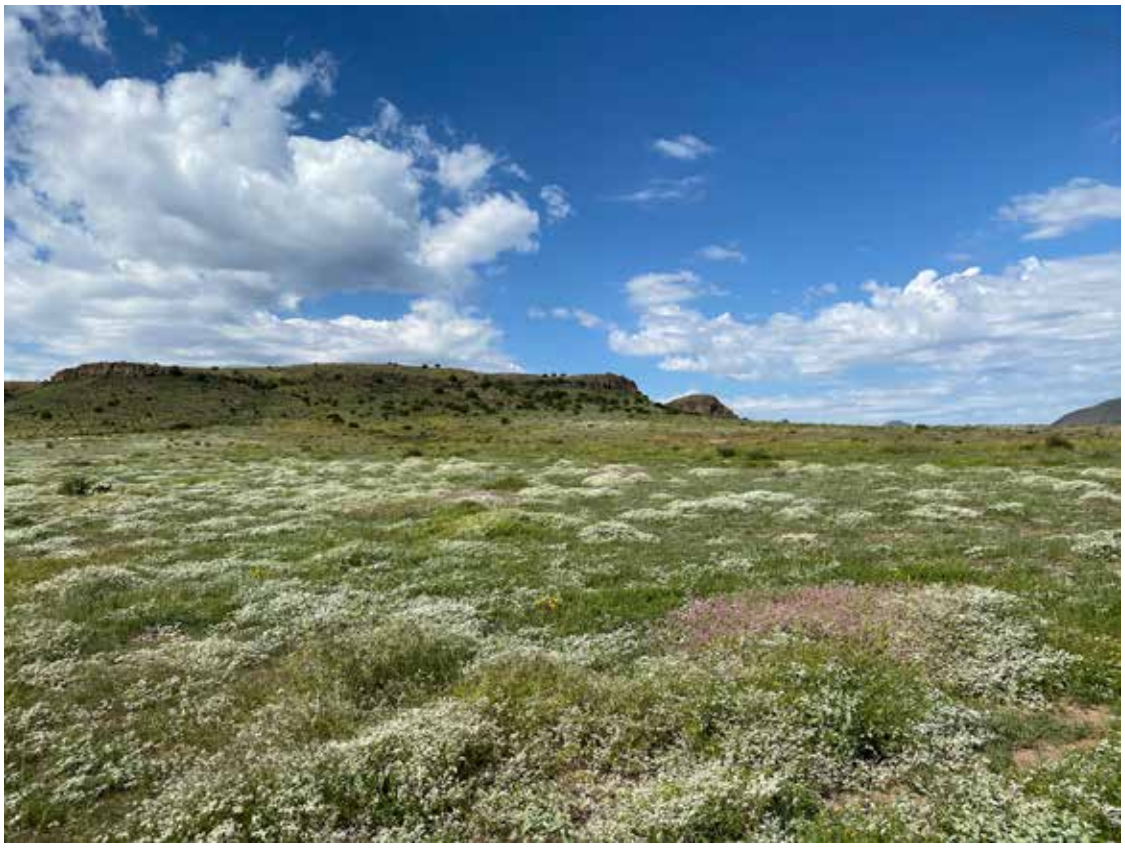
New Mexico's Voice for Native Plants

NEWSLETTER

of the

Native Plant Society of New Mexico

January, February, March 2023 Vol. XXXXVIII No. 1



The 2023 Annual Conference, hosted by the El Paso Chapter, will be in Alpine, TX area. Chief organizer Kevin Floyd has already started scouting out potential field trip opportunities. It's a hard job but someone has to do it. Read more on p. 3. Image: Kevin Floyd

Inside This Issue

The Newsletter of the Native Plant Society of New Mexico
January–March 2023, Vol. 48 No. 1. 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.

The next submission deadline is February 25, 2023. Articles and high-resolution artwork supporting NPSNM's mission are welcomed and can be sent to the editor, Margaret Ménache, ***npsnmnewsletter [at] gmail.com***.

Mission The Native Plant Society of New Mexico (NPSNM) is a non-profit organization that strives to educate the public about native plants by promoting knowledge of plant identification, ecology, and uses; fostering plant conservation and the preservation of natural habitats; supporting botanical research; and encouraging the appropriate use of native plants to conserve water, land, and wildlife.

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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, to conserve water, and as a part of the regional ecosystem in support of native pollinators and other fauna. Members benefit from chapter presentations, field trips, plant and seed exchanges/sales, discounts on publications, a statewide conference, and a network of knowledgeable plant enthusiasts.

Joining is easy through our website, www.npsnm.org, or by mailing your contact information, local chapter preference (if any), and dues to our main address (NPSNM, PO Box 35388, Albuquerque NM 87176). Yearly dues and donations are tax deductible at $30 regular individual, $45 household, $60 friend of the Society, and $20 for youth (through 26 years) or PK-12 teacher. Higher supporting levels can be found on our website. ❖

Don't Miss a Newsletter Issue or an Important Society Email!

- Has your email address changed?
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Keep us informed so we can keep you informed!

Send us your most current information at: npsnmmembership [at] gmail.com

Legacy: What we leave behind, we give to the future

NPSNM encourages members to consider including NPSNM in their wills.

For further information, contact us at ask.npsnm [at] npsnm.org

NPSNM is a 501(c3) tax-exempt organization

From the Presidents

by Wendy and Don Graves

Hello members of the Native Plant Society of New Mexico! We are grateful to have been voted in as your co-presidents. Co-presidents you may ask? We spent many years as two of three faculty members in a science department at a small community college in northern Minnesota, and have worked together professionally for many years. We enjoy working together and find that sharing the work enhances our productivity and creativity. Indeed, our roles as President and Treasurer of the Gila Chapter for the past four years definitely have been a team effort!

We want to thank all current and past officers, board members, committee members, newsletter editors, webmasters, and all the others who have stepped up to lead this organization. The officers and board members of the seven local chapters are key to serving our membership at large, and as such, essential to what we do. Additionally, the local chapters have many individual members who volunteer to help with operations, events, and outreach. As a result of all of these individuals, present and past, the two of us now transition into a leadership role in an organization that is strong and prosperous! The Native Plant Society of New Mexico currently has record membership and our finances are in better shape than ever. We send thanks to all of these individuals who have made us strong, effective and relevant!

As we look ahead to our upcoming term as co-presidents, we have identified ways for us to serve the Native Plant Society of New Mexico. These include increasing educational opportunities and outreach, maintaining our strong focus on native plant conservation, and identifying and encouraging others to consider leadership positions in the organization.

Educational Opportunities and Outreach

We are both retired educators and, as such, we understand the impact that teachers and professors bring to their students. Two recent pieces of legislation may offer opportunities for the NPSNM chapters to increase their impact on local school districts, with respect to teaching and learning in the outdoors. Outdoor Learning Program legislation was signed into law by NM Governor Michelle Lujan Grisham this past March, and in October, U.S. Senator Martin Heinrich (NM) introduced the Living Schoolyards Act. Both of these bills will create opportunities to teach about native plants and help establish native plant and pollinator school gardens, so we will be keeping

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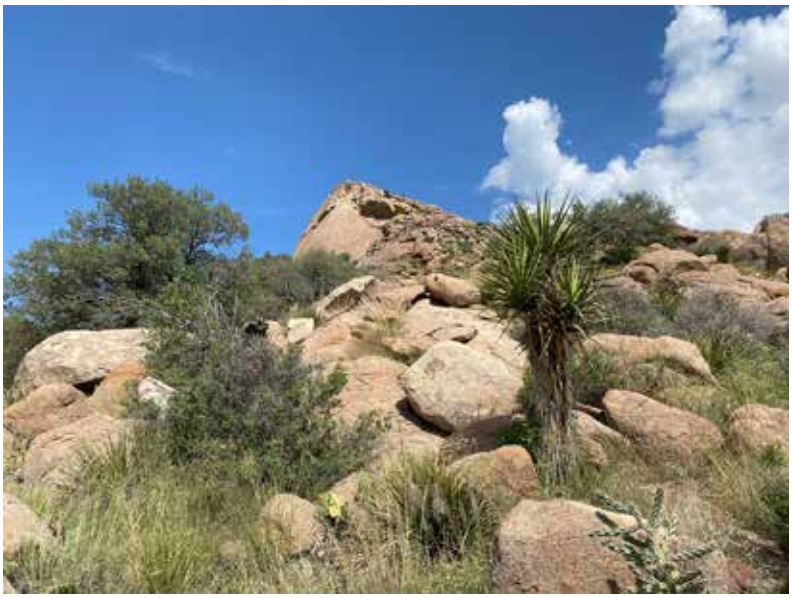
The El Paso Chapter Invites You to Alpine, TX

by Kevin Floyd, El Paso Chapter

Plans for the 2023 Annual NPSNM Conference are coming together. Yes, we will be meeting in Alpine, Texas! The conference is tentatively scheduled for 22-24 September 2023—a bit later than usual as a concession to summer heat. The conference size will be limited.

Nestled in the Trans-Pecos region and part of the Chihuahuan Desert, we are confident that you will enjoy this native plant paradise with stunning vistas and incredible plant biodiversity. This area has long been a favorite of botanists (read about Mary Sophie Young on p. 10 in this newsletter) and artists (think Georgia O'Keeffe) alike. Fort Davis and Marfa are within easy driving distance. There is so much to do that you might need to plan on a week (or more) in the area rather than limiting yourself to the three days of the conference.

We are still working on all the details, but the current plan is to have presentations Friday morning, a tour of the Chihuahuan Desert Research Institute in the afternoon followed by the awards dinner, also at CDRI. Saturday will be for field trips, including a couple all day options. Sunday morning will have more field trips and then people can head home or continue to explore the region. ❖



Biodiversity is only part of the attraction of the Alpine, TX area. Image: Kevin Floyd

Conservation Corner

by Rachel Jankowitz,
NPSNM Conservation Committee Chair

Las Cruces Update

In the Jan–Mar 2021 *Conservation Corner*, we described successful efforts by the NPSNM Las Cruces chapter, along with two other conservation groups, to oppose an unpermitted event that involved hundreds of motor vehicles tearing around in the bed of the Rio Grande. The conservation groups pointed out in a letter to the International Boundary and Water Commission (IBWC), which manages the location, that there were environmental hazards, including damage to restored riparian areas, as well as safety and health concerns. The event has not happened since then.

The Las Cruces chapter reports:

"Thanks for following up! For the past two years, the Rio Grande has been remarkably quiet following the cessation of water deliveries, when they turn the river "off." This usually is when the ATVs/UTVs are swarming the riverbed, gunning their vehicles along the banks and through the remnant pools. The Dona Ana County Sheriff said she would follow the trespass law and ticket any vehicles in the IBWC corridor, and she kept her word.

The good news is that the ATVs/UTVs are no longer flagrantly destroying the restoration areas—these seem to be gaining traction, habitat is spreading, and the river is a pleasant place to walk in the fall when the weather cools down, without unmufflered vehicles roaring by. The new statewide Rio Grande Trail efforts will surely be more successful now.

The downside, which the landowner (the IBWC) needs to address, is that people parking within the corridor to raft, kayak, and hike are also being ticketed and are upset about it. These users cause significantly less damage to the corridor than the rampaging ATVs/UTVs, but their protesting could cause the pendulum to swing back toward more permissive use by the ATV/UTV lobby, which is quite strong here. A really good participatory plan is needed that addresses the often-conflicting demands on the river, acknowledging primary purposes of floodplain protection and irrigation delivery, but also recognizing increasing pressure to utilize the river corridor for recreation and habitat. Until then, rafters/kayakers/hikers have public access points in one local and two state parks in our area."

Any chapter or individual member who has taken, or is taking, part in actions to protect native plants and habitat, is invited to let us know at npsnmconservation [at] gmail.com, so we can recognize your efforts.

Agency Botanist Update

NPSNM has repeatedly urged the US Forest Service to hire more botanists, most recently in a letter last February to the NM Forest Supervisors and the Regional office (see the Apr–Jun 2022 *Conservation Corner*). Currently in NM, only the Lincoln NF and the Regional Office based in Albuquerque employ a botanist. Now the Santa Fe NF has announced their intention to hire a Forest botanist. They are re-advertising the position in Fall 2022 since their first selection ended up declining the job. According to the hiring manager, the botanist will be responsible for leading seasonal resource monitoring crews as well as filling the traditional botany role. Monitoring work is tied to the Forest's Land Management Plan, as it helps determine existing conditions of various ecosystems and ecological resources, as well as helps to determine trends that can inform future adaptive management. The Forest hopes to have someone in the position by the beginning of 2023.

Elsewhere on the federal front, the Institute for Applied Ecology Southwest seeks to hire three Botany Program Leads to support the objectives of the Bureau of Land Management Plant Conservation and Restoration Program (PCRP) at the Farmington Field Office (FFO), Las Cruces District Office (LCDO) and Taos Field Office (TFO). The PCRP conserves, maintains, and restores native plant communities through its land use planning and land management activities. The FFO administers over 1.4 million acres of public land in New Mexico, the LCDO over 5.4 million acres, and the TFO over half a million acres.

Meanwhile, the state Forestry Division of the Energy, Minerals & Natural Resources Department is hiring not one, but three positions, to replace our recently departed State Botanist Daniela Roth. The duties of the new State Botanist will be to manage the state Rare Plant, Endangered Plant Species and Invasive Species Programs, implement New Mexico's Rare Plant Conservation Strategy, oversee agreements and projects with land management agencies, perform legislative bill analysis, and supervise staff. In addition, there will be an Assistant State Botanist, to administer the Endangered Species Act Section 6 federal grant agreements and projects with federal and state agencies, including research project development, field work, data analysis and report writing, and there will be a Field Botanist who will conduct field research and surveys on New Mexico's rare and endangered plant species and manage the invasive plant mitigation program and sub-award grants to landowners.

It is gratifying to see these positions being filled as it raises the prospect that native plants and plant communities will be given greater consideration by our state and federal land managers going forward. I hope to have the opportunity in the next newsletter to introduce you to some of the individuals who are selected for these jobs.

Valles Caldera Planning Update

Riparian wetland on the Valles Caldera National Preserve. Image: Rachel Jankowitz

NPSNM sent comments last year in response to the National Park Service (NPS) request for input to the Valles Caldera National Preserve (VCNP) General Management Plan (see the Jul–Sept 2021 *Conservation Corner*). They proposed a zoning approach to establish and define three management zones—Visitor Engagement, Self-Guided, and Backcountry/Self-Reliance—and map which parts of the Preserve to designate for each zone. The three zones differ along a spectrum of development compared to preservation.

The NPS has selected a preferred zoning option for internal discussion during the remainder of the planning process. Although details of the selected option are not yet available to the public, it sounds from their description like it incorporates many of our recommendations:

> "… a bit of a blend of [options] B and C, with the Visitor Engagement Zone going into the Cabin District, but having a large part of South Mountain in the Self-Guided Zone … In addition, the Self-Guided Zone in the backcountry part of the park is a balance between B and C"

On a recent visit, a cleared and leveled pad was evident across the road from the visitor center, but it is not clear whether something will be built at that location, or if it is just a staging area for other construction. The VCNP draft General Management Plan should be available for public comment in the Spring of 2023. ❖

A Rare Jewel in the Gila Wilderness

by Margie Gibson, Gila Chapter

Biologist John Gorey discovered a rare plant, Graham's thistle (*Cirsium grahamii*). In 2021, John was doing invasive plant surveys in the Gila Wilderness when he came across an unusual purple thistle. After keying it out as *Cirsium grahamii*, he found out it had not been collected in nearly 20 years and had only been collected three times in New Mexico. Thanks to the NPSNM, he received funding in 2022 from the Carter Conservation Fund to scour the wilderness for the thistle and unlock some of its secrets.

Graham's thistle is rare in the United States; the largest population is in southeast Arizona. It is also found in northern Mexico. John walked over 90 miles of the Gila seeking areas where the thistle might be located, as well as watching for it while hiking more than 300 miles as part of his invasive plant survey for the organization Heart of the Gila.

John discovered over 4,000 individual Graham's thistle plants at three sites between the West and Middle Forks of the Gila River. He found that the plant favors open meadows with moist soil and a low slope at elevations of 6,000 to 8,200 feet. These meadows can be well vegetated with grasses and sedges, but a gentle disturbance provides an opportunity for the thistle to grow. Such disturbances included fallen trees and digging by pocket gophers.

Native thistles are important for a wide range of pollinators, insect herbivores, and wildlife, and John observed that Graham's was no exception. The flower head attracted a variety of pollinators, including 28 species of butterfly, two species of hummingbird, and likely six species of bumblebee, along with wasps, moths, flies, and beetles. He noted that soldier beetles are an important

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The rare native Graham's thistle (Cirsium grahamii). Image: John Gorey

Chapter Activities & Events

For further information on upcoming events, notify the contact person listed, or visit the chapter's web page at www.npsnm.org. Click on Chapters to select the chapter. **Hikers** should always bring plenty of water, hat, sun protection, lunch and/or snacks, field guides. Wear sturdy shoes, suitable for rough, uneven ground. **Check with your chapter for any Covid-19 restrictions they or the event venues might require**. **Please check with the hosting chapter to be sure you know the current status of any event listed here.** ❖

Albuquerque

Monthly meetings are normally the first Wednesday of the month at 7:00 pm. For more information and updated locations, contact Sara Keeney at skeeney [at] swcp.com, 505-379-3392, or check the Albuquerque Chapter page on npsnm.org.

Jan 4 Meeting. Colleen Langan McRoberts. "Removing Invasive Plants from our Open Space." Invasive Plant Patrol is a City of Albuquerque Open Space volunteer program, created to establish a community of volunteers that works to restore sites by removing invasive, non-native plant species from our Open Spaces. An opportunity for the public to participate in ecological restoration, the volunteers learn to identify and manage specific species using best practices so that native flora can thrive, supporting the ecological health of the environment.

Feb 1 Meeting. Marisa Thompson. "Climate Ready Trees, Planting for a Drier Future." Albuquerque is facing increasingly extreme climatic events, compounded by the city's urban heat island effect. Urban trees are a cost-effective, nature-based solution to mitigating climate change and improving the livability in cities and towns. Albuquerque's estimated 1.5 million urban trees are quietly benefiting human and wildlife inhabitants, providing air and water pollution removal, carbon sequestration, carbon storage, building energy savings, heat mitigation, reduction of stormwater runoff, and improving physical and physiological health and well-being for residents.

Mar 1 Meeting. Lu Lu Sage. "How Many Species Will One Plant Support?" Have we forgotten that we are a part of nature, enmeshed in the web of life? Remember again by observing the mysteries and wonderment in the diversity of species that visit our gardens and habitats. Observe the symbiosis of all species interacting in the web of life we call earth. Join Lu Lu Sage as she shares her observations through the seasons in her native plant habitat. Come learn ways to transform your garden into a native habitat that can feed, shelter, and provide nesting for native bees, butterflies, moths, beneficial insects, lizards, bats, a myriad of birds and mammals as well as mycelia and microorganisms.

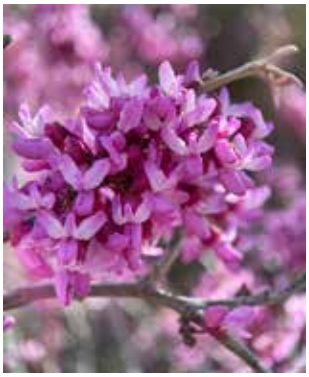
El Paso

Meetings are usually at St. Alban's Episcopal Church, 1810 Elm Street. Programs are second Thursdays at 6:30 pm. Coffee social at 6:15 unless otherwise noted. All events free unless a fee is specified. Nonmembers welcome. Info: Kevin Floyd, 915-747-6665; kwfloyd [at] utep.edu; and, https://www.facebook.com/Native-Plant-Society-of-New-Mexico-El-Paso-Chapter-191913520833180.

Jan 12 Meeting. "The Soil Connection: What can soils tell us about plants?" Soils support plants in so many ways, but did you know that many soil properties are also indicators of plant health? Join us to discuss how we can look at the earth beneath us to understand what makes plants in nature thrive! Speakers: Kathleen Schaeffer, Talverr Singh, and Dylan Stover, Ph.D. students in the Ecology and Evolutionary Biology program at UTEP. They work in the Chihuahuan Desert studying various aspects of soils, including restoration and nutrient cycles.

Feb No meeting.

Mar 11 Tour. 10:00 am at the Chihuahuan Desert Gardens (CDG) at UTEP. Spring brings many beautiful flowers to the desert. Join us for a special tour of the CDG with Botanical Curator Dr. Kevin Floyd. We will learn about the plants in the gardens and see which ones should be available for the spring FloraFest Native Plant Sale, tentatively scheduled for **Apr 1** starting at 9:00 am. (www.utep.edu/florafest). Parking is available in the lot behind the Centennial Museum, University 2 (UN2). Wear comfortable shoes.



An early spring bloomer. Mexican redbud (*Cercis canadensis* var. *mexicana*) from the CDG. Image: Kevin Floyd.

We are preparing for the 2023 NPSNM Annual Conference. Read more on p.3: *The El Paso Chapter Welcomes You to Alpine, TX*. Learn more about one of our early TX botanists on p. 10: *An Independent Life Devoted to Plants: Mary Sophie Young.*

Gila (Silver City)

Monthly evening programs will resume in January on third Fridays at 7:00 pm. Meetings will be hybrid. Check website for location information. Those who would rather join online may request a Zoom link at gilanative@gmail.com. (Chapter members will automatically receive a Zoom link by email). All are welcome. For more information go to www.gilanps.org/events/programs.

Jan 20 Meeting. Richard Spellenberg, Professor Emeritus, New Mexico State University, "Knowing the Sunflower Family in New Mexico." Author of "The Sunflower Family: A Guide to the Family Asteraceae in the Contiguous United States," Spellenberg will discuss what makes this family so difficult to grasp, the structure of the sunflower head, features used in identification, and the value in learning taxonomic tribes in the family. Examples will be from New Mexico species.

Feb 17 Meeting. Ann Audrey, Environmental Consultant, "Native Trees for Silver City: Ten Best Practices for Using Native Trees in Urban Environments to Improve Climate Change Resilience." Native trees are well adapted to our southwest climate and weather: they have endured extremes of heat, drought and cold events over countless years and still thrive. With more extreme weather events, adding native southwest trees into urban areas will help secure a shady future. Learn ten best practices to help select, plant, water and care for native trees to support their health and longevity in urban environments.

Mar 17 Meeting. Andrew Tree, GNPS Member and Wildflower Photographer, "Boston Hill Wildflowers: A Different Lens." This historic Silver City mining district is now a 500+ acre open space. Andrew will present his photographs, taken Feb–Nov 2022, as part of a mission to share widely the beauty of those wildflowers that are so often overlooked.

On **Nov 18**, botanist John Gorey spoke to us about his discovery of the rare Graham's thistle (*Cirsium grahamii*). Read about John's work with this thistle here: *A Rare Jewel in the Gila Wilderness* on p. 5.

Las Cruces

Our hybrid meetings are held on the NMSU campus in the Biology Annex, Herbarium Building, 3080 Williams Avenue, Room 101 on the second Wednesday of each month at 7:00 pm. Zoom link available from LC [at] npsnm.org. Check the NPSNM website, the LC Chapter's Facebook page, and recent email for updates, changes, additional news and other events and activities of interest. Some events of interest by other organizations become known only a few days before happening.

Jan 11 Meeting. "Tall Tales about Short Plants." Karen Blisard, Kelly Allred & Russ Kleinman will present a series of fun anecdotes about their trials and tribulations searching for bryophytes. Learn about mosses and liverworts painlessly as the three presenters discuss what it takes to put together a book about these enchanting little plants for New Mexico.
Feb 8 Meeting. TBA.
Mar 8 Meeting. "Milkweeds and Insects." Miranda Kersten is a Program Manager with the NMSU urban integrated pest management (IPM) program. Her work focuses on pollinator and beneficial insect conservation to help people attract more beneficial insects to their gardens. She has also worked in invasive species removal and riparian restoration as a member of the New Mexico Invasive Species Strike Team and with the Save Our Bosque Task Force.

Nov 9 The Las Cruces Chapter awarded a $500 NMSU student grant on to a student whose project or research is highly related to our organization's mission. This year we had both a winner and an honorable mention. **Alicia Marmolejo**, whose project on the in-

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Otero

For workshop and field trip details, contact Elva Osterreich, echoofthedesert [at] gmail.com, 575-443-4408, or Jennifer Gruger, jengruger [at] gmail.com, 505-710-2924. More information will be available by the beginning of each month.

Jan 14 Annual chapter meeting 11:30 am. Bring a dish for lunch, we will eat and then meet. Bring your ideas and questions for the coming year. Location TBA.
Feb 11 Presentation 10:30 am. Noxious weeds in the Sacramento Mts and Tularosa Basin: how to recognize them, what to do about them and how the battle against salt cedar is going. Location TBA.
Mar 25 Field trip. Meet at the Alamogordo Visitor Center Parking lot at 8:30 a.m. Cactus search in the White Sands National Park area. A desert wander to find what we can find. We will talk about pollinators and growth cycles of these prickly plants and how they differ from other things growing in our area.

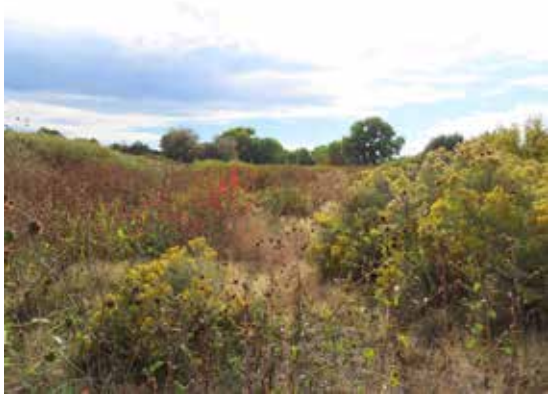
Nov 19 saw 19 of us at the La Cueva Loop Trail. To learn more about the hike and view a gallery of plant images, go to: https://npsnmo.notion.site/Field-Trip-La-Cueva-Loop-Trail-with-special-guest-David-Anderson-eb5e84b9d6db4407a0a3890dbfba0c7c

Image: Russell Davis.

Santa Fe

In-person meetings will resume on the second Tuesday of the month at 6:30 pm at Christ Church, 1701 Arroyo Chamiso. For more information, check the NPSNM website. Meetings and talks are free and open to all.

Jan 10 Meeting. Gwen Wion, of the Institute for Applied Ecology, will speak about the Southwest Seed Partnership.
Feb 14 Meeting. Dr. William DiMichele of the Smithsonian will speak on fossil plants in New Mexico. This presentation may be online, so look for more information on the website.



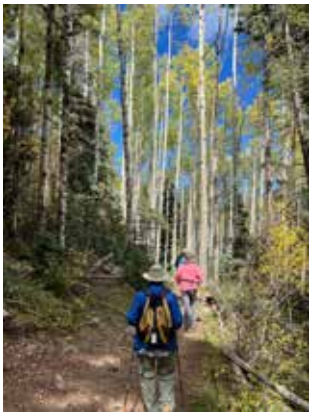
A view across Leonora Curtin Wetland Preserve where volunteers were helping the Institute for Applied Ecology control invasive plants this summer. Read more about this project in the article, *Leonora Curtin Wetland Preserve* on p. 8. Image: Sylvan Kaufman.

Three speakers presented this **Fall**: Tom Antonio on botanical names, Clayton Meredith with the Albuquerque Biopark on trillium conservation, and Kaitlin Haase with the Xerces Society on plants and pollinators. The chapter held its annual holiday potluck on **Dec 4** in lieu of a speaker.

Taos

Videos of past meetings are at https://tinyurl.com/TaosNPSvideos. For updates, check the Taos page on the NPSNM website, our Facebook page, the Taos News Calendar, email TaosNPS [at] gmail.com, or phone Mary Adams, president, 303-345-1491, Catherine Langley, vice-president, 713-261-3594, or Kathryn Mayer to talk about our greenhouse projects 512-230-7303.

Taos meetings are on hiatus during the winter months, but volunteers are always needed at the greenhouse to nurture our plants through the cold weather. Videos of past meetings will whet your appetite for our spring activities. Check our website for updates.



Santa Barbara Fall Hike: Taos chapter members and guests strolling through the aspen grove. Image: Mary Adams.

Due to the Calf Canyon and Hermit's peak fires and closure of all National Forest land in Taos County this summer, many Taos Chapter activities had to be cancelled. But we've been making up for lost time this fall. Our fourth and final hike of the year was to Santa Barbara Canyon, made possible when the Forest Service opened this part of the Carson National Forest at the beginning of October. We were grateful to be able to do this hike, in deep forest

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Leonora Curtin Wetland Preserve

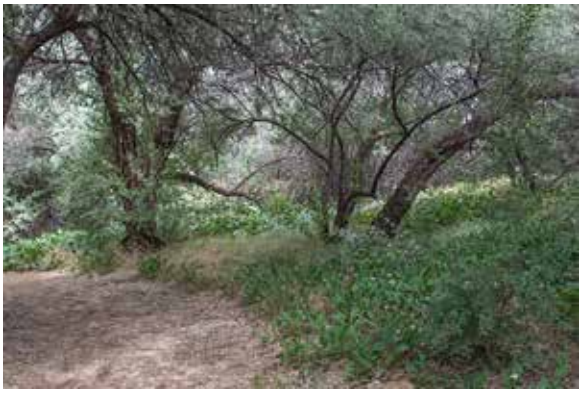
by Kathleen Hall, NPSNM Documentarian

Just a few miles southwest of Santa Fe, the Leonora Curtin Wetland Preserve (LCWP) is tucked into a fold of earth near Interstate 25, invisible to the rushing traffic. In centuries past, foot travelers, horses and wagons passed by on the Camino Real from Mexico City, perhaps pausing for a water break before arriving at the gates of El Rancho de las Golondrinas, the last camping stop of their journey to Santa Fe. It was a lush water meadow, thick with low-growing vegetation and rustling with birds and small mammals who came to eat and drink.

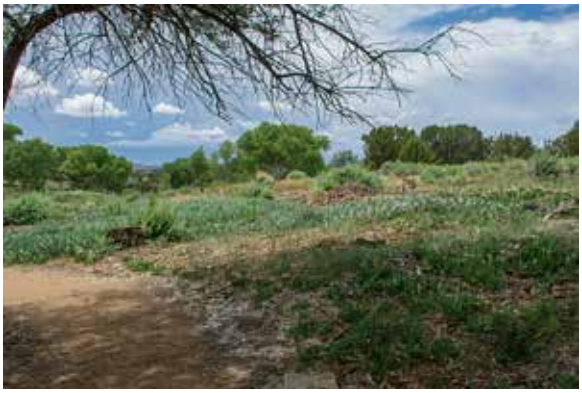
A cienega is a desert wetland with a unique community of plants and micro-organisms that provide wildlife habitat, erosion control, water storage, and carbon sequestration in its massive bulk of living and decaying plant material. Decades and generations of livestock mismanagement, irrigation practices, eradication of beaver, fire suppression and drought have turned most of the cienegas of the Southwest into arroyos that flush away soil and plant matter, eroding endlessly.

When Yvonne Hickerson, a Santa Fe ecologist with the Institute for Applied Ecology (IAE), began managing the restoration project at LCWP in 2016, she first visited a neighboring ranch where the land owner had been maintaining a healthy cienega. She marveled at the springy, living cushion of mossy plant matter that allowed water to seep gently and pond in low spots, preventing erosion and providing an anchor for an assemblage of hydrophilic grasses, sedges, wildflowers and shrubs. Then she went to work to recreate that kind of environment at LCWP.

The 35-acre plot of land is held by El Rancho de las Golondrinas, a private, family-owned living history museum on adjacent land. The preserve is named for a Santa Fe benefactor of the arts who purchased the rancho in the early 20th century as a venue for local artisans. Because this land has been in long-term ownership by Curtin and her descendants it was spared many of the management practices that destroyed fragile wetlands of the Southwest. The LCWP cienega topography has not been heavily damaged by erosion. Forested riparian, scrub upland and rare cienega habitats are host to a diversity of native plant and wildlife species. But it also had nearly ten acres of Russian olive (*Elaeagnus angustifolia*) thickets and a plague of aggressive exotic forbs. The Russian olives took much of the available water and heavily shaded the wetland area, limiting survival of native wetland species. Most of Yvonne's task would be to remove the invasives and re-establish native species.



A. LCS SW 15 July 2017



B. LCS SW 12 July 2018

C. LC4 SW 15 July 2017

D. LC4 SW 12 July 2018

The two paired images—A and B, and C and D—show the same landscape pre-restoration work (A and C) in the summer of 2017 and post-restoration work (B and D) in the summer of 2018. The top two images, A and B, show significant changes in the view as the result of extensive clearing of Russian olive and other trees. The bottom two images, C and D, demonstrate a more subtle impact of removing excess Russian olives from an area that still had substantial native plants. Images: Yvonne Hickerson.

Much of the cash funding for this project, $40,000, came as two grants in 2017 and 2020 from New Mexico State Forestry Division's Noxious Weed Program and was administered by the Santa Fe–Pojoaque Soil and Water Conservation District. In 2018, an initial 5.2 acres of Russian olive trees were removed by cutting; two additional acres of smaller clumps were cut in following years. Forest Fitness, a business specializing in landscape conservation heavy lifting, performed the tree removals. Twenty cords of wood were harvested. About two acres of remaining Russian olive will be removed at some future time.

Chemical herbicide applications have been used at critical times over the years to prevent Russian olive regrowth, and to treat Russian knapweed (*Acroptilon repans*). When the original spray application company went out of business, a team from Claunch-Pinto Soil and Water Conservation District stepped into the project.

Most of the herbaceous weeds—teasel (*Dipsacus fullonum*), bull thistle (*Cirsium vulgare*), kochia (*Bassia prostrata*), houndstongue (*Cynoglossum officionale*), prickly lettuce (*Lactuca serriola*), sow thistle (*Sonchus* sp.) and others—are being managed by hand pulling or clipping, or by cutting large masses with a string trimmer. Seeds of native plants onsite are collected and sown over disturbed soil in the wake of the removals.

State Forestry Division grant funds could not be used for kochia removal as that plant isn't on the state's noxious weed list, so NPSNM Santa Fe chapter granted the project $2,000 for the purpose. Other small amounts were donated by individuals for tools, gloves, and other needs as they came up. Matching donations required by the grantors were provided as services-in-kind by partners like botanist/cienega expert Bob Sivinski (NPSNM Santa Fe Chapter) and Steve Cary of Southwest Resource Associates.

Hand labor has been performed by crews sponsored by Youth Conservation Corps (YCC), a state-funded program that employs young people in conservation and community projects. The summer work experience encourages youth to consider careers in natural resource conservation and, along with a paycheck, also provides education vouchers to New Mexico schools as incentives. Grants for YCC work were awarded to IAE from the beginning of the project, and YCC members worked alongside volunteers to remove invasive forbs.

The Santa Fe Botanical Garden managed LCWP from 1993 to 2022 under a series of lease agreements, drawing groups of visitors on guided walks and volunteers to help with restoration and maintenance of the site, as well as providing botanical expertise. The property owners have since resumed the role of management.

Yvonne's parent organization and employer, IAE, is a nonprofit engaged in restoration, research and education, headquartered in New Mexico and Oregon. It has an internship program for up to five people every year in environmental conservation, partnering with NPSNM and with Native Plant Society of Oregon.

Hickerson has grown a remarkable interactive contingent of private and public, for-profit and non-profit, professional and volunteer individuals, groups and entities as the human element in her wetland structure. Her orchestration of these many moving parts is an accomplishment in landscape restoration, and her product a living expression of the many people and plants who gather in community to embrace the water and revere its presence in the desert.

It will take more work, more seasons of pulling, clipping and sowing before Leonora Curtin's cienega looks like the neighbor's. It has barren spots, more weeds sprouting, and Russian olive stumps. Today it's a raw stubbly plot, "Not the best place to have a picnic," she says. But it has light and water, native plants, and many hands to guide it to health. ❖

Invasive Plant Information

by Margaret Ménache, Albuquerque Chapter

Don Heinze has compiled his extensive work on the "Identification of Invasive Plants in the Southwest Deserts, Associated Wetlands, and Irrigated Crops" into a collection of approximately 100 Word files that he is happy to send to anyone who requests it for a shipping and handling fee of $15. Email him at dhbotany [at] gmail.com for details on how to get your copy.

He is passionate about the dangers of invasive plants and has written: "Obviously, before we can combat this destructive vegetation, it is imperative that [these invasive plants] are positively identified and their locations plotted on a map and/or GPS. Therefore, I have prepared this [material.]" It covers 76 undesirable foreign species, more than 300 color illustrations, 70 line drawings, and an illustrated glossary.

He asks, as well, that people consider making a donation to the Carter Conservation Fund. A regular donor himself, he informed me that his work had benefited greatly from the receipt of a 2019 grant for editorial help.

The material is provided in a series of directories (Grasses, Woody Plants, Blue Forbs, etc) with a number of individual Word documents for each plant. The documents contain a botanical description of the plant, illustrations from published sources as well as some of his own images, and interesting information about the plant—perhaps most importantly which of its characteristics make it invasive.

Don has long been an active member of the Albuquerque Chapter where he regularly led field trips until increasing health concerns curtailed his outdoor excursions. In a recent email exchange, he regretted very much that he wasn't able to attend the annual conference in August this year but reiterated that his sincere wish is that people have access to the information he has gathered over the years.

Until recently he served as the NPSNM representative to the NM Noxious Weed Advisory Committee. He has written several articles for this newsletter since at least 2009, always on the theme of controlling invasive plants. ❖

An Independent Life Devoted to Plants: Mary Sophie Young

by Cindy Foster

Growing up in the Victorian era, Mary Sophie Young was a tomboy-turned-scientist who forged a lasting legacy at the University of Texas as the school's first curator of the Austin Herbarium. She has provided an independent role model for generations of Texan women scientists.

She was born in 1872 in Gendale, Ohio, the sole girl in a family of seven boys. From an early age, she was determined not to be left behind and credited her brothers with teaching her perseverance in the face of obstacles. "I knew that [if] I ever offended once, I should be barred from going again," Young once wrote of playing outdoors with her brothers. "And, though I was wearied many a time to the point of exhaustion, I would have died rather than admit it to them."

After earning her BA at Wellesley College in 1895 and her PhD from the University of Chicago in 1910, Young became the first official curator in 1912 of the newly established University of Texas at Austin Herbarium and was appointed, as well, as a faculty member in the Botany Department.

From 1912–1918, Young collected more than 10,000 well-documented plant specimens, providing the bulk of the university's young herbarium. She had five plants named in her honor that carry the epithet "youngiae," including an uncommon shrub in the genus *Styrax* that she first collected in the Davis Mountains of western Texas in 1914. The common name for *Styrax platanifolius* Engelm. ssp. *youngiae* (Cory) P.W. Fritsch, Young's snowbell, bears her name as well.

She found that pioneering in plant collections fit in well with the academic life at the university.

Young's snowbell closely resembles but is different from three other Texas snowbells. More information about these listed plants may be found at: https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/nongame/listed-species/plants/texas_snowbell.phtml Image: Patty Manning (same site)

Gloved, hatted, and booted up for a day collecting plants in the rocky terrain of west Texas, a 1912 Texas State Historical Association (TSHA) photo shows a happy and satisfied-looking woman standing next to a burro, totally in control. Source: https://www.tshaonline.org/handbook/entries/young-mary-sophie.

She travelled throughout the Pecos/west Texas region during summers, napping some days beneath her wagon to escape the relentless summer heat.

Camping in the wilds in search of plants was hardly the expectation for most Victorian women. It was at those times that she was able to display the political skills one hones when growing up in a large family. Women weren't expected to travel alone? She would pay for younger graduate students to accompany her and set up camp. Her pocketbook would also open for travel expenses and she would donate her time—making her both cheaper and better than the competition.

Her field books from 1914–1918 detail a terrain that was "…beautifully painted with orange, yellow, and gray lichens, and decorated in every crevice with very many plants, ferns, selaginellas, liverworts, beside more hardy crevice plant…". The meticulous notes within the journal range from scientific notations to descriptions of close encounters with wildlife (including a bear!) to grocery lists to musings on how best to stew a jack rabbit. Other writings veered to reflections on the power of nature in her life. "The 'lonely' time is beginning," she wrote in one entry. "The air is very transparent and very still and everything glistens. There is something of that uncanny feeling of the consciousness of inanimate things."

Once teaching and university duties became a priority again with the start of fall semester, Young would turn her attention to what could be done locally, organizing class trips as well as solo journeys to collect the plants within the Austin area.

Altogether, she identified more than 10,000 specimens in six short years. How many more could she have identified if given the chance? Sadly, her hard won job and life lasted only for those six years. She became ill in early in 1919. Exploratory surgery revealed cancer and she died shortly after leaving the hospital in March of that year.

Through the years she has been discovered and re-discovered, becoming something of a Texas icon for her pioneering spirit and work. Today, her journal and papers are at the University of Texas with additional information and a biography at the Texas State Historical Association. ❖

Native Plants, Pollinators, and People: The McEwen Site

by Paul J. Polechla Jr., Ph.D., CCF Recipient

An article in the October 2022 issue of this newsletter presented an overview of this project, partially funded by a Carter Conservation Fund grant, with its objectives and an introduction to its two sites. This article focuses on the plantings and lessons learned for the McEwen site.

The impacts of urbanization and climate change on pollinator population decreases and loss of native plants are common knowledge: that many pollinators depend on native plants exacerbates the declines. Using two study sites in urban Albuquerque, we worked from September 2020 to September 2021 to develop landscapes that will be sustainable in the long term, support native plants necessary for native pollinators, and be of benefit to the people who use this land for a wide variety of purposes. The practical examples of restored habitat can be used by visitors to engage in similar efforts in their own yards.

The McEwen site consists of 2.6 acres located in the unincorporated South Valley in central New Mexico. Although sometimes called the McEwen "Pond," it is actually a Bernalillo County stormwater drainage channel that lies across from Ernie Pyle Middle School, off Isleta Road. This site is part of a network of sites that will create a habitat connection to the river so riparian wildlife can have cover when traveling to and from protected areas.

A preliminary plant inventory revealed sixteen native plant species on the property. A mature Rio Grande cottonwood (*Populus deltoides wislizenii*) and about 18 small cottonwood saplings, a seep willow (*Baccharis salicina*), and four Illinois bundleflower (*Desmanthus illinoensis*) shrubs were found. We left these "volunteers" saplings and fostered their health by giving them supplemental water. Texas mulberry (*Morus microphylla*) was growing at a couple locations on the property, as well as just outside the fenceline.

Native New Mexico forbs growing naturally on site consisted of horsetail milkweed (*Asclepias subverticilla*), gumweed (*Grindelia squarrosa*), purple tansy aster (*Machaeranthera canescens*), common sunflower (*Helianthus annuus*), purple nightshade (*So-*

Continued page 12

A Rare Jewel, *Continued from page 5*

pollinator. The leaves and sap are food for a variety of insects, and the stems provide shelter, including for cavity-nesting native bees. Birds eat the seeds.

Research in other states documents that *Cirsium* species are highly attractive to bumblebees and butterflies and, perhaps, preferred over other flowers. This bears further investigation in New Mexico.

The non-native Bull Thistle (*Cirsium vulgare*) is in direct competition with Graham's. John removed it from Graham's thistle habitat and anywhere else he found it in the Gila, but he cautioned others to be sure they correctly identify it before removal due to the importance of native thistles for wildlife.

John presented his findings at the November meeting of the Gila Chapter. View his presentation at: https://www.youtube.com/watch?v=ZjcLYrFhz7A. You can find out more about the importance of native thistles from a downloadable document by the Xerces Society: *Native Thistles: A Conservation Practitioner's Guide* (https://xerces.org/publications/guidelines/native-thistles-conservation-practitioners-guide). And, of course, you can learn more about thistle identification here in New Mexico when you download the NPSNM *New Mexico Thistle Identification Guide* from our website: https://www.npsnm.org/wp-content/uploads/2016/02/NM_Thistles_booklet5.5x8.5_332017.pdf As a bonus, this guide provides links to other resources. ❖

Native Plants, Pollinators, and People, *Continued from page 11*

lanum eleagnifolium), and sacred datura (*Datura wrightii*). Native New Mexico grasses included side oats grama (*Bouteloua curtipendula*) and blue grama (*B. gracilis*).

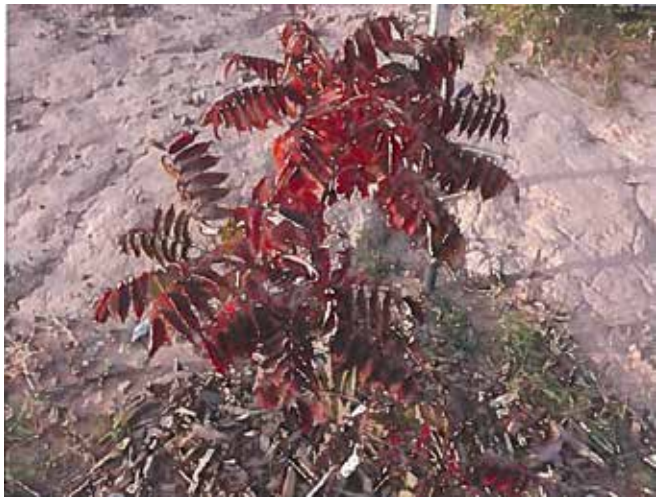
Preparation of the site for planting included removal of exotic plant species including Siberian elm (*Ulmus pumila*), tree of heaven (*Ailanthus altissima*), honey locust (*Gleditsia tricanthos*), and northern catalpa (*Catalpa speciosa*). Exotic forb species removed included ragweed (*Kochia* spp.) and tumbleweed (*Salsola kali*).

Plant species were selected based on being native to central New Mexico. Planting location was based on habitat (macro- and micro-), the number of frost-free days or growing season (influenced by elevation and latitude), precipitation (rainfall, snowfall, etc.), amount of solar radiation (influenced by direction the habitat is oriented in relation to the sun), soil conditions (amount of clay, silt, sand, and organic matter), soil relief, shade/sun, slope, and aspect. Plant species were selected on the basis of the known wild range of plants native to central New Mexico (Ivey 2003, Cartron et al. 2008, and D. Ferguson, personal communication, 2021). When placing a plant species which naturally grows at a different elevation or latitude, we chose locations that might best simulate the plant's preferred habitat.

We planted a total of 239 individual plants, representing 27 plant families, 44 genera, and 82 species of native New Mexico woody plants. Of the 82 plant species, 76 were angiosperms and six were gymnosperms.

The following plants are singled out for mention because of their special relationship to New Mexico.

- New Mexico's state tree: pinyon (*Pinus edulis*).
- State's name in common and scientific names: New Mexico privet or olive (*Forestiera neomexicana*), New Mexico locust (*Robinia neomexicana*), New Mexico elderberry (*Sambucus neomexicana*), and New Mexico hops (*Humulus lupulus neomexicanus*).
- References the river which runs through our city: Rio Grande cottonwood (*Populus deltoides wislizenii*).
- Official tree of the city of Albuquerque: desert willow (*Chilopsis linearis*).
- One of the mountain ranges in our state: the Rocky Mountain juniper (*Juniperus scopulorum*).
- Endangered cactus endemic to north central New Mexico: Santa Fe cholla (*Cylindropuntia viridiflora*). Permission from Daniella Roth, former NM State botanist received. This species is considered endangered in the wild, but the New Mexico Native Plant Program allows for it to be cultivated and sold at some nurseries. Initially it was thought to occur only around Santa Fe but is now known from other regions.
- New Mexico state flower: Yucca (*Yucca* spp.). We selected the soaptree yucca (*Y. elata*).
- The banana yucca (*Y. baccata*). The Spanish name for it is datil, which is also the name of a small town in New Mexico. The Llano Estacado (i.e. Staked Plains in English) was named by the Spanish explorers because of the flowering stalks of the soapweed yucca (*Yucca glauca*) jutting skyward on the flat prairies of eastern New Mexico and beyond.



Smooth sumac (*Rhus glabra*) in the fall. Image: Paul Polechla

We attempted to plant blue grama and Indian rice grass by seed. We tried the burlap cover method with Indian rice grass, applying compost to a rectangle of soil, sowing the seeds on top, and then rolling out a bolt of burlap mesh. The day after planting, we found lines of carpenter ants, radiating out from the burlap mesh, each with a seed of Indian rice grass. Several tries resulted in the same result, removal of all seeds by the granivorous carpenter ants. No attempted method, from raking the seeds into the soil, covering, or daily watering resulted in germination.

Woody plant survival rates two weeks post-planting was assessed. Some mortality is to be expected on almost all plantings. There was a mortality of approximately 12 plants or (5%). This was attributed to drought and a need to increase watering. Basins with bubblers had been created around plants. The problem appeared to be that although the irrigation company installed the irrigation system according to the Bernalillo County plan, the 3% slope and the pockets of sandy soil had not been considered. Irrigation or a heavy rain would cause the basins to break down and the water would run off, without providing moisture to the roots. We purchased clay soil for creation of individual "U"-shaped berms pointing uphill to retain rainfall and covered each clay berm with a burlap bag slit along the sides and stapled in place. This technique seemed to have worked well.

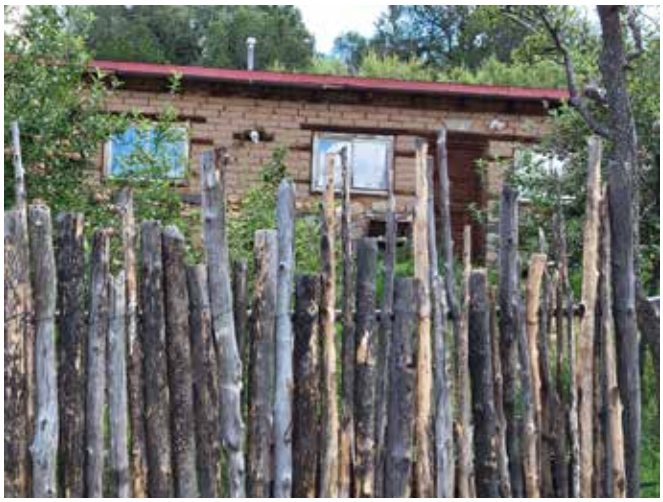
A reduction in labor force (by pandemic and lease agreement problems) from nine to two to one (i.e., me) limited the work that could be done. In particular, it was difficult to water adequately. The effect of the drought on plants, despite the later summer rains, was evident.

We anticipated difficulties in establishing new plants during the drought and other impacts of climate change, which we have documented to help gardeners, landscape designers, city planners, and farmers as they work with plants in a changing climate. We also experienced the consequences of the Covid-19 pandemic including a labor shortage that impacted our ability to accomplish our work. Finally, there are always the unexpected things that go wrong and require adjustments in plans: lack of lease agreement between the lessee and lessor, and security breaches at a neighboring greenhouse that supplied water. The challenges we faced are those faced by anyone embarking on a large project extended over multiple years. We hope our experiences will help others as they work to create more sustainable landscapes whether these are primarily for pollinator habitat or for a combination of plants to benefit humans as well as pollinators. ❖

This project has received funding from the Carter Conservation Fund and the U.S. Department of Agriculture, Natural Resource Conservation Service (Award Number NR208C30XXXXC010). Additional support has come from Tree New Mexico, National Fish and Wildlife Foundation, Rocky Mountain Youth Corps, University of New Mexico Hospital, Lee Graham and Ralph Peters of the New Mexico Cactus and Succulent Society, John "Obie" Oberhausen of Cactus Rescue, Steven Flores, and M. Armijo. Portions of this article have been taken from our final report to the USDA.

NM Nat Hist Institute Herbarium

by Renee Galeano-Popp, Taos Chapter



The herbarium is in the adobe building in back. It is housed with other natural history items such as bird and mammal skulls. Very small ! It was one of the field trip options for the 2019 Santa Fe-hosted conference. The Randall Davey Center abuts a large Nature Conservancy preserve with numerous hiking trails. Image: Renee Galeano-Popp.

The New Mexico Natural History Institute Herbarium is emerging from its Covid-19 quiet. This collection was founded by Roger Peterson at St. Johns College and now resides at the Randall Davey Audubon Center in Santa Fe. Major contributors include Helen Cannon, Mimi Hubby and Iris David. Specimens date back to the 1950s and are predominantly from New Mexico. The collection contains between 2000 and 3000 specimens.

Renee Galeano-Popp, formerly Regional Botanist for the Forest Service in Albuquerque, is now working with Roger to bring the collection up to date. The first pass is to replace paper folders with manila, update nomenclature and re-arrange the cabinets to conform with current taxonomy. The second pass in 2023 will be to upload specimen data to SEINet, the online collaboration among herbaria worldwide.

This small herbarium, with its emphasis on locally collected plants, will be an excellent resource for identification purposes. If anyone wishes to visit, please contact Renee at mtnpoppies [at] aol.com. We look forward to being yet another resource for help with identifying plants found in New Mexico. ❖

Chapter Activities, *Continued from page 3*

More from Las Cruces

vasive properties of a New Mexican native plant, camphorweed (*Heterotheca subaxillaris*), in Israel, stood out for its potential local and large-scale contributions. She will be studying how our native camphorweed, introduced to Israel 30 years ago, genetically adapted to become an uncontrollable invasive plant species. The grant will support fieldwork, lab analysis, and testing equipment that might not otherwise be supported. The Honorable Mention was given, along with a copy of Jack Carter's 2018 book, *Common Southwestern Native Plants*, to **Noel Prandoni**, for her work on dryland restoration through seed introduction and rainwater harvesting practices. Noel will be working with the NMSU Herbarium and others to help select appropriate native species for use in intermittent waterways, specifically, the Rincon watershed.

On **Nov 17**, a crew of nine volunteers led by member and landscape architect Leslie Bezner worked to clear overgrown pathways and invasive weeds from the native plant garden in front of the Dripping Springs Visitors Center of the Organ Mountains-Desert Peaks National Monument.

One chapter highlight of **Nov** was a field trip to La Maria Trail, with 31 participants learning about native plant identification, using a selected plant checklist provided to all.

La Maria Trail. Image: Lyn Hoffmann.

More from Taos

with the bubbling Rio Santa Barbara beside us, knowing that the fires barely missed this magical spot.

Our greenhouse was vandalized mid-summer, with all our tools, some soil amendments, plants, and miscellaneous items taken. Member Bob Pokorny designed and built a shed for storage, which will have a "Mad Max, medieval plan for the door," that will prevent any future break-ins. Despite that drama, we were very active growing and providing plants from our greenhouse.

We held a multi-week plant sale in September, selling most of our plants that were seeded last winter. Greenhouse manager, Kathryn Mayer, has since managed to dig plants from several locations to use as "mother plants" and starts in anticipation of 2023 sales.

New volunteer Rosemary LeClair potting up penstemon plants donated by former chapter president Claudia Bianca. Photo by Kathryn Mayer

Our greenhouse plants went to two different gardens on the Rio Fernando Land Trust property. The chapter's new demonstration garden was planted partially with a grant from the Taos Land Trust, and features natives and nearly natives. Different mulch materials will show visitors how beautiful natives can be in their own gardens. The second garden, a pollinator garden, was in need of serious TLC. Members of the chapter, Diane Padoven, Daphne Owens and Lilian Calles Barger, who also are Master Naturalists, came to its rescue. With the help of Kathryn Mayer, plants from the greenhouse and members' gardens, the pollinator garden is settled in for the winter, ready for its debut in the spring.

NPSNM Election Results

by Tom Stewart, NPSNM Treasurer & Former President

Election results are in, and the people have spoken! We welcome to the presidency Don and Wendy Graves, educators who have always been an effective team, lately leading the Gila Native Plant Society to great successes. We are fortunate to have Jonathan Tanis onboard as Vice President, with his passion not only for nature, but also for map making, technology and design. Jane Kruse has gotten rave reviews as Recording Secretary and is kindly continuing to support us in this way for one more term. Kathleen Hall, a frequent contributor to this newsletter, is pioneering the brave, new position of Documentarian. And I am happy to serve as Treasurer this time around. We thank former officers, Barbara Fix and Anne Curley, who have done so much these past few years and are now stepping off the board. ❖

Negative Impact of Invasives on Native Flora

by Donald H. Heinze, Albuquerque Chapter

This pernicious vegetation is silently overrunning our precious Southwest deserts, associated wetlands, and irrigated agricultural croplands. These trespassers are not ecologically suited to North America because they have no natural control to restrict their spread like native plants do. Therefore, they can rampage across the countryside with little natural restraint. They have deleterious impacts on the ecological balance of nature and have adverse effects on human society.

Alien invasive plants, also known as noxious weeds, freely enter undisturbed climax ecosystems such as forest, savanna, grassland, riparian plant communities, as well as cultivated crop fields. Threatened and endangered plants are vulnerable to these invaders. Often the reason that many, if not most, of these coveted

Continued next page

Presidents' Letter, *Continued from page 3*

an eye on these most recent opportunities. In addition, The Jack and Martha Carter Conservation fund will continue to be a NPSNM priority available to educators at all levels, researchers and conservationists.

Conservation

Rachel Jankowitz, chair of the Conservation Committee, has worked steadily to be sure the voice of the NPSNM is heard on critical conservation issues. Her *Conservation Corner* articles in this quarterly newsletter have been keeping us all up-to-date since 2014. We look forward to working with the NPSNM Conservation Committee and the chapters, through their own Conservation Committees and interested members, to speak out when important issues arise locally, both those that have a negative impact on our native flora and those that the NPSNM can support. Communication, both with the state organization and among local chapters, will help us to better protect the thing that brings us all together: our commitment to our beloved native flora and the ecosystems that support them. We welcome your thoughts and ideas to ensure that active conservation remains at the core of our NPSNM work.

Encouraging Future Leaders

We decided to run as co-presidents of the NPSNM because no one else in the organization did so. It was not our ambition or intention to seek this leadership position. With the Native Plant Society of New Mexico stronger than ever, indeed as a result of excellent past leadership, it is in the best interest of all the chapters to encourage individuals to consider leadership positions, at any level, local or state. Perhaps the NPSNM needs to consider some form of leadership development that helps to ensure strong chapter and state leadership into the future. Climate change, for example, is just one issue that is already having a detrimental impact on our native flora. These issues will require strong leadership far into the future. We encourage any and all members to provide counsel and guidance on how the NPSNM can maintain our strong position.

Starting in the New Year, we hope to visit each local chapter and attend a program, field trip, or other event. Through this process, we hope to meet as many NPSNM members as possible so that we can learn of the special attributes and activities of each chapter and better understand their strengths and challenges. More personally, these visits will also help the two of us continue to learn about our amazing native flora, as well as introducing us to many new places in the beautiful area that has adopted us! ❖

Negative Impact of Invasives, *Continued from previous page*

plants are rare in the first place is that they have trouble surviving in their original habitat, let alone competing with aggressive invading foreign vegetation. Less vigorous than the outsiders, they are out-competed for water, mineral nutrients, sunshine, and space. An example of this is the Russian olive (*Eleagnus angustifolia*) which can replace rare plants such as Pecos sunflower (*Helianthus paradoxis* Heiser) and Wright's thistle (*Circium wrightii* Gray) in cienagas like the one just south of the famous Blue Hole near Santa Rosa, NM.

Each of these plants has been introduced by people, either purposely or inadvertently. Humans, their livestock, vehicles, boats, farm machines, etc. are by far the most effective vectors that transport this undesirable vegetation.

Most of these plants are terrestrial, but several of them are aquatic. The latter cause a great deal of trouble in fresh and brackish water habitats, and they are the bane of farmers in the dry Southwest who must irrigate. These plants will block irrigation canals, causing water to back up and the irrigation canals to overflow. Thus water, precious in the arid deserts, will be lost and wasted. Recreationists are bedeviled by this vegetation. Aquatic invasive plants will stop a motorboat dead in its wake; swimmers and fishing lines can get fouled in the stems of these plants. Large mats of exotic vegetation will lower the value of expensive waterfront property.

The invasive plant problem is increasing geometrically. This vegetation is invading heretofore uninfected areas and prior infestations are enlarging, sometimes at an astonishing rate. Cheatgrass (*Bromus tectorum*) is a good example. The New Mexico Wilderness Alliance tried valiantly, but vainly, for years to eliminate it from the Sandia Mountains. If the initial cheatgrass plants had been removed, we might well be free of this scourge. But no one knew what it was at first; and, no one cared. Now it is a serious and probably unsolvable problem. Large amounts of money and effort have been expended to control it, but it has spread over the entirety of the contiguous United States, with the exception of the southeastern states.

Large amounts of herbicides of questioned safety are presently being used to control these plants. The inevitable increase in size and extent of invasives will undoubtedly increase the use of chemicals. Hopefully, however, new infestations can be eliminated by means other than herbicides. ❖

Native Plant Society of New Mexico

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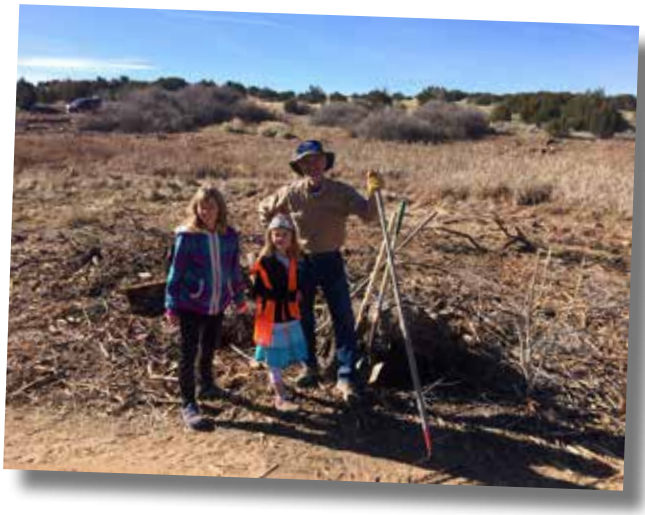
www.npsnm.org

Above: Paul Polechla describes work he has done with his 2021 Carter Conservation Fund award. Some plants were selected for their connection to New Mexico. The desert willow is the offical tree of Albuquerque, he reports. Read more starting on p. 11.

Below: Work at the Leonora Curtin Wetland Preserve has been going on for a number of years. First up has been removing invasive, over-eager Russian olive and doing the routine maintenance to ensure that it is kept under control. In this 2018 work-day image, Steve Cary and Yvonne Hickerson's two children take a break from raking mulch and clearing wood. Read more about this project, that has been supported in many ways by the Santa Fe Chapter, in the story on p. 8. Image:Yvonne Hickerson



Above: Taos Master Naturalists provide some much needed TLC to the Rio Fernando Land Trust pollinator garden. Read more in the Taos Chapter Activities. Image: Kathryn Mayer.

Right: The Otero Chapter was out for a fall hike on the La Cueva Trail. While it is long past the season for flowers, they managed to find some striking compositions, like this whitethorn acacia (***Vachellia constricta***). Read more in the Otero Chapter Activities, which includes a link to more infomation and many more images.