles in the Moab Times, the Provo Herald, and other local papers. The program was honored earlier this spring for its role in promoting water conservation in the state in the form of a citizen award for Susan Meyer from the Utah Water Conservation Forum.

Where do we go from here? Some have suggested that perhaps we have enough native plant demonstration gardens now and could move on to a new phase, while still aiding and abetting existing heritage gardens to become the showplaces we need them to be. Some have suggested that perhaps these particular progenitors have produced enough of these progeny. As we move into the long, lazy days of high summer, we might be inclined to agree. But when winter comes, and the urge to propagate takes over, we will probably be looking for new homes for yet another crop of baby plants.



Plant Profile: Globemallow

By Susan Meyer

Looking for a native wildflower that will thank you for a little extra water every few weeks by

blooming all summer long? Globemallows (*Sphaeralcea*) fit that description, and offer several other nice features as well. They have flowers that are truly orange, a beautiful, bright red orange that some authors call grenadine. The flowers resemble miniature hollyhocks in form, but unlike hollyhocks, globemallow flowers are fragrant, with a delicate, sweet scent, somewhat reminiscent of cotton candy. Unlike many native perennials, globemallows often flower the first year from seed, and given appropriately lean conditions, they live for many years.

There are several species of globemallow native to the state of Utah, but they all have rather similar habitat preferences and cultural requirements. They are plants of dry, barren, usually stony ground at low to middle elevations, and they love heat and bright sunshine. Shade, high fertility, over-watering, and the close companionship of too many other plants are their worst enemies. Too much water and high fertility can lead to oversized globemallows with a lot of leaves but not many flowers and a tendency to flop over the first time the wind blows. Give these plants the sunniest, driest corner of your property, where the soil is rocky and poor, and you will be rewarded with intensely colorful, long-lived plants.

Choose your globemallow species with an eye to its final size and growth form, as well as considering where you live in the state. The most strong perennial of our species, becoming sub-shrubby in the wild, is desert globemallow (*S. ambigua*). It is characterized by very fuzzy, only slightly lobed leaves that are crinkly on the edges, as well as by a somewhat woody habit. Desert globemallow, also called apricot mallow, is a plant of the warm deserts of the Southwest, entering Utah only in the St. George area. It is questionably cold-hardy on the Wasatch Front, but would be a great choice for home landscapes in the warmer parts of southern Utah.

At the other extreme in size is cushion globemallow (*S. caespitosa*). This little plant has fuzzy, flat, wedge-shaped gray-green leaves and an abundance of relatively large, orange flowers, but rarely exceeds six inches in height. It is restricted in the wild to a small area in the cold desert country of western Utah, out west of Milford, but it is quite common in that area. It looks great in a rock garden setting, but has a tendency to be short-lived.

Our other diminutive globemallow is scarlet or common globemallow (*S. coccinea*). This plant is very widely distributed throughout the Intermountain West and the Great Plains. It is our only species that forms long-lived patches from creeping rootstocks. It is rather slow to spread, however, so its creeping habit is not a problem in the garden. It coexists well with short grasses in a dry meadow, and is often

found in this setting in our foothills and valleys. Scarlet globemallow has very attractive, deeply divided leaves that are usually bright green.

Another globemallow with strongly lobed leaves is gooseberryleaf globemallow (*S. grossulariaefolia*), but the 3-5 lobes are not so deeply cleft as in scarlet globemallow. This globemallow is found throughout the drier parts of the state and across the Intermountain West. It forms clumps to three feet in height, with most of the leaves concentrated in the lower third of the plant. This sets the masses of orange flowers off to nice advantage. Gooseberryleaf globemallow would be my first choice as a globemallow to integrate into a Wasatch Front xeriscape garden. It is tall enough to attract some attention, but rarely gets 'floppy' even when overfertilized.

The typical tall globemallow with shallowly lobed leaves throughout the northern half of the state is Munro Globemallow (*S. munroana*). It is replaced in the south by the very similar Nelson Globemallow (*S. parvifolia*). Both these species make excellent garden plants as long as conditions are lean. These species may hybridize with Gooseberryleaf Globemallow in the wild, making for some rather mixed up looking populations, but that should not be a worry for gardeners.

Globemallows are easily propagated from seed, and in fact tend to propagate themselves rather readily in a garden setting. The best cure for this is to clip the spent stalks after flowering; this also encourages the development of more flowering stalks. To harvest seeds, wait until the globe-shaped fruits are straw-colored, dry, and preferably beginning to split open. Strip them from the flowering stalks into a paper sack—it's good to wear gloves to do this, as their tiny, fiberglass-like hairs can be rather irritating. The seeds are small, maybe a sixteenth of an inch across, wedge-shaped, and dark gray or black. The fruit is built somewhat like a dry orange, in sections, with one seed in each. You can gently crush the fruits to release the seeds. This is easier for some species than others, with Scarlet Globemallow the most stubborn.

The seeds of globemallows are generally hard, which means that they do not take up water. They must somehow be scarified (scratched or nicked) on the sur-

face to overcome this hard-seededness. Once they take up water, there is no dormancy, and the seeds will germinate readily. Plant the scarified seeds in a coarse, fast-draining mix. The tiny seedlings should emerge in a few days. They grow quickly and will be ready to transplant outside in about three months. Alternatively, you can direct-seed globemallows into a relatively weed free seed bed. Cover very shallowly by gentle raking after broadcasting the seeds. If you plant in the fall, nature will take care of the scarifying for you. Avoid planting in seed mixes that will offer too much competition.

Globemallows are not fussy about their soil requirements, growing equally well in sandy or clay soils, as long as they are not over-watered. They have few pests. We know that they are virtually grasshopper-



proof, as determined in a planting trial where the hoppers actually ate everything else, including all the cheatgrass for miles around, but not the globemallow. Deer tend to disdain them too. They do sometimes have problems with a rust disease that causes black spots on the leaves and leads to reduced vigor or even death in extreme cases. But even then, the plants usually ripen some seeds, and are able to try again another year. The hard seeds can live in the soil for up to a decade.

New Heritage Garden at Segó Lily Gardens

By Doug Kilgren

At Segó Lily Gardens, Sandy City's low-water use demonstration gardens, between 3000 to 3500 square feet have been set aside for plants native to Utah. That section of the gardens will become a part of the Heritage Garden program. Segó Lily Gardens has been open since 1999, but until this year there has not been a major focus on native plants. This year there has been an increasing emphasis on showcasing native plants in various ways. With the drought in its fourth year there is more interest than ever in alternative plants, so now is the time to show the public what is possible.

The goal with the Heritage Garden at Segó Lily Gardens is not just to show examples of plants native to Utah, but to show them as much as possible how they would be found in the wild. To that end, the Heritage Garden has been divided up into the different ecological zones found in Utah. Within the Heritage Garden is a section for plants found in wetter environments along streambeds. Another area is dedicated to plants that do well in sand (Segó Lily Gardens is essentially one large sandbox). A small section of the Heritage Garden will be set aside for plants that survive in the salt deserts of the Great Basin. Another section have plants that are characteristic of the Colorado Plateau. The largest section of the Heritage Garden will be for plants found within the Sagebrush and Pinyon-Juniper ecological zones. In a different location in Segó Lily Gardens there will be a small section for plants found in the high mountains such as Snowberry and White Fir.

One of the advantages of Segó Lily Gardens is that we have very well-drained soil, so many of these plants should do quite well. Segó

Lily Gardens is also fairly high up in the bench, so there are opportunities to try less cold-hardy plants found in areas like St. George, such as the Joshua Tree. Being high up in the bench, we also have a great view of the Salt Lake Valley.

Plants native to Utah will also be integrated in other sections of the garden to show their potential within more formal landscapes. The ultimate goal at Segó Lily Gardens is to diversify the turf-dominated landscapes found in Utah, by bringing in more drought-tolerant plants, especially natives. Other sections in the garden that feature native plants include: a fragrance garden, perennial beds, a section for plants on hill-sides, a southwest garden, and an area for plants that need no supplemental irrigation.

We are looking to having much of the Heritage Garden completed, including signs and trail, by early July. You are invited to come out and see the new Heritage Garden anytime but an open house will occur on Saturday, August 17th from 10 a.m. till 1 p.m. Segó Lily Gardens can be found in Sandy City at 1472 East Segó Lily Drive. If you have any questions call Doug Kilgren at 568-6048. At Segó Lily Gardens we look forward to providing an outstanding opportunity to experience the native plants of Utah in a large garden setting.



Weeding the Clay Phacelia

By Elaine York

From a distance it seems little grows on the steep Spanish Fork Canyon slope. There are millions of shale fragments, but only a few plants. A shrub here and there, and scattered herbs. The small group of volunteers who met there on June 4th know otherwise. This is the home of the endangered clay phacelia (*Phacelia argillacea*).

The volunteers gathered at The Nature Conservancy's Clay Phacelia Preserve at the urging of Dr. Kimball Harper - botanist, Brigham Young University professor emeritus and Nature Conservancy board member. As he's studied the phacelias through the years, he's noticed an increase in weeds. He gives a few simple weeding instructions to the volunteers. Then, cane in hand, he carefully walks up the unstable slope, finds a weed patch and begins weeding.

Dr. Harper's passion for Utah's native plants is obvious. His eyes light up when he speaks of several - dwarf bearclaw poppy, evening primrose, bitterroot, and clay phacelia. He saw few mature phacelias during the weeding project, but he was undisturbed by this. "It's a plant that produces few during dry years. In a wet year, this slope will be covered by a couple hundred phacelias." We all stopped to take a closer look at this botanical treasure. The clay phacelia stood about ten inches high. Leaves, both basal and cauline, are elongated ellipses with undulating margins; each flower a delicate, purple chalice with an explosion of exerted stamens.

The clay phacelia was discovered at this site in 1971 by Duane Atwood. At the time, the slopes were heavily used by sheep and deer. In 1990, after many years of negotiations, The Nature Conservancy purchased the 69 acre property and fenced it to prevent animals from browsing or disturbing the habitat. Meanwhile, Ben Franklin, Utah's Natural Heritage Program botanist, discovered another nearby population on private property. U.S. Fish and Wildlife is working to protect this population from current highway construction.

Horehound (*Marrubium vulgare*) and hound's tongue (*Cynoglossum officinale*) were the villains of the day. By evening, five large trash bags were filled with the weeds. Dr. Harper and the volunteers were pleased with the progress and have made plans to weed at the site annually.

Thank you to the clay phacelia weed warriors - Dr. Kimball Harper, Susan Garvin, Tom Cannon and Rick Van Wagenen!

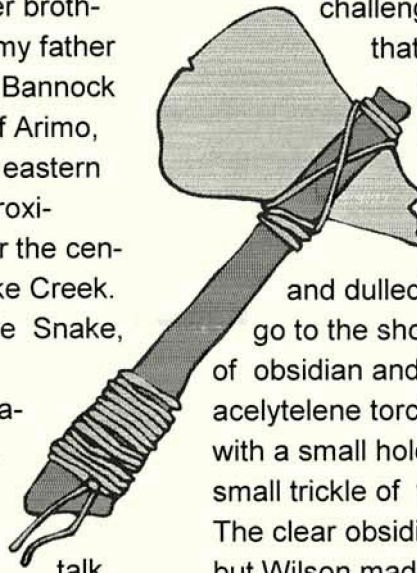
Editor's note: Elaine is a botanist and a volunteer coordinator for The Nature Conservancy of Utah. She too is a clay phacelia weed warrior and has been coordinating public education projects relating to rare plants that occur in the St. George area for the past several years. You can reach her at 238-2320 or at eyork@tnc.org.

The Tomahawk

By Dennis Mason

To start with, my Father Wayne Nebeker Mason was born and raised in the small towns of Brigham City, Riverside, Garland, and Plymouth. His father, William Sterling Mason inherited a farm about 2 miles north of Plymouth, Utah, known as the Mound Springs Ranch. His father was George Sterling Mason, who homesteaded the Mound Springs Ranch which was a stage coach stop. With 9 living children and two older brothers intent on owning the whole ranch, my father bought a farm in Idaho, located on the Bannock and Power county line, 15 miles west of Arimo, 20 miles south of Pocatello, and in the eastern end of Arbon Valley. The farm had approximately 1400 acres. It had a spring near the center of the farm that headed Rattle Snake Creek. The spring was named after Chief Rattle Snake, who was a brother to Chief White Bear (Grisley Bear). Wilson was an Indian laborer, but was well known in the family. If he had any other name, I have not heard it. I was in my early teens when I first met Wilson, and he would never talk very much. His responsibility was to run one of the two D4 Caterpillar tractors at night in order to plant the spring wheat, and therefore he slept most of the day time, and I did not see much of him. I first became acquainted with him when he was working on a piece of obsidian which was plentiful around the farm. He was making an arrowhead. He was using a deer horn to chip the edges while wearing thick leather gloves, and holding the volcanic glass in another piece of leather. He gave me the arrowhead. I asked him where the obsidian came from that is all over the farm, and his simple answer was, "Yellowstone." I didn't understand until

many years later that the good obsidian always came from Yellowstone where they have enormous obsidian cliffs. I showed Wilson my numerous arrowheads, spear heads, stone knives, and a tomahawk head that I had found, on the farm. He inspected each and every one of them, and told me that they had mostly been made in a fire by dropping water on the edge of a hot piece of obsidian. I



challenged that comment by saying that I had seen him chip the edge of his arrowhead with a deer horn. He then showed me that his arrowhead was shiny and clear in some places, whereas, mine were clouded and dulled by heat. We then decided to go to the shop on the farm with clear pieces of obsidian and heat them with the acetylene torch. Wilson rigged up a tin can with a small hole in the bottom that allowed a small trickle of water to flow out the bottom. The clear obsidian quickly clouded in the heat, but Wilson made some lovely arrowheads, after he learned how much water to put on the hot obsidian. Wilson asked me if I would like to make a throwing tomahawk out of the tomahawk head I had found. I thought it was a grand idea for the day. I soon learned that it would not be done in a day, a week or a month, and it took us most of the summer to finish the job. We started looking for the right kind of wood with the right kind of fork in a branch. I followed Wilson for miles as we went from willows to choke cherry to mountain maple groves all over the farm. He was not interested in quaking aspen or pine. We finally found a mountain maple branch, I think,

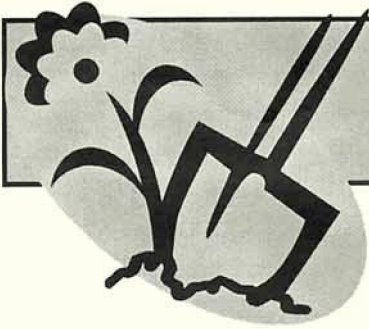
that appeared to be the right size, shape, and had an almost perfect branch on it. It took about a week to find it. Wilson cut it with a saw and placed it in the Rattle Snake Creek spring head. Many years later, I learned that the Vikings and other European ship builders would select a mast pole and place it in water formed by a spring head to have the cold water draw the sap out of the pole without cracking the wood. But at the time, I thought Wilson had marbles in his head. After about 10 days, we removed the branch from the water, but Wilson had been busy shaping a stone with a hammer and a chisel to match the size and shape of the tomahawk head. He also had been soaking a rawhide skin. He placed the branch in the barn and suspended it from the ceiling. He then had me moisten the top of the branch several times a day and rotate the branch that had the stone in the fork. He had wet, at first, rawhide strips pulling the branch forks around the stone as they dried. This took several days. In the mean time, Wilson had been collecting golden rod, sage, choke cherries, currants, and other items for coloring of the tomahawk handle. He also had found feathers from hawks and other

birds. The coloring plants were boiled in water, and a wax like color substance was collected from the surface of the water. He also cut rawhide which he continued to soak, and from somewhere he had long sinew cords. Finally, he assembled all his materials, and with files and rasps in the shop he worked on the handle, after removing the stone and rawhide strips. He singed the wood with the torch. I thought it was to color the stick, but I have since learned that it strengthens the wood. The head fit beautifully. he covered the handle in rawhide, then he colored it with the colored wax. Then he decorated it with feathers. It was beautiful. This process took several days. We waited again for everything to dry, and then we went and threw the tomahawk at a tree stump. He could throw it very well, but I couldn't. I kept the tomahawk for several years, but it disappeared or I lost track of it. I gave many items away including many perfect arrowheads. I still have many arrowheads, spear heads, a scraper, a sewing awl, and a few stone axe heads, but I do not have the tomahawk.

Book Signing

The Garden Niche and the Utah Native Plant Society will host a book signing on Monday, June 24 from 6:00 to 8:00 p.m. for the recently released book "How to Get Your Lawn Off Grass: a North American guide to turning off the tap and going native". The author, Canadian Carole Rubin, will give a slide show presentation. Her new book and other information on low-water-use landscaping with native plants will be available. There will be displays on low water turf, as well as shrubs, trees and perennials at the Garden Niche, located at 10650 South, 700 East, in Sandy, Utah. For more information call the Garden Niche: 523-5020.





Events and Chapter News

Garden Fair Days at Jordan Valley Water

July 13. 8:00 a.m. to noon. Jordan Valley Water Conservancy District Demonstration Garden. The Garden Fair includes "Ask an Expert" information booths such as the Utah Native Plant Society, Center for Water-Efficient Landscaping, and Utah Water Conservation Forum, food vendors, and Waterlou entertainment. This will also be a great opportunity to pick up some of our beautiful native plants, because ALL of Utah's native plant and seed sellers will be there: Wildland Nursery, Great Basin Natives, Utah Wildflower Seeds, High Desert Gardens, and Paul Ames' seeds. JWVCD, 8215 S 1300 W, West Jordan. For more information call Paula at 565-4300.

Waterwise Gardening Basics in the Demonstration Garden

June 20, Thursday 6-7:30. Paula Mohadjer, Conservation Horticulturist, JWVCD. This class will be held at the JWVCD Conservation Demonstration Gardens, 8215 S 1300 W, West Jordan, for hands-on learning about waterwise gardening. Topics will include irrigation technologies, waterwise design, and proper plant selection. Free. As space is limited, please register at 565-4300.

Farmington Canyon Field Trip

July 13th- Wayne Padgett, Ecologist with the Wasatch-Cache National Forest, and the new botanist for the forest have enthusiastically agreed to lead a field trip up to the Farmington Canyon area. Wayne promises some wonderful flowers in many different ecotypes as we make our way up Farmington Canyon. Wayne suggests you bring a lunch, you never know how distracted a whole bunch of plant enthusiasts can get!! Meet at the parking lot of Salt Lake Community College (SLCC) at 9 am on the east side of the campus. Turn right off 17th South (heading East) at about 2nd East. If you have any questions please call Mindy Wheeler at 801-699-5459.

Albion Basin Field Trip

July 27th- Steve Jensen and Ann Crawley have also excitedly agreed to lead a field trip up to the gem of Little Cottonwood Canyon- Albion Basin. The end of July is the height of the wildflower season up there. Not only will we get our botanical interests satisfied, Steve and Ann will also share their extensive knowledge about the geology and hydrology of the area. Meet at 10 am in the parking lot of Gold Miner's Daughter at the base of Alta Ski Area. OR meet at 9:30 am at the park-and-ride at the mouth of Big Cottonwood Canyon to carpool up to Alta. If you have any questions please call Mindy Wheeler at 801-699-5459.

Great Perennials for Waterwise Landscaping

July 13, Saturday 10-noon. Jordan Valley Water Conservancy District. Lecturer: Franci DeLong, Xeriscape Design. Are you looking for some beautiful, long blooming, low-water and low maintenance perennials to use in your garden this year? This talk will give you a large palate to choose from and you'll see how they've been used in some of our local landscapes. Free. As space is limited, please register at 565-4300.

**Demonstration
Garden**
A Slow The Flow Program



Overnight Field Trip

August 9-10th- Bill King is leading a joint overnight trip for the Utah Native Plant Society and the Rock Garden Society to Great Basin National Park. They plan to leave Salt Lake on Friday afternoon and hike to the Cirque Basin (or the glacier) on Saturday to view the unique Bristlecone Pine community in the area. If you are interested, give Bill King a call at 582-0432 for more information.

Trees and Shrubs for Waterwise Landscaping

August 15, Thursday 7-8:30 p.m. Jordan Valley Water Conservancy District. Lecturer: Doug Kilgren, City of Sandy Water Conservation Coordinator. Different waterwise trees and shrubs that can be incorporated in residential landscapes; both hard to find natives and ones found at the local garden center. Free. As space is limited, please register at 565-4300.

Ornamental Grasses Workshop

September 21, Saturday 10-noon. Jordan Valley Water Conservancy District. Lecturer: Julie Rotolo, Assistant Horticulturist. Learn about beautiful, drought tolerant ornamental grasses. This class will be held at the JWCD Conservation Demonstration Gardens so the grasses can be viewed in a garden setting. Free. As space is limited, please register at 565-4300.

Volunteers Needed for Wetland Sites

Red-winged blackbirds... Muskrats... Beaked sedge... Dragonfly larvae - committed Utah citizens are encountering and counting all these and more. Utah Division of Wildlife Resources is beginning its third season of wetland monitoring by citizen volunteers, and can use your help. People with interest and/or expertise in birding, water quality, macroinvertebrates, or vegetation are needed to help sample wetland sites in Cache Valley during the Summer 2002 (June through September) and Spring 2003 (March through June). The project includes training by wetland specialists and requires a commitment of 3 hours per month. For more information contact Brian Nicholson or Barbara Daniels at 435 797 8058 or wetlands@utah.gov.

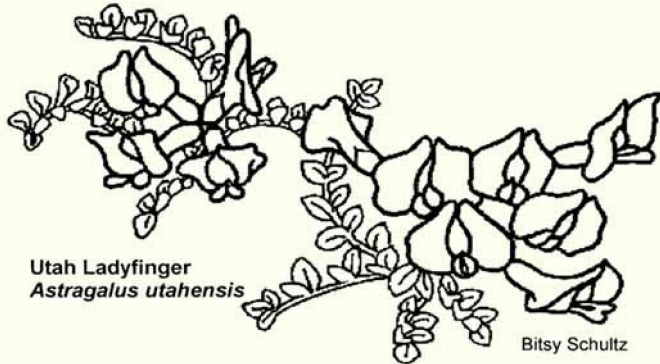
The Garden Niche Update

The Garden Niche Continues to Educate and Show the Community the Beauty of Native and Drought Tolerant Plants. Salt Lake Valley's main source for native plants for urban landscaping needs has proved that water-wise landscaping is on the rise in our arid environment. Without much advertising, The Garden Niche has had to continually re-stock the nursery at 10650 South, 700 East (in the corner of the Ream's grocery store parking lot) to assure the public can get the plants of their choice for their water-wise landscapes. The staff at The Garden Niche has been enthusiastically educating the public about their potential plant choices, such as how to get them established, how often to water, and xeriscape maintenance. Several species of Penstemons, Sage, Salvias, and Veronicas have been big sellers for water-wise landscapes, as well as a wide variety of native evergreen trees such as Bristlecone Pine, Ponderosa Pine and Pinyon Pine.

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Susan Garvin: 356-5108
Larry Meyer: 272-3275
Or write to: unps@unps.org

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Check out our website!
www.unps.org

Many thanks to Xmission for sponsoring the Utah Native Plant Society website.

Please direct all suggestions, articles and events for the newsletter to Paula Mohadjer at paulam@jvwcd.org. **The deadline for next issue is August 15.**

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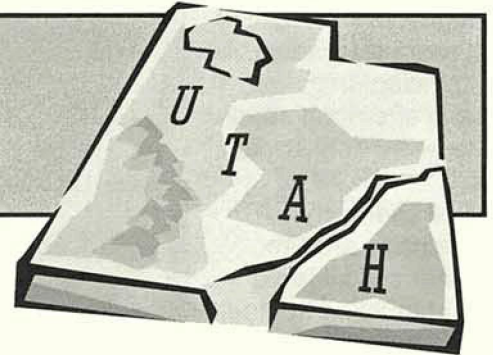
Sego Lily

Newsletter of the Utah Native Plant Society

VOLUME 25, ISSUE 5

SEP/OCT 2002

Creating a Sense of Place Parts II & III



By David Salmon, High Country Gardens

This is the continuation of a three-part article on gardening with native plants. Part 1 is in the Jul/Aug Sego Lily newsletter. Incorporating native plants into your landscape and landscape designs can be a very gratifying experience. The key to success with native plants is learning where the plants are from and what the climate and growing conditions of their native habitats tell us about their cultural needs in the garden.



SEP/OCT 2002

Creating a Sense of Place, Part II & III

Equestrian Trail Interpretive Sign Project

UDOT Seeks to Reduce Impacts to the Clay Phacelia

New Heritage Garden at Sego Lily Gardens

Events and Chapter News

Many of the non-native perennials that dominate our landscapes have been widely cultivated for many years in Europe and the United States and have very wide tolerances as to the type of climates they enjoy and their cultural needs in the garden. This is in large part because over the years plants that were difficult to grow and propagate using traditional methods disappeared from the trade. Many native plant introductions are very new to the gardening public and their cultural needs less well understood. However, we are already finding that many natives are also easy to grow and propagate and have also become common in gardens across the country. *Rudbeckia fulgida* "Goldsturm" (although selected by German breeders) is one of this country's most popular native perennials. To increase the gardening public's use of other native plants, our general knowledge about a native plant's soil preferences, sun exposure, and moisture needs and tolerances must be understood and accompany the plant as it moves from the grower's greenhouse to the homeowner's yard.

The compatibility of a given native plant to your local area is highly dependent on that plant's need for moisture. The amount of precipitation that plants receive in their habitats is a very important piece of cultural information. Looking at a precipitation map of the United States the pattern shows us that, in general, as we move west from the eastern seaboard toward California the terrain becomes drier and drier. Thus plants native to the various desert regions of the western United States will not be well suited to average garden conditions in moist Ohio.

However, in my experience, a native plant from Ohio may do fine in Santa Fe's high desert climate if given enriched soil, sufficient irrigation and afternoon shade to avoid heat stroke.

Soil chemistry and drainage are two other critical factors that must be taken into account. My experience has been that native plants from the east and Midwest make the transition to western growing conditions more easily than western natives transition the other direction. It would seem that many western plants are more specialized and closely matched to the harsh, dry conditions of their habitats and are less adaptable to richer soils and more moisture. But like all generalizations there are notable (and often surprising) exceptions.

Western soils tend to be very mineral (low in organic materials) and alkaline. Many Midwestern soils are humus rich and their pH ranges from neutral to acidic. Eastern soils can be much more variable but in general are acidic. Westerners don't use lime and wood ashes in our soils, as these soil amendments are for making soils more alkaline. Gardeners with acidic soil conditions must raise the soil pH using these additives to provide the alkaline conditions required by many western natives. Many western natives also need higher trace mineral levels and benefit greatly by using trace mineral fertilizers like [Planters II](#) (rock dust in organic gardening circles).

Moving eastern plants west can be accomplished using lots of greensand and soil sulfur to bring down the soil alkalinity. However, acid loving plants are very difficult to grow long term without constant acidification efforts and use of rainwater to irrigate. (Many western regions have very hard, alkaline well water.)

Soil drainage is a critical but often overlooked factor in growing native plants. Many western natives require fast draining soil when grown in wetter climates, so when gardening in wetter conditions sandy



HUMMINGBIRD FLOWER

and sandy loam soils provide drier conditions than clay. Natives that like moister, high humus soils can be accommodated out west by incorporating generous amounts of compost and [Broadleaf P4](#) water retaining crystals into the soil and irrigating more frequently. Clay loving plants are common in all areas of the United States. It is more challenging when we move dry clay lovers from west to east than vice versa. Clay soils that stay wet from plentiful rain and snow will be deadly for dry

clay lovers from the west. A sand/gravel/clay soil mixture used in a raised bed or berm is often the best solution to this dilemma.

I'm not as familiar with native plants from the Midwest and eastern United States, as I don't often have the opportunity to see and study these plants in their native habitats. However I look to the many native plant experts in these regions and trial their introductions in Santa Fe. Interestingly, these regions offer many summer and fall blooming species that are invaluable for coloring the garden when the many late spring and early summer bloomers natives have past. [Solidago rugosa](#) "Fireworks" and [S. sphacelata](#) "Golden Fleece" are two standouts valued for their late summer yellow flowers. The *novae-belgie* and *novae-angliae* Asters from back east are parents to a huge number of hybrids and selections. A favorite selection originally found in the wild is [Aster n.-a.](#) "Purple Dome".

An aster relative that has proven itself as a valued source of long lasting cut flowers is the white daisy flowered *Boltonia asteriodes* "Snowbank". *Eupatorium* can be a difficult genus in the high, dry desert of northern NM, but *Eupatorium maculatum* "Gateway" is a wonderful exception. It still needs regular irrigation and rich, moisture-retentive soils but will grow well in non-bog conditions. The same is true for several of the *Monarda* cultivars like *Monarda x* "Violet Queen". This hybrid has outstanding mildew tolerance and thrives in drier conditions. *Liatris ligulistylus* is a superb Gayfeather with long showy purple flower spikes. Of course the Coneflowers (*Echinacea*) reign supreme in the summer garden. *Echinacea purpurea* and its various cultivars ("Magnus" and "White Swan") are well known. Less familiar but equally deserving a place in the garden are the rare yellow flowered *E. paradoxa* from the Ozarks of Missouri and Arkansas and the graceful *E. angustifolia*, native to the prairies of the Midwest and eastern Great Plains. Almost all of the above natives are highly valued nectar sources for adult butterflies.

The Great Plains provide a treasure trove of tough but beautiful native plants. These plants are adapted to surviving extremes of temperatures and moisture as well as grazing animals. They favor well-drained, not-too-rich soils with a neutral to alkaline pH. Their natural climatic precipitation arrives during the winter, spring and sporadically during the heat of the summer months. My favorites include the duet of *Scutellaria resinosa*, a mounding blue-flowered beauty and *Hymenoxys scaposa*, a gray, thread-leaved little gem with yellow daisies. I like to plant these species with plains cacti like the magenta flowered *Coryphantha (Escobaria) vivipara* and the yellow-green flowered *Echinocereus viridiflorus*. Our native cacti are some of our most spectacular but overlooked wildflowers. I encourage their inclusion when planting other xeric (drought resistant) perennial native flowers.

Another outstanding succulent from the plains is the everblooming, magenta-flowered *Talinum calycinum*. This quirky little native's odd behavior is an excellent example of why some folks avoid native plants, thinking they are too hard to grow--but it's actually a showy, easy-to-grow plant once you understand its needs. I recommend it to everybody. *Talinum* likes dry, sandy or sandy loam soils. It is very slow to wake from its winter slumber, waiting until the late spring frosts have past. It also withers (goes dormant) before frost, using short days as its dormancy trigger. If you didn't know better you would

think the plant either died suddenly in the fall or didn't make it through the winter. However it easily survives the cold winters as a shallow rooted succulent crown (stem at the junction of the roots and above ground stem) that looks like a fat twig. Be patient in the spring because it returns to get bigger and showier every year.

Other indispensable flowering perennials from the Great Plains include *Berlandiera (Chocolate Flower)*, *Calylophus serrulatus (Dwarf Sundrops)*, *Callirhoe involucrata (Poppy Mallow)*, *Liatris punctata (Gayfeather)* and various grasses like *Schizachyrium scoparium "The Blues" (Little Blue Stem)* and *Panicum virgatum "Prairie Sky" (Switch Grass)*.

The Great Plants for the Great Plains program sponsored by the Nebraska Statewide Arboretum and supported by NE nurseries that grow and propagate new finds is an excellent program devoted to bringing natives for the plains into cultivation.

Over the past decade, I have focused on finding cold-hardy selections of Southwestern natives. The objective of this work is to expand the usage of these spectacular species beyond the mild winter areas of Texas, New Mexico, Arizona and California. 'Wild Thing' and 'Furman's Red' are two *Salvia greggii* cultivars that have proven cold hardy in USDA zone 6. *Salvia x Raspberry Delight* is a hybrid selection introduced by High Country Gardens in 2000. This ever-blooming hybrid is a cross between *S. greggii* 'Furman's Red' and a high altitude collection of *S. microphylla* from central Arizona. The genus *Agastache* is rich with native ornamental species. These plants have highly aromatic foliage and flowers and are some of our best natives for attracting hummingbirds. *Agastache x Desert Sunrise* is another High Country Gardens introduction. A cross between *A. rupestris* and *A. cana*, this large, long-blooming wildflower hybrid has become one of our most popular plants. Another fantastic and surprisingly cold-hardy hummingbird plant is *Zauschneria arizonica*. As this genus is typically not very cold hardy their use has traditionally been confined to the mild winter regions of California.

I have found that there are four key elements to the successful cultivation of Southwestern natives in cold climates. The first thing is to plant them from spring through late summer. Fall planting doesn't work for most of the Southwestern natives in zones 5 and 6. Secondly, plant in full sun locations where walls, pavement, and large rocks will provide re-

flected heat in the winter months. These hard surfaces provide a warm microclimate and help moderate wild temperature swings caused by cold fronts dropping in from Canada. Thirdly, don't cut these plants back in fall; wait until mid-spring before giving them their spring trimming. And forth, plant in a lean, well-drained soil mulched with chipped gravel to help protect against excessive winter moisture and encourage re-seeding.

The southwest is home to some of our showiest Penstemon (Beardtongue) species. *Penstemon pseudospectabilis*, *P. cardinalis*, *P. pinifolius* (and its numerous cultivars) and *P. palmeri* are all crowd pleasers. Be sure to plant *P. palmeri* in sandy soils; loam and clay soils will kill this lightly fragrant species. I have found *P. pinifolius* to be one of the most widely adaptable of all the Penstemon. 'Mersae Yellow' was originally discovered in England, where it has thrived in that country's maritime climate for many years.



DWARF SUNDROPS

Driving around Phoenix one is immediately struck by the importance of succulents in the landscapes there. Fortunately we're finding many succulents that survive cold winter climates. *Hesperaloe* (Texas Red Yucca), native to southern Texas and northeastern Mexico has proven to be cold hardy into zones 5, 6 and 7. Previously this ever-blooming hummingbird magnet was thought to be quite cold tender, but experimentation by myself and other native plant gardeners in Colorado proved otherwise. *Agave* (Century Plant) has numerous species from the Southwest and the Great Basin areas that grow in zones 5 & 6. *Agave parryi* and *A. neomexicana* are two larger growing Southwestern species. *Dasyliirion wheeleri* (Sotol or Desert Spoon) with its graceful evergreen foliage and enormous bloom spikes is another Southwesterner that is proving to be more cold-hardy than previously believed. *Claret Cup* (*Echinocereus triglochidiatus*) is the largest and showiest of our native cacti. It makes a superb companion plant to the other succulents mentioned above.

I have found that some Southwestern na-

tives have expanded a genera's usage from colder climates into warmer ones. The genus *Columbine* (*Aquilegia*) is an excellent example. Arizona is home to several of my favorites, *A. desertorum* and *A. species Swallowtail*. Both of these heat tolerant species were originally collected by Sally and Tim Walker of Tucson, Arizona. Unlike *A. caerulea* (Rocky Mountain Columbine) these two species have excellent tolerance to dry heat, expanding this

genus' usefulness into warmer areas of the country.

The intermountain region of Colorado, Utah, Idaho, Wyoming and Montana, including both mountainous and high plains habitat, is home to numerous ornamental species. My interests in this region focus on more of the dry land species and don't include plants

best suited to wet and boggy habitats. Penstemon are prominent on that list and include *P. strictus*, *P. barbatus*, *P. eantoni*, *P. virens* and an amazingly xeric species, *P. linarioides v. coloradensis*. Colorado Narrowleaf Beardtongue, as it's known regionally, puts on an amazing display of lavender flowers in late spring. But even better is its bright blue evergreen foliage, which gives this little gem year-round appeal.

Antenaria species 'Mc Clintock' is a favorite selection of Pussytoes, a widespread genus in the West. This tight, very low growing cultivar is ideal for planting between flagstone in patio areas. Its silver foliage is very showy. Essentially a non-blooming variety, it doesn't "fall apart" after blooming like most *Antenaria* and always looks good. *Campanula rotundifolia* is another favorite, long blooming wildflower. Useful in both full sun and partial shade, this little bluebells species naturalizes (re-seeds) readily when happy. It is an excellent companion to mountain *Aquilegia* (*Columbine*) like *A. formosa*, a red and yellow flowered species, and *A. caerulea* (Rocky Mountain Columbine) that both enjoy cooler

summer temperatures and moister conditions.

The high, cold desert regions of Nevada, western Utah, eastern California, Oregon and Washington are known as the Great Basin. Amazingly it has only been recently that many of its fantastic ornamental species have found their way into cultivation. *Salvia pachyphylla* (Giant Flowered Purple Sage) should be on top of everyone's list. The seeds of this fascinating species were originally supplied to me through the collecting efforts of Alan Bradshaw (Alplains Seed Company). Native to California, this species has proven itself cold-hardy in Colorado. Numerous native plant enthusiasts in Denver and elsewhere rave about this spectacular native shrub. It has large, pungently scented silver foliage and showy blue and rose-pink flower spikes that begin in mid-summer.

In writing these articles, I have been reminded of how native plants are an indispensable part of any garden or xeriscape. I have not had the room to cover all the species we offer (including

many grasses and shrubs), but I've tried to discuss some of the more interesting, lesser known varieties. Certainly, all of us native plant enthusiasts hope to continue to bring more species and selections (cultivars) into cultivation. The key to this ongoing effort will be to focus on selecting plants that adapt well to domestication and to develop improved methods of propagation and cultivation. Keeping these criteria in mind promises that both experienced and beginning gardeners will enjoy growing natives in their yards and gardens.

High Country Gardens has a full catalog of drought-tolerant plants for the Western garden. Visit their site at <http://highcountrygardens.com>. To subscribe to the free e-zine "Xeriscape Gardening News," send blank e-mail to join-gardens@lists.highcountrygardens.com.

Equestrian Trail Interpretive Sign Project

Partners - Forest Service, Back Country Horseman, Utah Native Plant Society

Do you remember the days before you were an expert on native plants? Do you remember struggling to learn the names of the common shrubs and trees you encountered in your forays into nature? Do you have friends or family members who are trying to learn about native plants?

In Utah's Dixie, a new resource is available for novice plant enthusiasts. A trail leading from the Pine Valley Equestrian Campground to Forsythe Canyon is being fitted with interpretive signs. The signs are tall enough for horse riders to read, but at a height hikers can also read. This project is the brain child of Fred Ybright, wilderness coordinator for the Pine Valley Ranger District. For a long time he has wanted to put interpretive signs along this popular trail that would identify and describe the trees and shrubs that grew there. When he learned that Utah Native Plant Society had purchased a machine that could print high quality signs inexpensively, he saw a chance to make his dream happen. Rebecca Fawson, a Forest Service volunteer and member of the Southern Utah Chapter of the Utah Native Plant Society, wrote 5 line descriptions of the 20 plants found on the trail and found line drawings of them. The Southern Utah Chapter of the Back Country Horseman purchased the materials and made the mounting structures for the signs. Susan Meyer and Bitsy Schultz took the sketches and descriptions, worked their computer magic, and printed off beautiful signs ready to be mounted. This project is unique because of the three partners involved: The Forest Service, The Back Country Horseman, and The Utah Native Plant Society. The logos of all three organizations adorn the signs. The signs will be in place soon, ready to educate trail users and increase their appreciation of the native plants they encounter on beautiful Pine Valley Mountain.

UDOT Seeks to Reduce Impacts to the Clay Phacelia

By Lars Anderson, Landscape Architect, UDOT Region 3

Phacelia argillacea (Clay phacelia) has been a hot topic of debate in UDOT offices for the past few years. UDOT (The Utah Department of Transportation) has been pressured to widen the portion of State Route 6 that runs from Spanish Fork to Price. Some groups have named this stretch of highway as the deadliest in Utah and one of the deadliest in the country. Over 80 million dollars has been allocated for road widening with additional funds on the way. The intent is to eventually have 4 lanes of traffic extending from Spanish Fork to Price. Unfortunately, this runs through prime habitat for the Clay phacelia.

The Utah Endangered, Threatened and Sensitive Plant Field Guide (1991) names UDOT as one of the agencies with "Management Responsibility". That is a scary proposition considering UDOT is more known for its ability to kill plants instead of preserve them. In this case however, great strides have been taken to protect existing habitat allowing for natural propagation of the species. Two years before the project began existing species of Clay phacelia on the hillslopes were identified, mapped and surveyed using a GPS unit. All were then flagged to prevent accidental harm. Next, the roadway designers moved the roadway alignment as far away from the slope as possible and yet still meet federal highway safety standards. Retaining walls were then designed and constructed to reduce the impact to the habitat. These walls would not have been used had it not been in the effort to reduce impact. Finally, Dr. Ron Kass from Intermountain Ecosystems has been hired to supervise construction. His responsibilities include protection of habitat, searching for unmapped plants, and erosion control to prevent further impact on the Clay phacelia as well as to reduce sedimentation into adjacent streams. Later this fall a 3.5 acre wetland mitigation site will be constructed next to the Spanish Fork River near Thistle to mitigate for wetlands lost due to the road project. The mitigation site will restore an old ox bow in the river by removing the

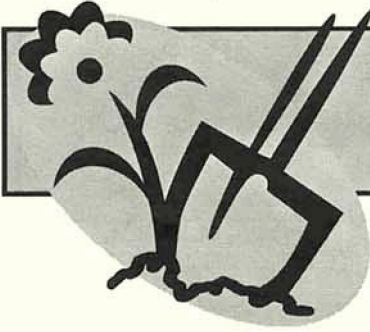
old State Route 6 and surrounding fill lowering the elevation of the site to the level of the river. Riparian habitat, emergent marsh, and wet meadow will be developed in the mitigation site to improve habitat and water quality.

Because it is difficult for the Clay phacelia to survive on the Green River Shale Formations of Spanish Fork Canyon, UDOT is committed to preserving its habitat. As pressure to widen roads and make them safer for the traveling motorist increases, the pressure on habitat for Clay phacelia and other endangered species increases as well. The built and natural environments are not often in harmony. We must continue in our efforts to accommodate the built environment without detrimental effects to our natural environment.

For further information, please contact Lars Anderson at LARSANDERSON@utah.gov.



Figure 1. This talus slope is home to the Clay phacelia. The wall was constructed to prevent impacts to the plant.



Events and Chapter News

Cache Chapter News

Although it's late in the season, we hear that there's still lots to see at Tony Grove in Logan Canyon. We've planned a last minute outing to this beautiful spot on Tuesday, August 20th, 8:30 am. Meet at the Cache County Extension offices located at 1780 N Research Pkwy, Suite 108, North Logan. A group of USU Extension Horticulture Agents from around the state will join us, so don't miss this opportunity to promote Utah's native plants and the UNPS.

You'll soon have another chance to accompany Intermountain Herbarium staff into the field if you missed our *Identifying Northern Utah's Natives* workshop in May. Mary Barkworth & Co. will lead a *Friends in Low Places Tour* on Wednesday, August 21st, 5:30 pm, meet in the parking lot across from the Straw Ibis. Unlike the Garth Brooks song, we won't be barhopping through Cache Valley's exciting tavern scene (sorry). We will, however, venture fearlessly into ditches, canals, and streambanks in search of native grasses and sedges. Thick-soled shoes or rubber boots would be a good idea on this trip.

The almost complete absence of native plants in Cache Valley nurseries continues to baffle our chapter members . . . all the way to the bank. Many thanks to those of you who have purchased plants and posters sold at our Gardeners' Market table or have given up your Saturday mornings to staff the table (special kudos to Dave, Jackie, Dick, and Mary). Also, the *Kjelgren Family* now offers a fine selection of hardy natives at the Market, including many flowering perennials. Finally, *The Garden Niche* and *Virginia Markham Seeds* will return to our Market on Saturday, September 7th with more natives just in time for fall planting. The Cache Valley Gardeners' Market is held every Saturday through October, 8 am to noon, at 100 South Main Street in Logan, just behind Tony Roma's.

Our first *chapter meeting* after the summer break will be held on Saturday, September 14th, in . . . Newton! UNPS member Jim Morris has kindly invited us to the beautiful historic stone home where he has been gardening with natives for twenty years. The newest addition to his landscape is a garden featuring alpines, most of which he propagated from seed. Bring a bag lunch (drinks will be provided) and seeds or plants to swap. We'll meet at

11:00 am for a quick chapter meeting then break for lunch. The Morris home is located at 190 E 200 S in downtown Newton. Call 435-563-3654 for directions.

It's election season again! The Cache Chapter will vote at the September 14th meeting for a new President to take office October 1st. To get your name on the ballot, please contact Alison Kelly at 435-797-0061 or at ali@biology.usu.edu.

Finally, we must say 'Goodbye' to a creative and supportive chapter member, Wendy Mee. Having co-authored the forthcoming *Landscaping With Utah Natives* (USU Press) and with an MA in Landscape Architecture in hand, she and her family are returning to Ellensburg, Washington. We'll miss you Wendy – good luck!

Ornamental Grasses Workshop

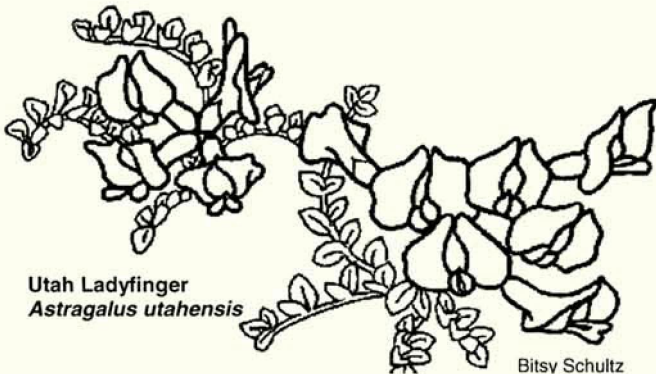
September 21, Saturday 10-noon. Jordan Valley Water Conservancy District. Lecturer: Julie Rotolo, Assistant Horticulturist. Learn about beautiful, drought tolerant ornamental grasses. This class will be held at the JWCD Conservation Demonstration Gardens so the grasses can be viewed in a garden setting. Free. As space is limited, please register at 565-4300.

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For more information about the
Utah Native Plant Society call:

Bill King: 582-0432
Susan Garvin: 356-5108
Larry Meyer: 272-3275
Or write to: unps@unps.org

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Please direct all suggestions,
articles and events for the
newsletter to Paula Mohadjer
at paulam@jvwcd.org. **The
deadline for next issue is
November 14.**

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Cache: Tami Coleman
Canyonlands: Karen Dohrenwend &
Sarah Haffron
Central Utah Chapter
Mountain: Abby Moore
Price: Mike Hubbard
Salt Lake: Mindy Wheeler
Southern Utah: Mike Empey
Utah Valley: Phil Allen

COMMITTEES

Horticulture: Susan Meyer
Conservation: Bill King
Education: Mindy Wheeler
Invasive Species: Phil Allen
Communications: Paula Mohadjer



Sego Lily

Newsletter of the Utah Native Plant Society

VOLUME 25, ISSUE 6

NOV/DEC 2002

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You can save a tree, reduce waste, and give more money to UNPS programs at no extra cost to you! Too good to be true? Not at all! Simply elect to receive the Sego Lily in electronic format only. This saves us printing and mailing costs, and every penny saved is a penny we can devote to the core programs of UNPS—to education and research promoting the conservation of native plants.

For example, our grant-in-aid program has re-

cently awarded grants to support surveys of

threatened native plants in the Capitol Reef National Park area, tamarisk removal in Dinosaur National Monument, research on what makes yellow starthistle such a threatening invasive weed, and more. Additionally, we have contributed to weed eradication programs, local restoration efforts, and publication costs of educational brochures. But all of this takes money and our resources are stretched thin. We don't want to raise dues again, so help us the cost-free way. Visit the web site to sign up today for electronic only delivery! Newsletters will be archived electronically so you will always have access to them, or print them out yourself.



NOV/DEC 2002

Special Sego Lily Internet Offer for all Members

Letter Calling for Equal Protection of Plants

UNPS Annual Members Meeting

Summary of Great Basin National Park Field Trip

Events and Chapter News

Letter Calling for Equal Protection of Plants

The Utah Native Plant Society is signatory to the following "open" letter which is a part of the Equal Protection for Plants Campaign initiated by the California Native Plant Society. This letter has been included as in the appendix of a 2002 publication referenced below.

Open Letter calling for Equal Protection for Plants under the Federal Endangered Species Act, June 24, 1999

Plants and animals contribute equally to the stability, health, and functions of the ecosystems on which we all depend for survival. However, plants and animals are not treated equally under the Federal Endangered Species Act.

Federally listed plant species are among the rarest and most imperiled species in our nation. But although the Federal Endangered Species Act prohibits the unauthorized destruction or even harm of Federally listed animals everywhere they occur, it allows many listed plants to be killed, without limit, on non-Federal lands, except in restricted circumstances.* In fact, some plant species can be knowingly driven to extinction without violating the Federal Act.

Lesser protection for plants is unsupportable biologically. It disregards our current understanding that plants and animals are inextricably intertwined in the structure and functioning of healthy ecosystems.

Unless plant species are protected from extinction as vigorously as animals, efforts to conserve biological diversity will inevitably fail. Plants and animals depend upon each other for food, habitat, indeed for their very survival. We cannot arbitrarily pick only one kingdom to protect. Ecosystems cannot survive with only one group or the other.

For these reasons, the undersigned organizations urge that the Federal Endangered Species Act be amended to provide the same protection for plants that it currently provides for animals through all of its policies, programs, and penalties.

Signed (as of June 20, 2002),

1. National Parks and Conservation Association, Washington DC
2. Natural Resources Defense Council, Washington, DC
3. American Lands Alliance, Washington DC
4. Endangered Habitats League, San Diego, CA
5. Endangered Species Coalition, Washington DC
6. Sierra Nevada Forest Protection Campaign, Sacramento, CA
7. Pacific Rivers Council, Portland, Or
8. California Botanical Society, Sacramento, CA
9. Oregon Natural Resources Council Action, Eugene, OR
10. Sequoia Forest Alliance, Weldon, CA
11. Safe Alternatives for our Forest Environment, Hayfork, CA
12. Cold Mountain, Cold Rivers, Missoula MT
13. Forest Issues Group, Grass Valley, CA
14. Center for Sierra Nevada Conservation, Georgetown, CA
15. Whidbey Environmental Action Network, Seattle, WA
16. Oregon Natural Desert Association, Portland, OR
17. Grassroots Environmental Effectiveness Network, Washington DC
18. Center for Biological Diversity, Tuscon, AZ
19. Society for Conservation Biology
20. Student Environmental Action Coalition, Normal IL
21. Defenders of Wildlife, Washington DC
22. John Wesley Powell Audubon Society, Normal IL
23. US PIRG, Washington DC
24. Florida Native Plant Society
25. Native Plant Society of Oregon

26. Texas Committee on Natural Resources (TCNR)
27. Washington Native Plant Society
28. Southern California Botanists
29. Indiana Native Plant and Wildflower Society
30. The Wilderness Society, Washington DC
31. The Sierra Club, Washington DC
32. Friends of Georgia, Inc., Stone Mountain, GA
33. North Carolina Wild Flower Preservation Society
34. Botanical Society of America
35. Society for Conservation Biology, Missouri Chapter
36. T&E Inc., Cortaro, Arizona
37. Utah Native Plant Society

*Section 9 (a) (1) of the ESA (16 U.S.C. § 1531 et seq.) gives animals full protection from destruction "within the United States or the territorial sea of the United States" or "upon the high seas." But Section 9 (a) (2) (B) of the ESA prohibits destruction of Federally listed plant species only on "areas under Federal jurisdiction." Plants also cannot be killed in knowing violation of state law, while trespassing, or in violation of Section 7 of the ESA which governs Federal agency actions.

Therefore, listed plants are only protected (1) on Federal lands or during activities that are funded, permitted, or carried out by a Federal agency and are therefore under Federal jurisdiction, or (2) in the unlikely event that it can be proved that they are destroyed in knowing violation of state law or during trespassing. Logging, housing development, mining, and other activities may all kill unlimited numbers of Federally listed plants, even cause extinction of a species, as long as the destruction does not meet these conditions.

The foregoing was excerpted from an appendix in the following publication: Roberson, E.B. 2002. Barriers to Native Plant Conservation in the United States: funding, staffing, law. Native Plant Conservation Campaign, California Native Plant Society, Sacramento, CA and Center for Biological Diversity, Tucson, AZ

For more information contact the Native Plant Conservation Campaign c/o California Native Plant Society, 1722 J. St., Suite 17, Sacramento CA 95814. Emily B. Roberson, Ph.D., Project Director. Phone: 415.970.0394. Fax: 916.447.2727. EMILYR@cnp.org. Web: www.cnp.org, www.biologicaldiversity.org

UNPS ANNUAL MEMBERS MEETING!

New World Pot Luck Dinner & Election of Directors

Bill King will present "Stalking the Wild
Penstemon of Southern Utah"

Friday November 22, 2002, 6:30 pm

Sugarhouse Garden Center, 1602 E 2100 S
Salt Lake City

For more info call Bill 801-582-0432



Summary of Great Basin National Park Field Trip

August 10-11, 2002

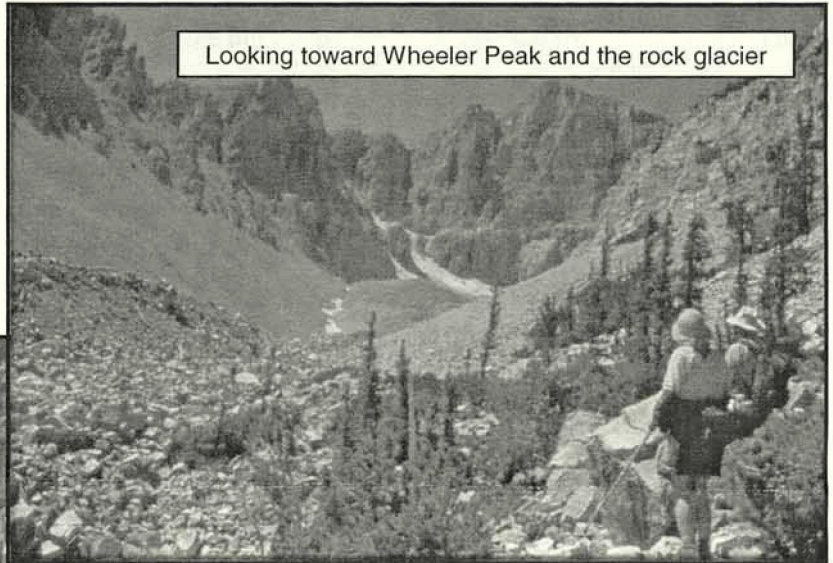
David Wallace, Cache UNPS

I couldn't resist the chance for a field-trip to Great Basin National Park. It's been too long since I visited this wonderful place, and it was my last opportunity for an outing before school started. Things turned out even better than expected, with good weather, great company, and an outstanding natural experience.

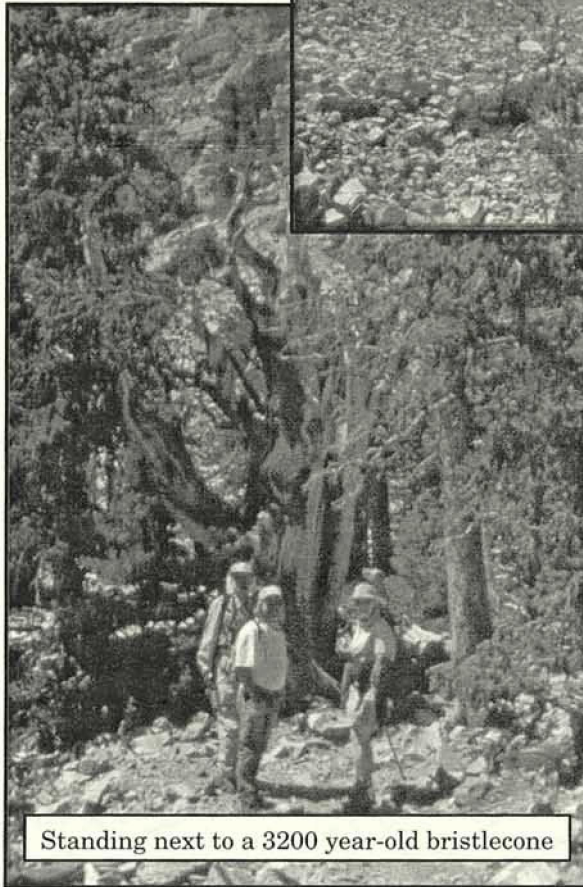
Bill King, UNPS Conservation Committee Chairman, organized the event as a joint activity with the Wasatch Rock Garden Society. Bill emailed a meticulous set of instructions, with travel and accommodation information and details about the planned activities. The trip was bound to be a success with such careful planning! Thirteen people participated: Bea Mayes, Park

City; Bob and Judy Johnson, Kaysville; Jeff Brimley, Bountiful; Thel and Wendy Noyes, Layton; Richard Jonas, Salt Lake City; Nancy

Forest, Salt Lake; Dick Van Reyper, Park City; Kees Jan van Zwienen, Alblasterdam, Netherlands; Dave Wallace, Logan; and Bill and Cathy King, Salt Lake City.



Looking toward Wheeler Peak and the rock glacier



Standing next to a 3200 year-old bristlecone

It's a long drive from Logan, and it was late Friday night when I finally arrived at the 10,000 ft. elevation Wheeler Peak Campground. There were no available campsites, but fortunately Bill and Cathy left enough room to park behind their car. Most of the participants camped here, a good way to avoid the valley heat and to get a head start on high-elevation acclimatization.

The next morning everyone met for a hike to the famous bristlecone pine forest. Interpretive signs along the trail explained how researchers use an incremental borer to determine the age of the trees, and the age was provided for several individual trees. Most of

the group continued up the trail to the rock glacier at the base of Wheeler Peak.

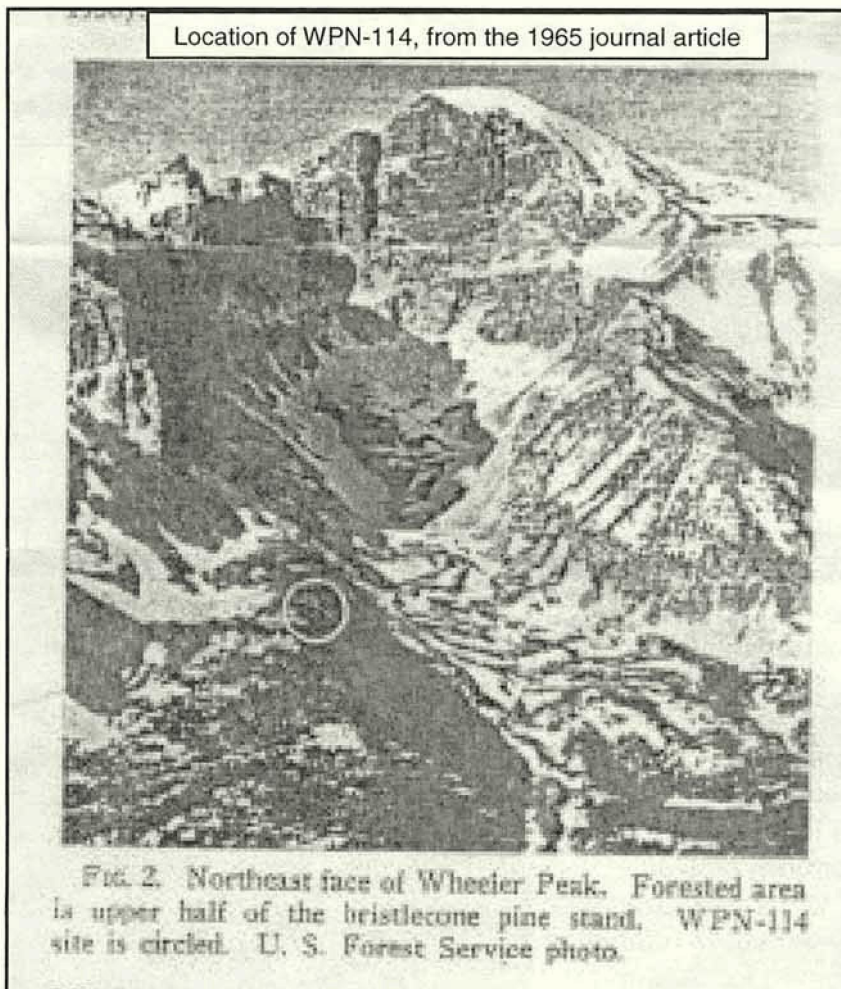
This area is famous as the location of the oldest living tree, a 5000 year-old bristlecone pine known as Prometheus. In 1964, a researcher cut the tree down and sliced it into pieces to get an accurate count of the rings.

The U.S. Park Service doesn't advertise the location, but the 1965 journal article shows where it is¹.

It was a rough scramble over the boulders, but we found Prometheus without too much trouble. The stump and other pieces looked much the same as when I last saw them in 1989, but there was evidence of some recent (but minor) souvenir collecting. It's depressing to see these pathetic remains, when we could have been admiring the oldest living tree on earth instead.

After the hike, we all met back at the campground for a potluck dinner. The next morning, several of us hiked to the nearby lakes. There was evidence of a spectacular display of Parry's Primrose along the creek, but it was too late in the season (maybe we'll

come back in July next time?). We also stopped at the visitors' center before leaving the Park. In past years, a slab from Prometheus was mounted anonymously and inconspicuously on a wall. It was a pleasant surprise to see it prominently displayed as the showpiece of the center's main exhibit.

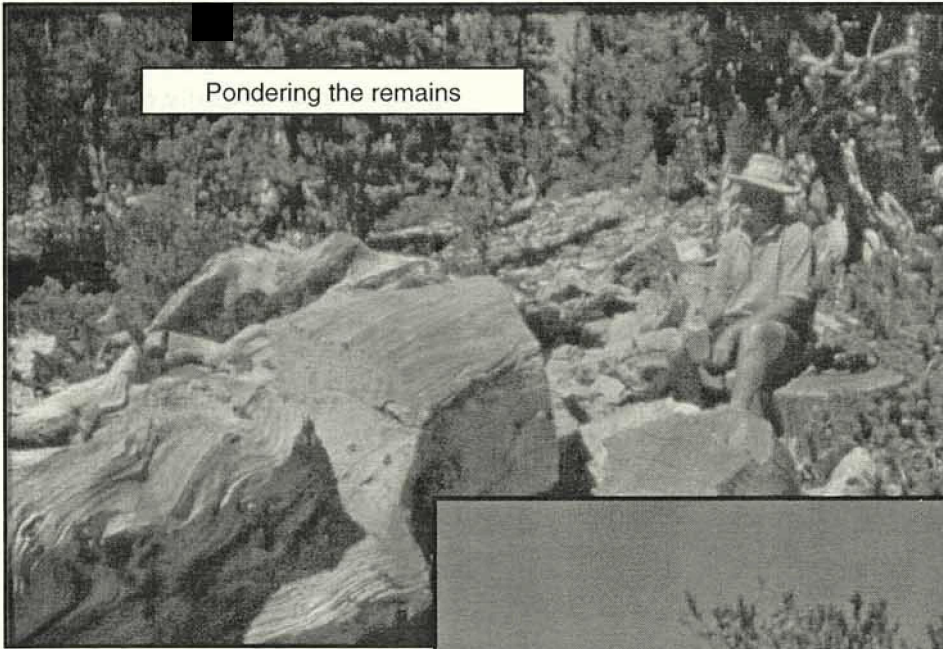


When the 5000 year-old tree was cut down in 1964, bristlecone pines were known as *Pinus aristata*. In 1970, D.K. Bailey named the "Great Basin" bristlecone pine *Pinus longaeva*, to distinguish it from the "Rocky Mountain" bristlecone pine, still known as *P. aristata*². *P. longaeva* is geographically separate, and it has significant morphological differences. The most obvious difference is the needles. *P. aristata* usually has white exudations of resin on the needles, yet the needles of *P. longaeva* are shiny and

green. You can usually see this "dandruff" on the needles of the *P. aristata* bristlecone pines found in the nursery trade.

Scientists named the 5000 year-old tree "Prometheus" several years before it was cut down, and we now know it was 2000 years older than any other tree in the area. In 1964, an incremental borer was used to help find the oldest tree at Wheeler Peak.

When the researcher encountered difficulty accurately establishing its age, he successfully petitioned the Forest Service to cut down the tree he called "WPN-114". He greatly understates the significance of this action in his 1965 journal article: "To facilitate compilation of a long-term tree-ring chronology for the Wheeler Peak area, one of the larger living bristlecone pines was sectioned."



Pondering the remains

onomy of *Pinus* Subsection *Balfourianae*." *Annals of the Missouri Botanical Garden* 57 (1970) 210-49

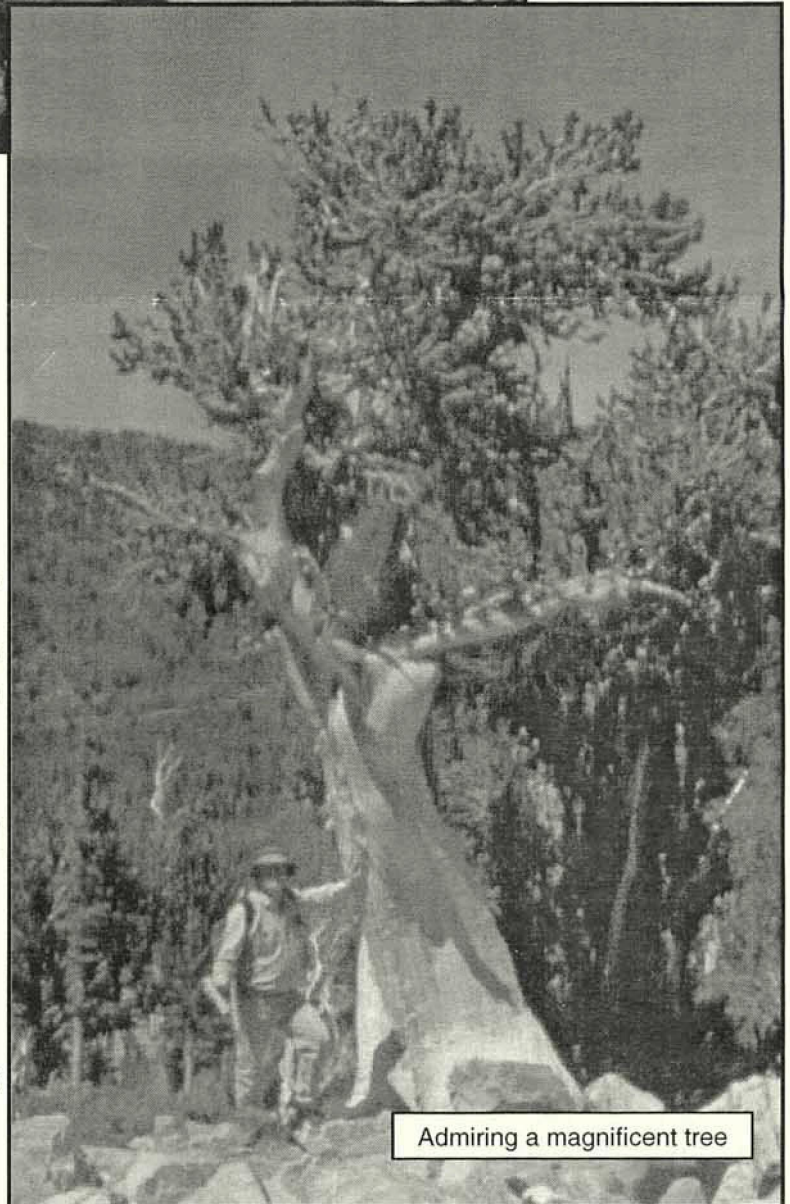
Cohen, Michael P. *A Garden of Bristlecones: Tales of Change in the Great Basin*. Reno: University of Nevada Press, 1998

I've often condemned the perpetrator of this unfortunate deed, but there are other cases where researchers have "collected" unique specimens in the name of science. Michael P. Cohen in *A Garden of Bristlecones* claims a benefit resulted from the felling of Prometheus. Cohen says the scientific discoveries were "less powerful as arguments for reserving bristlecone groves than the controversy surrounding the cutting of WPN-114" because that event was used by writers to attack the Forest Service and to plead for preservation. In other words, the cutting of Prometheus helped to preserve the bristlecone pines and to establish Great Basin National Park.

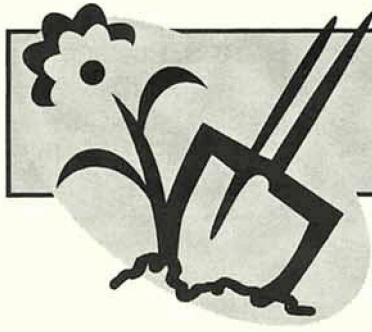
References:

Currey, Donald R. "An Ancient Bristlecone Pine Stand in Eastern Nevada" *Ecology*, 46 (1965): 564-66

1. Bailey, D.K. "Phytogeography and Tax-



Admiring a magnificent tree



Events and Chapter News

"Inspired by Nature" talk at Red Butte Gardens

Marcia Tatroe will give a talk on Friday, November 1, 2002 at Red Butte Gardens at 7 PM. Her lecture is entitled "Inspired by Nature - Gardens that reflect the Intermountain Beauty" Marcia is a horticulturist, designer and author from Denver Colorado. \$5 for UNPS members \$7 for nonmembers.

For a complete list of seminar titles and abstracts, please see the website

(www.usu.edu/ecology/eco-cntr.htm)

November 20-21, 2002: Jayne Belnap, U.S. Geological Survey, Moab, Utah.

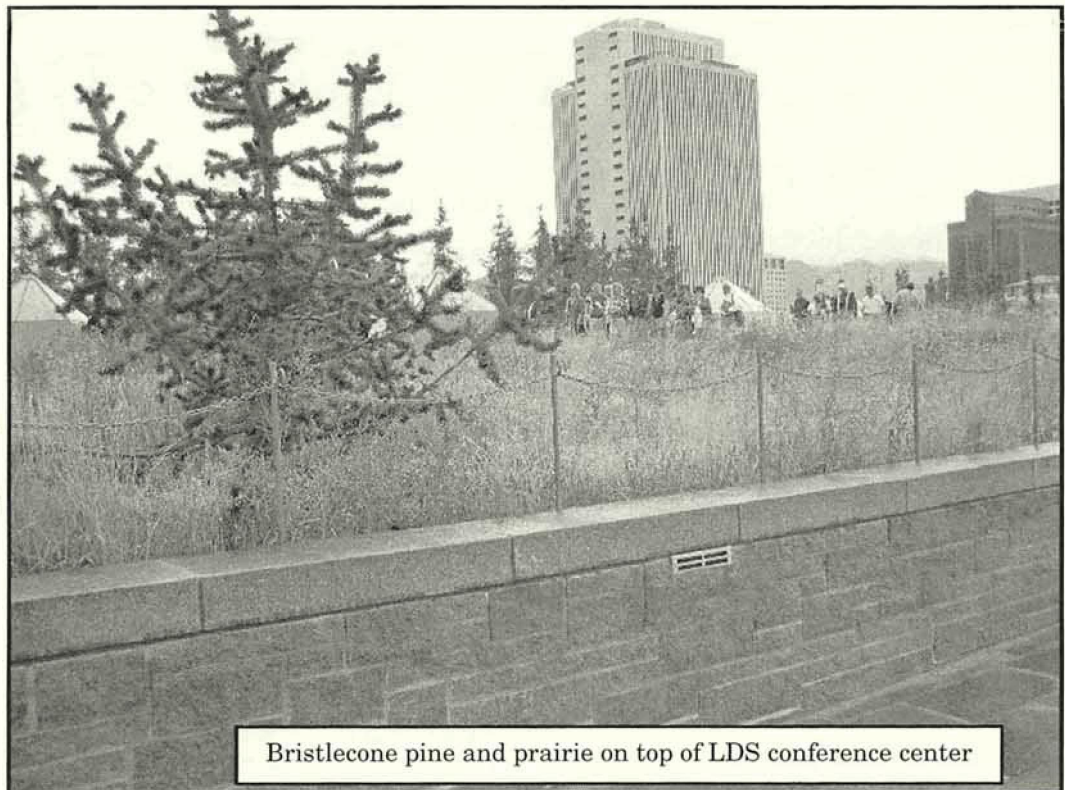
December 4-5, 2002: Steve Polasky, Department of Ecological/Environmental Economics, University of Michigan

January 15-16, 2003: Nancy Grimm, Department of Biology, Arizona State University

USU

Ecology Center Seminars

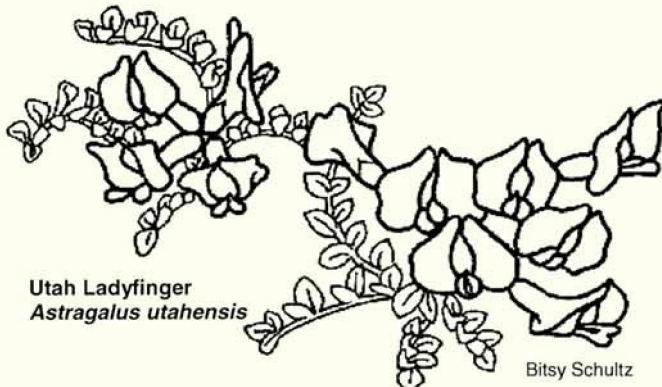
All seminars will be held in the Natural Resources Building Room 105, Utah State University. Each speaker will give two seminars: Wednesday: 6-7PM, Thursday: 3-4PM.



Bristlecone pine and prairie on top of LDS conference center

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Or write to: unps@unps.org

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