



NEVADA NATIVE PLANT SOCIETY

John P. Weiser Knows His Roots

by Lily Rice

When I moved to Reno, one of the first things I noticed when meeting new people was the ubiquity of Midwestern expats. Being one myself, I found it amusing how many people would comment in solidarity on my Ohio license plate, as though I represented a taste of home. Yet, in every conversation I had with these expats they would extol their newfound community and lament the idea of ever leaving. Either there's something about the Midwest that drives people out and towards Nevada, or there's some Nevadan "je ne sais quoi" so intoxicating that it makes converts of us all. In honor of our 50th anniversary, we are highlighting another NNPS member, John P. Weiser, who, like me, is a Nevada convert.

Originally hailing from Bismarck, North Dakota, John moved to Reno, Nevada for a job in 2002 and never left. Like any good Midwesterner, John did not originally have high hopes living in a landscape so different from the lush prairies of North Dakota. In fact, John commented that his first impression was bad, specifically, "dry and ugly." This first impression proved ephemeral, as John parked himself in Sparks and has yet to pull himself away from the glory of the Great Basin. When I asked John if there's anything he misses from his Midwestern home, he answered, "oh, the thunderstorms." I have to agree. While the storms that occasionally rip off of the Sierra

Nevada are impressive, there is nothing like Earth-rattling Midwestern storms, especially in big sky country like North Dakota.

Since settling in Sparks, John has adapted quite well to life inside the rain shadow of the Sierra Nevada. In 2004, John became a member of the Nevada Native Plant Society, seeking a community of plant-minded folk. John's floral admiration started in his youth, when his mother would walk through the native prairie surrounding his great plains home and name the species found there. This reminiscence about his botanical origin story reminded me of Mary Winter's quote, "To call a thing by name... is to be on home ground." John picked up his mother's habit of naming the local flora and took it above and beyond. His Sparks' home is a botanical repository of over 500 species/varieties. In his garden, John has over 40 species each of



John Weiser smiling for the camera

Penstemon & *Eriogonum*, his speciality, and he told me a few of his favorites. For *Eriogonum*, John loves *E. umbellatum* var. *modocense* for its deep burgundy color in drab wintertime, and *E. umbellatum* var. *polyanthum* for its panoply of characteristic yellow umbels. John's favorite *Penstemon* in his garden is another call back to his origin, *P. grandiflorus*, a lovely, large-pink-flowered, glabrous-stemmed *Penstemon* native east of the Rockies, including North Dakota, where his mother would grow them.

To keep plants from outside of the Central Basin & Range alive and thriving, like *P. grandiflorus*, the garden is equipped with irrigation that runs twice a day. The irrigation allows for distinct sections of water-loving and more xeric sections in his garden, and also allows for a broader range of plants. For example, John keeps alive two species of mesic, terrestrial orchids native to acidic peatlands and hardwood forests of the Midwest and Southeast, *Cypripedium*

parviflorum & *Cypripedium kentuckiense*. If it isn't clear by now, John's garden is his pride and joy, in fact, when I asked him what he's most proud of during his time in NNPS, it came as no surprise that the answer was his garden. Every year, John tries to show off his garden to interested folks and even gives away seeds. Furthermore, John supplies native plants to NNPS plant sales, and you may have some of his plants growing in your garden today.

Unfortunately, despite a rise in interest of native plant gardens, finding growers who grow lineages of wild type or cultivated native plants is still difficult, which John lamented. To solve a lack of supply, John keeps paper bags on him to collect wild seeds when traveling. Since he grows species from all over I wondered what species he's attempted to grow have been recalcitrant. Without much delay, his response, "*Ceanothus prostratus*," a beautiful member of Rhamnaceae. No



John's backyard garden ©John Weiser

matter the technique nor substrate, his biggest challenger will not establish. If John can grow Eastern *Cypripedium* in Nevada, I believe he can crack this case!

After discussing my shock of seeing so much Midwestern urban plantings in Nevadan suburbs, and Ohio's successful attempt at banning the invasive, ornamental Bradford Pear, I wanted to know what plants John wished would be banned for sale in Nevada. With a laugh, John answered, "Silver maples, Sycamores, and pretty much any other Eastern tree," which often require intensive care. He would rather see more Catalpa, Cercis, and Chilopsis, although Catalpa is still an Eastern species. I empathized and expressed my disdain with the prominent plantings of Colorado Blue Spruce in Ohio, which all eventually succumb to needle-cast fungus thanks to living in a temperate, wet climate instead of Western high mountains. For my final question pertaining to native plant gardening I wanted to know what arguments he found effective in convincing more traditional, contemporary gardens into switching. His answer reflects what many discover when they first dip their toes in: ease. John revels in the "set it and forget it," nature of native plants, where you don't have to worry about intensive water regimes or extensive insect damage.

I wanted to know more about John's perspective as a relatively newer NNPS member than others I have interviewed, so I switched gears in our conversation. As a member, John has filled many hats. While currently the Horticulture Committee Chairperson, John served as the Field Trip Coordinator from 2016 until 2023 when he stepped down; an astute change of pace given his living museum he calls home. John still enjoys attending the NNPS field trips and recounted the most recent trip to Grass Lake, CA- a floating sphagnum bog, and the largest sphagnum bog in California- as part of his answer to his most cherished memory as a member. The other half was a recollection of time spent with Gary Monroe, a fellow member of NNPS who passed away in 2023. Gary Monroe was a photographer of Western flora and worked professionally with California botanists; he also was John's field trip buddy and inspired John throughout his tenure. This font of inspiration is evidenced by John's Flickr page (username Sierrarainshadow), where he has catalogued 22,264 photos throughout his travels, almost entirely of Western flora.

For the final part of our conversation I asked John to look at the present and future. First, I asked John if he has noticed a change in the Nevada landscape over the 23 years he's lived here. His response mirrors



Belly botany in the snow

the climatic shifting many of us have noticed: Nevada has gotten drier with more frequent periods of drought, and the overall temperature is warmer, especially the winters. As climatic patterns continue to shift, native gardens like John's will serve as a testing ground for the species who can adapt to an even drier Nevada. In addition, John's & Charlie Duncan's collaboration with Master Gardeners from the University of Nevada, Reno provides valuable information for the future of plant conservation at large. Outside of John's personal work I asked him what legacy he hopes NNPS leaves for future generations and what about NNPS has allowed for its long-term success. His answers for both involve a rosy perspective on youth. "I hope a love of native species trickles down into the school system," and he hopes we see more teenagers and people in their young twenties becoming passionate about native plants. He believes that attracting young and passionate botanists is the key to NNPS' long-term success- an argument I cannot falsify, being a young and passionate convert myself -and that professional botanists are the backbone of our movement.

Becoming an impassioned botanist is

something many of us suddenly find ourselves drawn to. Not many people know they want to be a botanist at a young age. Instead, for many of us the story is similar to John's: someone along the way nurtured an interest and then curiosity followed, subsumed by a healthy obsession. There are an infinitude of pathways into botany, and an equal number of ways our skill sets can be utilized for good. While the backbone of botanical societies like NNPS are professionals, the legs which carry us forward are the determined and curious amateurs like John P. Weiser. I like to leave you in each of these interviews with a quote from the interviewee that I think encapsulates them as a person. For John, his final quote hits home for me as I write these final sentences. Part of being a nonprofessional botanist means having a lot of uncertainty and figuring things out as you go. For the first time in conducting interviews, I forgot to hit record before starting the conversation, which meant I had to rely on my scratchy shorthand for all of John's wonderful answers to my questions. As John said, "If you can't impress them with your knowledge, dazzle them with your B.S." I hope our conversation leaves you dazzled.

Submission window open for 2026 calendar

Calling all photographers! It's time to submit your best shots for the 2026 NNPS calendar. From August 1-21, you can share up to 4 photos taken in Nevada or on any NNPS field trips. Send your submissions to the NNPS Facebook page, Messenger, or email directly to info@nvnps.org. Remember to include the county location and plant name. No borders, watermarks, or trademarks allowed. Original photos must be 3300x2500 pixels and do not submit any photos entered in previous years.. Credits to the photographer will be included in the calendar. Reach out for more details info@nvnps.org



September 2025's *Potentilla holmgrenii* ©Gretchen Baker

Finding the new species, *Pyrrocoma anemophila*

by Michael Hagebusch

On June 2nd, I received an early 80th birthday present. *Pyrrocoma anemophila* A.Tiehm & Guy Nesom was formally published as a new species in Phytoneuron 2025. I found it! Yet, in all my formal education, I have never taken a botany class.

In October 2023, I visited a vernal playa in northern California named Windy Hollow, because the air seldom ceases blowing there. This unique area is just over one mile long and half as wide and is situated about 20 miles east of Mount Lassen in the Cascades. The playa bottom and shores are composed of silty volcanic ash and gravel, with pyroclastic rocks and boulders. Windy Hollow's protected natural area contains vernal drainage meadows, cliffs and remnants of the surrounding pine and fir upper montane-subalpine forests - all arranged in numerous microhabitats.

During this visit I came across a plant strange to me, growing over much of the dry bottom. I wasn't able to identify it with my floras or any internet tools. I quickly learned that it had been collected there in 1998, identified as *Pyrrocoma racemosa* var. *paniculata*. However, I knew that species from southern Nevada at Gap Springs, and my find was a completely different *Pyrrocoma*. So I showed

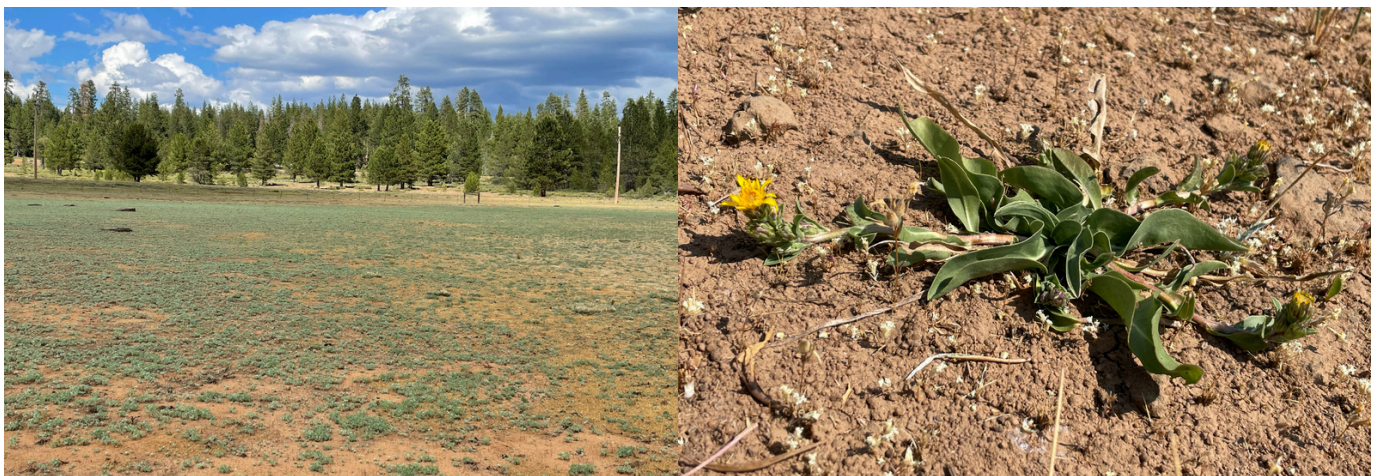
my collection to Jerry Tiehm who also couldn't give it a name. The next year when it was in flower, we made a type collection and gave it the epithet "*anemophila*" (wind-loving) after the site. We had a new species!

Can you find a new species as I did? Of course you could! After all, many plants are given new names every year. You can find a new one if you have two basic traits: curiosity and attention to notice differences.

Here are some of my steps as I learned to use these gifts.

My interest in flowers began in northern Wisconsin where I grew up. I loved the freedom to explore its forests and lakes and swamps. In the 1950's my father purchased 40 acres with frontage on a small lake surrounded by sphagnum bogs which drained into a huge swamp. I spent hours roaming the area and encountering the various flowering plants. But I couldn't find names for them, at least not as a junior-high student.

Fortunately, during my graduate studies at the Johns Hopkins University in Baltimore in the 1970's, I found a friend with the same curiosity. We bought copies of Peterson's "Field Guide to the Flowers of Northeastern North America." By looking at the illustrations we added flower after flower to our list of



Pyrrocoma anemophila blanketing the volcanic sand/gravel playa bottom (left) and close-up (right). Notice the visible pyroclastic rocks from the Cascade/Lassen area (about 20 miles away). ©Michael Hagebusch

finds. After being frustrated by finding flowers not in the book, we discovered Britton and Brown's three-volume illustrated guide. With each picture, our new manual also provided proper botanical descriptions for each plant. In a few years we had identified almost 1,000 plants. I was on my way to a lifelong hobby.

As a pastor and chaplain doing "death-and-dying" ministry, looking for more new plants was a relaxing outlet. I traveled from the swamps and mountains in South Carolina north to the coasts of New England and many places in between. On my way home for family visits, new species throughout the mid-South and Midwest slowed my travels. Prairies in Minnesota and the Great Plains opened up new vistas, as did trips to Texas and California driving through the Sierra Nevada and Rocky Mountains. So many new finds that I used old telephone books to press them to take them home for identification.

In the 1980's, I became a lifetime member of The Nature Conservancy and learned more about rare plants and animals. On Maryland's Eastern Shore, I served as the volunteer steward at four preserves and as a docent for people who traveled hundreds of miles to see these unique natural settings. Remember, in that decade, computers replaced typewriters and gave us the Internet. One fascinating site for me contained Dr. James Reveal's field notes, as he was collecting *Eriogonum* species

to revise the Eriogonoideae subfamily. Using TNC's preserve locations and Reveal's travel diary, I began a state-by-state, county-by-county listing of places I might visit "some day."

When I retired in 2015 due to my arthritis, I wanted to find a home with dryness and low humidity. I moved to Sparks at the urging of friends who lived here. That gave me the opportunity to explore my notes to see more rare plants. One of Reveal's collections was *Eriogonum ovalifolium* var. *depressum* at Windy Hollow in Lassen County. I went there in June 2018 and found plants growing by the thousands at this intriguing vernal playa. Great! I added it and several others and drove up Highway 44 where I collected several other rare plants

In July 2023, I returned to Windy Hollow and had two surprises. First, I noticed that the *Eriogonum* was growing in the water. "Huh?" I thought, "Wild buckwheats don't grow in water!" Back home, I checked online and found that Reveal had annotated a Windy Hollow collection of *Eriogonum ovalifolium* as "var. *purpureum*." I then contacted Travis Columbus (who is currently revising Reveal's revision of the subfamily) about this anomaly and ended up collecting plants and DNA material for his study.

Secondly, looking in the water, I noticed a strange crustacean swimming near the shore



Windy Hollow under snow (left) and again on Easter Sunday (right). ©Michael Hagebusch

and took a video on my phone. The thumbnail-sized body was encased in a carapace and propelled by a long tail. “Who are you? You’re not the similar rare fairy shrimp from the Central Valley’s vernal pools. So what’s your name?” At the January 2024 Northern California Botanists’ meeting in Chico, I discovered the animal’s identity. Before the main banquet, I met some botanists who studied vernal pools, including John Vollmar who was the closing speaker. He told me, “That’s a tadpole shrimp.”

Vollmar’s evening speech was eye-opening for me. He detailed the decades-long struggle to preserve the vernal pool areas as biological hot-spots. He concluded by saying that another needed step of his project was to examine the lesser-studied vernal pools in the northern California Modoc Plateau, where

Windy Hollow is located.

Back home, I contacted Allison Sanger, the Lassen National Forest Botanist, to get a permit to collect plants for a flora of Windy Hollow. Since then, I’ve discovered almost 150 plants adapted to this always amazing site.

These are the steps that led me to find one new species.

But this doesn’t finish my story. Travis Columbus has just let me know that the Windy Hollow *Eriogonum ovalifolium* DNA profile is in a clade far removed from other collections of the species. So far removed that, when his study is over, it will also become a new species.

I’m not a formal botanist. I’m just curious and I pay attention to differences. Two new species! Are there more waiting for me to find?

Could you do the same? As we say in Wisconsin, “You betcha!”



Windy Hollow *Eriogonum*. ©Michael Hagebusch

Not just for the royal Monarchs and Queens: rush milkweed supports an entire food web

by Larry Lodwick

Look up milkweeds and you are likely to find articles on monarch butterflies. Monarchs (*Danaus plexippus*) and queen butterflies (*D. gilippus*) are closely related species that utilize milkweeds as a larval food plant, necessary for the survival of those species. Various federal, state, and private organizations have programs to propagate and distribute milkweeds for the benefit of these butterflies. Google “milkweed and butterflies” and you will find hundreds of references related to their interdependence. But what about other insects using milkweeds? They get little or no recognition.

What can one species of milkweed do for other insects? To answer this, I started a photographic study of the insects on rush milkweed (*Asclepias subulata*) starting ten years ago and I continue to document the use of these plants. Not being an entomologist, but relying on others for many of the identifications (namely, bugguide.net), I set out to see which insects were using these plants. My rush milkweed study population (about 25 plants) is along State Highway 165 in the Lake Mead National Recreation Area, southeast of the town of Nelson. Utilizing a high-resolution camera and 200mm macro lens, I stay back several feet from the plants to create minimal disturbances to the insects on the plants.

The habitat for rush milkweed found in southern Nevada, Arizona, California, and Mexico are somewhat diverse. Many are found in dry washes in arid climates. Others are found on dry hillsides that only get water for brief periods during storms. The plants generally look like they are just a grayish green, multi-stemmed plant, but in

the spring, small linear leaves develop, only to be shed for water conservation during the dry summers. Flowers then develop in mid-spring and may continue into the early summer. The flowers develop as an ivory-white color, but age into a yellow or pale pink hue.



Asclepias subulata flowers, note the pollinia are the dark areas between the petals, (left), small linear leaves (right)
©Larry Lodwick

My initial thought was there were two primary uses of these plants, as pollen and nectar gathering and larval food sources. However, insects are not that predictable. First, the flower structure of rush milkweed makes access to the pollinia, the waxy sacs which contain the pollen and are picked up by insects and transferred as a unit to other flowers, difficult. The five petals are arranged in a tight upright cluster, surrounding the pollinia, making access to these pollen sacs available only to insects who can fit between the rigid petals. Access to the nectar is only possible by standing on top of the flower and using mouth parts to get to the nectaries from the top-center, but not getting near the pollinia. Unlike most

milkweed species, the majority of insects visiting these flowers are nectar robbers, rather than pollinators. Virtually all the butterflies, wasps, and bees visiting the rush milkweed flowers I observed are nectar robbers.

As a larval food plant, this is true for the monarch and queen butterflies, although only queen butterflies were seen on these particular plants. The larva were observed eating the tissue on the surface of the seed pods, from the time just after hatch until they were full-grown caterpillars. As leaves were not available when the caterpillars hatched, this was not a food source, and the stems are much harder to chew on than the outer layer of the seed pods. With a low number of caterpillars, versus a large number of seed pods, the development of seeds was highly successful.



Queen butterfly caterpillar on rush milkweed seed pod. ©Larry Lodwick

The nectar robbers (i.e., insects that don't benefit the plant and only feed on the nectar) are the most obvious because they stand on the top of the flowers. The most common and abundant are the Pepsis wasps (*Pepsis* spp.). One key to the species of the genus *Pepsis* listed eight species native to Nevada, all with the same iridescent blue abdomen and orange wings. Wasps concentrate on getting the nectar, with little regard to outside disturbances. When approached for a photograph, they may fly off, circle around once and return immediately to the same inflorescence. Two species of spider

wasps feed in the same position on the flower as the Pepsis wasps. Green sweet bees (*Agapostemon* sp.) a small, bright green bee, about one centimeter long, also sits on the petals to access nectar. Other bees, including a few honey bees and wasps have also been observed, again nearly all nectar robbers.



Pepsis wasp (upper left), *Prionyx* sp. (upper right), species of spider wasp (bottom left), Green sweat bee *Agapostemon* sp. (bottom center), Oil digger bee *Centris rhodopus* (bottom right) ©Larry Lodwick

One note: Rush milkweeds are sometimes used in formal landscaping around buildings and residences. One office park in Henderson has approximately twenty plants in their landscape, and only honey bees have been observed on these plants.

Other nectar robbers include the butterflies: Gray hairstreak (*Strymon melinus*) and Reakirt's blue (*Echinargus isola*). Butterflies have long, tubular mouth parts which makes feeding on nectar easy. [One interesting note: A queen butterfly was photographed on a rush milkweed prior to the buds opening, but with oleander aphids on the stem. The proboscis of this butterfly was extended toward the aphids and was there for some time. Was the butterfly feeding on the honeydew that the aphids produce and is usually harvested by ants?]

A corn earworm moth (*Helicoverpa zea*) was later observed robbing nectar during the day, and a few moth species were

observed at night, but not photographed.



Queen butterfly *Danaus gilippus* (upper left), Reakirt's blue *Echinargus isola* (upper right), gray hairstreak *Strymon melinus* (bottom left), Corn earworm moth *Helicoverpa zea* (bottom right) ©Larry Lodwick

Only a few insects made it to the pollinia to be considered pollinators. A small species of sweat bee (*Lasioglossum* sp.) was seen trying to get between the petals. The most persistent pollinator was a bee fly (*Lordotus* sp.). I don't usually interact with insects, but its head was between the petals, and I couldn't get a photo of this fly, so I poked it, and it just burrowed deeper into the flower. After about six or seven pokes, it finally looked up, I got the photo. Then it made its way back into the flower.



Bee fly *Lordotus* sp. (left) and Thrips (order Thysanoptera) on seed pod. ©Larry Lodwick

Many of the hemipterans (true bugs) found have piercing mouth parts, which are used to feed on the plants sap. These insects were the most diverse group observed on

this population. The most colorful of the hemipterans was Say's stinkbug (*Chlorochroa sayi*) with an emerald green coloration and a pink-orange colored rim on the wing covers. The oleander aphids (*Aphis nerii*) with their bright yellow coloring and black spings are common on various milkweed species and have been found on these milkweeds by the hundreds. Three different species referred to as 'milkweed bugs,' were found on the rush milkweeds. These are orange and black insects with distinctly different patterns, all about the same size and shape, but classified as three different genera; *Lygaeus kalmia*, *Melanopleurus belfragei*, and *Oncopeltus fasciatus*. Another sap feeding hemipteran is the western leaf-footed bug (*Leptoglossus clypealis*), which is easily identified by the zig-zag white pattern across the back of the abdomen. Other hemipterans feeding on the sap remain unidentified. The smallest insects observed which feeds on sap are thrips (order Thysanoptera) which were found on the milkweed seed pods. These are extremely small insects, but an infestation of thrips can cause significant damage.



Say's stinkbug *Chlorochroa sayi* (upper left), Oleander aphids *Aphis nerii* (upper center), western leaf-footed bug *Leptoglossus clypealis* (upper right), Milkweed bugs *Lygaeus kalmia* (bottom left), *Melanopleurus belfragei* (bottom center), and *Oncopeltus fasciatus* (bottom right) ©Larry Lodwick

Insects eating the tissue of rush milkweeds were primarily feeding on the seed pods, where the Queen caterpillars and spur-throat Grasshoppers (*Melanoplus* sp.) feasted during the day. These grasshoppers were observed at night clinging to the stems of milkweed, but not feeding. One species of ant appeared to be feeding on tissues associated with the inflorescence.



Spur-throat Grasshoppers *Melanoplus* sp.(left), unidentified ant on inflorescence (right) ©Larry Lodwick

Finally, what would a food web be without predators? It's well known that monarch and queen butterfly caterpillars feed on milkweeds which makes them unpalatable to bird predators. However, insects that prey on other insects are abundant. Three in particular have been found on the rush milkweeds. The yellow-bellied assassin bugs (*Apiomerus flaviventris*) were photographed with an ornate checkered beetle (*Trichodes ornatus*) and a green sweat bee impaled on their proboscis. These assassin bugs are ambush predators, sitting and waiting for a prey species to come close enough to stab. Then they use the proboscis to drain the body fluids from their victims.



Yellow-bellied assassin bug *Apiomerus flaviventris* with sweat bee (left) and with ornate checkered beetle (right)

Two species of robber flies were observed sitting on the milkweed stems, and these predators are active hunters. One species, an ornately-decorated, orange-colored robber fly (*Saropogon mohawki*) was photographed with a sweat bee, captured as it came to the milkweed flowers. This robber fly showed off its prey for the photograph!



Orange-colored robber fly *Saropogon mohawki* with sweat bee. ©Larry Lodwick

The third predator is more diverse in its dining habits. The ornate checked beetle (*Trichoda ornatus*) comes in two color variations: red and black, and yellow and black. Both color variations have been photographed on a single inflorescence (still in the bud stage). The adults are primarily pollen consumers, but will catch species of leafcutter, mason, and resin bees for consumption. The adults lay eggs in the center of flowers, and when they hatch, they attach themselves to the legs of solitary bees, travel back to the bee's nest, and become parasites on the bee's larvae. The parasites may consume several bee larvae before metamorphosing into adult beetles. And all of this takes place on a population of only twenty-five plants!



Ornate checked beetle *Trichoda ornatus* two color varieties (left) and ready for flight (right)

Featured plant: *Salvia funerea*, a visual intoxicant sage

by Lily Rice

If you were alive during the early aughts, you may recall an uproar around a drug of growing popularity, *Salvia divinorum*, or more commonly known as just “Salvia.” The drug received widespread attempts of legislative control with moderate success based upon the fear of harm from Salvia’s intoxicating effects. This month’s featured plant is a cousin to the aforementioned drug, *Salvia funerea*, although the ability to intoxicate you through the vector of this newsletter is strictly limited to its stunning appearance.

Salvia funerea is a Mojave Desert shrub almost completely endemic to Death Valley, CA, with a few populations surrounding Ash Meadows in Nye county, NV, and another population just south of the Mojave National Preserve in California. *Salvia funerea* exhibits edaphic endemism, and is only found within the Mojave on dry limestone washes and cliffs. *S. funerea* was first identified by Marcus E. Jones during his expedition to Death Valley roughly 100 years before curious American teenagers would cause a recreational craze around its cousin. Since the early 1900s, this enigmatic mint has earned several names, such as Woolly Sage, Death Valley Sage, and Funeral Mountain Sage. Both the specific epithet and common name are referring to where the type specimen was found by M.E. Jones in the Funeral Mountains.

Unlike its cousin, Death Valley Sage is not known for its psychotropic metabolites, but instead its adaptation to limestone soils, and its entrancing morphology. *Salvia funerea* shrubs can reach 4 feet tall and are heavily



Salvia funerea ©Lily Rice

branched. Each branch is loaded with dense clusters of leaves near the apex; depending on the individual the shrub can look more sparse, like the photo above, or a thicket of glaucous spires. The ovate leaves are short and oppositely arranged on the stem, with 1-5 spines. Both the leaves and inflorescences are thickened and covered in a dense indumentum (bristly hairs) - an obvious adaptation to the Death Valley heat - which gives the plant a frosted woolly appearance. Up to three dark-blue to violet flowers emerge from the short internodes, their corollas receding into large, rounded calyces that help distinguish this sage from others.

The genus of *Salvia* is one of



Salvia funerea ©Lily Rice

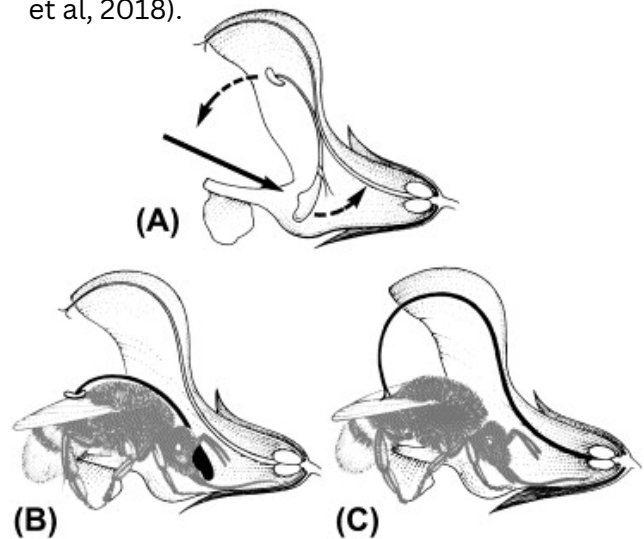


Salvia funerea ©Lily Rice

the largest within the family Lamiaceae, and contains almost 1,000 species (Drew et al, 2017). *Salvias* are recognized from a variety of traits, but quite possibly the most well studied trait is their staminal lever. Staminal levers are sterile modifications of the anther connective that act as levers when animal pollinators press against them, lowering the anthers onto the pollinator on specific regions of their body, and have evolved several times in *Salvia* (Drew et al, 2017). The levers are generally easy to depress (Claßen-Bockhoff et al, 2004), allowing for a variety of species to carry pollen on their bodies. Specific placement of pollen on the pollinator increases the rate of outcrossing and sympatric speciation through mechanical isolation; if one *Salvia* species places pollen on the dorsal head region of a bee and another *Salvia* species places pollen on the back dorsal abdomen, then the pollen of one species is prevented from reaching the stigma of the other. In *S. funerea*, the staminal lever found across most of the genus is absent.

While bees are the major group of pollinators within *Salvia*, like in *S. funerea*, the genus is also significantly pollinated by hummingbirds which select for different traits within flower anatomy. In *Salvia*, bird flowers tend to be less strongly bilabiate, more tubular, red in hue, and with less elaborate lever structures (Kriebel et al,

2019). Because the *Salvia* pollination system isn't highly selective, bee and bird pollinators will sometimes visit the same species and their selection pressures shape the suite of reproductive anatomy. The delicate evolutionary dance sometimes causes populations to shift away from one pollinator to another. In *Salvia*, species more often shift from bird to bee pollination, except in the Neotropics (Kriebel et al, 2018).



Example of staminal lever mechanism ©Claßen-Bockhoff et al, 2004

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Pollinators of *Mentzelia leucophylla*, the Ash Meadows Blazingstar

By: Larry Lodwick

Mentzelia leucophylla is the least abundant of the threatened species endemic to Ash Meadows National Wildlife Refuge which has several small population centers scattered around the refuge. The plants survive in open, full sun conditions with little competition from adjacent species. The plants flower from the beginning of May until mid-August, when most other desert plants are dormant. As a potential adaptation to these harsh conditions, this species of blazingstar fully opens the flowers only in the late afternoon. During hot, sunny days, the flowers fully open at approximately 6:15pm, while on cloudy, slightly less hot days they may open as early as 5pm. However, the flowers do not stay open past the last light of the day, closing just before total darkness. This limits the availability of access to pollinators.

Over several evenings in the past three years, ranging from when the flowers first open in May, to the one of the last days of the flowering season in August, I have been photographing the pollinators which have visited one accessible population for these plants, and have documented four species of bees, visiting the flowers. Interestingly, after the flowers open for the evening, it takes thirty to a full hour before any bees find the flowers. It is not until well after 7pm before any insects find the flowers.

Seasonally, the two earliest visitors to the

flowers are a species of leafcutter/resin bee of the genus *Megachile* and the iridescent green sweat bee *Agapostemon melliventris*. These bees were observed in May and June, but not at any later times when I visited.

The most common of the pollinators, and the most frequent is a small metallic sweat bee, of the genus *Lasioglossum*. This species was present on several occasions throughout the mid to late flowering season. This metallic sweat bee is only three to five millimeters in length, but was active as one of the first bees to find and visit the flowers after opening, and was present from mid-June through August.



©Larry Lodwick

The fourth species to visit the flowers were honeybees *Apis mellifera*. The only interesting aspect of their visits is that while arriving early, they were also the bee that stayed latest in the evening, pollinating the flowers until near total darkness as the flower were closing for the night.

A special thank you to John S. Archer, who identified the bee species, via Bugguide.net.



Leafcutter bee *Megachile* spp. (left) and the green sweat bee *Agapostemon melliventris* (right). ©Larry Lodwick

Conservation news:

Public lands not for sale

by Rose Strickland

June began with a lot of excitement this year when a proposal was leaked to the press led by Senator Mike Lee (R-UT), Chair of the Senate's Energy and Natural Resources Committee, to sell off more than 258 million acres of public lands managed by the Bureau of Land Management (BLM) and national forest lands in the 11 western states as a part of the Administration's omnibus spending and tax bill. An initial analysis showed that over 33 million acres would be up for sale in Nevada.

The massive acreage of public lands for sale immediately elicited widespread public outcry and opposition in the targeted western states, especially when it was learned that both public lands and national forest lands would be privatized without any requirement or opportunity for a public process for input or engagement before sales.

Many conservation organizations sent out alerts to their members to call their senators and congressional representatives to oppose the public lands sell-off. NNPS was in the process of developing such an alert for our members when the adamant public opposition was joined by many western states' governors as well as senators who declared that they would vote to oppose the entire budget and tax bill with sell-off provisions.

These political blockades along with a "recommendation" from the Senate Parliamentarian (who ruled against the proposal as a policy change extraneous to the federal budget) resulted in significant changes to the bill's language. National forest lands were dropped and BLM-managed public lands for sale were reduced to only lands within five miles of "population centers" (not defined) for "attainable" (not defined) housing, according to ongoing media reports. Despite the reductions of public lands which would be put up for sale "to any interested party," the public opposition

remained adamant. Thousands of public comments continued to decry these sales proposed to occur without any public process, but also other critical problems of proposed sale locations: lands in areas with scarce water, lands with high risk of wildfire; lands without much, if any, infrastructure to support affordable or attainable housing; and also lands in regions which may have high environmental, cultural, recreational, and economic values.

On June 29, these controversial provisions authorizing public lands privatization were dropped from the budget and tax bill, much to the relief of public lands advocates in the West and in the US. Later, Senator Lee explained his actions on social media, including a reference to those who might be buying up our public lands: "Because of the strict constraints of the budget reconciliation process, I was unable to secure clear, enforceable safeguards to guarantee that these lands would be sold only to American families — not to China, not to BlackRock and not to any foreign interests," he wrote in the post. Senator Lee's new language not only did not address the many problems raised in public opposition to proposed public land sales, but now points out additional problems, also without any solutions.

This crisis may be over, at least as part of the this year's budget and tax bill, but the struggle over privatizing public lands versus keeping public land public is not over. Mike Lee has stated that, "Most western federal land is not national parks but barren scrublands and desert that that [sic] has low present value," as if the sagebrush & creosote communities that make up most of Nevada are barren wastelands derelict of benefits to humans, plants, and other animals alike.

Nevada is home to over 2,800 plant species which support a panoply of ecologies unique to

the Basin & Range province. We recognize that the #1 cause of species extinction is the loss of habitat, much of which comes from human land development; habitat loss does not occur all at once, but instead through a steady process of erasure and fragmentation. Also, much of the proposed land surrounds protected areas with endangered and rare species, such as Ash Meadows, Mt. Rose, Mt. Peavine, Lamoille Canyon, Bodie Hills and many more. As a society, we know that an appreciation of native plants necessarily

requires stewardship of the land, and once habitat is gone, the communities there may never return.

If you appreciate the public lands for their biodiversity as well as their social, cultural, recreational, and economic values, we urge you to contact the Nevada senators and your Congressional representative to let them know that you support retaining and protecting public lands from privatization attempts and urge them to use all of their political power and influence to keep public lands public.

Protecting pollinators by law and in native gardens

by Rose Strickland

Neonicotinoids are among the deadliest insecticides ever created, including Acetamiprid, Clothianidin, Dinotefuran, Imidacloprid, Nithiazine, Thiocloprid and Thiamethoxam. Used in agriculture and pest control, they kill not only pests, but also native butterflies, bees, and other pollinators. Alongside habitat loss and climate change, these pesticides are causing massive declines in pollinators in the US and worldwide.

Pollinator loss threatens food production and may contribute to the steep declines in insectivorous bird populations over the last 50 years (stateofthebirds.org/2025/).

While bee and butterfly losses have been well-documented, there is less scientific consensus on the causes of broader declines in insect populations in the US due to relatively limited research. Pesticides also spread through irrigation and rainfall, contaminating ecosystems and moving up the food chain to humans. For more information neonicotinoid risks, see: nrdc.org/stories/neonicotinoids-101-effects-humans-and-bees

Agriculture continues to apply these insecticides, typically as treated seeds for planting hundreds of million acres every year in the US to protect soybeans and corn from



Bombus sp. on paintbrush (*Castilleja* sp) at Sheldon National Wildlife Refuge (left) and small bee and beetle on a desert marigold at Pahrangat National Wildlife Refuge (right). ©Dennis Ghiglieri

difficult to treat soil pests. The Environmental Protection Agency is studying their impacts and proposing new regulations. While federal programs exist to support pollinator research, education, and habitat restoration; it's unclear how recent funding and budget changes have impacted these efforts.

Since 2020, several states have taken action to address pollinator population declines by restricting residential uses of neonicotinoids, including California, Colorado, Maine, Maryland, Minnesota, New Jersey, New York, Rhode Island, Vermont, and Connecticut. On June 9, 2023, Nevada joined these states when Governor Lombardo signed AB162 banning non-agricultural uses of neonicotinoid pesticides to protect pollinators. The bill passed unanimously in the Assembly and had only three votes against it in the Senate. The Toiyabe Chapter of the Sierra Club noted, "The good news is that there are many safe alternatives to using neonicotinoid pesticides. If we switch to these safer methods, we could save the pollinators, other animals, and improve human health."

On June 10, 2025, the Connecticut Governor, signed legislation which bans the use of neonicotinoids on 300,000 acres of lawns, golf courses, and turf fields, starting in 2027.

While states work to reverse insect population declines, NNPS members can help by joining citizen-driven efforts to promote pollinator conservation through using native plants in our gardens. Several organizations have published lists of Nevada native plants to create pollinator-friendly gardens in both northern and southern Nevada.

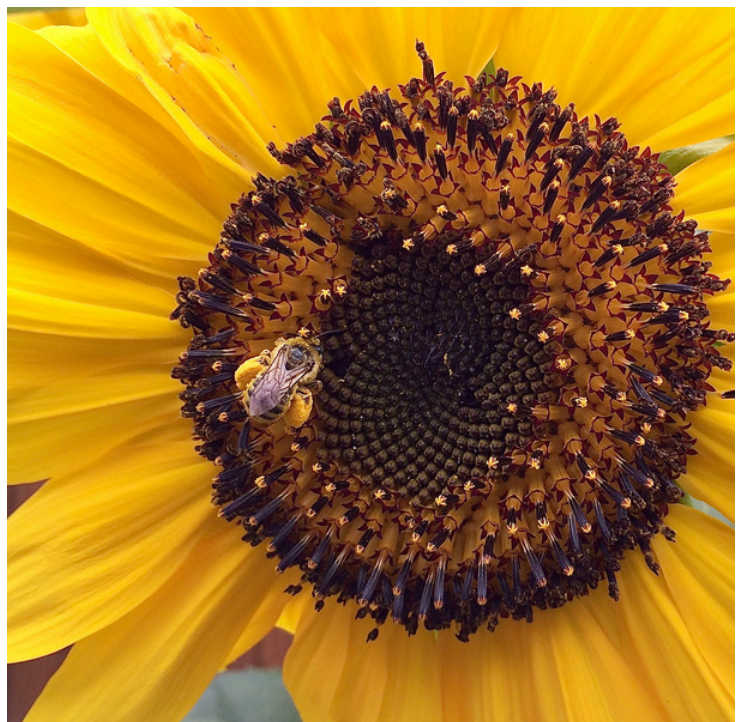
Carson City and Bee City USA have published a list which includes both common and scientific names and families of plants, blooming seasons and colors, annual or perennial, native to NV or not, where to buy the plants, precipitation and hardiness zones, and handy notes on the plants: carson.org/government/departments-g-z/parks-recreation-open-space/about-us/bee-city-usa#ad-image-1

The Xerces Society for Invertebrate Conservation also has two lists of Native Plants for Pollinators & Beneficial Insects. The one for the Great Basin can be found here: xerces.org/sites/default/files/publications/22-020_01_NPPBI-GreatBasin_web.pdf

The second for Southern Nevada and the California Deserts is here: xerces.org/publications/plant-lists/recommended-plants-california-deserts-southern-nevada

Both lists provide scientific and common names, blooming seasons, annual, biennial or perennial, dry, moist or wet soils, forb, cactus, grass, sedge, shrub, tree, or vine, full, partial sun or full shade, and additional information, such as larval host (butterfly, moth), supports specialist bee, attracts beneficial insects, bumble bee plant, nest site, nest materials, nest thatch, and deer resistance.

Many native plant species in Nevada and elsewhere are dependent on pollinators for their continued existence. To lose pollinators is to lose not only native plant species but many landscape plants and for some of the food crops on which we depend. Protecting pollinators is not just a good idea, it's a necessity for a healthy planet.



Small bee in the genus *Melissodes* on a common sunflower in Washoe County ©Dennis Ghiglieri

Field trip report: Nevada National Security Site

by Jeanette Hannon

On June 14th, 2025, a group of NNPS members from the Las Vegas area met at the Nevada National Security Site (NNSS; formerly Nevada Test Site) to visit some sensitive plant populations which are Nye County endemics. The NNSS is located about 60 miles northwest of Las Vegas and is managed by the Department of Energy. The land encompasses 1,375 square miles of Mojave and Great Basin Desert. Approximately 10% of the land is being used for DOE mission-related activities, leaving most of the land open, untouched wilderness. The land is closed to the public, so this was a rare opportunity for these 12 NNPS participants to access the plant populations and learn about how DOE manages the land in terms of conservation.

There are 19 vascular and one nonvascular sensitive plant species on the NNSS. These plants are on the Nevada Division of Natural Heritage and NNPS track lists but are not protected under federal or state law. The DOE recognizes the need for protection of these plants and works to protect their habitat from human threats. The NNSS has a sensitive plant monitoring program in which populations are visited and monitored for threats. Land-disturbing activities are also monitored and reviewed prior to activities to ensure known populations are not impacted.

The first stop of the field trip was in Mercury at the NNSS's herbarium, which houses about 8,000 specimens. The NNSS is working on photographing each specimen (a slow and tedious task!) to include in the Intermountain Region Herbarium Network that is online and open to the public. The second stop was close to the Radioactive Waste Management Facility where NNSS biologists are working to revegetate closed landfills in the Mojave Desert with native vegetation.

The field trip's final destination was Pahute Mesa, a little higher elevation in the Great Basin ecotone. The group was able to visit four known populations and see three sensitive plants (*Astragalus beatleyae*, *Hulsea vestita* ssp. *inyoensis*, and *Penstemon pahutensis*) in bloom and one that had already seeded (*Frasera pahutensis*). Opportunistically, the group found a small population of *Penstemon palmeri* var. *macranthus* on a road cut on the mesa. NNSS biologists are working on mapping the distribution of this plant to include in their sensitive plant monitoring program.

The group enjoyed lunch on the cliffs of Pahute Mesa overlooking Buckboard Mesa and Timber Mountain to the south. These field trip opportunities allow botanists, biologists, and horticulturists to learn from each other and share what they enjoy most – nature.



Astragalus beatleyae ©Jeanette Hannon



Frasera pahutensis. Note: the flower photo (left) is from several years ago and the right is from the field trip after the plant had seeded. ©Jeanette Hannon



Penstemon pahutensis ©Jeanette Hannon



Hulsea vestita ssp. *inyoensis* (left) and *Penstemon palmeri* var. *macranthus* ©Jeanette Hannon

Free Guided Wildflower Walks in Lake Tahoe

A second edition of *Plants of the Tahoe Basin* (Graf, 1999) is in the works, and botanist Molly J. Ferry invites you to join her free weekly wildflower walks to contribute! Choose from two types of outings:

Wildflower Wednesdays – Half-day morning hikes focused on locating specific plants. Expect off-trail adventure and up to 7 miles of hiking.

Friday Forays – Slow, easy walks perfect for plant lovers of all levels. Learn local flora and get help uploading observations to iNaturalist.

How to Join: Just show up! Details and locations are on Molly's site:

 [Website](#)  [Event Calendar](#)

Bring: Water, layers, sturdy shoes, snacks, sunscreen, and a loupe if you have one. No dogs, please.

Questions? Email Molly at tahoeplantbook@gmail.com

Society updates

Join the NNPS leadership team!

Help spread native plant love by joining the board or a committee. We are seeking a membership secretary, an event coordinator for Northern Nevada, and someone familiar with Instagram, and possibly TikTok, to up our social media presence. We are an all-volunteer society, and the more people we have helping within the organization the more people we can reach. If you are interested in one of the positions mentioned, or would like to help in another way, please contact Emma Wynn at president@nnps.org for more information.

50th anniversary merchandise still available

The temporary online store to sell limited edition NNPS merch can still be found here: [NNPS Bonfire Store](#).

Summer Updates

June and July were busy field trip months for the Society, and we still have more in August: Tahoe Meadows Interpretive Loop on August 2nd and a trip to Windy Hollow on August 23rd to see the new named *Pyrrocoma anemophila*, the trip will be led by Mike Hagebusch. Check our website for the latest information. Monthly meetings will resume on Thursday September 4th, in person in Reno and Henderson plus via Zoom.

We Want to Hear From YOU!

As we plan ahead, we want to ensure NNPS continues to offer what you value most. Take our short (3–5 min) survey to share your thoughts — what's working, what could be better, and what you'd love to see next. Your voice helps shape our priorities and direction! docs.google.com/forms/d/e/1FAIpQLSdW6x5lOJR8vR7Ey_P9Uh3flim-HB9dg2l6ryPcKz56kSpqyQ/viewform?usp=dialog

Welcome new members!

A special thank you to our new members who joined in June and July:

- Clint Harper, Carson City – New Lifetime Member!
- Victoria Wickert, Reno
- Mari Gilmore, Carson City
- Corbin Gentzler, Las Vegas
- Micaela Truslove, Fort Collins, CA
- Mark Schmitke, Los Angeles, CA
- Lakshmi Albright, Oakland, CA
- Neena Taskar, Reno
- Julie Etra, Reno
- Lily Ferguson, Elko
- Debbie King, Reno
- Johanne Albrigtsen, Reno
- Judy Buti Wootton, Reno
- Cindy Darcey, Reno
- Brian Howard, Reno
- Joanne Albrigtsen, Reno

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- Cody Ernst-Brock
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- Field Trips, N. Nevada: Christopher Mackessy
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- Horticulture: John Weiser
- Membership Coordinator: Vacant
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