ONTARIO PARKS Quetico

Staff for this project provided by the

QUETICO FOUNDATION

1990-2017: White Pine Blister Rust Resistance Monitoring

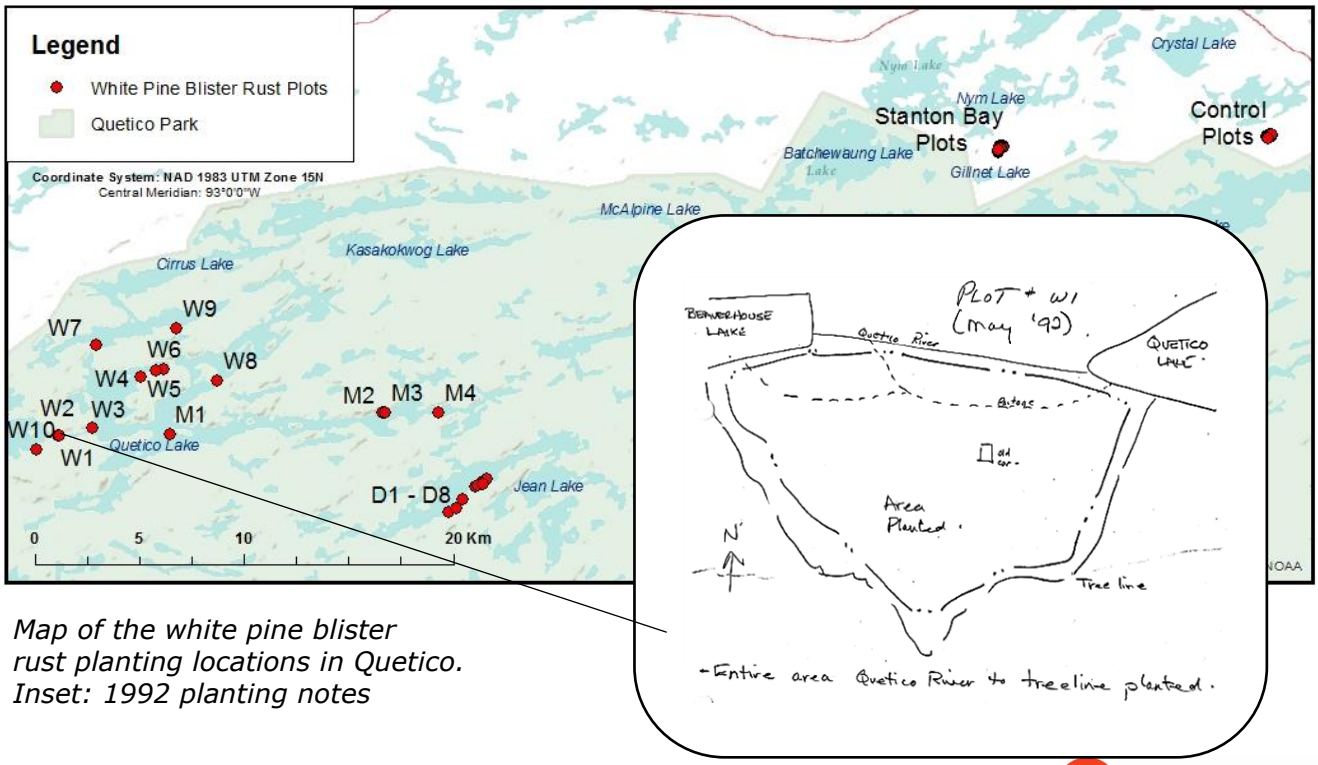
What is White Pine Blister Rust?

White Pine Blister Rust is a disease affecting white pine trees that is caused by a pathogenic fungus. Signs of infection include orange pustules on the branches and stem, cankers that weep resin, and from a distance, a dead branch (with noticeable red needles) on an otherwise healthy tree. White pine blister rust can be fatal if the infection encircles the trunk of the tree.

A weeping blister rust canker.

Work in Quetico

In the early 1990s, with the support of the Quetico Foundation, over 4000 white pine seedlings that had been selected and bred for genetic resistance to white pine blister rust were planted in Quetico Provincial Park. During 2016 and 2017, the Quetico Foundation Summer Student Research Crews, Park Staff, and the Ministry of Natural Resources and Forestry Area Forester used planting notes from the original reports to find these trees and assess their health.



Map of the white pine blister rust planting locations in Quetico. Inset: 1992 planting notes

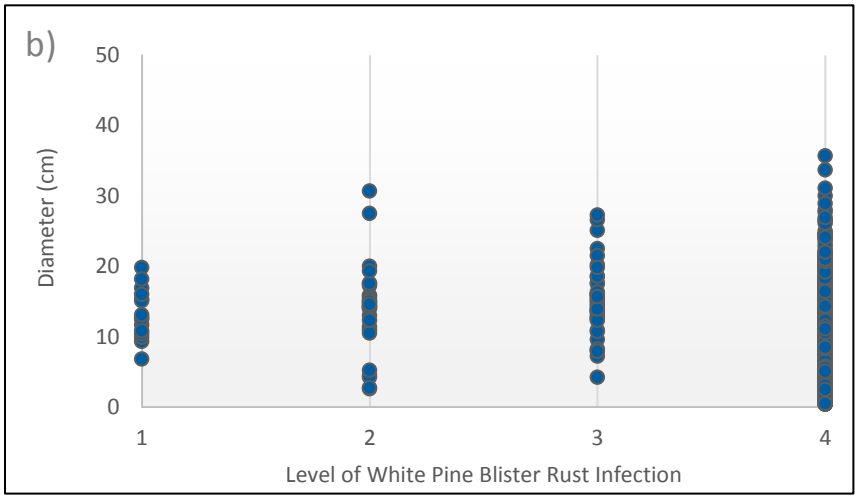
What Did They Find?

Resistant pines were found to have a 16.4% chance of dying as a result of blister rust infection, compared to a 33% chance for trees that were not genetically resistant. However, these non-resistant trees were younger than the resistant pines, making an accurate comparison difficult.

Future Monitoring

Ministry of Natural Resources and Forestry crews will continue to monitor non-resistant trees that are more similar in age to the planted pines. This will provide a better comparison for determining the level of resistance to white pine blister rust.

On right: the diameter of trees compared to the severity of white pine blister rust infection where a 1 represents a tree dead from blister rust and 4 represents a healthy tree. Graph a) shows control trees and graph b) shows resistant trees.



Monitoring resistant trees.

A planted resistant pine stand.

For more information, see the full report "Assessment of White Pine Blister Rust Resistant Planting in Quetico Provincial Park: Summary Report (Adair 2017)" available from Quetico Park Biologist Brian Jackson at **brian.w.jackson@ontario.ca**

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