



NEWSLETTER

of the

NATIVE PLANT SOCIETY
OF NEW MEXICO

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Above: *Packera mancosana* forms dense mats to a foot in diameter on Mancos Shale. Almost all plants on this shale form such mats, the mats are usually spaced two to five feet from each other, and each mat typically harbors two to five different species. **Right:** Notice the tiny, curved stem leaves and the hairs on the stem.

Read about this newly described species, page 8. Photos by Al Schneider

Inside This Issue

- 2 From the President ❖ 2 New Administrative Coordinator, New E-Mail Address ❖ 3 NPSNM Grantee Report:
Responsible Recreation in the Gila National Forest ❖ 4 Who's Who at NPSNM ❖ 5 Conservation Corner:
Searching for the Cloudcroft *Phacelia* ❖ 6-7 Chapter Activities & Events ❖ 8 *Packera mancosana*: A New Species ❖
9 Letter to the Editor ❖ 10 New Interactive Plant Keys for New Mexico and Nearby Regions ❖ 11 Membership

From the President

by Tom Antonio

The folks in the Santa Fe chapter are very busy preparing for the upcoming annual meeting on August 4–7. Although I run the risk of forgetting someone, I need to extend my thanks to some of the many Santa Fe chapter members who have pitched in and helped with the preparations: Nancy Daniel, Arabelle Luckhardt, Jamie Douglass, Joan and Truel West, Barbara Fix, Beverley Spears, Susan Williams, Gary and Carol Johnson, Ann Coulston, Linda Churchill, Mariana Bornholdt, Janet McVickers, Mimi Hubby, Nancy Sue Dimit, and Eileen Mandel.

I urge all members of the Society to attend the meeting; it is an incredible opportunity to learn from some of New Mexico's finest plants people. We have a stellar group of presentations, including an entire afternoon devoted to native pollinators. The field trips are filling up quickly, so please



do not be disappointed if you do not get into your first choice. Come to beautiful Santa Fe and join us on the campus of the Institute of American Indian Arts for an enjoyable few days. If you have never attended the annual meeting/native plant conference, I can assure you that you are in for a treat.

I want to welcome Cindy Roper as the new administrative coordinator for the Society. She officially began on June 1, and we are very pleased to have her expertise. (To learn more about Cindy, please see the article below.) Cindy will be attending the annual meeting, so you can meet her there. If you need to contact her, she can be reached through the new NPSNM e-mail address, nativeplantsNM@gmail.com.

See you all in Santa Fe. ❖

New Administrative Coordinator, New E-Mail Address

Cindy Roper has been hired effective June 1, 2011, to assume the administrative coordinator duties for the NPSNM. She didn't even wait for her start date to set up a new e-mail address for the Society at nativeplantsNM@gmail.com. While the newsletter and the website have contact information for all state and chapter officers, it was sometimes difficult for members to make sure the right person was contacted. Cindy's job will be to ensure that all queries and suggestions are handled by the correct person and to make the entire system more efficient and timely. She will be taking on the administrative tasks that the board has little time for.

Cindy writes the following:

Howdy from the foothills of the Ortiz Mountains!

I am happy to join the NPSNM as your new administrative coordinator. With a variety of work environments under my belt, I hope to be able to handle whatever the organization needs from me. My experiences include everything from small-business owner to 911 operator to air-traffic controller to website designer. My forte is organization, which will come in handy while getting this growing group's operations under control.

I grew up on the east coast, outside of Philadelphia. Some of my most wondrous memories are of spending time

“in the woods” with my naturalist grandmother. She could name every tree and plant, and wanted to share that love with anyone who might listen. (My personal favorite always was, and remains to this day, the Jack-in-the-pulpit.)

I've been in New Mexico since 1994 and have lived all over the state. Since arriving in NM I've become very active in coordinating wildlife educational events. I'm still doing that today, focusing on coyotes and snakes. I have a passion for native fauna, but not much knowledge of native flora. I hope to learn a lot as we go along. All new knowledge is good knowledge, right?

I must (shamefully) admit that I *do not* have a green thumb, so obviously it was the plan of the universe that I was hired as the administrative coordinator and nothing more. (Though I do long to have the time and energy someday for a little native garden sufficiently protected from my goat.)

I also have a passion for companion animals, especially dogs. I can't imagine my life without them. I share my quiet (read: hermit) life with two dogs, Tigger and Ginger; a goat, Murphy; and my horse, Nova.

Please bear with me as I learn the ropes. I look forward to meeting each of you over the coming years.

~Cindy Roper, Cerillos, NM



Cindy and Nova

Photo by Evalyn Bemis

NPSNM Grantee Report: Responsible Recreation in the Gila National Forest

by Donna Stevens, Gila Chapter

For four consecutive years, NPSNM has been generous in awarding grant funding to the Upper Gila Watershed Alliance (UGWA), a nonprofit watershed protection group based in the southwestern corner of the state. UGWA's project aims to influence the future of motorized recreation on the Gila National Forest (GNF).

The boring-sounding "travel management planning" Forest Service directive has far-reaching consequences for the Gila's soils, native flora, wildlife, and riparian areas. And not just the Gila—all national forests have been tasked with developing a system of roads that will safeguard the forests' ecosystems while still allowing for motorized recreational access.

It's a tall order, and far more contentious than one would assume from reading the words *travel management*. Here in the GNF, UGWA has been working with the Forest Service to represent the values of "quiet users": plant lovers (the best people!), hikers, birders, campers, and others who value the Gila's serenity.

For the past few decades, off-roaders have been allowed to drive anywhere in the GNF, creating new roads as they go. But roads impact the landscape far more than most of us realize. User-created routes are not engineered in any sense of the word, and they often "capture" streams, which escape their natural channels and instead flow down the roads. Areas that used to get this water are now dry, causing plants to die, decreasing diversity and numbers of native plants, in turn harming wildlife.

Water flowing down these new routes causes erosion. While erosion is a natural process, it can be extremely harmful when sediment that flows down roads ends up in streams, filling in the spaces under rocks that function as habitat for macroinvertebrates at the bottom of the aquatic food chain.

Roads also exacerbate flooding. Just a few generations ago, before there were thousands of miles of roads in the Gila, precipitation soaked into the ground, or ran off in thousands of small watersheds. Roads now funnel water from one watershed into another, drying up one watershed and causing huge floods in another. We'd do well to remember that, ultimately, our drinking water comes from the forest.

The GNF's budget provides for maintenance of only about 10% of their roads annually. Unmaintained roads continue to erode, causing ecological and human safety hazards. Given budget shortfalls and the harmful effects of roads, the Forest Service should be commended for taking responsibility for stewardship of roads in our national forests.

Yet hundreds of local citizens were up in arms about



The San Francisco, shown here in July 2009. Is this a river or a road?

Photo by Grant Gourley

the closing of *any* GNF roads, despite the fact that the Forest Service proposed to leave open more than 3,300 miles of roads in the Gila, enough to drive from San Diego to Maine. Reverend Mike Skidmore of Truth or Consequences and Representative Steve Pearce whipped a crowd into a frenzy at a Keep Our Forest Open rally in Silver City in early March, two days before the travel management public comment period closed. Their inflammatory rhetoric included falsehoods such as "taking away our American freedoms" and "denying access to the elderly and disabled." UGWA, acting as a voice of reason, kept repeating the facts: anyone able to get into a vehicle will still be able to drive 3,300 miles of roads in the Gila.

To help us bolster the facts, the 2011 NPSNM grant funded the services of a GIS (Geographic Information System) analyst, who created maps of the Forest Service's proposed alternatives. These maps depicted roads with resource issues, such as threatened and endangered species habitat, old growth forests, critical riparian habitat, unstable slopes and soils, areas with high road densities, and other concerns. This information was submitted to the Forest Service with our formal comments.

For years, one area of particular concern to UGWA has been the San Francisco River, a major tributary of the Gila. When travel management planning began in 2005, the GNF had proposed a road that would cross the San Francisco several times. During two previous public comment periods, UGWA and other conservation groups recruited concerned citizens to submit letters to the Forest Service opposing this irresponsible scheme. At last the Forest Service saw the light, and in their most recent travel manage-

Continued page 9

The Newsletter of the NPSNM

July–September 2011. Vol. 36 No. 3. 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.

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.

Next deadline is September 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

Searching for the Cloudcroft *Phacelia*

by Jim McGrath, NPSNM Conservation Committee Chair

We were looking at a cliffy outcrop of travertine along the edge of Highway 82, a stretch of highway that connects Alamogordo to Cloudcroft. George Miller, one of the field trip participants, beckoned to me. I came over and he pointed to what was obviously a small *Phacelia*, or scorpionweed, standing on a ledge. There it was—the Cloudcroft *Phacelia* (*Phacelia cloudcroftensis*).

Finding the Cloudcroft *Phacelia* was the primary objective of the Albuquerque chapter's 2010 rare plant field trip, which I organized and led into the Sacramento Mountains of central New Mexico. There were only four plants in the population we found. I had chosen to focus on *Phacelia cloudcroftensis* because Bob Sivinski, the New Mexico state botanist, had indicated (in a posting to the NM Rare Plants Discussion Group [NMRPDG] on September 23, 2009) that this species is "exceedingly rare." This *Phacelia* has only recently been described as a new species, by Duane Atwood in 2007. The new species has been reported from three small populations, all of which are adjacent to Highway 82 about three to four miles west of Cloudcroft (Atwood 2007; NMBCC 2009). After Atwood published a description of the new species, Bob Sivinski attempted to relocate populations of the species at the type locality along Highway 82, but he could not find any individuals of this elusive annual species. His searches did, however, reveal three plants in the gravel cobble of a canyon bottom a few miles south of Bent in 2009. The small population found during the 2010 rare plant field trip was found at one of the three original sites.

So what is the conservation status of the Cloudcroft *Phacelia*? Bob Sivinski (in his 2009 NMRPDG posting) has indicated that the three populations along Highway 82 are "definitely threatened." He also speculated that herbicide spraying may be responsible for his failure to relocate the populations along Highway 82. Atwood (cited in a February 14, 2008, posting by Sivinski to the NMRPDG) is more specific in saying that the Highway 82 *Phacelia* sites are "heavily

impacted by Siberian elm, and more so by the efforts to control the elm, i.e., cutting, trampling, and apparently spraying by state or forest road crews."

But the Cloudcroft *Phacelia* has only been recognized as a species for four years. Perhaps previous botanical collectors collected this species and identified it as another *Phacelia*. In fact, one of the original collections of *P. cloudcroftensis* was originally identified as *P. integrifolia*, "a name that has been loosely used incorrectly for numerous collections"

(Atwood 2007). Or perhaps botanists have neglected to make collections of *Phacelia*. Or perhaps there have been very few botanists making collections in the general area where this species is known to occur. It is entirely possible that this species is far more widespread than indicated by our current knowledge. In short, we simply do not know what the actual distribution of this species is without a significant effort to look for more populations.

And that is where the Native Plant Society of New Mexico comes in. In recent years, funding has become less available for State Botanist Sivinski to perform his work in searching for and providing protection for New Mexico's rare plants. We in NPSNM have an opportunity to play a significant role in the conservation of the state's rare plants. To that end I am converting the Albuquerque chapter's annual rare plant trip into one that appeals to Society members statewide. Therefore, I propose the weekend of either August

19–21 or August 26–28 for a focused search for the Cloudcroft *Phacelia*. If you are interested in joining the search, contact me at sedges@swcp.com or 505/286-8745. Let me know whether you are available either or both weekends and which weekend you prefer. I will determine a rendezvous place and/or campground later in the summer. Depending on the number of participants, we will break up into smaller groups exploring different canyons so that we can cover as much potential habitat as possible.

Our Albuquerque chapter field trips over the past two years have been characterized by learning many new plants

Continued page 9



Photo by Jim McGrath

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;

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.

Jul 6 Meeting. Native Bees of New Mexico. Karen Wetherill, UNM PhD candidate and former Sevilleta LTER research scientist, discusses evolution of bees and flowers, the diversity of bees in New Mexico, threats to native bee populations, and how to attract them to your garden.

Jul 9 Field Forum. Old Las Huertas Trail, east side of the Sandias. Pam McBride, leader. High-altitude conditions; bring extra clothing and raingear. Meet 9:00 a.m. at [A].

Aug 5–7 NPSNM annual meeting in Santa Fe.

Aug 19–21 or Aug 26–28 Rare Plant Field Trip: A Search for the Cloudcroft *Phacelia*. Canyons on the west face of the Sacramento Mountains. Contact Jim McGrath, sedges@swcp.com or 505/286-8745 to sign up. Specify preferred weekend. One weekend (or both) will be chosen later in the summer. Camping and other logistics will be provided via e-mail or phone with trip participants.

Sep 7 Meeting. Sand and Cebolla Canyons: Flora of the Cebolla Wilderness and El Malpais National Conservation Area. Pam McBride, ethnobotanist and past NPSNM chapter president.

Sep 10 Field Trip. Flora of the Eastern El Malpais National Conservation Area on 3000-Year-Old Lava vs. 70-Million-Year-Old Sandstone. El Malpais NCA Ranger Paul Yoder, leader. Meet 7:30 a.m. at [B]. Carpool west almost to Grants to meet Paul at Ranger Station (9 miles south of I-40 Exit 89 on Hwy 117) at about 8:45 a.m. Proceed another 13 miles to Narrows Rim Trailhead. Return to Ranger Station approx. 3:00 p.m., arrive Albuquerque 4:30–5:00 p.m. Bring sack lunch, water, hat, sunscreen, sturdy boots.

Sep 16 Field Forum. Albuquerque Volcanoes. Gary Runyan, leader. Meet 8:00 a.m. at [B].

Sep 24 Field Forum. Placitas Open Space. Lolly Jones, leader. In addition to piñon-juniper, this 560-acre parcel in the heart of Placitas contains riparian and wetland habitat in Las Huertas Creek. Meet 9:15 a.m. at [E]. Carpoolers meet 8:30 a.m. at [D].

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.

El Paso

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

Jul 14 Meeting. How to Identify Wildflowers. Cheryl Garing, horticulturist and El Paso chapter president.

Aug 11 Meeting. What About This Weather? Answers from NOAA. Speaker from the National Oceanic and Atmospheric Administration National Weather Service station at Santa Teresa, NM.

Sep 9 Meeting. E-Harmony.com. Eric Metzler, retired entomologist.

Gila (Silver City)

All programs and hikes are free and open to the public. Meetings are third Fridays at 7 p.m. at WNMU's Harlan Hall. Hikers meet at 8 a.m. in south parking lot of WNMU Fine Arts Theatre the morning of the hike to arrange carpooling. Participants must sign a release-of-liability form at that time, and will receive a list of native plants in the hiking area. For more info, call Deming Gustafson, 575/388-5192. Destinations may be changed due to weather. Activity updates posted on www.gilanps.org.

Jul 17 Field Trip. A visit to Silva Creek Botanical Garden and an adjacent part of Silva Creek, a tributary to the Big Ditch in Silver City.

Aug 21 Field Trip. A trek to a favorite spot: Myer's Canyon. We expect to see blue-eyed grass (*Sisyrinchium demissum*) and coral bells (*Heuchera sanguinea*) in this perennial riparian canyon.

Sep 16 Talk. Program TBA.

Sep 18 Field Trip. A hike in Spirit Canyon, with the promise of wild grapes and pictographs, will close out the 2011 season. We'll see late summer blooms and seeding plants, always of interest to the outdoor enthusiast.

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 Samaritan-Village, 3011 Buena Vida Circle, Las Cruces. (On the right, while traveling east on Buena Vida from Telshor.) 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.

Jul 13 Meeting. Botanizing in Big Bend. Lisa Mandelkern. The majority of the flora featured in this talk does not extend into the Las Cruces area. *Deadline for sign-up for September's WSMR field trip.*

Jul 16 Field Trip. (Tentative, due to drought.) Gallinas Creek, Black Range. Lisa Mandelkern, leader. Long drive on all blacktop roads, return late afternoon; walking easy, on well-defined forest trails, with very slight elevation gain. Meet 8 a.m. at east parking lot of K-Mart on Hwy 70.

Aug 13 Field Trip. (Tentative.) Pine Tree Trail, at Aguirre Springs National Recreation Area. Easy-medium hike. Fee: \$3/car. Meet 8 a.m. at east parking lot of K-Mart on Hwy 70.

Sep 14 Meeting. Desert Arthropods. Scott Bundy.

Sep 17 Field Trip. Ropes Spring, White Sands Missile Range. Easy. Meet 8 a.m. at east parking lot of K-Mart on Hwy 70.

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.

Jul 23 Walk. Mills Canyon Trail, past Ruidoso. Meet at the Y in Tularosa (where Hwys 54 and 70 meet) at 8 a.m. Bring lunch and water.

Aug 17-20 Otero County Fair. Volunteers will be needed to staff our booth. More information and schedules will be sent out to members.

Aug 27 Field Trip. White Sands Missile Range. Dave Anderson, leader. Arrangements must be made ahead of time with Eric Metzler (see above contact). More information will be sent out to members.

Sep 24 Walk. Giant yuccas on Westside Rd. Meet 8:00 a.m. at NW corner Hwy 82/N. Florida Ave. Bring water and lunch.

San Juan (Farmington)

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

San Juan (Southwest Colorado)

The San Juan/Four Corners Native Plant Society welcomes you on all of our field trips. This summer we have wildflower trips to Mesa Verde, the montane area north of Durango, and the sub-alpine and alpine areas above Telluride, Silverton, and Wolf Creek Pass. We also have several specialized trips for mushroom hunting and one grand hunt for *Botrychium* at Molas Pass. See <http://www.swcoloradowildflowers.com/San%20Juan%20Four%20Corners%20Native%20Plant%20Society.htm> for details.

Santa Fe

All the Santa Fe chapter energies this summer are devoted to preparation for the annual meeting in Santa Fe at the Institute of American Indian Arts (IAIA) from August 4-7. See you all in Santa Fe. If you want to donate items for the silent auction, please contact Jamie Douglass, 505/690-7288.

Taos

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

Jul 16 Field Trip. A day-long trip to Cerro Pedernal, Georgia O'Keeffe's favorite mountain. For meeting details and registration, contact Ty Minton, tgmraven@gmail.com or 575/751-4681.

Jul 20 Meeting. Noxious Weeds in Taos County. Rey Torres. Introduction of the new noxious weed program designed by the Soil and Water Conservation District.

Sep 23 Meeting. Native Wildflowers Along Forest Trails. Kendall Clark, BLM district manager.



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Packera mancosana: A New Species

by Al Schneider, San Juan Chapter

Several years ago my wife, Betty, and I volunteered to create a plant list for Lone Mesa State Park in southwest Colorado, about 70 miles north of the New Mexico border and 40 miles east of the Utah border. We were surprised, maybe even a bit disappointed on our first April trip to the Park, for our initial views were of acres and acres of barren-seeming Mancos Shale. But we strolled around, kept our eyes and minds open, and soon came to love the Mancos Shale barrens. We especially liked the way in which the plants were so evenly spaced from one another and we were even more taken by the variety of plants, many of which we did not know.

We returned to the park every ten days, and at each visit the barren-seeming shale became more and more attractive to us. The shale is at 7,600', yet we found plants that normally occur at 9–12,000' and others that occur at 5,000'. What a treat!

Early in June Betty called my attention to a lovely, bright yellow Asteraceae (Sunflower Family) that she knew we had never encountered in our botanical explorations in the park—or anywhere else in the Four Corners states. Our attempts to key the plant with botanical books from all four states were fruitless, but we did not jump to the conclusion that we had discovered a new species. Plants are so variable that we knew we should be cautious. Three years and many discussions, consultations with professional botanists, hours at the microscope, and comparisons of the unknown species with many similar species in the Four Corners states led us to the conviction that we had a new species.

In describing and publishing the new species, we were fortunate to have the able and friendly assistance of Loraine Yeatts of the Denver Botanical Garden and Guy Nesom, one of the authors of the *Flora of North America*. To read the full description that we all created, visit www.phytoneuron.net/PhytoN-Packeramancosana.pdf.

Packera mancosana is currently known from several small populations in and adjacent to Lone Mesa State Park, where it is represented by just several hundred plants. The new *Packera* exhibits salient features of the group of Asteraceae that is characterized by creeping rootstocks and fibrous roots, basal leaves well developed and entire to shallowly lobed, stem leaves progressively to abruptly reduced upward, and much hairiness.



Plants are densely hairy, basal leaves are usually in a vertical position, phyllaries are red-tipped and equal in length.

Photo by Al Schneider

Packera mancosana is found growing with the dominant species *Helianthella microcephala*, *Physaria pulvinata*, *Tetraneuris acaulis*, *Townsendia leptotes*, and *Eriogonum lonchophyllum*; the abundant species *Gutierrezia elegans* (which Al and Peggy Lyon discovered on the same Mancos Shale in 2008), *Petradoria pumila*, *Astragalus missouriensis* var. *amphibolus*, and *Heterotheca villosa*; and scattered plants of *Calochortus nuttallii*, *Delphinium nuttallianum*, *Orthocarpus purpureoalbus*, *Packera oödes*, *Solidago simplex*, and others.

Plants were collected and dried to be deposited in herbaria, with the most important collection (the holotype) going to the Denver Botanical Garden Kathryn Kalmbach Herbarium; isotypes to herbaria at the University of Colorado, the Missouri Botanical Garden, the Smithsonian, etc.; and paratypes to herbaria in New Mexico, Arizona, and Utah. The specimens in these herbaria are available for anyone to examine.

We chose the specific epithet *mancosana* because of the soils on which the species is found—those which we at first had found so disappointing. We knew that the name Mancos Shale itself is derived from the type location of this shale near the town of Mancos, Colorado, where this shale formation is abundant. But we had to continue our research just to figure out where the name Mancos came from. The word *manco* is Spanish for “one-handed” or “one-armed”; for some now unknown reason the word was associated with this area by the Escalante-Dominguez expedition of 1776.

Determining the identity of a plant or the origin of words—it's all part of the pleasure of living and learning. ❖

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NPSNM Grantee Report (continued from p. 3)

ment proposal, the San Francisco River is designated as closed to off-roading.

But we're not quite out of the woods (pun intended) yet. UGWA expects the Forest Service to release their Final Environmental Impact Statement late this year. At that time, we will again pore over the maps to make sure that the Forest Service has not caved in under the pressure of Steve Pearce's and others' anti-environment disinformation campaigns. Again, we will use NPSNM funding to contract with our GIS specialist to analyze the Forest Service's proposal.

UGWA is committed to working on travel management planning until the new road system is implemented, which is anticipated in 2012. We sincerely appreciate the support of NPSNM, which has stood with us all the way. Our native flora and wildlife will benefit from the Society's generosity. ❖

Donna Stevens, past president of NPSNM's Gila chapter, is executive director of the Upper Gila Watershed Alliance.

Letter: The Pinnacle

Dear Editor,

As a retired physics professor who was involved in physics education, I wholeheartedly endorse Jim Nellesen's thesis that biology should be the "pinnacle" of the sciences (newsletter April–June 2011). The physics community has for many years endorsed "Physics First," a program that encourages the physics-then-chemistry-then-biology high school science sequence. Today, biology is built on the concepts of genetics and cellular function, subjects that require a background in physical science. So what are the obstacles?

(1) Tradition! Parents and school boards alike are suspicious of any change to the curriculum and question the merits of changing the science curriculum. (2) Teacher shortage. The number of teachers qualified to teach physics, even at a fairly elementary level, is inadequate. Grants intended to bring teachers up to speed have helped, but not in the numbers needed. (3) Student readiness. At the K–12 level, physics, like any other subject, can be taught in an age-/experience-appropriate manner. But some experienced teachers are concerned that ninth graders, for instance, might not have the intellectual maturity to handle such concepts as "conservation law" and "rate of change," which even at a qualitative level might not be comprehended.

So, teaching physics before chemistry and biology is a worthy goal, but one with serious challenges.

~F. R. (Dick) Yeatts, Professor Emeritus of Physics
Colorado School of Mines, Golden, CO

Conservation Corner (continued from p. 5)

and observing a lot of colorful wildflowers. In 2009 we found 15 species from the New Mexico Rare Plant List and in 2010 we found 6. And all of the participants had a lot of fun. So consider signing up for this year's rare plant field trip.

Remember that the work we perform will make a difference. If repeated searches fail to find populations of the Cloudcroft *Phacelia*, the species will then truly deserve the protections that accompany designation as a threatened or endangered species.

If you want to learn more about the Cloudcroft *Phacelia*, you can go to the New Mexico Rare Plant website (<http://nmrareplants.unm.edu>). Click on County Lists, then submit a query for Otero County in the dropdown box, and finally click on *Phacelia cloudcroftensis*.

On a side note, you may have noticed that I have replaced Jim Nellesen in writing this column. I want to thank Jim for keeping NPSNM members abreast of conservation issues for many years with his articles, and also want to thank him for his excellent service as Conservation Committee chair. I certainly hope I can meet the standard he set.

References

- Atwood, N. D. 2007. Six new species of *Phacelia* (Hydrophyllaceae) from Arizona and New Mexico. *Novon* 17: 403–46.
- NMBCC. 2009. The NMBCC Web Site. New Mexico Biodiversity Collections Consortium, New Mexico, USA. Available at <http://NMBiodiversity.org>. (Accessed: May 19, 2011). ❖



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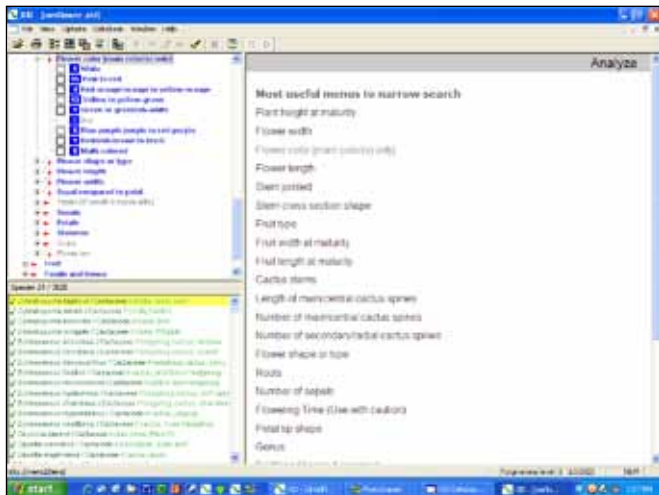
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New Interactive Plant Keys for New Mexico and Nearby Regions

by Bruce Barnes

Interested in a new, quick way to key out New Mexico plants? With updated nomenclature, color photos, and more? Flora ID Northwest, LLC has been progressively developing, refining, and expanding its programs for identifying plants, using software platforms produced by XID Services, Inc. for the past 17 years. They now have programs available for all the native and naturalized vascular plants in 18 western and central states, and 4 Canadian provinces—everything from weeds to natives. Their software is used by wildflower enthusiasts, high school classes, professional botanists, researchers, government agencies, and universities. The version for New Mexico plants was released last year, and is now available at a reduced price through NPSNM book sales. Larger



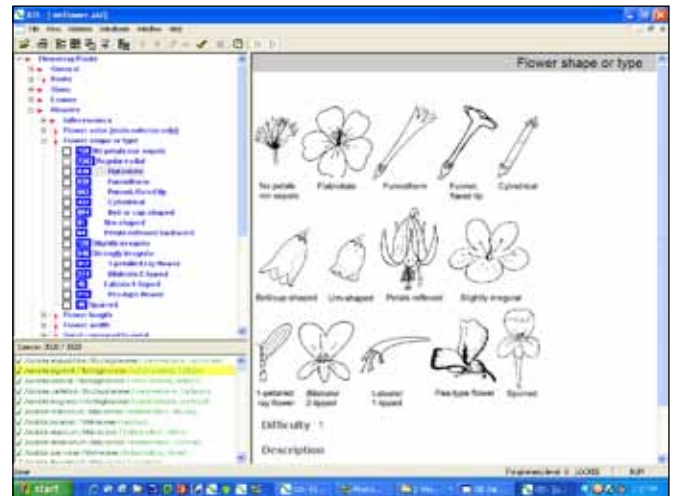
Sample screen shots from the Flora ID plant-keying software. Above, "Analyze" feature; upper right, "Flower Type" screen; lower right, penstemon image gallery.

regional versions are also available, including for SW United States, the Great Basin, and the Rocky Mountain Region.

The software is fast and easy to use, and includes color photos of over 99% of the species. One may select any plant characteristic in any order. Terms are defined and illustrated. With far more possible characteristics to choose from than needed, there is no need to worry about forced choices or whether the plant has all its parts present. The software will even provide a list of which menus of characteristics will most easily and quickly identify the plant in question. The Help menu includes a User's Guide, a Tutorial, and a Quick Reference Guide to get one started and familiar with the program. For each species there is descriptive information and a list of regional floras with the page numbers for information on that species.

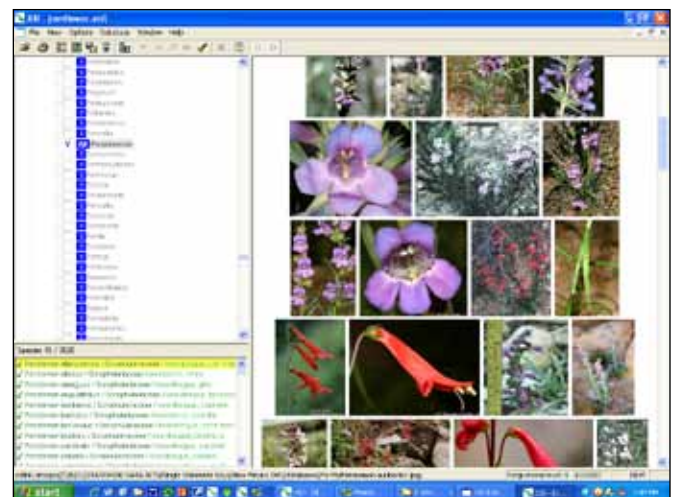
Technical support is only a phone call or e-mail away. Updates are free and available on request as often as once a year for \$6 for mailing and handling.

The software is designed to run in Windows 98 or more recent versions, and works fine on Macs with recent oper-



ating systems that have Windows loaded. It does not run in Windows Mobile. There is a Droid version currently in development. For more information, there is a website at <http://flora-id-northwest.com>, and a demo video of the same XID software using a weed program on <http://www.youtube.com/weedidentification>. For additional questions about the software, please contact Flora ID Northwest at flora.id@wtechlink.us or 541/276-5547. ❖

Bruce Barnes, based in Oregon, is the developer of the Flora ID software.



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. 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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