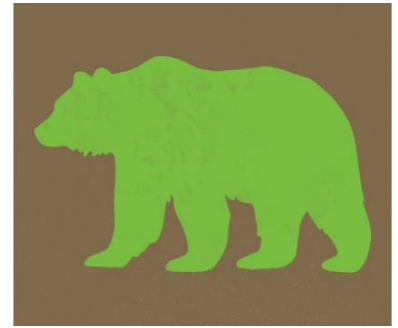




Whitebark & Limber Pine Science and Management Conference



Speaker Bios & Abstracts

Collaboration for Recovery: Active Management in a Changing Climate
October 14 & 15, 2026 | Radium Hot Springs, BC

Individual Presentations

Randy Moody

President, Whitebark Pine Ecosystem Foundation of Canada

Owner, Moody Tree

Presentation: *Co-Management of Whitebark Pine in Silviculture*

Speaker Bio

Randy Moody is an ecologist and a leading provincial expert in whitebark and limber pine conservation and restoration. His work has included recovery planning, planting programs, permanent monitoring, prescribed fire and restoration treatments, research, reclamation, and ecosystem mapping. Randy holds a Master's degree in Forest Science and a Bachelor's degree in Natural Resources Conservation from UBC and is a Registered Professional Biologist.

Abstract

Whitebark pine commonly occurs within the timber harvesting land base including naturally regenerating in post-harvest cutblocks. These harvest areas typically have longer and more productive growing seasons than higher forests where whitebark pine may be more common. We restored regenerating cutblocks by removing competition from around whitebark pine but limited restoration work to the removal of non-well-spaced preferred trees. This work will show if retaining stocking density for silviculture obligations is feasible while also supporting natural recruitment of whitebark pine.

Robyn Denn

Simon Fraser University

Presentation: *Spatial and Temporal Patterns in Habitat Use by Clark's Nutcracker in Post-Fire Environments*

Speaker Bio

Robyn is a master's student at Simon Fraser University working under the supervision of Dr. David Green and in close collaboration with Environment and Climate Change Canada (Kimberly Dohms) and the BC Ministry of Water, Land, and Resource Stewardship (Travis Heckford and Fran Iredale). She is studying spatial and temporal patterns in habitat use by Clark's nutcracker in post-

fire environments during the autumn seed caching period. Robyn first became interested in whitebark pine ecosystems while she was working as a summer student at Parks Canada in the Rocky Mountains. Since then, she has pursued graduate school to continue to grow as a researcher and conserve whitebark pine ecosystems in Canada. When she is not birdwatching (for work), you can find her birdwatching (for fun).

Abstract

The whitebark pine (*Pinus albicaulis*) is a keystone species of sub-alpine ecosystems and relies solely upon its avian mutualist and obligate seed disperser, the Clark's nutcracker (*Nucifraga columbiana*), for seed dispersal. Historical fire suppression has changed the frequency and intensity of fire in whitebark pine ecosystems. Despite their obligate mutualism with the nutcracker, we have little information on how whitebark stand densities influence harvest and caching decisions of nutcrackers in Canada or the extent to which nutcrackers cache seeds in burned habitat. Here we describe the spatial and temporal variation in nutcracker abundance and examine how habitat disturbance and whitebark stand density influence habitat use by nutcrackers. We deployed an array of acoustic recording units and conducted vegetation surveys, avian point counts and focal behavioural surveys across a mosaic of burn disturbance where whitebark pine stands vary in density in the Pasayten Valley, British Columbia, Canada between July and September 2025 when nutcrackers were most active harvesting and caching whitebark pine seeds. We analysed nutcracker vocalizations and habitat use using a generalized additive model approach. Our results show that disturbance type was a significant predictor of nutcracker habitat use with very few vocalizations in burned habitat in contrast to unburned habitat, and no visual observations of caching in burned habitat. Distance to whitebark pine was negatively associated with habitat use and elevation was positively associated in burned habitat, while cone density positively predicted habitat use in unburned habitat. Our findings will contribute to advancing whitebark pine ecosystem conservation and recovery in BC by enhancing our ability to establish scientifically supported conservation planning for whitebark pine and create effective management strategies. By identifying areas that lack nutcracker facilitated seeding dispersal managers can target specific areas with active management such as seedling planting.

Jodie Krakowski

Vice-President, Whitebark Pine Ecosystem Foundation of Canada

Presentation: *The Alberta Advantage for Whitebark and Limber Pine Recovery*

Speaker Bio

Jodie Krakowski is an independent consultant and Vice-President of WPEFC who has worked with five-needle pines since the late 1990s. As co-chair of Alberta's provincial whitebark and limber pine recovery team, she collaborates with partners to implement recovery plans across the species' Alberta ranges. Her background includes gene conservation, forest genetics, terrestrial ecology, forestry, and research in both Alberta and British Columbia.

Abstract

Alberta supports approximately 24% of Canada's Rocky Mountain whitebark pine and 95% of Canada's limber pine. This presentation highlights the evolution of recovery efforts in the province toward a systematic, operational-scale restoration program. It will summarize recovery progress, introduce the GIS spatial restoration toolkit developed by WPEFC and partners, and

highlight provincial implementation plans that prioritize restoration actions according to regional and site conditions.

Murray Peck & Gina Fryer

Geoterra Integrated Resource Systems Ltd.

Presentation: *Whitebark and Limber Pine Recovery and Restoration on Three Pipeline Projects in SW Alberta and SE British Columbia*

Abstract

Three TC Energy pipeline projects in SW Alberta and SE BC overlapping the range of Whitebark pine (WBP) and limber pine (LP) have recently been constructed. The ABC and Lundbreck pipeline projects impacted primarily limber pine, while the Elko Pipeline Project impacted Whitebark pine and crossed federal Dominion Coal Block Lands, requiring two Species at Risk Act (SARA) permits. Detailed WBP and LP inventories were conducted prior to disturbance and seed was collected. Following a two year sowing and growing period, tens of thousands of WBP and LP have been planted. In addition, a scion grafting study was undertaken, the details of which will be outlined in another poster separately from this submission. This presentation will outline the work undertaken to date and the monitoring that will continue into the future.

Michael Murray

Forest Pathologist, BC Ministry of Forests

Presentation: *Disturbance as Opportunity for Research and Technical Innovation*

Speaker Bio

Michael Murray is a forest pathologist with the BC Ministry of Forests and a Director of both the Canadian and U.S. Whitebark Pine Ecosystem Foundations. He holds a PhD focused on whitebark pine fire ecology and forest health from the University of Idaho and an MSc in Natural Resources from Humboldt State University.

Abstract

In Canada's whitebark and limber pine populations, agents of disturbance such as harvesting, mining and hydro development, weevil, and grizzly bear pruning are acknowledged as opportunities for increased research and monitoring. Emerging tools (e.g. drones, nanotechnology) may prove useful for understanding and promoting regeneration. Disease resistance screening follows established protocols, however novel advancements may prove complementary for increasing tree survivorship under the widespread pressure of blister rust.

Felix Bilodeau

Selkirk College

Presentation: *Detecting Whitebark Pinecones from Drone-Derived Imagery: A Spectral Index & Spatial Clustering Approach*

Speaker Bio

Felix Bilodeau is a research intern in the School of Environment and Geomatics and a Bachelor of GIS student with honours diplomas in environmental science and GIS. They use drones, satellite imagery, and LiDAR to map environmental features, including whitebark pine, and are currently researching how high-resolution satellite imagery can predict urban tree genera. Felix is working toward their RPBio designation and would love to connect with anyone doing field-based conservation or forest health work.

Abstract

This study evaluated the feasibility of detecting whitebark pine (*Pinus albicaulis*) cone clusters from drone-derived multispectral imagery using spectral index classification and spatial clustering. A canopy height mask derived from a LiDAR canopy height model was applied to remove vegetation below 6 m, reducing spectral confusion with low-lying brush. Jeffries-Matusita separability analysis across 13 band combinations identified GNDVI, NDVI, GRVI, and DVI as the optimal index combination, achieving a separability score of 1.973 for cone versus canopy pixels. Maximum Likelihood classification at an 80% confidence threshold with a minimum cluster size of 2 pixels identified all 16 confirmed mature cone-bearing trees with 100% precision and 59.9% recall. Density-based spatial clustering and mean center analysis reduced 443 canopy polygons to 16 high-probability cone locations, providing a spatially explicit inventory for arborist prioritization and targeted seed collection.

Charlie Cartwright

BC Ministry of Forests

Presentation: *Whitebark Pine Adaptation to Site as Informed by Height and Rust Data from Provenance Trials in British Columbia*

Speaker Bio

Charlie Cartwright is a Research Scientist and Forest Geneticist with the BC Ministry of Forests. His work focuses on forest genetics, tree improvement, and gene conservation, including research supporting the recovery of whitebark pine. Charlie has been involved in field testing whitebark pine populations and families across British Columbia to better understand genetic variation, climate adaptation, and resistance to white pine blister rust.

Abstract

Wind-pollinated whitebark pine from 450 parent trees representing 68 range-wide seed sources were established in twelve multi-environment genecology trials across British Columbia. Test sites were located from 800 m elevation to above treeline, from semi-arid ground with 0.4 m of annual precipitation to areas with 2.0 m, and from the Coast Mountains to the Rockies to account for continentality. Tree heights were measured at age five and ten years from seed, and rust assessments done every two years when possible. The primary goal was identifying populations and parent trees resistant to white pine blister rust for use in restoration but also assessing where different seed sources would be adapted now and in the changing climate of the future. As well as developing climate-based seed transfer guidelines so that this improved material would be reliably adapted to sites, rust hazard severity was considered as part of where families could be deployed. Survival, height growth and health as affected by geography and climate are presented to provide a practical approach to restoration.

Ingrid Farnell

Bulkley Valley Research Centre

Presentation: *Whitebark Pine Restoration in Northwest BC - Updates and Outlooks*

Speaker Bio

Ingrid is the Research Officer for the Bulkley Valley Research Centre's Silviculture Innovation, Fire Stewardship, and Whitebark Pine Restoration Programs. She holds a Master of Science degree from the University of Northern British Columbia. Since joining the BVRC, Ingrid's role has evolved to support a wide range of collaborative research and monitoring initiatives. Her work focuses on field-based ecological monitoring, data management, spatial analysis, and the development of digital tools that improve the efficiency, quality, and accessibility of research programs. Ingrid is a big whitebark pine fan and loves getting to work in these beautiful ecosystems. Sybille taught her how to identify collection trees and what to look for when monitoring our seedlings. Ingrid is Alana's right hand gal when running the restoration program and she works closely with Jen in the field during seed collection, planting, and monitoring.

Abstract

The Bulkley Valley Research Centre has led whitebark pine restoration at the northwestern range limit for almost 20 years (initiated in ca 2007). The pioneering work of Sybille Haeussler and the broader whitebark pine community supported the development of tools, techniques and relationships to sustain restoration activities in the region. Here we share lessons learned, current focus and future directions as we navigate an increasingly complex landscape of restoration opportunities and challenges.

Lightning Talks

Natalie Staffl | Parks Canada

Pine Restoration in Canada's National Parks

Natalie will provide an update on whitebark and limber pine recovery and restoration efforts within Canada's national parks, highlighting current activities, progress, partnerships, and approaches being used to support the long-term recovery of these threatened species.

Elisabeth Webb | University of Calgary

Integrating Resident Plant Community into White Pine Blister Rust Hazard Assessments

Elisabeth will present research examining how surrounding plant communities, including known and potentially overlooked alternate hosts, influence white pine blister rust risk in whitebark and limber pine ecosystems. The work aims to strengthen hazard assessments and inform restoration and disease-prevention strategies in Alberta.

Sybille Haeussler | Bulkley Valley Research Centre

15 Years of Seedling Performance at Whitebark Pine's Northwest Limit

Sybillie will share results from a long-term whitebark pine planting trial established on Hudson Bay Mountain near Smithers, BC. Following seedlings planted across three elevations and multiple provenances, the study provides 15 years of insight into survival, growth, site conditions, environmental stressors, and the potential effects of climate change at the northwestern edge of whitebark pine's range.

Dylan Begin | Elk Valley Resources

Elk Valley Resources Whitebark Pine Seed Orchard Update

Dylan will provide an update on the continued development of Elk Valley Resources' whitebark pine seed orchard, including recent progress and its role in supporting future seed supply and whitebark pine restoration efforts.

Thank you to all our speakers and presenters for sharing their knowledge, research, experience, and perspectives in support of whitebark and limber pine recovery!

The [Whitebark Pine Ecosystem Foundation of Canada \(WPEFC\)](https://www.whitebarkpine.ca/) is a nonprofit organization dedicated to the conservation and recovery of whitebark and limber pine ecosystems in Canada. Through restoration, research, education, and collaboration, WPEFC brings partners together to advance the recovery.



**WHITEBARK PINE
ECOSYSTEM**
FOUNDATION OF CANADA

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