

Proposed

**Species at Risk Act**  
Action Plan Series

# Multi-species Action Plan for Jasper National Park of Canada [Proposed]



2017

Canada

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For copies of the action plan, or for additional information on species at risk, including COSEWIC Status Reports, residence descriptions, recovery strategies, and other related recovery documents, please visit the [Species At Risk Public Registry](#)<sup>1</sup>.

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<sup>1</sup> [www.registrelp.gc.ca/default\\_e.cfm](http://www.registrelp.gc.ca/default_e.cfm)

## Approval statement

The Parks Canada Agency led the development of this federal action plan under the Species at Risk Act. The relevant Field Unit Superintendent hereby approves this document indicating that the relevant Species at Risk Act requirements related to action plan development have been fulfilled in accordance with the Act.

Approved by:



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Salman Rasheed  
Interim Superintendent, Jasper National Park of Canada  
Parks Canada Agency

## Preface

The federal, provincial, and territorial government signatories under the [Accord for the Protection of Species at Risk \(1996\)](#)<sup>2</sup> agreed to establish complementary legislation and programs that provide for effective protection of species at risk throughout Canada. Under the Species at Risk Act (S.C. 2002, c.29) (SARA), the federal competent ministers are responsible for the preparation of action plans for species listed as Extirpated, Endangered, and Threatened for which recovery has been deemed feasible. They are also required to report on progress five years after the publication of the final document on the Species at Risk Public Registry.

Under SARA, one or more action plan(s) provides the detailed recovery planning that supports the strategic direction set out in the recovery strategies for the species. The plan outlines what needs to be done to achieve the population and distribution objectives (previously referred to as recovery goals and objectives) identified in the recovery strategies, including the measures to be taken to address the threats and monitor the recovery of the species, as well as the proposed measures to protect critical habitat that has been identified for the species. The action plan also includes an evaluation of the socio-economic costs of the action plan and the benefits to be derived from its implementation. The action plan is considered one in a series of documents that are linked and should be taken into consideration together with the COSEWIC status reports, management plans, recovery strategies, and other action plans produced for these species.

The Minister responsible for the Parks Canada Agency (the Minister of the Environment and Climate Change) is the competent minister under SARA for the species found in Jasper National Park (JNP) of Canada and has prepared this action plan to implement the recovery strategies as they apply to the Park, as per section 47 of SARA. It has been prepared in cooperation with First Nations, Environment Canada, Fisheries and Oceans Canada and the provinces of British Columbia and Alberta as per section 48(1) of SARA.

Implementation of this action plan is subject to appropriations, priorities, and budgetary constraints of the participating jurisdictions and organizations.

## Acknowledgments

Special thanks go out to all of those who added to the content of this plan and especially those who participated in the site analysis workshop in the winter of 2013 and contributed their time, expertise and information.

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<sup>2</sup> [www.ec.gc.ca/media\\_archive/press/2001/010919\\_b\\_e.htm](http://www.ec.gc.ca/media_archive/press/2001/010919_b_e.htm)

## Executive summary

The Multi-species Action Plan for Jasper National Park of Canada applies to lands and waters occurring within the boundaries of Jasper National Park of Canada (JNP). The plan meets the Species at Risk Act action plan requirements (SARA s.47) for Schedule 1 listed Endangered and Threatened species that regularly occur in the Park.

Park-specific objectives for species at risk are identified in this plan and represent the site's contribution to objectives presented in federal recovery strategies. Species at risk, their residences, and their habitat are protected by existing regulations and management regimes in national parks and national historic sites as well as by SARA. The Multi-species Action Plan for Jasper National Park of Canada describes additional measures that will contribute to the survival and recovery of the SARA listed species in JNP. Site-specific objectives are identified to help recover and/or manage the identified species, to be met through a number of recommended management activities. These activities represent the site's contribution to objectives presented in federal recovery strategies and management plans. These measures were identified based on threats and actions outlined in federal and provincial status assessments and recovery documents, as well as knowledge of the status and needs of each species in JNP. Population monitoring measures are also identified for the species for which management activities at the sites can contribute to recovery objectives.

No new critical habitat is identified in this action plan. Critical habitat for some species has been identified previously in their respective recovery strategies. Measures used for protection of existing critical habitat are described.

Measures proposed in this action plan will have limited socio-economic impact and place no restrictions on land use outside of JNP. Direct costs of implementing this action plan will be borne by Parks Canada. Indirect costs are expected to be minimal. Benefits include opportunities to engage with and benefit from traditional knowledge of Indigenous Peoples, including the potential to fill knowledge gaps and enhance and strengthen relationships. Additional benefits include positive impacts on Park ecological integrity, and greater awareness and appreciation of the value of biodiversity to Canadians.

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## 1. Context

Canada's national parks protect a country-wide system of representative natural areas of Canadian significance. Parks Canada is responsible for managing these special places for the benefit, education and enjoyment of Canadians, while ensuring that they are protected and maintained so that they are left unimpaired for future generations.

With over a century of accomplishments in establishing and protecting national parks, Parks Canada is a recognized world leader in conservation. Canada's national parks afford a high level of protection to plant and wildlife species that rely upon these lands for their habitat. National parks also provide a unique opportunity to engage Canadians in learning and stewardship activities focused on species at risk. The conservation of species at risk, using both ecological measures and educational programs, is an important part of the day-to-day work of Parks Canada.

This Species at Risk Action Plan describes the work that Parks Canada is doing as part of the larger national park conservation program to put vulnerable species on the path to recovery. It is one of the tangible ways Parks Canada protects species at risk, while providing ways to connect and educate Canadians about the endangered wildlife and plants found in these special places. Parks Canada will take a leadership role in implementing this action plan, but its full potential will be achieved by working with others, including Indigenous Peoples, Park visitors, neighboring landowners, businesses, local residents and other Canadians.

Jasper National Park (JNP) is 11,228 km<sup>2</sup> in size and is the most northerly Canadian national park in the Rocky Mountains (Figure 1). Located in Alberta, but sharing its western border with British Columbia, the Park attracts over 2 million visitors each year to enjoy its majestic peaks, glaciers, pristine wilderness, abundant wildlife and outdoor adventures. The Park was established in 1907 to protect the lands and headwaters of the Upper Athabasca, the proposed route for the Grand Trunk Pacific transcontinental railway. Together with six neighbouring protected areas, Jasper National Park shares the designation of the Canadian Rocky Mountains World Heritage Site.

The Park protects diverse mountain ecosystems including forests, alpine meadows, fresh water habitats, grasslands and sand dunes in the Montane Cordillera ecozone. JNP is home to a wide range of species including several species at risk. While 97% of JNP is designated as wilderness with low human activity, the most biologically productive area is the low elevation montane forest. This is also where the town of Jasper and most of the transportation and visitor infrastructure is located. Outside the Park, the surrounding lands in both Alberta and British Columbia are impacted by intensive use, including forestry, mining, oil and gas extraction and recreation (both motorized and non-motorized).

“Maintenance or restoration of ecological integrity, through the protection of natural resources and natural processes, shall be the first priority of the Minister when considering all aspects of the management of parks” (Canada National Parks Act s.

8(2)). Species at risk, their residences, and their habitat are therefore protected by existing national park regulations and management regimes. In addition, the Species at Risk Act (SARA) prohibitions protecting individuals and residences apply automatically when a species is listed, and all critical habitat in national parks and national historic sites must be legally protected within 180 days of being identified.

Recovery measures for species at risk will be integrated within the framework of Parks Canada's ongoing ecological integrity programs. National parks maintain scientifically rigorous ecological integrity monitoring and restoration programs to sustain healthy, functional ecosystems and biodiversity throughout the Park. The recovery measures described in this action plan have been organized under four key priorities: active management, disease management, filling knowledge gaps, and working together. Parks Canada contributes to the recovery of species at risk by providing inventory and monitoring data, and through the implementation of habitat restoration projects and other conservation measures. The species-directed measures outlined in this plan will in turn contribute to improving the conservation status of species and their habitat, and maintaining biodiversity.

In addition to status assessments, SARA recovery strategies have been completed for woodland caribou, Haller's Apple Moss, common nighthawk and olive-sided flycatcher, while a proposed recovery strategy has been prepared for little brown and northern myotis. A recovery strategy for whitebark pine is currently under development. These documents provide guidance for the recovery of individual species, including strategic direction, recovery objectives, critical habitat, and threats. This action plan was developed and will be implemented in a manner that is consistent with those recovery documents, and should be viewed as part of this body of linked strategies and plans.

### **1.1 Scope of the action plan**

The geographic scope of this action plan includes all federally owned lands and waters managed by JNP (Figure 1). This multi-species action plan has been written specifically for JNP because the Parks Canada Agency (PCA) is legally responsible for species at risk on PCA lands and waters, has the ability to take direct conservation action, and deal with different threats, legislation, and management priorities than areas outside the Park. The advantage of a multi-species action plan is that it can minimize redundancies while allowing for coordination of key actions affecting multiple species at risk where these actions overlap in space or time.

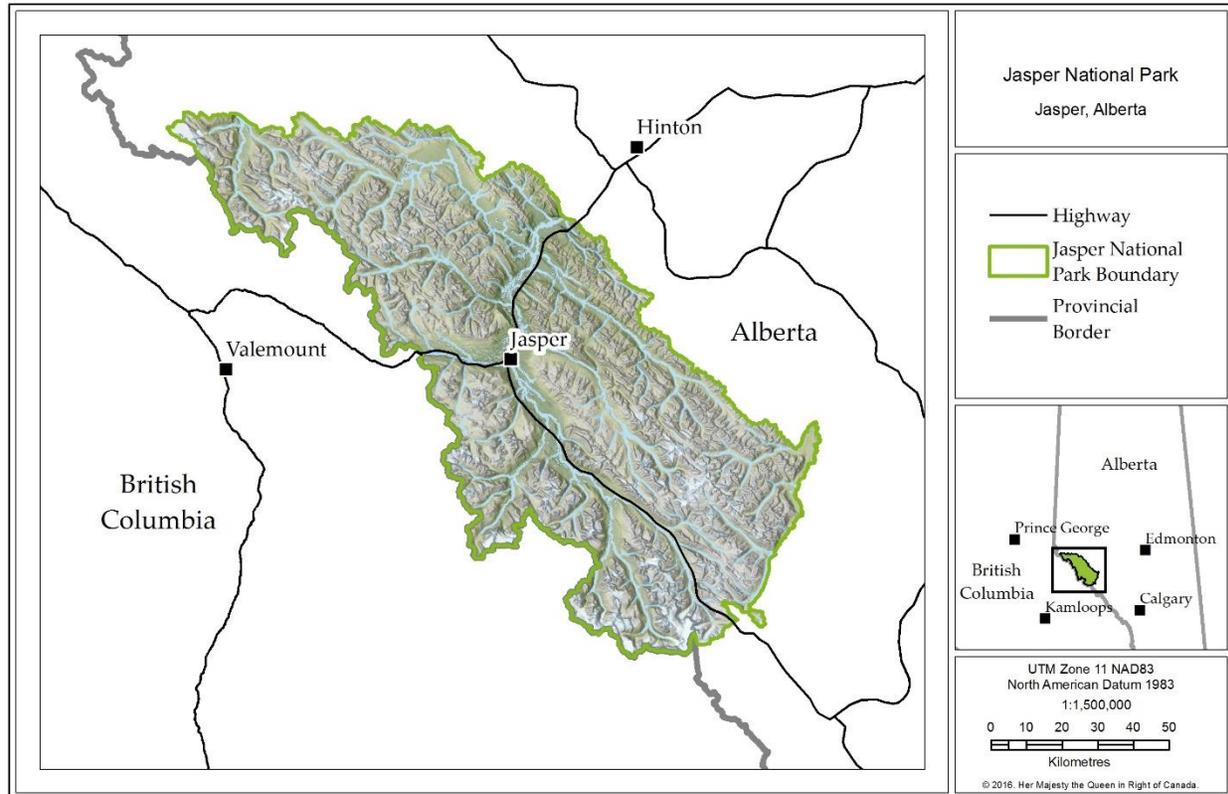


Figure 1. Jasper National Park.

Action plans are legally required for all SARA Schedule 1 listed endangered and threatened species once a final recovery strategy has been published on the Species at Risk (SAR) Public Registry. This action plan is a SARA action plan (as per SARA s.47) for four species: woodland caribou, Haller's apple moss, common nighthawk and olive-sided flycatcher. This action plan is also consistent with current direction in the draft recovery strategies for whitebark pine, northern myotis and little brown myotis.

This action plan addresses SARA-listed Endangered and Threatened species that regularly occur in JNP which require an action plan under SARA (s.47) (Table 1). The plan will be amended as required (e.g. as additional species are added to Schedule 1 of SARA) to meet SARA requirements for action planning.

Table 1. Species at risk included in the action plan for JNP.

Species	Scientific Name	SARA Schedule 1 Status
Common Nighthawk	<i>Chordeiles minor</i>	Threatened
Haller's Apple Moss	<i>Batramia halleriana</i>	Threatened
Little Brown Myotis	<i>Myotis lucifugus</i>	Endangered
Northern Myotis	<i>Myotis septentrionalis</i>	Endangered
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Threatened
Whitebark Pine	<i>Pinus albicaulis</i>	Endangered
Woodland Caribou, Southern Mountain population	<i>Rangifer tarandus caribou</i>	Threatened

## 2. Site-based population and distribution objectives

Parks Canada assessed the potential to take management actions in JNP that will contribute to the recovery of each species and site-specific population and distribution objectives were developed (Appendix A). Because they are directly linked to the site-based population and distribution objectives, monitoring activities are reported in Appendix A rather than in the tables of recovery measures (Appendix B). If there is little opportunity for the site to contribute to the recovery of a species, conservation actions may be limited to protection measures in place under the Canada National Parks Act. For a few species, population and distribution objectives for JNP will have little to no impact on the species' national recovery objectives. This is primarily for two reasons: the threats cannot be controlled in the Park or do not exist in the Park (e.g., wide-spread disease, loss of overwintering habitat elsewhere); and/or the population within the site is a very small part of the Canadian distribution or is unknown or unconfirmed.

## 3. Conservation and recovery measures

Managing wide-ranging species like woodland caribou at a park landscape level, or a keystone species like whitebark pine that is intricately connected to many other species, for example, all have their own complexities. While the vast majority of the Park area is wilderness, habitat alteration and fragmentation has occurred in the main valleys (the Athabasca, Miette, Maligne, Fiddle and Sunwapta), through past tourism and community development, transportation corridors and recreation. Recreational activities can also contribute to local and regional stresses on caribou and other sensitive species. Historical management practices have altered the natural range of ecosystem variability (e.g. fire suppression, aquatic connections). Industrial, recreational, residential and hunting activities on regional landscapes adjacent to Park boundaries directly or indirectly impact shared wildlife populations, aquatic resources and vegetation communities. Changes in climate impact wildlife and vegetation distributions, freshwater flows and natural disturbance processes. Exotic (non-native), invasive diseases affect species at a continental scale. Collaboration with adjacent land managers and owners will be important to conserving cross-boundary species at risk.

As reflected in the Parks Canada mandate, it is a priority to maintain ecological integrity and to facilitate opportunities for Canadians to experience and learn about these special places. JNP has worked with partners and volunteers to improve the ecological health

of the Park, and increase opportunities to support the recovery of species at risk. Innovative species at risk programs and activities engage and connect Canadians both in the Park and where they live, to their national parks and Parks Canada's role in conservation. Canadians are invited to get involved in species recovery through citizen science, volunteering and partnering opportunities. Academic collaboration in the park is a source of valuable research and data collection that supports better management and restoration efforts. Visitor facilities and trail networks have been redesigned and continuously improved to provide meaningful experiences while protecting park habitats and species.

This action planning process identified measures that will contribute to site-based population and distribution objectives, as well as measures required to protect the species and learn more about them. These measures were then prioritized to determine which will be conducted by the Park (Appendix B). The primary consideration was the ecological effectiveness of measures, but opportunities to enhance visitor experience in the Park, to increase awareness through outreach and education, as well as financial costs and benefits were also considered. Wherever possible, Parks Canada is taking an ecosystem approach, prioritizing actions that benefit numerous species at once to effectively and efficiently protect and recover species at risk.

Four priority themes emerge from these measures: active management, disease management, filling knowledge gaps and working together.

### **Active management**

Active management is a course of action directed toward maintaining or changing the ecological condition to achieve specific objectives. Active management measures for Whitebark Pine include habitat restoration and actions to directly increase stand-level resistance to blister rust infection. A key action in restoring whitebark pine is to ensure that future stands have some resistance to blister rust by increasing the number of trees with genetic resistance to the disease. We do this by collecting seeds from whitebark pine trees that appear to be rust-resistant, testing them for resistance to the disease and planting the seedlings. Whitebark pine is also vulnerable to forest ingrowth by other tree species, particularly where natural fire cycles have been disrupted through fire suppression. Climate change may also contribute to greater risk of mountain pine beetle-caused mortality of whitebark pine and increased competition with other plant species. Restoring natural fire cycles on the landscape is an important strategy for ensuring the persistence of high quality whitebark pine habitat. Reducing forest ingrowth by restoring fire may also benefit common nighthawk, as this species nests on the ground in open forest and grassland habitat. Additionally, carrying out prescribed burns in mature conifer stands near bogs and meadows to create a mosaic of live and dead trees near water and open areas may favour Olive-sided Flycatcher. Parks Canada is internationally recognized for leadership in restoring fire through prescribed burning and continues to conduct burns and manage wildfire as part of a national program.

We identify a suite of coordinated actions aimed at halting caribou population declines. The proximate cause of caribou decline in Jasper National Park is predation, mainly by

wolves. The broader cause of increased predation is related to a change in the predator-prey dynamic, linked to previous wildlife management (i.e., reintroducing elk in 1920 and decades of simultaneous wolf control from 1920-1959). Predator-prey dynamics in the park are also affected by habitat alteration in the larger landscape, external to the park. Recovering caribou may require augmenting existing populations supported by a multi-partner, multi-jurisdictional captive breeding program contingent on the availability of captive-bred animals, and the persistence of a sufficient amount of suitable habitat with low predation risk. Due to the complexity of augmentation, we will first investigate feasibility of augmentation with partners. Old growth forest is a seasonal habitat requirement for this species. Careful management of the fire regime will be essential to ensure a suitable range of forest patches of varying stand ages across the landscape over time. Any future re-introduction of caribou would be coordinated with the work of other mountain parks.

Increased awareness, engagement and education will encourage stewardship and support for actions that protect species at risk in JNP and that lead to on-the-ground changes to habitat conditions.

### **Disease management**

White-nose syndrome (WNS) is decimating bat populations in eastern North America and moving west, and has recently been discovered in Washington State. Parks Canada manages access to all caves in Jasper National Park using a permit system (i.e., caves are closed to access, unless by permit). Currently, the Park's one known hibernaculum is closed to recreational access to reduce the risk of WNS contamination. Determining and tracking population numbers and distribution before the arrival of WNS is key to the early detection of the disease. This knowledge allows early and targeted action to prevent disease spread to the most important bat sites (e.g. decontamination procedures for cavers reduces the spread of WNS). For whitebark pine, white pine blister rust is the main cause of decline across North America. Determining infection rates and identifying resistance in stands is essential to support recovery. Protection measures against other threats, including mountain pine beetle, can then be focused on the rare disease-resistant whitebark pine trees.

### **Filling knowledge gaps**

For some species at risk, research and monitoring is needed to fill gaps in the knowledge base necessary to support protection or recovery. Identifying and mapping important habitat is essential to inform protection and recovery actions. For the species in this Action Plan, this includes ongoing work on: bat hibernacula and roost sites, stands of whitebark pine and breeding sites for bird species at risk. In many cases, this will require partnerships and/or additional funding and will benefit from the opportunity to work with Indigenous communities, the academic community and citizen scientist programs.

### **Working together**

Engaging others in recovery of species at risk through involvement of Indigenous communities, partnering efforts, visitor experience opportunities, and outreach activities is an important component of this multi-species action plan.

The potential reintroduction of southern mountain caribou to the Park can only proceed by working with partners to establish the best way forward to augment herds to support recovery efforts throughout the species' range. Species at risk recovery in JNP will be positively influenced by increased public awareness, understanding, support and engagement. It is important that Canadians, including our Indigenous partners and key stakeholders, have opportunities to learn about and participate in species at risk recovery in JNP. These opportunities help foster a sense of connection to JNP that motivates them to act as stewards for the Park and builds support for conservation actions. Interactive in-park programs like JNP's whitebark pine street theatre or the Caribou Ambassador volunteer program, engage visitors in the Park. Hands-on volunteer citizen science opportunities like the bat monitoring program, foster new park stewards. Innovative urban outreach tools and activities like the whitebark pine, caribou and fire travelling exhibit and collaboration with the Calgary Zoo, bring JNP's stories to Canadians where they live. The "bat-camera" takes images of bats inside a small bat roost at the Palisades Stewardship Education Centre and not only supports monitoring, it provides a unique and engaging education and awareness tool to reach audiences across the country.

Engaging Indigenous communities may create opportunities to incorporate traditional knowledge and work together on specific recovery actions for species at risk. Their understanding of the land and the interconnectedness between species can enrich learning and awareness opportunities as well as contributing to protection and recovery measures.

Where recovery measures include access restrictions or specific protection actions, such as the seasonal closure of important caribou winter habitat, restricting access to bat hibernaculum, or the protection of common nighthawk nests, integrated communications will increase awareness, support and compliance for the measures, as well as establish guidelines for enforcement. Education and awareness programs will also target external audiences. This is critical, as most of the species that are included in this action plan are found regionally beyond the park boundaries. External communications may also help to build support for species at risk generally.

For wide-ranging species like woodland caribou and whitebark pine, collaboration with external partners and stakeholders supports the broader national recovery goals of the species.

## **4. Critical habitat**

Critical habitat is "the habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species' critical habitat in the recovery

strategy or in an action plan for the species” (SARA s.2(1)). As of January 2016, no additional information is available to identify more critical habitat within this action plan. Recovery strategies have identified critical habitat in JNP for woodland caribou, Haller’s Apple Moss, little brown myotis, and northern myotis. Where critical habitat identification is not complete, it will be identified in an upcoming or amended action plan or revised recovery strategies for the species; refer to the schedule of studies in relevant recovery strategies for further details.

#### **4.1 Proposed measures to protect critical habitat**

Critical habitat identified in other recovery documents within JNP will be legally protected from destruction as per section 58 of the SARA. Species at risk, their residences, and their habitat are therefore protected in Canada’s national parks by existing national park regulations and management regimes as well as by SARA.

### **5. Evaluation of socio-economic costs and of benefits**

The Species at Risk Act requires the responsible federal minister to undertake “an evaluation of the socio-economic costs of the action plan and the benefits to be derived from its implementation”.

#### **5.1 Costs**

The cost to implement the action plan will be borne by Parks Canada out of existing salaries and goods and services dollars, and national ecosystem restoration project funding. This includes incremental salary costs, materials, equipment, and contracting of professional services for measures outlined in Appendix B. No major socio-economic costs to partners, stakeholders or Indigenous Peoples are expected as a result of this action plan. Specific project implementation will be contingent on funding being allocated through the Park’s annual business planning process, or from alternative funding sources such as Parks Canada’s national Conservation and Restoration Program.

Some recovery measures are already being implemented in the Park. The other proposed measures will be integrated into the operational management of the Park and there will be few new costs. These costs will be covered by prioritization of existing funds and salary dollars at the Park and therefore will not result in additional costs to society.

The action plan applies only to lands and waters in JNP and does not bring any restrictions to land use outside the sites. This action plan, therefore, will not result in any significant socio-economic impacts to the public. Minor restrictions may be placed on visitor activities on Park lands and waters where they are considered necessary to protect and recover species at risk.

#### **5.2 Benefits**

Measures presented in this action plan for JNP will contribute to meeting recovery strategy objectives for threatened and endangered species. These measures are expected to have an overall positive impact on ecological integrity and enhance

opportunities for appreciation of the sites and the species by visitors and the general public. Opportunities to engage with Indigenous communities and incorporate traditional knowledge could yield significant benefits for species at risk. Other measures that could result in benefits to Canadians, such as positive impacts on biodiversity and the value individuals place on preserving biodiversity (Federal, Provincial, Territorial Governments of Canada, 2014).

The proposed measures seek a balanced approach to reducing or eliminating threats to species-at-risk populations and habitats, and include protection of individuals and their habitat (e.g., restrictions to human activities within areas occupied by the species, combined with ongoing research and monitoring), potential species re-establishment, and increasing public awareness and stewardship (e.g., signage, visitor programs, and highlights in communication media).

Potential economic benefits of the recovery of the species at risk found in JNP cannot be easily quantified, as many of the values derived from wildlife are non-market commodities that are difficult to appraise in financial terms. Wildlife, in all its forms, has value in and of itself, and is valued by Canadians for aesthetic, cultural, spiritual, recreational, educational, historical, economic, medical, ecological and scientific reasons. The conservation of wildlife at risk is an important component of the Government of Canada's commitment to conserving biological diversity, and is important to Canada's current and future economic and natural wealth.

Implementing this action plan is expected to have positive benefits for park visitors, local residents, and Indigenous groups. Some activities in the plan may create opportunities for local residents to become involved in the recovery of species at risk and for cooperation and community partnerships in species at risk recovery. Benefits should be relatively evenly distributed across individuals in local communities, and opportunities for involvement will be available to all local residents. These include opportunities to learn about and take part in the recovery of culturally important species at risk, opportunities for visitors and local communities to be involved in conservation issues, opportunities for integration of Indigenous Traditional Knowledge into conservation in JNP, and greater awareness of Indigenous values and culture among local residents and visitors to the parks. In doing so the plan supports the goals under the Species at Risk Act: "the traditional knowledge of the Indigenous peoples of Canada should be considered in the assessment of which species may be at risk and in developing and implementing recovery measures".

## **6. Measuring progress**

Reporting on implementation of the action plan (under s. 55 of SARA) will be done by assessing progress towards implementing the measures. Reporting on the ecological and socio-economic impacts of the action plan will be done by assessing progress towards meeting the site-based population and distribution objectives.

## 7. References

Environment Canada. 2016. Recovery strategy for Common Nighthawk (*Chordeiles minor*) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa, vii + 49p.

Environment Canada. 2016. Recovery strategy for Olive-sided Flycatcher (*Contopus cooperi*) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa, vii + 52p.

Environment Canada. 2015. Recovery strategy for Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and Tri-colored Bat (*Perimyotis subflavus*) in Canada (Proposed). Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. 110 pp.

Environment Canada. 2014. Recovery strategy for Whitebark Pine (*Pinus albicaulis*) in Canada (Draft). Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa.

Haller's Apple Moss Recovery Team. 2010. Recovery Strategy for Haller's Apple Moss (*Bartramia halleriana*) in Canada. Species at Risk Act Recovery Strategy Series. Parks Canada Agency. viii + 32pp.

Parks Canada Agency. 2010. Jasper National Park Management Plan. Parks Canada Agency. Ottawa. xiv + 81 pp.

Parks Canada Agency. 2011. Conservation strategy for southern mountain caribou in Canada's national parks. Parks Canada Agency. 30pp.

## Appendix A: Species information, objectives and monitoring plans for species at risk in JNP.

Species	National objectives	Site-based population & distribution objectives	Population trend in JNP	Population monitoring <sup>3</sup>	General information and broad park approach
Common nighthawk	In the short-term, halt the national decline by 2025, while ensuring the population does not decrease more than 10%. In the long-term (i.e., after 2025) ensure a positive 10-year population trend. Maintain the current extent of occurrence in Canada.	Maintain occupancy of common nighthawk at confirmed sites in appropriate habitat in JNP.	Unknown. Breeding confirmed.	Report presence through incidental observations and nest protection measures (if required).	Opportunistically identify nest sites, and where resources allow, conduct surveys in historically occupied and high potential habitats. Outreach, education & seasonal activity restrictions may help prevent accidental nest disturbance. Fire and invasive plant management programs may contribute to enhancing nesting habitat.
Haller's apple moss	Maintain or increase population sizes at existing locations to ensure that all populations remain viable over the long term and, where feasible, reintroduce the species to extirpated locations with suitable or capable habitat.	Maintain or increase population sizes at both of JNP's existing locations.	Unknown; baseline monitoring completed in 2011.	Complete established population monitoring every 5 years.	Two of the ten populations are located in JNP. The west gate population is one of the largest known. The Park approach focuses on protecting critical habitat.

<sup>3</sup> Where population and distribution objectives have been established for JNP, monitoring is designed to directly measure success in achieving those goals.

Species	National objectives	Site-based population & distribution objectives	Population trend in JNP	Population monitoring <sup>3</sup>	General information and broad park approach
Little brown myotis	The distribution objective is to maintain the pre-white-nose syndrome extent of occurrence. Within areas not yet affected by WNS, the population objective is to maintain (and where feasible increase) the current level of the population.	<ol style="list-style-type: none"> <li>1. Maintain current spatial and temporal distribution.</li> <li>2. Protect all known hibernacula and maternity roosts.</li> </ol>	Unknown. There is one confirmed hibernaculum in JNP identified as critical habitat. The population in that cave has been stable at a minimum count of 700 bats over the past several years.	<ol style="list-style-type: none"> <li>1. Use the North American Bat Monitoring Protocol (NABat) and opportunistic observations to identify significant bat locations in natural areas and human structures. Monitor these sites to detect changes.</li> <li>2. Monitor bat use and hibernation activity in priority caves and mines using roost loggers.</li> </ol>	<ol style="list-style-type: none"> <li>1. Protect individuals and residences.</li> <li>2. Opportunistically where resources allow locate important habitat, in particular, hibernacula and maternity roosts.</li> <li>3. Continue to actively manage cave access (permit required) and implement decontamination protocol to deter the spread of WNS through human vectors.</li> </ol>
Northern myotis	The distribution objective is to maintain the pre-white-nose syndrome extent of occurrence. Within areas not yet affected by white-nose syndrome, the population objective is to maintain (and where feasible increase) the current level of the population.	<ol style="list-style-type: none"> <li>1. Maintain current spatial and temporal distribution.</li> <li>2. Protect all known hibernacula and maternity roosts.</li> </ol>	Unknown.	<ol style="list-style-type: none"> <li>1. Use the North American Bat Monitoring Protocol (NABat) and opportunistic observations to identify significant bat locations in natural areas and human structures. Monitor these sites to detect changes.</li> <li>2. Monitor bat use and hibernation activity in priority caves and mines using roost loggers.</li> </ol>	<ol style="list-style-type: none"> <li>1. Protect individuals and residences.</li> <li>2. Opportunistically where resources allow locate important habitat, in particular, at hibernacula and maternity roosts.</li> <li>3. Continue to actively manage cave access (permit required) and implement decontamination protocol to deter the spread of WNS through human vectors.</li> </ol>

Species	National objectives	Site-based population & distribution objectives	Population trend in JNP	Population monitoring <sup>3</sup>	General information and broad park approach
Olive-sided flycatcher	In the short-term, halt the national decline by 2025, while ensuring the population does not decrease more than 10% over this time. In the long-term (after 2025) ensure a positive 10-year population trend. Maintain the current extent of occurrence in Canada.	No objectives established: Nests and birds are protected by the CNPA and Migratory Birds Act. Fire management practices may provide more nesting habitat. JNP is of limited importance to the species national recovery.	Unknown. Incidental observations indicate breeding activity in the Park.	Report presence through incidental observations.	Little is known about this species in the Park. Observations obtained through monitoring and incidental reports indicates it continues to nest in the Park. May benefit from habitat restoration using fire.
Whitebark pine	To establish a self-sustaining, rust-resistant population of whitebark pine throughout the species' range that demonstrates natural seed dispersal, connectivity, genetic diversity and adaptability to changing climate. (DRAFT)	To establish a self-sustaining, rust-resistant population of whitebark pine that demonstrates natural seed dispersal, connectivity, genetic diversity and adaptability to changing climate.	Infection and mortality rates have increased from 2003 to 2014. White pine blister rust is distributed throughout the park.	<ol style="list-style-type: none"> <li>1. Disease infection, stand density and mortality rate via stand health transects.</li> <li>2. Hectares of habitat created or restored.</li> <li>3. Number of potentially resistant trees identified and protected and number of these with stored seeds.</li> <li>4. If fire is applied, the amount of regeneration 5-years post-fire.</li> </ol>	<ol style="list-style-type: none"> <li>1. Assess stands to identify trees that are potentially resistant to white pine blister rust.</li> <li>2. Collect and conserve seeds from potential blister rust resistant trees; test for resistance; plant resistant trees.</li> <li>3. Forest management practices such as prescribed burning, thinning and wildfire impact mitigation can be used to protect and restore habitat.</li> </ol>

Species	National objectives	Site-based population & distribution objectives	Population trend in JNP	Population monitoring <sup>3</sup>	General information and broad park approach
Woodland caribou	<p>Achieve self-sustaining populations in all local population units (LPU) within their current distribution:</p> <ol style="list-style-type: none"> <li>1. Stop the decline in both size and distribution of all LPUs;</li> <li>2. Maintain the current distribution within each LPU; and</li> <li>3. Increase the size of all LPUs to self-sustaining levels and, where appropriate and attainable, to levels which can sustain a harvest with dedicated or priority access to Indigenous peoples.</li> </ol>	<p>For the Jasper/Banff National Park Local Population Unit achieve stable to increasing numbers to a minimum of 100 animals (as defined in the Southern Mountain Caribou Recovery Strategy) as a step towards achieving self-sustaining local herds in which natural processes (dispersal, migration) can occur. Where caribou have been extirpated, examine opportunities for restoration.</p>	<p>In the Jasper/Banff Local Population Unit, three of the four subpopulations are declining and the fourth has been extirpated. The A La Peche Local Population Unit, which is a transboundary herd with Jasper, is declining.</p>	<p>Caribou population monitoring</p>	<ol style="list-style-type: none"> <li>1. Manage and reduce threats to existing caribou subpopulations in JNP.</li> <li>2. Conduct research and monitoring on caribou and predator-prey dynamics in and adjacent to caribou habitat.</li> <li>3. With partners, investigate potential for caribou augmentation in the local population unit (as defined in the Recovery Strategy).</li> </ol>

## Appendix B: Conservation and recovery measures that will be conducted by JNP.

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed	Timeline
<b>Active Management</b>					
Whitebark pine	1	Identify putatively rust resistant individuals (Plus Trees) at high priority sites, conduct Plus Tree seed resistance testing for high probability trees, collect seed for genetic conservation and protect high value Plus Trees from mountain pine beetles.	1. Where conditions permit, identify rust resistant trees or high value individuals and conserve genetic resources. 2. Where protection from mountain pine beetle is required, protect high-value individual whitebark pine trees.	1. Exotic, invasive species (white pine blister rust) 2. Problematic native species (mountain pine beetle)	Ongoing
Whitebark pine	2	Plant putatively rust resistant seedlings, and when available confirmed rust resistant seedlings, in priority restoration sites. Inoculate seedlings with mycorrhizal fungi to improve establishment.	1. Plant a minimum of 3500 rust-resistant whitebark pine seedlings by 2019. Continue annual planting beyond 2019 as resources are available and based on priority areas for restoration need. 2. Where available, inoculate at least 50% of seedlings with mycorrhizal fungi prior to planting.	1 Exotic, invasive species (white pine blister rust) 2. Fire and fire suppression	Ongoing
Whitebark pine	3	Protect and, where feasible, increase the number and extent of existing stands and of blister rust resistant individuals through habitat management and restoration.	1. Restore WBP habitat (e.g., using prescribed fire and mechanical thinning) to a degree that will allow the persistence or expansion of existing stands and the potential for generation of new stands. Target 2 hectares by 2019, and continue beyond as resources are available and based on priority areas for restoration need. 2. Mitigate threats in priority high value stands.	1. Fire and fire suppression 2. Problematic native species (mountain pine beetle)	Ongoing

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed	Timeline
Woodland caribou	4	Work with partners to determine next steps for augmentation of the Jasper/Banff Local Population Unit in Jasper National Park, and investigate the feasibility of re-introduction within the historic range in Banff National Park. Prioritize actions based on assessment of conditions including predator-prey dynamics, predation risk, and translocation recovery priority of other caribou populations (e.g., British Columbia).	Increasing population trend for one subpopulation in the short-term and other subpopulations to follow. Over the long term, the Local Population Unit is self-sustaining.	Small population effects	2016-2021
Woodland caribou	5	Manage forests near caribou range to maintain and/or increase caribou habitat quality and availability. Reduce the impact of wildfire on caribou habitat through fire management planning.	Managed fire maintains dynamic forest mosaic ensuring adequate abundance of old forest and predator-prey dynamic conducive to caribou recovery.	1.Habitat loss 2. Altered predator-prey dynamics.	Ongoing
Woodland caribou	6	Reduce threat of predator access to high quality caribou habitat by managing extent and timing of human activities.	Maintain safe and secure high quality habitat, without human-facilitated predator access.	1. Direct disturbance 2.Facilitated predator access	Ongoing
Woodland caribou	7	Implement guidelines for aircraft flying over caribou habitat to reduce disturbance.	Direct disturbance to caribou is minimized.	Direct disturbance	Ongoing
Woodland caribou	8	Reduce highway-caused mortality.	Caribou road mortality remains at current, low levels.	Small population effects	Ongoing

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed	Timeline
Woodland caribou	9	Continue communication activities delivered as part ongoing efforts to communicate and raise general awareness about woodland caribou.	Increased awareness about this species among Canadians and maintain public support for the implementation of caribou conservation actions.	1.Facilitated predator access 2. Direct disturbance 3. Habitat loss 4. Small population effects	2016-2021
Common nighthawk	10	Implement measures (e.g. best management practices, seasonal closures if required) to protect known nest sites and known nesting habitat from destruction or disturbance.	Individuals are protected from direct disturbance during the breeding season.	1.Direct disturbance 2.Habitat destruction	Ongoing.
Haller's apple moss	11	Implement fire and trampling protection measures for the two known populations.	Reduce fire and trampling threats to populations	1.Trampling/dislodgement, 2.Fire	2021
Whitebark pine, woodland caribou, common nighthawk, olive-sided flycatcher	12	Implement prescribed fire for species at risk.	Increase the number of species at risk targeted burns with the goal of implementing at least two every 5 years.	Habitat loss	2016-2021
Woodland caribou	13	Develop an elk and deer management strategy and continue implementing actions to address unnatural ungulate distribution and abundance; continue to monitor predator-prey populations and distribution.	Predator-prey processes and densities within and adjacent to caribou range are understood, and are at levels conducive to caribou recovery, as identified in critical habitat requirements.	Altered predator-prey dynamics	Ongoing
All species in plan	14	Maintain law enforcement patrols to prevent disturbance, destruction or removal of species at risk and their habitats.	Law enforcement capability is maintained to prevent disturbance to species at risk and associated habitat.	1.Disturbance or harm 2.Habitat loss.	Ongoing

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed	Timeline
<b>Disease Management</b>					
Little brown bat & northern myotis	15	Limit spread of white-nose syndrome by sharing protocols (such as the Canadian National White-Nose Syndrome Decontamination Protocol) for cave researchers, and maintaining access restrictions, to protect bats and their residences.	<ol style="list-style-type: none"> <li>1. Limit human caused spread of WNS through awareness, enforcement of restricted access, and implementation of decontamination protocols and BMPs for researchers and cavers.</li> <li>2. Establish best practices for Parks Canada staff and Park stakeholders to address maintenance of infrastructure that contains roosts.</li> </ol>	<ol style="list-style-type: none"> <li>1. Disturbance or harm</li> <li>2. Exotic, invasive species (WNS).</li> </ol>	2017-2021
<b>Fill Knowledge Gaps</b>					
Little brown bat & northern myotis	16	Compile existing data and knowledge using a GIS to identify and prioritize sites that have a high potential to be hibernacula or maternity colonies. As resources are available and based on priority, sample sites to determine their significance.	Status (presence/non-detection of bats) has been determined for known hibernacula and maternity colony caves and roosts during first 5 year reporting period.	<ol style="list-style-type: none"> <li>1. Disturbance or harm;</li> <li>2. Exotic Invasive species (WNS).</li> </ol>	2016-2021
Woodland caribou	17	Adopt non-invasive census techniques for population monitoring.	Use DNA scat surveys for population monitoring in place of collar-based methods.	Direct disturbance	By 2016
Whitebark pine	18	Complete predictive habitat model and map of whitebark pine distribution for the Park. Where stand assessments are completed, they include aspects of stand health (i.e., rust presence/absence and stand density).	<ol style="list-style-type: none"> <li>1. Predictive map of whitebark pine distribution for the Park.</li> <li>2. Assessed high-value stands in high risk areas.</li> <li>3. Data inform targeted and efficient management and recovery.</li> </ol>	<ol style="list-style-type: none"> <li>1. Exotic, invasive species (white pine blister rust)</li> <li>2. Problematic native species (mountain pine beetle)</li> <li>3. Fire and fire suppression</li> </ol>	2016-2021

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed	Timeline
Common nighthawk	19	Identify breeding and nesting sites opportunistically, targeting high probability sites, and encourage the public to share observations.	Knowledge of species distribution and, in particular, nesting areas informs Park management.	1.Direct disturbance 2.Destruction of important habitat	2016-2021
<b>Working Together</b>					
Little brown bat & northern myotis	20	Adopt best practices for the maintenance or decommissioning of JNP infrastructure that contain little brown and/or northern myotis roosts. Work with partners and community to protect important bat sites in buildings.	Important roosts identified in infrastructure requiring maintenance and impacts are mitigated.	1.Disturbance or harm 2.Destruction of hibernacula and roosts	2017-2021
Little brown bat & northern myotis	21	Implement communication actions aimed at preventing disturbance, disease transmission and potential human-caused mortality.	Raise knowledge and awareness about this species among priority audiences; support an integrated approach towards increased compliance to prevent habitat degradation and human-caused mortality.	1.Disturbance or harm 2.Destruction of hibernacula and roosts 3.Exotic Invasive species (WNS)	2016-2021
Woodland caribou	22	Collaborate with Alberta government in developing the range plan for the A La Peche herd, including maintaining habitat condition that supports connectivity / migration for this population.	Range plan completed for A La Peche	1.Direct disturbance, 2.Facilitated predator access 3.Altered predator-prey dynamics 4.Direct loss of caribou habitat	Ongoing
Whitebark pine	23	Continue communication activities aimed at awareness of, and reducing human-caused impacts on, whitebark pine as outlined in the Whitebark Pine Conservation and Restoration Project.	Increased awareness about this species among priority audiences; Reduction of accidental harm/removal of whitebark pine trees.	Harm individuals	2016-2021

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed	Timeline
All species in plan	24	Work with adjacent land management agencies, government scientists and Indigenous communities to improve understanding and knowledge of populations of species at risk, and to increase the level of recovery of species occurring across Park boundaries within multiple jurisdictions.	Increased coordination of recovery actions for species occurring across Jasper National Park boundaries within multiple jurisdictions.	This will be specific to the species.	On-going
All species in plan	25	Increase general awareness about species at risk that are found in the Park, through interpretive programming, targeted communications, stakeholder engagement and outreach.	Increased support and action for species at risk conservation and associated management activities. Priority audiences, including park visitors, youth, urban and new Canadians, learn about species at risk found in the Park.	This will be specific to the species knowledge gap or outreach, education and visitor experience action.	2016-2021
All species in plan	26	Explore the interests of various Indigenous communities in Species at Risk education and recovery. Collaborate with interested communities on recovery, incorporating Traditional Knowledge, outreach, education, ceremonies and visitor experience actions in mutually agreed upon ways.	Increased Indigenous community involvement in the delivery of species at risk recovery, outreach, education, ceremonial and visitor experience actions including incorporating Indigenous Traditional Knowledge to fill species knowledge gaps.	This will be specific to the species knowledge gap or outreach, education and visitor experience action.	2016-2021

## Appendix C: Effects on the environment and other species

A strategic environmental assessment (SEA) is conducted on all SARA recovery planning documents, in accordance with the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals. The purpose of a SEA is to incorporate environmental considerations into the development of public policies, plans, and program proposals to support environmentally sound decision-making and to evaluate whether the outcomes of a recovery planning document could affect any component of the environment or achievement of any of the [Federal Sustainable Development Strategy](#)'s<sup>4</sup> goals and targets.

Recovery planning is intended to benefit species at risk and biodiversity in general. However, it is recognized that recovery actions may also inadvertently lead to environmental effects beyond the intended benefits. The planning process, which is based on national guidelines, directly incorporates consideration of all environmental effects, with a particular focus on possible impacts upon non-target species or habitats. The results of the SEA are incorporated directly into the plan itself, and are summarized below.

Overall, it is anticipated that implementation of this action plan will have a beneficial impact on non-target species, ecological processes, and the environment in JNP. This plan puts into practice recovery goals presented in recovery strategies already developed for some of the species at risk in this plan, which were subject to SEAs during the development of those documents. Further, this action plan was developed to benefit all species at risk that regularly occur in JNP and ; all of these species were considered in the planning process, any potential secondary effects were considered and mitigated, and where appropriate, measures were designed to benefit multiple species. The planning process was also guided by priorities identified in the Park's ecological integrity monitoring program and the Park's management plan (Parks Canada, 2010). Consequently activities outlined in this plan address key management priorities aimed at improving the broader ecological health of both sites. Finally, this plan outlines stewardship actions, educational programs, and awareness initiatives that will involve visitors, local residents, Indigenous organizations, and the general public. This will lead to greater appreciation, understanding, and action towards the conservation and recovery of species at risk in general.

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<sup>4</sup> [www.ec.gc.ca/dd-sd/default.asp?lang=En&n=F93CD795-1](http://www.ec.gc.ca/dd-sd/default.asp?lang=En&n=F93CD795-1)