



AMERICAN FORESTS
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REPORT 2019



NATURAL BENEFITS OF HIGH ELEVATION FORESTS

AMERICAN RELEAF PRIORITY LANDSCAPES - NORTHERN ROCKIES AND CASCADES

S U M M A R Y

The high-elevation forests of the Northern Rockies and Cascades provide many benefits: offering scenic backdrops for backcountry skiers; protecting snowpack as temperatures rise; and controlling spring melts to provide a steady supply of water to down-mountain users.

Yet these critical natural services are threatened by climate change, as longer periods of warmer, drier weather are fueling unprecedented native pest outbreaks and large, high-intensity wildfires. In the Sierra Nevada, the amount of water provided by melting snow to California's reservoirs is expected to decline by 50 percent over the next 20 to 40 years, so maintaining these valuable forests as natural watershed protection will be critical in the future.

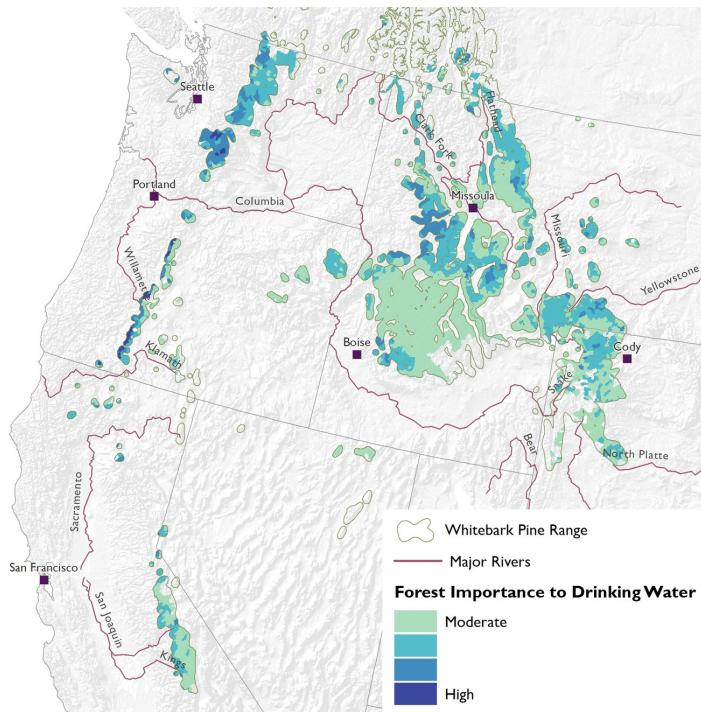
The high-elevation, five-needle white pines (known as Hi5s), including whitebark pine, are also suffering major declines due to the spread of an exotic disease, white pine blister rust. Given these threats, whitebark pine is a candidate species under the U.S Endangered Species Act and is already listed as Endangered in Canada's Species at Risk Act.

The latest research shows that whitebark pine ecosystems can adapt to climate change. However, the ecosystem's ability to adapt in the future is dependent on the restoration actions we take now.

American Forests is working with partners across the region to protect the many natural benefits of these special forests.



W A T E R



Forests are important to providing drinking water and protecting snowpack.

High-elevation forests protect snowpack and water supplies from warming temperatures.

- They shade and anchor snowbanks through spring months. This protection is especially important on exposed, south-facing slopes. Without healthy forests, downstream communities experience earlier runoff, greater flooding and dirtier rivers. Two million people get their drinking water from watersheds within the range of whitebark pine.

- High-elevation forests in the Greater Yellowstone Ecosystem form the headwaters of three major river systems in the West: the Snake/Columbia, the Green/Colorado and the Yellowstone/Missouri/ Mississippi.

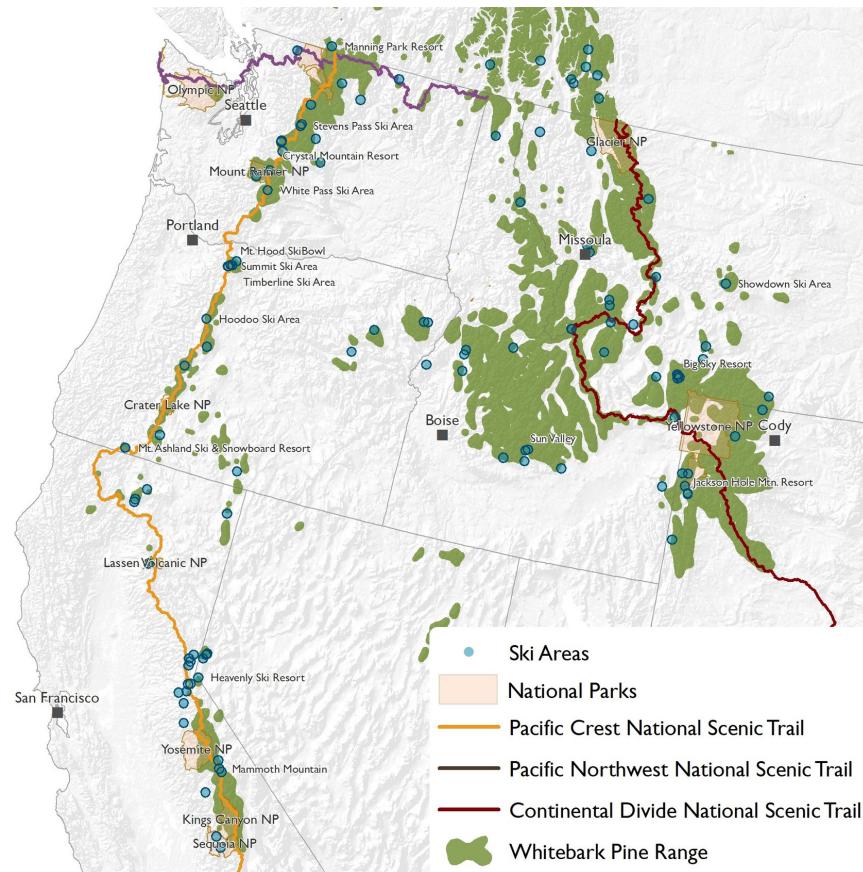
High-elevation forests are key to maintaining forest cover at high elevations.

- The whitebark pine is the highest-elevation pine found in the Northern Rocky Mountains. This tree species thrives where no other trees can. Whitebark pines are able to withstand poor, rocky soils, drought, subzero winters and near-hurricane-force winds. They form fire-resistant stands and are the first tree to re-establish after wildfires. Single trees can live for millennia. Their hardiness and tenacity will become more important as the climate places further stressors on trees.

- The loss of whitebark pine will cause an overall decrease in high-elevation forest cover. Whitebark pine plays a “nursery” role in allowing other vegetation to establish in the harsh alpine conditions. They provide protection from wind and sun and improve water availability for other trees.



RECREATION



High-elevation forests improve scenery for outdoor recreation and reduce avalanche risk.

- Whitebark pines grow in idyllic, open stands familiar to high-elevation hikers, skiers and birders.
- Healthy, dense forests growing in avalanche terrain reduce the likelihood of avalanche release by preventing continuous weak layers from forming.
- Studies conducted in the Colorado Rockies reveal that a 75 percent reduction in live trees following disease or beetle outbreaks results in a similar reduction in recreational use and enjoyment.



W I L D L I F E

High-elevation forests sustain wildlife populations.

- Whitebark pine seeds provide as many calories per ounce as butter.
- They are a food source for over 110 wildlife species, including the threatened grizzly bear. Grizzly bear will feed almost exclusively on the seeds when available before denning in the fall.

-The Clark's nutcracker and the whitebark pine have co-evolved together for millennia. Nutcrackers cache whitebark pine seeds in recently-burned areas and are the only way that seeds are dispersed.



Whitebark Pine is an important food source for wildlife like the Clark's Nutcracker.

W E N E E D Y O U R H E L P

American Forests' work to restore whitebark pine and other Hi5 pines has become more urgent than ever. In the Crown of the Continent region that includes Glacier National Park, blister rust infection rates are up to 95 percent. Additionally, the dramatic wildfires seen across the Northern Rockies and Cascades in recent years have added new urgency.

With your help, we will restore thousands of acres by planting one million rust-resistant whitebark pine seedlings in just the next five years—doubling our first 20 years of progress. We will accomplish this ambitious goal through the Comprehensive Whitebark Pine Recovery Strategy described on the

following page, driving restoration through a long-term collaboration based on science. Whitebark and other Hi5 pines can be saved, but we need to act now to protect these wild, cone-bearing trees and produce rust-resistant seedlings before it is too late.



COMPREHENSIVE WHITEBARK PINE RECOVERY STRATEGY

Whitebark pine snag overlooking Wizard Island at Crater Lake National Park, Oregon.



1. Build Partnerships: In 2019, American Forests is partnering with the U.S. Forest Service and other organizations to create a new Hi5 Restoration Partnership that will guide and integrate restoration efforts among public and private partners—essential across such a vast area.

2. Plan Guided by Science: American Forests is collaborating with the U.S. Forest Service and Whitebark Pine Ecosystem Foundation to develop the first range-wide National Whitebark Pine Restoration Plan. This plan will prioritize the strategic locations for restoring whitebark pine and provide guidance on innovative planting and restoration techniques.

3. Advocate and Fund: American Forests' policy team is leading federal policy efforts in Washington, D.C., to advocate for increased public funding and supportive agency policies that can advance whitebark pine restoration efforts. This includes increased funding for reforestation on federal lands and enhanced agency staffing for this work.

4. Plant and Restore Forests:

American Forests has been working across the Northern Rockies and Cascades since 1999 to curb the heavy losses of whitebark and other Hi5 pines, and to restore resilient forests for the future. We have already planted 500,000 whitebark pines over 2,000 acres in the United States and Canada, but this is just the beginning. Our new Hi5 Restoration Fund will help fund restoration projects aligned with our Whitebark Pine Recovery Plan. These projects include planting disease-resistant trees, hiring tree climbing crews to collect wild seed for resistance testing and growing disease resistant-seedlings in special tree nurseries. We will also help use the fund to identify and protect the most valuable cone-producing trees from threats like mountain pine beetle, severe wildfire and natural competition.

5. Communicate and Replicate: To help build this movement, American Forests held the first-ever Whitebark Pine Summit in November 2017, bringing together public agencies, nonprofits, tribes and potential funders to shape a shared restoration vision. American Forests is also a major sponsor of an international conference on Hi5 restoration in 2020. And we continue to build awareness and support through our award-winning magazine and online content.