

Blister Rust Screening for Whitebark Pine in BC

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(Ministry of Forests, Lands, and Natural Resource Operations)

Outline

- Why develop resistance?
- Rust screening procedure
- USA programs
- New BC effort

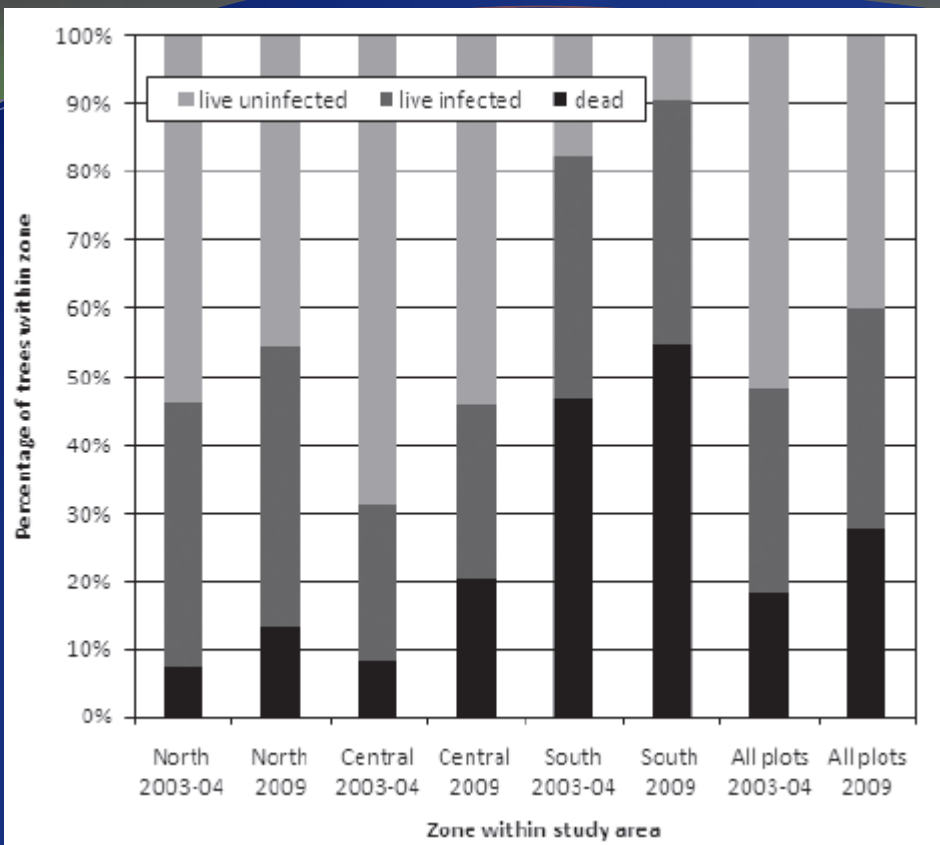
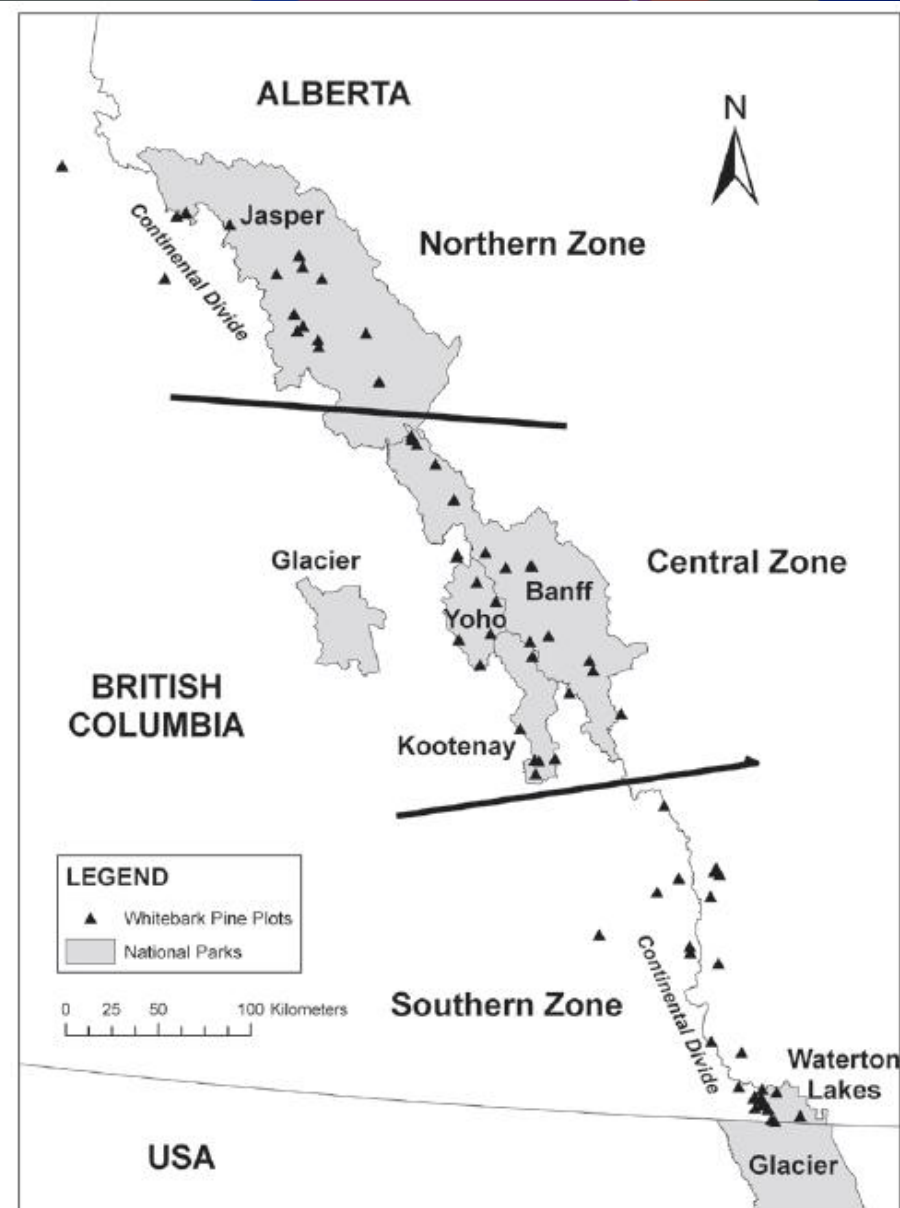
Whitebark Pine

- Increasing industry demand for mine-site reclamation.
- Harvested
- Increasing demand for park plantings.
- Keystone species, supporting fauna and flora.
- First western tree on Endangered List...





Blister Rust Incidence (%)	Location	Source
14 – 71%	Kootenays (BC)	Murray 2010
≤ 72%	Smithers area (BC)	Haeussler 2008
16 – 73%	Continental Divide (BC/AB)	Smith 2010



COSEWIC
Assessment and Status Report

on the

Whitebark Pine
Pinus albicaulis

in Canada



ENDANGERED
2010

COSEWIC
Committee on the Status
of Endangered Wildlife
in Canada



COSEPAC
Comité sur la situation
des espèces en péril
au Canada

**“High risk of
extirpation in Canada”**





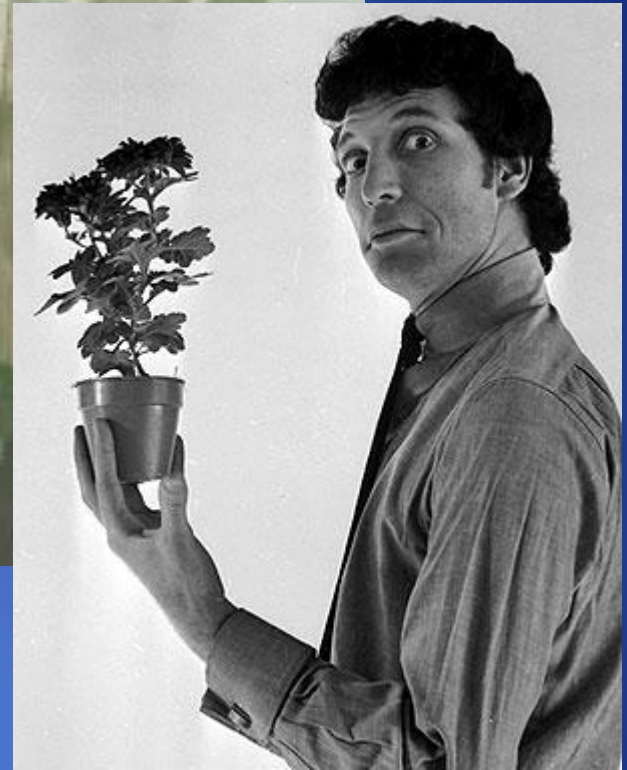


Propagate



**Whitebark Pine Blister Rust Screening
Dorena, Oregon**

Inoculate



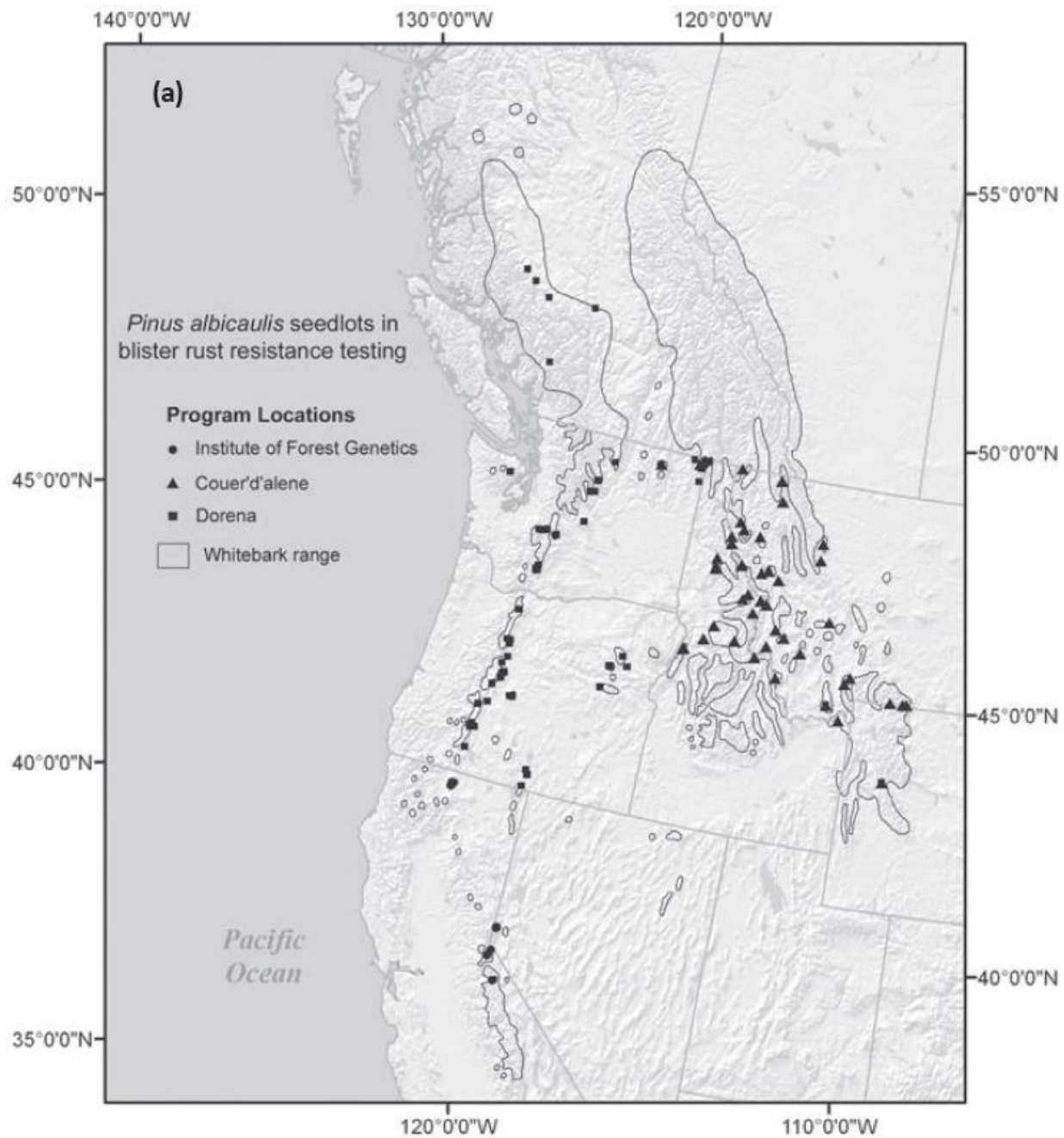


Monitor









USA

~1,479 Parents Screened

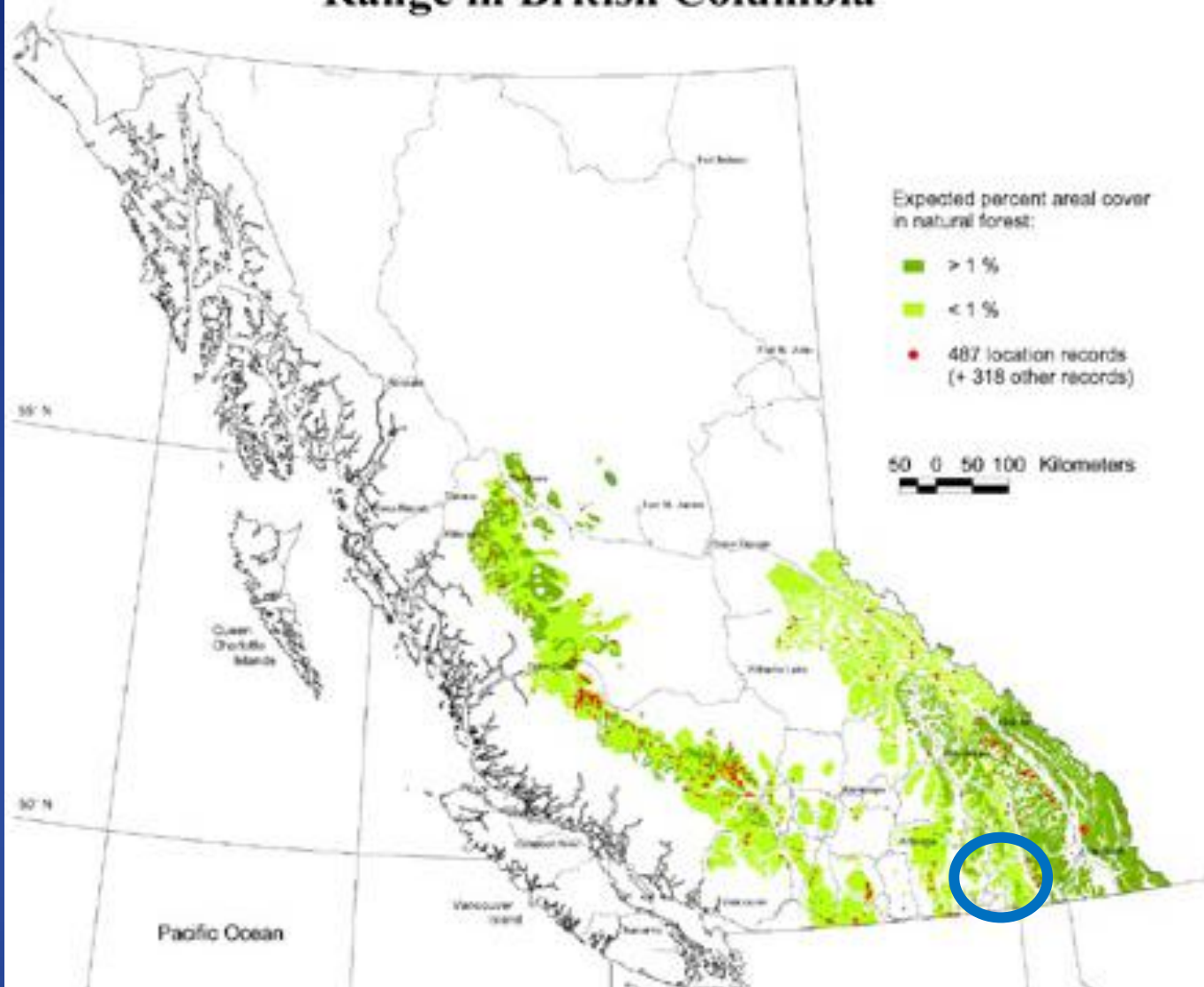
60 Resistant Trees

~2,000 acres Planted

~200,000 trees Planted



***Pinus albicaulis* Engelm. – Whitebark pine**
Range in British Columbia



West Kootenays

- 6 Sites
- 20 Trees

East Kootenays

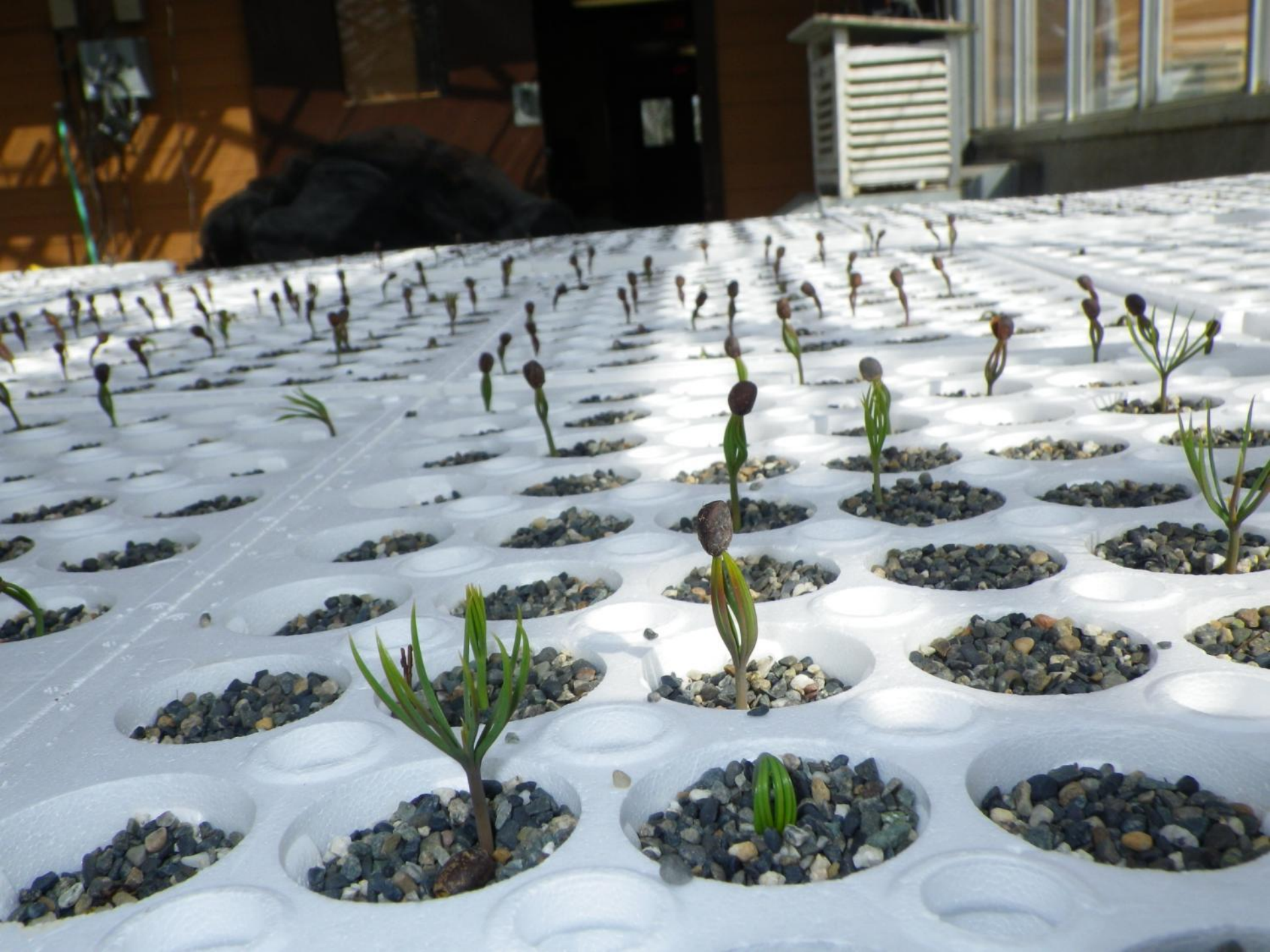
- 5 Sites
- 20 Trees

Inoculations

Kalamalka Research Centre (BC)

Dorena Tree Improvement Center (USFS)

Field Trials (Kootenays)





Puddingburn Mtn, BC



THE SENTINEL: JESSE LOGAN FINDS A HEALTHY (OLDER) WHITEBARK PINE AND KNEELS TO REMEMBER HIS WILD HOME

Beetle Maniac

One backcountry-loving scientist's wild theories have become a frightening reality.

JESSE LOGAN MAY BE A SCIENTIST, but he's no egghead. A lifelong Rockies resident, Logan is an avid fly-fisherman and expert backcountry skier, and he's spent an enviable number of days exploring off-trail. And like anyone who has logged serious wilderness time in the northern Rockies, he has sought shelter from the elements among the whitebark pines that grow just below treeline.

So it's fitting that Logan, who began his career as an agricultural entomologist, ultimately focused on the mountain pine beetles that led him straight back to those same trees.

Known in his field as the beetle guy, Logan spent most of the 1990s studying how these swarms wreaked havoc on lower-elevation lodgepole pines. At the USDA Forest Service's Rocky Mountain Research Station in Logan, UT, where he dedicated 15 years to beetles, he noticed that the bugs were highly sensitive to temperature.

As more evidence of global warming emerged in the mid-'90s, Logan began to get a sinking feeling in the pit of his stomach. With difficulty, he wrangled funding from higher-ups in DC to plug some gently warming temperatures into a mathematical model. "It was really

theoretical," he says. "Just an exercise." But what he found scared him. With just a slightly longer summer season, his model predicted, mountain pine beetles could complete their life cycle in one season instead of two, emerging in greater numbers to overwhelm trees and elevations that were once mostly beyond their reach.

Sadly, these theories have become hard fact. Logan caught his first glimpse of the evidence in 2003 at the rooftop of the Sawtooths outside Stanley, ID. The higher-elevation whitebark pines were under attack. By the next year, the needles would turn red and drop, leaving a wake of dry, weathered, birdless snags. Even as a scientist who had witnessed numerous beetle kills, Logan was devastated. "It's absolutely heartbreaking," he says. "I can't find other words."

His findings drove the Forest Service toward more long-term ecological research, but Logan left the agency last year—in part, he says, because of its lack of enthusiasm for such research. Now mostly retired at 63, he tries to enjoy the wilderness as much as he can. The beetle recently showed into one of his favorite ski slopes on the northeast aspect of Emigrant Peak in southern Montana, and Logan fears that whitebark pine forests could become functionally extinct in as soon as a generation. "It's now one of the most intact ecosystems in the world," he says. "But my grandchildren may never see it."

Florence Williams

Acknowledgements

John King (MFLNRO, emeritus)

Mary F. Mahalovich (USFS)

Richard Snieszko (USFS)

