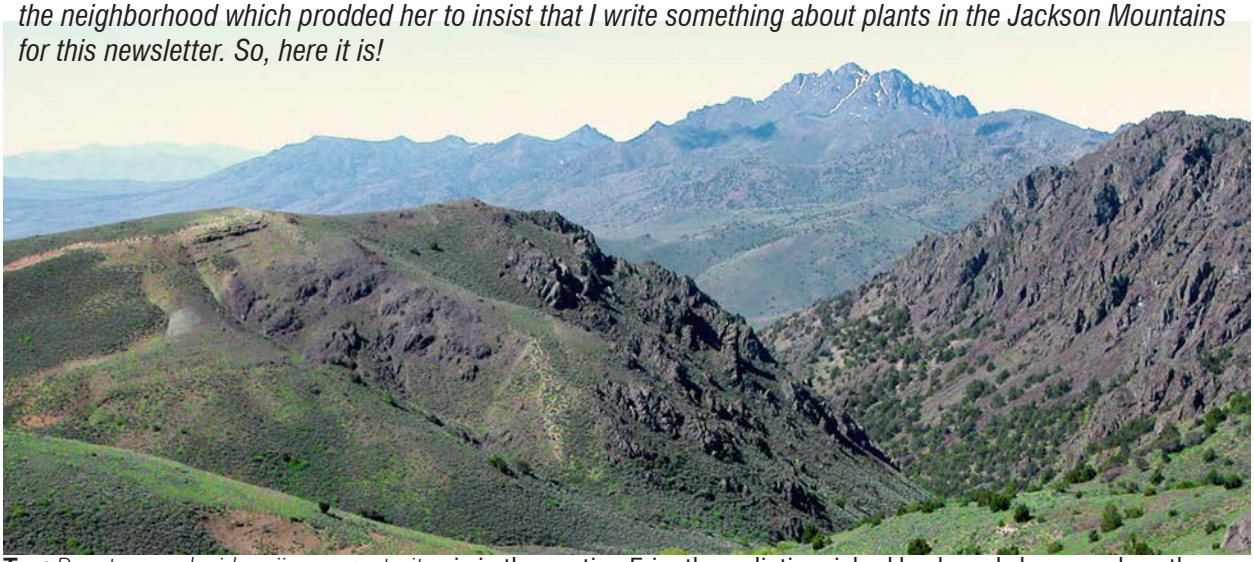
Volume 47 Number 2 - April 2021

Nevada Native Plant Society

Botanical treasures of the Jackson Mountains

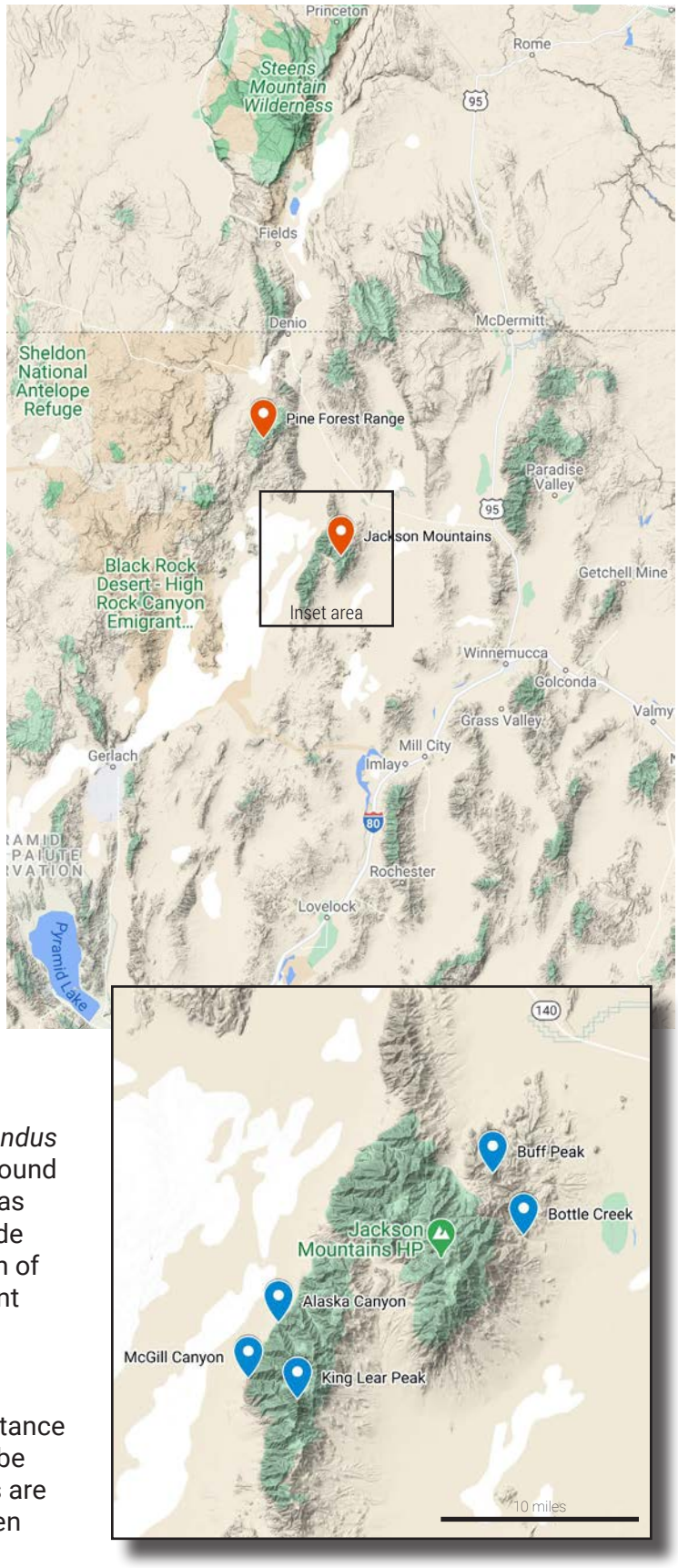
Story by Arnold Tiehm
Photography by Jan Nachlinger

In mid-June of 2020, Jan Nachlinger and I were returning to Reno from a botanical trip that had brought us to the southern end of the Pine Forest Range of Humboldt County. From there we headed west on the Leonard Creek road and, instead of proceeding east to pavement and eventually to Winnemucca, we turned south on the main road down the west side of the Jackson Mountains. South of the Jackson Creek Ranch, I mentioned to Jan that ahead was the only place in Nevada that Carex hystericina *occurred. On her insistence we parked the car, hiked into Alaska Canyon, and marveled at a disjunct population of* Carex hystericina*, which she excitedly photographed. I mentioned several other interesting plant distributions in the neighborhood which prodded her to insist that I write something about plants in the Jackson Mountains for this newsletter. So, here it is!*



Top: *Penstemon davidsonii* var. *praeteritus* is in the section Erianthera distinguished by densely long wooly anthers.
Above: King Lear Peak looms over diverse montane shrublands, woodlands, and clifflands.

The Jackson Mountains are a typical Great Basin range in that they are oriented in a northeast-southwest direction and one side is much steeper than the other. They are in southern Humboldt County, bordered on the west by the east fork of the Black Rock Desert and on the east by Desert Valley, thus isolating the range from neighboring mountains. The southern point of the mountains is near Jungo along the Western Pacific Railroad, and they run north nearly to Quinn River Crossing. Overall, they are about 46 miles long with a maximum width of about 11 miles (McLane, 1978). The mountains are steep and, in the northwestern part, the slopes fall dramatically into the Black Rock Desert. Many of the steep canyons have permanent streams. During peak runoff, these streams emerge from the mountains and disappear into the valley alluvium as they run into the Black Rock Desert. Geologically, the Jacksons are composed primarily of andesite with some pockets of limestone, especially in the middle-western part, and are part of a greater formation historically known as the Happy Creek formation, which incorporates part of the Black Rock Range as well as the Pine Forest Range (Russel, 1984).



There is one plant endemic to the Jackson Mountains, *Penstemon floribundus* (Plantaginaceae, or if you have been around a while like me, Scrophulariaceae). It was described in 1985 from collections made on the west side of the range, just north of McGill Creek (Danley, 1985). Subsequent collections have shown it to be quite widespread in the Jacksons, beginning one canyon north of Bottle Creek and extending south 15 miles to a short distance beyond McGill Creek. Populations can be spatially extensive but individual plants are usually well scattered - I have never seen a "field" of *Penstemon floribundus*. The

plant is a member of section *Saccanthera*, characterized by horseshoe-shaped anthers that open across the arched area while the long tips remain closed. The key characters within the *Saccanthera* are a glabrous staminode, entire puberulent leaves, and glabrous corollas (Holmgren, 2017).

The Jackson Mountains are the only place where *Carex hystericina* (Cyperaceae) occurs in Nevada (Wilson, et al., 2014). This wide-ranging plant occurs from British Columbia to California and east to Newfoundland and Virginia (Reznicek & Ford, 2002). It is known from as close as the Owyhee River in Malheur County, Oregon. In the Jackson Mountains, *Carex hystericina* occurs in Alaska and Bliss Canyons along the same-named creeks. If you are familiar with sedges and have never seen this sedge, your reaction would be, "Wow, I have never seen this sedge before." It is very distinctive with short, fat female spikes that droop with age.

There are two genera, both monotypic, that are endemic to Nevada: *Toiyabea* in the Asteraceae and *Nevada* in the Brassicaceae (Holmgren, 2004; Urbatsch et al., 2006) (see also Nesom, 2020, for a different opinion on *Toiyabea*). *Toiyabea alpina* is found in central Nevada but not known from the Jackson Mountains. *Nevada holmgrenii* is found in six Nevada mountain ranges*: the southern Ruby Mountains (1989); the Toiyabe Range (1978); the Toquima Range (1945); the Shoshone Mountains (1980); the Humboldt Range (1984); and the Jackson Mountains (1988). The Jackson Mountain collection, from the King Lear Peak area, is the farthest north and west known to date. It occurs in cracks of steep rock outcrops and in the talus below them and I am sure that more searches in that area will produce more localities.

Top: Alaska Canyon on the west side of the Jackson Mountains has a permanent stream dominated by willows, wild rose, grasses, and sedges.
Middle: *Penstemon floribundus* is found in limestone and other rock talus, usually on steep slopes.
Bottom: The flowers of *Penstemon floribundus* with characteristic horseshoe-shaped anthers opening across the arch and glabrous staminodes.

* Date of the first collection from that range in ().

Another Nevada endemic that occurs in the Jackson Mountains is *Caulanthus barnebyi* (Brassicaceae). This is a plant of the foothills, occurring in talus at the base of rock outcrops. It is nearly endemic to the hydrographic Black Rock Desert and is known from Humboldt and Pershing counties. The exception is a location in Rosebud Canyon of the Kamma Mountains in Pershing County, just "over the hill" from the Black Rock Desert. In the Jackson Mountains, *Caulanthus barnebyi* is widespread along the western edge.

Also on the Nevada endemic list is *Eriogonum anemophilum*, which only occurs in the northern Great Basin. This is an interesting plant in that it has both high- and low-elevation populations. It is the high-elevation form that occurs in the Jackson Mountains. It is widespread on and south of Buff Peak, at the head of Jackson Creek, and on the ridge east of King Lear Peak. Elsewhere, it occurs in the Humboldt and Sonoma ranges and the Eugene Mountains of Pershing County. The low-elevation form occurs in the Trinity Range and in Jersey Valley of Pershing County and in the foothills of the Shoshone and Fish Creek ranges bordering Reese River Valley in Lander County. The Jackson Mountain populations are a little different as noted by Reveal (2012):

The Jackson Mountains population may prove to be taxonomically distinct as typical E. anemophilum has turbinate to turbinate-campanulate involucres 2-3 mm long and a creamy white perianth, while the Jackson Mountains plant has turbinate-campanulate to campanulate involucres 3-3.5(4) mm long and a pale yellow or occasionally creamy white perianth.

Left: *Carex hystericina*, with characteristic nodding female spikes having a distinctive "bottlebrush" look. **Right:** The inflorescence of *Caulanthus barnebyi* showing petals exceeding the sepals, siliques ascending to spreading, and a capitate stigma. **Opp. top:** Habitat for the high elevation form of *Eriogonum anemophilum* on the central bald mound and on Buff Peak in the left back mid-ground. **Opp. bottom:** Cespitose habit of *Eriogonum anemophilum* on light clay soils at higher elevations in the Jackson Mountains.

While on the subject of Nevada endemics, I need to include *Astragalus pterocarpus* (Fabaceae) and the annual *Eriogonum esmeraldense* var. *toiyabense* (Polygonaceae). *Astragalus pterocarpus* is widespread in the southern part of the range and there are populations along the foothills on the west side as well as in Churchill, Pershing, and Lander counties in northern Nevada. *E. esmeraldense* var. *toiyabense* is widespread in the Jacksons and also in five adjacent ranges in central Nevada:

Left column, top: *Astragalus pterocarpus* is common in the foothills of the Jackson Mountains.
Middle, bottom: The subtranslucent wings on the pendulous pod and long, narrow leaflets of *Astragalus pterocarpus* distinguish it from all other milkvetches.
Right column, top: The Nevada endemic *Eriogonum esmeraldense* var. *tioyabense* differs from the more widespread typical variety by having glandular stems and inflorescence branches.
Middle, bottom: *Penstemon davidsonii* var. *praeteritus* has a lighter lavender corolla color compared to the blue-purple color of the typical Sierran variety.
Opposite: Alaska Canyon is the author's only known Nevada location where both *Epipactis gigantea* (left) and *Zigadenus elegans* (right) occur together.

Shoshone, Toiyabe, Toquima, Monitor, and Hot Creek. These populations are in Lander and Nye counties. There is also a disjunct population in the Independence Range in Elko County.

A regional endemic that reaches its southern limit in the Jackson Mountains is *Penstemon davidsonii* var. *praeteritus* (Plantaginaceae). It also occurs on Steens Mountain in Harney County, Oregon and in the Bilk Creek Mountains, Black Rock Range, Pine Forest Range, Santa Rosa Range, and Trout Creek Mountains, all in Humboldt County. Shrubby at the base and forming large erect clumps, it has rather large blue-purple flowers that can be seen at quite a distance and is a striking sight.

Three common plants that reach their northern distribution points in the Jackson Mountains are *Phacelia crenulata* var. *crenulata*, *Lepidium fremontii*, and *Dodecatheon redolens*. *Phacelia crenulata* var. *crenulata* ranges from southern California to northwestern New Mexico, western Colorado, and Utah. In Nevada, it is known from every county except Storey and Carson City. *Lepidium fremontii* occurs in southern California, northwestern Arizona, and southwestern Utah, and is found in Churchill, Clark, Douglas, Esmeralda, Lincoln, Lyon, Mineral, Nye, Pershing, and Washoe counties in Nevada. *Lepidium fremontii* is sometimes treated as consisting of two varieties, var. *fremontii* and var. *stipitatum* (Holmgren, 2005; Rollins, 1993) while others have not maintained var. *stipitatum* and have treated *Lepidium fremontii* as a variable species without recognized varieties (Al-Shehbaz & Gaskin, 2010). If both varieties are recognized, most Nevada plants would be var. *fremontii*. *Dodecatheon redolens* occurs in western Utah, southern California, and in Nevada in Clark, Elko, Humboldt, Lander, Mineral, and Nye counties. Some botanists combine *Dodecatheon* with *Primula* and in those treatments, *D. redolens* takes the name *Primula fragrans* (Mast & Reveal, 2007).

Occurring with *Carex hystericina* in Alaska and Bliss Canyons is *Epipactis gigantea* (Orchidaceae) and *Zigadenus elegans* (Melanthiaceae). This is the only place I have ever seen these two attractive species growing together. *Epipactis* is known from three canyons in the Jackson Mountains and

elsewhere in Nevada in scattered localities in Carson City, Churchill, Clark, Douglas, Humboldt, Lander, Lincoln, Nye, Pershing, and White Pine counties. *Zigadenus* is also known from three canyons in the Jackson Mountains as well as Elko, Eureka, Humboldt, Lander, Nye, Pershing, and White Pine counties. That is quite a compilation of interesting plants growing together.

Other attention-worthy plants in the Jackson Mountains include *Ivesia shockleyi* var. *shockleyi* (Rosaceae). Found in the upper reaches of Jackson Creek, it is also known in Nevada from the White Mountains, Sierra Nevada, Santa Rosa Mountains, Granite Range, Shoshone Range, Jarbidge Mountains, and the Toquima Range. It has also been found in California and Oregon. *Clarkia rhomboidea* (Onagraceae) occurs along the ridge ENE of King Lear Peak and has been documented in Carson City, Douglas, Elko, Humboldt, Lander, Pershing, Storey, and Washoe counties. Outside of Nevada it occurs from Washington and Idaho south to Arizona and New Mexico. It has also been reported from Mexico. Finally, one of the cutest diminutive plants I have ever seen, *Dimeresia howellii* (Asteraceae), is found in northern Nevada in Elko, Humboldt,

Above: The diminutive *Dimeresia howellii* is a composite (inferior ovary, fused anthers), but was confused with the hydrophylls (superior ovary and free anthers) even by our local expert in his infancy days of plant identification.

Lander, and Washoe counties as well as in Oregon, Idaho, and California. In the Jackson Mountains, it has been seen in the upper reaches of Jackson Creek. This plant is thoroughly embedded in my mind. There is a lot of credence to the adage that you learn from your mistakes. When I first encountered *Dimeresia* in 1975, I immediately saw the five-lobed, fused corolla and the two-parted style. This sent me to the Hydrophyllaceae key in which I got nowhere. I then realized it had an inferior ovary and from there was able to correctly identify it. Live and learn!

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Society News

Virtual Meetings

Our first virtual meeting in March was a success and we are planning to host more meetings online while our meeting locations remain closed. When in-person meetings resume, we plan to stream them online and record them for later viewing for those who can't make it to the meeting. Online meetings require pre-registration so check the Meetings page on the website for dates, times, and links.

2021 Margaret Williams Grant

This year's Margaret Williams Grant recipient is Laura Shriver. Laura is studying the evolutionary effects of cheatgrass-fueled wildfires on native plants. The **Seeds of Success** program has been collecting seeds around Nevada for more than 20 years and Laura will compare plants grown from seeds collected before a site burned to those collected from the same site after a fire. She hopes to better understand whether the plants are different following a fire and how well each set of plants can compete with cheatgrass. The grant will support her fieldwork while she travels around Nevada collecting seeds from burned sites. Congratulations, Laura!

The Eriogonum Society
Annual Meeting 2021
June 24-27 Elko, Nevada

Eriogonum lewisii - Lewis' wild buckwheat

Eriogonum kingii - Ruby Mountains wild buckwheat

Eriogonum douglasii var. elkoense - Sunflower Flat wild buckwheat

The Eriogonum Society was founded to promote the conservation and appreciation of our wild buckwheats both in the garden and in the wild. This year we will be exploring the wild buckwheats of Elko County, including rare and endemic species.
Membership in the Eriogonum Society also includes access to our seeds exchange, our buckwheat packed newsletter, and supports the Dr. James Reveal Memorial Grant to advance research on our favorite genus.

2021 Meeting Agenda

Thursday - Board Meeting and evening reception at the Northeastern Nevada Museum

Friday - Driving tour of rare buckwheats in the Mountain City area, north of Elko

Saturday - Eriogonum identification workshop and short field trip near Elko

Sunday - Driving tour of Ruby Valley and Ruby Mountains, including Lamoille Canyon

Registration includes workshop, field trips led by local botanists, evening presentations, and dinner on Friday and Saturday nights. One-day and no-meals options available.

Full Registration before April 30th - $135
Full Registration after April 30th - $150

Visit **Eriogonum.org** for more information and to register for the meeting.

The Bureau of Land Management's **Basin and Range National Monument** seeks volunteers to participate in a plant and animal "Bioblitz" scheduled Friday, June 4 through Sunday, June 6, 2021.

A Bioblitz is a citizen-science effort to record and identify plant or animal species within a designated area in a short time period. Botanical or wildlife experience is not needed to participate. Scientist and naturalist group leaders will be provided.

The **iNaturalist** mobile application will be used to collect data. Volunteers are encouraged to download the app (go to **https://www.inaturalist.org**) before leaving home due to limited cellphone service in the monument. Demonstrations on how to use the iNaturalist app will be provided onsite. Join the **Bioblitz project on iNaturalist** to receive updates before the event.

Inventories will be conducted across different habitats within the monument making a high clearance, four-wheel drive vehicle necessary. Water, food, and other supplies are the responsibility of the volunteer. **There are no facilities, electrical hookups, or cell service within the monument.** For more information about the monument, go to **https://go.usa.gov/xspxk**.

The Bioblitz is a partnership between the Bureau of Land Management, U.S. Geological Survey, Nevada Department of Wildlife, Friends of Basin and Range, Nevada Division of Natural Heritage, and Eastern Nevada Landscape Coalition.

Interested individuals may also contact Monument Manager Alicia Styles at (775) 726-8100 or **astyles@blm.gov** or Wildlife Biologist Camille Brooks at the same number or **c1brooks@blm.gov**.

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