

# INVESTIGATOR'S ANNUAL REPORT

## National Park Service

All or some of the information provided may be available to the public

<b>Reporting Year:</b> 2003	<b>Park:</b> Yellowstone NP
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<b>Permit#:</b> YELL-2003-SCI-2176	
<b>Park-assigned Study Id. #:</b> YELL-02176	
<b>Project Title:</b> White Pine Blister Rust Pest Trend-Impact Plots	
<b>Permit Start Date:</b> Jul 10, 2003	<b>Permit Expiration Date</b> Dec 31, 2003
<b>Study Start Date:</b> Jul 10, 2003	<b>Study End Date</b> Dec 31, 2054
<b>Study Status:</b> Continuing	
<b>Activity Type:</b> Monitoring	
<b>Subject/Discipline:</b> Other	
<b>Objectives:</b> White pine blister rust disease (WPBR) caused by the fungus, <i>Cronartium ribicola</i> , is a devastating, exotic, and invasive disease of five-needle pines. This disease is severely impacting whitebark pines ( <i>Pinus albicaulis</i> ) and limber pines ( <i>P. flexilis</i> ) in the northern Rocky Mountains, and is well established in five-needle pine stands of Wyoming forests. USDA-Forest Service, Rocky Mountain Region, Forest Health Management established permanent plots in five-needle pine stands with the disease, representing a wide range of stand conditions. These plots were designed to collect long-term data on this disease. The objective of this study was to remeasure the WPBR permanent plots in the Rocky Mountain Region in 2003. Results will be used to calibrate rust disease models for the prediction of WPBR disease impacts and spread, and to report historical trends in the continuing impact of this important disease. The final report will include a summary of all 22 plots in Wyoming and South Dakota, and will be out later in 2004.  The hope is that this study will continue for several years, with re-measurements and reports every 3 to 6 years.	
<b>Findings and Status:</b> There are 14 whitebark pine trees (DBH > 4 inches) in the 3 plots in the Yellowstone National Park. One branch canker was observed in 2003, which was the same number observed in 2000. No stem cankers were observed on trees in the Park. However, mountain pine beetle recently killed six of the trees. Seedling (height < 4.5 feet) regeneration within the plot consisted of 16% whitebark pine and 84% subalpine fir, with 92 total seedlings. Saplings (DBH between 0.1 and 3.9 inches) regeneration consisted of 43% whitebark pine and 57% subalpine fir, with 14 total saplings. None of the seedlings or saplings were infected with WPBR.	
<b>For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?</b> No	
<b>Funding provided this reporting year by NPS:</b>	<b>Funding provided this reporting year by other sources:</b>

0	2000
<b>Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college</b>	
<b>Full name of college or university:</b> n/a	<b>Annual funding provided by NPS to university or college this reporting year:</b> 0