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H5II Conference

Conference Proceedings

Preface and Acknowledgements

Whitebark Pine Ecosystem Foundation

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Preface

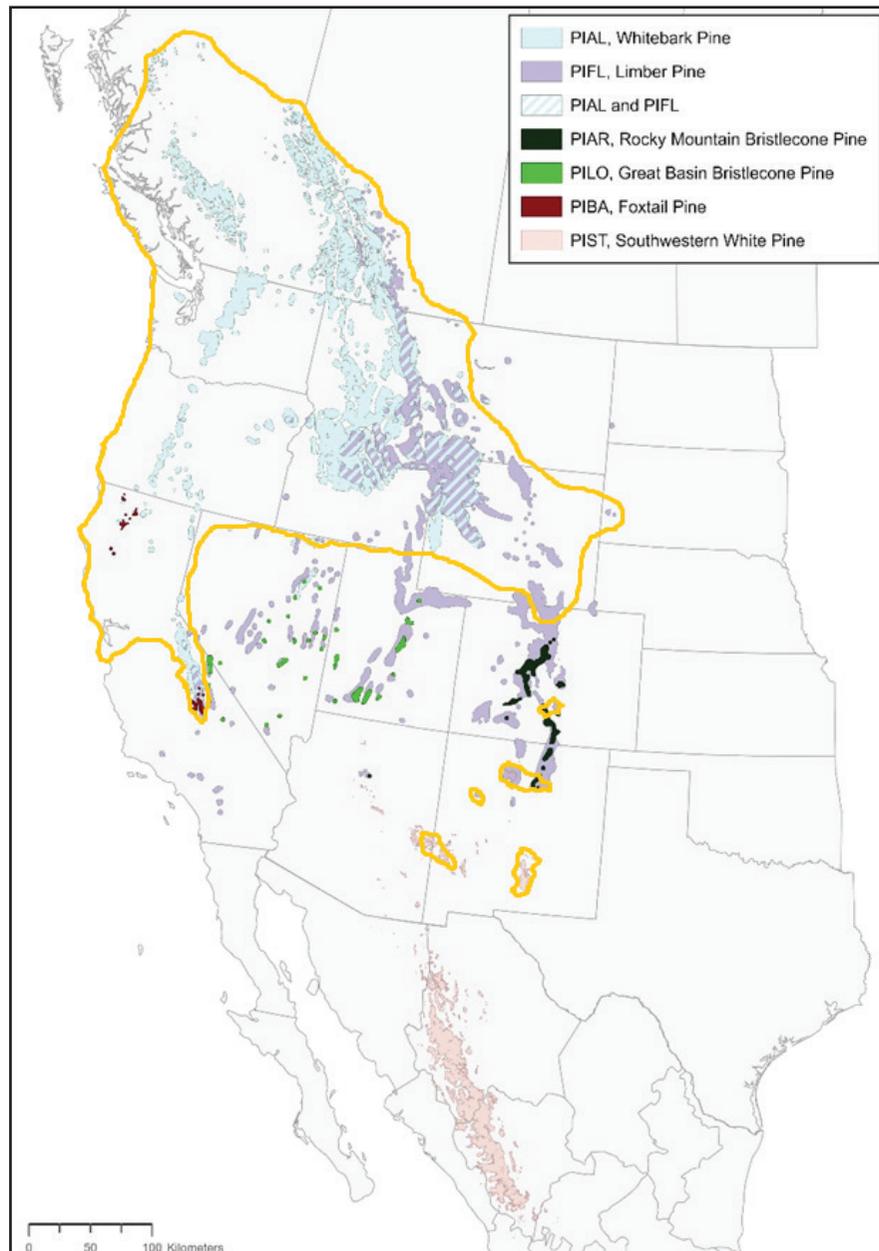
Taking place from October 5-7, 2021, this second high-five (H5II) conference brought together the world's leading experts on North America's magnificent high-elevation pines. The high-five conferences are for scientists and management professionals interested in learning about new management techniques, research findings, and the latest trends in high-elevation five-needle pine ecosystems. Hosted by the Whitebark Pine Ecosystem Foundation (WPEF), 287 registrants benefitted from 97 presentations plus a dozen keynote and plenary talks. This proceedings document captures submitted papers plus all abstracts of presentations and posters that covered a tremendous variety of topics. Keynote and plenary talks are not included as papers here, as these were submitted as a special issue to will be published in the Journal of Forest Ecology and Management.

Originally planned as a gathering in Missoula, MT during 2020, a viral pandemic (Covid-19) emerged - presenting very unexpected challenges. As a result, the conference presentations were pre-recorded for viewing on-screen. Aired October 5-7, each recording was followed by a live question-answer period. Similarly, field trip presenters provided their field recordings for a very unique viewing experience.

Why is WPEF investing so much time and effort into this conference? Many high-elevation five-needle pine forests are rapidly declining throughout North America. The six high-elevation five-needle pine species — whitebark (*Pinus albicaulis* Engelm.), limber (*P. flexilis* James), southwestern white (*P. strobiformis* Engelm.), foxtail (*P. balfouriana* Grev. & Balf.), Great Basin bristlecone (*P. longaeva* D.K. Bailey), and Rocky Mountain bristlecone (*P. aristata* Engelm.) — are of great ecological and symbolic importance to both the U.S. and Canada. The objectives of our series of high-five conferences are to: (1) bring together scientists, managers, and concerned citizens to exchange information on the ecology and management of these important pines; (2) learn about the threats and current status of pine populations; (3) describe efforts to mitigate threats through restoration techniques and action plans; and (4) build a foundation for the synthesis of research efforts and management approaches.

This conference was made possible by the steering committee, collaborators, and sponsors. We appreciate the generous support provided by American Forests; British Columbia Forest Service; Montana Department of Natural Resources and Conservation; National Forest Foundation; Montana Native Plant Society; Society of American Foresters; Northern Rockies Fire Science Network; College of Forestry & Conservation at the University of Montana; Crater Lake Institute; The Nature Conservancy – Montana; The Nature Conservancy – Idaho; Charles Bacon & Cynthia Dusel-Bacon; Horizon Credit Union, Missoula, MT; Dr. Cathy Cripps, Montana State University; and the John & Janet Tagney Charity.





Distribution of the high-elevation five-needle pines and estimated extent of white pine blister rust (orange polygons) in western North America. Base maps were compiled by Schoettle et al. (2022) and updated blister rust distribution adapted from Schoettle et al. (2019).

Schoettle AW, KS Burns, ST McKinney, J Krakowski, KM Waring, DF Tomback, and M Davenport. 2022. Integrating forest health condition and species adaptive capacities to infer and affect future trajectories of the high-elevation five-needle pines. *Forest Ecology and Management*: in review.

Schoettle AW, KS Burns, CM Cleaver, and JJ Connor. 2019. Proactive limber pine conservation strategy for the Greater Rocky Mountain National Park Area. General Technical Report RMRS-GTR-379. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 81p. <https://www.fs.usda.gov/treearch/pubs/57621>



WHITEBARK PINE

ECOSYSTEM FOUNDATION

The Mission of the **Whitebark Pine Ecosystem Foundation USA** (WPEF) is to promote the conservation of whitebark pine ecosystems by supporting restoration, education, management, and research projects that enhance knowledge and stewardship of these valuable ecosystems. Through the cooperative organization of the foundation, and networking with other organizations, government agencies, and individuals, we are doing together what we cannot do alone.

We:

1. Promote general understanding and appreciation for the ecological value of whitebark pine, and recognition of the accelerating losses of whitebark pine ecosystems rangewide.
2. Form a membership base of like-minded individuals who provide basic financial support for operational needs and promote the mission of the WPEF.
3. Inform and educate the public and natural resource agencies.
4. Support research to understand whitebark pine ecosystem processes and functions.
5. Test and promote possible strategies for restoration.
6. Provide financial assistance and technical support for restoration efforts.
7. Form associations with other organizations, governmental agencies, and individuals to further cooperation and collaboration in education, research, and restoration projects related to whitebark pine ecosystems.

USA
whitebarkfound.org

The **Whitebark Pine Ecosystem Foundation of Canada** (WPEFC) is devoted to the conservation and stewardship of whitebark and limber pine ecosystems. A sister to the Whitebark Pine Ecosystem Foundation based in Montana, the Canadian chapter was founded in 2010. While Canadian legislation and policies are distinct from the American system, we maintain strong ties with our USA counterpart and both organizations work to conserve and restore these vulnerable ecosystems.

We believe that:

- recovery is possible
- whitebark and limber pine ecosystems are valuable and worth recovering
- appropriately applied science will aid in this recovery
- engagement, connection, and communication with partners is necessary

Our strategic goals are that WPEFC:

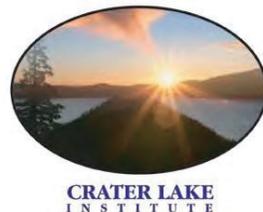
- engages with the public and partners using a variety of diverse platforms
- has sufficient funds to deliver key objectives
- is an integral and respected hub for knowledge sharing
- is governed by an engaged and effective Board of Directors
- plays a leading role in coordinating the conservation & recovery of whitebark and limber pine ecosystems across their Canadian Ranges

CANADA
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John & Janet Tagney Charity

Conference Host
Whitebark Pine Ecosystem Foundation