

Whitebark Pine Recovery in the Columbia Region: Restoring a Keystone Species

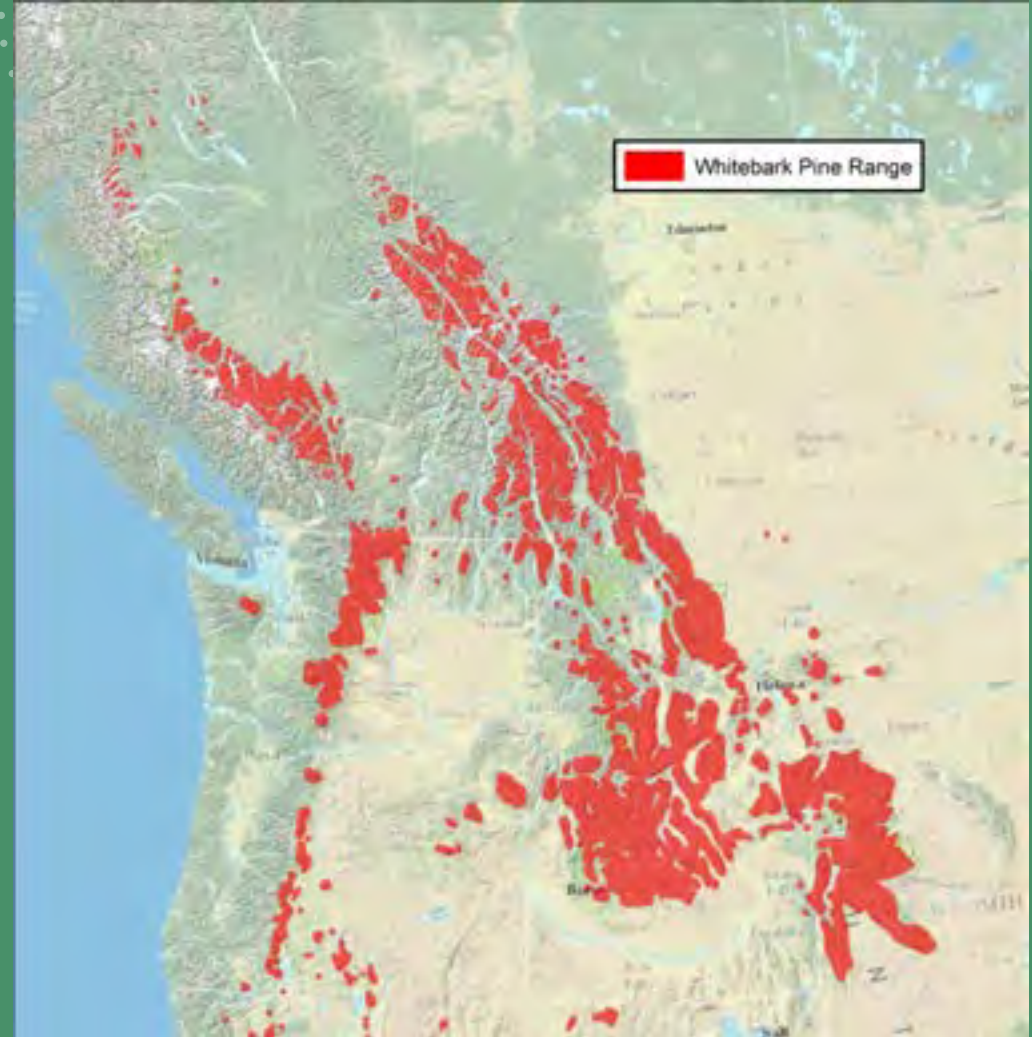
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FWCP
Fish & Wildlife
COMPENSATION PROGRAM

Whitebark Pine – Identification

- Occurs in Mountainous Regions of Western North America



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Whitebark Pine – Identification

- Occurs in Mountainous Regions of Western North America
- High Elevation Species ~> 1700m
- Indehiscent Cones
- Needles in bundles of five











Whitebark Pine – An Endangered Species

- Endangered under Species at Risk Act (SARA)
- Blue-listed in BC
- Multiple causes of decline
 - Primary is white pine blister rust
 - Mountain pine beetle
 - Changes to fire regimes
 - Global climate change
 - Localized human impacts (often acute)



Whitebark Pine – An Endangered Species

- White Pine Blister Rust



Whitebark Pine – An Endangered Species

- White Pine Blister Rust



Whitebark Pine – An Endangered Species

- Mountain pine beetle



Whitebark Pine – An Endangered Species

- Changes to Fire Regimes





Whitebark Pine – An Endangered Species

- Climate Change
 - Shift in habitat
 - Increasing insect populations
 - Changes to fire behaviour
 - Increased blister rust?



Whitebark Pine – Keystone Species

- Post-fire Pioneer
- Stabilizes Hostile Environments
- Moderates Snow Melt
- Important Food Source
 - Red Squirrels
 - Black Bears
 - Grizzly Bears
 - Clark's Nutcrackers





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Recovery Work in the Columbia

- Mapping and Identifying Restoration Sites
- Competition Removal
- Seed Collection
- Seedling Planting



Recovery Work in the Columbia

- Mapping and Identifying Restoration Sites









Treatment Focus Area Pilot Restoration Areas

10 0 10 20 30 km



Treatment Focus Areas: Grid Cell 283

-  Treatment Focus Areas
-  Cores Areas
-  12 km x12 km Grid
-  Wildfire Boundaries



Recovery Work in the Columbia

- Competition Removal





Recovery Work in the Columbia

- Seed Collection

















Recovery Work in the Columbia

- Seedling Planting





Recovery Work in the Columbia

- Seedling Planting



Recovery Work in the Columbia

- Seedling Planting



Recovery Work in the Columbia

- Seed Collection – 350,000
- Planting – 105,000
- Competition Removal – 30 ha



Recovery Work in the Columbia

- Seed Collection – 350,000
 - Many rust resistant parents identified
- Planting – 105,000
- Competition Removal – 30 ha



Recovery Work in the Columbia

- Seed Collection – 350,000
 - Many rust resistant parents identified
- Planting – 105,000
 - (67 – 100% 3-Year Survival; average 87%)
- Competition Removal – 30 ha



Recovery Work in the Columbia

- Seed Collection – 350,000
 - Many rust resistant parents identified
- Planting – 105,000
 - (67 – 100% 3-Year Survival; average 87%)
- Competition Removal – 30 ha
 - Industry is getting involved in supporting



Thank You!

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WHITEBARK PINE
ECOSYSTEM
FOUNDATION OF CANADA

