



# NEVADA NATIVE PLANT SOCIETY



*Lewisia maguirei*, Quinn Canyon Range, by Matt Berger

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## A SWEET BITTERROOT FIND

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Story by Janel Johnson

If you've been to our meetings or read this newsletter, you've probably heard me talk about **iNaturalist**, a free citizen science app that lets people post photos of plants, animals, fungi, or any other living organism. Part of our rare plant program at the **Nevada Division of Natural Heritage** (NDNH), formerly the Nevada Natural Heritage Program, is to monitor iNaturalist observations for the rare plants we track throughout the state. Last month this effort paid off with a big discovery for **Lewisia maguirei**, a small rare plant that is similar to **Lewisia rediviva**, aka bitterroot.

The story begins with Matt Berger (iNaturalist username **@sheriff\_woody\_pct**), a botanist, rare plant enthusiast, and long-distance backpacker. He writes:

*I love looking for rare and remote plant species and I also love the family Montiaceae and especially Claytonia and Lewisia. After learning about the existence of Lewisia maguirei, I had a plan to track it down in its only known location, the **Quinn Canyon Range**. When the chance finally came in early May, my girlfriend Annie and I headed to the remote range to look for it. It only took about 10 minutes to find rosettes of Lewisia leaves there, but still no inflorescence to confirm which species. After a little longer we found our target, Lewisia with 2-3 flowered inflorescences. The flowers were closed but it was definitely Lewisia maguirei! Another 3 hours of searching yielded a single plant in flower [see photo above].*

*We went home high on the feeling of success at seeing one of the rarest Lewisia species still alive and well! As far as I can tell, it*

*hadn't been documented in many years, only a few old photographs of it existed online.*

I saw Matt's observation the next morning, so I confirmed his identification and asked him to share the coordinates with us to add the observation to Biotics, NDNH's database and map of rare species. iNaturalist automatically obscures the coordinates of rare species to prevent poaching and disturbance from over-enthusiastic sightseers. True locations can be shared automatically with project curators by joining the project. NDNH oversees two rare plants projects, the **NNHP Track List** and the **NNHP Watch List** which are curated by Jim Morefield (@jdmore) and me (@jdjohnson).

I was excited to have a high-quality photo of the flowers. I have looked for them myself, but I always seem to be there about a week too late. Matt continues:

*When we made it back to the Las Vegas area, we camped in the **Spring Mountains**. The next day I took Annie out to see some **Claytonia panamintensis** I had found earlier in the year. Then in the same area, Annie looked down at the ground and said, "Hey look at this! **Lewisia**!" We got down on our knees to get a close look at it... I said, "There's 2-3 buds per inflorescence and only 3, sometimes 4 sepals ... this has to be **Lewisia maguirei**!"*

*Had we not JUST visited the known location of this rare and endangered plant the day before, we probably never would have thought twice and just called it **Lewisia rediviva**! We shouted with the pure exhilarating thrill of botanical discovery! After posting to iNaturalist, I looked for other observations of **Lewisia** in the area and sure enough, someone else had seen this rare species flowering as well, but identified as **Lewisia rediviva**, due to no known locations of **Lewisia maguirei** known outside the Quinn Canyon Range. One of the most fun plants we've ever found!*



*Lewisia maguirei*, Spring Mountains, by Matt Berger

A bit later in the day, I checked on iNaturalist to find several notifications of Matt and Annie's discovery with confirmation of the ID from Jim Morefield. In searching the **Consortium of Intermountain Herbaria** (SEINet) for *Lewisia* observations, we found that not only had *L. maguirei* never been documented in the Spring Mountains, there were no specimens of *Lewisia* of any kind in the whole mountain range. In fact, the only other *Lewisia* specimens in all of Clark County were from the Sheep Range in **Desert National Wildlife Refuge**, collected by Thomas Ackerman in 1979 and 1983. These seven *Lewisia* specimens were all identified as *L. rediviva*.

The seven specimens had found their way into four different collections across the west. Two are at Utah State University and their photos are online. Examination of the images shows that even though the flowers have fallen off the specimens, there had been 2-3 flowers per inflorescence with wide-elliptical bracts below the flowers, a sure sign that these were in fact *L. maguirei*.

Three of the specimens are at the University of Nevada, Las Vegas and another at the University of Nevada, Reno. None of these specimens had yet been photographed and I knew that due to the COVID-19 lockdown the university staff and volunteers would not be able to access the specimens to verify their identity.

The last of the seven specimens is at the **Clifton Smith Herbarium** in the Santa Barbara Botanic Garden. Unfortunately, there wasn't an image online. However, unlike the Nevada universities, the Botanic Garden was staffed. I contacted the curator, Matt Williams (@matt\_g), to see if the herbarium staff could help me examine the specimen.

Coincidentally, Matt is currently reviewing the phylogeny of the *Lewisia* genus and had been following the discussion of the other Matt's discovery on iNaturalist. He asked Suzy Delgadillo, a curatorial assistant at the herbarium, to move this specimen to the front of the imaging queue and we soon had our answer: this too was *L. maguirei*. It's quite

likely that Ackerman's remaining specimens from the Sheep Range are all *L. maguirei* but we will have to wait until Nevada's Universities reopen to be certain.

A few days after the first discovery, I saw more *L. maguirei* observations from the Spring Mountains, this time from Corey Lange (@coreylange), the Wildlife Biologist for the Pahrump, Red Rock, and Sloan BLM Field Offices, in Las Vegas. I asked him write about his observations.

*I had been following Matt Berger (@sheriff\_woody\_pct) on iNaturalist and Instagram for a little while because he had been botanizing some really remote and interesting places in southern California and Nevada that I had been to as well, or have been wanting to go. He had also been spending quite a bit of time botanizing around Clark County, which is where I'm currently living.*

*I first saw that @sheriff\_woody\_pct had found *Lewisia maguirei* in the Quinn Canyon Range, and that was an exciting find because *Lewisia maguirei* is an endemic species to Nevada, and apparently not common across its known range. I then noticed on iNaturalist that @sheriff\_woody\_pct had found and identified *Lewisia maguirei* in the Spring Mountains, right outside of Las Vegas, which was a range extension and a very exciting find. According to @jdmore there were no previous reports of any *Lewisia* in the Spring Mountains before @sheriff\_woody\_pct's discovery!*

*On May 8th I had a free Friday, so I decided to search for *Lewisia maguirei* as well. I was really inspired by @sheriff\_woody\_pct's discovery of *L. maguirei* in the Spring Mountains, and I knew it was probably past the flowering season for the species, but I wanted to see if I could find some for myself. I decided to hike some ridges in the southern Spring Mountains, on the backside of Red Rock Canyon, just a few miles south of where @sheriff\_woody\_pct found his plants.*

*I parked in Mountain Springs and hiked to the northeast. I wasn't finding any *Lewisia* for a while but kept gaining elevation and stayed on ridges as much as possible. It wasn't until I*

was close to the ridgetop of the mountain when I found my first *Lewisia*! The plants were scattered along a west and south-facing, mostly bare slope. They were all past bloom and some had gone to seed. I counted seven plants at the first location I found.

I continued up the ridge towards the crest of the mountain and found scattered populations of *L. maguirei* along an approximately 250m long section of the ridge. I only found about 50 plants total and those were in areas of mostly bare gravel on west- and south-facing slopes, and all plants were past bloom. There could have easily been more plants but the *Lewisia* are very short, blend in fairly well with the rocks, and were not blooming, which made them slightly harder to find.

After reaching the crest of the mountains, I hiked back towards my car on the next ridgetop south of where I had found the *Lewisia*. I did not find any *L. maguirei* on any other ridgetops, even though the other ridges were very close by and



Top and bottom: *Lewisia maguirei*, Spring Mountains, by Corey Lange



*Lewisia rediviva* by J. Johnson

had similar habitat. However, the other ridges had slightly more pinyon/juniper than the ridgetop where I found the *L. maguirei*.

From the little information we have about this species, the plants seem to bloom in early to mid-April in Clark County and mid-to late April in the Quinn Canyon Range in eastern Nye County. The populations are not at the highest elevation of any of these mountain ranges so there is perhaps more potential habitat in the mid-height limestone mountain ranges in southeast Nevada.

If you are exploring the mountains in this part of the state, here are the distinguishing features of the two species:

***Lewisia maguirei*** – Inflorescence with 2 or 3 flowers, each branch subtended by elliptical bracts. Each flower has 3-4 pink sepals (turning tan with age) and 7-9 white petals. The leaves are present when the plant is blooming, succulent, and 3-6 mm wide. Smaller leaves seem to stay attached to the plant longest, persisting until the plant has gone to seed.

The information in Intermountain Flora that the leaves are 1.2-1.8 mm wide is likely based on specimens that were collected long after flowering and only had the smallest leaves still attached.

***Lewisia rediviva*** – Inflorescence with one flower, subtended by narrowly lanceolate bracts. Each flower has 6-9 pink sepals and 10-20 white or pink petals. The leaves are 1.3-2.2 mm wide, cylindrical to slightly flattened, and are dried and gone before the flowers open.

Thanks to Matt and Annie for their find and to Matt Guilleams, Suzy Delgadillo, and Corey Lange for their contributions toward and sorting out a 40-year-old mis-identification!

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## SOCIETY NEWS

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### SOUTHERN & NORTHERN NEVADA EVENTS

All meetings are currently canceled. For all cancellations and postponements, NNPS will post updates on our website, [NVNPS.org](http://NVNPS.org) when we have more information.

Nevada Native Plant Society  
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