RARE PLANT PRESS

Spring/Summer 2014
Vol IX No 1

Washington Rare Plant Care & Conservation | University of Washington Botanic Gardens
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Monitoring and outplanting a rare Wenatchee endemic

Rare Care and the US Bureau of Land Management (BLM), with a grant from the Deupree Family Foundation, launched an initiative in 2013 to monitor long-term trends of one of the largest populations of Whited's milk-vetch (*Astragalus sinuatus*) and to develop protocols for establishing plants in the field. This rare plant is one of a number of endemic species found in Wenatchee area. All eight populations grow in just two drainages in the tall sagebrush-bluebunch wheatgrass vegetation zone.

Endemic species occupy a narrow range. Consequently, they are especially vulnerable to decline or extinction resulting from changes wrought by human activities. Whited's milk-vetch faces competition with cheatgrass (*Bromus tectorum*), increased fire intensity (compared to historic fire regimes), and habitat loss to development. The added stressor of climate change reinforces the importance of developing information and tools for managing this species effectively.

The study population extends nearly a mile across a south-facing slope south of Wenatchee on BLM property. BLM monitored the population for a number of years but has not repeated that effort in the past decade or more. Rare Care volunteer David Zamora completed a one-time monitoring assignment of the population in 2011 and estimated it contained 5,000 individuals.

Now, permanent transects will be established in the population to allow repeated sampling over years to detect changes in abundance across the entire population. This will enable us to evaluate responses to changes in land use, disturbances, and climate change. Before establishing the permanent transects, Rare Care and BLM staff developed more precise mapping data of the population to identify the perimeter. We also collected data on six test transects in May 2013 to evaluate the best methods for sampling the population. We tested a methodology that the Washington State Department of Natural Resources Natural Areas Program has used successfully in another population. Using the same methods for two sites will allow comparisons to be made for a more species-wide analysis. The methods include counting reproductive plants, vegetative plants and seedlings in 2-meter-wide belt transects.

This initial work proved fortuitous because the site burned in a 2013 wildlife, impacting the densest part of the population. Data will be collected this spring on the same six test transects to determine how many plants were destroyed. The installation of permanent transects will allow us to track the response of the population to the wildfire, and expected encroachment of invasive species, over the next several years.

The second effort of this project is an experimental outplanting of *A. sinuatus*. This outplanting serves two *(continued on page 2)*

Rare Care honors Doans, Saul

Each year, Rare Care recognizes one or more volunteers for exceptional contributions to our rare plant conservation projects.

Over a period of more than ten years, Tena and Earl Doan have devoted well over 1,000 hours to rare plant monitoring and seed collecting. They have willingly tackled a variety of species, from the Quinault fawn-lily of coniferous forests *(Erythronium quinaultense)* to the shrub-steppe's Hoover's tauschia *(Tauschia hooveri)* to the wetland-loving several-flowered sedge *(Carex pluriflora)*.

Although Susan Saul began volunteering just three years ago, she has already racked up nearly 500 hours on individual monitoring assignments (completing her own and assisting others with theirs) and at Rare Care's monitoring weekends.

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Counterclockwise starting top right: Rosemary Baker, pictured on the right, was among those who revisited the experimental outplanting in April to monitor and water it *(photo by Brittany King).* An initial outplanting of 100 *Astragalus sinuatus* plants occurred in March *(photo by Wendy Gibble).* Susan Saul records data during a monitoring weekend *(photo by Paul Slichter).* Tena Doan monitors *Cimicifuga elata (photo by Earl Doan).* Earl Doan monitors by canoe *(photo by Tena Doan).*

Outplanting is launched

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objectives: 1) to restore the *A. sinuatus* population to an area where plants were destroyed by pipeline construction in 2008, and 2) to develop outplanting protocols for the species.

Rare Care collected seed from plants in the pipeline right-of-way in 2007 to provide material for *ex situ* conservation and to allow for future planting in the construction area. An initial outplanting of 100 plants occurred in mid-March, with additional trials planned for the fall of 2014. Survivorship will be monitored several times in the first year and yearly thereafter to evaluate treatments and methods.

Rare Care volunteer Rosemary Baker nabs BLM internship

Volunteers play an important role in all of Rare Care's programs. They monitor rare plant populations, collect seeds for the Miller Seed Vault, help with outreach events, clean seeds in the Miller Seed Vault, and assist with research projects. Not only do volunteers make a valuable contribution to the conservation of Washington's rare plants. They also have the opportunity to develop their botanical and scientific skills and use their experience as a stepping stone to careers in plant conservation.

Rosemary Baker joined Rare Care as a volunteer in 2010 when she attended the rare plant monitoring training. She took on a two-year effort to monitor a population of white-top aster (*Sericocarpus rigidus*) and, in her third year, assisted with monitoring the pink fawn-lily (*Erythronium revolutum*). In the fall of 2011, she started her degree in Masters of Environmental Horticulture at University of Washington, where she had the opportunity to gain more familiarity with the program and delve deeper into plant conservation and restoration. She assisted Rare Care and BLM staff in monitoring *Astragalus sinuatus* in the spring of 2013 in preparation for installing permanent transects in 2014. Last spring, when a research position opened with Rare Care to work on a pale blue-eyed grass (*Sisyrinchium sarmentosum*) research project, she jumped at the opportunity. She spent the summer of 2013 collecting seeds from ten populations of pale blue-eyed grass for use in a 2014 common garden study.

These valuable experiences helped position Rosemary for her next career step. This April, she started a five-month internship with the BLM through the Conservation and Land Management Internship Program. She and another intern will work on a range of projects related to plant conservation, including rare plant monitoring, invasive species and post-fire rangeland monitoring, wildlife habitat assessments, Seeds of Success collections, and herbarium specimens management.

Her interest in the internship stemmed in part from the personal connections she made while volunteering for Rare Care. "I met BLM botanist Molly Boyter while on a Wenatchee Rare Care volunteer assignment last spring and felt an easy and welcoming professional kinship. The Wenatchee shrub-steppe ecosystem has always fascinated me for its rich ecology, geology, climatic variability, and diversity of habitats resulting in the most striking landscapes of Washington State." She's looking forward to experiencing a deeper, place-based connection to central and eastern Washington and spending time in the field.

One thing she is not looking forward to, however, is ticks. We wish her a fun-filled, tick-free, learning experience!

Rare Care is grateful for support from the United States Bureau of Land Management, Deupree Family Foundation, Miller Charitable Foundation, National Fish and Wildlife Foundation, Seattle Garden Club, Tacoma Garden Club, private organizations and individual donors.