New Mexico's Voice for Native Plants

NEWSLETTER

of the

Native Plant Society of New Mexico

April, May, June 2023 Vol. XXXXVIII No. 2

Will you be ready for the City Nature Challenge? El Paso will be! Brush up on your iNaturalist skills to participate in this friendly competition among cities across the globe to submit the most plant observations. Wolfberry (*Lycium* spp.) Image: Kevin Floyd

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The Newsletter of the Native Plant Society of New Mexico

April–June 2023, Vol. 48 No. 2. 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. Articles and high-resolution artwork supporting NPSNM's mission are welcomed and can be sent to the editor, Margaret Ménache, ***newsletter [at] npsnm.org***. **The next submission deadline is May 25, 2023.**

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.

SCAN ME

Joining is easy! Scan this QR code to be directed to our website or go there the old-fashioned way from your browser: www.npsnm.org. You may also snail mail your contact information, local chapter preference (if any), and dues to our main address (NPSNM, PO Box 35388, Albuquerque NM 87176). Yearly dues [$30 regular individual, $45 household, $60 friend of the Society, and $20 for youth (through 26 years) or PK-12 teacher] and donations are tax deductible. Higher supporting levels can be found on our website. ❖

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From the Presidents

by Wendy and Don Graves

Hello members of the Native Plant Society of New Mexico. We hope you are receiving some of the winter moisture that the Silver City area is enjoying. As we write this, we are preparing to visit the El Paso Chapter to participate in their field trip planned for March 11th, and to visit the Otero Chapter for a workshop planned for March 25th. We feel that a visit to the Las Cruces Chapter is imminent as well; we're just looking for the best time. As we continue our statewide chapter visits, we hope that other chapters will alert us when good opportunities might exist for us to get more acquainted with you.

Other news that we have to share with you is that Sylvan Kaufman of the Santa Fe Chapter has agreed to transition into Chair of the NPSNM Conservation Committee, as Rachel Jankowitz, long time Conservation Committee Chair, prepares to retire from this position. Sylvan's background has prepared her well to take on the responsibilities of the Conservation Committee Chair. She consults, writes, and teaches about ecology, botany and restoration topics. She co-authored *Invasive Plants, Guide to Identification and the Impacts and Control of Common North American Species*, first published by Stackpole Books in 2007. A new edition will be coming out in 2023. She taught as an adjunct professor for George Washington University's Sustainable Landscapes Program and worked as the curator and land manager at Adkins Arboretum, the Maryland state arboretum. She has been a researcher on invasive plant and climate change projects at Harvard University. Sylvan has a BA in Biology from Vassar College and a PhD in Ecology and Evolutionary Biology from Rutgers University.

We are delighted that she will be taking on the Chair role for the Conservation Committee. What makes this transition ideal is that Rachel will continue on the Conservation Committee as the representative from the Taos Chapter. We think that with active engagement and coordination from all our chapters, the time is ripe for NPSNM to be more vocal then ever in speaking out for conservation. We request that each chapter select a member to serve as a representative on this committee and send that name, along with contact information, to Sylvan Kaufman at conservation [at] npsnm.org. The committee plans to hold their first meeting by Zoom sometime in May to begin working on a set of guiding principles for this statewide NPSNM committee.

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Exploring the Trans-Pecos: Texas's Wild West

by Kevin Floyd, El Paso Chapter

The El Paso Chapter is hard at work planning the 2023 conference in Alpine, TX. There will be a morning of presentations about the Trans-Pecos region of Texas on September 22nd. After a short break to freshen up, we will meet up at the Chihuahuan Desert Research Institute outside of Ft. Davis for tours of the site followed by our combination welcome and awards dinner. Saturday, September 23rd, will offer a variety of field trips. Options will range from heading into the sky islands of the Davis Mountains to visiting riparian preserves. Dinner on Saturday will be on your own, allowing you time to explore Marfa, Ft. Davis, or Alpine, or possibly heading up to the McDonald Observatory for some star-gazing. We will provide a list of options for self-guided stops on Sunday morning as people either head home or continue to explore the region.

Conference registration will open on May 1st. Check our webpage for the latest information: https://www.npsnm.org/2023-conference/
You can scan this handy QR code to get there, too. Attendance will be limited to around 75 people and we expect to "sell out" quickly! Some field trips will also have limited space.

SCAN ME

Conservation Corner

by Rachel Jankowitz,
NPSNM Conservation Committee Chair

That's All, Folks

NPSNM was one of the first organizations I joined after moving to NM in 1999. I have been honored to represent NPSNM and its members as Conservation Chair since 2014, working with past Presidents Barbara Fix and Tom Stewart, and current Presidents Don and Wendy Graves. All good things must come to an end, however, and I will step down from that position as of the Annual Meeting in September 2023. As a Life Member, this event will not mark the end of my involvement with the Society. I hope to see more of you in meeting rooms, at special events, and on the trails in the years to come.

Meet Our New State Botanist

Erika Rowe has been hired as the New Mexico State Botanist and Program Manager for the Endangered Plant Program at the Forestry Division of the Energy, Minerals, and Natural Resources Department. Erika has a BS from the University of Minnesota in Natural Resources and a Master's degree in Forest Ecology. Her research focused on vascular and nonvascular ground-layer recovery after wildfire. From 2001–2022 she worked for the Minnesota Biological Survey doing rare plant surveys, vegetation mapping and monitoring, and conservation planning. She was instrumental in creating three new State Natural Areas and one new State Park to protect rare plants and extraordinary landscape features.

She also helped develop an Ecological Monitoring Network, establishing hundreds of long-term permanent vegetation plots statewide, across all ownerships, to achieve a broader scientific understanding of changes taking place in native plant communities from habitat fragmentation, climate change, and invasive species. The project is only the second statewide, long-term monitoring effort in the U.S.

While the majority of Erika's professional experience has been in Minnesota, she has a long history in New Mexico. She loves the high deserts and mountains and has made regular visits. She currently lives on the outskirts of Santa Fe in the small village of La Cienega where she is thrilled to look out on a seepage wetland which attracts many species of birds. Erika is excited to take the lead as State Botanist and continue to build on all the incredible work that her predecessor, Daniela Roth — and Bob Sivinski before that — accomplished.

The Forestry Division has also created two additional positions in the Rare Plant program. The Assistant State Botanist, Martin Purdy, will focus on administering the U.S. Fish and Wildlife Service Endangered Species Act Section 6 federal grants and doing much of the field monitoring associated with those grants. Ashley Taylor, Field Botanist and Invasive Plant Program Coordinator, will assist Marty with that monitoring effort, but will also spend a portion of her time coordinating grants and cost-share agreements under the Invasive Plant Program, working with Soil and Water Conservation Districts and landowners to assist with invasive plant removal on forested lands.

Marty Purdy is a recent transplant to New Mexico who spent the last several years studying plant diversity in California's Eastern Sierra region as a botany technician for the Inyo National Forest and as a graduate student at California Botanic Garden/ Claremont Graduate University. His recent Master's thesis was a specimen-based floristic inventory of Coyote Flat and Ridge, a high-elevation unglaciated region on the east slope of the Sierra Nevada mountains. Marty is passionate about native plant conservation and diversity, alpine plants (especially *Draba* species) and environmental education.

Ash Taylor grew up in Ohio and received a degree in Zoology and Environmental Studies from Ohio Wesleyan University. Ash has lived in Albuquerque for four years. She brings almost a decade of field experience in sustainable agriculture and native plant conservation. She comes to EMNRD most recently from SWCA Environmental Consultants and Adkins Consulting, Inc. Ash has also worked on local farms, with the New Mexico Farmers Marketing Association, Conservation Corps NM, and the Institute for Applied Ecology.

When not in the field, she'll be working out of the Albuquerque District Office.

The Rare Plants Program plans to finalize the Endangered Rare Plant Rule amendment (see the Winter 2022 *Conservation Corner* for details). Changes have been proposed to strengthen the language around the definition of 'take' to include harm, kill, and destroy, because the current definition provides only protection from removal with the intent to possess, transport, export, sell, or offer for sale. Erika is currently working on how the new permitting process will be rolled out.

They will also provide comments on recovery plans of listed species, environmental review of project proposals, and additional field work to update and expand distribution knowledge and understanding of the many rare plants across the state. Their program plans to work closely with staff at The Museum of Southwestern Biology Herbarium, Natural Heritage, and other partners such as the Native Plant Society. NPSNM members should feel free to reach out to them individually or collectively.

Feral Cattle Removal from the Gila Wilderness

NPSNM sent a letter in mid-December to the Gila National Forest supporting their proposal to remove unauthorized cattle from designated Wilderness using lethal methods. The effects of excessive cattle grazing are well-documented and include forest floor and streambank erosion, degraded water quality, introduction of noxious weeds, and the reduction of herbaceous vegetation. Whether they are termed "feral" or "estray", "unauthorized" or "trespass", these animals cause serious ecosystem damage and frustrate the Forest Service's efforts to manage Gila NF grazing in a sustainable manner. The Gila Wilderness was the world's first wilderness, designated in 1924, and it should continue to be managed with the goal of providing a shining example of ecosystem health as well as a valued recreational resource.

On February 16, the Gila NF announced their decision to go ahead with the removal. "This has been a difficult decision, but the lethal removal of feral cattle from the Gila Wilderness is necessary to protect public safety, threatened and endangered species habitats, water quality, and the natural character of the Gila Wilderness," said Camille Howes, Gila National Forest Supervisor. "The feral cattle in the Gila Wilderness have been aggressive towards wilderness visitors, graze year-round, and trample stream banks and springs, causing erosion and sedimentation. This action will help restore the wilderness character of the Gila Wilderness enjoyed by visitors from across the country."

All dispatched cattle will be left onsite to naturally decompose. Forest Service staff will ensure no carcasses are adjacent to, or in, any waterbody or spring, designated hiking trail, or known culturally sensitive area.

Update: As of our newsletter deadline, a group of organizations including the Humane Farming Association and the NM Cattle Growers Association have filed a last-minute lawsuit and are requesting a temporary restraining order to stop the removals.

Tongass National Forest Update

Kootznoowoo Wilderness, Admiralty Island, Tongass National Forest, Alaska. (Forest Service photo by Don MacDougall). Original public domain image from Flickr

This item is a follow-up to our review of the documentary movie *Understory*, in the Spring 2022 newsletter. *Understory* was made, in part, for the purpose of influencing public opinion during a Forest Service public comment period about restoring "Roadless Rule" protections to the Tongass, which had been removed by the Trump administration. On January 25, 2023, those protections were restored in full. Road-building and logging will be prohibited on 9.3 million acres of old-growth temperate forest. "The Tongass National Forest is key to conserving biodiversity and addressing the climate crisis," Agriculture Secretary Tom Vilsack said in a statement. "Restoring roadless protections listens to the voices of Tribal Nations and the people of Southeast Alaska while recognizing the importance of fishing and tourism to the region's economy." ❖

Phenology: Watch What Happens

by Kathleen Hall,
NPSNM Documentarian

Do you keep…

- A garden journal?
- Calendar notes of seasonal changes?
- An annotated bird list?

Phenology is the study of biological phenomena over time — budding, fruiting, migration, nesting, pupation, hibernation. If you keep a record of the changes you see in the natural world, you are collecting phenological data. Through the seasons and over the years you may have accumulated a stack of notebooks or spreadsheets that help you know when to plant tomatoes, what bird species to expect at your backyard feeders, or what happens when you introduce new material to your landscape. Your notes may have inspired you to dig deeper into a topic, perhaps to study how the natural phenomena you observe work in synchrony.

Now imagine hundreds of thousands of people across North America all putting their nature notebooks and spreadsheets together and standardizing their recording techniques to contrib-

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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 at the New Mexico Museum of Natural History and Science, 1801 Mountain Rd NW. For more information contact Sara Keeney at skeeney [at] swcp.com, 505-379-3392, or check the Albuquerque Chapter page on npsnm.org.

Apr 5 Meeting. "Rewilding at the Candelaria Nature Preserve." Jeannie Allen leads the Friends of Candelaria Nature Preserve, which supports the City's implementation of a Resource Management Plan on the 167-acre Preserve. Jeannie will explain the rewilding process and its regional and global connections along with the work of the Friends group, including development of an Interpretive Plan. Seven years ago neighbors discovered pesticide use on the property. A city-sponsored Technical Advisory Group of over 60 specialists devised the Resource Management Plan that outlines a 20-year process for transforming the land from commercial farming to a mosaic of native habitats that will serve as a haven for wildlife and nature study.

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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.

Apr 13 Meeting. Plant identification can be challenging, but luckily technology is here to help! iNaturalist is a network of naturalists and citizen scientists built on the goal of mapping observations of biodiversity worldwide. Although not perfect, iNaturalist uses computer vision to do an amazing job at narrowing the observation into a limited group if it can't suggest a species identification. This interactive presentation led by Dr. Kevin Floyd will help participants become more confident about using iNaturalist and get everyone ready to participate in the 2023 City Nature Challenge April 28–May 1. The CNC is a friendly competition among cities across the globe to see who can submit the most observations. El Paso plans to make a strong showing for the Challenge! To get the most out of this presentation, consider installing iNaturalist on your smartphone and signing up for an account prior to the meeting. It is all free! We will practice what we learn about iNaturalist on a field trip Saturday **Apr 15**. Location will be announced via Facebook and email.

New Mexico Rainbow Cactus *(Echinocereus dasyacanthus ssp. dasyacanthus)*. Image: Kevin Floyd.

May No meeting. We will plan a field trip to enjoy the late spring flowers. Details will be announced via Facebook and email.

Jun 8 Meeting. Indio Mountains Research Station is a 41,200 acre property located in far west Texas and administered by the University of Texas at El Paso. The landscape at the station is represented mostly by pristine Chihuahuan Desert scrubland encompassing the Indio Mountains which run from north to south with primarily east- and west-facing slopes. With recent acquisition of additional land, IMRS now reaches the Rio Grande, increasing the role of this station in the protection and conservation of diversity. This presentation by Dr. Vicente Mata-Silva will be about plant species and their associations found at IMRS, including rare species and how snakes interact with plants.

Gila (Silver City)

Monthly evening programs will be on third Fridays at 7:00 pm. Some will be hybrid; some by Zoom only. Chapter members will automatically receive a Zoom link by email. Others may request it at gilanative [at] gmail.com. For more information go to www.gilanps.org/events/programs.

Apr 21 Meeting. "Amigos Bravos Wetland Mapping Project in the Gila". Steven Fry, Amigos Bravos Policy and Project Specialist, will describe the aims of the wetland mapping project and explain how Gila Chapter members can help.

May 19 Meeting. "Alpine Systems." Hannah Marx, Curator of the Herbarium, Museum of Southwestern Biology, UNM, will discuss the evolution and ecology of alpine plant communities and the effects of climate change on alpine systems.

Jun 16 Meeting. "A Tale of Three Rivers." Mary Harner, University of Nebraska, Kearney will speak about applications of digital technologies to document and convey riverine landscape change, featuring examples from the Platte River in Nebraska and Middle Rio Grande and Gila River in New Mexico.

Field trips will resume in April as opportunities arise. We will have a booth and activities for kids at the Gila Earth Day celebration in Gough Park on April 22nd, and will participate in the Give Grandly fundraiser on May 6th.

Image: Eloy Limner.

One of our most exciting projects has been to enlist the help of Ashley Pedersen, a graduate student in Landscape Architecture at the Rhode Island School of Design, in developing a Master and Interpretative Plan for the Silva Creek Botanical Garden. Ashley will earn credit towards her master's degree, and we will gain an overall design that will encompass the full scope of our native plant garden, including the currently undeveloped areas.

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.

Apr 12 Meeting. "Trifecta Crisis and Natural Climate Solutions," presented by A.T. Cole. We live in the most important moment in human history: climate, temperature, species extinction and soil loss/depletion are at all-time highs. Atmospheric carbon dioxide must be reduced from the current 419 parts per million (ppm) to 350 ppm. A.T.'s presentation discusses habitat restoration at Pitchfork Ranch in Grant County using natural climate solutions.

May 10 Meeting. "Beneficial Insects of New Mexico," presented by Dr. Joanie King, Extension entomologist. Get to know your backyard beauties and misunderstood "monsters!" This presentation will give an overview of some of the beneficial insects (and other arthropods) you may see in your garden or backyard. As part of integrated pest management (IPM), you'll learn ways to help pollinators, natural enemies, and decomposers. Dr. King's lab also focuses on host-parasite interaction, community ecology, effective science outreach, and science communication. Sharing bug science is cool!

Jun 14 Meeting. "Coastal Deserts of Western South America: Fog Makes for Something Entirely Different." Dr. Michael O. Dillon is Curator Emeritus of Flowering Plants at the Field Museum of Natural History for 30 years until his retirement in 2008. He became

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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. Contact Jen if you'd like to be on a list to receive information regularly. More information will be available by the beginning of each month.

Apr 22 Plant sale. Our Annual Native Plant Sale offers a wide variety of native choices for your gardens and yards. Location TBA. If you're not on the Otero Chapter email list, please contact Jen so she can keep you updated on plant availability, location, and time.

May 20 Field Trip: We will visit several homes and yards in the area to explore what people are doing with the native plants they have fostered and how they have designed their space to accommodate our environment.

Jun 17 Field trip. We will visit the meadows and paths of the Upper Karr Canyon Recreation area and look for some butterfly habitat and hosts as well as see what else is out there. Meet at the empty gas station at the corner of US 84 to Cloudcroft and Florida Ave. at 9:00 am.

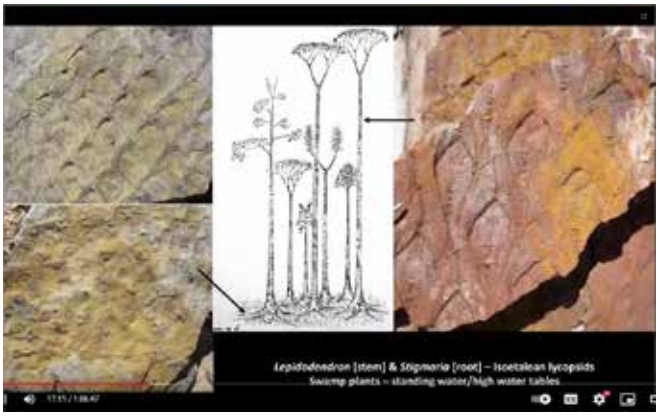
Image: Elva Osterreich.

Otero County Extension Agent Sid Gorden talked to our Chapter about Noxious Weeds in the Sacramento Mountains and Tularosa Basin on **Feb 17**. He had great information about noxious plants, ways to control them, and various kinds of chemical and natural remediations. The NMSU Extension Service has great information available which can be found at: nmdeptag.nmsu.edu/apr/noxious-weeds.html

Santa Fe

In-person meetings are 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.

Apr 11 Meeting. Mateo Pomilia, Forest Stewards Guild, will speak on "Restoration of fire-adapted forests of the Southwest".



February's in person talk was snowed out, but fortunately Dr. Bill DiMichele from the Smithsonian Natural History Museum spoke online about paleobotany in New Mexico. You can watch his presentation at https://youtu.be/qJXHAwyroiw

The Santa Fe chapter had several excellent speakers this winter. In **Jan**, Gwen Wion from the IAE spoke about seed collection for restoration projects. Volunteers can help with seed cleaning during the winter months. Our speaker in **Mar** was our own chapter member, Renee Galeano-Popp, who spoke about Project Pine Cone and pine blister rust. Renee will be our representative to the state Conservation Committee. For Santa Fe area conservation concerns, you can contact her at mtnpoppies [at] aol.com.

In other news, the chapter wrote a letter of support for a grant application by IAE for researching planting native seeds under solar projects. Sylvan has been updating the Santa Fe chapter's listserve. If you would like to be on that list, contact her at sylvan.kaufman [at] gmail.com

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. Meetings will be held on the FIRST Wednesday of the month in the Kit Carson Electric Cooperative Boardroom, 118 Cruz Alta Road at 6:00 pm. This will now be our "permanent" date and time.

Start looking for spring wildflowers! Pasque flowers, *Pulsitilla nuttalliana*, on NPSNM-Taos hike, April 9, 2022. Image: Mary Adams.

Apr 5 Meeting. "Tale of Two Herbaria" by Renee Galliano-Popp. Botanist/Ecologist.

May 3 Meeting. TBA.

Jun 7 Meeting. TBA.

The new Taos Chapter leadership team is planning monthly meetings, workshops, field trips and hikes for the year. If you

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Happenings in the Bosque with the Yerba Mansa Project

by Dara Saville and Jonathan Tanis, Albuquerque Chapter

If you are a regular reader of the Native Plant Society Newsletter or attended the 2022 Annual Conference, then you have likely already heard of the Yerba Mansa Project. The Yerba Mansa Project (YMP) was founded in 2014 as a nonprofit community participatory project designed to bring people into relationship with the Albuquerque Bosque through land stewardship events and educational programs. We work in partnership with City of Albuquerque Open Space and numerous other organizations including the Native Plant Society of New Mexico, which funded our recent conservation efforts described below, and the Native Plant Society Albuquerque Chapter, which has supported editorial work on our youth-authored Plants of the Middle Rio Grande Bosque Field Guide on iNaturalist.

Our service projects are undertaken by community volunteers and include such activities as:

- ravenna grass (*Saccharum ravennae*) removal,
- native species replanting and reseeding,
- ongoing caretaking of establishing plants,
- free field programs for school classrooms,
- fundraising field programs for the general public,
- development of the free online field guide, and
- botanical population data collection with GIS integration for conservation initiatives.

Thanks to a grant from the NPSNM Jack and Martha Carter Conservation Fund, YMP has begun work documenting existing yerba mansa (*Anemopsis californica*) stands in the greater Albuquerque area (see map below). The lack of baseline population data makes it difficult to assess how this species is responding to decades of floodplain land conversion, water diversions, ground water pumping, and climate change. Floodplain desiccation also results in bosque fires that impact native riparian vegetation, providing an opportunity to monitor this plant's recovery at one of our previously documented sites.

Since yerba mansa is a native plant that prefers wetland habitats of the American Southwest and adjacent arid regions, identifying population changes over time has potentially important implications for understanding environmental change in our region. As an ecologically and culturally significant species, yerba mansa contributes to habitat health and cultural persistence. It is a contributor to riparian and ciénega ecosystem functions by aerating soil, altering soil chemistry, purifying water, and invigorating the vitality of the overall system.

Additionally, this species is a legendary herb of botanical medicine practices of the Southwest and lies at the heart of this healing tradition today. Although large stands exist in some areas, there is evidence of population decline across its range. (For more see Dara's monographs at yerbamansaproject.org/wp-content/uploads/2021/03/Anemopsis-californica-monograph.pdf and unitedplantsavers.org/species-at-risk-list/yerba-mansa-anemopsis-californica/)

Work undertaken through the NPSNM CCF grant seeks both to enable long term monitoring of known yerba mansa stands in our area and to document vegetative changes at our restoration site. In order to establish a baseline for future yerba mansa population trend analysis, the YMP GIS team used GPS devices to record the area of each stand.

Information was collected on associated plant species, stand density and health, along with photos. These data will provide a baseline for population change studies in the future, in order to better understand how stands respond to environmental stresses and restoration practices.

Additionally, the YMP GIS team documents the ravenna grass removal and native species re-establishment work done by community volunteers at our Bosque

Three stand locations of yerba mansa (*Anemopsis californica*) in the greater Albuquerque area, outlined in white. Map prepared by Jonathan Tanis.

Restoration Field Days. We record the point locations of native plantings, polygon locations for broadcast areas seeded with a mix of native grasses and forbs, and the locations of ravenna grass removals.

These data are used in a number of ways. Our volunteer maintenance team regularly visits new plantings for the first two to three years; having precise locations of recent plantings ensures that none of them are missed. Location data also allow for ongoing assessment of success rates for both planted and seeded areas. Quantitative data regarding invasive species removal and native species plantings are vital for working cooperatively with land management agencies and maintaining funding through grants. Lastly, by recording data on ravenna grass locations and removals over multiple years, we are able to analyze spatial trends in how these populations spread and respond to management practices. For a detailed account of this portion of our project, please review our NPSNM grant report for 2022.

Want to join us?
Connect with us locally or from afar at:
YerbaMansaProject.org

The work of YMP demonstrates the capacity of community led organizations to engage in riparian restoration work, whilst maintaining a rigor in data collection and monitoring that matches or exceeds the standards of agency-led habitat restoration projects. The combination of relatively inexpensive recreation-grade GPS units with a nonprofit license for GIS software allows YMP to collect high quality spatial data for both research and restoration purposes. Volunteers trained in these methods contribute to a community of citizen scientists in Albuquerque and beyond who are impassioned and empowered to tend to their local ecosystems. Furthermore, these projects present a replicable and scalable model for similar community-led organizations elsewhere to engage in research-grade data collection. Most agency-led habitat restoration projects are created and monitored by practitioners from outside the local community, and monitoring of vegetation development tends to be short-term. There is therefore a distinct need and opportunity for local people to engage with their more-than-human communities through assessing the long-term success and failure of various restoration practices and techniques. ❖

Carter Conservation Fund Awards

Every year the NPSNM Board is pleased to review and grant Jack and Martha Carter Conservation Fund (CCF) awards to projects that further the mission of the organization. While we were pleased to have a near-record number of applications in this round, we only wish that we had more resources to fund all the projects that we reviewed. The following fourteen projects received funding for 2023.

Browsing impacts on Arizona Willow (*Salix arizonica*) defense and growth. Shannon Lencioni. An NAU graduate student, Shannon will expand on observations of the effect of browsers on plant health and robustness by studying phytochemistry and growth factors. Noting that the Arizona Willow is a sensitive species, these data can provide important information for land managers.

Dripping Springs natural area garden enhancements. Patrick Nolan, Friends of the Organ Mountains-Desert Peaks.

Flora of the Brokeoff Mountains. Bryana Olmeda. A UNM graduate student, Bryana notes that the Brokeoff Mountains "represent several habitats within the Chihuahuan desert ecoregion." And: "This collections-based project allows us to see shifts in phenology, changing vegetation definitions, and evolutionary processes by carefully preserving years' worth of specimens in natural history museums."

Gypsum mosses of the Chihuahuan and Mojave Deserts. Katelyn Gobbie. A graduate student at John Carroll University, she wrote: "Gypsum soils support many endemic and endangered plant spe-

Continued page 15

New 2020 Edition

Trees and Shrubs of New Mexico

by Jack L. Carter

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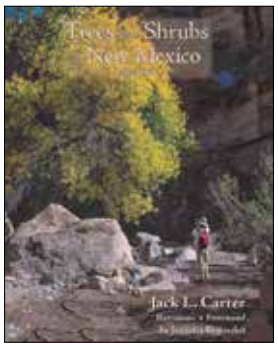

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GILA NATIVE PLANT SOCIETY

The Gila Native Plant Society is committed to promoting the education, research, and appreciation of the native flora of the southwest; encouraging the preservation of rare and endangered plant species; and supporting the use of suitable native plants in landscaping.

A Very Brief History of *E. laricifolia*

Margaret Ménache, Albuquerque Chapter

A firm believer that a picture is worth a thousand words, Jim Von Loh and fellow photographer Gordon Berman spent Fall 2021 photographing the butterflies and moths drinking deeply from turpentine bush (*Ericameria laricifolia*) flowers.

Turpentine bush (*Ericameria laricifolia*) in full flower along the Soledad Canyon Trail, 29 September 2021. Image: Jim Von Loh.

Clearly, the plant has high value to butterflies and moths. I wondered what its value to humans might be. In one of those really unusual non-competitive relationships, humans appear to have no use for the plant other than as a landscape shrub. While other *Ericameria*s do have medicinal, herbal, and/or food value to people, this is apparently not the case for turpentine bush. The wood is not particularly valued either. As a result of its non-importance to humans, as far as I can tell, it doesn't appear in stories either. Which perhaps might just point out that I don't know where to look. On the other hand, it might open the possibility for writers of stories and folk tales to fill a niche and write the tale of the turpentine bush.

Here is what I know. The plant was first collected by Charles Wright in October 1851 in New Mexico. Wright, as I have learned, was one of Asa Gray's most trusted botanizers. Turpentine bush was described in an 1853 Smithsonian publication, "Contributions to Knowledge, Vol. V". (Available at: https://ia802707.us.archive.org/34/items/smithsoniancontr51853smit/smithsoniancontr51853smit.pdf) Latin being the rage, this article, written by Gray, is titled: Plantæ Wrightianæ: Texano—Neo-Mexicanæ. The shrub is described as "Aplopappus [sic] (Ericameria) laricifolius (sp. nov.)." Wright's notes included "On mountains, at Guadalupe Pass, New Mexico; Oct. (1188)." The holotype of collection specimen 1188 is held at Harvard's Gray Herbarium. An isotype, pictured here, is from the Missouri Botanical Garden Herbarium (Urbatsch:

Continued next page

"Fill 'er up!"

James Von Loh, Las Cruces Chapter

Butterflies and moths swarm turpentine bush (Asteraceae: *Ericameria laricifolia* (A. Gray) Shinners) flowers as a last nectar source in 2021!

Turpentine bush is relatively common, growing as single shrubs or small clumps on the gravelly-to-rocky mid-slopes and along drainages of the Organ Mountains. They are also common, drought tolerant, landscape plants in developed neighborhoods of Las Cruces and Mesilla and are typically included in reclamation plantings. The common name is derived from its evergreen leaf fragrance: lemony when lightly rubbed, becoming gummy when crushed with a sharp turpentine odor.

Mexican Metalmark (*Apodemia mejicanus* (Behr, 1865)); Soledad Canyon; 20 Oct 2021. Image: Gordon Berman.

Generally, these densely flowered and brightly-colored (medium- to dark-yellow) short shrubs are distributed across portions of the Chihuahuan, Sonoran, and Mojave deserts of NM, TX, AZ, CA, NV, UT, and Chihuahua, Mexico. They flower late in the summer (late September through early November) and are typically the last host-plant species supporting nectaring insects, including butterflies and moths (which were abun-

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Variegated Fritillary (*Euptoieta claudia* (Cramer, 1776)) (Note Dainty Sulphur Above); Fillmore Canyon; 26 September 2021. Image: Gordon Berman.

Indomitable Graphic Moth (*Melipotus indomita* (Walker, 1858)); Soledad Canyon; 20 Oct 2021. Image: Gordon Berman

dant in 2021 due to timely monsoon rainstorms, from late-June to October).

Gordon Berman and I photo-documented twenty-five butterfly species, one butterfly complex, and three moth species nectaring from, and likely pollinating, turpentine bush flowers during the months of September through November 2021. A small selection of our images are included in this article. Butterflies and moths share these tough, beautiful shrubs with other insects, including species of grasshoppers, beetles, bugs, flies, bees, and wasps among others. Gordon and I collected images on several late-season field-days in Fillmore, Soledad, and Bar Canyons on the predominantly west-facing mid-slopes of the Organ Mountains. Overall, butterflies were observed in this area, often in quite large numbers, from May through the end of 2021. ❖

Queen (*Danaus gilippus* (Cramer, 1776)); Soledad Canyon; 20 Oct 2021. Image: Gordon Berman

Reakirt's Blue (*Echinargus isola* (Reakirt, 1867)); Soledad Canyon; 20 Oct 2021. Image: Jim Von Loh

A Very Brief History, *Continued from previous page*

SIDA, Contributions to Botany, 7(3) pp 298-303). Urbatsch also distinguished the Chihuahuan Desert species from their California relatives as "novelties," adding that "each has a unique flavonoid complement and one or more extraordinary morphological features." He finds that *E. laricifolia*, however, is more closely allied to the California species than to its Chihuahuan Desert relative.

The shrub seems to be somewhat botanically independent based on Urbatsch's investigation and certainly has landscape value as it thrives in the harsh life the desert southwest throws at all living beings, whether they are plant or animal. So, plant one or two or more this spring and make the butterflies and moths in your neighborhood happy this fall. ❖

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Judy Tribble
Peggy Wells
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Gail Haggard
Katie McLane
Tom Stewart
Marisa Thompson

2021-2022

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Hobey Dixon
Sheila Gershen
Katherine Gould-Martin
Rachel Jankowitz
George Miller
Jeff and Mary O. Parker
Miriam and Robert Vaughn
Paul Walmsley

Phenology, *Continued from page 5*

ute to a giant, expanding database that anyone can access. You're imagining *Nature's Notebook*! A web-based monitoring program of the USA National Phenological Network (USA-NPN), it is used to collect and organize data, including digitizing some plant data sets from as far back as the mid-twentieth century, all of which are available to scientists and management teams, agencies and businesses, schools and universities; in a word, to everyone.

Some of the many contributors to *Nature's Notebook* and USA-NPN are your fellow NPSNM members. Some are students and educators at local schools, scouting groups, other volunteer organizations and private individuals.

The *Nature's Notebook* program features an app that permits observers to upload data directly from the field, circumventing transcription errors. It has criteria that help to standardize observation techniques and reporting, and plant and animal lists that are geographically selected, so observations in the Rio Grande Bosque, for example, are collected on species common to the area. Cumulative data on the same species over the course of several years reveal incremental shifts in the timing of their life cycles.

On a chilly February morning in 2022, three volunteers meet at the main gate of Albuquerque Botanic Gardens and head for the undeveloped forest behind the Gardens. Gerri, Allison, and Sheila are three of the seven people who share this weekly walk in the Bosque. Next week at least one of the three will take the walk with two other team members, so there is continuity from one week to the next but no one must commit to data collection every week.

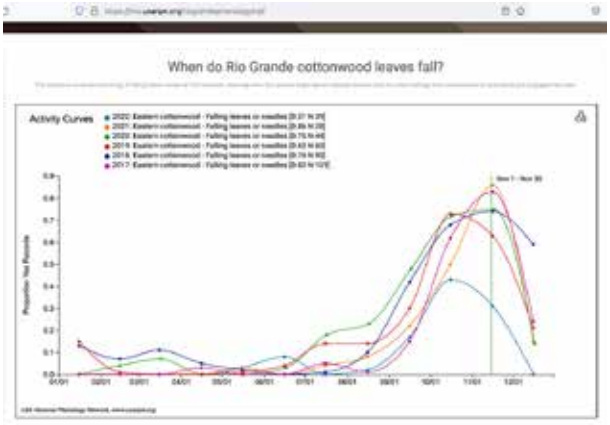
Siberian elm (*Ulmus pumila*) with early spring seeds, which are excellent in salads. Image: Margaret Ménache.

The first stop is a mature Siberian Elm, *Ulmus pumila*. Binoculars help to see how many of the swelling buds at the top of the tree have begun to open. Mark "YES," this phenophase has begun. What percentage of the buds are open? The

three observers discuss what they see and record their observations using the *Nature's Notebook* app on a cell phone. They also record each data point in a paper notebook.

They continue on a looped trail that wanders through cottonwoods and understory, engaging with 23 plants of ten different species. A four-wing saltbush (*Atriplex canescens*) on the observation list has died. A note is entered in the data and a nearby saltbush plant is chosen by group consensus to replace it. Most of the plants are dormant in February. By March this same walk will be alive with buds, blossoms, leaves. This set of plants has been observed since 2013, the beginning of the Biopark volunteers' phenology program. Other sets of plants and animals along the Bosque are monitored by other groups and individuals using the same criteria.

Phenological data are useful indicators of change, and these data points will show up in maps illustrating the onset of spring, forecasts that enhance the effectiveness of pesticide applications, graphs comparing phenophases of different species, estimates of food availability for fauna, and studies of the effects of climate change on particular species and biomes, to name but a few possible uses of the data. One study based on the USA-NPN open database found that, while many species become active earlier due to earlier spring warming, some species are staying dormant later than normal. Those plants require a minimum amount of cold or below-freezing temperature before bud burst. Their prolonged dormancy will, in turn, impact the other organisms that are part of the plant's community.



A sample graph (above) from the Rio Grande Phenology Trail group tracks cottonwood leaf drop over the past six years. Knowing leaf drop times can indicate the best times to collect cottonwood cuttings for pole planting propagation.

The Botanic Garden and eight other data collection sites along the river from Sevilleta to Santa Fe comprise the Rio Grande Phenology Trail, a network of collaborator communities and agencies. Data generated by the Trail is being used as a management tool by Valle de Oro National Wildlife Preserve. The US Fish and Wildlife Service preserve, on the southern edge of Albuquerque, was established in 2012 on a former dairy farm, and since that time has been in planning and construction phases of its restoration process. The refuge has a cadre of volunteers who have been contributing to USA-NPN observation data to establish baseline information and to monitor progress of the restoration, not only to track resident and migratory bird populations that are expected to use the refuge, but also to aid in establishing a mosaic of habitats for birds and other animals.

Refuge Manager Jennifer Owen-White looks at elm and cottonwood seed maturation data to inform the timing of summer flood irrigation pulses on refuge land to favor the cottonwood seeds over elms. She and her team will be able to use phenological data to see the effectiveness of their restoration efforts and to control invasive species. And, says Owen-White, the process of data collection is an opportunity to engage members of the human community in the life of Valle de Oro Refuge.

Want to become a phenologist? Join the Nature's Notebook monitoring program as an individual and observe in your own yard or a favorite park. Form your own group and monitor a trail together. Join an established volunteer group and share nature with a community. Go to the USA National phenology network website: www.usanpn.org to learn more. ❖

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Chapter Activities, *Continued from page 3*

More from Albuquerque

May 3 Meeting. "Removing Invasive Plants from our Open Space." (Rescheduled from Jan.) Colleen Langan McRoberts will speak about Plant Patrol, a City of Albuquerque Open Space volunteer program, created with the intent to establish a community of volunteers to restore sites by removing invasive plants. Trained volunteers control and contain the spread of invasive, non-native plant species in our Open Spaces. Participants learn how to identify and manage specific species using best practices so that native flora can thrive, supporting the ecological health of the environment.

Jun 7 Meeting. "Knowing the Sunflower Family in New Mexico." Richard Spellenberg, Professor Emeritus, NMSU, takes a new approach for the serious amateur to learn the diverse genera and species of plants in the Asteraceae family - learn to recognize taxonomic tribes. The talk will be an introduction to understanding the structure of the flower head in the sunflower family and the value of learning the important feature defining tribes. He will show photos and diagrams illustrating differences among and unique characteristics of the various tribes of the sunflower family. Enhance your knowledge and enjoyment of our many New Mexico sunflowers, asters, daisies, marigolds, cosmos, ragworts, rag weeds, sage brush and more.

More from Las Cruces

one of the world's leading experts on the plants of Peru, as well as the effects of El Niño events on Neotropical plant populations. He has published over 100 scientific papers and described dozens of new species. Between 2005 and 2008 Dr. Dillon was Chair of the Department of Botany, overseeing a major upgrade of The Field Museum Herbarium and botanical labs and spearheading pioneering efforts in collections digitization.

Field Trip to UTEP. Image: Lyn Hoffmann.

In February 2023, Kevin Floyd, Botanical Curator and President of the El Paso Chapter, led the Las Cruces Chapter on a tour of the Chihuahuan Desert Gardens at UTEP in El Paso. The Chapter enjoyed seeing the diversity of the winter gardens, from cacti to agave to perennials to shrubs to trees. Some early blooming plants like New Mexico Privet or Desert Olive (*Forestiera neomexicana*) were already in bloom. He discussed how the gardens are dealing with agave weevils, including reducing the usage of agaves in the gardens.

More from Taos

would like to join us in the planning and volunteering, here is a quick look at what we need for 2023:

- Greenhouse tools: rake, shovel, wheelbarrow, watering cans, small tools such as widgers and dibblers, and always 4" planting pots (clean please). We were wiped out last summer during a break-in.
- Media person to run our Facebook page, Taos News announcements and articles, other marketing
- Conservation committee members—Taos has not had a committee for some years, but we would like some local eyes and ears represented from northern NM to collaborate with the state NPSNM as well as other Taos conservation groups
- Technology lead—for meetings, keeping us current and organized with IT and setting up online registration for next year's annual state conference,
- Videographer to record monthly meetings—we've experimented with an iPhone and a tripod, so this might be an alternative to videotaping
- Demonstration Garden lead—we already have great volunteers doing much of the work!
- Co-manager for republishing "Native Gardening in Northern New Mexico"
- Volunteers for the 2024 Annual State Conference committee, to be held in Taos.

Presidents' Letter, *Continued from page 3*

Something else that has been increasingly on our minds is the trouble our native plant retailers are having with procuring native plants to sell. It is readily apparent that in order for our organization to meet its mission of "encouraging the appropriate use of native plants to conserve water, land and wildlife" that an adequate supply of native plants and seeds must be readily available for restoration, landscaping and other uses. Unfortunately, every year we seem to be losing more and more of those native plant growers who have been supplying these needs. We would like to put together an *ad hoc* committee comprised of local growers, wholesalers, retailers, nurseries, and others with relevant experience to explore what might be done to reverse this trend. If you are interested in participating, or know a grower who might be able to contribute to our understanding of the issues involved in this decline of availability, please contact us at president [at] npsnm.org.

We are hoping that the fall and winter moisture will bring a bountiful spring bloom. Look for us at a NPSNM chapter near you! ❖

Native plants give us a sense of where we are in this great land of ours. I want Texas to look like Texax and Vermont to look like Vermont.

Lady Bird Johnson

CCF Awards, *Continued from page 9*

cies, contributing to some of the most biodiverse terrestrial hotspots worldwide... My research will provide public and land management agencies with key ecological information regarding moss biocrusts necessary for educational and conservation purposes."

Harnessing soil microbial communities to facilitate dryland restoration. Parikrama Sapkota. Sapkota, a PhD candidate at UTEP wrote that this research "focuses on the effect of global change on the interaction between plant microbes in dryland systems." Using five grass species in a greenhouse experiment, plants will be analyzed for biomass and microbial diversity and community structure. The results will support efforts to restore historical perennial grasslands.

Identification and mapping of an unknown thistle, potentially endemic to the Mogollon Mountains. John Gorey. During the course of CCF-funded research on Graham's Thistle (Cirsium grahamii), Gorey "came across another strange thistle high in the Mogollon Mountains. After sending photos of the plants to NM plant experts there is speculation that it could be a new species of thistle endemic to the Mogollon Mountains." With this grant Gorey will find, count, collect, and map this thistle. He hopes also to continue mapping work for Graham's Thistle.

Native plant education for 3rd and 4th Grade Students. Stephanie Bestelmeyer, Asombro Institute. The grant will support delivery of previously developed lesson plans on plant traits, structure, and function to a number of classrooms in Dona Ana County. A prior recipient of CCF grants, Asombro aligns all lessons with educational standards in science, language arts, and math as students learn about native plants of the Chihuahuan Desert.

***Piñon Country*, a conservation photography project**. Christina Selby. The project brings to light the interdependence of life in the Piñon-Juniper Woodland ecosystem, highlights the intimate lives of Pinyon Jays as the guardians of this ecosystem, the challenges and threats they face in their habitat as well as solutions being implemented across the intermountain west. There will be an exhibit and educational events at the Santa Fe Botanical Gardens on Museum Hill.

Plant Community Restoration using Connectivity Modifiers following Honey Mesquite Management in southern New Mexico. Molly Reichenborn, NMSU. This PhD research project proposes to study the effectiveness of connectivity modifiers (panels of hardware cloth) to help capture "soil, seeds, and plant litter" with the intention of "creating more habitable conditions for herbaceous species to re-establish" in areas where mesquite has encroached.

Printing and distribution of "Wildflowers of the Railyard Park." Izzy Barr, Railyard Park Conservancy. Santa Fe's Railyard Park is "filled with drought-tolerant plants that are meant to grow naturally without much human intervention. Yet for those accustomed to the manicured turf grass typical of most public parks, the sight can be a little jarring." Free distribution of the plant identification booklet will increase public awareness of native plants, using a local artist's work.

Sampling the alpine flora of the Southern Rocky Mountains. Joseph Kleinkopf. A graduate student at UNM, Kleinkopf brings a year of fieldwork in alpine flora collection and strong mentorship to this project. He writes: "Increased sampling should help to generate knowledge and data that are necessary for testing hypotheses of alpine ecology and evolution, as well as for better understanding how alpine communities are being affected by continued climate change."

Socorro Bosque Native Plant Enhancement Project. Danielle Hensley, Save our Bosque Task Force. Native plants will be planted during the spring and maintained throughout this year. "The Task Force and its partners are performing trail and park maintenance over the coming year. Some of the areas we are focusing on have low quality plant diversity, either through disturbance or invasive vegetation removal. This project allows us to enhance the plant diversity, as well as habitat and recreational quality in areas where we are already working.

Update to the ferns and fern allies of NM checklist. Harpo Faust, UNM. " The goal of this project is to publish an updated checklist of the fern and fern allies for New Mexico that is publicly accessible. This list will be primarily based on reviewing herbarium specimens and occurrence data, as well as focused collection effort for the group over the next 2 years."

Zeta Day at the Refuge: An immersive experience for high school students. Maya L. Shamsid-Deen, Zeta Phi Beta. An organization "created to pursue social justice, preserve cultural traditions, and provide a network of Black professionals," the participants for this one-day event "will interface with our membership which is largely comprised of Black and Brown women, and we have intentionally asked women, LGBTQIA+, and Black USFWS and SEV LTER guides to participate. We aim to showcase not only floristic diversity but also the diversity of environment stewards." In the morning, "[h]alf of the students will visit SEV LTER experimental sites while the other half does on-site activities to learn about New Mexico's flora with USFWS Rangers." In the afternoon the students will change places. ❖

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~Jack & Martha Carter

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Carter Conservation Awards for 2023 Announced. Read about the funded projects on page 9.

In February, the Las Cruces Chapter was pleased to report the first sighted Mexican Poppy of the season. This annual native, often considered a subspecies of the California Golden Poppy (*Eschscholzia californica* ssp. *mexicana*), will in some years with adequate moisture and the right conditions, turn hillsides and roadside fields a brilliant orange yellow. Its range extends from far West Texas northwestward through Arizona and into extreme southwestern Utah and far southern Nevada. It is also found in parts of Chihuahua and Sonora, Mexico. Blooming times in the Las Cruces area usually extend from about mid-February to mid-April. Image: Gordon Berman.

James Von Loh, along with Gordon Berman, both of the Las Cruces chapter, spend Fall 2021 documenting the many butterflies and moths that benefit from our native turpentine bush (*Ericameria laricifolia*). Read the story on page 10.
Above: Checkered White (*Pontia protodice* (Boisduval & Le Conte, 1830)); Soledad Canyon; 24 Sep 2021. Image: James Von Loh.
Below: Reakirt's Blue (*Echinargus isola* (Reakirt, 1867)); Soledad Canyon; 20 Oct 2021. Image: Gordon Berman.