2012 Annual Progress Report

Whitebark Pine Restoration Program

Pacific Northwest Region

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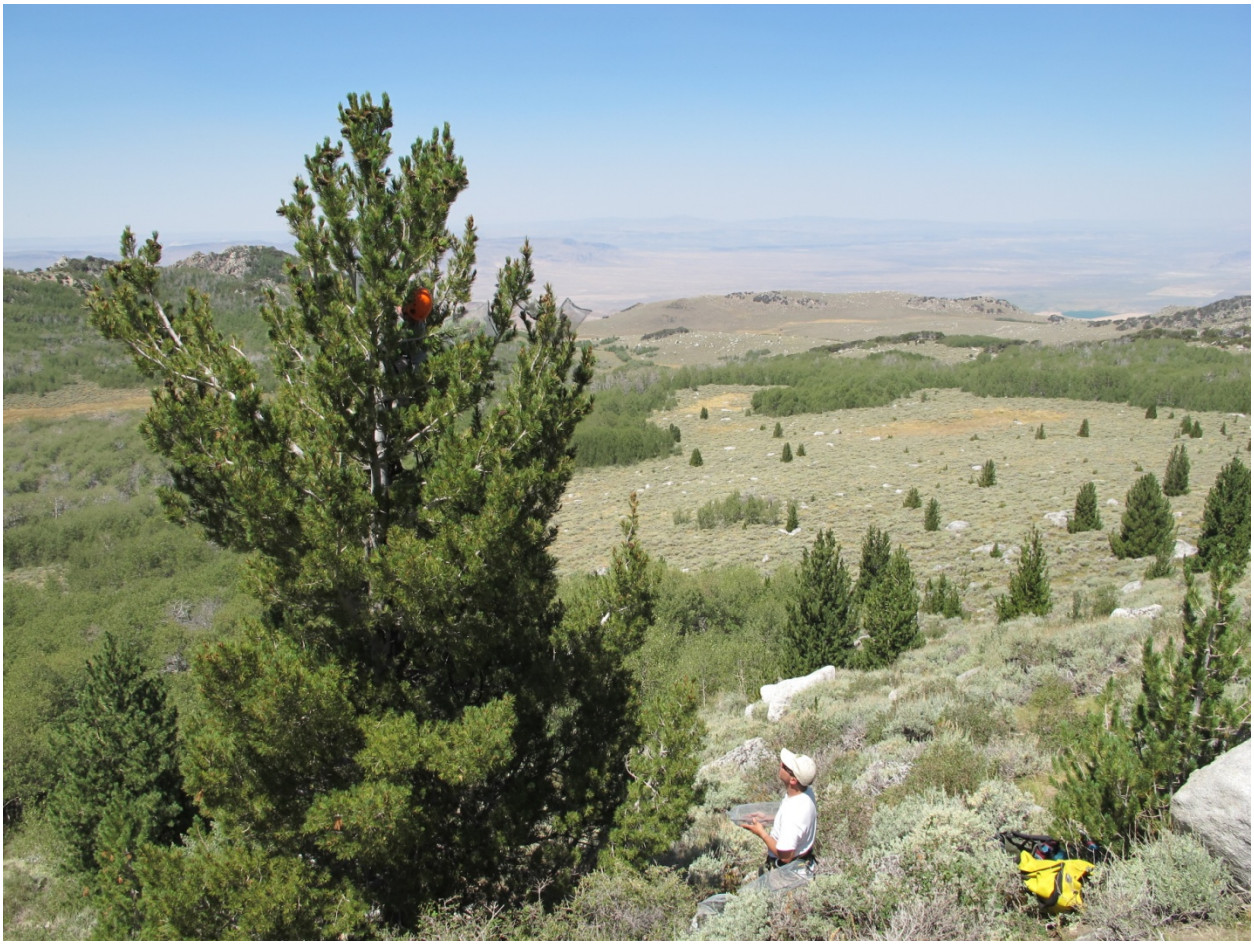

Photo: C. Jensen

INTRODUCTION

The Whitebark Pine Restoration Strategy for the Pacific Northwest Region (Aubry et al. 2008) laid out a comprehensive 5-year plan to reach the goal of "a network of viable populations of whitebark pine throughout the Pacific Northwest". The key actions prescribed included:

- collect seed for gene conservation and rust resistance screening
- assess stand conditions in priority management units
- develop plans for planting seedlings in priority management units
- continue a rust screening program with emphasis on seed zones in grizzly bear areas
- treat for mountain pine beetle in high risk management units
- develop an approach for planting seedlings in designated wilderness areas
- develop an approach to mitigate the predicted impacts of climate change
- develop a monitoring plan to track accomplishments, success of actions, and provide feedback to improve project procedures and outcomes and disseminate information.

2012 was the fourth year of implementation of the restoration strategy.

MAJOR ACCOMPLISHMENTS FOR CY2012

- Single tree cone collections from 130 trees from 6 different locations
- 19 bushels of cones collected for bulk reforestation seedlots
- 300 Verbenone pouches put out on 4 sites
- 2895 seedlings planted on 5 sites on the Okanagan-Wenatchee NF

Photo: A. Bower

PROGRAM FUNDING

2012 was another successful year in the implementation of the Region 6 Whitebark Pine Restoration Strategy. As in past years Forest Health Protection has provided the bulk of the funding for this work. Funding allocated this year included:

- $13,700K from R6 FHP for thinning/fire protection at Anthony Lakes
- $10K from R6 FHP for planting seedlings on the Okanagan-Wenatchee NF
- $15K from W.O. FHP for limber pine gene conservation cone collections

CONE COLLECTIONS

Gene Conservation

2012 was another productive year with additional gains made towards meeting our goals for whitebark pine gene conservation cone collections in Region 6. Efforts focused in the south with collections from the Fremont NF, and from northern California and Nevada. W.O. Forest Health Protection gene conservation funds carried over from 2010 and funds newly allocated in 2011 paid for the collection most trees, with the collection from the remainder being funded from other sources (FHP WBP restoration funds, forest base funding, etc.). Outside of Region 6, at the request of Region 5, cones were collected for gene conservation and rust screening from the Warner Mountains on the Modoc NF in northern California. In addition, cones were collected from a population of WBP on BLM land in the Pine Forest Range in northwestern Nevada. Overall, 130 single-tree collections were made from trees in six separate locations. Since 2009, cones have been collected from 785 individual trees for gene conservation and rust resistance testing.

The W.O. FHP provided funding in 2012 for gene conservation collections from several stands of limber pine in and near R6. There are 2 known stands of limber pine on the Wallowa-Whitman NF, and a populations of limber pine in the Pine Forest Range (BLM land) and Santa Rosa Range (Humboldt-Toiyabee NF) in northwestern Nevada.

The Whitebark Pine *ex situ* Gene Conservation Plan for the Pacific Northwest Region designated 22 collection areas in and around Region 6, with a goal of collecting seed from a minimum of 25 individuals within each collection area. A minimum of 700-800 seeds is needed for gene conservation at both the national and regional level. The Region 6 *ex situ* Whitebark Pine Gene Conservation Plan calls for ~500 to be placed in long-term storage at the ARS National Center for Geneplasm Preservation in Ft. Collins, CO, and 300 seed will be stored locally at the Dorena Genetic Resources Center. This local storage will provide a backup for gene conservation and will also be a "working" collection that can be available for small research projects. Prior to 2009 sufficient seed was only available to meet the target in 2 of these areas. With the 2012 seed collection, we have met the target in 19 areas.

Restoration cone collections were also made in areas with a critical need for seed for future reforestation:

- Fremont-Winema NF, which is experiencing an epidemic level outbreak of mountain pine beetle that is killing thousands of acres of lodgepole and whitebark pine – 41 pounds of seed collected from 3 different locations – Grizzly Mountain, Green Mountain, and Abert Rim
- Deschutes NF – 0.5 pounds of seed from Paulina Peak

VERBENONE TREATMENTS

Treatment with verbenone to protect trees from mountain pine beetle on the Fremont-Winema NF was started in 2009 and continued in 2010 and 2011 to control an epidemic level infestation. While no formal assessment has been completed or reported from these efforts, anecdotally the treatment appears to have been effecting in preventing mass attack on treated trees. Survival of these trees appears to be higher than trees in the surrounding area that were not treated. In 2012, verbenone was applied to approximately 300 large, mature trees of cone-bearing age to protect them from beetle mass attack.

Photo: D. Stubbs

OTHER ACTIVITIES

Surveys

Prior to cone collections, cone surveys were conducted on sites as needed. Several stands on the Colville NF were visited with the focus on collecting more detailed information and pictures for help in making stand treatment prescriptions. Stands visited were Salmo Mtn, Sullivan Mtn, Crowell Ridge, Bear Pasture Trail, Round Top Mtn, Mankato Mtn, Grassy Top Mtn & Abercrombie Mtn.

Thinning

Funding was received from Region 6 FHP for a thinning project at the Anthony Lakes ski area on the Wallowa-Whitman NF. The goal of the project is to remove competing vegetation and ladder fuels from around high-value, mature, cone-producing whitebark pines. Trees have been identified for treatment and funding has been allocated into the forest thinning contract. NEPA analysis is nearly complete with the publication of a CE expected by the end of summer. Pending the public response to the CE, project execution could be started in fall of 2013, otherwise treatment will occur in CY 2014. The area to be treated is on the back side of the ski area so there is high public visibility in both winter by skiers and summer by hikers. Interpretive signs for public education were purchased with part of the funding for this project and will be installed near the summit of the ski area, in whitebark pine.

Plantings

Approximately 2900 seedlings were planted in five different locations on the Okanagan-Wenatchee NF in areas that had previously burned and had little natural regeneration. The total area planted was approximately 250 acres. Funding for this planting was provided by Region 6 Forest Health Protection.

Partnerships

Regional personnel were involved in numerous partnerships with other agencies and organizations working for whitebark pine restoration. These partnerships included: National Park Service, Oregon State University, Bureau of Land Management, the Confederated Tribes of Warm Springs, as well as USFS Regions 4 and 5.

Table 1. Gene conservation cone collection progress for CY2009 through 2012

Collection Area	Seed Zone	Conservation Areas	# Seedlots >700 seed available pre-2009	Goal met? Pre-2009	# Seedlots collected 2009	Goal met 2009?	# Seedlots collected 2010	Goal met 2010?	# Seedlots collected 2011	Goal met 2011?	# Seedlots collected 2012	Goal met 2012?
Olympic mtns.	1	101	10	NO		NO	16	YES		YES		YES
Okanagan NF	2E	202 - 205	2	NO	16	NO	10	YES		YES		YES
Wenatchee NF	2W	206, 207	12	NO		NO	26	YES		YES		YES
Wenatchee NF	2W	208	2	NO		NO	23	YES		YES		YES
Bonaparte mtn.	3	301	0	NO	19	NO		NO	30	YES		YES
Kettle Crest	3	302	0	NO	17	NO		NO	54	YES		YES
Selkirk mtns.	3	303	1	NO		NO	6	NO	53	YES		YES
Mt. Rainier-Mt. Adams	4	401 - 405	24	NO		NO	4	YES		YES		YES
Mt. Hood	5	501	18	NO	7	YES	7	YES		YES		YES
Central OR Cascades	5	502 - 504	25	YES	26	YES	7	YES	29	YES		YES
Newberry Crater	5	505	4	NO	26	YES	10	YES	3	YES		YES
Wallowa mtns.	6	601	0	NO	25	NO		NO	16	YES		YES
Umatilla NF	6	602, 603	49	YES	5	YES		YES	6	YES		YES
Malheur NF	6	604	7	NO	28	YES		YES	10	YES		YES
Seven Devils Hills**	6	605							14	NO		NO
Central OR Cascades	7	701	0	NO	23	NO		NO		NO		NO
S. OR Cascades	7	703	7	NO	20	NO	11	YES		YES		YES
Mt. Ashland*	7	704										
Yamsay Mtn.	8	801	0	NO	11	NO	8	NO		NO		NO
Fremont NF	8	802	0	NO	20	NO	18	YES	16	YES	19	YES
N. Warner mtns.	8	803	0	NO	24	NO		NO	7	YES		YES
S. Warner mtns.**	8	804								NO	49	YES
Pine Forest range NV**	8	805								NO	25	YES
TOTAL					267		146		238			

*Very small population, only 3 or fewer mature trees

**Conservation Area added in 2010

Figure 1. Revised map of whitebark pine seed zones and conservation areas and locations of seed collections in Washington and Oregon.