

# Native Plant Society of New Mexico

## ***NEWSLETTER***

July, August, September 2007 Volume XXXII Number 3

### 2007 NPSNM Grants Awarded

The board of Native Plant Society of New Mexico agreed to provide funding to these proposals for 2007:

Pollination of Agaves by Nectar-feeding Bats and Birds in Southwestern NM

—to Angela England, graduate student at UNM, to study reproductive ecology of *Agave palmeri* in the NM bootheel, where nectar-feeding bats occur.

High Desert Cactus Demonstration Garden

—to Texas Master Gardeners' Association, El Paso County Chapter, to expand on completed Phase 1 of the garden, focusing on Chihuahuan Desert cacti.

Greenhouse for propagating plants native to Taos County

—to NPSNM Taos Chapter, to help upgrade the deteriorating greenhouse used to propagate plants for local demonstration gardens and plant sales.

Floras of the Burro Mountains and Lake Roberts (Gila NF): Voucher specimen mounting

—to William Norris, Western NM University, to mount and process 1,730 voucher specimens for submission to WNMU. Ultimately, floras of Burros and Lake Roberts will be published.

Plant Trunk

—to Gila Conservation Education Center (Silver City), to continue developing traveling plant trunk for classroom presentations on plant ID, anatomy, native foods, seed dispersal strategies, etc.

Lichens of New Mexico

—to David Johnson, College of Santa Fe, to begin a teaching collection of lichens of NM at CSF.

Checklist of Vascular Plants in the Sandia and Manzano Mountains of Central NM

—to Bob Sivinski, to make available to everyone the floristic study to provide verifiable data for phytogeographic and biodiversity research.

Wild Orchids of the Southwestern US

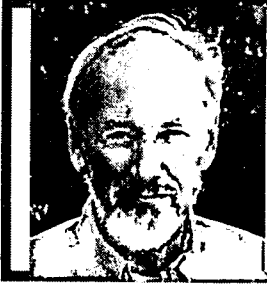
—to Paul Martin Brown, to research NM orchids for the 10<sup>th</sup> book on North American wild orchids.

A Field Guide to the Flora and Fauna of the Middle Rio Grande Bosque

—Drylands Institute. (No funding. NPSNM agreed to buy books when published.)

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## From the President

Chick Keller

This has been an active time for the society – finishing up the plant salvage (thanks to all who made this a great success), distribution of grant awards, receiving applications for the new administrative assistant position, as well as many chapter activities. I was privileged to participate in two, one at Oliver Lee State Park with the Otero Chapter and one at San Juan College with the San Juan Chapter. Both visits were fun and informative with lots of good people participating.

Spring rains have brought out a wealth of native plants, some not seen in years. Two new ones for me were in the badlands near Chimayo north of Santa Fe, the very showy *Erigeron pulcherrima* and a small colony of the yellow composite commonly seen in Utah, *Stenotus armerioides*. I had found a large colony (about 400 plants) on a single mesa top east of Los Alamos, but this new colony was a surprise. The fuchsia of *Oxytropis lambertii*, usually restricted to a few roadside banks in the Rio Grande Valley, is currently covering large areas of the above Badlands. I estimated 30,000 to 40,000 blooms of *Penstemon secundiflorus* in Los Alamos County. I'm certain you all have your new finds to add to these.

There are many new ideas floating around in my head. At the suggestion of Tom Antonio, our vice president, I'd like to look into expanding the state board by inviting influential and/knowledgeable people who might not be NPSNM members but who might provide insights of the public we don't have. One possibility would be someone from the state highway department who could help us in an initiative I'd like to get started: that of making NPSNM a resource for, rather than a critic of, roadside and median management such as mowing, seeding, etc. There is much we could do here, especially since it occurs to me that perhaps 90 percent of all native plants seen by New Mexicans are seen from their cars. Consider the added water collection that the impermeable roadway provides such floral displays, and we ought to work with the

highway department to enhance these ad hoc flower displays.

Other board members might be from appropriate state and federal agencies, perhaps a nature reporter from a New Mexico publication, etc. And so I'd like to hear from you, both by nominations of particular people and suggestions of appropriate types of people we should have. Such representation might be very helpful in getting our message more broadly known and in making us more of a statewide resource.

By the time this newsletter comes out we should be well along in hiring our administrative assistant. One of the duties of the position will be to help chapter program people find good speakers. This will be a two-way street, in that we're asking the chapters to send us names of good speakers. Once a person has put together a talk, it's easy to give it several times. Thus, names you send us will be forwarded to the other chapters for their consideration. Here it would be appropriate for the state organization to pay any travel expenses of such speakers. So, until we have the person in place, you can send your suggestions to me (a quick email would do), and I'll pass the names on to the successful applicant.

My goal of meeting with every chapter this year is nearly complete. I only have three left—El Paso, Las Cruces, and Silver City. Perhaps we could conspire to have me make a grand tour, visiting all on the same trip? My visits to the other chapters have greatly encouraged me about the health of the society, and it was grand to see people working hard and having such fun! Native plants gladden the heart. Enjoy.

The volunteer position of NPSNM Finance Chair has been filled. Long-time member Tom Wooten of Gila, NM, has graciously agreed to assume these important duties. Thank you, Tom!

**Don't miss the next Annual State Meeting  
in Farmington, NM,  
in the spectacular Four Corners region  
August 2-5, 2007**

This NEWSLETTER is published quarterly by the Native Plant Society of New Mexico, a nonprofit organization, and is free to members. The NPSNM is composed of professional and amateur botanists and others with an interest in the flora of New Mexico. Original articles from the Newsletter may be reprinted if attributed to the author and to this Newsletter. Views expressed are the opinions of the individual authors and not necessarily those of NPSNM.

Manuscripts and artwork are welcome and should be submitted to the editor, Renée West at:

*keywestern@hotmail.com* OR:

*1105 Ocotillo Canyon Dr., Carlsbad NM 88220*

**Next Deadline is Sept. 1, 2007**

Membership in the NPSNM is open to anyone supporting our goals of promoting a greater appreciation of native plants and their environment and the preservation of endangered species. We encourage the use of suitable native plants in landscaping to preserve our State's unique character and as a water conservation measure. Members benefit from chapter meetings, field trips, publications, plant and seed exchanges, and educational forums. A wide selection of books dealing with plants, landscaping, and other environmental issues are available at discount prices. The Society has also produced two New Mexico wildflower posters by artist Niki Threlkeld and a cactus poster designed by Lisa Mandelkern. These can be ordered from our Poster Chair or Book Sales representative.

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**NPSNM Membership Application**

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*I (we) wish to affiliate with the checked chapter*

- Albuquerque  
 El Paso, TX  
 Gila (Silver City)  
 Las Cruces  
 Otero  
 San Juan (Farmington)  
 Santa Fe  
 Taos

*I am interested in forming a new chapter in*

**Annual Dues:**

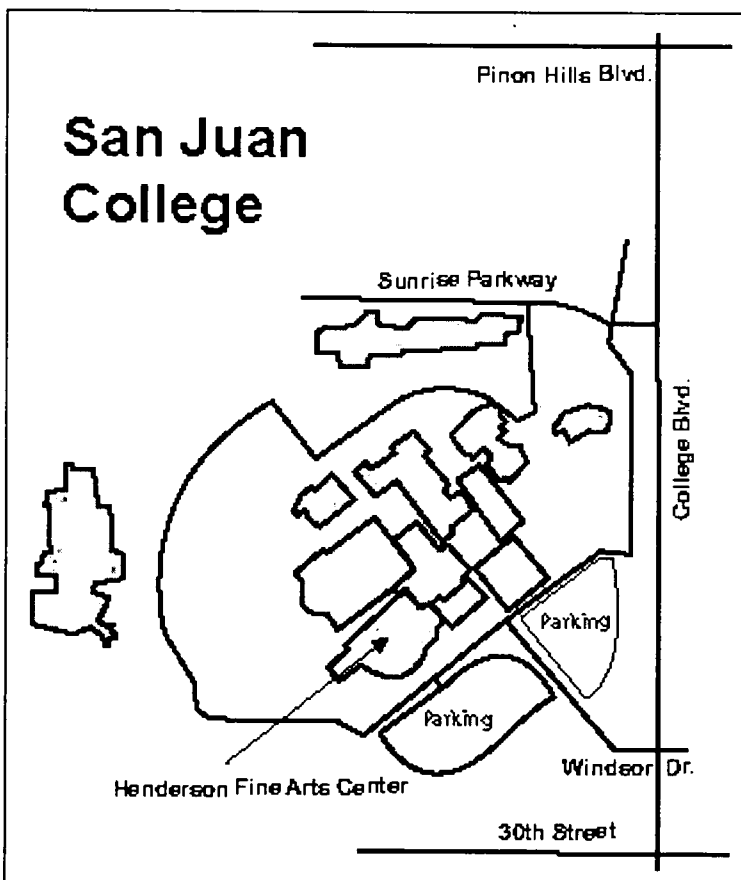
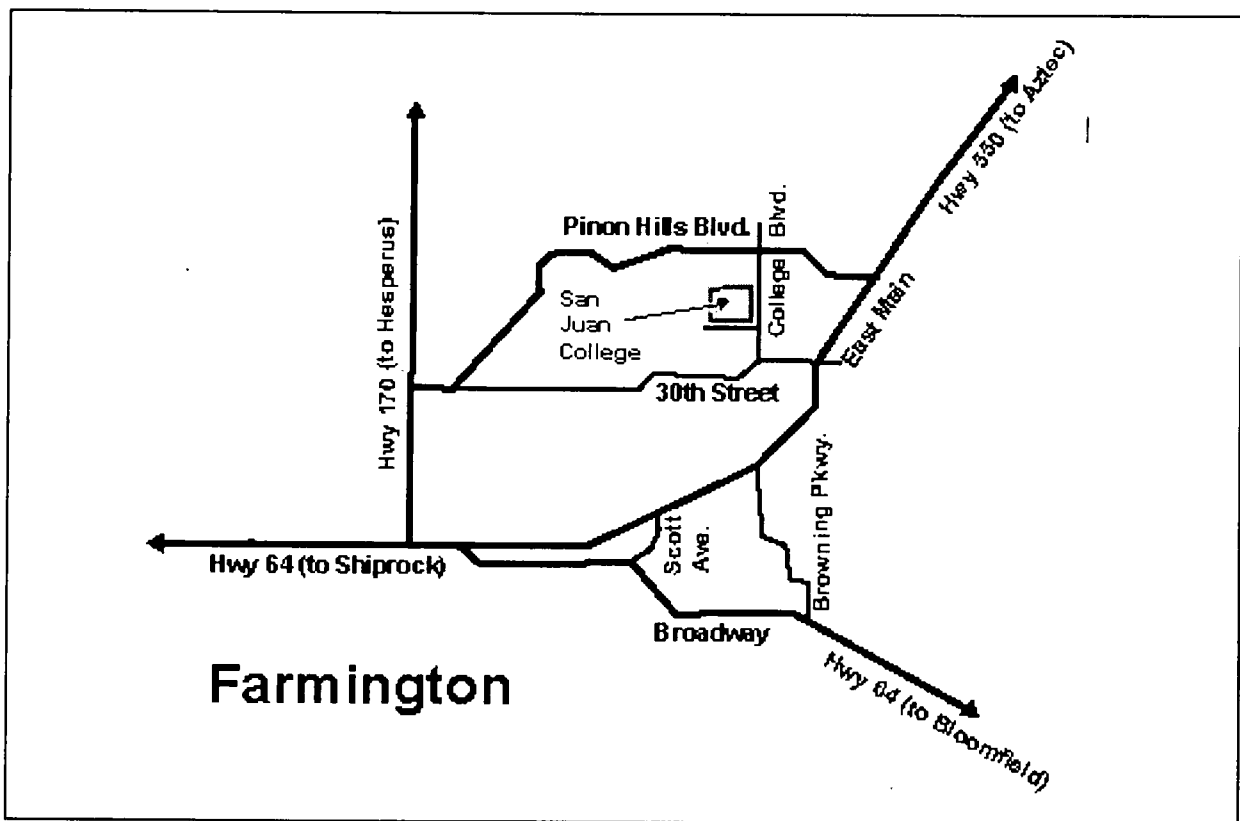
Individual or Family.....	\$20
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Supporting Member.....	\$50
Sponsor.....	\$100
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Benefactor.....	\$500
Life Member.....	\$1,000
Limited Income, Family, Students & Seniors (65+).....	\$12

Endowment contribution \$ \_\_\_\_\_  
Total \$ \_\_\_\_\_

*Make your check payable to  
NPSNM  
and send to*

**Membership Secretary  
P.O.Box 2364, Las Cruces NM 88004**

Hang onto these maps for early August when you attend the annual statewide meeting at San Juan College in Farmington. The meeting schedule and registration form, as well as hotel information, are available in the previous issue of this newsletter and on our website: <http://npsnm.unm.edu>



**How To Get To  
Where You've Got To Get To  
for the  
2007  
Native Plant Society  
of New Mexico  
Annual Meeting**



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Send Membership Dues & Changes of Address to:  
Membership Secretary,  
P.O. Box 2364, Las Cruces NM 88004

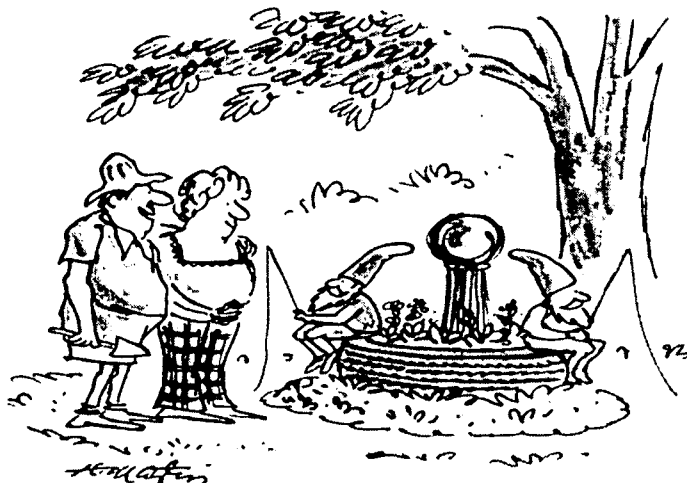
## Tired of mowing the lawn? Pave it!

According to The Wall Street Journal, homeowners weary of yard work are replacing grass and plants with stone or concrete. Some are adding fake vegetation. A recent article says that the landscaping business is steadily converting from working with grass, flowers and trees.

"Frustrated by extreme changes in the weather – floods this year, droughts last year – some homeowners are simply giving up. They're replacing ferns and palms with lifelike fakes, pulling up the sod and putting down stone, concrete and other types of paving, and drastically shrinking planting beds," wrote the newspaper.

Another factor is aging homeowners: they're just too tired to keep things perfect. Many customers say they would rather spend their weekends relaxing and entertaining in their paved-over backyards – complete with weather-resistant rugs, kitchens and built-in televisions – than mowing lawns and pulling weeds. In the past year, one company's hardscaping sales have increased 20 percent, even though the cost for paving is more than 10 times the cost of sod.

Also available is artificial flora made from urethane that can be used outdoors, as well as real plants that have been preserved with chemicals and are suitable for covered areas like porches. Though pricier than the real thing, the faux foliage will last for three years without fading. "People want everything aesthetically pleasing all the time," one business said.



There, dear! I think we've left the world a better place than we found it!

Cartoon submitted by Marshall Carter-Tripp

## Chapter Activities & Events

### Albuquerque

Most meetings are first Thursdays at 7 pm at the Albuquerque Garden Center, 10120 Lomas Blvd (between Eubank & Wyoming Blvd. in Los Altos Park). For information, contact Pam McBride at [ebotpam@msn.com](mailto:ebotpam@msn.com), 505-343-9472, or Philip Melnick at [philm@pmelnick.com](mailto:philm@pmelnick.com), 505-345-9877.

July 14 field trip—to Laura White's 33-acre property outside of Torreon in Manzano Mountains. She is slowly working to restore an overgrazed cow pasture. We can help Laura and brush up our skills by identifying as many plants as we can. To carpool and caravan, meet at 8 am in parking lot of Smith's supermarket, south of Tramway and Central, in Albuquerque. Sturdy shoes or boots, water, lunch, sunscreen, sun hat.

August 25—Native Plant Society Garden Fair & Plant Sale. (Set up on Friday, Aug. 24.) Wendy Natoli from Plants of the Southwest will speak on permaculture at 10 am and 1:30 pm.

September 6 talk—"My Love of Sunflowers – and Where It's Taken Me" by Sandra Lynn.

September 9 field trip—3<sup>rd</sup> annual trip to monitor the federally listed Pecos Sunflower population at the Blue Hole Cienega in Santa Rosa. To carpool and caravan, meet at 8:30 am in parking lot of Smith's supermarket, south of Tramway and Central, in Albuquerque. Or meet the group at Blue Hole parking lot in Santa Rosa at 10:30. Sturdy shoes or boots, water, lunch, sunscreen, sun hat.

### El Paso

All programs are second Thursdays at 7 pm at Centennial Museum, UTEP campus. All society events are free unless otherwise noted. Non-members are always welcome.

July 12 talk—"Integrated Pest Management" by Dr. Salvador Vitanza, Extension Agent for El Paso and Hudspeth counties, Texas Cooperative Extension. I've got bugs!--dreaded words for any gardener. Dr. Vitanza will discuss a pest

management program that uses chemical agents as a last resort. Tour the Master Gardener demonstration gardens (vegetable, cactus, orchard and native plant) from 5:30 to 7 pm with Master Gardeners to answer gardening questions.

Presentation at 7 pm in auditorium of Texas Agricultural Extension Station, 1380 A&M Circle (exit I-10 at Americas Ave). For more information, call Virginia Morris at 915-833-7637.

August 9 talk—"El Paso Southwest: Wilderness Gateway" by Nathan Small, southern grassroots organizer with New Mexico Wilderness Alliance. Discuss El Paso's role as the gateway to wild natural places in nearby Dona Ana County, NM. From the grass-covered calderas in the volcanic West Potrillo Mountain to rock-studded spires in the Organ Mountains, natural areas offer recreation, relaxation, wildlife habitats, and hope for the region. But El Paso and Las Cruces are also home to some of our fastest development rates. Every day more open space disappears and irresponsible off-road vehicle abuse cuts once-pristine lands. Will conservation and common sense prevail? Learn about the campaign to "Keep It Wild" and how you can help protect our natural heritage. For more information: [www.DonaAnaWild.org](http://www.DonaAnaWild.org), or call Betty Brown 915-757-2803.

September 13 talk—"A Gardener's Timetable: What, When + Why" by John White, Agricultural Extension Agent for Dona Ana County, NM Cooperative Extension. A year in the life of a well-maintained native garden. Topics include planting, pruning, irrigation, fertilizing, and frost and heat protection, as well as the consequences of bad timing. For more information, call Betty Brown 915-757-2803.

September 15 walk—Pine Tree Trailhead: Aguirre Springs Campgrounds. Mark Johns will lead a moderate hike (on trail). Aguirre Springs is on eastern slope of Organ Mountains. Trail is a loop from desert to mountain vegetation. Meet at 8:30 am at Aguirre Springs, about 15 miles east of Las Cruces, off Hwy. 70 on the way to White Sands. Sign on right as you come down from San Augustine Pass. \$3 per vehicle fee. For more information, call Mark Johns 915-595-5992.

October 11 talk—"Fall is the Time to Plant"—Plant/Seed Exchange. A panel of local experts discusses tips for growing native plants. Their

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(Continued from page 6)

## Activities & Events

successes and failures in planting native and low-water plants. Bring questions, success stories, and horror stories. You might find a new approach or unearth a solution. Panel discussion followed by plant and seed exchange. Bring your volunteer or excess plants/seeds and exchange them with others to increase your garden diversity and share the beauty. For more information, call Betty Brown 915-757-2803.

### Gila (Silver City)

All programs and hikes are free and open to the public. Meetings are second Fridays at 7 pm at WNMU's Harlan Hall. Hikers meet at 8 am in south parking lot of WNMU Fine Arts Theatre the morning of the hike to arrange carpooling. For more information, call Deming Gustafson, 505-388-5192. For hikes, bring water, food, hat, sunscreen, hiking shoes.

July 15 field trip—Lake Roberts area. Guided by Kelly Kindscher of University of Kansas, who has been studying the flora of the Gila for some time.

Aug. 23-Sept. 26 workshop—"Asteraceae Identification" by Dr. Russ Kleinman and William Norris. Wednesday evenings Aug. 23-Sept. 26, 6-8:30 pm in Harlan Hall, Room 135, on WNMU campus in Silver City. Mixture of lab work and field trips. Class limited to 25. To register call 505-534-9355.

August 19 field trip—Little Cherry Creek area, investigating its fungi population and the fruiting stages of local woody and flowering plants.

September 14 talk—"From the Mountains to the Desert: Flora and Fauna of the Gila River Corridor in New Mexico" by William Norris, Kelly Kindscher, Roland Shook, and Randy Jennings. Overview of their research and findings on the Gila River from Cliff Dwellings to Red Rock. Joint meeting of Gila NPS and Southwestern New Mexico Audubon Society, at 7 pm at the Silco Theater in downtown Silver City. Promises to be very informative. It will also serve as kickoff for 3<sup>rd</sup> annual Gila River Festival, with many field trips, workshops, and other activities all weekend.

September 16 field trip—Caves Trail 803, off Rocky Canyon Trail 700 from Wall Lake Road. Looking at late-flowering herbaceous plants and fruit types of local woody plants.

### Las Cruces

Meetings and programs are on Wednesdays at 7 pm in the conference room of the Social Center at the University Terrace Good Samaritan Village, 3011 Buena Vida Circle, Las Cruces. Field trips are on Saturdays. Most field trips extend into afternoon. Bring lunch, water, sun protection, plant field guides, and good shoes. Children must be accompanied by their parents. Programs and field trips are free; non-members always welcome. Contacts: president Ray Bowers 505-541-1877; vice-president Carolyn Gressitt 505-523-8413.

July 11 talk—"Aquatic Plants" by Alex Mares and Kevin Hansen of Mesilla Bosque State Park.

August 11 walk—to Rio Grande Bosque State Park to study aquatic plants, if visitor center is finished. Meet at 9 am at east end of Rio Grande Bank parking lot, corner of University and Telshor, to carpool. Led by Ray Bowers.

September 12 talk—Talks about plant families. Speakers will be Terry and Lisa on cacti, Tom on mustards, Ray on sunflowers, John and Carolyn on the nightshades, and Patrick on the saxifrages. Anyone else who would like to give a 10-minute talk about a plant family, call Ray at 505-541-1877. We will be signing up for the October trip to the southern San Andres Mountains on White Sands Missile Range.

September 15 walk—Lisa Mandelkern, Ray, Al, and Patrick lead a photography workshop on the Pine Tree Trail near Aguirre Springs, Organ Mountains. Lisa will have handouts. Meet at K-Mart parking lot on Hwy. 70 at 9 am.

### Otero (Alamogordo)

For field trip information, e-mail or call John Stockert, [jwstockert@tularosa.net](mailto:jwstockert@tularosa.net), 505-585-2546, or Helgi Osterreich, [hkasak@netmdc.com](mailto:hkasak@netmdc.com),

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**505-585-3315, at least a few days in advance. For the Missile Range trip, call at least two weeks ahead.**

July 20-22 field trip—Sitting Bull Falls in the Guadalupe Mountains. This is the most spectacular permanent desert waterfalls in this part of the country. An excellent trail to base of the falls, 2 miles round trip. Plan to stay Friday night to start early Saturday morning, Saturday stay optional.

August 11 walk—T-93, Perk Canyon. Scenic forested canyon with open understory adjacent to Ruidoso. Walk up trail one mile, then back over same route. Rated easy.

August 15-18—Otero County Fair. Help needed to man our chapter's booth. Coordinator will be named in a future communication.

September 8 field trip—Annual White Sands Missile Range tour. Leaders on site are David Lee Anderson, an excellent botanist at White Sands Missile Range, and Cammy Montoya, military coordinator for the trip. Go to Cottonwood Canyon, Buckhorn Canyon, Woolf Ranch in the Chalk Hills, and Rhodes Canyon. We will start registering people about a month in advance.

### San Juan (Farmington)

Meetings are third Thursdays at 7 pm at San Juan Community College. For more information call Les Lundquist at 505-326-7194.

Events TBA.

### Santa Fe

Meetings are third Wednesdays at 7 pm at College of Santa Fe, 1600 St. Michael's Dr., Luke Hall, Room 303. For more information, contact Tom Antonio, tantonio@csf.edu, 505-473-6465; or Carol Johnson, gcjohnson@comcast.net, 505-466-1303.

Events TBA.

### Taos

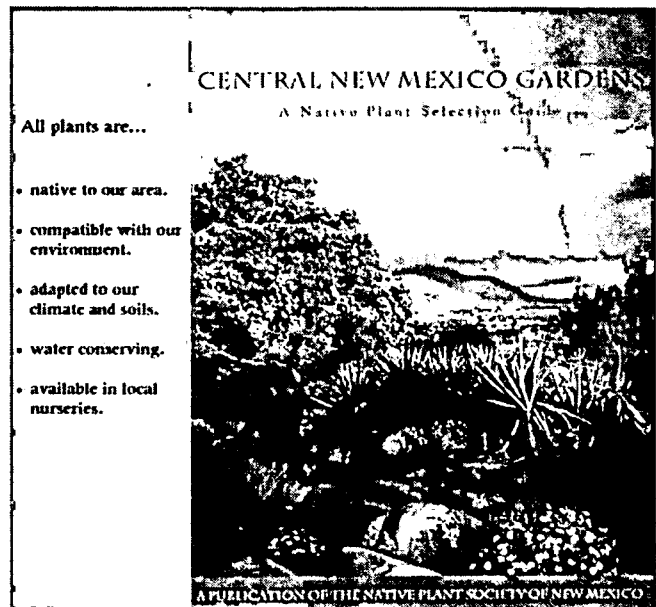
Meetings are second Wednesdays at 7 pm at San Geronimo Lodge. For more information on field trips and other activities, contact David Witt, davidlwitt@cybermesa.com, 505-758-0619.

July 7 field trip—to Williams Lake. Meet at 8 am at parking lot across from KTAO for carpooling to Taos Ski Valley. Small lake at base of Mount Wheeler. 2-mile hike (one-way) up to the lake goes through forest and moraine meadow. Difficulty: moderate, elevation 10,000-11,000 feet. Time: 5 hours.

July 11 talk—"Native Plants & Native Soils of New Mexico" by Dr. Michael Meyer, professor of forestry at NM Highlands University.

July 14 field trip—Upper Lake Fork Valley into the Alpine. Meet at 8 am at parking lot across from KTAO for carpooling to Taos Ski Valley. Hike through subalpine forest and wetlands, into alpine to find the most beautiful wildflowers in NM. 8 miles, elevation 10,000 to 12,000 feet. Difficulty: strenuous. Time: all day.

August 18 field trip—to Rio Santa Barbara. Meet at 7:30 am, San Francisco de Asis Plaza, north side (Ranchos de Taos). Trip Leaders: Jean, Betsy, Pat. This trip takes us to what is possibly the best flower show in our area along the roaring Rio Santa Barbara. Starts with a 45-minute drive to Penasco, then east to the S.B. campground. The 4-mile round trip hike is 8,800-9,800 feet elevation. Difficulty: moderate. Time: six hours.



Transform your yard into an inviting natural landscape using native plants! The Native Plant Society of New Mexico has produced an inexpensive, easy to use guide featuring 94 color photographs of trees, shrubs, vines, succulents, grasses and wildflowers suitable for landscapes in central New Mexico. Colorful and rugged, these plants look superb in gardens, require minimum water to maintain, and offer food and shelter to native wildlife. Color photographs and text cover how and where to plant, cultivation and maintenance.

Available to the public for \$12.95 (plus shipping and handling). Discount available when purchasing ten or more copies. NPSNM members: \$10.00 each. For more information about NPSNM membership, this and other publications, posters and t-shirts, visit our website at <http://npstnm.unm.edu>.



## News from the Chapters

# Albuquerque

### ***Habitat workshop a smashing success***

At least one Albuquerque school now has plans to certify its school grounds as a wildlife habitat as a result of the Albuquerque Chapter's May workshop called "Birds, Bees, and Butterflies – a Different Approach to Landscaping." Another school plans to start a project in removing invasive species from their campus.

"The students came back with rave reviews and many notes."

Students from a total of five local schools participated in the workshop. Overall, it was a smashing success, with all 95 slots sold out a week in advance. At least 25 people had to be turned away.

Adults were in attendance too, both amateurs and professionals. The two-day workshop garnered many compliments, such as, "This is the best workshop I have ever been to and I have been to many in my professional life." Grandmothers told how they now realized they had been connecting their grandchildren with nature and how important that is. Participants thanked the chapter for giving the workshop and wanted to know when the next workshop would take place.

The professional credibility of the workshop was enhanced when the board of the Albuquerque Master Gardeners voted unanimously to give two class credits to each Master Gardener who attended the workshop.

Early in the registration process, it had become apparent that participation by schools in the workshop might be limited due to the fees. So the chapter offered scholarships to schools who would send students. If the school would cover the cost of the meals, the chapter would cover the cost of putting on the workshop. The result was a win/win situation. Schools that participated included the Albuquerque Academy, the charter high school South Valley Academy, a pre-school, a pre-school/elementary school, a biodynamic learning center, and the Albuquerque Branch of the College of

Santa Fe.

A feeling of excitement, anticipation, and friendliness prevailed during the workshop. It was a special audience of people who care about the natural world and were OK, even excited, about being on the cutting edge. Speakers included NPSNM members Judith Phillips on plant selection, Carolyn Dodson on pollinators, and Cynthia Hunter on birds and butterflies. Other speakers were Don Sias on reptiles, David Cristiani on using natural plant communities, and Joran Viers on native bees. The National Wildlife Foundation's powerpoint program on "How to Certify A Backyard Habitat" was given by Frances Robertson, and Virginia Burris spoke on the importance of connecting children to the out-of-doors. Friday morning was devoted to presentations on how to design wildlife habitats using native plants; in the afternoon the focus was on the interdependencies between native plants and animals. On Saturday, attendees toured four yards representing different styles of habitat landscaping. At one yard, Cynthia Hunter critiqued the landscape from a habitat point of view.

Books on native plants were offered for sale, and we sold more books at this event than at any of our previous NPSNM functions. Native plants were also sold during breaks and meals. The catered food was exceptionally good. It included cookies freshly baked in the kitchen (with the wonderful aroma escaping into the meeting room), sundaes for afternoon break, and cheesecake for dinner dessert.

We will be glad to share our experience and knowledge with other NPSNM chapters. You can contact Virginia Burris, [vburris1@msn.com](mailto:vburris1@msn.com).

Submitted by Virginia Burris

***NPSNM Plant Resources  
webpage:***

<http://npsnm.unm.edu/links.html>

## News from the Chapters

### Gila

#### ***Students beautify their school***

Students at G.W. Stout Elementary School in Silver City have been busy beautifying their school, thanks to a \$500 grant from the Gila Chapter of the Native Plant Society of New Mexico. They have undertaken a planting project near a school parking lot and have learned a great deal in the process.

Back in 2005, teacher Judy Bailey (now-retired) conceived the idea of landscaping a portion of the school grounds as a hands-on learning project for her special ed classes. She and fellow teacher Candace Breen-Lee sought and received a grant from the Gila Native Plant Society (Gila Chapter) and began incorporating into her classroom lessons about soil types, native plants, and landscape design. Students in other classes joined in the effort. They studied the soil around their school, which is primarily rock and construction rubble,

and worked out plans for the landscaping project.

Members of GNPS visited Stout in 2006 to help the children understand how to select plants that will grow in that environment, the benefits of using native plants for landscaping, and how to care for natives. GNPS provided plants for the project, and Margaret Hadderman and the High Desert Organic Gardeners donated some native seeds.

The planting took place in May 2007 with the help of a school employee who tilled and dug holes in the hardscrabble soil. The students distributed mulch donated by Gila WoodNet.

The project has met with such success that there are plans for extending the landscaping to other areas around the school next year.

Special thanks go to GNPS president Angela Flanders, who has worked hard with this project.

By Phoebe Lawrence



Photo by Angela Flanders

Teachers Judy Bailey and Candace Breen-Lee and students at Silver City's Stout Elementary School after a day of planting in May.

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## Judge rules against feds in grass test

Posted by *The Oregonian*

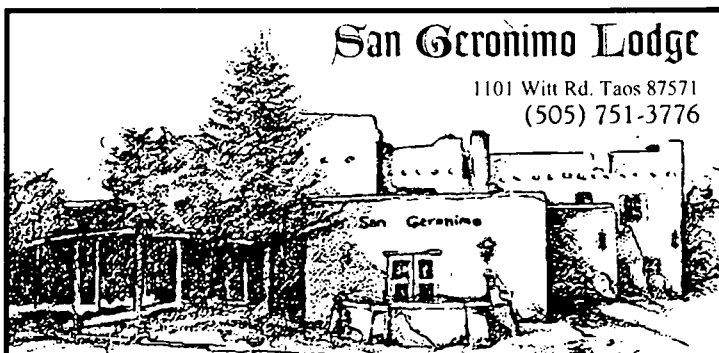
February 6, 2007

Federal agricultural officials did not conduct proper environmental reviews before allowing field trials of genetically modified bentgrass near Madras, [Oregon,] a judge has ruled.

The ruling has broad implications for any new GM crop planted in the United States. The Washington, D.C., federal judge who issued the decision said no new field trials could go forward without better environmental oversight.

The grass, developed in partnership between Scotts Miracle-Gro Co. and Monsanto Co., is designed to resist the herbicide Roundup, the world's most widely used plant-killer. Golf courses could plant the seed and keep other grass varieties in check by spraying Roundup.

Corvallis scientists discovered two years ago that the experimental Madras crop had sent pollen more than a dozen miles away. They discovered last year that the modified plants had crossed with wild grasses outside a buffer area, raising the threat of contaminating the state's nation-leading grass seed crop.



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Grass has relevance to each of our lives, although almost none of us lives in the sweep of plain between the Mississippi and the Rocky Mountains and the smaller grassland domains west of the Rockies. We are all creatures of grass, if only because grassland defines a world we are not and so defines us like the black defines the day. It is silent; we are not. It is free; we aren't. It is large to a degree we cannot comprehend, so much so that we as a nation have spent 150 years in an assault on its whole, trying to reduce it to bits that fit our grasp. Still, stripping off all its grass does not make it less a grassland, though it makes us less of a people. Grassland is indivisible. It endures. We, as now constituted, cannot.

—Richard Manning

*Grassland: The History, Biology, Politics and Promise of the American Prairie*




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## Chamiso Hediondo:

# A Widespread and Useful Southwestern Plant

by Linda La Grange  
Interim Dean of Graduate Studies and Research  
New Mexico Highlands University

*Artemisia tridentata* (big sagebrush, chamiso hediondo) is the ubiquitous sagely vision that becomes the essence of most of our western North American road trips. As we blast past these common unspectacular plants, few of us realize how much this shrub has been utilized by the human population for thousands of years. The plant was named after Queen Artemisia who, with her husband Mausolus, ruled the kingdom of Caria in Asia Minor (377–353 BC). ‘Tridentata’ means three teeth and refers to the three-lobed leaves.

Chamiso hediondo is an erect rounded evergreen shrub that can grow to a height of 10 feet. Its lifespan is 40 to 50 years, although some plants have been found to be over 100 years old. Common shrub associates include *Gutierrezia sarothrae* (broom snakeweed, escoba de la vibora), *Chrysothamnus graveolens* (rabbit brush, chamiso blanco), and *Atriplex canescens* (four-wing saltbush, cenizo) – which share some dizzyingly similar common names. Chamiso hediondo reproduces from seed and the pleasantly scented flowers are self- or wind-pollinated. The plant does not resprout after being burned, but high seed production and germination rates contribute to its rapid reestablishment. Its pollen is one of the primary causes of hay fever in the western United States.

*Artemisia tridentata* is a valuable source of food for a wide range of wildlife that includes sage grouse, mule deer, pronghorn, elk, small mammals, and small non-game birds. Sheep will eat chamiso, but have a definite preference for the tetraploid *tridentata* populations (containing 44 chromosomes as compared with diploid, containing 22 chromosomes). Palatability is reduced if the plant contains high levels of terpenoid. Chamiso plants are an important source of winter food and contain high levels of protein, carotene, and phosphorous.

The website [Crowcanyon.org](http://Crowcanyon.org) provides an

extensive listing of Native American uses for all United States species of *Artemisia*. This list includes some of the lesser-known uses. For instance, the Havasupai use a decoction of the leaves to treat acnes. They also use the branches as thatch for their shelters. The Hopi used the woody parts of the plant as a part of the flute paho (prayer stick). A salve that was rubbed over a water snake bite was a common Kayenta Navajo remedy. The plant was used ritually by Navajos to make Life Medicine, as well as in building the Mountain Chant Sweathouse. In situations requiring purification, *Artemisia tridentata* was burned with *Portulaca oleracea* seeds to produce a purifying smoke. The Zuni used *A. tridentata* leaves as foot deodorant, stuffing the leaves into their shoes.

Another excellent source of information about Native American and Northern Hispanic use of plants is the book *Healing Herbs of the Upper Rio Grande* by L.S.M. Curtin (1947). She reported that the Tewas steeped the leaves in hot water and drank the decoction to relieve indigestion. They would also steep a bundle of stems and leaves in hot water, wrap them in a cloth, and hold the bundle over the stomach – also to relieve indigestion. Hispanic settlers would boil huge quantities of leaves to make a hot bath to alleviate the symptoms of rheumatism, croup, and chest pains (from colds). In addition to the soaking bath, a strong tea was brewed from the leaves. The tea, mixed with piloncillo (unrefined brown sugar), was consumed three times a day.

In northern New Mexico there was (and still is, to some extent) a religious brotherhood known as Los Hermanos Penitentes that engaged in rituals not officially sanctioned by the Catholic Church. The society dates to the early 19<sup>th</sup> century when it flourished in southern Colorado and northern New Mexico. Members were expected to atone for their sins by self-flagellation, carrying heavy crosses, tying their bodies on the crosses, and tightly binding their limbs to restrict blood flow. The Penitentes made a tea from the chamiso hediondo

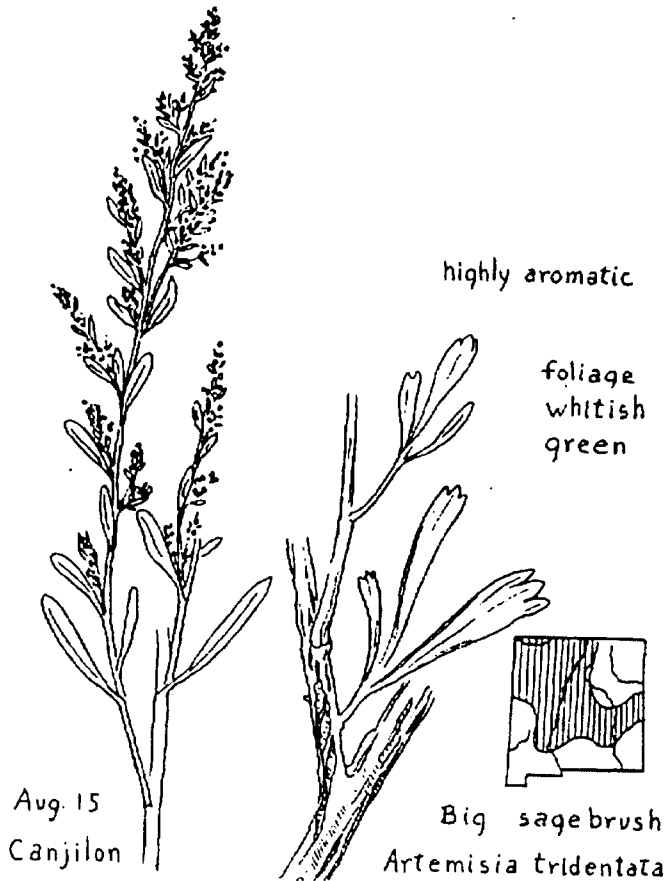
(Continued on page 14)

(Continued from page 13)

## Chamiso hediondo

leaves and applied the liquid mixture to the flagellation wounds. They also drank the tea, believing that the tea would stop the bleeding.

Additional rich sources of information about Native American uses of plants are the two books by Dunmire and Tierney, *Wild Plants of the Pueblos Province* and *Wild Plants and Native*



Drawing of *Artemisia tridentata*  
by Robert DeWitt Ivey,  
from *Flowering Plants of New Mexico*

*Peoples of the Four Corners.* The authors note that although chamiso hediondo is toxic, Native Americans apparently knew just how much of the plant to ingest for its medicinal and vitamin benefits. The Utes, as did the earlier Fremont people, used the bark extensively for all fabric-like applications such as shirts, ponchos, and leggings. Folks from the Jemez Pueblo, who called the plant Navajo sage since it did not grow in their area,

would burn small amounts of the plant and inhale the smoke as a treatment for depression. A Jemez elder explained, "This plant is associated with Navajos who often live alone but are not lonely."

The primary active constituents found in chamiso are sesquiterpenes, monoterpenes, camphenes, flavonoids, and coumarins. The sesquiterpene santonin is responsible for the antihelmintic actions of chamiso. The compound acts on the worm's ganglion cells, which causes paralysis. Thujone is just one of the monoterpenes in chamiso and is considered a CNS stimulant. However, high doses of thujone can cause serious side effects, such as convulsions. Of the flavonoids, quercetin and apigenin have been extensively studied and are both considered potent antioxidants. Quercetin and kaempferol might be responsible for chamiso's anti-inflammatory properties, decreasing prostaglandin synthetase activity and thus reducing prostaglandin production.

Researchers have observed that among Navajos, there is a higher-than-expected number of albumin polymorphisms. These researchers have also noted that warfarin, which is a synthetic derivative of coumarin, is much less likely to bind with albumin because of these polymorphisms. They believe that this is the consequence of a human/plant interaction that occurs with chamiso. When conducting their Life Way Ceremony, the Navajos make an infusion of herbs that contain the stems and twigs of chamiso. There are relatively high levels of coumarins present in chamiso, which scientists think influenced the development of the albumin polymorphisms.

Finally, if you are more interested in prospecting for gold than medicinal herbs, chamiso has been used as a tool for geobotanical prospecting. The plants don't actually accumulate gold; instead they absorb the elements associated with soils containing Carlin-type disseminated ore, namely, arsenic and antimony. The stems and twigs of these plants contain significantly higher levels of arsenic and antimony than do plants grown in control soils.

So, think about it – get a burro and a portable neutron activation analyzer and you're a genuine 21<sup>st</sup> century gold prospector.

+++++

[This article is for information only. Always use extreme caution about ingesting wild plants.]

## Review

*Gathering Moss: A Natural and Cultural History of Mosses*

Book by Robin Wall Kimmerer  
Oregon State University Press, 2003

During a recent battle with viruses, I looked for a good book to hold my attention. I rejected several mysteries and grabbed *Gathering Moss: A Natural and Cultural History of Mosses*. I had already read it, and I remembered that it was quite engaging. I was not disappointed the second time.

Robin Wall Kimmerer is a scientist (a Ph.D. bryologist), mother, Native American, and an excellent writer of non-fiction, weaving insights from all aspects of her life to tell tales, not just report facts. "To me, a good experiment is like a good conversation," she says. "Each listener creates an opening for the other's story to be told."

In bringing the joys of mosses to the public, Kimmerer doesn't shy away from technical concepts and terms, like poikilohydry – mosses' ability to dry up almost completely, then rehydrate and resume growth. But her description is so artfully painted that anyone can picture photosynthesis:

What art of waiting is practiced by the mosses, crisped and baking on the summer oak? They curl inward upon themselves, as if suspended in daydreams. And if mosses dream, I suspect they dream of rain. Mosses must be awash in moisture in order for the alchemy of photosynthesis to occur. A thin film of water over the moss leaf is the gateway for carbon dioxide to dissolve and enter the leaf, beginning the transformation of light and air into sugar.

Scientific papers report that some mosses have been rehydrated and began photosynthesizing after sitting dry on herbarium shelves for 40 years. Kimmerer puts another image:

Mosses have a covenant with change; their destiny is linked to the vagaries of rain. They shrink and shrivel while carefully laying the groundwork of their own renewal. They give me faith.

After a dance through the delights of mosses that takes up more than half the book, Kimmerer begins to talk about conservation of mosses. These later chapters are naturally much sadder. Like much else in our natural world, mosses are being destroyed at an alarmingly unsustainable rate. Her data for just the Coast Range of Oregon put the legal moss harvest at 230,000 kilograms per year. "Illegal harvest is thought to be as much as thirty times higher..." Kimmerer has studied the lack of recovery from harvesters and from logging. Her description tugs at the heart strings:



I feel like a photographer helplessly documenting a disaster, passive and unable to change the outcome. We find these spots where the moss pickers have been and become scientific witnesses to the destruction. Every scalped branch will be measured and tagged and examined for signs of regrowth. I'm looking hard for hope that these naked branches will have started to green up again. They haven't.

Most of Kimmerer's working life has been spent in moister climates than our deserts – classic moss habitats like the Adirondacks, Wisconsin, and Oregon. But there are moss habitats here in the arid Southwest. If you doubt that, check out some of the talks set for the August statewide meeting, such as "Mosses of the Southwest" and "Fens of the Four Corners." And then go curl up with Kimmerer's delightfully informative book.

—Renee West

## New Publications Available

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#### New Rocky Mountain Book Available

*Growing Native Plants of the Rocky Mountain Area*  
by Robert D. Dorn and Jane L. Dorn

This book covers the northern third of New Mexico. For a review and information on how to obtain a copy at the website for the Wyoming Native Plant Society — <http://uwadmnweb.uwo.edu/WYNDD/wnps/newsletters.htm>. Click on May 2007 (or Newsletter Archives, then May 2007), then go to page 4.

“We are trying to make it available for actual printing cost to as many people as would like it, as the retail cost is rather expensive,” said Bob Dorn. “We also have made it available in a cheaper CD version.”

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The Xerces Society for Invertebrate Conservation has just redesigned its series of pollinator conservation fact sheets. Each sheet provides a simple overview and basic guidance on providing a different aspect of pollinator habitat. The sheets cover choosing plants for bees, providing nests for native bees, and butterfly gardening. The information is useful for almost any area of land, from urban backyards through to natural areas, although ‘Butterfly Gardening’ is strictly for gardens because the plant lists combine native and non-native species.

The sheets are all in color and can be downloaded as a PDF files from the website at [www.xerces.org](http://www.xerces.org). Click on “Xerces Publications.”

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