Idaho BLM Whitebark Pine Status Summary
Nov. 18, 2014
Attachment 1

Distribution and Abundance of Whitebark Pine:

Whitebark pine (*Pinus albicaulis*) populations on Bureau of Land Management (BLM) administered lands in Idaho occur at high elevations generally adjacent to U.S. Forest Service (USFS) lands and as isolated mountain islands that provide seed refugia and connectivity to more continuous populations. Estimated acreage on BLM lands in Idaho range between 47,000 and 78,000 acres based on the 60 and 80 percent probability thresholds of Warwell's (2006) bioclimatic model overlain with BLM ownership. This model was chosen for its high correlation (94.7%) with USFS Forest Inventory and Analysis data. Challis and Salmon Field Offices (Idaho Falls District), Cottonwood and Coeur d'Alene Field Offices (Coeur D'Alene District), and Shoshone Field Office (Twin Falls District) are currently known to have whitebark pines.

Whitebark pine stands on Idaho BLM lands range from approximately 7,600 to over 10,000 feet in elevation. They are found in pure whitebark pine stands, mixed limber pine/whitebark stands, and mixed conifer stands with lodgepole pine, subalpine fir and Engelmann spruce. These stands range from open high elevation woodlands to dense whitebark and limber pine stands to heavily forested mixed stands. Whitebark pine is a component of the semi-arid lower treeline, bordering sagebrush steppe habitat types in central Idaho.

Status and Condition of Whitebark Pine

Whitebark pine is an Idaho BLM Special Status Species and a Federal Candidate species under the Endangered Species Act. The USFS issued their twelve (12) month finding on a petition to list whitebark pine as a threatened or endangered species on July 19, 2011, in Federal Register Volume 76, Number 138. The finding was that of "warranted but precluded" with a Listing Priority Number (LPN) of 2. The LPN of 2 indicates that the species has a very high priority for listing as threatened or endangered because of eminent threats to the species.

Whitebark is long-lived, cold-tolerant, five-needle pine of high elevations. It is a keystone species, important to numerous species of wildlife, including Clark's nutcracker (*Nucifraga columbiana*), its seed dispersal agent. Major threats to the persistence of whitebark pine are an exotic fungus, white pine blister rust (*Croartium ribicola*), mountain pine beetle (*Dendroctonous ponderosae*) infestations, succession, fire and fire suppression, and climate change.

Throughout Idaho all BLM whitebark pine stands that have been visited have had some degree of mortality, due to Mountain Pine Beetle (MPB), White Pine Blister Rust (WPBR), and wildfire. Condition surveys have not been completed for all areas, but an estimate of up to 80% mortality of overstory whitebark pine from MPB occurs in some areas. The current MPB epidemic started in the late 1990s in central Idaho and has been spreading north and west in recent years. Field observations indicate 50-80% mortality of large (> 8" diameter at breast height) size class depending on location. Forest Health Protection Aerial Detection Surveys and ground visits by the BLM and the USFS foresters and entomologists in 2010 and 2011 noted a

decline in MPB caused mortality in some Field Offices. Lack of susceptible hosts because of high MPB caused mortality in previous years, and weather conditions have contributed to MPB population decline in some areas.

Field observations made by USFS Forest Health Protection (FHP) Biological Evaluations indicate that WPBR is present in low to moderate levels. Observations from Poverty Flat, (Challis Field Office) are 1% incidence and observations from Marshal Mountain, (Cottonwood Field Office) range from 30-41% based on FHP transects.

Successional replacement by shade tolerant species such as subalpine fir, Douglas-fir or faster growing species such as lodgepole pine evident on many sites.

Whitebark Pine Conservation Projects

Idaho BLM initiated whitebark pine conservation projects beginning in 2005 with Operational Monitoring of Verbenone (an anti-aggregating pheromone) effectiveness to protect trees from mountain pine beetle attack (Table 1). In 2010, forest inventory, compliant with the BLM – Forest Vegetation Information System (FORVIS), began in Idaho, Montana and Wyoming to quantify mortality levels, survivorship, WPBR incidence, species composition, density, size and age structure. By the fall of 2014, 12 areas and 40 stands in the tri-state region have been inventoried, with four areas, 22 stands completed. Idaho BLM also participates in the Whitebark Pine Gene Conservation program (Mahalovich and Dickerson 2004) http://www.fs.fed.us/rm/pubs/rmrs_p032/rmrs_p032_181_187.pdf)and the BLM Seeds of Success and Native Plant Materials Gene Conservation Program. Seed collections are used for research; primarily to determine if whitebark pines have genetic resistance to WPBR. Other uses of seed are for restoration plantings of blister rust resistant seedlings.

Table 1. Completed and upcoming whitebark pine conservation projects in Idaho.

Field Office District	Location	Time frame	Acres	No. stands: forest inventory	No. Five Needle Pines inventories >5" DBH	White Pine Blister Rust incidence (%)	Project Type
Challis FO Idaho Falls District	Poverty Flat	2005-2011	276	4	381	< 1%	1. Verbenone (150 trees) 2. Forest inventory (300 acres) 3. Silvicultural treatment – release thinning (250 acres) 4. Gene conservation (13 trees)
	Donkey Hills	2011	192	5	456	<1%	1. Forest inventory 2. Gene conservation
	Herd Lake	2011	63	2	204	<1%	1.Forest inventory
Salmon FO Idaho Falls District	Geertson Creek	2012	250	In planning			2. Gene conservation
	Grizzly Hill	2012	100	In planning			2. Gene conservation
Cottonwood FO Coeur D'Alene District	Marshall Mountain	2011	93	5	93	3-51%	1. Forest Inventory 2. Gene Conservation (5 trees)
Coeur D'Alene FO Coeur D'Alene District		2015	1200	Slated for 2015		10-80%	1. Forest Inventory Gene Conservation (5 trees)

Regulatory Mechanisms for Management of Whitebark Pine:

Whitebark pine is mentioned explicitly in the Coeur D'Alene and Cottonwood Resource Management Plans (RMPs) and the Sun Valley Management Framework Plan (Shoshone Field Office). Implicit direction for management of whitebark pine has been outlined in RMP goals including:

Challis RMP 1999:
Biodiversity Goal 1:
"Maintain functional and repair non-functional ecological systems and processes to ensure continued sustained production of ecosystem products and values such as forage, timber, clean water, and wildlife and fisheries habitat." (Pg. 27, Pg. 18)

Forest Resources Goal:
"Maintain the sustainable productivity of forest land by managing forests with an ecosystem approach." (Pg. 27)

Cottonwood RMP 2009:
Goal VF-1-Vegetation-Forests:

"Manage forests to maintain or improve forest health, composition, structure, and diversity consistent with site potential, and Historical Range of Variability."

Goal SP-1 Special Status Species:
"Maintain or restore special status species and their habitat to contribute to species recovery."

Existing whitebark pine conservation projects have been in conformance with biodiversity and forest resource goals in Idaho BLM land use plans. The management guidelines outlined in Attachment 2 provide additional guidance for implementing restoration and recovery actions.

References:

Warwell, M.V., G.E. Rehfeldt, N.L. Crookston. 2006. Modeling contemporary climate profiles of whitebark pine (*Pinus albicaulis*) and predicting responses to global warming. In: Goheen, E., ed. Proceedings of the Conference Whitebark Pine: A Pacific Coast Perspective. R6-NR-FHP-2007-01. Ashland, OR: United States Department of Agriculture. Forest Service. p. 139-142.