



Banff  
National Park

# Reintroduction Plan: Plains Bison in Banff National Park

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Reintroducing plains bison to Banff National Park will be a significant undertaking. This **document presents Parks Canada’s vision for this effort, and the** rationale behind it. It also outlines the key considerations and the approach that will be used, and provides a foundation for detailed action planning and environmental assessment.



## Why Reintroduce Bison to Banff?

For thousands of years, vast herds of plains bison roamed the prairies and the eastern slopes of the Continental Divide, including the area that is now Banff National Park. By the mid-1800s, hunting had nearly eliminated them from the continent. Today, only a few small herds of wild, free-roaming plains bison remain. Their future in Canada is threatened by the scarcity of suitable habitat and the conservation challenges inherent to small, remnant populations.

### Ecological Restoration

Historically, bison played a key role in the ecosystem and were a dominant herbivore in the area of what is now Banff National Park. Through their grazing and physical disturbance of vegetation and soil, bison helped create and maintain the patchwork of meadows, grasslands and other open habitats upon which they, and many other animals and plants, depend. Bison were also a food source for predators and scavengers. Similarly, decomposing bison carcasses provided a flush of nutrients for soil microorganisms and plants. Reintroducing bison is an important step toward restoring the full diversity of **species and natural processes to Banff’s ecosystem, and to delivering on a core element of Parks Canada’s mandate.**

### Cultural Reconnection

**Bison were an important feature of Canada’s past. The lives and livelihoods of First Nations peoples and many of the country’s pioneers were inextricably linked to bison, not** only on the vast grasslands of North America but on the eastern slopes of the mountains as well. Reintroducing bison to the landscape is an opportunity to restore cultural connections that have been lost for more than a century.

### Inspiring Discovery

A chance to appreciate and learn about the full range of native species is integral to an authentic national park experience. Bison are inspirational, not only because of their **impressive size and power, but as ‘ecosystem engineers’ and cultural icons of our** landscape. Successfully restoring this keystone species in Banff National Park will enrich opportunities for visitors, neighbours and the public at large to learn about their heritage and join Parks Canada in the reintroduction journey.



## Vision

*Our vision for the project is to restore a wild, free-roaming bison population to Banff National Park in a way that supports ecosystem integrity, enriches and is compatible with other visitor experiences, facilitates cultural connections with the landscape and wildlife, and enhances learning and stewardship opportunities, both in the park and from afar.*

We aim to contribute to international conservation efforts for plains bison by establishing a wild population that can roam freely across a large range in the park and meet their seasonal requirements, subject to natural processes including harsh weather and predators. A long-term population target for bison in Banff will be developed; however, we anticipate that the maximum population will be in the range of 600-1000 individuals. This reflects the estimated number of bison that could be supported on 25% of the available winter forage in the park.

Our work on restoring plains bison to Banff National Park is just one example of Parks Canada's contribution to the Federal Government's National Conservation Plan.



## Considerations

To restore bison successfully in Banff, there are many elements that must be considered.

### The Banff Context

**Banff is Canada's first national park and renowned for its unique blend of mountain nature, beauty, culture and adventure.** It is also known for its wildlife, research, conservation, and innovations in ecological restoration.

As an iconic symbol of Canada, Banff plays a key role in Canadian tourism by hosting over three million visitors annually. Visitors come to enjoy the extensive opportunities offered by trails, cycling paths, historic sites, campgrounds, large-scale special events, scenic drives and landscapes, wildlife viewing and the amenities found in the two park **communities. Along the park's eastern boundary lie provincial parks, wilderness areas, agricultural operations and a number of communities.**

Incorporating this busy, complex context into reintroduction planning will be fundamental **to the project's success.**

### Stakeholder Feedback

Banff is privileged to have a diverse and passionate stakeholder and visitor base. Additionally, thousands of people make their home either within or near the park. Understanding and accommodating the priorities, potential impacts and perspectives of **these groups is important for Parks Canada's long-term success.**

Public feedback on bison reintroduction was first solicited during the 2010 Park Management Plan review, where the idea received substantial support. Subsequently, Parks Canada staff sought specific input about the concept from dozens of organizations including advocacy, tourism, educational, recreational and environmental groups, business

operators, bison and cattle producers, provincial and municipal governments, First Nations and outfitters. These discussions provided the foundation for a draft reintroduction plan that was subsequently presented to the general public for review and comment in fall 2013.

Bison reintroduction garnered considerable support, based on its perceived ecological, visitor experience and cultural benefits. At the same time, a number of specific concerns were flagged, including:

- The potential for bison excursions into communities, high visitor-use areas, lands outside the park, or onto highways and railways; and the consequent need for efficient and effective responses across federal-provincial boundaries to any excursion;
- The risks that bison may pose to the safety of visitors, residents and neighbours, or the risk of bison damaging property or infrastructure; potential health risks to wildlife and domestic livestock, and the need to have protocols in place to prevent disease transmission and effectively address disease if it should occur;
- The feasibility of, and mechanisms for herd management, such as culling to control herd size;
- The potential negative impacts on other wildlife associated with fence affecting movements in and out of the park, and the consequent need to develop a wildlife permeable fence; competition for food, shift in predator-prey relationships, or changes in other aspects of the ecosystem such as soils and water (through application of prescribed fire to maintain bison habitat); and
- The need to clearly and reasonably define visitor opportunities at each stage of the **project (including the limited 'live' viewing and business opportunities associated with the first phase)** and to work creatively with others to create new opportunities that focus on programming and education.

### Visitor Enjoyment and Safety

As with all wildlife in the park, the opportunity to view bison can never be guaranteed. Consequently, Parks Canada will make every effort to bring the bison story to people in the park or wherever they may be, through new and enhanced interpretive and cultural programs, remote technology, internet content and special bison-themed events.

In the first few years of the project, backcountry users will be the most likely to see bison in the park. Tourism operators and outfitters working along the eastern slopes of the park may experience increased visitor interest and could develop new offers as a result of reintroduction. (It should be noted that no new roads or trails will be built to facilitate this; access to the reintroduction area will only be allowed on established trails by foot or horseback.) Over time, if it is determined that the herd can be expanded into more accessible areas of the park, the opportunities for visitors to see bison in their natural state will increase.

Bison can pose safety risks for those who venture too close. Parks Canada has a long history of successfully managing human-wildlife interactions in Banff and other national parks; we are confident that these issues can be addressed through strong planning, public education and communication about bison safety, and ensuring Parks Canada has the necessary capacity to manage and implement response protocols.

## Ecological Factors

**Restoring North America's largest land mammal in Banff's current landscape is a** challenging prospect. Key among the challenges will be managing the natural tendency for bison to roam, in a way that supports the **overall health of Banff's ecosystem**. Historically, they ranged freely on the eastern slopes and prairies in response to availability of high-quality habitat.

Habitat quality will be crucial to a successful reintroduction. When provided with high-quality habitat, bison are less inclined to roam. Bison prefer grass and sedge habitat, especially in areas that have burned within the last 25 years. Recent research shows that there is sufficient high-quality habitat to support bison year-round within the park, particularly in the Panther and Red Deer River valleys and the Fairholme Bench area of the lower Bow Valley. These locations provide prime habitat where lower elevation, southerly aspects and Chinook winds combine to produce suitable winter foraging conditions and reduced snow cover.

Attractive habitat for bison can be maintained over time through application of prescribed fire. This not only benefits bison, but many other species that also prefer relatively open and productive habitats.

While containing bison within the park through fencing is a fundamental requirement for the project, fencing must be used in such a way as to avoid degrading habitat and population connectivity for other wildlife in the park.

This will necessitate an approach to bison fencing based on the latest research and technology. Parks Canada will undertake intensive on-the-ground efforts to evaluate and adapt the fencing to ensure it is permeable for other wildlife. This will involve using pre-existing baseline information on wildlife movement in the park and conducting fence permeability monitoring before and throughout the bison reintroduction.

Finally, working towards the long term vision for wild, free-roaming bison in Banff National Park would be a meaningful contribution to international conservation efforts for bison. Currently the capacity to conserve plains bison in Canada relies on a few small, widely dispersed herds. The Banff reintroduction will represent a valuable opportunity for bison to proliferate in a relatively wild and free-ranging context.

The Banff reintroduction is just one of a number of Parks Canada initiatives associated with bison conservation. Elk Island National Park has contributed bison to conservation projects around the world, including Grasslands National Park, American Prairie Reserve, the Yukon, Alaska and the Republic of Sakha, Russia. Parks Canada also manages wild, free-roaming bison in Prince Albert National Park and Wood Buffalo National Park.

## Citizen Engagement and Stewardship

With this project, Parks Canada intends to continue **Banff National Park's tradition of** innovation and excellence in park management, while strengthening the culture of cooperation, learning and stewardship. The backcountry location for reintroduction necessitates a creative, multi-pronged approach to bring bison experience to people, including:

- Film documentaries of the reintroduction process (for web and television);
- Social media updates from the field;
- Eco-tourism initiatives;

- Collaboration with universities and students on bison-related research;
- Remote viewing (web-cams) and virtual learning programs;
- Cultural, ceremonial and educational activities led by First Nations;
- Bison-related special events that invite large-scale public participation in frontcountry cultural and educational activities;
- Enhanced interpretive or live theatre programs, both in the park and in urban centres with partners such as the Calgary Zoo;
- Using wildlife cameras, GPS data, and people working on the project to convey on-the-ground stories of Banff's reintroduced bison via the web, traditional media and new media; and
- Portable displays that will facilitate awareness and education efforts in urban settings.

## Approach

To provide the best long-term chance of success for bison reintroduction, Parks Canada is instituting a phased approach:

- The first phase of the project will focus on practical issues such as effective fencing, and developing mechanisms to address stakeholder concerns. Successful completion of this phase will trigger the second phase - release of 30-50 bison in the Panther River area;
- Concurrently developing and implementing education, outreach and visitor experience programs;
- Applying what we already know and learning about bison herd behaviour, monitoring and management on the Banff landscape;
- Continually evaluating the approach and effectiveness of all programs;
- Adapting the approach and programs as necessary to support the long-term vision; and
- Evaluating the feasibility of bison range expansion into other areas of the park (see Figure 1).

## Key Elements of the Project

### Location

A small herd of 30-50 animals will be introduced in the area of the Panther and Dormer rivers in the east-central portion of the park. This core area offers a large amount of suitable habitat and opportunities to more easily manage bison movement without negatively impacting the movement of other species. Because of its large size, the area is also likely to accommodate natural herd movements and offers ample habitat for the herd to grow.

## Herd Selection and Soft-Release

Parks Canada will begin the project with a herd of predominantly young bison, which are generally better at adapting to new surroundings. The herd will largely be comprised of yearling and two-year-olds, but will include a few mature female bison (cows) to help lead the herd and respond to predators. The bison will initially be held and monitored in a **temporary 'soft-release' paddock that will provide high-quality feed, shelter and water.** After three-to-four months of acclimatization, the paddock gates will be opened in early spring and the bison will be free to move and forage within their new home range.

## Fencing

A combination of fencing and natural topographic barriers will be used to discourage bison from moving onto provincial lands, transportation corridors or other areas in the park. This will require initially installing approximately 21 kilometres of wire fence in small sections in specific locations, primarily in low-lying and moderately low-slope areas near the park boundary. Fence effectiveness in containing bison, while maximizing its permeability to other wildlife and people, will be tested in advance and monitored on an ongoing basis. Its construction will be high-quality and reliable, and present the least possible risk of entanglement or injury to other wildlife. One measure of success will be our ability to establish a herd of wild bison with a home-range inside the park with minimum fencing.

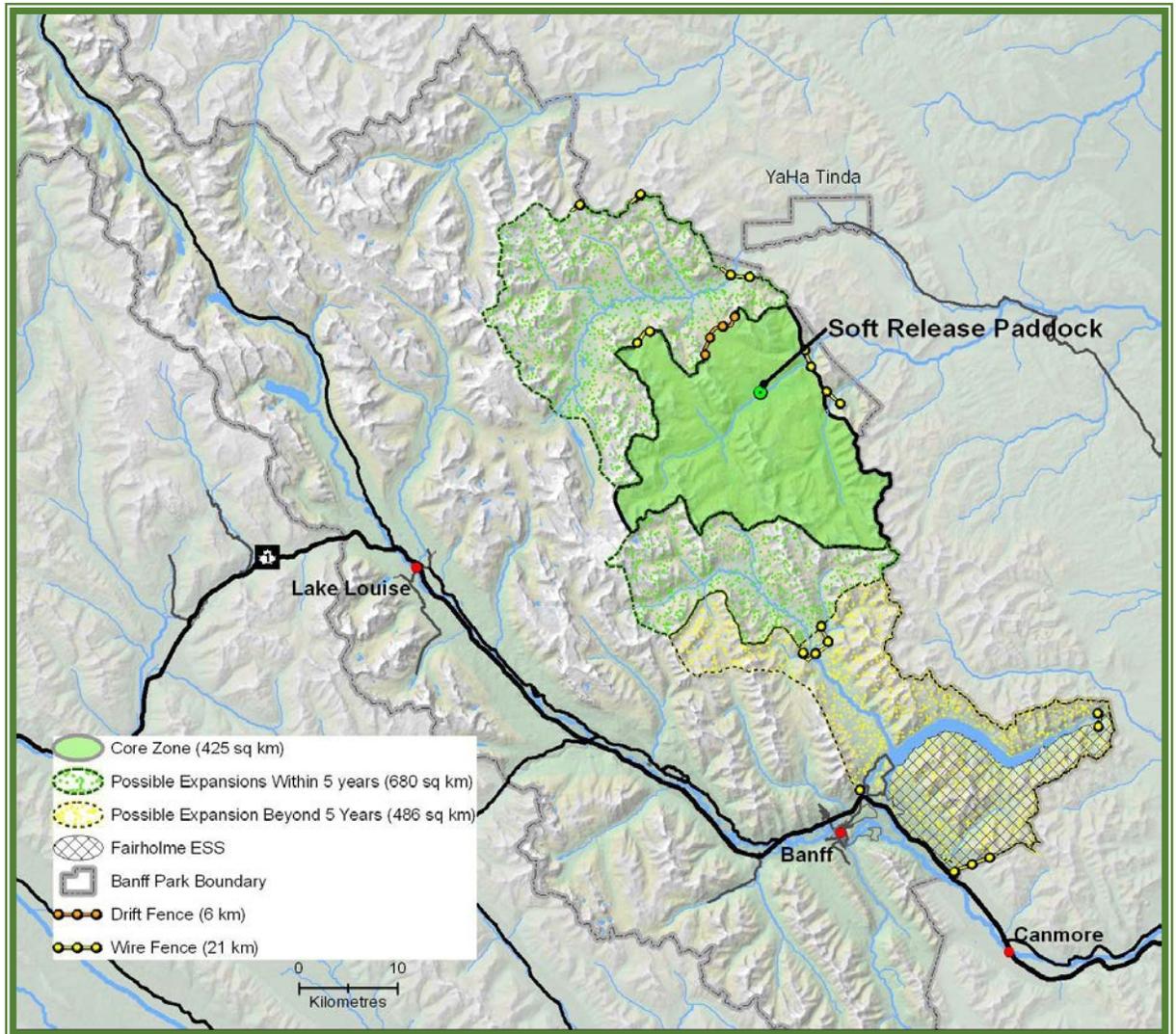
## Monitoring

All bison released will have numbered ear tags, and a subset of the herd will be fitted with satellite-linked GPS collars. Their location, patterns of habitat use and survival will be monitored remotely via satellite and by regular direct observation of the herd.

## Bison Management

**Core Area:** Bison will be released in the core area and their location monitored closely. Bison management activities within the core area will include: ongoing assessment of herd health and size; monitoring fence integrity and effectiveness; and prompt response to reports of bison mortalities, evidence of illness or injury, or any bison-human conflicts. Based on the behaviour of the bison, fence effectiveness and experiences in bison monitoring and response, the boundary of this area may be refined or expanded into the Red Deer and/or Cascade River valleys over the course of the project (See Figure 1).

**Outside the Core Area:** Bison movement outside the core area will trigger management actions to encourage them back to the core area. A bison management team will assess the situation and implement pre-determined response strategies based on: location, time of year, number of animals, animal behaviour, distance from park boundary and many other factors. The management response may include: active baiting and soft hazing of bison where feasible; capturing, immobilizing and relocating or culling; and advising neighbouring land managers and stakeholders, as appropriate.



**Figure 1.** Proposed soft-release site, core areas and possible expansion areas for reintroduction of bison in Banff National Park.

Contingent on performance, portions of the Red Deer and Cascade valleys will be evaluated for possible expansion of the core area during and/or beyond the project. The Fairholme Environmentally Sensitive Site extending from the East Gate to Johnson Lake, is the largest remaining intact block of secure montane wildlife habitat in the park. To protect wildlife from disturbance, human use of this area is restricted by means of educational measures and a voluntary access closure. These would still apply in the event of bison reintroduction to this area.

## Bison Health

The probability of bison introducing or being exposed to diseases such as bovine tuberculosis, brucellosis or anthrax in Banff is estimated to be negligible-to-low. Yet due to the potential negative impacts associated with these diseases, Parks Canada will use proven approaches from other bison restoration projects to ensure herd health, take all necessary precautions and be vigilant for any sign of illness in the herd. This includes:

- Releasing only bison that have been tested and found to be disease-free for bovine tuberculosis and brucellosis. The animals will be obtained from Elk Island National Park, which has been recognized as free of bovine tuberculosis and brucellosis for over 40 years;
- Implementing stringent bio-security measures including: regular monitoring for disease, immediate follow-up of symptoms by a qualified veterinarian, and adhering strictly to sanitary practices and protocols during handling or translocation. Additionally, preparedness plans will include cooperation with other federal and provincial agencies that have specialized skills, expertise and equipment for disease containment and control. The project action plan will include contingency plans for response to anthrax, bovine tuberculosis and brucellosis; and
- Installing bison fencing to help contain bison within park lands and ensure physical separation between park bison and domestic livestock in the province. Rapid response will be implemented to all bison excursions.

## Public Awareness and Safety

Despite their seemingly docile appearance, bison can be dangerous. They weigh between 450-900 kilograms, are agile for their size, and capable of reaching speeds of 70 kilometres an hour. As with many other wildlife species, bison will respond aggressively if they feel threatened. Failure to respect safe viewing distances has resulted in human fatalities and serious injuries in other locations.

Parks Canada is recognised as a world-leader in visitor safety, education and in managing public interactions with potentially dangerous wildlife. Enhanced outreach and information programs will focus on fostering visitor and community understanding of bison biology and behaviour, the potential risks posed by interaction with free-roaming bison, and how to act in ways that support both personal and animal safety. These programs will include visitor information and education programs, staff training and response protocols, as well as community outreach. Parks Canada also anticipates working closely with other organizations such as Alberta Parks and Wildsmart, to ensure the widest possible distribution of bison safety material.

## Evaluation

After bison have inhabited the re-introduction area for a few years, the project will undergo an in-depth assessment of:

- Visitor safety and visitor experience impacts;
- Neighbour/partner impacts and perspectives;
- Response to citizen engagement and stewardship programs;
- Bison home ranges, monitoring and responses;
- Mitigating effects of the bison project on other species;

- Bison population growth and population targets;
- Public awareness, education and appreciation; and
- Factors influencing bison movement and habitat selection.

In conjunction with feedback from key stakeholders and interested groups, the assessment will inform long-term decisions about modifying, maintaining and/or expanding the bison herd to other areas of the park.

### Project Phasing

Parks Canada will apply an adaptive management approach to all aspects of reintroduction. This means relying on ongoing monitoring and evaluation to guide management decisions throughout the course of the project. The approximate timelines for the project are described below. Some activities, such as monitoring of pre-fence wildlife movement patterns, have already begun.

- **Years 1 and 2: Preparations**

Through a variety of mechanisms including individual discussions, working groups, and advisory committees, Parks Canada will continue to share details, consult and work collaboratively with First Nations, the Government of Alberta, and other stakeholders groups to help guide development of the bison reintroduction action plan. This will include development of a bison excursion response plan and disease response plans. An environmental impact analysis will also be conducted on the bison reintroduction plan.

Continued collection of pre-fence wildlife movement information is necessary to enable assessment of fence permeability to other wildlife. Short segments of experimental fencing will be deployed in select locations for testing to determine fence permeability for other wildlife of concern, including elk, deer and bighorn sheep. Parks Canada will also test designs and the ability to maintain visual barriers across river crossings and fencing in areas prone to significant snow accumulation.

- **Year 3: Implementation**

Contingent on results of the fence permeability assessment and testing, the fence and temporary soft release paddock will be installed in the core zone in the Panther-Dormer River area (Figure 1) in summer/fall.

Prescribed fire will be applied on a small scale (approximately 1,000 hectares) in summer/fall to promote attractive, high-quality habitat for bison within the core area.

Outreach, education and visitor programs will be developed. Some will be introduced in year three with the majority to follow in year four and subsequent years. Objectives of these outreach programs are to increase awareness among visitors and regional residents, to generate public interest and understanding of the bison reintroduction, set realistic expectations, and provide basic information regarding bison ecology, behaviour and safety.

In mid-winter of the third year, 30-50 plains bison from Elk Island National Park will be captured, tested for diseases and transported to the soft-release paddock in the remote backcountry of the Panther River Valley.

Concurrently, additional education, outreach and visitor programs will be launched. This will include: special events, interpretive and cultural programming, media and

website features, and programs in nearby communities/adjacent areas to inform residents of safety protocols and the response protocol for bison excursions..

- **Year 4: Initial release, monitoring and management**

Plains bison will be released from the temporary paddock in early spring of the fourth year, marking the return of this iconic and influential species to the eastern slopes of Banff National Park and the onset of bison monitoring and management.

Parks Canada will closely monitor the activities of the bison herd in the core zone to record their movement and habitat use, ensuring a quick response to any excursions that may occur.

Monitoring, maintenance and evaluation of fencing for effective containment of bison and permeability for other wildlife will be ongoing. Prescribed fire will be applied on a small scale (approximately 1,000 hectares) to help maintain and improve habitat quality for bison within the core area.

Bison may be allowed to move into portions of the Red Deer and/or Cascade River valleys (see Figure 1), contingent on their behaviour and **Parks Canada's** record of bison management and safety. Education and outreach programs will continue and be evaluated on an ongoing basis.

- **Years 5 and Beyond**

Based on initial monitoring and evaluation, programs and activities will be adapted as required.

There is a chance that the sixth year may bring the first wild-born bison in Banff National Park since before **the park's** inception in 1885. Dependant on starting population size, **on observed rates of survival and reproduction, Banff's bison** population may have grown to approximately 60-75 animals by this time.

After the bison have been on the ground for a few years, monitoring results from all years will be evaluated to determine long-term feasibility of bison reintroduction; including location and herd size, protocol and program strengths and gaps, and ongoing resource requirements. This information will be incorporated into a final report on the bison reintroduction with recommendations on achieving our long-term vision. This information will be made available for public review and comment.

## **Next Steps**

Parks Canada will work with key stakeholders, including the Government of Alberta, to address any outstanding concerns and develop protocols for the project. A detailed action plan for the project is being developed.



## Further Information

For further information or questions, please contact:

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