

# Sego Lily

*Newsletter of the Utah Native Plant Society*

Spring 2024 Volume 47 Number 2



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# Steve Hegji's Camera

by Steve Hegji.

Much of San Juan county Utah is either Indian Reservation, National Monument, National Park, or National Recreation Area and contains some of the most beautiful and unique sights in Utah. Botanically speaking there is much to be found as the habitats vary from: the near alpine-like condition of Abajo Peak (or "the Blue" as the locals call it); Pinyon-Juniper forests; hanging gardens in sandstone formations; to washes and red sand dunes. The more time you spend in SE Utah, the more you'll fall in love with it.



*Aquilegia micrantha*. Alcoves formed by water steadily seeping through sandstone create a perfect environment for many plants, including this columbine, which is normally cream-colored but may have hybridized with *A. formosa*.



*Viola canadensis*. Broadly distributed across North America, this elegant violet shows up in San Juan county on the slopes of Abajo Peak (11,368').



*Phacelia ivesiana*. Another inhabitant of the red sand washes and dunes, this little phacelia is so very cute.



*Sclerocactus whipplei*. This cactus is a fairly rare find in San Juan county, but is more common to the south in Arizona. This one looks to be loving its sandy home.

**Cover photo:** *Primula specuicola*. What a spot of beauty showing up at the moist and crusty base of a typical sandstone alcove. The flower color seems almost unreal. Photo by Steve Hegji.



*Lupinus pusillus*. Much of the surface of San Juan county is either red rock or red sand. Fortunately this beautiful little lupine survives quite nicely in the red sand.



*Poliomintha incana*. These shrubby mint family plants can appear purple from a distance because of the red purple calyces. They love the sandy areas of southeastern Utah.



*Eremocrinum albomarginatum*. Growing directly out of the red sand dune, this member of the Asparagaceae family turns the simple color scheme of white with a touch of green and yellow into an elegant beauty.



*Asclepias macrosperma*. While not very showy in flower, the very large fruit of this milkweed is quite something else!



*Vesper bulbosus*. Early Spring brings this lovely and striking member of the Apiaceae family - formerly known as *Cymopterus bulbosus*.



*Penstemon lentus*. This penstemon is a Four Corners endemic, with the variety *albiflorus* known only from San Juan county in Utah and neighboring Apache county in Arizona.



*Solanum elaeagnifolium*. This toxic globetrotter is common in the sandy washes. Considered a toxic weed in most of the world, one of its sister species *S. lycopersicum* (culinary tomato) is the world's most consumed vegetable.



*Shepherdia rotundifolia*. This easy to spot large shrub with round leaves has shy small yellow flowers in the Spring that give way to mildy tasty berries.



*Mirabilis linearis*. This plant is less showy than its sister species, *M. multiflora*, but still a showoff with its extended stamens and styles. The flowers vary from white through shades of pink, borne on stems rising well above the base of long thin folded leaves.



*Astragalus flavus*. There are quite a few astragali to be found in San Juan county - primarily magenta colored. What a treat to come across patches of this yellow-cream colored milkvetch.

# Moab Earth Day Celebration/Crystal Geyser Field Trip

## UNPS Canyonlands Chapter

*by Diane Ackerman*

Canyonlands chapter was invited to the 2024 Moab Earth Day Celebration event. It was a warm, outdoor celebration with music and food and young-and-old came to join the celebration. One city employee had planted trees in Swanny City Park with sixth graders earlier that day.

We set up near Youth Garden Project, a local non-profit which educates and promotes growing food. USU-Moab County Extension, National Park Service, Grand County Weed District and other notable champions of the natural world were there as well. We entertained questions and conversations ensued.

I potted baby sagebrush and juniper seedlings to give away along with UNPS brochures and colorful wildflower post cards. Names of folks who were interested in our field trip and hearing about future chapter events were added to our e-mail list.

Our May field trip to Crystal Geyser near Green River, Utah has become a favorite of our group. Located near Green River, Utah, Crystal Geyser is a rare example of a cold water, carbon dioxide geyser. Not affiliated with geothermal, the geyser was created by an exploration well drilled in 1935 in an attempt to find oil. While visitors to this BLM land where the geyser is located may get to see it go off, wildflower enthusiasts most certainly can expect to see a wide variety of wildflowers



Castleton Tower and paintbrush.



Photographing Jones Cycladenia.



Heading into Y-Canyon.

blooming in the surrounding areas in early May.

Sadly, winds blew in an ominous purple-black sky on the morning of the field trip and we hesitantly cancelled the trip. However, my family visiting from out-of-town, wanted to photograph wildflowers. So, later the same morning, we motored the short distance from our Castle Valley residence and embarked on a loop trail hoping to avoid the worst of the wind and eventually take us down Y-Canyon. Cliffrose were rumored to show early flowers in this popular canyon-hike and it seemed likely we would find many of the familiar spring flowers as well. We were not disappointed.

While avoiding gusty winds along the hike, our luck ran out on our way back down the canyon to the vehicle when we encountered gravel-tossing winds funneling up the narrow canyon. We were walking against these winds and then, outside the canyon, they subsided!!

Along the two-mile hike, we saw over 25 species of flowering plants including cliffrose and Jones Cycladenia. We photographed a beautifully patterned 5-foot gopher snake slowly slithering across the trail and several fast-moving lizards. With craned neck, we found nesting ravens in the rock cliffs way overhead and heard our first canyon wren of the season. Not bad for an impromptu field trip. (Photos courtesy of Sharon Rambo.)

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## Intermountain Botanical Foray 2024 - July 11-15

### You are invited to participate in the Intermountain Botanical Foray!

The Foray is an annual event organized by the Intermountain Herbarium at USU and regional partners. Each year botanists of all stripes spend a long weekend at a different botanical hotspot in the Intermountain Region, to intensively collect and ID plants, document biodiversity, and generally nerd out in all manners plant-related.

Foray 2024 is co-hosted by Snow College, and will take place from July 11 - July 15 at the Great Basin Station in Ephraim, UT! Thank you to our partners at Snow College and the Forest Service for helping make this possible, and for the support of the Utah Native Plant Society.

The historic Great Basin Station is located in Ephraim Canyon in the Wasatch Plateau area of the Manti-La Sal National Forest. We are looking forward to exploring the aspen-conifer forests and subalpine meadows of this area - it will be a stark contrast to last year's high desert ecosystem! We hope to see some neat endemics such as *Astragalus montii* and *Eriogonum brevicaulis* var. *caelitum* (pictured here, photos from Kris Valles).

The Great Basin Station has a kitchen, bunks, and a classroom gathering area. Participants will be responsible for bringing their own bedding and food, while the organizers will take care of permitting and providing collecting supplies and instruction. Thursday and Monday will primarily be travel days. On Friday, Sat, and Sun we will survey different areas of botanical interest, and each evening we will spend time IDing and pressing our specimens, intermixed with some botanical and cultural presentations. This will be a wonderful opportunity for those interested in botany to learn from experts and each other as well as to explore this interesting locality.

We would love for you to join us! You can sign up to attend the Foray at <https://forms.gle/jEHgB8Kpi2KDj1oc6>. Please email [julia.hobbie@usu.edu](mailto:julia.hobbie@usu.edu) with any questions or to get on the email list for next year. And please spread the word to interested friends/colleagues! Happy botanizing,

*Julia Hobbie, Carl Rothfels, and the Foray crew*



## The Ongoing Spurge Scourge

by Dave Wallace, Utah Native Plant Society, Invasive Species Committee

A large infestation of the toxic noxious weed, myrtle spurge, *Euphorbia myrsinites*, has been discovered at the mouth of Logan Canyon. We are asking for volunteers to help control it (dig, bag, and haul) during the 6th Annual Logan Canyon Weed Day. Volunteers should meet 9:00 on Saturday, May 25, 2024, at Logan's Canyon Entrance Park (also known as "First Dam"). See the announcement in this issue for more information.



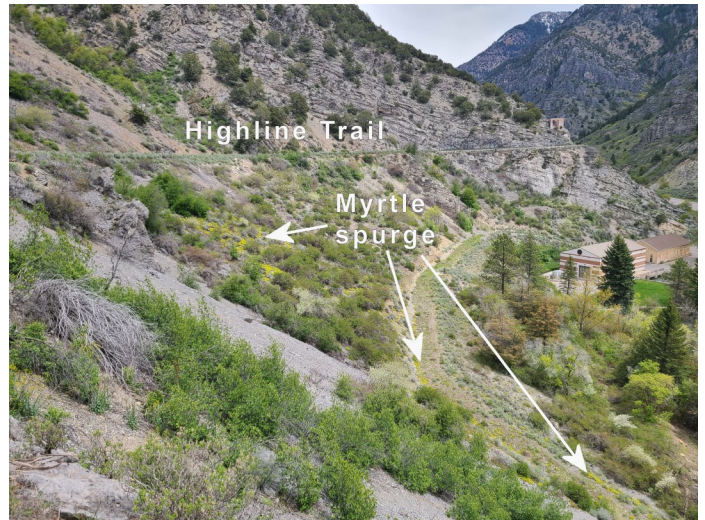
Myrtle spurge on the Highline Trail, May 1, 2024 (Dave Wallace photo)

A few scattered myrtle spurge plants had been observed - and dug out - along the Highline Trail on Logan Canyon Weed Day in 2022 and 2023, and we thought there were no more plants in the area. This spring, however, hikers were able to see a large spurge infestation mixed in with woody vegetation in the area below the trail.

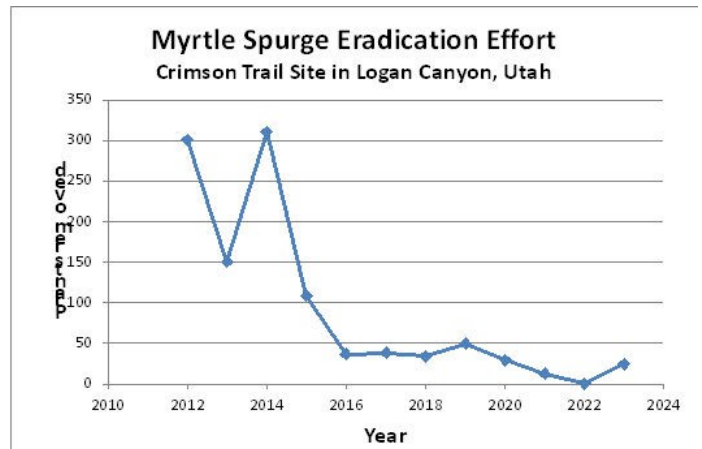
The terrain along the Highline Trail is steep, and, although it is Forest land, the gate accessing the area was controlled by Logan City. Arrangements have now been made so the Forest Service will be able to open the gate for Weed Day, allowing volunteers to easily access the myrtle spurge infested area. Weed volunteers also should be able to ascend the not-as-steep slope from below to get to the spurge growing there.

A year ago, the Invasive Species Committee was cautiously optimistic about containing the spread of myrtle spurge in Logan Canyon. Unlike Wasatch Front areas to the south, we only have seen a few incursions of that

noxious weed into our canyons and foothills, in part because local development has been constrained by nearby Forest Service lands (in the Salt Lake area, myrtle spurge spread from residential plantings to nearby foothills).



Myrtle spurge infestation below the Highline Trail, May 1, 2024 (Dave Wallace photo)



Myrtle spurge was nearly eradicated along the Crimson Trail (Dave Wallace data)

In 2012, we spotted a relatively small infestation along Logan Canyon's iconic Crimson Trail, and repeated efforts to keep it from reproducing there led us to believe it was nearly eradicated at that location. Then, in August 2023, we discovered several myrtle spurge plants that had been overlooked near the Crimson Trail - and there was evidence of recent reproduction, too. Myrtle spurge seeds are believed to survive in the soil for at least 8 years, which means another decade of

monitoring. Additionally, the plants were adjacent to the “China Wall” cliff band, so seeds may have been dispersed down the cliff face and hundreds of feet below to the cliff base. (We will look into that possibility later this summer.)

*Sego Lily* readers (or observers of vegetation along the Wasatch Front’s foothills and lower canyons) should be well aware of the myrtle spurge invasion. Myrtle spurge is referenced 10 times on the [unps.org](https://www.unps.org) website and in 21 issues of the *Sego Lily* since 2006. Salt Lake County declared it a Noxious Weed in 2007, and the State of Utah did so in 2016. Here are some links to learn more about myrtle spurge:

<https://youtu.be/IQKXeS0taWg>, <https://www.unps.org/miscpdf/MyrtleSpurgeFactSheet2017.pdf>

<https://www.sltrib.com/news/environment/2018/05/07/how-a-waterwise-ornamental-plant-has-taken-over-wasatch-foothills/>



25 myrtle spurge plants were unexpectedly discovered along the Crimson Trail in August 2023 (Dave Wallace photo)

# HELP FIGHT WEEDS ON OUR PUBLIC LANDS



Please join the Logan Ranger District, Bridgerland Audubon Society, Utah Native Plant Society, Cache Trails Alliance, Logan City, and Stokes Nature Center to help control the spread of spread of noxious weeds on our lands.

**What:** 6th Annual Logan Canyon Weed Day

**When:** Saturday, May 25, 2024, 9:00 a.m. – 1:00 p.m.

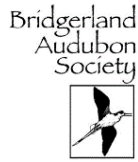
**Where:** Canyon Entrance Park Pavilion (First Dam), US 89 & Canyon Road, Logan, UT

**Contact:** Kristin Johansen, Volunteer Coordinator, 385-466-0369, [kristin.johansen@usda.gov](mailto:kristin.johansen@usda.gov)

Wear protective clothing, including gloves, long pants, long sleeved shirts, sturdy footwear and bring drinking water. Some tools will be provided but bring your own heavy-duty weeding tools if you can...

The goal of this project is to help reduce and eradicate invasive weeds threatening the native plant community of the local area. Target weeds are dyers woad, burdock, houndstongue, Scotch thistle, myrtle spurge and other invasive plants. Control methods will include hand pulling, digging and possible bagging.

For more information, contact Kristin Johansen, Volunteer Coordinator, Logan Ranger District, 385-466-0369, kristin.johansen@usda.gov, Dave Wallace, Utah Native Plant Society, (435) 750-5913, or Hilary Shughart, Bridgerland Audubon, hilary.shughart@gmail.com.



*Cymopterus coulteri*.

## Zach Coury Photos



The first population of *Cycladenia jonesii* found in Washington County.



*Phemeranthus brevifolius*, San Juan County.



*Terraria haydenii*, the only member of the genus, found at its only population in the Wah Wah Mountains.

# Highly invasive Stinknet closes in on southwestern Utah

by Tony Frates

A South African plant species that somehow was transported to the western United States in the early 1980s has been increasingly invading fragile desert landscapes in California and Arizona since then, and most recently has been causing havoc for recreationists in Arizona. Given where it is now already known to have spread into southern Nevada and its propensity to be spread long distances, an incursion into Utah seems likely.

Stinknet is an odiferous (its smell has been compared to that of turpentine) winter annual with dark green dissected leaves and paniculate, globular flowering heads with yellow disc florets (it has no ray florets) that can grow up to two feet in height. A single plant can have several thousand or more flowering heads producing numerous seeds that can be easily spread in part by the wind. Severe allergic reactions (as well as skin irritation) can be caused by touching the plant or inhaling its pollen.

Another common name for this South African native is Globe Chamomile. It has no forage value but has been investigated for potential antimalarial properties.

Taxonomically, the plant is a member of the Asteraceae (Composite or Sunflower family) and most recently is being treated as *Oncosiphon pilulifer* (and has many synonyms in at least six other genera). It has been confused with plants in the genus *Matricaria*. You may see it treated also as *Oncosiphon piluliferum*, a name that has been questioned and at least for now should be considered as an orthographic variant, although there does not appear to be complete consensus with respect to its correct scientific name currently.

Outside of its native range, the species has spread to western Australia as well as to the western United States, first in southern California (Riverside County 1981 and not previously known from North America; San Diego County by 1997) and then into southern Arizona (first in Maricopa County in 1997 but not

correctly identified until 2005 with other reports starting in 2002; in Pima County by 2004)) and to a lesser degree in Nevada (Wesley Niles first collected it in April of 2007 in Clark County's Las Vegas Springs Preserve). It is probably also now established in Mexico (not verified). How it jumped from southern California then much later to south-central Arizona isn't known, much less how it then even later spread to the Las Vegas area. It is thought that its numerous tiny seeds can easily be spread by people and equipment, as well as by the wind.

Since its 2007 inaugural observation in southern Nevada some 84 aerial miles away from the southwestern corner of Utah, it subsequently has been observed not far east of the Niles collection first in 2018 (Clark County Wetlands Park) and in 2019 at the Boulder Beach Campground east of Henderson (in the vicinity of the Lake Mead National Recreation Area) which places it about 7 miles closer to Utah (the 2018 and 2019 reports are on [iNaturalist.org](https://www.inaturalist.org)). It could easily be spread via vehicular traffic or recreationists transporting it from southwestern Nevada to the St. George area, or via similar activity from central Arizona back into Utah.

In North America, the plant has been observed in flower as early as in late February and then to mid-July, but more commonly flowers in the March to May time frame. The species quickly overwhelms the varied habitats that it invades quickly becoming a monoculture carpeting the ground. It is reported to grow in densities of six or more seedlings per square inch.

In early 2024, this species started to cause even more havoc. Casa Grande Ruins National Monument (south-central Arizona) officials actually closed the picnic area there from March 28 to April 30 due to plant density and because of its potential to cause breathing problems as well as skin rashes. Similarly, Saguaro National Park (near Tucson) put out a warning near the end of March about the spread of the plant there. Visitors were told not to walk near, nor step on, Stinknet plants to help insure that its seeds would not be spread elsewhere after visitors left the park.

Wildfires have caused Stinknet populations to skyrocket.

There is no reason to not think that Stinknet won't ultimately spread into Utah. The public and field biologists/botanists will need to stay vigilant so that any occurrences can be promptly eradicated.

Some selected articles and references of interest with respect to Stinknet are listed informally below:

**Most recent news articles:**

<https://apnews.com/article/stinknet-weed-smell-casa-grande-ruins-closes-cbc4e589a16368b102a010d3f50eb7f7>

<https://hoodline.com/2024/03/aggressive-stinknet-weed-shuts-down-picnic-area-at-casa-grande-ruins-until-may/>

<https://www.nbcnews.com/news/us-news/smelly-invasive-stinknet-plant-closes-part-arizona-national-monument-rcna145404>

<https://www.nps.gov/sagu/learn/news/2024-03-28-invasive-stinknet.htm>

**HCN article:**

<https://www.hcn.org/articles/south-non-native-species-a-weed-is-swallowing-the-sonoran-desert/>

**California**

<https://www.cal-ipc.org/plants/profile/oncosiphon-piluliferum-profile/>

See in particular:

[https://www.cal-ipc.org/wp-content/uploads/2019/04/Cal-IPC\\_Dispatch\\_Spring\\_2019\\_FINAL.pdf#page=6](https://www.cal-ipc.org/wp-content/uploads/2019/04/Cal-IPC_Dispatch_Spring_2019_FINAL.pdf#page=6)

**Arizona**

<https://azinvasiveplants.arizona.edu/invasive-plant/stinknet>

<https://extension.arizona.edu/stinknet-invasion>

**See in particular:**

<https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1827-2020.pdf>

<https://www.stinknet.org/>

USFWS

<https://www.fws.gov/story/2021-06/pretty-looks-can-be-deceiving>

**FNA**

[http://www.efloras.org/florataxon.aspx?flora\\_id=1&taxon\\_id=250067219](http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=250067219)

<http://beta.floranorthamerica.org/Oncosiphon>

**POWO**

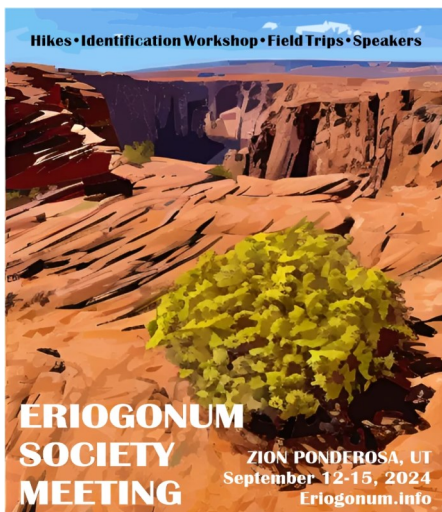
<https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:945195-1>

**Other important resources:**

Consortium of Intermountain Herbaria. 2024. [last accessed May 11, 2024]. <https://intermountainbiota.org/index.php>.

EDDMapS. 2024. Early detection & distribution mapping system. The University of Georgia – Center for Invasive Species and Ecosystem Health. [last accessed Feb. 5, 2023 ]. <https://www.eddmaps.org>.

iNaturalist. 2024. iNaturalist Research-grade Observations. [last accessed May 11, 2024]. <https://www.inaturalist.org>.



## Eriogonum Society Meeting

Join us amid the soaring sandstone cliffs of Zion National Park for this year's annual meeting, **September 12-15th**. Workshops and lodging at the Zion Ponderosa Resort near the east entrance of the park.

Buckwheat hotspot! [Symbiota.org](https://www.symbiota.org) lists collections of more than 50 *Eriogonum* taxa within a one-hour drive of the park, including *Eriogonum zionis* and *E. mortonianum*, so we will have plenty of buckwheats to keep us busy.

Registration is now open for members. Full information here:

<https://erogonum.info/index.php/meetings/34-2024-annual-meeting>

# 2024 Annual Lifetime Achievement Award

## Recipient: Wayne Padgett

*by Ron Bolander*

The Lifetime Achievement Award for 2024 was presented to Wayne Padgett at the recent Annual Utah Native Plant Society Rare Plant Meeting held March 5, 2024. Wayne is most deserving of this award having spent a lifetime in native plant study, protection and restoration.

### **U. S. Forest Service (FS) and Bureau of Land Management (BLM) Career**

Wayne began his work with the FS in 1983 in Jackson, Wyoming. One important accomplishment for Wayne was to assist in the development of a riparian classification for eastern Idaho and western Wyoming. Wayne later transferred to Logan, Utah, where he continued working on riparian classification, this time for Utah and southeastern Idaho. Later Wayne transferred to the FS Regional Office in Ogden, Utah, where he worked as the assistant regional ecologist. Wayne continued his FS work on the Uinta-Wasatch-Cache National Forest as the forest ecologist. Wayne completed his FS work with a two-year stint in Washington, DC.

He completed his Federal career working with the BLM in the Utah State Office where he was the Program Lead for the BLM Colorado Plateau Native Plant Program. Wayne worked with several government and non-government entities to promote the development and use of native plant materials to maintain and restore healthy ecosystems throughout the Colorado Plateau.

While in Washington, DC, Wayne testified before Congress in support of the passage of a Botany bill.

### **Utah Native Plant Society Service**

Wayne has been involved with the UNPS since 1985 and is a life time member. He was instrumental in reactivating the Cache Valley Chapter and has served on the UNPS Board of Directors in 1989 and 2019. Wayne has been active in planning and participating in UNPS field trips. These include a Monte Cristo/Bear Lake astragalus trip and a trip to the Spruces Campground in Big Cottonwood Canyon where attendees learned about the historic tree farm there. Wayne also planned and participated in trips to Snowbird and Strawberry Reservoir. Perhaps the most memorable trips were the ill-fated excursions to Silver Lake in an attempt to locate *Botrichium*.



Wayne Padgett and Ron Bolander at the Utah Native Plant Society Rare Plant Meeting held March 5, 2024.

In addition to serving in leadership positions and conducting field trips, Wayne has been involved in conservation related issues while with UNPS. He has helped prepare numerous letters commenting on various conservation issues such as Areas of Environmental Concern, Research Natural Areas, BLM and FS planning documents, etc.

### **Summary**

A former co-worker said it best. "And it is not just WHAT Wayne did, which was a ton of things for the Natives, but the WAY he did it. Wayne consistently used his creativity courageously, to be willing to stand up, no matter the politics and pressure, and say what needed to be said when it came to potential impacts of humans on vital elements of native vegetation. And to deliver the message in a respectful, effective way making it much more likely to be accepted and even embraced. Wayne intuitively brings humor, balance and calm to help a group work together better. He makes working for the natives fun and successful."

# Wayne Padgett

by Teresa Prendusi



For decades, Wayne has been one of those rare, unsung heroes working for federal agencies in Utah (and elsewhere) whose contributions have left an indelible legacy of conservation and protection for rare plants and plant communities for a long time to come. As the Wasatch-Cache NF ecologist, he championed the hiring of two Botanists (Mike Duncan and Beth Corbin) on the Forest; proposed in the Revised Forest Plan that Lower Logan Canyon be designated a Botanical Special Interest Area (SIA) with an additional 8700 acres; was instrumental in establishing the Walter F. Mueggler-Butler Fork Research Natural Area (as an aspen reference area).

Wayne was the primary author of the Riparian Vegetation Classification System not only for Utah forests but other States within the intermountain region as well. He developed forest plan standards and guidelines for managing all non-forested vegetation types – riparian, tall forb, sagebrush, aspen, etc. He provided leadership in educating and training for native plant restoration.

For a long time Wayne bore sole responsibility for the Threatened, Endangered and Sensitive plant program (surveys, monitoring, Biological Evaluations, etc.) on the Forest and he sought out academic experts like Leila Schultz and Loreen Allphin to better understand the life histories, distribution and conservation needs of rare plants on the Forest.

In his free time, Wayne loves to spend his days in the field botanizing with his friends, partner Jim, and photographing and cataloguing the flora of the Bear River range and northern Wasatch....unless of course it's cherry season, and then you'll find him busily baking away pies-to-die-for in his kitchen.

*Photos by Teresa Prendusi*



Peggy Olwell and Wayne Padgett taking a break.



# Utah Rare Plant Meeting 2024

by Cathy King

The Utah Native Plant Society, in conjunction with many other organizations, has been involved in planning and organizing the Utah Rare Plant Meeting (URPM) for about forty years. The purpose of the URPM is to offer a full day of scientific presentations regarding the current status of research about the rare plants in the state of Utah. These presentations are made by a broad representation of scientists from universities, colleges, state and federal agencies and independent researchers.

Since the Covid pandemic, for health safety reasons, the Utah Rare Plant Meeting has been meeting through the Zoom platform, so it was good to find ourselves gathered together again for an in-person and Zoom (hybrid) meeting this year on Tuesday, March 5, 2024. The venue was the Swaner Forum, generously provided by the

Natural History Museum of Utah and facilitated by the Garrett Herbarium, both always great supporters of the URPM.

The meeting is open to all those who are interested in the rare plants of Utah. This year, there were 131 attendees, 84 of which attended in person and 47 attended via Zoom. There were 15 presentations covering a wide variety of topics. Wayne Padgett received the Utah Native Plant Society Lifetime Achievement Award (see article in this issue).

On following pages are the Agenda and Abstracts from URPM 2024. The proceedings were recorded and will soon be posted on the UNPS YouTube channel <https://www.youtube.com/channel/UCx07-R3WWYQCGZYpgb3Khdw>

The Utah Rare Plant Meeting is always scheduled for the first Tuesday in March. That means we are already planning the meeting for next year on Tuesday, March 4, 2025.

**Save the date and plan to join us.**



Cathy King opening the 2024 UNPS Rare Plant Meeting.

## Agenda

### Rare Plant Meeting

March 5, 2024

Organized by Utah Native Plant Society

at the Utah Museum of Natural History, Salt Lake City



Registration and [Zoom](#) links; also at [unps.org](https://unps.org)      Abstracts here

| Time         | Presenter       | Organization                 | Title                                                                                   |
|--------------|-----------------|------------------------------|-----------------------------------------------------------------------------------------|
| 9am          | Cathy King      | UNPS Board                   | Welcome & announcements                                                                 |
| 9:10         | Bill King       | UNPS Board                   | UNPS accomplishments & grants                                                           |
| 9:20         | Mindy Wheeler   | Utah Rare Plant Program      | Update from the Utah Rare Plant Team                                                    |
| 9:40         | Rita Reisor     | US Fish and Wildlife Service | USFWS update on T&E activities                                                          |
| 10:00        | Aaron Roe       | BLM                          | BLM Updates                                                                             |
| 10:20        | Tova Spector    | Forest Service               | Region 4 Forest Service Updates                                                         |
| <b>Break</b> |                 |                              |                                                                                         |
| 10:40        | Susan Meyer     | Southern Utah University     | Population Genetics of Welsh's Milkweed at Coral Pink Sand Dunes                        |
| 11:00        | Ava Brinkley    | Northern Arizona University  | Species boundaries in <i>Astragalus</i> subsect. <i>newberryi</i>                       |
| 11:20        | Shanon Lencioni | Northern Arizona University  | The Cost of Self-Defense: Browsing Impacts on Arizona Willow ( <i>Salix arizonica</i> ) |
| 11:40        | Cindy Newlander | Denver Botanic Gardens       | Scouting and Collecting <i>Quercus welshii</i> for use in ex situ collections           |
| Noon         | Ron Bolander    | UNPS Board                   | Award presentation                                                                      |

| <i>Lunch</i> |                |                                                |                                                                                                                           |
|--------------|----------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Time         | Presenter      | Organization                                   | Title                                                                                                                     |
| 1:20pm       | Announcements  |                                                |                                                                                                                           |
| 1:25         | Zach Coury     | Utah Rare Plant Program                        | Exciting Rare Plants in Desolation Canyon                                                                                 |
| 1:45         | Bill Gray      | Utah Museum of Natural History                 | In search of the Grandmother Tree: old-growth Utah Junipers                                                               |
| 2:05         | Mitch Power    | Utah Museum of Natural History                 | The History of Aspen in the Intermountain West: paleoecological evidence since the last Ice Age from Fish Lake, UT        |
| <i>Break</i> |                |                                                |                                                                                                                           |
| 2:40         | Carl Rothfels  | Intermountain Herbarium, Utah State University | Utah's rare and unusual fern diversity                                                                                    |
| 3:00         | Steve Leavitt  | Brigham Young University                       | Utah's vulnerable lichen communities                                                                                      |
| 3:20         | Thomas Meinzen | Project Eleven Hundred                         | Pollinator Dependency of a Rare Alpine Plant, <i>Senecio fremontii</i> var. <i>inexpectatus</i> , in the La Sal Mountains |
| 3:40         | Carrie Cannon  | Hualapai Department of Cultural Resources      | Mojave desert plants of southwest Utah with significant Tribal uses                                                       |

Tour of herbarium, probably 30 minutes during the latter half of the lunch break; sign-up here or at the meeting (20 person limit).

For questions about the Rare Plant Meeting message: [urpm@unps.org](mailto:urpm@unps.org)

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## Abstracts

# Utah Rare Plant Meeting hosted by the Utah Native Plant Society

March 5, 2024 Online Meeting via Zoom

(The following in order of appearance on agenda)

**Mindy Wheeler**, Utah Rare Plant Program, Salt Lake City, UT. [mindywheeler@utah.gov](mailto:mindywheeler@utah.gov)

### Update from the Utah Rare Plant Team

The Utah Rare Plant Program (URPP) continues to be an industrious group that works toward rare plant conservation. We work with and receive funding from several federal and state agencies and local governments who are also interested and responsible for rare and native plant conservation. One of our primary duties is to keep track of the distribution, trends and threats facing each of the rare and endemic plant species in Utah, and assign a conservation rank per the widely accepted and used NatureServe process. The results of this work are used by agencies to help determine their respective priorities for rare plant conservation, including the State of Utah. The URPP has been highly involved in the next edition of the State Wildlife Action Plan (due August 2025) regarding rare and native plants and their habitats. Details of this work and responsibilities will be discussed, in particular the progress made in 2023.

**Rita Reisor** (U.S. Fish & Wildlife Service, West Valley City, UT, [rita\\_reisor@fws.gov](mailto:rita_reisor@fws.gov)), **Matthew Lewis** (U.S. Fish & Wildlife Service, West Valley City, UT, [matthew\\_lewis@fws.gov](mailto:matthew_lewis@fws.gov)), **Lark Willey** (U.S. Fish & Wildlife Service, West Valley City, UT, [lark\\_willey@fws.gov](mailto:lark_willey@fws.gov))

### USFWS Office Updates 2024

The USFWS will provide updates on listing decisions, recovery planning and implementation. In 2023 the Uinta Basin Hookless Cactus and Pariette Cactus recovery plan was finalized and published here, <https://www.fws.gov/endangered/species/recovery-plans.html>. A Species Status Assessments (SSAs) and 5-year review was completed for Ute ladies-tresses (*Spiranthes diluvialis*), which made the recommendation to change the species status from threatened to delisted. The Arizona Field Office completed a 5-year review for Navajo sedge (*Carex specuicola*). In 2024 we will be conducting 5-year status reviews for Last Chance townsendia (*Townsendia aprica*), clay phacelia (*Phacelia argillacea*), shrubby reed-mustard (*Schoenocrambe suffrutescense*), and clay reed-mustard (*Schoenocrambe argillacea*). A Species Status Assessment for Heliotrope milkvetch (*Astragalus montii*) will be initiated this fiscal year along with a 5-year review. A Biological Report and 5-year review will be completed for Winkler cactus (*Pediocactus winkleri*) and San Rafael cactus (*Pediocactus despainii*). Additionally, the Arizona Field Office is completing the 5-year review for Siler pincushion cactus (*Pediocactus sileri*).

**Aaron Roe**, Bureau of Land Management, Utah State Office, Salt Lake City, UT. [aroe@blm.gov](mailto:aroe@blm.gov)

### BLM Updates

Provide updates on policy and projects relevant to the BLM Utah botany and rare plant program.

**Tova Spector**, US Forest Service, Region 4, Monticello, UT. Tova.Spector@usda.gov

**Region 4 of Forest Service Botany Updates**

**Susan Meyer**, Dept. of Geosciences, Southern Utah Univ, Elk Ridge, UT. susanmeyer@suu.edu

**Population Genetics of Welsh's Milkweed at Coral Pink Sand Dunes**

Welsh's milkweed (*Asclepias Welshii* N. Holmgren and P. Holmgren) is a robust rhizomatous perennial plant largely restricted to active dunes at Coral Pink Sand Dunes, Kane County, Utah. It is listed as threatened under the ESA. The species was reported as largely clonally reproducing, which could result in decreased genetic diversity. We carried out a population genetics study of this population using SNP markers developed from Illumina sequence data (NGS). Our study based on 140 stem samples from across the dune system showed that this population has ample genetic diversity (expected heterozygosity 0.252) and very high outcrossing rates (inbreeding coefficient 0.024). Genetic distance was only weakly correlated with physical distance over the 10 km length of the dune system, indicating regular dispersal both by seeds and by bee-vectored pollen. Most of the sampled stems (75%) were genetically unique, indicating frequent establishment from seed. Clonal reproduction was evident on a local scale, with groups of up to nine genetically identical sampled stems ranging from one to 75 meters apart. Intermixed stems very closely related to clonal stems probably represent seed progeny of the clone. We conclude that sexual reproduction is the dominant reproductive mode in this population. Clonal reproduction permits local persistence of a genet over time by allowing it to migrate vegetatively to more favorable positions in response to sand movement. A more fine-scale analysis of clonal structure would require much larger sample sizes and a marker system more suited to fine-scale analysis.

**Ava Brinkley**, Northern Arizona University, Phoenix, AZ. Sb3445@nau.edu

**Species Boundaries in *Astragalus* subsect. *newberryani***

*Astragalus loanus* (Glenwood milkvetch) and *Astragalus welshii* (Loa milkvetch) have a convoluted taxonomic history spanning more than a century. Given the pressing conservation status of *A. loanus*, resolving this taxonomic issue and collecting more information on these species is critical, as a lack of information and collections of both species have contributed to this gap in the knowledge. Extensive field work was conducted and molecular and morphological approaches were used to assess this species boundary and broader relationships in *Astragalus* subsection *Newberryani*. Field work successfully relocated *A. welshii* across its known distribution and uncovered new localities, while morphological study revealed much greater variation in both focal species than previously recognized, calling for updated species descriptions and keys. Molecular analysis is expected to reaffirm the split of the two species, and some further taxonomic shifts to the subsection may be made as a result of this study.

Shannon Lencioni, Northern Arizona University, Flagstaff, AZ. sl2782@nau.edu

### The Cost of Self-Defense: Browsing Impacts on Arizona Willow (*Salix arizonica*)

Arizona willow (*Salix arizonica*) is a species under review with the Endangered Species Act, listed as imperiled in Arizona and Utah, and critically imperiled in Colorado and New Mexico. Using phenolic glycosides (PG), defense compounds of willows, we assessed the effects of browsing by ungulates that cohabit with the species. We found an increase in PG production with increasing browse severity. It also appears that plant height is significantly affected by the highest browse severity for two of the three populations, Arizona and New Mexico, and there is no effect on the Utah population. Using height as a continuous category of browse severity, there is a strong negative correlation of plant height and PG production. Additionally, we found a significant effect in long-term browsing protection for individuals; protected individuals produce less PGs, indicating that they can use resources for growth instead of defense.

Cindy Newlander, Denver Botanic Gardens, Denver, CO, newlandc@botanicgardens.org, Jennifer Ackers (Denver Botanic Gardens), Brooke Palmer (Denver Botanic Gardens), Alexandra Seglias (Denver Botanic Gardens), Ross McCauley (Fort Lewis College), Tim Thibault (The Huntington Library, Art Museum, and Botanical Gardens), and Marc Coles-Ritchie (BLM)

### Scouting and Collecting *Quercus welshii* for Use in Ex Situ Collections

In 2022 and 2023, Denver Botanic Gardens secured funding from an American Public Gardens Association – U.S. Forest Service Tree Gene Conservation Partnership Grant for fieldwork in Utah and Arizona on *Quercus welshii* R.A.Denham (syn: *Q. havardii* Rydb. var. *tuckeri* S.L.Welsh). Scouting and collecting trips were conducted both years, re-visiting previously identified collecting sites in both years and attempting to find additional sites in 2023. Herbarium vouchers and acorns were collected. The collections were shared with other botanical gardens and are also in propagation in Denver Botanic Gardens' greenhouse. During this talk, Cindy Newlander will discuss the prior status of *Q. welshii* in ex situ collections, show images of the unique habitat in which this species grows, and talk about the current ex situ efforts for this species, including an update on the germination of acorns collected in 2023.

Zach Coury, Utah Rare Plant Program, Salt Lake City, UT. zachrc98@gmail.com

### Exciting Rare Plants in Desolation Canyon

In June 2023, a joint surveying trip between the Utah Rare Plant Program and the BLM took place along Desolation/Gray's Canyon of the Green River. There were many exciting finds, including new populations for three federally listed species: *Carex specuicola*, *Cycladenia jonesii* and *Hesperidanthus argillaceus*. Additionally, there were new populations found of five species ranked S2 or S1: *Aliciella imperialis* subsp. *latifolia*, *Aquilegia atwoodii*, *Aquilegia desolaticola*, *Gaillardia flava*, and *Phacelia incana*. Desolation Canyon Wilderness Study Area is one of the most remote places in the contiguous United States and a safe haven for these rare and endemic species. While these finds are exciting in their own right, this expedition only scratched the surface of what might be found within the Wilderness Study Area. Given the status of the species found, and the large unexplored area, we are confident our future efforts in Desolation Canyon will continue to produce valuable results.

**Bill Gray**, Utah Museum of Natural History, Salt Lake City, UT. [cyberflora80@gmail.com](mailto:cyberflora80@gmail.com)

### **In Search of the Grandmother Tree: Old-growth Utah Junipers**

Utah Junipers (*Juniperus osteosperma*) are likely the most abundant large shrub/tree in the Intermountain Region, with perhaps a couple of billion individual plants – yes, billions. They are often portrayed as an imminent threat, galloping invasives that will take over our public lands. Alternatively they can be treasured for their role as wildlife habitat and for their intrinsic beauty. Depending on location they can be any of these things. An especially appealing group consists of very old trees, often developing gnarled and picturesque forms. What enables these Grandmother trees to thrive for a thousand years in a harsh environment, and to keep producing offspring? How well do those offspring fare in the long run? In Mitch Power's lab at NHMU I have had the luxury of simply following my interest in these questions and developing some sense of the long slow processes involved. To this end we developed a high-resolution imaging system with which we can measure the very fine annual rings that accompany really slow radial growth rates of up to 100 years per centimeter. It can handle one-meter diameter slabs or one-millimeter rootlets. My presentation will introduce trees of widely varying characters from around the State of Utah and try to give a sense of how we might recognize populations of special interest. Above all I want to engender a heightened curiosity and respect for these fine Utah native plants.

**Mitchell J. Power**, Vachel Carter, Andrea Brunelle, Jesse Morris and the Fish Lake Working Group, Salt Lake City, UT. [mitchell.power@geog.utah.edu](mailto:mitchell.power@geog.utah.edu)

### **The History of Aspen in the Intermountain West: Paleoecological Evidence Since the Last Ice Age from Fish Lake, UT**

Aspen is considered a keystone species and has a crucial role in forest ecosystems of the intermountain west. Aspens are adapted to thrive following disturbances, including wildfires, making them a key component of forest regeneration. This research will explore the long-term history (thousands of years) of aspen forests in Utah and discuss some of natural and cultural forces that have shaped these ecosystems on long time scales. Recent threats to aspen forests, including climate change and increasing frequency and severity of wildfires are contextualized on long time scales with new evidence emerging on the linkages among climate, vegetation and fire since the Last Ice Age from sediment archives in Fish Lake, UT.

**Carl Rothfels**, Intermountain Herbarium, Utah State Univ, Logan, UT. [carl.rothfels@usu.edu](mailto:carl.rothfels@usu.edu)

### **Utah's Rare and Unusual Fern Diversity**

While not renowned for its pteridoflora, Utah is home to a diversity of ferns and lycophytes, including a strong representation of xeric-adapted groups. I'll provide a brief introduction to this flora, with a focus on Utah's rare species, before discussing some of the unique biological features of these organisms and the processes by which their diversity is generated.

**Steve Leavitt**, Brigham Young University, Provo, UT. [steve\\_leavitt@byu.edu](mailto:steve_leavitt@byu.edu)

### **Utah's Vulnerable Lichen Communities**

Diverse habitats in Utah support an incredible array of lichen communities, from specialized alpine-adapted lichens to arid sandstone specialists to others that are critical components of biological soil crusts. While our understanding of lichen diversity in the Intermountain West has improved dramatically over the past few decades, there is still much to learn about Utah's most vulnerable lichen communities. I highlight three types of lichen communities that are under threat: (i) lichens endemic to Utah not been found elsewhere, (ii) those that rarely occur in Utah and represent unusual, outlying populations, and (iii) cryptic or otherwise previously overlooked lichen diversity that remains largely uncharacterized. Together, these provide a compelling perspective of the value of considering and protecting Utah's "plant" diversity more broadly.

**Thomas Meinzen**, Project Eleven Hundred, Portland, OR. [thomasmeinzen@gmail.com](mailto:thomasmeinzen@gmail.com)

### **Pollinator Dependency of a Rare Alpine Plant, *Senecio fremontii* var. *inexpectatus*, in the La Sal Mountains, Utah**

*Senecio fremontii* var. *inexpectatus* (SEFRI) is a rare perennial herb in the Asteraceae family endemic to the La Sal Mountains of southeastern Utah. This plant and its habitat are endangered by climate change and introduced mountain goats, which pose a novel and escalating threat to the alpine ecosystem where SEFRI grows. Pollinators may represent a key aspect of SEFRI's persistence as a patchy metapopulation in this challenging environment, yet this relationship is poorly understood. In this study, we provide evidence that insect pollination substantially boosts the production of fertile SEFRI seeds by more than threefold, and that plants without insect pollination are able to produce low numbers of fertile seeds, presumably through self-fertilization. We also share observations of up to 59 insect morphospecies visiting SEFRI, and of low levels of direct grazing on the plants. These results offer compelling support for the importance of alpine pollinators, including bumblebees, in the conservation of this endemic plant, and for SEFRI's significance as a keystone species for a unique alpine pollinator community.

**Carrie Cannon**, Hualapai Department of Cultural Resources, Peach Springs, AZ. [calisay17@hotmail.com](mailto:calisay17@hotmail.com)

### **Mojave Desert Plants of Southwest Utah with Significant Tribal Uses**

Plants of the Mojave desert in Utah, especially in Snow Canyon State Park, with a focus on the small portion of the Mojave desert that extends into southwestern Utah, and several of the significant plants that have tribal uses.



# Grow Native: The Beautiful Blue Wasatch Penstemon, *Penstemon cyananthus*

by Cathy King, UNPS Horticulture Committee

Penstemons, the “beardtongues,” grow quite well in native plant gardens and one species that is particularly beautiful and is often available in local nurseries is the Wasatch penstemon, *Penstemon cyananthus*. *Cyananthus* comes from the Greek word for blue flowers and these flowers range from a gorgeous sky blue to a deep blue. “Wasatch penstemon” is named for its most commonly found location in the Wasatch range of the Rocky Mountains. Wasatch is also a Ute Indian word meaning “mountain pass.”

Ranging in height from 12” to as tall as 18”, the Wasatch penstemon typically blooms in late May to early June in Salt Lake City gardens or later if your garden is at a higher elevation.

The flowers are tubular with two lips and a protruding hairy staminode (sterile stamen) which is where the penstemon common name “beardtongue” is derived. The Wasatch penstemon forms dense clusters of flowers (called verticillasters—meaning whorls) at the top of stems emerging from basal mats of green leaves of approximately 3-6”. The intense blue flowers are especially showy and beautiful.



Flower close-up of the Wasatch penstemon shows some of the bearded staminodes that give the genus the common name “beardtongues.” Photo by Patrick Alexander.



*Penstemon cyananthus* in habitat on the trail to Catherine Pass in Big Cottonwood Canyon. Deep blue flowers are a beautiful addition to native gardens. Photo by Patrick Alexander.

Wasatch penstemon grows well in garden conditions mostly because it can tolerate more water than some penstemons and other native plants but it is still considered a xeric plant. However, like all plants, it needs to be watered regularly when first established. It has a reputation for being longer-lived than most penstemons, too.

Once you start growing penstemons in your garden, it is easy to directly sow the prolific seeds they produce. Or, if you prefer, collect the seeds and grow them in pots to start new plants to set out into the garden. That is a little more complicated since the seeds require cold stratification, a long, cold, and moist period that enables germination.

Utah is considered by most to be the epicenter for penstemons (76 species). It is a genus of flowering herbaceous perennials in the Plantaginaceae family (formerly placed in the Scrophulariaceae family). Penstemons resemble



*Penstemon cyananthus* in habitat in the area around Red Butte Garden. Photo by Andrey Zharkikh.

snapdragons and vary in size, color, blooming habit and habitat, from cool, moist mountains to dry deserts.

If you are a person who likes to hike anywhere in the state of Utah, odds are high that you have encountered at least one species of penstemon in your travels. It is a very attractive genus and is pretty hard to miss. A number of books have been written about penstemon, but one of the best and most recent is *Heart of Penstemon Country*, written by Mikel Stevens from Brigham Young University, Steven Love from the University of Idaho and ethnobotanist Tony McCammon. This book can be ordered directly from the author at [mikel.r.stevens@gmail.com](mailto:mikel.r.stevens@gmail.com).

Penstemons are so well-loved that the American Penstemon Society was formed over 75 years ago to share information and a seed exchange. It is easy to join and learn more about this beautiful genus of flowering plants: <https://penstemons.org/>.



The exquisite blue Wasatch penstemon just beginning to open flower buds on a plant at Alta in Little Cottonwood Canyon. Photo by Andrey Zharkikh.

Local nurseries quite often offer the Wasatch penstemon in their native plant section or it can also be found from mail order companies. Once you start growing penstemons in your garden, you will only want more!

#### References:

- Nold, Robert. *Penstemons*, Timber Press, Portland, OR, 1999
- Stevens, Mikel, et al, *Heart of Penstemon Country*, Sweetgrass Books, Helena, MT, 2020
- Van Cott, John W., *Utah Place Names*, University of Utah Press, SLC, UT, 1990.
- Welsh, Stan, et al, *A Utah Flora*, Fourth Edition, revised. Brigham Young University, Provo, UT, 2008.

### Your Membership

Your membership is vital to the Utah Native Plant Society. It is important that your information is correct and up to date for notifications and the delivery of The Sego Lily newsletter.

Any questions about your membership, Contact Tony Stireman, [tstireman@gmail.com](mailto:tstireman@gmail.com).

**Summer is approaching...** It is time to consider another issue of the Utah Native Plant Society *Sego Lily* which relies mostly upon articles from the society's membership. Please submit articles of your native plant stories and photos from hikes and field trips, conservation activities... whatever might be informative and interesting to fellow members.

The *Sego Lily* editors can use most any text format for articles (**PDFs can be troublesome**). Photos are always best submitted in original resolution and as individual files **separate** from text. You can indicate desired positioning within a document. We are looking forward to hearing from you. For submissions and/or questions: [newsletter@unps.org](mailto:newsletter@unps.org) or [cathy.king@gmail.com](mailto:cathy.king@gmail.com).



## Utah Native Plant Society

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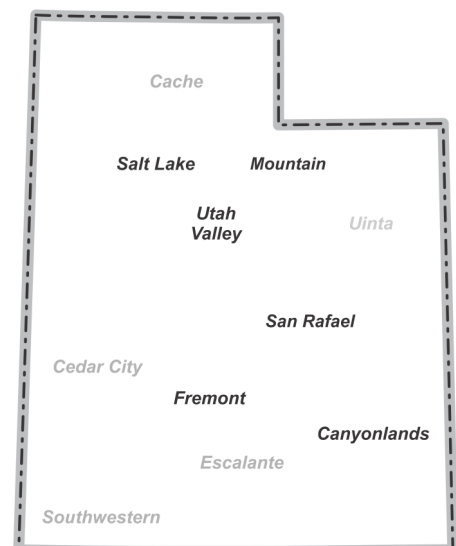
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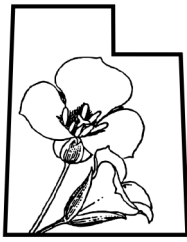
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