

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Statistical assistance on sample design and data analysis for Vital Signs Monitoring in the Greater Yellowstone Network Inventory and Monitoring Program

Discipline: Natural
Type of Project: Technical Assistance
Funding Agency: National Park Service
Other Partners/Cooperators: Montana State University
Effective Dates: 6/1/2010 - 4/30/2012
Funding Amount: \$23,941

Investigators and Agency Representative:

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Project Abstract Natural resource monitoring provides information needed to understand and identify change in complex, variable, and imperfectly understood natural systems and to determine whether observed changes are within natural levels of variability or may be indicators of unwanted human influences. A fundamental principle underlying the I & M Program is a recognition of the importance of collecting data in a scientifically credible manner so that they can be used to address management issues and withstand scrutiny by critics. A major component of such a standard is that the sampling designs our program and analyses of our data must adhere to high standards of statistical validity. This project will help to ensure that such standards are maintained and to help steer us toward a reliable and defensible monitoring program.

This project will provide specialized statistical assistance to the Greater Yellowstone Network on monitoring protocols and their implementation. An important aspect of this Task Agreement is the mutual benefit derived by the Department of Mathematical Sciences at Montana State and NPS cooperative relationship. The primary objective of this Agreement is to design and develop sampling designs for long-term monitoring protocols for the Greater Yellowstone Network. A secondary objective, however, is to foster the development of an academic program at MSU that is responsive to the search for practical solutions to the enormous set of complex issues confronting contemporary natural resource managers. This project will enhance the knowledge base, and hence the capacity at MSU, for development of technical outreach programs that are pertinent to the sustainable use of natural resources, biodiversity conservation, and ecological restoration. Ultimately, this collaborative project also contributes to the knowledge base available at MSU to develop and deliver curricula pertinent to the real-world demands graduates will face after leaving academe.

This is a multi-year project and the following scope of work describes the breadth of activities for which we need statistical assistance. On an annual basis, we will evaluate the need for additional funding. If the need exists and funding is available, this task agreement may be modified to add funding.

Outcomes with Completion Dates: September 1, 2013

Whitebark Pine 2009 white pine blister rust analysis report	July 2010
Annual summary report for AARWP	October 1, 2010
Final Water Quality power analysis report and procedures -	October 30, 2010
Whitebark Pine 2010 white pine blister rust data summary report	January 15, 2011
Monitoring Protocol Revision contributions	January 15, 2011
Tools and tutorials for water quality trend analysis final report	May 30, 2011
Annual summary report for AARWP	October 1, 2011
All final products due	September 1, 2013

Keywords: Montana State University, Greater Yellowstone Network, Vital Signs Monitoring, statistical assistance