

# RARE PLANT

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Washington Rare Plant Care & Conservation ♦ University of Washington Botanic Gardens  
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## Groups survey rosy owl-clover, blue-eyed grass, checker-mallow

Group monitoring projects took Rare Care to many parts of the state in 2012, including Turnbull National Wildlife Refuge in Spokane County for Spalding's catchfly (*Silene spaldingii*) surveys (see article, p. 3), Klickitat County for our annual monitoring weekend, and Camas Meadows for population census of the Wenatchee Mountain checker-mallow (*Sidalcea oregana* var. *calva*).

This was the second year our monitoring weekend took place in Klickitat County. Our goal was to survey and map two species: rosy owl-clover (*Orthocarpus bracteosus*) and pale blue-eyed grass (*Sisyrinchium sarmentosum*). Rosy owl-clover can be locally abundant in seasonally moist meadows in the region, particularly on Conboy National Wildlife Refuge where it is patchily distributed among dense stands of reed canary-grass. Our 4- to 6-person survey groups proved to be an effective way to search out these patches, particularly where the reed canarygrass was taller than us! Conversely, meadow complexes holding the pale blue-eyed grass presented a different challenge. Having groups of surveyors walk through the area allowed us to explore the myriad of small openings in the forested meadow and develop a detailed map of where individuals are clustered. The US Forest Service plans to use these maps to develop an annual monitoring protocol to track changes in population size over time.

In July, Rare Care staff and volunteers joined the US Forest Service, Washington Department of Natural Resources, and Washington Natural Heritage Program to collect population data on the Wenatchee Mountain checker-mallow. The Camas Meadows area contains more than 95 percent of all known individuals of this plant, scattered throughout meadows and forest openings on federal, state and private lands. The population's size and complexity present a significant challenge to understanding long-term population trends, and several different methods have been used to track species abundance. Our work this year entailed repeating data collection on a number of established transects following two different protocols, as well as a complete count of one subpopulation to compare the various methodologies in use. We plan on continuing this work next year, applying the same techniques to other subpopulations to fill in missing census data for this occurrence. We hope you will consider joining us in 2013 for this important project.



*Delphinium viridescentes*

## Unstable slopes among challenges in showy stickseed recovery

Rare Care is working with the US Fish and Wildlife Service and US Forest Service on the recovery of showy stickseed (*Hackelia venusta*), one of Washington's rarest plants and a federally-listed endangered species. The recovery of this species is complicated by a number of factors. It appears to prefer a specific soil environment consisting of unstable sandy materials on steep slopes. This makes work on the site challenging and potentially damaging to the plants, and it severely restricts the potential number of sites where it can be introduced. It appears to not tolerate competition, and its survival is likely dependent on wildfire to decrease tree and shrub cover. Unfortunately, its sole population lies close to a state highway, restricting the ability of land managers to use prescribed burns to control woody vegetation encroachment. This species is also very challenging to propagate by seed and to rear in a nursery setting.

Rare Care and UW soil scientists started working on a new project this year to tackle some of these thorny issues. Professor Darlene Zabowski and her graduate students are characterizing the soil environment and how showy stickseed utilizes it, including rooting depth, structure, and associations with mycorrhizae. (continued on page 2)

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## Thesis work, germination tests dovetail for grad student Clark

Graduate student Lauren “Ivy” Clark has been knee deep in seeds ever since she started her Master’s work at University of Washington. She first came to work with Rare Care in 2009 to develop protocols for propagating ten shrub-steppe species from seed for a project Rare Care was working on with BLM. Having developed an interest in germination ecology, Ivy also started working with Rare Care’s rare plant seed collection, conducting germination tests on collections held in the Miller Seed Vault. This ongoing work dovetails nicely with her thesis work, in which she explores the potential for hybridization between golden paintbrush (*Castilleja levisecta*) and harsh Indian paintbrush (*C. hispida*).

Both *Castilleja* species occur on Puget Sound prairies, and hybridization has been observed in a nursery setting. Recent golden paintbrush reintroductions have resulted in both species growing in close proximity to one another at out-planting sites. After ascertaining that the same pollinator species frequent both species, Ivy collected seeds from both species where they co-occur and is propagating them in the greenhouse. She will evaluate morphological features of the progeny to determine whether and to what extent hybridization is occurring at these reintroduction sites and whether the risk of hybridization is reduced by increasing the distance between neighboring individuals of the two species.

Ivy has had an interest in plants for as long as she can remember. Growing up in Texas, her interest in the natural world was nurtured by her parents. She’s held a variety of jobs since becoming a biologist, many of them restricting her to laboratories. Finding that she really enjoys being in the field, she hopes to use her skills and degree to work in the restoration ecology field. In the meantime, we are delighted to have her working on Rare Care projects and caring for our *ex situ* collection.

## Rare Care’s contributions: seed propagation, out-plantings

(continued from page 1) They are evaluating slope stability concerns and the rate of slope movement. The project also includes characterization of tree and shrub encroachment into the population and research into alternative control methods. Light meters were installed at the site to understand whether overstory canopy facilitates or hinders showy stickseed versus understory competition with shrubs such as shiny-leaf spirea (*Spiraea lucida*). The soils and vegetation work will provide a better understanding of the habitat requirements of showy stickseed that can be used to identify new sites where populations can be established.

The final element of the project is to conduct experimental out-plantings to develop protocols for propagating individuals and successfully establishing plants at the site. Seed propagation has started at Rare Care, and we anticipate starting to out-plant individuals in 2013.

Top right: *Hackelia venusta* (photo by Joe Arnett). Top left: Ivy Clark plants *Castilleja* seedlings (photo by Wendy Gibble). Above: *Castilleja levisecta* (photo by Jennifer Youngman). Above: *Orthocarpus bracteosus* (photo by Jeff Thorsen). Page 4: Volunteers survey rosy owl-clover during 2012 monitoring weekend (photo by Sarah Reichard).

View newsletter online to see photos larger and in color at <http://depts.washington.edu/rarecare/Links.htm>

## Step one: Identify existing Spalding's catchfly populations

By Brenda McCracken, Rare Care Volunteer

I first encountered Spalding's catchfly (*Silene spaldingii*) in 2007 during my first season as a Rare Care volunteer. My field-partner-for-life John Baumann and I set out one 100-degree day in August for a scorched, treeless field in the eastern Washington desert. After an hour or so in blistering heat, John spotted our plant. One plant. One lone flower on that plant. And one lone bee visiting it.

We were not surprised to discover that *S. spaldingii* is listed as threatened. It is known to have only about 100 populations confined to Montana, Idaho, a little bit of British Columbia, and the Channeled Scablands of eastern Washington. A first step in the US Fish and Wildlife's 2007 Recovery Plan for *S. spaldingii* involves identifying existing populations. And that is exactly what eastern Washington Rare Care volunteers are doing.

Two years ago, Rare Care was appointed the hunt for new occurrences of *S. spaldingii* at Turnbull National Wildlife Refuge, about 20 miles southeast of Spokane. TNWR features a spectacular wide-open, off-road landscape that encompasses about 16,000 acres of Channeled Scablands. This geology results from the great Missoula Flood channeling canyons through volcanic basalt and makes TNWR unique in the Refuge system. Volunteers enjoy not only this landscape, but the diversity of wildlife sheltered here.

One component of the Channeled Scablands is topography called "biscuit and swale," which is important because *S. spaldingii* prefers the north slopes of the biscuits. Biscuits are relatively low grass-covered mounds filled with small basalt rocks. At TNWR, these seem to be an average of 3 feet high and 15 feet in diameter and are spaced roughly 30 feet apart in all directions. The swales are the shallow bits in between the biscuits. The north slopes of the biscuits offer relatively more moisture than nearby options, and *S. spaldingii* soaks it up.

The plant blooms in the hottest part of summer, and it is not pretty. It is built for desert heat and wind, which means that it usually has a single stem covered in stout hairs that may reflect the sun. The hairs are coated with a sticky exudate that may prevent water loss. But the result is that anything carried in the wind sticks to the stem. White bell-shaped flowers (consistent with the Caryophyllaceae family) form a cyme up the length of this dirt and debris-covered stem..

We search early in the day, needless to say, and our search at TNWR involves traversing acres of wide open space in a way that reminds me a little of detectives walking shoulder to shoulder through a crime scene to assure that no clues are missed. Except that we're spread out in 50-foot-wide tracts, and we don't climb into fast, expensive cars when we're done. With full volunteer participation, this project at TNWR will take a few years to complete. But it is a beautiful place to be. And this season, volunteers were rewarded with the sighting of a moose as we headed off for a lunch break.

## 2013 RARE CARE CALENDAR

- Sat. Mar. 2 — Monitoring Training,**  
Seattle (Apply by Feb. 9)
- Sat. Mar. 30 — Navigation Training,**  
Seattle
- Sat. Mar. 30 — Volunteer Forum,**  
Seattle
- Sat. Apr. 20 — Earth Day with Seattle Art Museum, Olympic Sculpture Park, Seattle**
- May 10-12 — 7th Annual Monitoring Weekend,** Hanford Reach
- Sat. May 18 — Seed Collecting Training,**  
Seattle (prerequisite: monitoring)
- July 9-12—Wenatchee Mountain checker-mallow monitoring,** Wenatchee Mountains
- Dates TBA — Monitoring Trainings & Volunteer Forums,** statewide



Right: Moose on a lunch break (photo by John Baumann). Far right: 2012 Spalding's catchfly search team (left to right) Richard Fleenor, Jane Beaven, Julie Jose, Brenda McCracken, John Baumann and Tim Dring (photo by John Baumann). Top right: *Silene spaldingii* (photo by Wendy Gibble).



Photo by Sarah Reichard

## THANK YOU, DONORS: JULY 1, 2011 - JUNE 30, 2012

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 4,250 hours of service.

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Kathryn Lowe

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