

## **Project Summary**

### **Rocky Mountains Cooperative Ecosystem Studies Unit**

**Project Title:** Evaluating bison immune responses for developing a brucellosis vaccination program

**Discipline:** Natural

**Type of Project:** Research

**Funding Agency:** National Park Service

**Other Partners/Cooperators:** Montana State University

**Effective Dates:** 8/15/2007 - 10/30/2009

**Funding Amount:** \$11,750

**Investigators and Agency Representative:**

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**Project Abstract:** Bison management in Yellowstone National Park (YNP) operates under an Interagency Bison Management Plan (IBMP) focused on maintaining a wild, free ranging bison population while also addressing the risk of brucellosis transmission to livestock in the state of Montana. The IBMP identified bison vaccination as a potential method for managing brucellosis transmission risk and the National Park Service (NPS) is proposing to implement a remote vaccination program aimed at reducing brucellosis infection in Yellowstone bison. As directed by the IBMP, the NPS is responsible for completing an environmental impact statement (EIS) to assess the effectiveness of remotely vaccinating YNP bison.

The purpose of this project is to gain expertise and services that improve our understanding of brucellosis dynamics in YNP bison that will lead to the development of an effective vaccination program by addressing the following management objectives:

- 1) Gain baseline information of bison immune responses prior to initiating a vaccination program
- 2) Develop a remote vaccination strategy based on seasonal effects on bison immune status

**Outcomes with Completion Dates:**

1. September 15, 2007 - Peer reviewed study plan including: 1) literature review, research design, hypotheses and predictions, and analyses to be conducted that is focused at developing a remote vaccination program for YNP bison
2. February 15, 2008 - Interim project report summarizing information collected and preliminary results for informing Yellowstone park management and interdisciplinary planning team developing draft EIS for remote vaccination.
3. September 15, 2008 - Report summarizing and interpreting analyses of bison immune responses following different vaccine delivery methods. Study conducted on private bison herd located in the Greater Yellowstone Ecosystem
4. November 30, 2008 - Report summarizing and interpreting analyses of seasonal effects on YNP bison immune status. Study conducted on radio-collared bison in Yellowstone National Park

**Keywords:** bison, remote vaccination, immune response, study design, brucellosis, EIS, Yellowstone National Park, Montana State University

**For Administrative Use Only:**

Date Annual Report Received:

Date Final Report Received:

Publications, etc. on file: