

RARE

Washington Rare Plant Care & Conservation | University of Washington Botanic Gardens
3501 NE 41st Street, Box 354115, Seattle, WA 98195-4115 USA | 206 616-0780 | rarecare@uw.edu
<http://depts.washington.edu/uwbg/rarecare/index.shtml> | www.facebook.com/RareCare

Fall/Winter
2014
Vol IX No 2

PLANT

R E S S



New phlox species discovered in Blue Mountains

A new phlox species has been discovered in Blue Mountains of southeast Washington. The phlox was first spotted in June 2013 when Rare Care staff and volunteers joined Umatilla National Forest botanist Mark Darrach to conduct botanical surveys for an unusual variant of *Pachera cana* (see our Fall 2013 *Rare Plant Press*).

The phlox was found on a ridge top on the northeast edge of the Blue Mountains in a plant community typical of shallow rocky soils of the shrub steppe. (See photos, page 2.) Although the phlox was past bloom, we spotted what we surmised to be *Phlox hoodii* (spiny phlox) based on plant habit and leaf morphology. Spiny phlox is common in tall sagebrush communities of the Columbia Plateau in areas of shallow soils and low rainfall. However, we noticed there were two subtly different varieties of phlox at the site, which posed a mystery. What could the second one be? Mark Darrach collected a small amount of the plant and sent it off to *Phlox* experts Dr. Carolyn Ferguson and Dr. Mark Mayfield at Kansas State University for an opinion. They, too, thought it was highly unusual. But without reproductive structures, no identification could be made.

This spring, Mark Darrach and Mark Mayfield returned to the site to collect a flowering individual. They also visited a rare phlox of western Idaho, *Phlox mollis*, that they thought may be the species found in the Blue Mountains. Comparison of the two taxa at their native populations revealed that they were quite dissimilar morphologically, and their habitats were also very different. A thorough evaluation of the collections made in 2014 confirmed that it was indeed a new phlox species.

Soon to be published as *Phlox solivagus*, the new species will be named for the Latin words *solus*, meaning “lonely” in reference to its apparent rarity, and *vagus*, meaning “straggler.” The taxa has also been found at a second site approximately 30 miles west of the 2013 location. Once the species is published, the next step will be to collect more data on the two known populations and search for additional populations in similar habitat. We look forward to an opportunity to work with the Forest Service to survey for new populations and develop a better understanding of its habitat.

Discovery of new phlox species is in itself a rare event, probably because their flowers are quite showy. Only two have been described in the past 50 years: one found recently by Ben Legler in New Mexico, and a second one from northern Mexico described by Alan Prather in 1993.

Rare Care assists effort to protect Quinault fawn-lily

One of the hidden treasures of the Olympic rainforest is the *Erythronium quinaultense* (Quinault fawn-lily). This endemic perennial is known from only five locales distributed in valleys and on ridges north of Lake Quinault. Within the Olympic National Forest, its populations occur in areas managed for timber production. Consequently, the US Forest Service is preparing a conservation and management plan to provide best practices for ensuring the long-term health and survival of these populations.

One of the first steps for developing the plan is documenting the extent and habitat of the species. Prior to 2001 when Dr. Geraldine Allen described *E. quinaultense*, its populations were documented as *E. revolutum* (pink fawn-lily), another sensitive species in Washington. Although the two species are very similar, the Quinault fawn-lily has white tepals with varying amounts of pink at the tips and edges, and leaf blades without or with weak mottling. These characteristics provide hints of its origin as an intermediate hybrid of *E. revolutum* and *E. montanum* (avalanche lily).

(continued on page 3)

Rare Care staff

Sarah Reichard, Ph.D.,
Director
Wendy Gible, Program Manager
Jennifer Youngman,
Program Coordinator

Science Advisory Board

Joe Arnett
Peter Dunwiddie, Ph.D.
John Gamon
Art Kruckeberg, Ph.D.
Regina Rochefort, Ph.D.
Ted Thomas
Kelli Van Norman



Artemisia borealis
var. *wormskoldii*





Top left, the new phlox species was discovered at this site in the Blue Mountains (photo by Wendy Gibble). Right, *Phlox solivagus* (species novum) is much smaller and more tufted than *Phlox mollis* (photo by Mark Darrach). Bottom left, *Polemonium pectinatum* (photo by John Baumann).



Multi-year efforts bear fruit in 2014

Many of this year's monitoring highlights are the culmination of multi-year efforts on the part of many volunteers. In June two volunteers, armed with reports from five previous unsuccessful site visits, confirmed the presence of a *Fritillaria camschatcensis* (black lily) occurrence in Mt. Baker-Snoqualmie National Forest. A lily had been located during one of those previous visits, but without blossoms the identification wasn't 100% certain. Of 21 plants found this year, a single plant was blooming.

Volunteers had previously monitored four *Lobelia dortmanna* (water lobelia) sites at a lake's edge in Moran State Park. But the final site, near an island within the lake, required a kayak. This year a volunteer stepped forth (or more accurately, paddled forth) and documented a subpopulation of more than 1,000 plants.

In Conboy Lake National Wildlife Refuge, Rare Care completed multi-year undertakings of mapping and counting *Calochortus longebarbatus* var. *longebarbatus* (long-bearded sego lily) and *Orthocarpus bracteosus* (rosy owl-clover). We also made substantial progress toward our goal of monitoring all known occurrences of *Polemonium pectinatum* (Washington polemonium)—finding plants at six more sites in Lincoln and Adams counties on Bureau of Land Management and Department of Natural Resources (DNR) lands—as well as *Cryptantha leucophaea* (gray cryptantha), finding plants at three more sites in Grant County on DNR, Washington Department of Fish and Wildlife, and Bureau of Reclamation lands. This is the first time Rare Care has monitored on Reclamation lands.

Two endemics monitored

Our rare plant monitoring weekend took us back to the Wenatchee Mountains, a botanically rich area with a high density of endemic plants. We focused on two species, federally listed endangered *Sidalcea oregana* var. *calva* (Wenatchee Mountain checker-mallow) and *Delphinium viridescens* (Wenatchee larkspur).

We worked in groups of two to four people and tackled several objectives over a three-day weekend in July. Several groups revisited monitoring plots established by the Department of Natural Resources and collected data on the abundance of *S. oregana* var. *calva* at Camas Lands. On the third day, we recounted individuals in several areas to document the abundance of checker-mallow during this hot, dry summer compared to previous years.

Other groups revisited known occurrences of *D. viridescens* to document its persistence and abundance in its preferred habitat of meadows and seasonally moist sites in open coniferous forests. All five *D. viridescens* populations visited were successfully relocated. However, in most cases the plants are getting shaded out by encroachment of shrubs and trees into the wet sites, a result of years of fire suppression.

Other highlights:

- With only vague location information to go on, three volunteers found a 2-square-meter *Gentiana glauca* (glaucous gentian) occurrence that hadn't been documented since 1966, camping and crossing snowfields along the way.
- A volunteer painstakingly sorted through public/private land boundaries to monitor *Cimicifuga elata* (tall bugbane) in the Columbia River National Scenic Area, only to be barred from one site by a peregrine nest closure. He went on to locate the species at another site.
- When we removed a volunteer's first choice from this year's monitoring list, the volunteer and his cohorts graciously agreed to repeat a search they made last year for *Dryopteris cristata* (crested shield-fern) in Colville National Forest. This year they found it.
- Volunteers found new occurrences of *Eryngium petiolatum* (Oregon coyote-thistle) and *Rotala ramoisor* (lowland toothcup) in Klickitat County, and a new *Hackelia cinerea* (gray stickseed) site within a known occurrence along the Spokane River.

Right, *Calochortus longebarbatus* var. *longebarbatus* (photo by Susan Saul).

View photos in color under "Newsletters" at <http://depts.washington.edu/uwbg/rarecare/aboutus.shtml>



Rare Care collects data on Quinault fawn-lily habitat, boundaries

(Continued from page 1)

Not surprisingly, *E. quinaultense* occurs at elevations ranging from approximately 1,000 to 3,000 feet, higher than suitable habitat for *E. revolutum* and at the lower limits of where *E. montanum* typically occurs. Dr. Allen's work also included genetic analyses, which showed that *E. quinaultense* is a tetraploid species (having four copies of each chromosome), as well as verification of which *E. quinaultense* populations were mislabeled as *E. revolutum*. This information provided the starting point for development of a conservation and management plan.

The Olympic National Forest reached out to Rare Care to help with this effort. In June 2014, Rare Care staff and volunteers spent six days in the field with US Forest Service Botanist Cheryl Bartlett, visiting a number of populations to collect data on population boundaries and habitat. Developing good population maps is very time intensive but extremely important for management of the forest and the species.

E. quinaultense occurs in young to mature forests dominated by *Abies amabilis* (Pacific silver fir), *Tsuga heterophylla* (western hemlock), *Pseudotsuga menziesii* (Douglas-fir) and *Thuja plicata* (western redcedar). In the dim light of the forest, the plant does not have enough light to flower, making it harder to spot. Many of the populations occur in steeply wooded valleys littered with downed logs and dense underbrush, making it challenging to survey for this species. Working in teams of twos and threes, Rare Care volunteers were able to cover a large amount of ground and map patches of plants to develop accurate maps of the populations. In total, 10 volunteers spent approximately 240 hours over six days clambering up and down rugged mountain slopes recording plant locations with handheld GPS units and noting characteristics of the habitat.

Observations made during the surveys start to shed light on what habitat this plant prefers. Plants appear to do quite well on the uphill slope of cuts made for logging roads. In this setting, the plants are plentiful, large, and mostly reproductive. Within second growth forests, plants are scattered throughout the forest floor in small patches but they are mostly vegetative individuals, bearing one leaf and no flowers. In some places the fawn-lily is the predom-

inant ground cover, especially in areas with low cover of *Vaccinium ovalifolium* (oval-leaf blueberry). In young second growth forests, we found that the plants persist by finding sites in small openings within the stand, but are excluded from areas with dense stands of young trees.

The next step of the project will be to finish mapping a few remaining sites and develop a more comprehensive habitat characterization for the species. Then a management plan can be developed with an eye towards prescribing forest practices and activities that will ensure long-term survival of the species.



Top, *Erythronium quinaultense* (photo by Richard Ramsden). Midweek (below) and weekend (right) volunteers with Botanist Cheryl Bartlett and Rare Care Program Manager Wendy Gibble.



Planned giving—a lasting legacy

Much as we bank seeds to ensure a future for native rare plants, charitable bequests provide an opportunity to support plant conservation of future generations. Rare Care is committed to funding plant conservation efforts and stewarding our seed collection into the 21st Century. We are able to make this commitment because of our association with the University of Washington Botanic Gardens, an established organization at a premier state university with expertise in the latest tools and scientific knowledge. Charitable bequests are gifts made at death through a will or trust, and can be made of any size and be directed to support the purpose that is most important to you. To learn more, visit <https://www.washington.edu/giving/planned-giving/>



Volunteers have relocated a dozen occurrences of *Cimicifuga elata* during the past several years (photo by Lisa Hintz).

Visit our redesigned website

For the first time in 12 years, Rare Care's website has a new look and a new address: <http://depts.washington.edu/uwbg/rarecare/index.shtml>. The new site better conveys that Rare Care is a program of the UW Botanic Gardens. Check out the updated information on Rare Care's monitoring, seed banking and research projects. Enjoy rare plant images that volunteers have taken while on assignment (see links on "What's in the Seed Bank" and "Washington Rare Plants").

To navigate between Rare Care's pages, use the lefthand menu bar and photo buttons. To explore all that the UW Botanic Gardens has to offer, use the horizontal menu bar. Rare Care is under "Research & Science."

THANK YOU, DONORS: JULY 1, 2013 - JUNE 30, 2014

Rare Care is grateful for financial support provided by generous donors. We rely on grants and donations to fund all program activities. We are also grateful for the support of volunteers who contributed more than 4,000 hours of service.

IN MEMORY OF RACHEL VIRDEN HULSCHER

Mary Lee Virden

IN HONOR OF MRS. JOSEPH L. CARMAN, III

Joseph L. Carman, IV
Philip Carman
Sally Carman LeFeber
Lisa Carman Rohrback

IN HONOR OF PAUL SLICHTER, SUSAN SAUL, BARBARA ROBINSON, NANCY ALLEN AND DONNA ENZ FOR THEIR WORK ON *MECONELLA OREGANA*

Twin Oaks Construction

\$1,000 AND ABOVE

Deupree Family Foundation
Alan Sugino
Lily Takatsuka
Susan Wheatley

\$500 TO \$999

Anonymous (2)
Chris Mealy
Sarah Reichard

\$250 TO \$499

Eleanor Boba and Alan B. Humphrey
Steven Clark
V. Lee Ellis
Anne Goslin
Gretchen Hull
Charles Hyde, III
John and Lee Neff
Monte and Diane Powell

\$100 TO \$249

James Adcock
Marvin and Suzanne Anderson
Paul and Susan Ballinger
Elisabeth Bottler
Julie Bresnan
Thomas and Sally Cahill
Patricia Danford
Mary DeVany
Earl and Tena Doan
Lucile Flanagan
Wendy Gobble
Julia Jose
Virginia King
Don Knoke
Wendy Lee
Larry Loftis
Merrill Gardens, LLC
Renee Miller
Susan O'Neil
Lois Prestrud
Brian and Bronwyn Scott
Seattle Garden Club

Mary Ann Simmons
Paul Slichter
Fred Stark
Brooke Sullivan
Linda Swartz
Ted Thomas
George Thornton
Jeff Thorson and Marilee Henry
Kathleen Van Veen
Jeffrey Walker

\$50 to \$99

Lyle Anderson
Brenda Cunningham and Tim Manns
Darcy Dauble
Wendy Descamp
Peter Dunwiddie
Joie Goodman and Jill Stolt, in honor
of Mary Ann and George Wolter
Michael and Janka Hobbs
Shaun Hubbard
Kathleen Learned
Michael and Rebecca McGoodwin
Susan Saul
David Selk
Mani Soma
Hally Swift
Brian Thompson
Jeanie Taylor
Melissa Winters

UP TO \$49

Jeanette Burkhardt
Clara Burnett
Jason Clinch
Eric Delvin
Sharon Dunn
Tom Guobis
Anne Hillman, in honor of Betty Swift
Dorothy Hudson
Bob Jackson
Bob and Judy Kent
Mary Kiesau
Ron Klump
Barbara Kolar and Mark Fessler
Helen Lau
Jenn Purnell
Maureen Schmitz
Cynthia Smith-Kuebel
Shelagh Tucker
Mary Water
Jennifer Youngman
Alessandra Zuin

CORPORATE MATCHES

The Boeing Company

Rare Care is grateful for support from the Miller Charitable Foundation, Seattle Garden Club, Tacoma Garden Club, Washington Native Plant Society, private organizations and individual donors.