

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Yellowstone Wildlife Health Program
Discipline: Natural Resources
Type of Project: Technical assistance and Education
Funding Agency: National Park Service
Other Partners/Cooperators: Montana State University
Effective Dates: 8/13/2007 - 9/30/2009
Funding Amount: \$100.125

Investigators and Agency Representative:

NPS Contact: **PJ White**, Yellowstone Center for Resources, P.O. Box 168, Yellowstone National Park, WY 82190; 307-344-2154, pj_white@nps.gov
Investigator: John Varley, Big Sky Institute, 107 AJM Johnson Hall, Montana State University, Bozeman, MT 59717; 406-994-5320, john_varley@montana.edu

Project Abstract: The Center for Resources at Yellowstone National Park (NPS) has signed a Memorandum of Understanding (MOU) with Montana State University (MSU) and the Wildlife Health Center in the School of Veterinary Medicine at the University of California, Davis (UCD) to collaboratively develop and implement the Yellowstone Wildlife Health Program (YWHP). The goal of this effort is to create a long-term program focused on understanding and addressing priority wildlife disease and ecosystem health problems in Yellowstone National Park. Core objectives of the YWHP are to: 1) restore and preserve healthy wildlife and ecosystems; 2) apply superior science to solve problems; 3) balance the needs of people and wildlife; and 4) train the next generation of ecosystem health leaders in the unique educational context of Yellowstone National Park.

As part of these collaborative efforts, the MSU Big Sky Institute will:

- facilitate workshops and other meetings (e.g., offset travel and meeting costs) to bring expertise from MSU, UCD/WHC, NPS, and other interested parties to establish the program, develop proposals, and implement monitoring, modeling, management, and research to evaluate wildlife diseases and health indicators;
- provide faculty experts and researchers to collaboratively develop, review, and implement disease monitoring, modeling, management, and research; and
- facilitate, through cost-sharing, the publication of Strain 82 brucellosis data in collaboration with Russian scientists and the U.S. State Department.
- facilitate a student project to collate and analyze historic data on diseases of bighorn sheep in the Greater Yellowstone Area, and (2) develop surveillance protocols for bighorn sheep on the northern and Absaroka ranges;
- facilitate research efforts to address key uncertainties of *Brucella abortus*-epidemiology that must be resolved to develop management activities that could lead to the control and, possibly, eradication of the disease from this system, including the role of intra- and inter-species disease transmission in the maintenance of brucellosis in elk and bison and the effects of environmental variability and resultant nutritional/physiological stress on disease susceptibility; and
- facilitate modeling efforts to link spatial and temporal demographics of elk and bison populations within Yellowstone National Park with models of *B. abortus* transmission informed by quantitative environmental stressor parameters.

Outcomes with Completion Dates: Due by the end of 2009, Digital copies of final reports, proposals, and scientific publications from workshops and other efforts

Keywords: Yellowstone Wildlife Health Program, Workshops, proposals, modeling, brucellosis, Yellowstone National Park, Montana State University