Bison ready for new pastures?

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A new study from the USDA Animal and Plant Health Inspection Services (APHIS) and the Wildlife Conservation Society (WCS) demonstrates that it is possible to qualify bison coming from an infected herd as free of brucellosis using quarantine procedures. These bison can then be used to seed conservation herds in other landscapes without the threat of spreading the disease.

In response to Interagency Bison Management Plan (IBMP) guidelines on federal and state bison management actions, the USDA, APHIS Brucellosis Eradication: Uniform Methods and Rules protocol for the quarantine of bison was tested to see if it could successfully be used to qualify the animals as brucellosis-free.

Results of the study indicated that it is feasible to take young bison from an infected population and, using the approved quarantine protocol published as a Federal Uniform Method and Rule (UM &R), qualify them as brucellosis-free in less than three years.

Between 2005 and 2008, more than 200 bison calves of Yellowstone National Park origin were transported to a quarantine facility at Corwin Springs Montana, just outside Yellowstone National Park. During the study, blood samples were collected from the animals every 30-45 days and tested for brucellosis. Those animals that tested positive were euthanized and those remaining were tested until all had two consecutive negative tests. Since the primary mode of brucellosis transmission is via abortion and birthing events, all animals testing negative were held until they produced their first calf and showed no evidence of the disease in

newborn calves, birth fluids, or blood.

At that point, the bison were considered brucellosis-free. The study showed that all bison continued to be brucellosis-free over the course of the seven-year study after the initial screening period and through several calving cycles. No evidence of brucellosis was found in either newborn calves or their mothers.

"The results of this study indicate that under the right conditions, there is an opportunity to produce live brucellosis-free bison from even a herd with a large number of infected animals like the one in Yellowstone National Park," said Dr. Jack Rhyan, APHIS Veterinary Officer. "Additionally, this study was a great example of the benefits to be gained from several agencies pooling resources and expertise to research the critical issue of brucellosis in wildlife."

The authors of the study note that agencies charged with the management of bison agree that capture and relocation of bison to other suitable habitats would be an appropriate alternative to the lethal removal of bison that exceed population objectives for Yellowstone National Park, as defined by the IMBP. The UM &R protocol could facilitate such relocation by demonstrating animals are disease-free and would not transmit brucellosis to cattle or other animals.

At the same time, a movement to ecologically restore bison to large landscapes is gaining momentum throughout the United States and Canada, and brucellosis-free bison may be needed to seed those landscapes. In particular, the genetics of Yellowstone bison are important because they are known to be free of cattle genes and represent bison that existed on the Great Plains for thousands of years.

WCS Bison Project Coordinator Keith Aune said, "This study represents an important milestone in bison conservation and these research findings

enable us to practice genetic rescue from brucellosis infected bison herds. The Yellowstone animals passing through this system of testing are critical to conserving the diversity of the bison genome over the long term. We've also learned a great deal about brucellosis blood testing and how to better interpret results when screening animals for this disease. It is our hope that several satellite herds of Yellowstone bison can be assembled from the animals that graduate through this quarantine process."

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