Global Re-introduction Perspectives: 2013

Further case-studies from around the globe

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Re-introduction of bison to the Wind River Ranch in northern New Mexico and Native American lands in the western USA

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Introduction

Bison (*Bison bison*) were catalogued as Near Threatened by the World Conservation Union (IUCN) in 2012. Bison, a mega-herbivore in North America, numbered around 30,000,000 when Euroamericans arrived. During the 1870s and 1880s, all but about 1,000 were slaughtered in a conscious attempt to remove the primary resource for Plains Indians, disrupt Indian lifestyle and culture, and clear the way for settlers and cattle. The slaughter also removed a species from the ecosystem that played a key role in the maintenance of healthy grasslands. Efforts to conserve the few remaining bison began around 1900. The return of bison can reestablish hope and culture to tribes, as well as re-establish health to a badly abused grassland ecosystem. Even though there are presently 400,000 bison in North America, 97% of them are managed for meat, not for conservation and ecological function. Since 1992, the Inter-Tribal Buffalo Council (ITBC) has restored 15,000 bison to tribal lands, yet the bison is still the only major ungulate that has not recovered following the wildlife declines of the 19th century. The Wind River Ranch (WRR) and the ITBC currently seek to expand research on the ecological role of bison in grassland health.

Bull bison and cow in typical habitat

Goals

- Goal 1: Establish a conservation herd at a level that will allow bison to perform their ecological function on the grassland.
- Goal 2: Research the ecological function of bison in grassland health.
- Goal 3: Analyze the genetics and lineage of the animals in the herd.
- Goal 4: Cooperate with the ITBC on bison research, management, and cultural issues.

Success Indicators

- Indicator 1: Maintain between 40 and 60 adult equivalents in the bison herd, adjusted according to conditions on the ranch. The herd is half owned by the Jicarilla Apache and half by the WRRF.
- Indicator 2: Performing research on the role of bison as the native mega-herbivore in a functioning grassland. We have had one pilot study, one MS project that is completed, and one 5 year study that is in its first year.
- Indicator 3: The genetic research is ongoing. It has identified one completely new lineage, and another lineage that comes from the Yellowstone herd.

Adult bison with calf © Jim Stone

Project Summary

We began managing the WRR in January of 2005, following several years of drought and grazing by a herd of horses. We rested the grass until 2007, when we started grazing nine bison owned by the Jicarilla Apache Office of Cultural Affairs (JAOCA). Our intention was to give their herd a head start until they could get permission to graze bison on tribal lands. In 2008, the ITBC donated 35 more bison to the JAOCA herd at the WRR. The JAOCA donated 3 females and one male from that group to the WRR. In 2009 and 2010, WRR grazed a dozen bison from the Picuris Pueblo. WRR then bought those bison from the Picuris tribe. Presently, there are 68 individuals of various ages from calves to adults in the herd, with half owned by the WRR and half owned by the JAOCA. The bison respect our 1.2 m high barbed wire external fence. We have removed internal fences except for a trap when we want to put bison in the corral.

The WRR and ITBC cooperate on this herd of bison, with the ITBC paying the salary of a bison caretaker during 2011. We manage the bison as a conservation herd, and to assist tribes with bison. Because we want to investigate the role of bison in grassland health, we maintain a number of bison that is large enough to have ecological impact, but not so large as to degrade grasses. When we have excess animals, they are sold to other tribes, sold for meat, or enter the JAOCA free meat program. We periodically monitor the grass condition, and each fall we assess the amount of grass we have for winter grazing. We do this by mapping the grass conditions around the ranch, and estimating the pounds of grass per acre in those various areas. We convert the various ages of bison into adult equivalents of 450 kg and assume that each adult equivalent will eat about 9 kg of grass per day (2% of body-weight). We then calculate how many bison can live

Bison in Yellowstone during winter © Jim Stone

on the grass for the next nine months. As a conservation herd, we are trying to move closer to a 50:50 sex ratio, although at present we are biased toward females. Genetic analyses, both mitochondrial DNA and nuclear DNA, indicated that these bison represent the Yellowstone lineage as well as several that are in a lineage not previously described.

A pilot study and a Master's Thesis have both shown that bison break piñon, juniper, and yucca that advance onto the grassland. Similar to elephants in Africa, bison probably played a role in halting the transition from grassland to savannah to woodland, a transition that has degraded millions of acres of grassland in the western U.S. as well as causing arroyo formation. Arroyos lower the water table and reduce the productivity of the surrounding grassland. An ongoing study at WRR by the Denver Zoo is investigating flora and fauna associated with bison compared to cattle. WRR and ITBC are planning to develop more studies of the bison's role in grassland function.

The ITBC is composed of 57 tribes, and the organization's members currently have a population of 15,000 bison on 51 reservations in 19 states. Bison historically had a wide range in North America so the number of tribes interested in restoring bison for cultural reasons is varied. Of great importance to tribes is regional research on how bison restore lands that were grazed by cattle. This allows tribes to determine what changes and progressions can be seen in their own restoration efforts. The Southwest is a unique ecosystem, and that makes it hard for Southwestern tribes to extrapolate from previous efforts by northern tribes. The documented results of the WRR/ITBC restoration will be of the utmost importance to the regional tribes, allowing them to develop management principles that are science based.

Major difficulties faced

- Finding grant money to do the research.
- The WRR has only about 4,600 acres and is not large enough to have a large bison herd.
- They reproduce well and are long-lived, so we need to watch numbers, but the ITBC has been able to help move excess animals to other tribes.

Major lessons learned

- The role of bison in preventing the transition of grassland to savannah to woodland.
- That bison are much easier to work with than many people say.
- Cooperation between like-minded groups is important for long-term conservation of bison.

Success of project

Highly Successful	Successful	Partially Successful	Failure
√			

Reason(s) for success/failure:

- The fecundity of bison and the cooperation between the ITBC and the WRRF.

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