

Whitebark Pine

A KEYSTONE SPECIES



Whitebark pines form subalpine and treeline forests that provide shelter and allow spring runoff, helping provide the valleys below with a vital supply of water through the summer.



Whitebark pines hold rocks and soil on steep slopes where other trees cannot survive. Their pinecones hold large nutritious seeds that are prized by more than 30 species of animals including bears, foxes, rodents, and birds.



An ecosystem in trouble:

Whitebark pine has declined by more than 50% across its range in a single year (2015-2016) and is still decreasing. Whitebark has been listed as endangered in the IUCN Red List as of April 2011.¹ Fish and Wildlife Services are also in the process of assessing it as a candidate species under the endangered species act, more will be known by Fall 2021.

This decline has primarily been caused by:



White pine blister rust, a lethal, non-native fungus accidentally imported in the early 1900's.



Increasingly severe outbreaks of mountain pine beetle, a native species that has climbed higher in elevation as a result of climate change.



Whitebark Pine Facts and Conservation

Old and Bold

The oldest whitebark on record is 1,250 years old. Whitebarks often stabilize the soil in extremely cold and dry conditions, helping other plants gain a toehold near treeline.

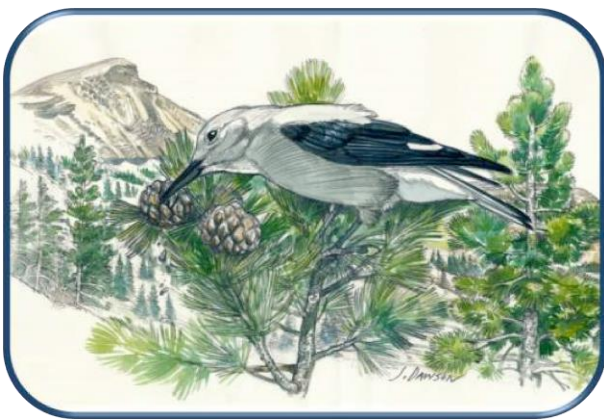


Better than Chocolate

Ounce for ounce, whitebark pine nuts have more calories than chocolate. This makes them an important food source for bears. In years with a good whitebark cone crop, researchers noticed that bears stayed at higher elevations to eat whitebark pinecones and came into less conflict with humans as a result.

What's Hidden in that Midden?

Though black bears will climb trees to feast on whitebark cones, bears often take advantage of middens, the ground-level stockpiles of squirrels. Squirrels will snip whitebark cones from trees and may stash them in their centrally located middens, though cone middens are rare in Washington. Squirrels are less reliant on the cones for their survival and have an abundant supply of food.



Symbols of Symbiosis

Clark's nutcrackers are the primary seed disperser of the whitebark pine. They may fly up to 20 miles to 'cache' whitebark pine seeds. Because whitebark pine seedlings arise almost exclusively from unretrieved seed caches, whitebark is considered an "obligate mutualist"—meaning its survival as a species depends on Clark's nutcrackers.

CONSERVATION: Around 3-5% of all whitebark trees have the gene responsible for being resistant to blister rust. The U.S. Forest Service has been working to cultivate these resistant trees for the last 50 years, to plant and restore whitebark pine populations.² However, the task of re-planting entire mountain ranges falls largely to the Clark's nutcracker as it has for millennia.

Learn more at The Nutcracker Ecosystem Project, www.thenutcrackerecosystemproject.com

References:

1. USDA Forest Service. (2018, September 14th). The big picture on whitebark pine. *U.S. Department of Agriculture*. Retrieved from <https://www.fs.usda.gov/inside-fs/delivering-mission/sustain/big-picture-whitebark-pine>
2. USDA Forest Service. (2017, November 2nd). Crews plant whitebark pine seedlings in Lamoille Canyon. *U.S. Department of Agriculture*. Retrieved from <https://www.fs.usda.gov/inside-fs/delivering-mission/sustain/crews-plant-whitebark-pine-seedlings-lamoille-canyon>