

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Soil Microbes that sustain Yellowstone National Park Whitebark Pine Forests: Inventory of Native Mycorrhizal Fungi and their Preservation

Discipline: Natural Resources
Type of Project: Research
Funding Agency: National Park Service
Other Partners/Cooperators: Montana State University
Effective Dates: August 1, 2008 - March 30, 2010
Funding Amount: \$5,000

Investigators and Agency Representative:

NPS Contact: Mary Hektner, Center for Resources, P.O. Box 168, Yellowstone National Park, WY 82190; 307-344-2151, mary_hektner@nps.gov
Investigator: Cathy Cripps, Plant Science Dept., Montana State University, Bozeman, MT 59717; 406-994-5226, ccripps@montana.edu

Project Abstract: MSU Cooperators will work with the NPS on a project to investigate the types of soil fungi that are needed for whitebark pine seedling growth. Tasks include:

- 1) Sporocarps (mushrooms, truffles) of native ectomycorrhizal fungi in YNP particularly along Dunraven Pass will be collected, identified, and recorded in a database. The method basically consists of sporocarp collection and processing each as voucher herbarium specimens to be deposited in the YNP Herbarium at the Heritage Center. Data collected along with specimens will include UMT/GPS, host tree species, and habitat notes. New and previous data on ectomycorrhizal fungi in whitebark pine forests will be consolidated into a database.
- 2) Development of a method for the long term storage of viable DNA of collected ecotypes of native ectomycorrhizal fungi from whitebark pine.
- 3) Report on the feasibility of a study on: Whitebark pine:Lodgepole pine interaction: Do 2-needle and 5-needle pines share mycorrhizal suilloid fungi in areas where they are mixed?

Outcomes with Completion Dates: Final report due by August 30, 2009

Keywords: Yellowstone National Park, Dunraven Pass, whitebark pine, ponderosa pine restoration, soils, mychorrhizal fungi, Montana State University