

**National Bison Range**  
**Bison Conservation and Management - 2018**

The National Bison Range (NBR) maintains a population of 250 - 300 genetically diverse bison for species conservation, while also providing public opportunity to view bison in a natural setting. Bison are not supplemented with feed and population size must be maintained within the ecological carrying capacity of the Refuge. Bison are captured annually, or as necessary for maintaining this objective, during which time genetic information is collected from calves and the overall health of the population is assessed. Each bison is marked with a microchip for individual identification and record keeping. All surplus bison are pre-selected based on the genetic data and will be sorted during this operation. Microchips allow staff to identify and direct management of individual animals based on genetic and disease testing history with minimal handling.

Each year, the staff at the NBR strives to improve upon this effort by addressing any issues and implementing upgrades to the infrastructure of the corral system, by working with software developers to customize up to date equipment for processing wildlife and by maintaining high quality, well trained staff and volunteers who improve the overall efficiency of this operation. All of these efforts facilitate low stress handling, a priority for wildlife management. In 2018, 20 bison will be removed from the population and donated to the Blackfeet Indian Tribe to augment a conservation population.

Based on the results of a federal bison genetics project, NBR bison were found to have a very high level of genetic diversity, with one of the highest levels of allelic richness, heterozygosity, and private alleles of the federal herds tested in this study. NBR bison also have a very low level of cattle gene introgression. NBR has had only 12 animals brought into the herd in the last 100 years, and the NBR bison herd is not augmenting bison from outside sources at this time in order to preserve the high genetic quality and low levels of cattle gene introgression.

In order to most effectively study and manage disease risk to NBR bison, we have developed a herd health disease surveillance program. Each year, specific adult age/sex classes are targeted for disease testing prior to release back to the Refuge. Captured bison are sorted into smaller groups, scanned and directed through the facility accordingly. Animals targeted for testing and all animals leaving the Refuge are directed through a chute for repeat identification, sampling and proper tagging for transport if necessary.

The NBR runs a standard panel of tests each year for several viral diseases, including Bovine Virus Diarrhea (Types 1 and 2), Parainfluenza-3 and Bovine Respiratory Syncytial Virus. Testing based on current and local wildlife threats and/or needs for early detection and rapid response of wildlife diseases is decided on and implemented as needed.

Some agents of diseases such as Malignant Catarrhal Fever (MCF), Johne's disease (paratuberculosis), and Bovine Viral Diarrhea (BVD), have been detected at very low levels. BVD vaccinations were administered to NBR bison in 2010 during the annual roundup upon suspicion of a disease incursion, while simultaneous ear notch antigen tests were initiated. Both testing at this level and vaccinations were discontinued after no positive antigen results were found. The National Bison Range (NBR) bison come from outside the designated Brucellosis Surveillance Area in Montana. Studies have demonstrated that the RB51 brucellosis vaccine is ineffective in bison, and although vaccinations have not been used for brucellosis since 1997, standardized random sampling has been conducted since that time without detections.