



United States
Department of
Agriculture

Forest
Service

Rocky
Mountain
Region

Forest Health Management
1730 Samco Road
Rapid City, SD 57702
605-394-1960

File Code: 3410

Date: 06/25/2004

Subject: White Pine Blister Rust on Rocky Mountain Bristlecone Pine, RCSC-13-04

To: Superintendent, Great Sand Dunes National Monument and Preserve

White pine blister rust (*Cronartium ribicola*) was first observed on Rocky Mountain bristlecone pine (*Pinus aristata*) in October 2003 near Mosca Pass in the Great Sand Dunes National Monument, Alamosa County, Colorado (Blodgett and Sullivan 2004). Many bristlecone pine trees were examined throughout the 2003 field season, however, only 1 infected Rocky Mountain bristlecone pine was observed. The infected tree had 7 branch cankers; the oldest canker was estimated to be approximately 5 to 7 years old. Limber pines in the same area are moderately to heavily infected.

Given the major concern of white pine blister rust on bristlecone pine, we revisited the area this spring to inspect more trees and to collect a sample branch with aecial blisters for the Colorado State Herbarium (herbarium code: CS).

In June 2004, eight bristlecone pines were examined along the Mosca Pass Trail and six (75%) of these trees were infected with *C. ribicola*. Distinct *C. ribicola* branch symptoms were observed including flagging, spindle-shaped swellings, and orange aecial blisters, most aecia observed had not yet ruptured. All 6 infected bristlecone pines had branch cankers and 4 of the infected trees had active stem cankers. Microscopic examination revealed aeciospores characteristic of *C. ribicola* (yellow-orange, ellipsoid, verrucose, $25 \mu\text{m} \pm 2.2$ standard deviation $\times 17 \mu\text{m} \pm 1.0$). Stem cankers eventually girdle the tree, killing the entire tree or the portion of the tree above the canker. This is particularly damaging to small trees. The rust was also observed on 23 of 25 (92%) limber pine examined along the Mosca Pass Trail.

This finding substantiates our earlier report. R2 Forest Health Management has initiated a more extensive survey of the incidence of white pine blister rust on Rocky Mountain bristlecone pine in the Sangre de Cristo and Wet Mountains of southern Colorado. Field work for this project is beginning next week and data will be analyzed during the fall and winter of 2004. We will provide you with a report of our findings upon completion.

Please let us know if you have further questions on this or other forest health topics.

Literature Cited

Blodgett, J. T., and Sullivan, K. F. 2004. First report of white pine blister rust on Rocky Mountain bristlecone pine. *Plant Dis.* 88:311.

Sincerely,
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CC: Bob Leaverton, Paul Crespin, Mike Smith, Peter Clark, Thomas Goodwin, Mary Nelson, Dave Leatherman, Jim Worrall, Roy Mask, Jeff Witcosky, Jeri Lyn Harris, James Hoffman, Brian Geils, Anna Schoettle, Phyllis Pineda Bovin

