Nevada Native Plant Society

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Society News

Northern Nevada Events

February 2 – Janel Johnson looks back on 2016's phenomenal Carson Valley monkeyflower super-bloom.

Join our speakers before the meetings for dinner at 5:30 at **Great Full Gardens**, 555 South Virginia Street.

Meetings are in room 300G of the Fleischman Agriculture Building on the UNR campus, north of 9th Street and Evans Avenue.

Enter the building under the breezeway on the west side near the street. There's an elevator at the east end of the building. Meet on the third floor and down the hall from the UNR herbarium.

Social time starts at 7:00 PM and the program starts at 7:30. The outside door will be automatically locked at 7:30.

Parking is enforced in the lot on the SE corner of Evans and Record Way.

Parking passes and maps are available from the university – see **www.unr.edu/parking** for more information. Parking may be available on the street. A small metered parking lot is along the east side of the Fleischmann Agriculture building and another metered lot is located two blocks west at the Center Street entrance.

Southern Nevada Events

January - No meeting scheduled. Have a Happy New Year!

February 6 - Melissa Sanders of the Great Basin Institute and Southern Nevada Office of the BLM will present "Seeds of Success and the Federal Native Plant Materials Development Program in Southern Nevada."

March 6 - Dr. Jim Boone, Ecologist and founder of BirdandHike.com will present "Gold Butte and the Biology of Elevation Gradients."

Southern Nevada Meetings are held in Henderson the first Monday of every month from 6:30-7:30 PM (unless otherwise noted when holidays fall on first Mondays) at the U.S. Geological Survey office at 160 North Stephanie Street.

Our program coordinator is Lesley DeFalco. If you would like email updates for Southern Nevada events, please email her at **defalco@usgs.gov** and ask to be added to the list.

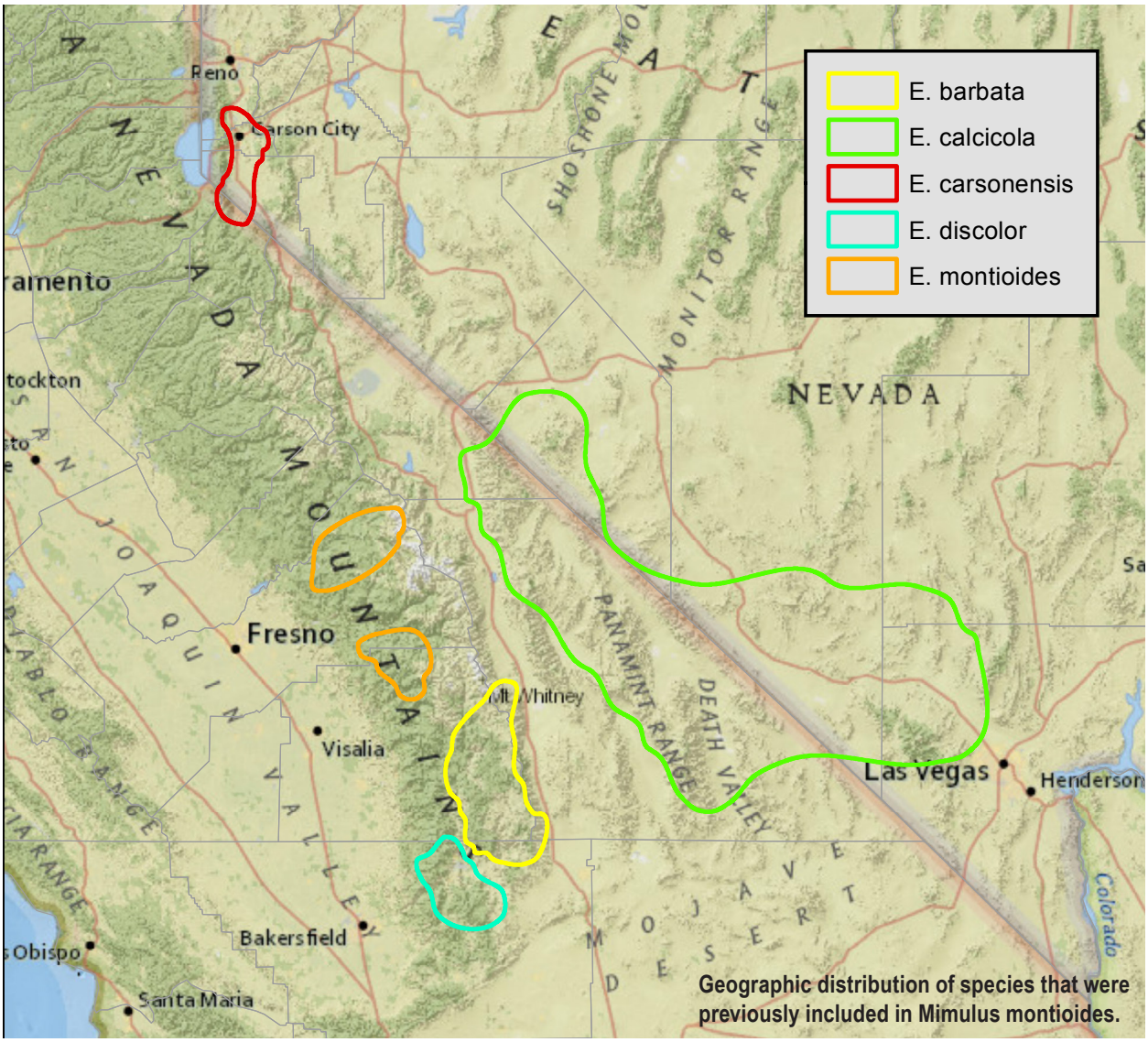
Events subject to change.
Visit nvnps.org for updates.

Erythranthe carsonensis

The Year of the Monkey

Story by Janel Johnson

In the spring of 1868, while Clarence King's Expedition waited in Carson City for the weather to improve sufficiently to resume their survey of the 40th parallel, the expedition's newly promoted botanist, Sereno Watson, explored the local hills and valleys (Brewer, 1905). Near Carson City he found "*A pretty dwarf flower of earliest spring, forming bright patches of color among the sage-brush in the lower valleys, the delicate inch-long stem seeming scarce able to sustain the absurdly disproportionate flowers that terminate it*." In his later report on the plants he collected during the expedition, he named it a new variety of ***Mimulus rubellus***, var. *latiflora*, beginning a long tradition of lumping these plants



Geographic distribution of species that were previously included in Mimulus montioides.

into broadly defined and wide ranging *Mimulus* species (Watson, 1871).

The western Nevada plants were maintained as *M. rubellus* var. *latiflora* by Asa Gray(1886), who also included ***M. montioides*** in *M. rubellus*. Adele Grant's (1924) revision of *Mimulus* species recognized *M. montioides* as a separate species with the northern Nevada plants lumped in with plants from high mountain meadows in the southern Sierra Nevada.

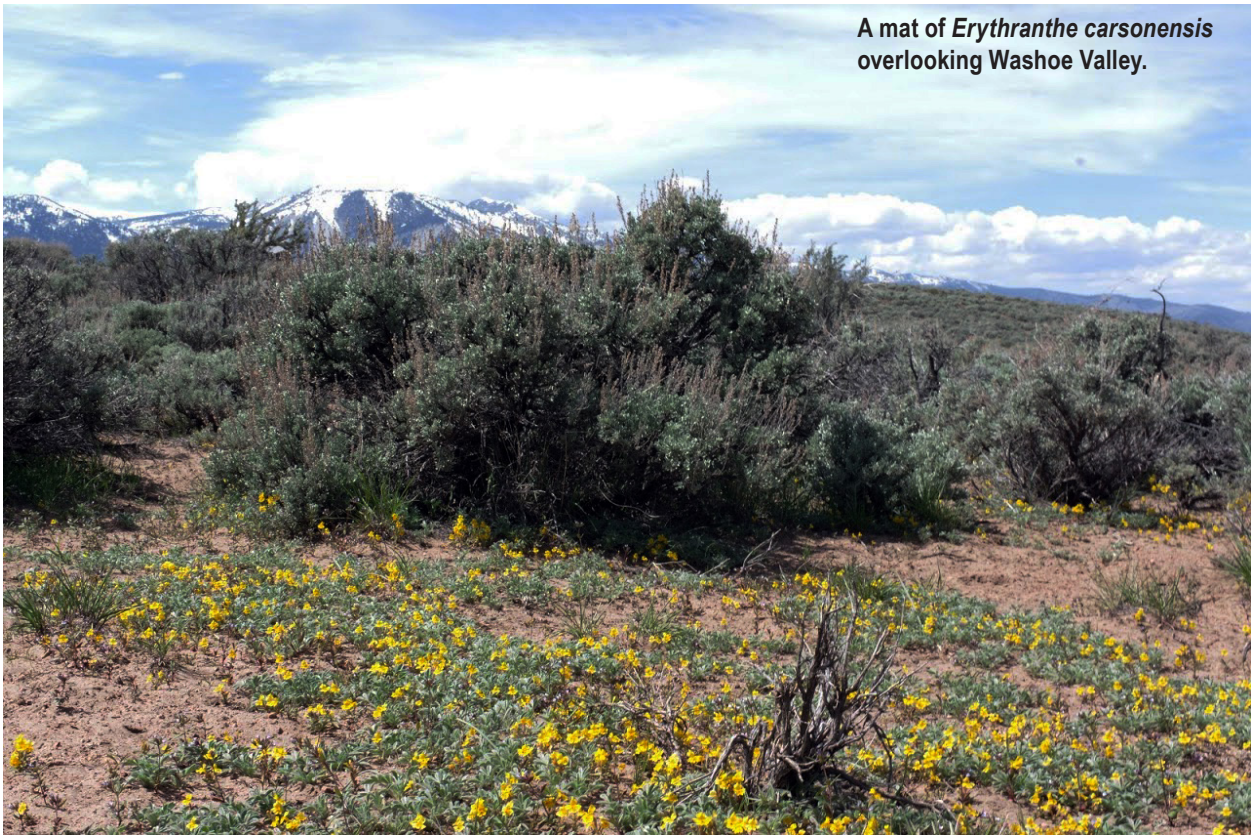
This treatment was followed until Naomi Fraga, conservation botanist at Rancho Santa Ana Botanic Garden, was reviewing the taxonomic history of the group and noticed that the description for *M. montioides* was based on three different collections. When Naomi visited Carson City in 2009, having previously visited the High Sierra sites of *M. montioides*, she recognized immediately that the plants were a different species (Fraga, pers. comm.). Not only are the plants separated by a large distance, they occupy very different habitats, and the flowers of the Carson City plants bear a striking red spot that can be difficult to see in faded pressed specimens. Based on these and other differences, she

Erythranthe carsonensis

published a paper in 2012 describing the western Nevada plants as a separate species, giving them the name ***Erythranthe carsonensis*** or Carson Valley monkeyflower. During a recent extensive revision of the entire family *Scrophulariaceae*, *Erythranthe*, a former sub-genus of Mimulus, was promoted to the level of genus, and all monkeyflowers were moved to the Lopseed Family, *Phrymaceae* (Barker et al. 2012; Beardsley & Olmstead 2002).

With the recognition of Carson Valley monkeyflower as a separate species it became clear that the species is restricted to a very small geographic range, much of which now lies beneath Carson City and farms of Carson and Washoe valleys. In 2011, the Nevada Native Plant Society's Rare Plant Workshop added *E. carsonensis* to the NNPS list of threatened plants and recommended that the State of Nevada, Bureau of Land Management, and US Forest Service recognize the soon-to-be named species and begin protecting its habitat.

From 2010 to 2015, a few local botanists and volunteers searched for the plants in remnant sagebrush stands around the edges of Carson City, places such as Prison Hill, Indian Hills, and



A mat of *Erythranthe carsonensis* overlooking Washoe Valley.

Jack's Valley. Except for 2011, which was unusually cold and wet, the winter and spring weather was exceptionally dry. You may remember the unusual mid-winter wildfires in Reno and Pleasant Valley, driven by high winds and parched vegetation. For a plant with roots that rarely extend beyond three inches deep, winter and spring rainfall are critical to growth and reproduction. During these severe drought years, our searches yielded very few plants. At the type locality on the southwestern slope of Prison Hill, a team of eight interns and two botanists managed to find only a single flowering plant.

Unlike perennial plants that use deep roots, hairy leaves, or stored water to survive a drought, annual plants can avoid the effects of drought by simply staying dormant until growing conditions improve. Desert annuals are well adapted for this strategy with small, hard seeds that can survive for years in the soil. This survival strategy results in the famous "super-blooms" in Death Valley when flooding stimulates seeds to germinate en masse, carpeting the valley with color. In the winter of 2015-2016 the drought cycle finally eased, bringing a wetter than normal winter and then an unusual series of rain showers alternating with

Development threatens many of the known *Erythranthe carsonensis* populations.

warm, sunny weather in the spring. The combination of moisture and warmth proved to be just the thing the dormant seeds were waiting for. The first sighting came in late March; a former Natural Heritage Program colleague saw them while jogging on Prison Hill, just east of Carson City. Even on a cold, cloudy day the carpets of yellow flowers around the water tank were visible from a distance. We spent a full day chasing the little flowers from the top of the toeslope down to the line of houses.

Excited by our find and knowing that there was far more habitat than two botanists could cover in two to three weeks, we sent a press release to the local newspapers, websites, and the NNPS mailing list, asking people to contact us and send photos if they located any monkeyflowers. While we started searching near previously known locations, the reports from the public started pouring in. Each day when I returned from my field surveys I found up to a dozen emails, ranging from "there's one plant growing in my driveway" to "they're all over valley floor south of the Gardnerville Ranchos." One email even led us to a small valley at the top of the ridge that separates Carson City from Washoe Valley, a spot we never would have looked if not for a guy out riding his dirt bike who noticed the cute yellow flowers.

We only expected a short window for surveying before the flowers dried up and the tiny plants became impossible to find, but the unusual weather pattern of frequent light showers extended through April and May, delivering more than three times the normal amount of precipitation for those two months. With the extra rain and help from volunteers, including a large group of NNPS members, we were able to map areas of monkeyflowers about five times larger than everything we had mapped previously. More importantly, many of the new populations are in areas that are farther from development on public lands that have not been identified for sale. While the new information is good news, we will continue to track this

species and additional loss of habitat to development, agriculture, or fire.

Once the flowers started to wither, we were forced to give up our search and turn to processing the mountain of data that had collected on our desks and computers over the course of two months of surveys. With more than 12,000 photos, miles of GPS tracks, and a box of soil samples, we will probably be analyzing these data until the next "year of the monkey."

Acknowledgments

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- Naomi Fraga, Rancho Santa Ana Botanic Garden
- NNPS volunteers
- US Fish and Wildlife Service
- KTVN Channel 2, Carsonnow.org, Nevada Appeal, Carson Valley Times, This is Reno, and other local news outlets for sharing our story
- Everyone who sent us monkeyflower sightings

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