

insights regarding cottonwood stand dynamics over time. The number of mature trees is being annually inventoried. Over a two-year period, approximately 10% of the Lamar Valley cottonwoods have been lost primarily due to channel erosion. Cottonwood establishment data have also been collected at the Lamar Valley study site. An estimated 150,000 young cottonwoods between 0.2 and 3 m in height are currently present indicating a high recruitment potential for the coming years.

Project title: White Pine Blister Rust Pest Trend-Impact Plots

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Purpose: White pine blister rust disease (WPBR), caused by the fungus, *Cronartium ribicola*, is a devastating, exotic, and invasive disease of five-needle pines. This disease is severely impacting white-bark pines (*Pinus albicaulis*) and limber pines (*P. flexilis*) in the northern Rocky Mountains, and is well established in five-needle pine stands of Wyoming forests. The 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. It is hoped that this study will continue for several years, with re-measurements and reports every three to six years.

Findings: There are 14 whitebark pine trees (DBH > 4 inches) in three plots in 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.

Project title: Parkwide Seedbank

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