

## **Bison Quarantine Feasibility Study Q&A**

### **Q: What agencies are involved with the bison quarantine feasibility study and under what authorities?**

The bison quarantine feasibility study is jointly conducted by Montana Fish, Wildlife and Parks (FWP) and the Animal and Plant Health Inspection Service Veterinary Services (APHIS VS), a program within the U.S. Department of Agriculture (USDA). FWP has authority to manage resident wildlife within Montana's borders and authority to enter into cooperative agreements to promote wildlife research. APHIS VS has authority to enter into cooperative agreements with individual states to address animal health issues, including the establishment of minimum standards for disease surveillance, testing, quarantine, and interstate transport of livestock. The National Park Service (NPS) has reviewed the project proposal and granted the principal investigators a research permit to allow the use of bison captured at the Stevens Creek Facility inside Yellowstone National Park (YNP).

### **Q: Why are the agencies developing a bison quarantine feasibility study?**

The purpose of the bison quarantine feasibility study is to determine whether it is possible, using the protocol described in the draft environmental assessment (EA) for Phases II and III of the Bison Quarantine Feasibility Study, to certify groups of YNP bison that are free from brucellosis. If so, additional management options could be considered under the Interagency Bison Management Plan (IBMP) for bison that leave YNP.

### **Q: Is a quarantine feasibility study and live removal of bison allowed under the IBMP?**

Yes. The IBMP includes provisions for consigning surplus, seronegative bison to quarantine. However, neither a quarantine facility nor approved quarantine procedures were available when the agencies approved the IBMP. Therefore, the IBMP included provisions to initiate a process to determine the design, location, and operation parameters for a bison quarantine facility.

### **Q: Why are the agencies only completing an EA and not a full environmental impact statement?**

An EA is prepared, among other reasons, to determine whether any of the impacts resulting from the proposed action are significant. FWP and APHIS VS will not make that determination until the EA process is complete. If there are no significant impacts, the agencies will issue a Finding of No Significant Impact (FONSI). If there are potentially significant impacts, the agencies will prepare an Environmental Impact Statement (EIS), modify the proposed action to preclude the potentially significant impacts or make a decision to not proceed with the bison quarantine feasibility study.

It should also be noted that the EA was tiered to the EIS that was prepared for the IBMP. Many, if not all, of the potentially significant impacts associated with the bison quarantine feasibility study already have been analyzed in the previous EIS.

**Q: What are the goals of the feasibility study?**

The primary goal of the bison quarantine feasibility study is to develop quarantine procedures, using the best available science and adaptive research strategies, that would allow YNP bison to be certified as free of brucellosis and suitable for the establishment of new public and Native American bison herds or to augment existing public and tribal herds in North America. Completion of the study also might provide insight into the feasibility of quarantine protocols and the reintroduction of bison to large grassland systems as one component of a broader bison conservation strategy.

**Q: Was the study protocol scientifically peer-reviewed? If so, by whom?**

Yes. Scientists within APHIS VS and FWP who have expertise in wildlife and disease management reviewed the study protocol. The agencies requested advice from a panel of other bison or disease experts who provided written comments on the proposal. In addition, the project proposal was reviewed by YNP staff prior to the approval of the research permit that authorizes the use of bison captured at the Stevens Creek Facility. The proposal was discussed with the Greater Yellowstone Interagency Brucellosis Committee (GYIBC) Technical Sub-committee; the United States Animal Health Association (USAHA) Brucellosis Committee; the Western States Livestock Health Association; the Montana Fish, Wildlife and Parks Commission; and, the Montana Board of Livestock. Letters of support for the project were secured from GYIBC and USAHA and are a matter of public record.

**Q: When will the feasibility study start? When will it end?**

The feasibility study includes two replications of a study that requires three to four years to complete. If the preferred alternative is selected and assuming that a sufficient number of suitable bison calves are captured, Phase I of the first replication would begin during winter 2005-06, the second replication of the feasibility study would begin the following winter 2006-07 and the feasibility study would be complete by the end of 2009. If, instead of running concurrently, the replications are completed consecutively, the feasibility study would not be complete until the end of 2012 or 2013.

**Q: How much will the study cost?**

Project costs are detailed in the EA. The estimated costs for the preferred alternative are \$2.2 million.

**Q: How long will bison be quarantined?**

Bison will be held in the quarantine facility for 2.5 to 4 years, depending on when they are captured and whether they have contact with seropositive animals at anytime during the study. Suitable bison would then be transported to the release site and held in a large pasture, segregated from other animals for an additional year. During this period they would also be tested for brucellosis to assure that the process for quarantine was completely successful.

**Q: How many bison will be quarantined?**

Up to 100 bison calves will be consigned to quarantine during each replication of the feasibility study (200 total).

**Q: How will bison be obtained for the study?**

Pursuant to the provisions of the IBMP, YNP operates a capture facility at Stephens Creek, near Gardiner, and Montana Department of Livestock (DOL) operates capture facilities in the Western Boundary Area, near West Yellowstone. Seronegative bison calves captured at those facilities are eligible for the quarantine feasibility study.

**Q: Where will the feasibility study take place?**

The preferred alternative describes two locations where the feasibility study would take place: the Brogan Bison Facility and the Slip and Slide Ranch. The facilities are in close proximity to each other and both are near Gardiner, Montana.

**Q: What will happen during each of the three phases?**

Phase I is an assembly step. Bison calves (animals aged 8 to 12 months) would be captured and tested for brucellosis. Seronegative bison would be consigned to the feasibility study. These bison subsequently would be screened with a panel of several standard blood tests for the presence of antibodies to brucellosis. Suspect animals would be removed from the cohort and shipped to slaughter or used for other research projects. As a method to check the validity of the blood tests, up to half of the seronegative bison would be euthanized midway during Phase I for detailed tissue sampling and culture tests for the presence of brucellosis bacteria. The required level of tissue sampling cannot be performed on live animals.

Phase II is a holding step. If, following Phase I, there is reasonable certainty that the remaining animals are brucellosis-free, the remaining animals would be held on pasture until they reach sexual maturity, at which time the animals will be bred.

Phase III is a calving step. Following breeding, pregnant bison and a few bulls would be transported to the calving facility. In February, prior to calving, the bison would be sorted into smaller groups and the bulls would be separated from the cows. Pregnant bison would be closely monitored and, within five days of either a birth or an abortion, would be tested for brucellosis. Bison would be held in their test groups until fall. All bison, including the calves, within test groups that remain seronegative would then be eligible for soft release.

**Q: What determines moving the bison from Phase I to II, Phase II to III, and Phase III to release?**

Movement from Phase I to Phase II is dependant upon the determination that there is reasonable certainty that the remaining animals in the cohort are free of brucellosis. Movement from Phase II to Phase III is dependant upon successful breeding. Movement from Phase III to soft release is dependant upon successful completion of one calving cycle and association with a test group of other bison, all of which remain brucellosis-free following calving.

**Q: How will bison be cared for during the study? How will they be held, how much land will be available to them, and how will they be fed? How much contact will bison have with people?**

An Animal Care and Use Committee is active and reviews all care and use issues. Additionally, advice will be sought from professionals with relevant expertise regarding the handling, care, and nutrition of bison. Forage will include native and introduced grasses growing in the pastures, hay from weed-free sources, and pelleted rations. In addition, protein and mineral blocks will be provided as needed. Water will come from multiple sources including impoundments and automatic watering devices.

The bison will be held in one of two facilities. During Phase I the bison would be held in groups of 50 in a 400-acre double-fenced property that is dissected into three large pastures (50 to 100 acres) and three smaller (1-4 acres) assembly pens. During Phase II at the Slip and Slide Ranch there would be two 30-acre pastures holding 25 bison each. These are irrigated lands that will continue to be irrigated during the study. The animal care personnel will provide daily care and feeding of the bison. The handling sessions will be more consistent (approximately monthly) during the first half of Phase I. The Phase II process will involve only one test upon entry and one test upon exit of these pastures. The only exception would be to manage an injured or sick bison. Phase III would use smaller pastures and smaller test groups of up to 5-6 individuals. These animals would be intensively monitored during calving by remote sensing (telemetry). Fencing and management will be designed to minimize human contact. However, bison will become accustomed to vehicle traffic and human presence adjacent to the facilities.

**Q: Will bison be “domesticated” due to captivity during the study?**

No. If released in wild environments, offspring from these bison will retain their wild character. There are many instances in which wild animals have been held or reared in captivity and subsequently used for wildlife restoration. In fact, ancestors of the wild bison in Yellowstone National Park were, at one time, held and intensively managed in captivity. Yet, the bison have retained their wild character.

**Q: Will bison be killed during the study?**

Yes. Animals that are determined to be positive for brucellosis during the screening process will be shipped to slaughter, unless they are suitable for other research projects. Also, up to half of each of the two cohorts of experimental animals will be euthanized so that tissues can be collected and cultured for the presence of brucellosis bacteria.

**Q: What will happen if a bison is diagnosed with brucellosis?**

Individual animals that are diagnosed with brucellosis will either be shipped to slaughter or used for other research projects.

**Q: How is a bison diagnosed with brucellosis?**

The standard procedure for diagnosing brucellosis is a blood test for the presence of antibodies to the bacterium that causes brucellosis (*Brucella abortus*). There are currently eight approved tests for bison. A ninth test, the PCR test, has not yet been approved, but will be used and evaluated during this study.

**Q: What percentage of Yellowstone bison is seropositive for brucellosis?**

The percentage of Yellowstone bison that is seropositive for brucellosis has varied between 40 and 60 percent among the various studies.

**Q: What percentage of Yellowstone bison is infected with brucellosis?**

There is not a routine test to distinguish between animals with an active brucellosis infection and those animals that are seropositive for brucellosis. Because the test for brucellosis is a determination of the presence of antibodies to the bacteria that causes the disease, it is reasonable to assume that all seropositive animals previously experienced a brucellosis infection even if the infection is not currently active. Some animals that are infected are never completely cured (i.e., the organism, *Brucella abortus*, remains somewhere in the animal's tissues in a latent state). Recent work by collaborating scientists from the U.S. Department of the Interior, U.S. Department of Agriculture, and Montana Fish, Wildlife and Parks has demonstrated that approximately 46 percent of the seropositive animals are culture positive, indicating that *Brucella abortus* was present in at least some tissues.

**Q: How will success be measured?**

The bison quarantine feasibility study will be considered successful if it is determined that, within reasonable limits of statistical certainty, the quarantine protocol is adequate to distinguish YNP bison calves that are not infected with brucellosis and thus may be transplanted to new locations without subsequently transmitting brucellosis to other animals.

**Q: What happens if the feasibility study fails?**

The agencies will either modify the quarantine protocol and repeat the study or terminate the project.

**Q: How and when will the public know if the feasibility study is a success or failure?**

The agencies will document the results of the feasibility study with regular reports. The researchers will prepare a final epidemiologic analysis for peer review at the end of the study. If the study is successful, FWP and APHIS VS, in cooperation with YNP, Gallatin National Forest, and DOL may initiate a process to revise the IBMP to incorporate quarantine. If so, the agencies would initiate another environmental review, including public notice and opportunity for public comment.

**Q: Where will the brucellosis-free bison that successfully complete the quarantine study go?**

Potentially suitable locations would be other public or Tribal lands within the historic distribution of bison. APHIS VS and FWP will work with an interagency panel that will provide advice in the selection of suitable locations and projects that are consistent with broader objectives related to bison conservation in North America. Bison that complete the quarantine study may not be sold or used for commercial purposes.

**Q: How will appropriate recipients and locations for brucellosis-free bison be determined?**

The Phases II and III EA includes a description of the process that will be followed for identifying recipients and locations for the distribution of those bison that complete the quarantine feasibility study. In general, the agencies will solicit proposals from other agencies and Tribal governments. Recipients will be required to prepare a management plan, including appropriate environmental review, that is consistent with objectives for bison conservation and that includes procedures for monitoring disease. Recipients and locations will be selected from among the applicants and on the merits of the applications.

**Q: What criteria will be used to determine appropriate recipients and locations for release of bison?**

Applications will be reviewed on the basis of the willingness and ability of the applicant to receive and manage wild bison; management objectives that are consistent with a North American bison conservation strategy; locations that are suitable habitats within the historic range of bison; the recipient's commitment to monitor disease in the transplanted bison herd; and the recipient's commitment to manage the bison for other than commercial purposes.

**Q: What is brucellosis and why is it a problem?**

Brucellosis is an infectious disease caused by the bacterium, *Brucella abortus*. In the United States, brucellosis is primarily a disease of domestic cattle. The disease is transmissible from livestock to humans and is referred to as undulant fever. In an attempt to control and eradicate brucellosis, USDA, in cooperation with the 50 states, adopted the National Brucellosis Eradication Program. The program constrains interstate movement of cattle from states that have infected cattle herds. The economic and animal health implications of those constraints are significant, especially for a state like Montana, which has significant markets for replacement cattle. Montana is classified as a brucellosis-free state and thus producers are able to market their livestock without incurring program constraints. Brucellosis was first diagnosed in the YNP bison in 1917 and the disease has since been endemic in this herd. The IBMP recognizes that active management to maintain spatial and temporal separation between bison and livestock, vaccination, testing, removal, and slaughter are among many methods necessary to preclude transmission from bison to cattle and to maintain Montana's class-free status.

**Q: What involvement does Montana Department of Livestock have in the study?**

The DOL is a cooperating agency in the IBMP and concurs with the study. The agencies consulted with the DOL Animal Health Division during the design of the feasibility study and will continue to consult with the Division regarding quarantine and testing protocols during the course of the study.

DOL's role in the study is limited to providing bison calves that are captured at the facilities in the Western Boundary Area, transporting bison to the quarantine facilities, and performing many of the serological tests at its Diagnostic Laboratory.

**Q: What involvement do the YNP and NPS have in the study?**

YNP is a cooperating agency in the IBMP. The agencies consulted with YNP in the design of the feasibility study and YNP concurs with the study. YNP also has provided the agencies with a research permit that authorizes the removal of bison from the capture facilities at Stephens Creek to the quarantine feasibility study facilities. Except to provide those bison, YNP will not participate in the study. Other units of the National Park System, especially Theodore Roosevelt National Park and Fort Niobrara, are potential recipients of bison that successfully complete the quarantine feasibility study.

**Q: Have Yellowstone bison been held in captivity or fenced in before?**

Yes. During its early history, YNP maintained bison behind fences for several years at Mammoth Hot Springs. After the facility was developed, the bison eventually were relocated to the "Buffalo Ranch" in the Lamar Valley. For several decades, YNP intensively managed and fed bison at the Buffalo Ranch. For a period, YNP permitted the bison to forage in open pastures near the ranch, but penned the animals at night. Eventually, YNP released the bison to range freely across the open landscapes of the Lamar Valley.

**Q: What is the current population estimate of YNP bison? Will these removals threaten the population?**

The current population estimate is 4,900 bison. The IBMP specified an overall population target of 3,000 bison. When the population exceeds that level, the IBMP allows the agencies to remove all animals that migrate from YNP into Montana. Bison that are consigned to quarantine would be animals that otherwise are subject to removal according to the provisions of the IBMP.

**Q: Will the quarantine feasibility study divert attention and resources away from the bison-brucellosis problem in Yellowstone?**

No. The agencies are proceeding with the quarantine feasibility study because a study of this type was anticipated when the IBMP was approved. If the study is successful, the IBMP may be revised to incorporate quarantine as a live alternative for the removal of excess bison.

**Q: Why aren't elk being studied in this feasibility project?**

There are ongoing research projects studying brucellosis in elk. None of these projects are designed in accordance with the bison quarantine feasibility study because there is no management purpose to be served by relocating brucellosis-free elk from the Greater Yellowstone Area (GYA) to other habitats. Elk are potentially available from many different herds and most habitats that are potentially capable of supporting elk already have elk.

**Q: Aren't elk considered to be a larger problem than bison in terms of brucellosis?**

The purpose of the IBMP is to prevent the potential transmission of brucellosis from bison to domestic livestock, reduce the potential for damage to personal property, reduce threats to human safety, and prescribe circumstances in which bison may remain outside the park. The IBMP is not intended to eradicate brucellosis from the bison herd nor will inclusion of a quarantine protocol achieve eradication. Brucellosis also is endemic in the elk population in the GYA. However, that is relevant to provisions of the IBMP only to the extent that it affects the feasibility of brucellosis eradication from the GYA.

Montana has developed an elk-brucellosis management plan and continues to evaluate the risk of brucellosis transmission from elk to other animals. The current elk-brucellosis plan emphasizes routine surveillance and employs seroprevalence triggers to direct specific management actions. In addition, the agencies are cooperating in a risk assessment process to develop specific herd plans for livestock producers potentially affected by elk and bison in the GYA. This risk assessment will guide where risk management is needed and what specific actions might be desirable to reduce the risk of transmission.