

---

# Developing a Transboundary Management Strategy for a Free-ranging Plains Bison Population

DAN FRANDSEN

Prince Albert National Park, P.O. Box 100, Waskesiu Lake, SK, S0J 2Y0, Canada, email [Dan.Frandsen@pc.gc.ca](mailto:Dan.Frandsen@pc.gc.ca)

---

**Abstract:** The Sturgeon River plains bison (*Bison bison bison*)<sup>1</sup> herd is the only free-ranging population of plains bison within the species' historic range in Canada. The population currently numbers approximately 320 and ranges predominantly within the southwest corner of Prince Albert National Park. For the last several years, small numbers of bison have forayed outside the park boundaries for varying stretches of time; however, these numbers increased significantly during the winter of 2004 when over 40 bison spent at least two months in a neighboring hay field. The usual bison summer range within the park is adjacent to an area outside the park that is used for mixed agricultural activity ranging from grain farming to traditional livestock operations and game ranching. Crop depredation and fence damage by free-ranging bison occurs but is limited, and at current levels, is generally tolerated by local landowners. The bison population continues to grow rapidly; hence, a proactive management strategy is being developed to maintain stakeholder support for the long-term conservation of a regional free-ranging plains bison population that is subject to natural processes and selection, and to mitigate potential conflicts associated with conserving this population.

A team representing local, regional, and national perspectives and interests is developing a transboundary<sup>2</sup> or regional plains bison management strategy. The strategy team members represent various groups including farmers who live adjacent to the park, small tourism-dependent businesses, game ranching operations, neighboring rural municipalities, the Saskatchewan Wildlife Federation, the Saskatchewan Environmental Society, local First Nations, Saskatchewan Environment, and Prince Albert National Park. A good deal of time has been invested in building relationships between stakeholders, and guest speakers have been invited to increase the stakeholders' depth of understanding of the issues pertaining to bison management and multi-jurisdictional cooperation. A bison damage assessment was also conducted and will serve as a benchmark for comparison with future bison impacts on local agricultural activities and lands adjoining or near the park. The strategy team will prepare a draft plains bison management strategy for approval-in-principal by responsible jurisdictions (e.g., Saskatchewan Environment, Parks Canada, rural municipalities) in late 2005. It is expected that the regional strategy will be used as a tool by a Bison Recovery Team in preparing a provincial or national recovery strategy or action plan if the plains bison is included under Schedule 1 of the *Species at Risk Act*.

---

<sup>1</sup>NatureServe Explorer (version 4.0, July 2004) lists the plains bison as bison (*Bos bison bison*).

<sup>2</sup>'Transboundary' refers to the boundaries of Prince Albert National Park.

**Key Words:** management strategy, multi-jurisdictional management, stakeholder involvement, plains bison, bison, *Bison bison bison*, *Bos bison bison*, Prince Albert National Park, Saskatchewan

## Introduction

Plains bison (*Bison bison bison*) were once the dominant herbivore on the Great Plains of North America. The estimated historic northern limit of their distribution included the southern portions of what is now Prince Albert National Park. The vast herds of plains bison were reduced to near extinction by the late 19<sup>th</sup> century (Roe 1970). It was mainly through the initiative of private individuals and, eventually, the federal government that steps were taken to reintroduce plains bison onto Canadian public lands (Ogilvie 1979). Some of the descendents of those bison ended up in Elk Island National Park and became the founding population for most plains bison herds in Canada.

In 1969, the Saskatchewan Department of Natural Resources obtained 50 plains bison from Elk Island National Park and released them in the Thunder Hills, about 60 km north of Prince Albert National Park, with the hopes of eventually providing an additional food source for First Nations people in the area. The bison did not stay in the release area but dispersed into small groups and generally moved in southerly directions. Most of the bison were recaptured and released in other areas or were eventually shot. A number of the released bison moved into or through Prince Albert National Park. It is estimated that 10 or more stayed in the park and became the founders of the Sturgeon River population. The bison that stayed eventually established a home range in the southwest quadrant of the park where suitable habitat exists.

After an apparently slow start, the Sturgeon River plains bison population then grew consistently at a rate of 10–14% per year from approximately 1980–2004. As of February 2004, the population numbered at least 320 adults and yearlings. This population is unique in Canada as it is the only free-ranging or wild plains bison population that occurs primarily within a national park and is the only wild herd that occurs clearly within the species' historic range in Canada. These bison are again beginning to fulfil their natural role within the ecosystem as their population reestablishes itself. The regional ecosystem now contains the full array of native ungulates along with a full complement of predators.

## Ecological Context

The home range of the Sturgeon River plains bison population is currently centered in an area of approximately 700 km<sup>2</sup> in the southwest quadrant of Prince Albert National Park. The bison generally inhabit the larger southern sedge meadows during the growing seasons and the smaller more northerly meadows and forest during the winter. The Sturgeon River forms the park boundary in the middle and southern portions of the bison's range. While the river is not a barrier to cross-boundary movement, it does appear to act as a deterrent or impediment to bison

movement out of the park. In spite of this, bison do occasionally cross in winter and summer. Occasionally, 5–10 bison have been found outside the park; however, during the winter of 2003/04, over 40 bison spent more than two months in a hay field adjacent to the park.

Bison in agricultural areas occasionally damage fences; consume, roll in, or damage crops; or attempt to harass or fight with domestic bison on nearby ranches. The current level of bison activity outside the park is generally tolerated by most residents; however, increased activity may lead to intolerance of bison in the area. Habitat that appears similar to the summer range within the park and which is not intensively used for agriculture is found along the park boundary north of the Sturgeon River and extends northwest outside of the park. This area may provide suitable habitat should the bison begin to expand beyond the park's boundaries. Bison are also making exploratory movements into areas within the park that could function as additional range.

## **The Plains Bison Regional Management Strategy**

### ***Team Development***

Because the Sturgeon River plains bison population is growing quickly and agricultural activities occur near a large part of the bison's range, the development of a transboundary or regional management strategy was seen by Saskatchewan Environment, Parks Canada, and local residents as a necessary mechanism for guiding future management of the bison population. One of the first steps in this process was to assemble a team that would be responsible for developing the management strategy. Initially, the team was intended to be relatively small, which was believed would improve its efficiency. Team members were encouraged to bring their unique experiences to the table rather than simply representing the constituency they were from. The original members requested that representatives from rural municipalities, First Nations groups, and government (field staff) be added to the team to improve its representation. The team was gradually expanded to 14 members, and now includes representatives from local landowners, local ecotourism businesses, bison ranching operations, environmental groups, the Saskatchewan Wildlife Federation, rural municipalities, local and regional First Nations, the Saskatchewan government, and Parks Canada.

The strategy team's early meetings focused on establishing an operational team which developed the Terms of Reference for the strategy team's operation and finalizing a scoping document for the work the strategy team was going to perform. The early meetings also included training by Parks Canada on multi-jurisdictional cooperation. Subsequent meetings included brainstorming sessions that were used to identify the most important issues relating to the conservation of the Sturgeon River bison population, including the positive and negative effects of the free-ranging herd on the local residents. These meetings also focused on educating the strategy team about bison and the issues related to managing a free-ranging plains bison population which often moved on to agricultural lands. Individuals who had expertise in specific

areas of concern were invited to address the team during its meetings. Some of the topics discussed included the *Saskatchewan Stray Animals Act* and *Stray Animals Regulations*, which pertain to captive bison and other livestock, Crop Insurance and Wildlife Depredation programs, and changes in risk factors related to wildlife disease outbreaks and genetic contamination of free-ranging plains bison in the current and future context of the Sturgeon River bison population. An increased understanding of these issues was required to generate practical, innovative, and acceptable approaches to minimizing some of the current and expected impacts of the free-ranging herd on residents within the regional ecosystem.

### ***Strategy Development***

The Terms of Reference developed and adopted by the strategy team included the scope, objectives, and principles of the team's operation, and outlined the main goals of the team and its advisory relationship to the responsible jurisdictions. The team determined that its main role was to develop a regional management strategy. A scoping document was initially prepared by Saskatchewan Environment and Parks Canada staff, and was presented to the strategy team for their input and comment. After minor revisions, the scoping document was adopted by the strategy team as the framework for developing the regional plains bison management strategy. The approved scoping document presents the historical context of the Sturgeon River plains bison population, outlines the vision for the bison population, stipulates the management principles the strategy should follow, explores various positive and negative effects that an expanding free-ranging bison herd may have on local residents, and directs the strategy to seek ways of minimizing the negative effects and maximizing the positive aspects associated with this bison herd.

It was deemed that the management strategy must

- be prepared cooperatively by the local jurisdictions and must involve interested stakeholders;
- incorporate scientific and local knowledge and accommodate local environmental and social conditions;
- incorporate the precautionary principle and adaptive management practices when proposing management strategies and implementing management actions; and
- involve local, regional, and all other interested people in the conservation of the bison population and its ecosystem by instilling awareness, promoting education and understanding, encouraging participation in conservation efforts, and facilitating experiences that will support the Sturgeon River bison population.

Additionally, the following goals were established for the plains bison management strategy:

- The Sturgeon River plains bison population remains naturally regulated, genetically diverse, and free-ranging within the acceptable parts of the regional ecosystem.

- Local landowners, regional residents, and the public at large become more aware of, interested in, and educated about wild plains bison, and grow to understand, support, appreciate, and experience the only example of this free-ranging species within its historic environment in Canada.
- The West Side Bison Management Group<sup>3</sup> continues to function as a communications forum for discussing local bison management issues and activities.
- The management strategy is formulated and regularly updated by incorporating new experience, knowledge from research, and results from adaptive management, which could improve plains bison management in this area and possibly contribute to plains bison conservation elsewhere in Canada and North America.

Landowners were surveyed in April 2004 to gain a better understanding of the levels of impact they have experienced from the Sturgeon River plains bison herd. This will help determine when and where active management actions should be initiated in order to reduce impacts to within tolerable levels. It will also help in evaluating the effectiveness of potential management actions.

At future meetings, the strategy team will prepare and begin reviewing the draft plains bison management strategy with the objective of achieving team consensus by the end of 2005 and jurisdictional approval-in-principle prior to public consultations the following year. Following the public consultations, necessary changes to the strategy will be made before final approval is obtained from the responsible jurisdictions (e.g., Saskatchewan Environment, Parks Canada, rural municipalities). The strategy will be implemented by the responsible groups or jurisdictions outlined within the strategy in accordance with its identified schedule.

### **National Plains Bison Recovery Strategy and Action Plan**

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) recently recommended that the plains bison be listed as Threatened under the *Species at Risk Act* (SARA). If the species is listed on Schedule 1 of SARA, then a national recovery strategy and subsequent action plan for the Sturgeon River plains bison population will be required. The development of the regional management strategy will likely form the basis of the action plan and will be an important information source or starting point for the recovery strategy.

---

<sup>3</sup>The West Side Bison Management Group includes local landowners and some stakeholders including local rural municipalities and Saskatchewan Environment. The group was brought together by the Park in the early 1990s and serves as a forum for those who are potentially most directly affected by bison management and activities in the park area. This group recommended the establishment of the Plains Bison Management Strategy Development Team.

---

**References**

- Ogilvie, S.C. 1979. The park buffalo. Calgary-Banff chapter. National and Provincial Parks Association of Canada. University of Calgary, Calgary, Alberta. 68 pp.
- Roe, F. 1970. The North American buffalo: a critical study of the species in its wild state. 2<sup>nd</sup> edition, University of Toronto Press, Toronto, Ontario. 991 pp.