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United States  
Department of  
Agriculture

## History and Status of the Bison Quarantine Feasibility Study (BQFS) April 2009

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### **Background:**

In the negotiations and hearings held in the development of the Interagency Bison Management Plan, the agencies were instructed to examine the feasibility of bison quarantine. The Uniform Methods and Rules (UM&R) for Brucellosis Eradication contain a protocol for the quarantine of bison from Yellowstone and Grand Teton National Parks in order to qualify the animals as brucellosis-free.

### **Purpose of BQFS:**

The purpose of the BQFS is to determine the feasibility, efficacy, and associated risk of utilizing the protocol for bison quarantine set forth in the UM&R to qualify bison from Yellowstone National Park (YNP) as free of brucellosis.

### **History of BQFS:**

The first calves entered in the BQFS were captured in the management actions of April 2005. Calves were captured with other bison migrating out of YNP and were seronegative on tests performed at the trap. Additional animals were entered in the quarantine study in 2006 and were combined with the 2005 animals to make the 1<sup>st</sup> cohort of approximately 100 animals. Another cohort of seronegative bison calves entered the facility in 2008 during capture operations for the IBMP. One half of both cohorts that tested negative on at least 2 consecutive tests after the last exposure to a positive animal were slaughtered and tissues collected to validate the serological tests. All animals tested so far have been negative for brucellosis culture. The protocol also requires periodic testing of quarantined bison for brucellosis until 6 months after the last animal has calved for animals captured as immature females; until 3 years of age for animals caught as immature bulls; and until 6 months of age for calves born in the facility and not exposed to any infected bison.

### **Current Inventory of Bison:**

A total of 45 bison (21 cows, 8 bulls, 16 calves) have successfully met requirements to be translocated from quarantine to other public lands and tribes. This number is composed of 5 cows and 4 bulls born in 2004, placed in quarantine in April 2005; 16 cows and 4 bulls born in 2005; placed in quarantine in January and February 2006; and 16 calves born in quarantine May-July 2008. Four of the above cows delivered stillborn calves due to dystocia, while one cow rejected her calf after birth.

Fourteen cows from the 1<sup>st</sup> cohort that were not pregnant in 2008 are currently going through procedures related to their first calf and all will be tested within five days of calving. They will also be tested again six months after the last calf is born. The remaining 40 head (35 cows, 5 bulls) brought to the facility in 2008, have been split into



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2 breeding groups in order to calve next year. These animals will be checked for pregnancy status and tested again for brucellosis fall /winter of 2009.

**Testing History of Bison Captured in 2005:**

The animals entering quarantine in 2005 were last exposed to a seropositive and culture positive yearling bull in August 2005. No animals in this group have been seropositive since August 2005. They have been tested by serology and blood culture between 13 and 16 times (10 and 13 times since Aug 2005) depending on which individual test group they were in. All females were tested within 5 days after calving in 2008 and were seronegative as well as culture negative on vaginal swabs and birth fluids at that time. They were last tested March 24<sup>th</sup>, 2009 and were all seronegative. They will be tested once more before translocation.

**Testing History of Bison Captured in 2006:**

The animals entering quarantine in 2006 were last exposed to a seropositive and culture positive heifer in August 2006. In November 2006, 3 bison seroconverted (low titers). Two were euthanized and cultured negative, the third was seronegative one month later. No animals in this group have been seropositive since November 2006. They have been tested between 10 and 14 times depending on which individual test group they were in. They calved in 2008 and were tested within 5 days after calving. All were seronegative and culture negative at that time. They were last tested March 24<sup>th</sup>, 2009 and were all seronegative. They will be tested once more before translocation.

**Testing History of Calves Born in Facility:**

The 16 calves (4 born to animals put in the quarantine in '05 and 12 born to animals put in quarantine in '06) have been tested three times and will be tested once more before translocation. All have been seronegative. These calves were also culture negative on conjunctival swabs within 5 days of birth.

**Additional Testing of BQFS Bison:**

In June 2006, 48 randomly selected seronegative bison (including animals placed in quarantine in 2005 and 2006 were slaughtered and an extensive set of tissues from each cultured in an effort to determine latent infection. All were culture negative. In October 2008, 41 randomly selected seronegative bison from the 2<sup>nd</sup> cohort were slaughtered and tissues collected. All animals were culture negative.