

## Project Summary

### Rocky Mountains Cooperative Ecosystem Studies Unit

**Project Title:** Develop Whitebark Pine Condition Assessment Tools in Grand Teton National Park

**Discipline:** Natural

**Type of Project:** Technical assistance

**Funding Agency:** National Park Service

**Other Partners/Cooperators:** University of Wyoming

**Effective Dates:** 9/1/2007-9/1/2009

**Funding Amount:** \$4935

**Investigators and Agency Representative:**

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**Project Abstract:** The University of Wyoming will work with staff of Grand Teton NP to determine the degree to which the mountain pine beetle and white pine blister rust have impacted the whitebark pine ecosystem in Grand Teton National Park for use in implementing successful restoration practices. Whitebark pine, a keystone species in the Intermountain West, is being severely impacted by white pine blister rust and mountain pine beetle. Whitebark pine seeds are a critical food resource for grizzly bear and Clark's nutcrackers. Intact Whitebark pine stands also function to protect watersheds and increase species richness and diversity. Infestation levels throughout the region have increased dramatically in the past five years with GRTE infestation levels estimated to be at 89% in mixed stands and 85% in pure whitebark stands.

In 2006, whitebark pine management activities within Grand Teton National Park included identification of blister rust resistant ("plus") trees, caging of cones to protect from squirrels and birds, then collection of the cones and submission to Coeur d'Alene nursery for propagation and testing as part of a regional attempt to preserve the species in the Central Rockies as part of USFS-sponsored plus tree project. Working with the Forest Health Protection program, the park initiated protection of selected trees from the mountain pine beetle. Technical assistance from the University of Wyoming will allow park staff to continue efforts begun in 2006 to assess and maintain the condition of the whitebark pine ecosystem. Data gathered through more intensive surveys will provide critical information needed to accurately select rust resistant trees, contribute to our understanding of site variability of infestation levels, and provide a basis for making informed management decisions.

#### **Outcomes with Completion Dates:**

- Georeferenced dataset of whitebark pine transects surveyed within park, listing NVC classification, stand composition information, infestation rates.
- GIS-based analysis of the relationship, if any, of infestation rates to stand characteristics, biotic, and abiotic variables including elevation, slope, aspect.
- Brief describing known distribution of blister rust and mountain pine beetle within GRTE, identification of areas most at risk in GRTE, possible suggestions of restoration strategy based on distribution within GRTE and available literature. Final report due by September 1, 2009.

**Keywords:** whitebark pine, blister rust, bark beetles, restoration, Grand Teton NP, University of Wyoming

#### **For Administrative Use Only:**

Date Annual Report Received:

Date Final Report Received:

Publications, etc. on file: