New Mexico's Voice for Native Plants

Newsletter

of the

Native Plant Society of New Mexico

October, November, December 2011 Vol. XXXVI No. 4

Fire damage from the recent Las Conchas Fire is visible above the North Fork of the Jemez River, as seen during an NPSNM Annual Meeting field trip. Photo by Joe Cancellare

Inside This Issue

From the President

by Tom Antonio

We honored the past and hopefully prepared for the future at the 2011 annual meeting of the Society, held last month in Santa Fe. Among the over 170 attendees was Dr. Ray Powell, New Mexico Land Commissioner, along with 44 members of the Santa Fe chapter. I want to personally thank the many volunteers from the Santa Fe chapter who helped to make the conference such a success. Granted, I might be a bit biased, but judging from the many comments and e-mails received, I wasn't the only one who enjoyed the conference. In honoring the past we recognized that the Society was organized at a meeting in Santa Fe in February of 1976, making this year the 35th anniversary of the Society's founding. The first statewide meeting was held August 16, 1980, at Fourth of July Canyon in the Manzano Mountains, making the 2011 conference the 31st annual meeting of the NPSNM.

In attendance at the conference were a number of past presidents, and I would like to thank them all for their service to the Society. They include:

1976—Co-chairs: Melissa Savage, Norman Poitras
1977–1978—Melissa Savage
1979—Melissa Savage/David Deardorff
1980—Melissa Savage
1981—Fairley Barnes
1982—Mary Wohlers
1983–1986—Ted Hodoba
1987–1990—Lisa Johnston
1991–1992—Bob Reeves
1993–1996—Mimi Hubby
1997–1998—Mary Whitmore
1999–2000—Jack Carter
2001–2002—Bob Sivinski
2003–2004—Lisa Mandelkern
2005–2006—Wynn Anderson
2007–2008—Chick Keller

Finally, please join me again in thanking the New Mexico Educators Federal Credit Union for their generous contribution to the Native Plant Society of New Mexico. This is the third year we have received funds from their community rewards program and we are very appreciative of their support. ❖

NPSNM News Items

Newsletter Goes Electronic

Important announcement! NPSNM will start sending the quarterly newsletter via e-mail (as a link to a PDF on our website) ***unless you request otherwise***. This will save paper and reduce the cost and work to the society. In addition, you will get to see the newsletter in full color (as opposed to the black-and-white mail version). If you prefer to continue receiving your hard-copy newsletter via the U.S. Postal Service, please send an e-mail to our Administrative Coordinator, Cindy Roper, at nativeplantsnm@gmail.com, or call 505/466-3536 and leave a message. Those of you with no e-mail address on file with NPSNM will automatically continue to receive the hard-copy newsletter. Please send any questions or comments to Cindy.

Society Switching to PayPal for Nonprofits

In our continuing efforts to reduce expenses on administrative costs, the Society will be switching from "Network for Good" to "PayPal for Nonprofits" for our online credit card processing (through our website). We expect this to take place shortly, and further expect it to be a smooth transition. Please be aware: you do *not* need to have a PayPal account to use PayPal online services. We don't anticipate any difficulties, but if you do run into a problem, please e-mail or call Cindy Roper. ❖

Board Elections Coming Soon

The Native Plant Society of New Mexico will be holding its biennial election in a few months. All positions on the Board of Directors are available, and a slate of candidates is now needed. We especially need people who are willing to serve as **Treasurer** and **Vice President**. **Recording Secretary** is also open. Candidates are welcome to run for President and Membership Secretary as well. These can be fascinating and rewarding positions in this all-volunteer nonprofit organization that serves the fifth-largest state and even spills over into Texas and Colorado!

If you're interested in any of these positions, please contact the current office holder to find out more. Or contact VP Renee West for information and to get on the ballot. See the list of Board members on page 4. ❖

Drought and Fire—2011 in Carlsbad Caverns National Park

by Renée West, NPSNM Board Vice President, Carlsbad Caverns National Park Supervisory Biologist

Carlsbad Caverns National Park, August 11, 2011

A park visitor was looking out the visitor center windows and asking rangers about the fire-blackened shrubs. "It just doesn't look like there's anything out there that would have burned."

Carlsbad Caverns National Park, June 13, 2011

It was just after 2:00 in the afternoon when I heard the radio call: A biological technician from my staff was reporting a wildfire. Outside my office I could see the large column of smoke just a few miles away and blowing directly toward: our two biotechs in the field, a backcountry cave with UNM researchers, Carlsbad Cavern full of visitors, the park's only access road, and the park buildings.

The temperature was 101, with single-digit humidity and wind gusts near 30 mph. The park had had less than a tenth of an inch of precipitation in the previous nine months. The sky was clear; the fire was human caused.

To a visitor from back East, the desert shrublands and grasslands probably don't look like much. But the Loop Fire—about 30,000 acres, more than 8,000 of them inside the park—burned rare plants, unique plant communities, and habitat for rare wildlife. In the harsh conditions some shrubs burned so completely that even their roots are white ash.

Among the unique vegetation types that burned substantially in the fire was 35% of the park's Curlyleaf Muhly Grassland, and 57% of its Curlyleaf Muhly Grassland with Pinchot Juniper.

According to Dr. Esteban Muldavin and the UNM/Natural Heritage Program team who did the park's vegetation map,* the Curlyleaf Muhly grassland types "give the mid-elevation slopes their distinctive character and are part of what sets the landscape of CCNP apart from most others in the Southwest. Curlyleaf is almost entirely restricted to the Chihuahuan Desert where it occurs sporadically and mostly on rocky, limestone slopes. While similar Curlyleaf Muhly–dominated communities are found occasionally throughout the range, none are known to dominate their respective landscapes as those on CCNP do."

Other unique communities within the fire boundary were 83% of the park's Oak-Madrone Band Cove Woodland type, and 61% of its Pinchot Juniper Shrubland.

The Oak-Madrone Band Cove Woodlands, according to the vegetation map report, are "typically found in horizontal bands associated with the contact between the Tansil and Yates geological formations. At this contact, water accumulates, often creating seeps and springs, and more mesic conditions for the development of woodlands. The stands are particularly prevalent in the headslope "coves" of drainages. . . . The canopies can reach 85% or more cover. . . . The shrub layers are diverse. . . . [T]hese band-cove woodlands are important wildlife corridors that provide cover and browse at lower elevations where they are imbedded in a matrix of semi-desert grasslands and desert grasslands."

Pinchot juniper, with its permanently shrubby habit and orange-red cones, has a relatively small distribution in the world—growing only in New Mexico, central and west Texas, and west Oklahoma. In New Mexico, Pinchot juniper's main distribution is in the Guadalupe Mountains, which include CCNP.

Primary among the rare plants of concern is the Lee pincushion cactus (*Escobaria sneedii* var. *leei,* or *Coryphantha sneedii* var. *leei*), which is New Mexico endangered and federally listed as threatened. (And depending on how you define the varieties, the park may also host the Sneed pincushion cactus [var. *sneedii*], which is federally and state endangered.) Lee pincushion cactus is found almost entirely within Carlsbad Caverns National Park.

Among the federal and New Mexico species of concern known to occur within the burned area are Guadalupe penstemon (*Penstemon car-*

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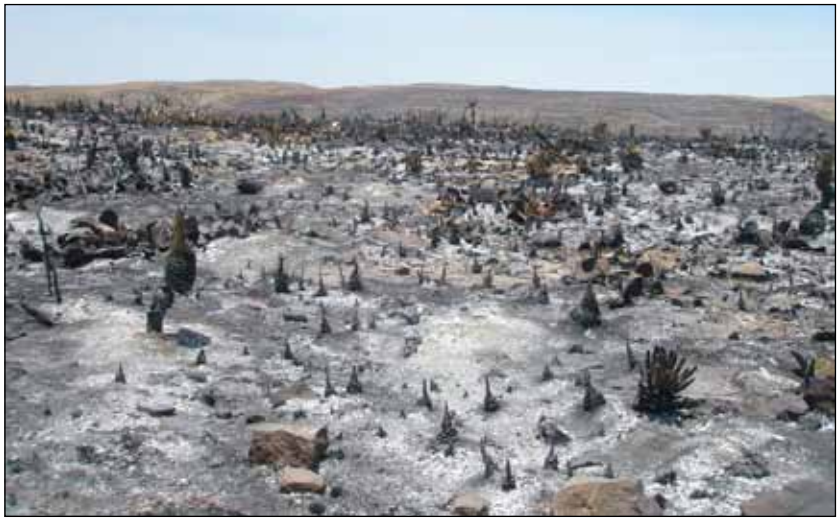

Even in this severely burned community of succulents and shrubs within the Loop Fire there may still be life in some of the roots.
National Park Service photo

The Newsletter of the NPSNM

October–December 2011. Vol. 36 No. 4. This newsletter is published quarterly by the Native Plant Society of New Mexico (PO Box 35388, Albuquerque, NM 87176) and is free to members. The NPSNM, a nonprofit organization, is composed of professional and amateur botanists and others with an interest in the flora of New Mexico.

Next deadline is December 1, 2011. Articles and high-resolution artwork supporting the NPSNM's mission are welcomed and can be sent to the editor, Sarah Johnson, at ***sarita@wildblue.net***, or PO Box 53, Gila, NM 88038.

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NPSNM's Mission to educate members on native plant identification, ecology, and uses; encourage preservation of natural habitats; support botanical research; and promote use of native plants for conservation of water, land, and wildlife.

CONSERVATION CORNER

The Blue Hole Ciénega: Sometimes Conservation Requires a Village

by Jim McGrath, NPSNM Conservation Committee Chair

During the current severe recession, families, individuals, businesses, and government agencies all have a hard time scraping up enough financial resources to do just the most essential things. So it is not surprising that government funding for a conservation initiative is either nonexistent or the project is placed on a back burner until that wonderful day, years from the present, when such funding is once again available. In the meantime, protection of a special place requires extraordinary and coordinated effort by numerous determined individuals, government agencies, organizations, and community members who have become attached to that place.

One such special place is the Blue Hole Ciénega Nature Preserve. The community of Santa Rosa, NM proudly describes itself as The City of Natural Lakes. The famous Blue Hole is the town's leading tourist attraction. But the community of Santa Rosa was unaware of the significance of the large wetland that is just across the street from the Blue Hole. Until, that is, botanists Bob Sivinski and David Bleakly began looking more closely at the numerous spring-fed wetlands within and near Santa Rosa. Bob and Dave realized the significance of these wetlands as they documented the species composition of observed plant communities. They found Indiangrass (*Sorghastrum nutans*) dominating an apparent remnant of the Tall Grass Prairie—a vegetation type more characteristic of Illinois or Wisconsin. Other plants (*Flaveria chlorifolia*, *Limonium limbatum*) found were more characteristic of New Mexico and Trans-Pecos Texas wetlands. Two other species (*Cirsium wrightii*, *Spiranthes magnicamporum*) are now listed endangered by the state of New Mexico (NMRPTC 1999; Sivinski pers. comm.). Most importantly, they found a large population of the federally threatened Pecos sunflower (*Helianthus paradoxus*) in the largest of the Santa Rosa wetlands—the place we now know as the Blue Hole Ciénega. Lastly, Bob and Dave concluded that the "Santa Rosa Wetlands are in danger of eventually disappearing" (Sivinski and Bleakly 2004).

Taking action to protect the Santa Rosa wetlands was the logical next step. Bob Sivinski obtained a federal grant through the U.S. Fish and Wildlife Service Recovery Lands Acquisition Program, and with additional financial help from the New Mexico Department of Transportation purchased most of the ciénega for the New Mexico Energy, Minerals and Natural Resources Department–Forestry Division in 2005.

Once the land was purchased, Bob was faced with the task of managing the property—no easy task, since he has no staff in his current position as botanist with NM Forestry Division. The most obvious need was for the removal of the noxious weed Russian olive (*Elaeagnus angustifolia*), which dominated about a third of the 116-acre preserve. NM Forestry Division obtained a state watershed protection grant sufficient to employ several inmate work camp crews from the minimum security prison in Los Lunas. Using chainsaws, the inmate crews felled the Russian olive forest. When the downed wood was dry, NM Forestry used the last of its grant money to conduct a prescribed fire to burn the dead trees and the ciénega in December 2008. The ciénega and Pecos sunflower responded favorably to the tree removal and prescribed fire and both are now well on their way to recovery.

However, a land purchase and a single prescribed burn are not enough to ensure long-term protection of a unique botanical resource. Bob knew that protection would only be possible if others, especially those in the local community, took an interest in the ciénega. Enter Christian LeJeune, a UNM graduate student at the time. Christian performed field work at the ciénega for a limnology class at UNM and prepared a report of his findings (LeJeune 2008). Christian's paper provided an overview of the physical, hydrological, and ecological conditions at the ciénega. Christian's ultimate goal was to engage school children in long-term monitoring of the ciénega in a manner similar to that used in the Bosque Ecosystem Monitoring Program (BEMP), which was developed by Christian's mentor, the late Dr. Cliff Crawford.

Estela Thompson, a Santa Rosa Middle School science teacher, bought into Christian's idea of incorporating the monitoring into the school's science curriculum. During the summer and fall of 2010, ten groundwater monitoring wells (piezometers) were installed and soil analyses were performed in conjunction with hands-on involvement by sixth, seventh, and eighth grade students. The wells will eventually be instrumented with pressure transducers to establish a groundwater fluctuation database. Students have been trained to manually check groundwater levels. They will eventually assume partial responsibility for long-term groundwater monitoring and water-quality testing and analysis. The students have learned appropriate field procedures and, most important of all, have actually personally experienced the sights, sounds, and odors of this very special place within their very own community.

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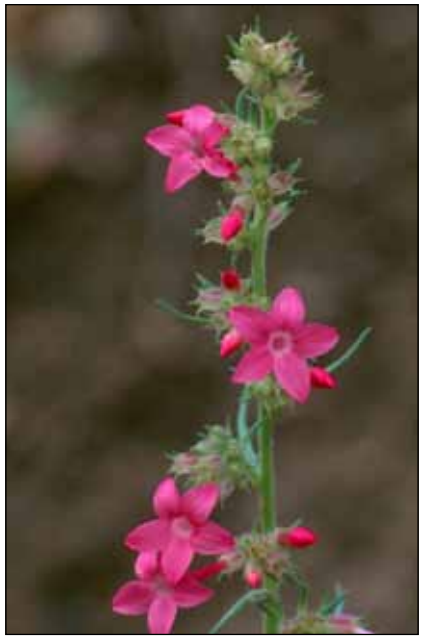
THE VOICE OF NATIVE PLANTS

Painting the Canyon Pink: Efforts to Recover the Endangered *Ipomopsis sancti-spiritus*

by Phil Tonne, Albuquerque chapter

As people concerned with the fate of New Mexico's rare plants, we hope for opportunities to get our hands dirty and help to create a better future for a struggling species. This year, as in years past with the Holy Ghost Ipomopsis, that was our intention but it wasn't at all clear that we'd have the opportunity. We had the plants, over 1,000 of them nurtured over the spring in the UNM greenhouse, but we didn't have the sustaining rains they'd require to make it on their own. Once the rains finally came we still had to contend with forest closures and very little time to organize the crew and the logistics of doing the planting. This summer, however, people were able to take time from their busy lives and gather in the Sangre de Cristo Mountains near Pecos, NM, ready to work. We met in late July and planted 1,111 individuals of this endangered species, which is known only from Holy Ghost Canyon. Each plant had been grown from seed collected by hand, transplanted into portable pots, and made ready to transport, mostly through the care and effort of Joy Avritt at the UNM greenhouse.



Ipomopsis sancti-spiritus
Photos by Phil Tonne

But that's not where the project started. Years ago we finally got the right team of people together and formed a plan to do some thinning in Holy Ghost Canyon as part of the recovery effort for this species. Bob Sivinski, of the State Forestry Division, in collaboration with Esther Nelson and Steve Romero of the Pecos/Las Vegas Ranger District (U.S. Forest Service), organized an inmate crew out of Los Lunas to thin some trees in *Ipomopsis* habitat. *Ipomopsis sancti-spiritus* occurs almost exclusively on disturbed soils with adequate solar exposure. Fire suppression had led to a closing forest canopy in much of *I. sancti-spiritus*'s habitat, and the thinning would provide canopy gaps for the plant to colonize. According to an old miner from the area, the plant used to be much more abundant and widespread within Holy Ghost Canyon during mining days, when timber harvesting and disturbance were common.

What can we do for a species that consists of fewer than 1,800 individuals in some years, and that is trapped in a single canyon managed for summer homes and recreation? Our first efforts were to grow the plants and transplant them into different areas: Panchuela, Winsor, and Indian Creek Canyons. We placed several hundred in those areas, establishing experimental populations consisting of between 170 and 350 individuals. This year Bob Sivinski observed 40 to 60 flowering plants in each of those sites, planted five or six years ago. We don't know whether those colonies will survive into the future, so, as is generally true, our best opportunity is within occupied habitat for the species.

This year volunteers, interns, and a few agency employees took the next step towards testing the miner's story and our thoughts about what this species needs in Holy Ghost Canyon. We think it needs sunlight and disturbed soils in an area that supports a healthy pollinator population. Pollination and seed set is quite high within the canyon; what appears to be lacking is suitable habitat to colonize. For the most part *Ipomopsis sancti-spiritus* occupies only the lower slopes and is limited to the disturbance associated with the road cuts of the Forest Road. As a result, much of its

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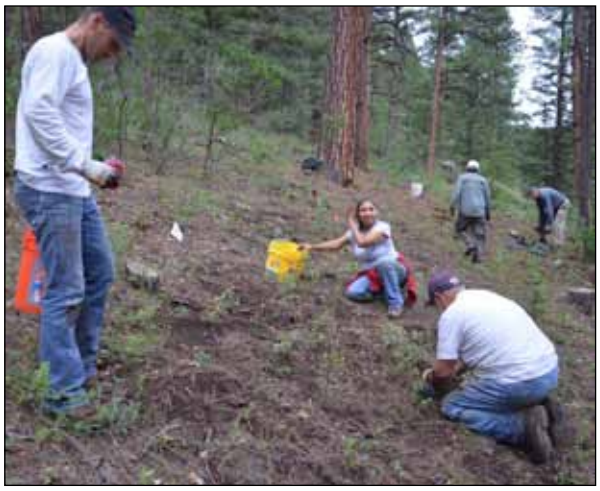


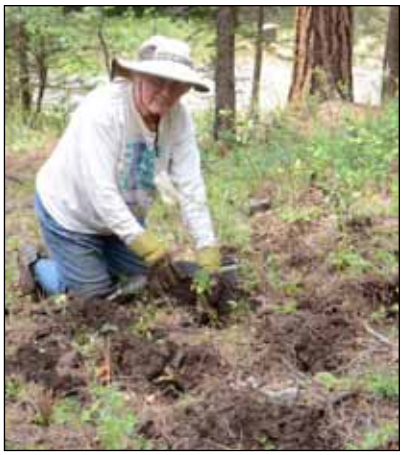
Left to right: **Charlie Jackson, Jeanne Tenorio, Jim McGrath, Charlie McDonald, Jim Mallinson**

Painting the Canyon Pink *(continued from p. 6)*

reproductive effort ends up in the road and eventually Holy Ghost Creek, so we, a merry team from various walks of life, marched it up the sunny slopes to areas prepared in 2009.

To plant each individual Holy Ghost Ipomopsis we dug into soil, when we could locate it, though often our pick encountered Terrero limestone and bent, bounced back, or glanced off. Eventually we would be able to form a hole for the next team member, the planter. The planters prepared the soil, providing a small bed for the plant and a small berm, or water harvest, to catch water for it. Next, we mulched the plants and hauled buckets from the creek to water them in. After the first one was in place, with 1,110 to go, it seemed unlikely we would ever get them all in the ground. But by lunchtime the first day we had planted 320 and it seemed the clouds would do the watering that afternoon. The days immediately following the planting were tense, as we hoped and prayed the monsoon moisture would come through and provide the necessary water the plants would need so that all of our efforts would not be wasted. As luck would have it, we got a number of big rains within a week, and a month later we're confident that this year's planting will be a success.

Charlie Jackson



Marilyn Mallinson

To work with great people bound by a common goal high in the Sangres is a rewarding thing. To do that while potentially increasing the world population of an endangered plant by 63% is something participants should feel good about for some time. I'm grateful for the efforts of so many people and glad I had a chance to be there with you. The last report is that the plants are perky and in place and seem at home. In the coming years I can imagine their blooms creating a pink cast to the canyon and a gathering of bees, butterflies, and sphinx moths visiting them all. The Holy Ghost Ipomopsis lives as a rosette most of its life. In the coming years, when conditions are right, the rosettes will bolt and flower between June and September. If they take to these areas they'll set seed for years to come.

Without those named above and here we could not have pulled this off. My torn and dirty hat is off to each of you: Greg Bevacqua, Natalie Casaus, Tina and Steve Ehrman, Matt Gautreaux, Lindsey Kaufman, Rebecca Keeshen, Doug Kenfield, Marilyn and Jim Mallinson, Charlie McDonald, Jim McGrath, Charlie Jackson, Lindsay Schenker, and Jeanne Tenorio. ❖

Cloudcroft *Phacelia* Search Is a Partial Success!

by Jim McGrath, NPSNM Conservation Chair

Two locations of one population of the Cloudcroft *Phacelia* (*Phacelia cloudcroftensis*) were found during the August 18–21 search. One of the two was on the same dry travertine rock outcrop in Fresnal Canyon where the plant was found last year, but this time we found 12 adult plants (instead of the 4 found last year) in good flowering or fruiting condition. About 25 seedlings were also noted at the base of the outcrop. The second location was about 200 meters from the first one. Only one adult plant, with 15 flowering racemes, was found on a sandstone lens in some limestone bedrock. About 20 seedlings were noted in the loose, gravelly soil below the outcrop. A search of La Luz, Laborcita, and Cuervo Canyons failed to reveal signs of the *Phacelia*. Not only does *Phacelia cloudcroftensis* remain elusive, so does its habitat (dry travertine rock outcrops, loose or gravelly soil in full sun). There are only two known populations—both in the Sacramento Mountains—of this very rare species, which is currently listed as a species of concern by both the U.S. Fish and Wildlife Service and the State of New Mexico. ❖

Chapter Activities & Events

For further information on the following events, notify the contact person listed, or visit the chapter's Web page: first go to http://npsnm.unm.edu; click on Local Chapters; then select the chapter. **Hikers** should always bring plenty of water, hat, sun protection, lunch and/or snacks, field guides, and wear sturdy shoes, suitable for rough, uneven ground.

Albuquerque

All scheduled monthly meetings are first Wednesday of the month at 7 p.m. in the NM Museum of Natural History, 1801 Mountain Rd. NW. For more info on programs contact Jim McGrath, sedges@swcp.com, 505/286-8745. For more info on field trips and forums contact Dana Price, dana_price@bicycleaustin.info, 505/872-2646 or (cell) 512/797-1986. For meeting places indicated [A] through [H] see website.

Oct 5 Meeting. Rare Plant Recovery Efforts in New Mexico. Phil Tonne, rare plant botanist for the Museum of Southwestern Biology.

Oct 21–23 Overnight Field Trip: Russian Olive Removal at Blue Hole Ciénega. Jim McGrath, leader. Camp at Santa Rosa Lake State Park ($10/vehicle per night), 120 mi E of Albq on I-40. Contact Jim McGrath for more info.

Nov 2 Meeting. Desert Plants: How They Survive. Carolyn Dodson, author and past president of NPSNM.

Dec 11 Annual Holiday Potluck. 11 a.m.–2 p.m. Site TBA.

El Paso

All programs are second Thursdays at 7 p.m. (coffee social at 6:30) at El Paso Garden Center, 3105 Grant Ave. unless otherwise noted. All events free unless otherwise noted. Nonmembers always welcome. Info: Jim Hastings, 915/240-7414.

Oct 13 Meeting. Plant and Seed Exchange. John White, curator at UTEP Chihuahuan Desert Gardens.

Oct 15 Native Plant Appreciation Day. Program 9 a.m.–2 p.m. Speakers from El Paso NPS, El Paso Cactus and Rock Club, UTEP Chihuahuan Desert Gardens. Children's Corner activities. Centennial Museum, corner Wiggins and University Ave., UTEP.

Nov 5 Field Trip. McKittrick Canyon, Guadalupe Mtns. Contact Cheryl Garing at 915/549-3674 for info.

Nov 10 Meeting. 6:30 p.m. Rainwater Harvesting for Your Landscape. Doc Stalker, El Paso County Master Gardener. Centennial Museum, cor. Wiggins/University Ave., UTEP.

Dec Date TBA. Potluck Holiday Party. El Paso NPS and El Paso Cactus and Rock Club. 10 a.m., El Paso Garden Center.

Gila (Silver City)

All programs are free and open to the public. Meetings are third Fridays at 7 p.m. at WNMU's Harlan Hall, with refreshments following the program. Activity updates and further details posted on www.gilanps.org.

Oct 21 Talk. Plant Litter Decomposition in Freshwater Streams. Keller Suberkropp, stream ecologist.

Nov 18 Talk. Water Harvesting for Native Plant Gardens. Van Clothier, owner of Stream Dynamics.

Las Cruces

Meetings and workshops are second Wednesdays (unless otherwise noted) at 7 p.m. in the conference room of the Social Center at the University Terrace Good SamaritanVillage, 3011 Buena Vida Circle, Las Cruces. Field trips are Saturdays; most last into the afternoon. Participants must sign a release-of-liability form. Children must be accompanied by their parents. Programs and field trips are free; nonmembers always welcome. Contacts: Carolyn Gressitt, 575/523-8413; Al Krueger, 575/532-1036.

Oct 12 Meeting. The History, Design, and Progress of the Chihuahuan Desert Gardens at UTEP. John White.

Oct 15 Field Trip. Tour of the Chihuahuan Desert Gardens at UTEP. John White, leader. Meet E end of Rio Grande Bank parking lot at the corner of University/Telshor.

Oct 23 Plant tree seedlings: Audubon-sponsored workday. Broad Canyon Ranch. 9 a.m.–noon, 1:30–4:30 p.m. Contact Carolyn Gressitt, 575/523-8413, for more information.

Nov 9 Planning Meeting for 2012 (no regular meeting). Elect officers and help pick speakers and field trips for 2012.

Nov 13 Field Trip. TBA. 8:00 a.m.

Dec No meeting. Happy holidays!

Otero (Alamogordo)

For field trip information, contact Eric Metzler, metzlere@msu.edu, 575/443-6250; or Helgi Osterreich, hkasak@netmdc.com, 575/585-3315. More info should be available by the beginning of each month.

Oct 8 Walk. Osha Trail. Meet 9 a.m. at NW corner Hwy 82/N. Florida Ave. Bring water and lunch.

Nov 5 Annual meeting of NPSNM–Otero chapter and potluck. John and Beth Anne Gordon's house on Lower Cottonwood Rd., noon. Info, directions to come.

Dec No activities. Have a wonderful holiday!

San Juan (Farmington)

Meetings are third Thursdays at 7 p.m. at San Juan Community College. For more info, contact Donna Thatcher, dthatcher@fmtn.org or 505/325-5811.

San Juan (Southwest Colorado)

The San Juan/Four Corners Native Plant Society has 20 field trips and five programs each year. All activities are free and open to everyone, members or non-members. For details see www.swcoloradowildflowers.com, e-mail coloradowildflowers@yahoo.com, or call Al at 970/882-4647.

Santa Fe

Meetings are third Thursdays at 6:30 p.m. at the meeting room of the REI store, 500 Market Ave. For more information, contact Tom Antonio, tom@thomasantonio.org, 505/690-5105; or Carol Johnson, gcjohnson@comcast.net, 505/466-1303.

Sep 15 Flora and Paleoethnobotany of the Cebolla Wilderness. Pam McBride, ethnobotanist.

Oct 27 Project PRESERVE. Will Barnes, botanist.

Nov TBA.

Dec Potluck holiday party. Date TBA.

Taos

Meetings are third Wednesdays at 7 p.m. in the Los Angelitos Room at the Taos Convention Center. Please check the NPSNM website for updates and information on upcoming field trips.

Oct 1–30 Seed 3: An exhibition inspired by the beginning of everything. Opening reception 5–8 p.m. Oct. 8. For more info, visit www.seedtaos.org.

Native Bees of New Mexico

by Susan Williams, Santa Fe Chapter

Entomologist and bee expert Karen Wetherill, PhD student at UNM, gave a presentation on native bees of NM at the NPS annual meeting in Santa Fe. My husband and I were lucky to have her stay with us during the conference and one of the many benefits of her time with us was the identification of every insect in our garden. We also enjoyed her car-what a sight! It is covered inside and out with realistic models of insects. On the roof sits a huge bee made out of rebar. Some of you may have seen the car in the parking lot at IAIA; if not, you missed a real treat.

Her talk began with a review of what a bee is and how to identify it, bee evolution and diversity, and pollination biology. Bees are the most important group of pollinators, surpassing all others including birds, bats, and other insects. The female bee specifically collects pollen as food for her young and thereby transfers large quantities of pollen from plant to plant. In contrast, wasps, which also inadvertently pollinate when they seek nectar, feed animal protein to their young.

The main focus of her talk was native bees of NM, the threats to their existence, and how to attract them to your garden. Bees are desert adapted, and the southwestern deserts of the U.S., along with Mediterranean regions, have the highest species diversity in the world. While earlier records indicated the species in NM numbered fewer than 500, there are now over 1000, which surpasses all other states except California. Karen has added many new species to the NM list as the result of her work for many years as a research scientist at Sevilleta NWR, Bosque del Apache, and other sites. Most of NM, however, is still unexplored concerning bee populations and species.

Threats to our diverse bee population are many and familiar: loss of biodiversity, monoculture and pesticides, introduction of exotic species and pathogens, and global warming. We can help mitigate these threats by choosing to garden with native plants (no pollenless plants!) and by planting flowers with a wide color range (although bees do not see red) and with variations in shape, corolla length, and size to accommodate the preferences of different bee species. In addition, having a wide range of structures in our yards helps provide bees with diverse nesting sites. Don't be tidy! Rock walls, stone, litter, snags, all sorts of clutter will entice bees to nest. Leave patches of bare soil for ground-nesting bees. You can build a simple bee nesting site with a thick board, drilling random-sized holes several inches apart and five to six inches deep for bees to lay their eggs in.

Continued page 12

Conservation Corner *(continued from p. 5)*

In addition to involving the students, both Bob Sivinski and Christian LeJeune have made presentations to the Santa Rosa City Council, the School Board, the mayor, and other city administrators. While funding has not yet been a product of these presentations, there has been some support from these political entities for the educational programs initiated by LeJeune and Thompson.

So the involvement of the local community with the Blue Hole Ciénega has just begun. And while the students from the middle school have become directly exposed to physical and ecological features of the ciénega, there is a need to involve more members of the Santa Rosa community with management and protection of the nature preserve.

Long-term protection of a special place like this requires that people develop a love for it. I am a firm believer that love for a special place comes from personal experience at that place. I cannot learn to love the Blue Hole Ciénega by looking at pictures of Pecos sunflowers or a film about the ciénega. No. I have to personally experience what the ciénega has to offer. So, to that end, Don Heinze and I have visited the ciénega three times over the past six months. We have tried to learn as much as possible about the ciénega—its ecology, flora, and fauna.

My three visits to the ciénega have convinced me that there is a role for the NPSNM in that developing community of people who love the ciénega and are determined to ensure its suitable management and protection. So, as NPSNM's Conservation Chair, I have organized a Russian olive removal event to be held over the three days of October 21–23. Although many Russian olives have already been removed, numerous small seedlings and saplings have sprouted throughout the site following the initial prescribed burn and several Russian olive stands surround the ciénega and act as a seed source. Russian olive removal is very hard work, but we intend to focus on these small seedlings and saplings. We will remove Russian olives for only a few hours at a time. Although we want to assist in Russian olive removal, we also want participants to learn to love the ciénega. So we will encourage participants to explore the site. Participants may also visit the nearby Blue Hole or other sinkholes or just kick back during the down time. Participants can camp at Santa Rosa Lake State Park ($10 per vehicle per night) or stay in a motel in Santa Rosa. If you wish to join the Russian olive removal event, contact me at sedges@swcp.com or 505/286-8745.

The Russian olive removal event is a way for NPSNM members to begin forming an attachment to the ciénega. But it is more important that the community of Santa Rosa become familiar with the ciénega. For that to happen Santa Rosa residents must learn what makes the ciénega special. That is yet another way the Native Plant Society can make a difference in the conservation of the Blue Hole Ciénega. I would like to set up regular nature walks that would educate visitors about the site's natural history. The NPSNM could also provide educational training for local people to lead such walks. Unfortunately, the cost of fuel and the time commitment would most likely prohibit NPSNM members from traveling from Albuquerque or Santa Fe; compensation for fuel and possibly housing and food costs may be necessary.

Although uncertainty clouds the future of the ciénega, it is clear that the management, protection, and educational interpretation of the Blue Hole Ciénega Nature Preserve will involve the effort of a lot of interested parties: the NM Forestry Division, the City of Santa Rosa administrators, the city council, the teachers and students within the Santa Rosa school system, scientists like Bob Sivinski and Christian LeJeune, local residents, and organizations like the Native Plant Society of New Mexico.

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Acknowledgments

The author wishes to thank three people who have already developed a love for the Blue Hole Ciénega: Bob Sivinski, Christian LeJeune, and Don Heinze. Bob and Christian provided substantial background information necessary for the production of this article. Don has provided companionship and advice on grasses, noxious weeds, and vegetation sampling protocols. ❖

Contributions to the Jack & Martha Carter Conservation Fund

This issue of the newsletter provides an opportunity for us to recognize and thank those who have contributed to the Carter Conservation Fund. As NPSNM celebrates thirty-five years, this very young organization has many reasons to express our appreciation to all those who joined together to form the Society so that we might continue to encourage the appropriate use of native plants throughout New Mexico. As the organization has grown in numbers and income, the Board has provided funding for more than fifty research, education, herbaria, and landscaping grants. Today we can see the work of the organization reflected throughout New Mexico, but we are just scratching the surface and the needs are great.

Three years ago the Board looked into the future and decided to develop a fund from which we can use the income for long-term growth. That fund continues to grow and has reached nearly $26,000. These gifts have been set aside, above the regular dues of our membership and other friends, because the Board sees the need to protect the flora of New Mexico in perpetuity. Probably the most striking thing about these acts of conservation are the amounts in which the funds are received. Although some gifts reach $1,000 or more, for which we are thankful, there are a number of folks who send $5 or $10, sometimes each month, because they all believe in the need to protect the flora. These are extremely important gifts. At the same time, as we love to tell folks, contribute if you can, and if you can't provide funds, work in your local chapter, join the Board, volunteer in a local garden or herbarium, or plant a tree and devote your time and energy to protecting that tree into the future. We all have a role to play. Thank you.

If you have not already done so, please consider making a year-end, tax-free gift to the Carter Conservation Fund. See the donation form on page 14. ❖

~Jack & Martha Carter

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You have begun to know the meaning of life when you plant shade trees under which you know full well you will never sit.

Ellen Trueblood, *Truth in Words*

Native Bees *(continued from p. 9)*

You can also cut bamboo stems into pieces below each node and bundle them together with open ends exposed. Or turn a clay pot upside down and a bumble bee may enter the hole and build a nest.

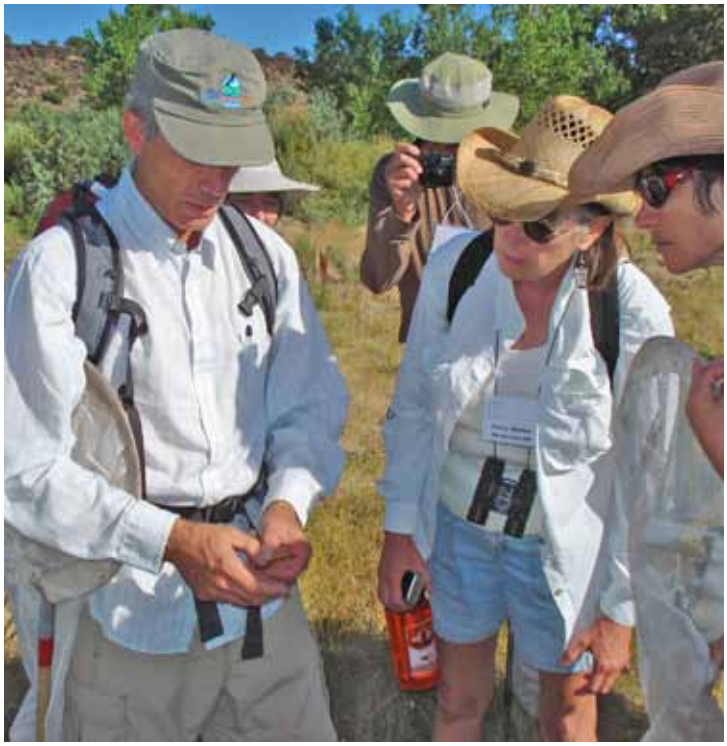
Karen recommends the excellent book *Attracting Native Pollinators,* a Xerces Society guide published in 2011 by Storey Publishing. She also provided the following list of websites for further information on bees, pollination, and other items of interest to members of the NPSNM:

- http://www.xerces.org/
- http://www.pollinatorparadise.com/
- http://www.nappc.org/
- http://www.pollinator.org/
- http://nature.berkeley.edu/urbanbeegardens/
- http://gears.tuscon.ars.ag.gov/na/bgardn.html
- http://npsnm.unm.edu/
- http://www.fhwa.dot.gov/environment/rdsduse/nm.htm
- http://www.enature.com/native_invasive/

Above: **Karen Wetherill with her entomology-themed art car.** *Below:* **Karen answers questions about native bees for a few members of her enthusiastic audience.**

Photos by Susan Williams

And More from the Annual Meeting



New Mexico butterfly expert Steve Cary gently holds a butterfly while explaining its characteristics to field trip participants at the NPSNM annual meeting in Santa Fe.

Photo by Renée West

New and Recent Books

Founding Gardeners: The Revolutionary Generation, Nature, and the Shaping of the American Nation
By Andrea Wulf
Knopf, 2011. 352 pages (16 pp. color photos, 19 illus.)

Review by Martha Carter

Andrea Wulf, author of the award-winning *The Brother Gardeners: Botany, Empire, and the Birth of an Obsession* (2008), has authored another engaging, meticulously researched and documented book on gardens. The founding gardeners of the title are the first four American presidents, whose interests in gardening held a close second to their dedication to independence from Britian. Readers who enjoy history, especially as the political times relate to gardens and the development of agriculture, will be delighted with the skillful intertwining of these stories.

Washington, Jefferson, and Madison all inherited vast amounts of land; John Adams had just five hundred acres. Each estate reflected a strong belief that agriculture was the foundation of a free society and that the new nation needed to practice conservation.

George Washington had rebuilt Mt. Vernon in 1759, orienting it toward the west, where he believed the future lay, beyond the Appalachians. His plantation was planted in tobacco, cotton, and wheat and tended by slaves. The Bowling Green was enclosed by serpentine walks and lined with tall black gum, American linden, and aspen trees, the undergrowth of mountain laurel, yellow sassafras, and flowering dogwood—every species selected for color through the seasons. Washington called this "painting with trees." Adjacent to the "necessaries" he planted lilac and mock orange for scent. (The author often uses common names, with Latin names in the index.) For the capitol city, Washington dreamed of a "mighty, dominant central government" on 5,000 acres, including 60 acres of gardens.

When John Adams was elected president in 1797, he refused to live in the White House, which didn't yet have heat, roof, windows, or staircase. He wrote to Abigail in 1798 that "improveing my Garden has more charms for my fancy, than residing at the court of Saint James's." Finally, in November 1780, he and Abigail moved in, and after one term he happily returned to his farm and gardens.

Jefferson, elected in March 1801, took no interest in the plan for a sixty-acre garden. Finally in 1807 he planned a "republican" garden—five acres that included vegetables for the White House kitchen. Lack of funds prevented this garden from being developed, and all but five acres of the planned sixty were eventually given to public lands.

Both Jefferson and Adams, when abroad as ambassadors, had been impressed with English gardens, especially Stowe and Wooburn Farm. Stowe celebrated liberty, honor, and civic duty—trees were unclipped, paths wound through thickets, choices of vice or virture. (The frugal Adams preferred the garden of Virtue.) Wooburn combined beautiful groves and shrubberies with tidy elements of a working farm. Most of the trees and shrubs, they discovered, were American species, exported from outside Philadelphia. They also learned of the "ha-ha," a ditch that allows landscape views but that animals won't cross, thus eliminating the need for an ugly fence. At Mt. Vernon, Peacefield, Monticello, and Montelier, ha-ha ditches were constructed.

Jefferson's Monticello revealed his vision for America, with experimental plots of grasses, orchards, vineyards, and vegetables. Meticulous records were kept of everything, especially the experimental mountaintop garden with southern exposure—a horticultural laboratory—uniting horticultural and culinary European and colonial, Native American, and slave traditions. Often Jefferson was so efficient at discarding unsatisfactory plants that he was forced to purchase veggies from his slaves' gardens. The beds at the back of Monticello were planted with traditional flowering plants and several new plants from seeds from Lewis and Clark.

James Madison's 3,000-acre plantation at Montpelier featured vast lawns enclosed with thick forest of Osage Orange (from Lewis and Clark), weeping willow, tulip poplars, and chinaberry. The years of his presidency, 1809–1817, saw a nation of small farmers and many advances in technology, transportation, and communication that made farmers less isolated, but farmers continued to plant the same old crops that destroyed the land—cotton and tobacco—and to chop trees for building and warmth.

Washington had ceased growing tobacco in 1766, seeing that it depleted the soil. By 1800, Virginia's soils were nearly depleted by tobacco cultivation and wheat fields were attacked by the Hessian fly. Small farmers were moving west to new lands—the new Eden. Madison led the Virginia farmers in calling for change—crop rotation, contour ploughing, soil irrigation, and manure as fertilizer. During most of the colonial time, farmers simply allowed cattle to roam; fertilizer was therefore scattered and not available for crops. These were radical ideas to American farmers in 1818; Britian had long used these conservation methods. Madison understood that nature was not subservient to man—there must be symmetry and balance; what man took must be replaced. Americans were starting to realize the limits to their seemingly endless collective lands. ❖

Drought and Fire *(continued from p. 3)*

dinalis ssp. *regalis*), five-flowered rock daisy *(Perityle quinqueflora*), supreme sage (*Salvia summa*), Guadalupe jewelflower (*Streptanthus sparsiflorus*), and cliff nama (*Nama xylopodum*).

Rare wildlife known from the area include the state-endangered gray-banded kingsnake, state-threatened mottled rock rattlesnake, and two state threatened birds—varied bunting and gray vireo, both of which nested there.

The effects of this fire on the park's wildlife and plants are compounded by the extremely hot and dry weather. Through the end of August 2011, the park weather station (within the burned area) registered only 1.16 inch of precipitation, most of that since the fire. The "exceptional" drought (National Weather Service) also makes an initial assessment of plant mortality difficult. Some shrubs and grasses that looked dead are starting to show some green two months later, even with barely an inch of rainfall. More moisture would presumably spur more growth of still-living tissues. But with the Lee pincushion cacti, it will take years to be sure. Fire-effects studies on these cacti in the 1990s showed steady decline in plant condition and increase in mortality up to three years after burning. Of 103 Lee cacti assessed so far, only a third were determined to be alive and half were listed as unknown. On another hillside, all the cacti appeared to be dead.

For both of the state-threatened birds, loss of habitat has been listed as a primary threat. They lost important breeding habitat in this fire. Possibly the two state-listed snakes were able to survive, but lack of food is a concern with the food chain so disrupted. Reduced food supply has been a concern throughout this drought for other, more common wildlife. Bats and cave swallows at the park survive on insects, and there have been few. Breeding in cave swallows appears down by 95% this year.

A badly burned Lee pincushion cactus from the Loop Fire.
National Park Service photo

We don't know how long the drought will last, but indications are that 2012 could be another dry year, which will hamper recovery of all life impacted by the fire. ❖

*You can see the 2003 report, *A Vegetation Map of Carlsbad Caverns National Park, New Mexico,* at http://nhnm.unm.edu. Click on Publications, then select "Carlsbad Caverns National Park" as the keyword. For more on the park's natural resources, see http://www.nps.gov/cave/naturescience.

Jack & Martha Carter Conservation Fund Donation Form

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Make your check payable to: **NPSNM—Carter Endowment Fund**

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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. Members also qualify for membership in New Mexico Educators Federal Credit Union. 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 via the Administrative Coordinator, nativeplantsNM@gmail.com.



New Mexico wildflower posters: $8 (nonmembers, $10)
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Below: **Chick Keller holds forth on the banks of the East Fork of the Jemez River during one of the field trips he led for the NPSNM Annual Meeting in Santa Fe.**
Left: **One of the many sights from that field trip.** Photos by Joe Cancellare