

***Ex-situ* Conservation of Washington's Rare Native Plants 2015 Annual Report**

Washington Rare Plant Care and Conservation banks seeds of Washington's rarest native plants in the Miller Seed Vault. Seed-banking is an effective *ex-situ* conservation tool that complements on-the-ground work to preserve imperiled plant species. It safeguards against the loss of a species due to catastrophic events and also allows for the preservation of the genetic diversity of individual populations. The banked seed may be used for reintroducing populations to ecologically appropriate sites as part of carefully-planned recovery efforts. They are also available to scientists conducting research related to the conservation of native plants.

Each year, seed collections are made from populations of rare native plants across Washington State to increase the number of species represented in the seed bank and to increase the genetic diversity of banked seeds. Seed collections are carried out by Rare Care staff and volunteers. Seed collections may also be contributed by scientists and land managers from public agencies and non-profit organizations.

In 2015, twenty seed collections were added to the Miller Seed Vault, representing ten taxa (Table 1). These collections included two of *Silene spaldingii* and one each of *Lomatium tuberosum*, *Astragalus sinuatus* and *Nicotiana attenuata* on Bureau of Land Management (BLM) lands as part of an on-going collaboration with the public agency to secure collections of sensitive species on their lands. Two other collections of *N. attenuata* were also made this year from two sites on the Yakima Training Center. Five collections of *Cryptantha leuocphaea* were collected as part of a special project to assess the status of this species in the state and to build the *ex situ* collection. We also added three additional collections of *A. sinuatus* to the seed vault that were collected in 2003 as part of a research project and donated to the seed vault. Seeds from four new species were also added to the seed bank, *Draba aurea*, *Hackelia cinerea*, *Heterotheca oregona*, and *Orobanche californica* ssp. *grayana*. Finally, a population of *Sanicula marilandica* was added to expand our holdings for this species.

All collections received by Rare Care were accessioned into the Miller Seed Vault and have been dried at 15 degrees C and 22% relative humidity. Seeds are currently being cleaned, counted and packaged for long term storage. Cleaned seeds will be stored -18 degree C until they are used or no longer viable. Several collections will be split, with part of the seeds to be sent to the National Center for Genetic Resources Preservation in Ft. Collins, Colorado.

Volunteer Participation

Eight volunteers devoted 180.5 hours to seed collecting during the 2015 field season. This includes hours dedicated to preparation and planning, field work and report writing. In addition, six volunteers contributed 112 hours of time to cleaning and packaging seeds for long term storage in the seed vault.

Table 1. Seed collections added to the Miller Seed Vault in 2015.

Species	EO #	Collection Date	Management Area
<i>Astragalus sinuatus</i>	6	July 2003	US Bureau of Land Management
<i>Astragalus sinuatus</i>	6	July 2003	WA Department of Natural Resources
<i>Astragalus sinuatus</i>	6	July 2003	WA Department of Natural Resources
<i>Astragalus sinuatus</i>	6	6-19-2015	US Bureau of Land Management
<i>Cryptantha leucophaea</i>	32	6-24-2015	South Columbia Basin Wildlife Area
<i>Cryptantha leucophaea</i>	33	6-18-2015	USA Bureau of Reclamation
<i>Cryptantha leucophaea</i>	35	6-13-2015	WA Department of Natural Resources
<i>Cryptantha leucophaea</i>	46	6-18-2015	Hanford Site
<i>Cryptantha leucophaea</i>	61	6-05-2105	Crab Creek Wildlife Area
<i>Draba aurea</i>	10	8-12-2015	Okanogan-Wenatchee National Forest
<i>Hackelia cinerea</i>	17	6-28-2015	Riverside State Park
<i>Heterotheca oregona</i>	14	7-21-2015	Okanogan-Wenatchee National Forest
<i>Lomatium tuberosum</i>	37	5-21-2015	US Bureau of Land Management
<i>Nicotiana attenuata</i>	31	7-13-2015	Yakima Training Center
<i>Nicotiana attenuata</i>	New	7-13-2015	Yakima Training Center
<i>Nicotiana attenuata</i>	New	8-11-2015	US Bureau of Land Management
<i>Orobanche californica</i> ssp. <i>grayana</i>	1	9-03-2015	Conboy National Wildlife Refuge
<i>Sanicula marilandica</i>	32	7-25-2015	Dishman Hills NRCA
<i>Silene spaldingii</i>	30	8-06-2015	US Bureau of Land Management
<i>Silene spaldingii</i>	48	8-05-2015	US Bureau of Land Management