

RARE PLANT PRESS

From Washington Rare Plant Care & Conservation

Fall/Winter 2023 Vol. 18, No. 2

NOTES FROM THE FIELD

Rare Care volunteers are known for going on some pretty extreme adventures each year to search for rare plants, and the 2023 monitoring season was no exception. From paddling down rivers to trekking up mountains and cliffsides, it doesn't seem like there's much that can stop our volunteers, except maybe the occasional rattlesnake encounter!

Volunteers Carol Mack, John Stuart and two friends took their canoes 10 miles up the Pend Oreille River to search the shoreline for lesser-bladder milk vetch (*Astragalus microcystis*). Four sets of eyes found several hundred plants scattered over slate slopes along an approximate mile stretch of riverbank. The area the group searched is one of two disjunct population areas where lesser-bladder milk vetch is found in Washington: the other is found on the Olympic Peninsula.

At 7,500 feet, Laura Potash and fellow volunteer Cyndy Smith-Kuebel, found a rare variety of Ross's avens (*Geum rossii* var. *depressum*) on the slopes of Mount Stuart. They spent three days on the mountain and accomplished some difficult 4th class scrambling to reach the plants, with helmets on, of course! Near Leavenworth, extensive surveying for strawberry saxifrage (*Saxifragopsis fragarioides*) was halted when Kayla Seaforth

and Kristin Bird ran into a rattlesnake at the rock outcropping where the plants were found. Kayla and Kristin counted 82 plants before leaving the saxifrage habitat, and the rattlesnake, behind them. Further east near Odessa, another rattlesnake encounter prevented Bob Kent from fully surveying the riparian habitat where he found Washington Jacob's ladder (*Polemonium pectinatum*).

Sometimes a monitoring trip is less perilous, but with impressive results, nonetheless. Just off a forest road about an hour west of Yakima, Ronald Toonen found and mapped the largest extent of Sierra onion (*Allium campanulatum*) on record. The prairie habitat Toonen visited is one of only three recorded locations for of Sierra onion in Washington.

On the winding roads through Umatilla National Forest, volunteers Darcy Dauble and Sue Wickham led Rare Care staff to several populations of Blue Mountains beardtongue (*Penstemon pennellianus*) and collected an estimated 2,000 seeds for the Miller Seed Vault. Although an easy drive from Walla Walla, it takes an accomplished explorer to navigate the numerous dirt roads of the Blue Mountains! Thanks to Darcy and Sue for being incredible navigators and thank you to all of our volunteers for another great season of adventures.



Volunteer Darcy Dauble collects Blue Mountains beardtongue (*Penstemon pennellianus*) seeds.
Photo: Jennie Green



Washington Jacob's ladder (*Polemonium pectinatum*).
Photo: Barbara Varnum-Finney



Volunteer Remmy Jackson with dark-spine ball cactus (*Pediocactus nigrispinus*).
Photo: Remmy Jackson

RESTORING HABITAT FOR SPECIES RECOVERY

Five years ago, Rare Care established vegetation plots in a population of Wenatchee Mountains checker-mallow (*Sidalcea oregana* var. *calva*) to evaluate how to control the spread of shrubs and non-native grasses in its habitat. This federally endangered plant grows in flat, seasonally wet meadows in Ponderosa pine, Douglas fir, or aspen forest openings, and is known from only two large and two very small extant populations in the Wenatchee Mountains. The largest population is at Camas Meadows Natural Area Preserve with about 40,000 plants, and the second largest, with approximately 3,000 plants, inhabits the expansive front yard of the privately owned lodge near Leavenworth. This second population is the focus of our study.

At our study site, the checker-mallow is threatened by non-native pasture grasses and the expansion of shrubs into its habitat. Historically, under management by Indigenous groups, frequent, low-intensity fires prevented trees and shrubs from establishing in the checker-mallow's meadow habitat. Fire suppression after European colonization has allowed shrubs to become more abundant in the meadow, competing with the checker-mallow for light, water, and nutrients. In addition, European settlers planted non-native grasses for livestock forage that are pushing out native vegetation in the meadow, including the checker-mallow. The absence of recurring fire is detrimental to the checker-mallow: its seeds germinate more readily when they are exposed to hot temperatures during a wildfire.

To learn how to best reduce shrub and nonnative grass competition and increase the number and vigor of checker-mallow plants, Rare Care established test plots to evaluate different vegetation treatments. We installed 24 plots to test four vegetation treatments: spring mowing, a prescribed burn, raking in combination with herbicide carefully applied to shrubs or grasses, and a control treatment where no action was taken. We also wanted to test if spreading extra checker-mallow seeds would increase the number of seedlings; therefore, in each plot we set up two smaller plots and added checker-mallow seeds to one, leaving the other unseeded. We returned every summer to monitor how the plant community and checker-mallow responded to the treatments.

After five years, we learned that adding checker-mallow seeds increased the number of new seedlings in all plots across all vegetation treatments, suggesting that growth of wild population might be limited by inadequate seed supply. Our raking treatment helped promote the growth of wildflowers, and our herbicide and mowing treatments reduced the shrubs and wildflowers in the meadow the spring after treatment. However, no treatment had a lasting impact beyond the first year, and none of the treatments showed a positive or negative effect on established checker-mallow plants. We were surprised to find fire didn't seem to affect the vegetation. We suspect this was because our prescribed burn was not hot enough to have a lasting impact on vegetation.

It is well established that restoring natural areas is an ongoing process that occurs over many years. Other studies with similar goals to ours have shown treatments are more successful when different types of treatment are combined or treatments are repeated more than once. Over the next three years, Rare Care plans to repeat some of the treatments and test different combinations together. We hope to identify the most effective techniques for controlling the spread of shrubs and non-native grasses at this population with the long-term goal of expanding the population's size and extent.



Wenatchee Mountains checker-mallow (*Sidalcea oregana* var. *calva*). Photo: Allie Howell



Crew burns study plot for species recovery. Photo: Wendy Gobble

MONITORING WEEKEND CAMPOUT

Rare Care staff, volunteers and agency partners convened in June in the southeastern corner of the state for Rare Care's annual monitoring weekend. Our goal was to help US Forest Service assess the impact of the 2021 Lick Creek wildfire on sensitive plant species. Located on the northeastern flank of the Blue Mountains, the Lick Creek area has some of the highest concentration of rare plants on the Washington side of the mountains. It is also known for its spectacular landscape of conifer-capped mountains and steep basalt canyons covered with bunchgrasses and wildflowers. Wildfires are a defining ecological disturbance in this ecosystem, with lightning-caused, stand-replacing fires recurring every 150-500 years.



Blue Mountains beardtongue (*Penstemon pennelianus*). Photo: Alicia McMurchie

Over three days, 24 participants generated 26 monitoring reports for nine species. Everyone saw and learned to identify Yeti phlox (*Phlox solivaga*), a recently described species endemic to the area. It was heartening to see its robust populations thriving with no evidence of fire damage. We also found large populations of Snake River fleabane (*Erigeron disparipilus*), Blue Mountains beardtongue (*Penstemon pennelianus*) and mountain buttercup (*Ranunculus populago*). Numbers of Arthur's milk-vetch (*Astragalus arthurii*) seemed low, but we were late for this species. Spalding's catchfly (*Silene spaldingii*) numbers were also low, but we may have been early for this species. The same was true for the one population of sagebrush lily (*Calochortus macrocarpus* var. *maculosus*) we documented. Searches for broadfruit mariposa lily (*Calochortus nitidus*) and Scouler's catchfly (*Silene scouleri* spp. *scouleri*) proved unsuccessful. Weed encroachment was noted in some areas, and these areas will need to be revised in coming years to monitor their spread.

MEET RARE CARE'S 2023 FIELD TEAM



Left to right: Jennie Green, Jackson Wright and Teddy Pierson.
Photo: Danielle Horne



Anna Wilson at Camas Lands.
Photo: Jennie Green

Rare Care's team expands each spring when we are joined by seasonal staff who assist with field work to support the recovery of endangered plants and restoration of their habitats. This year we were thrilled to be able to hire five talented biologists, and their experience, enthusiasm and hard work were a tremendous asset to our team.

Teddy Pierson joined us for the entire field season and assisted with the Wenatchee Mountains checker-mallow introductions (*Sidalcea oregana* var. *calva*) project, the Colockum restoration project near Wenatchee, the White Bluffs bladderpod (*Physaria douglasia* ssp. *tuplashensis*) seeding study at Hanford Reach National Monument, and Spalding's catchfly (*Silene spaldingii*) monitoring in Lincoln County. Prior

to working with Rare Care, Teddy was a Rare Care volunteer and also had experience working in land restoration and in the horticulture field. They truly got a tour of the central and eastern Washington flora and habitats while working on Rare Care's projects this summer.

We are also grateful to have Jennie Green join our team this year. Jennie started in May to assist with two Wenatchee Mountains checker-mallow recovery projects: installing soils probes at Camas Lands and collecting vegetation data at our habitat restoration project site. Jennie also was a Rare Care volunteer and had previous experience monitoring invasive and rare plants for a local consulting firm. We were thrilled that Jennie was able

to stay on with this fall to help support volunteer coordination for our rare plant monitoring program while our Volunteer & Outreach Coordinator position is vacant. Her previous experience as a Rare Care volunteer made this an easy transition and we are so grateful for her help!

Three other members rounded out our field crew this spring. Jackson Wright helped with data collection for the Colockum restoration project as well as the with the Wenatchee Mountains checker-mallow recovery projects. With two simultaneous projects occurring for the checker-mallow at the same time, we were thankful to also have the capable assistance of Anna Wilson and Kayce Khsueh to help complete the data collection while the plants were in bloom.

July 1, 2022 - June 30, 2023

THANK YOU

Rare Care is grateful for the valuable contributions of our volunteers, who gave 3,108 hours in fiscal year 2023.

\$1,000 & above

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Northwest Horticultural Society
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THANK YOU



Sierra onion (*Allium campanulatum*).

Photo: Sarah Shank

\$100 to \$249

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Rare Care is grateful for support from the Miller Charitable Foundation, Center for Plant Conservation, Washington Native Plant Society, Amazon Horticulture Program, private organizations and individual donors.