

# Whitebark Pine Restoration Treatments in the Vinegar Hill Scenic Area of Northeastern Oregon

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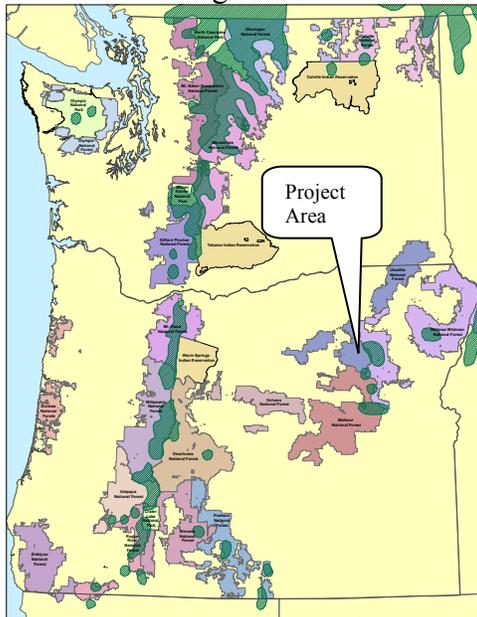
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## Introduction

The Vinegar Hill Scenic Area is located in the south central portion of the Blue Mountains in northeastern Oregon. The Scenic Area contains one of the several isolated populations of



whitebark pine known to occur in northeastern Oregon, all of which are well outside the main distribution of the species (see Fig. 1).

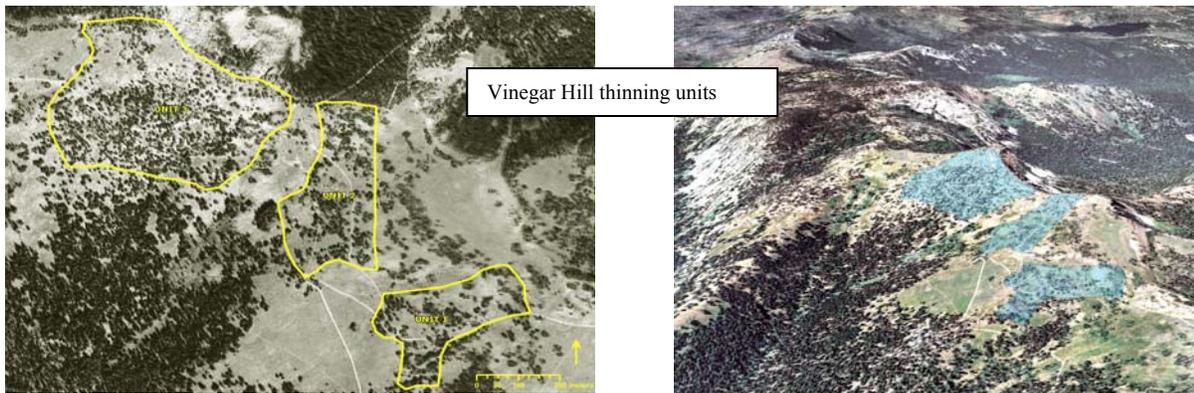
Within the high elevation (2200-2500 m), mixed-conifer forests and meadows of the Scenic Area, approximately 193 ha contain whitebark pine as a major component of the stand. Recent assessments of the condition and health of whitebark pine in these stands provide evidence that the Vinegar Hill population is at risk of local extinction due to mortality caused by white pine blister rust (*Cronartium ribicola*), subalpine fir encroachment and associated overstocking-induced stress, and mountain pine beetle (*Dendroctonus ponderosae*) (see abstract, Condition and Health of Whitebark Pine in the Blue Mountains, this proceedings).

## Whitebark Pine Restoration

In 2003, a restoration project was implemented to reduce co-dominant and understory subalpine fir and other competing conifer species to stand density and basal area levels more conducive to whitebark pine growth and vigor (<10m<sup>2</sup>/ha). An additional objective of the project was to create small openings to encourage whitebark pine seed caching by Clark's nutcracker.



The project area contained 3 units totaling 33 ha of the most accessible stands where there was a predominance of whitebark pine. Within each unit, competing subalpine fir, lodgepole pine, and other conifer species were removed by felling or girdling. The work was completed under a service contract at a cost of \$1927-\$2322 per ha.



## Project Specifications

- Live trees of competing species were cut or girdled within a 15 m radius of whitebark pine that were over 5 m in height. A 6 m radius was used if whitebark pine tree height was <5 m.
- Competing trees with a DBH of 3 cm or greater were girdled by 2 overlapping sawcuts below the lowest limb.
- If the tree to be removed was <3 cm DBH, it was cut below the lowest live limb, bucked into manageable pieces, and hand-piled at the edge of the stand for later burning (Fall 2004). Stumps were limited to a maximum height of 2.5 cm.
- Slash piles were restricted to no more than 2.5m x 2.5m x 2 m in size and were located at least 9 m from standing live trees or snags.



Girdled trees



Girdled trees



Burned slash piles

Future monitoring will determine the effectiveness of the thinning and girdling treatments on whitebark pine vigor, health, and regeneration.

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Dead and dying girdled trees (red flagging)