

ERIOGONUM SOCIETY NEWSLETTER

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A CALL FOR VOLUNTEERS

Hello members, I trust you are having a rewarding spring. The Eriogonum Society is looking forward to our annual meeting at Rancho Santa Ana Botanic Garden. **Beyond the Garden**, we've scheduled some off-site hikes at Tejon Ranch, the San Bernardino Mountains, and a possible optional hike to the mainland coast. We're expecting a great turnout this year and sincerely hope you enjoy the activities we've arranged.

These meetings require a huge effort by local members and volunteers as well as by society committees and board members. The viability of societies like ours rests primarily on the shoulders of volunteers, most of whom also have their daily work and family obligations. These volunteers allow us to hold events, communicate with our members, and hold our society together. Unfortunately, for the last few years we have been woefully short of the volunteer numbers needed to keep the society operative. There are many openings available – from short-term jobs like helping with registration for annual meetings to long-term positions, like filling our currently vacant offices of Vice-President and Secretary.

I ask that you carefully assess your availability to become a volunteer, weighing your current home and office needs to see if the opportunity to serve the society and shape its future exists for you.

Regards,



Hugh Mac Millan, Eriogonum Society President



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ANNUAL MEETING SCHEDULE OF EVENTS

Thurs., June 14 – Registration / Board Meeting

East Class Room. 5:00PM reception at Johnson's Oval at [Rancho Santa Ana Botanic Garden](#).

Friday, June 15th – A day at the Garden!

Two *Eriogonum* identification workshops (morning or afternoon) will be offered in the East Class Room along with tours of Rancho Santa Ana's facilities and collections including the herbarium, grounds, seed storage facility, and plant nursery. Afterwards, enjoy a catered dinner and a talk on buckwheats of [Tejon Ranch](#) by Nick Jensen of the [California Native Plant Society](#).

Saturday, June 16th – San Bernardino Mts.

Come along on a field trip to the [San Bernardino Mountains](#) led by Naomi Fraga, the Director of Conservation Programs at the Rancho Santa Ana Botanic Garden. We'll return to the Garden for another delicious dinner followed by the annual report from the Board of Directors and our featured speaker's presentation. If there's time we'll have a talk on the San Bernardino Mountain buckwheats.

Sunday, June 17th – Tejon Ranch

Field trip to see the many buckwheats of Tejon Ranch. Nick Jensen will lead the trip and we expect to see the beautiful endemic *Eriogonum calistum*.

Monday, June 18th – Coastal Buckwheats

Explore the mainland coastal area with Santa Barbara Botanic Garden's Steve Junak!

If you haven't registered yet, go to our website at [erionum.org](#) and click on the **Annual Meeting** tab. We look forward to seeing you at the Garden!

iNATURALIST

We've set up an [iNaturalist project](#) to collect our observations during the meeting's field trips. It will automatically collect the observations in California of any registered users during the meeting. To sign up for this project email Janel at president@nvnp.org or message her on iNaturalist at @jdjohnson.

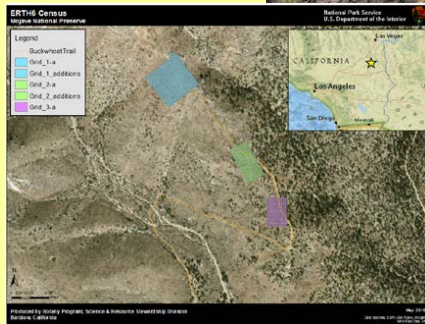
For those of you who haven't used it, iNaturalist is an online social network of people sharing biodiversity information to help each other learn about nature. It is a wonderful resource and we highly encourage you to check it out.



ERTH NEEDS YOUR HELP!

JUNE 18-22, 2018

Mojave National Preserve is looking for volunteers to help monitor Thorne's buckwheat, (*Eriogonum thornei*), USDA Plant Code: ERTH6. Thorne's buckwheat is a rare plant species only known to grow on a single ridge in the New York Mountains. In 2011, over 12,000 individuals were counted. This is why we need your help! Come camp out with us in one of the most botanically diverse desert mountain ranges.



Contact Drew Kaiser for more information

Andrew_Kaiser@nps.gov

760-252-6106



VOLUNTEERS WANTED!

BUCKWHEATS OUT OF PLACE

By William Hoyer



Eriogonum heracleoides var. *heracleoides*
Photo by Gerald D. Carr, botany.hawaii.edu

A few years ago my father called me up and asked if I was interested in publishing a range extension for a couple populations of *Eriogonum heracleoides* var. *heracleoides* he found in the Tahoe Basin. Usually documenting a new population is exciting, but this appeared to be an instance where a non-native buckwheat was introduced into the Tahoe Basin by people. Because this happens amongst other genera and I wasn't sure if it was a very critical thing to record, I asked Dr. Reveal to see what he thought.

As it turned out Dr. Reveal was passionate about the issue of conserving the buckwheat species we have and he was very interested in making sure we formally document anthropogenic movement of species. He mentioned that highway repair and restoration teams were regularly planting *Eriogonum*

species in areas disjunct with their native range. Also, publishing a range extension is good as it formally documents the movement.

For those of you whom may not be familiar with formal botanical documentation of a range extension it goes like this:

Visit the area and identify the plant then press and dry several samples from the area representing the displayed natural variability as well as the available phenology.

Next assemble information about the collection site and plant including: plant phenology, flower and leaf color, population size, neighboring plant names, vegetation type, location data, soil data, date, collector's name, and collection number and send this

along with now dry pressed plants to herbaria for identification confirmation and curation.

Then the search of literature and herbaria begins. Find the authoritative flora for the region you are in (which, in many areas of California, is not the *Jepson Manual*) to ensure that the plant wasn't previously found but not added into a more generalized flora. Search databases of regional herbaria (and maybe even pay a visit in person to shuffle through the dusty collection cabinets) in the chance that it was previously collected but not published.

Only after all of that can you go through the writing, submission, fee payment, and peer-review process of simply stating that you saw a plant in a location and it hasn't been seen there before. Sounds like fun, huh?

Why go through this level of effort for a single buckwheat moved several hundred miles from its native range? Why were Dr. Reveal and many other

botanists so particular about plants being relocated to new areas? It is driven by our appreciation for the history and diversity of the flora of the arid west and our desire to conserve it for future generations. We want to preserve the natural boundaries between varieties.

This drive is most apparent in our classification of what we call neo-endemics. These are species that are still in the process of expanding and diversifying. They are adapting to different altitudes, soils, and other conditions and that leads to differences in size, shape, flower color, leaf hairiness, involucre shape, and so on. It also means that several closely related varieties and species may still be able to hybridize, potentially homogenizing the diversification process. Our beloved buckwheats are a perfect example of this, as are *Arctostaphalus* and *Ceanothus*.

MADROÑO, Vol. 60, No. 3, p. 261, 2013

NOTEWORTHY COLLECTION

CALIFORNIA

ERIOGONUM HERACLEOIDES Nutt. var. *HERACLEOIDES* (POLYGONACEAE).—El Dorado Co., the intersection of North Upper Truckee Rd and Shoshone Rd, South Lake Tahoe, CA, 1.9 mi N of U.S. Hwy 50, 38.87152°N, -120.03767°W, 6473 ft, July 28, 2012; same site different occurrence at the intersection of U.S. Hwy 50 and Pioneer Trail, SE corner about 50 ft from the roadside, 38.859059°N, -120.011704°W, 28 July 2012, *Hoyer 2* (BH, JEPS, RENO, SD). Identification confirmed by Dr. James L. Reveal (Cornell Univ.).

Observed at two locations alongside the road within 1.5 mi of each other, one with approximately 50 plants and the other with hundreds of plants. Plants were growing in partial shade to full sun. Associated species include: *Pinus contorta* Douglas ex Loudon, *P. jeffreyi* Balf., and *Eriogonum umbellatum* Torr.

NEVADA

ERIOGONUM HERACLEOIDES Nutt. var. *HERACLEOIDES* (POLYGONACEAE).—Douglas Co., State-line, NV, at the intersection of Kingsbury Grade Rd (Nevada Hwy 207) and Kahle Dr, 0.2 mi E of U.S. Hwy 50, 38.96860°N, -119.93191°W, 6335 ft, 28 July 2012, *Hoyer 1* (BH, JEPS, RENO, SD, US). Identification confirmed by Dr. James L. Reveal (Cornell Univ.).

Observed at one location, with slightly less than 100 plants. Plants appeared to be planted as part of a restoration project and were growing in full sun. Associated species: *Pinus jeffreyi* Balf.

Previous knowledge. *Eriogonum heracleoides* var. *heracleoides* is a perennial herb that forms a spreading mat. It has a distinctive whorl of foliaceous bracts about

midway up the flowering stem. The previously known distribution spanned from southern British Columbia, Canada, S through Washington and Oregon to northeastern California (Modoc Co.), and E across Idaho, portions of Nevada (Elko, Eureka, Humboldt, Washoe, and White Pine cos.), and northern Utah to western Montana, western Wyoming, and northwestern Colorado (Baldwin et al. 2012; J. L. Reveal, Cornell Univ., personal communication), and is absent from the Tahoe Basin (Smith 1984).

Significance. This site represents the southernmost occurrence in California and the first within the Tahoe Basin. Both locations abut roadsides suggesting the taxon was introduced by restoration efforts mitigating roadwork impacts. Natural resource management agencies should be aware of this possible introduction pathway and avoid introducing this species outside its native range. (Special thanks to my father, Dr. William F. Hoyer Jr., for bringing this population to my attention).

—WILLIAM F. HOYER, III, 19240 Dearborn St., Northridge, CA 91324. williamhoyer@gmail.com.

LITERATURE CITED

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Unfortunately, trying to keep neat delineations between the different groups creates a headache when we try to identify them in the field.

How does this apply to our out-of-place *E. heracleoides*? *Eriogonum heracleoides* is in the sub-genus *Oligogonum*, as are *E. umbellatum*, *E. lobbii*, and *E. ursinum* — three species that are naturally occurring in the Tahoe Basin. There is now a risk that *E. heracleoides* may cross with the other three, homogenizing the buckwheat diversity in the Tahoe Basin. The combination of naturally occurring *Eriogonum* in the Tahoe Basin belongs there and serves an ecological function and we owe it to the next generation

of wildflower fans to preserve those relationships. To appreciate the intricate and astounding diversity between the species of this genus we need to keep them separate and on their evolutionary journey and not allow hybridization with a closely related species we have introduced to the area. Documenting the introduction of the non-endemic is the first step in undoing the damage.

William Hoyer is an Eriogonum Society member from Santa Barbara and a natural resource manager on Naval Outlying Field San Nicolas Island.



Eriogonum microthecum var *ambiguum*
Bishop, CA

Rarity in *Eriogonum*

Story and photos by Ben Grady

Rarity in the natural world can be a difficult concept to grasp. Simply counting the number of individuals in a population or species may not represent the entire picture of how rare that particular taxon may be. Some species, such as *Platanthera leucophaea* (the prairie white-fringed orchid), are relatively widespread geographically (12 states), yet not usually found in sizable populations. On the other end of the spectrum, the Dudley Bluffs bladderpod (*Physaria congesta*) is only known to occur in Rio Blanco County on western Colorado. Both of these species have the same status (Threatened) under the Endangered Species Act.

Eriogonum is a genus of extremes, especially when it comes to species ranges and distributions. We have all certainly encountered one of the varieties of either *E. umbellatum* or *E. ovalifolium* during our botanical forays. These two wild buckwheat species are each commonly encountered in 11 different western states. On the other hand, many species of *Eriogonum* epitomize the definition of rarity. Jim Reveal estimated that fully one third of the species of *Eriogonum* are considered to be rare or uncommon throughout their range. That is

over 80 rare species out of 250+ species in the genus! Of these, eight taxa have federal status under the Endangered Species Act.

One might ask, “What is it about *Eriogonum*

that lends to such high levels of taxonomic scarcity?” This is an interesting and complicated question, to be sure. Here I will offer some speculative opinions based on my experience. For starters, the sheer taxonomic size of *Eriogonum* increases the likelihood that some of the species may exist in low numbers. Additionally, some populations are considered rare if they are located at the edge of their range. Biological, geological, and geographic factors certainly contribute to the rarity of many other species of wild buckwheat in western north America. Hybridization and polyploidy are common in *Eriogonum*. These processes can add to the genomic toolkit of certain plants, allowing future genera-



Eriogonum gypsophilum

tions to tolerate a wider range of ecological conditions. Many of the rarest species of *Eriogonum* are limited to unusual **edaphic** conditions, which are less than ideal for other, non-tolerant, plant species. *Eriogonum thornei* (Thorne’s wild buckwheat) is one species that instantly comes to mind. This lovely

minuscule shrub is limited to the copper-rich soils on ridges in the New York Mountains of the Mojave Desert. The habitat range is narrow for *E. thornei*, but on these ridges, individuals are relatively numerous. Other notable examples include *E. pendulum* on serpentine-derived soils, *E. ovalifolium* var. *vineum* on calcareous talus, *E. gypsophilum* on gypsum flats. Isolation, either on one of these “edaphic islands”, in a mountain range, or otherwise, can certainly lead to speciation at a local or regional scale.

The status of rarity for a species, not only difficult to define, can change overnight. Once thought to be extinct, the Mt. Diablo wild buckwheat (*Eriogonum truncatum*) “jumped” back into existence with the rediscovery of a population by Michael Park in 2005 ([UC Berkeley News](#)). This annual species had likely been hiding in the seedbank, or other unknown areas, for decades. Recently, botanists estimate the presence of over 2 million individuals of *E. truncatum*. Other recent species discoveries shed additional light on scarce plant taxa. *Eriogonum domitum*, a

newly described species from west-central Utah, has only been found in the House Range on high-elevation calcareous soils. While there are likely thousands of individuals present here, these individuals represent the entirety of the global distribution of this species. This is the case with a number of *Eriogonum* species.

Conservation efforts to prevent extinction or localized extirpation are underway for many of the rarest species of *Eriogonum*. Monitoring and education are two of the simplest ways to gain valuable knowledge, increase awareness, and make a difference. Involvement in the *Eriogonum* Society, as well as many other state and regional native plant societies is a great place to start!

When Dr. Ben Grady isn't teaching classes in biology and botany at the University of Wisconsin-Platteville, he continues his exploration into the beauty and mystery of Eriogonum.



Eriogonum domitum

Two Jewels

Story by Hugh MacMillan



I admit it: I love eriogonums. While they come in many different shapes, my favorites are the compact, mat-forming members of the genus. These tend to grow in rather harsh conditions and some of these tenacious jewels can be found in the rugged borderlands between Wyoming, Colorado, and Utah. Here is a story of my fondest encounters with two of them: *Eriogonum tumulosum* and *Eriogonum acaule*.

In the summer of 2010, the American Penstemon Society held an annual meeting in Moffat County, Colorado. Moffat is the most northwesterly county in the state, wedged up against Utah and Wyoming. Included on the plant list for the field trip was *Eriogonum tumulosum* and a location where it might be found – a hill near the **Gates of Lodore** Ranger Station. This is a popular staging area for rafters enjoying the Green River as it runs through **Dinosaur National Monument**. Happily, I was camping with a group of fellow Society members at Irish Canyon campground, just a short distance away from the site. Once we realized this, we eagerly headed out in search of *E. tumulosum*.

The hill where the buckwheat grows turned out to be next to the parking area for the ranger station. After quick hike up the hill and brief search we found our goal. This compact species known as the Woodside wild buckwheat has truly minute leaves forming compact mats or buns. In his treatise *Eriogonum as a Rock Garden Plant*, Dr. James Reveal wrote, “*Eriogonum tumulosum* . . . is often confused with *Parthenium ligulatum* Barneby as both grow together and [form] dense hummock-like mats. It occurs on gravelly to clayey flats and slopes in salt-bush and sagebrush communities, and in piñon and/or juniper woodlands between 1650 and 2300 m.”

In his wonderful book *Alpine Plants of North America*, Graham Nicholls says of *Eriogonum tumulosum*, “The fantastically tight cushions with almost stem-less flowers on the bun have olive-gray foliage with small white-pink umbels nestled among the tiny leaves. Although an ideal trough plant, it ranks among the best and most challenging to grow.”

Sadly, we were there a few days before the blooms unfolded but we got a spectacular view of the Green River as it emerges from the canyons through the Gates of Lodore.

The second species in this tale, *Eriogonum acaule*, is one I came across at a lake near the **Snowy Range** west of Laramie, Wyoming. While on a trip to the Beaver Divide in central Wyoming, a group of friends and I had decided to camp at the lake and look around for *E. acaule* which was known to live in the area. To our amazement, we found a few specimens in the compacted dirt parking area. They were a bit mashed and had obviously driven over by the vehicles of anglers and other outdoor enthusiasts

who visit the lake but were otherwise thriving. The sheer toughness of these beauties is not uncommon in the genus but this was beyond my wildest expectation. I was compelled to run my fingers over these orbs, fascinated by their density.

Of the “low, matted, caespitose perennials in *Eriogonum*,” Dr. Reveal thought *E. acaule* was one of the loveliest. He wrote, “The flowers are in small, capitate clusters arranged in a single involucre atop a short flowering stalk that hardly exceeds the length of the leaves. The species is a true rock garden plant but somewhat slow to grow to reach maximum size (up to 5 dm across). It occurs mainly in southern Wyoming in Albany, Carbon, Fremont, Lincoln, Natrona, Sublette, Sweetwater, and Teton counties; it is most commonly seen in Sweetwater, Carbon, and Albany counties. The species also occurs in Moffat Co., Colorado.”

Graham Nicholls penned, “*Eriogonum acaule* is a cold-desert plant from Wyoming. This is the tiniest buckwheat and makes rounded buns of gray-green leaves 2 cm high and 25 cm or more across. The practically stemless flowers of burnished gold, orange, and red appear in June.”

Traveling the west in search of *Eriogonum* and other genera has been the highlight of my summers for several years now. The majesty of our area, the broad open spaces, the clear skies and starlit nights continue to intoxicate. Days spent on knees peering at plants, key in hand, is indeed a noble undertaking for even the amateurs among us. Come join us and revel in the beauty that is the West – may these spaces be cherished and preserved in coming years.

Hugh MacMillan is a naturalist and avid hiker who makes his home in Colorado.





By recommendation of a colleague, I enrolled for the *Eriogonum* Conference. As an eager botanist, I was curious to join those who felt *Eriogonum* is deserving of society-level recognition. When my I-5 drive northward began reveal a new suite of species, I wondered aloud “Who are these people?” As I climbed the moisture gradient to the base of Mount Shasta, the grassland yielded to oak and oak succumbed to conifer. While I have always admired the scrappy tenacity of the *Eriogonum*, I could not extrapolate who would congregate for this conference. I was a little apprehensive meeting new people. I then reaffirmed to myself, “Well, at least they have good taste.” My journey ended at the conference venue, the charming **College of the Siskiyous**. After a beer (or two) from the local bar, I ascended into nostalgia as I climbed into the dorm-style bunk.

Once the conference began, it was clear the members were as diverse as the genus *Eriogonum*. Our merry bunch included forest service folk, ranchers, gardeners, botanists, and their loving partners. Surrounded by friendly faces, I was inspired to take advantage of the mental clarity of the morning workshop. Dr. Ben Grady’s workshop unveiled the

vast variation in character traits secured in footholds of the respective tribes (from annual to subshrubs, to over 40 varieties for a single species, and 240 species nationwide – Oh My!). I was converted in moments. This is no ordinary taxon. Its majesty commands a society devoted to consideration and investigation.

My previous attempts to key *Eriogonum* produced a bashful “soft key.” Couplets mocked me with familiar jargon applied in a novel manner. Employing PowerPoint and white-board sketches, Ben highlighted the variation in involucre, habit, and leaf shape. I was grateful for an in-depth overview of a questionable character: the stipe. The workshop was fantastic because only a single taxon was present. Traditionally, my keying experience consisted of identifying a myriad species collected that day. While keying, I would try and add to the running tally of the intra-genus variation witnessed in the past. This workshop’s benefit was from displaying each representative species’ variation side-by-side. In the day’s second half, we ventured to Mt. Eddy where there were at least five *Eriogonum* species growing proudly along the rocky slope. Finally I was able to characterize the genus in the wild.

The conference proceeded in botanical caravan fashion. Each stop invited an appreciation of scale. There was a grand display of textural complexity – from the mountains boasting their timeless stature to the floral characters requesting magnification. Once back at the college, we discussed the implications of seed collection in the wild and its impacts on native recruitment, strategies for germination, and general gardening tips. A fascinating undertone of “genetic integrity” circulated through the conversation and hinted at the ecological implications of bringing buckwheats into cultivation.

In the days following, our caravan navigated through a labyrinth of roads to carefully selected sites of natural beauty. The Eriogonum Society proudly represents a special troupe. Each individual brings with them a unique perspective with insight and tales to share. This conference accentuates a diversity of backgrounds united by a core passion for *Eriogonum*. Converted and inspired, I am one of them.

Devin Jokerst was the recipient of the Eriogonum Society student scholarship in 2017.

ERIOGONUM LINKS

Here is a selection of articles printed elsewhere that may be of interest to Society members:
The “Ivory-Billed Woodpecker of Rare Wildflowers” is Now an Unlikely Symbol of Success in an Era of Extinction – a Bay Nature story about the Mount Diablo buckwheat (*Eriogonum truncatum*).

UC Berkeley News wrote about the rediscovery of the Mt. Diablo buckwheat in **2005** (see Ben’s article, too) and again in **2006**.

High Country News featured a story titled **“Threatened plants on state lands have few protections”** that mentions buckwheats and describes some of the challenges we face in conserving habitat for rare plant populations.

The Washington Native Plant Society’s blog has a fine writeup on *Eriogonum niveum*, snow buckwheat.

Finally, Houzz discusses **using *Eriogonum nudum* in the garden**.

PAUL SILVA STUDENT RESEARCH GRANTS

The Paul Silva Student Research Grant from the California Botanical Society is named after Paul Silva (1922-2014), a phycologist and Curator of Algae at the University Herbarium, UC Berkeley, whose bequest to the Society has made this award possible. Awards are made to qualified undergraduate and graduate student members of the Society working on projects that will help achieve the Society’s goal of advancing Western American botany. Students from any accredited university doing botanical research within western North America and who are members of the Society are eligible for this award.

The next deadline for receipt of applications for a Paul Silva Student Research Grant is May 31, 2018. Proposals will be reviewed by a panel of experts, and winners will be announced within two months of the application deadline.

Application details and application form are here:
<https://calbotsoc.org/grants>

ERIOGONUM SOCIETY GRANT

We are proud to announce that the recipient of this year’s Eriogonum Society Grant is Jamey Wilcher of the University of Nevada, Reno. Jamey’s proposal, entitled “Ecology, Genetics, and Restoration of *Eriogonum crosbyae*,” will focus on conservation efforts to protect that species in Nevada.

The goal of the study is to characterize genetic diversity in the plant population and assess soil conditions of potential reintroduction sites. Greenhouse trials and genetic testing will be included in the work. Jamey was awarded \$1,145.