Species at Risk Act
Action Plan Series

Multi-species Action Plan for Waterton Lakes National Park of Canada and Bar U Ranch National Historic Site of 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[1].

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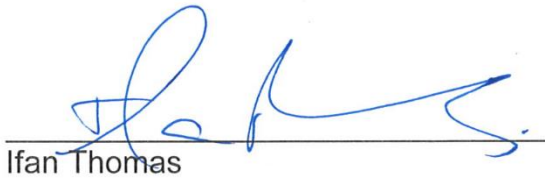
[1] http://sararegistry.gc.ca/default.asp?lang=En&n=24F7211B-1

Recommendation and 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.

Recommended by:



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Preface

The federal, provincial, and territorial government signatories under the Accord for the Protection of Species at Risk (1996)[2] 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 Waterton Lakes National Park (WLNP) and the Bar U Ranch National Historic Site (BURNHS) of Canada and has prepared this action plan to implement the recovery strategies as they apply to the park and the BURNHS, as per section 47 of SARA. It has been prepared in cooperation with Environment and Climate Change Canada and the province of 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 are extended to those who contributed to the content of this plan and especially those who provided input and perspectives during the site analysis workshop in February 2015.

[2] www.ec.gc.ca/media_archive/press/2001/010919_b_e.htm

Executive summary

The Multi-species Action Plan for Waterton Lakes National Park of Canada and the Bar U Ranch National Historic Site of Canada applies to lands and waters occurring within the boundaries of the two sites: Waterton Lakes National Park of Canada (WLNP) and the Bar U Ranch National Historic Site of Canada (BURNHS). The plan meets the requirements for action plans set out in the Species At Risk Act (SARA (s.47)) for species requiring an action plan and that regularly occur in these sites. Measures described in this plan will also provide benefits for other species of conservation concern that regularly occur at WLNP and at BURNHS.

Where it has been determined that the sites can conduct management activities to help recover and/or manage a species, site-specific objectives are identified in this plan and represent the site's contribution to objectives presented in federal recovery strategies and management plans. 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. Additional measures that will contribute to the survival and recovery of the species at the sites are described in this plan. 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 at each site. Population monitoring measures are also identified for the species for which management activities at the sites can contribute to recovery.

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 WLNP or BURNHS. Direct costs of implementing this action plan will be borne by Parks Canada. Indirect costs are expected to be minimal, while benefits will include positive impacts on ecological integrity, greater awareness and appreciation of the value of biodiversity to Canadians, and opportunities for engagement of local communities and Indigenous groups.

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1. Context

Canada's national parks and national historic sites protect a country-wide system of representative natural areas and cultural sites of National significance. The Parks Canada Agency (PCA) is responsible for managing these special places for the benefit, education and enjoyment of Canadians, 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 and national historic sites, 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 wildlife and plant species at risk 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 park visitors, neighbouring landowners, businesses, local residents and other Canadians.

Waterton Lakes National Park (WLNP) is 505 km^2 in size and is located in the southwestern corner of Alberta (Figure 1). WLNP forms part of the Waterton-Glacier International Peace Park, which is a designated UNESCO World Heritage Site due to its significant ecological, scenic and cultural values. WLNP also represents the core of the Waterton Biosphere Reserve and is part of the Crown of the Continent ecosystem, an area internationally recognized for its biodiversity, pristine mountain landscapes, important wildlife movement corridors and headwaters that drain into three oceans.

Due to its abrupt mountain and prairie interface, the park supports a high diversity of flora and fauna, including many species at risk. Four ecoregions - foothills parkland, montane, subalpine and alpine – are represented within WLNP boundaries in the Montane Cordillera ecozone. Neighbouring private and public lands are managed for cattle grazing, conservation and resource extraction by a variety of federal, provincial and local government agencies, private landowners, non-government conservation organizations, and the Kainai First Nation.

The park was established in 1895, initially protected by the federal government as a Forest Park Reserve, primarily at the urging of local ranchers. The park's namesake lakes were named by Lieutenant Blakiston (a member of the Palliser Expedition), to honour a British naturalist, Squire Charles Waterton (1782-1865).

The health and viability of Kainai First Nation and Piikani First Nation (both members of the Blackfoot Confederacy), their places of cultural and spiritual significance, and economic opportunities, are inextricably linked to the health of their surrounding traditional lands and waters, which include WLNP. Many shared interests exist between these First Nations and Parks Canada, including the protection of natural and cultural heritage and the desire to build appreciation of the natural and cultural resources and to share this knowledge.

As well as being responsible for WLNP, the Field Unit Superintendent for the Waterton Lakes Field Unit is responsible for the Bar U Ranch National Historic Site (BURNHS). Recognizing that the Bar U Ranch's long history provided an excellent opportunity to commemorate Canada's ranching heritage, Parks Canada acquired 148.43 hectares (367 acres), including the ranch's headquarters area, in 1991. It is located within the Prairie ecozone and consists of foothills parkland and foothills fescue ecoregions. A portion of Pekisko Creek flows through it. The Bar U Ranch was one of a small group of large, corporate ranches in western Canada. Established in 1882, it was one of the foremost ranching operations in Canada, including North America's largest Percheron horse breeding program. Today's national historic site features the original ranch headquarters, consisting of 35 historic structures, as well as a modern visitor orientation centre.

Flora and fauna have not been extensively surveyed at BURNHS. Recovery measures included in this plan target known species at risk. Surveys will be conducted in an effort to identify any others present.

Maintenance and restoration of ecological integrity is the first priority of national 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 Site 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 comprehensive, scientifically rigorous ecological integrity monitoring and restoration programs that are organized according to the major ecosystems present in the park. Parks Canada's ecological integrity programs make contributions 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 maintaining and improving ecological integrity at both sites by improving the conservation status of native species and their habitat and maintaining biodiversity.

A number of federal and provincial recovery strategies and plans, management plans, and action plans have been prepared for species considered in this action plan,

including Bolander`s quillwort, half-moon hairstreak, common nighthawk, Lewis`s woodpecker, westslope cutthroat trout (AB population), olive-sided flycatcher, whitebark pine, and little brown myotis. Along with status assessments, those documents provide guidance for the recovery of individual species, including strategic directions, 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 WLNP (Figure 1). The scope also includes all lands and waters within the boundaries of the BURNHS, and that are administered by the Parks Canada Agency as federal properties under the authority of the Federal Real Property and Federal Immovables Act (Figure 2). This multi-species action plan has been written specifically for WLNP and BURNHS because PCA is legally responsible for species at risk on PCA lands and waters, has the ability to take direct conservation action, and deal with threats, legislation, and management priorities related to these lands. 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.

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 six species: Bolander`s quillwort, half-moon hairstreak, common nighthawk, Lewis`s woodpecker, westslope cutthroat trout (AB population), and olive-sided flycatcher. This action plan is also consistent with current direction in the proposed recovery strategies for little brown myotis and whitebark pine.

This action plan addresses SARA-listed species that regularly occur in WLNP and BURNHS which require an action plan under SARA (s.47) and for which Parks Canada management actions can contribute to the species' conservation, as well as other species of conservation concern (Tables 1 and 2). This approach both responds to the legislated requirements of the SARA and provides the Parks Canada Agency with a comprehensive plan for species conservation and recovery at these sites. The plan will be amended as required, or additional plans will be prepared, to meet SARA requirements for action planning.

2. Site-based population and distribution objectives

The potential for PCA to undertake management actions at the sites that will contribute to the recovery of each species was assessed. Site-specific population and distribution objectives were developed (Appendices A and B) to identify the contribution that the site can make towards achieving the national objectives presented in federal recovery strategies and management plans. Because they are directly linked to the site-based population and distribution objectives, monitoring activities are reported in Appendices A

and B rather than in the tables of recovery measures (Appendices C and D). If there is little opportunity for the site to contribute to the recovery of a species, site-specific objectives and conservation measures may be limited to protection measures in place under the Canada National Parks Act and SARA, population monitoring, habitat maintenance and restoration through the existing management regimes at the site. For many species, population and distribution objectives for WLNP or BURNHS are not meaningful at the scale of this action plan for various reasons, including 1) threats cannot be controlled in or do not exist in the park/site (e.g., wide-spread disease, loss of overwintering habitat elsewhere); 2) species is only transient; 3) population within the site is a very small part of the Canadian distribution or is unknown or unconfirmed.

3. Conservation and recovery measures

Waterton Lakes National Park and BURNHS are vital components of the unique, biologically and culturally diverse landscape of the internationally-recognized Crown of the Continent Ecosystem. Since the early 1970s, WLNP has worked with partners and volunteers to improve the ecological health of the park, and increase opportunities to support the recovery of many of these species. The broad visitor base of the park provides opportunities to engage and connect with Canadians and get them involved in species recovery; to draw upon citizen science, volunteers and partnerships. Academic interest in the park has meant a consistent source of research and studies which support enhanced management and restoration efforts. Visitor and park/site operation facilities have been designed and continuously improved to provide meaningful experiences while protecting park/site habitats and species.

The action planning process identified measures to achieve the site-based population and distribution objectives, along with measures required to protect the species and learn more about them. The process of determining which measures will be conducted by the park/site and which measures will be encouraged through partnerships or when additional resources come available (shown in Appendices C & D) involved a prioritization process. The process primarily considered ecological effectiveness of measures, and also included consideration of opportunities to increase the value of visitor experience to the park, opportunities to increase awareness through external relations, and budgetary opportunities and constraints. Wherever possible, Parks Canada is taking an ecosystem approach, prioritizing actions that benefit numerous species at once to effectively and efficiently protect and recover populations of species at risk.

Four themes emerge from these measures: 1) Active Restoration; 2) Invasive Species Management; 3) Forging Partnerships; and 4) Filling Knowledge Gaps. The recovery measures described in this action plan are organized according to these themes.

Active restoration

Restoration and protection of habitats and populations are key activities for the conservation and recovery of species at risk. WLNP and BURNHS will continue to

actively restore species at risk. Active restoration measures will include managing visitor activity within Bolander's quillwort Critical Habitat, implementing prescribed burn plans

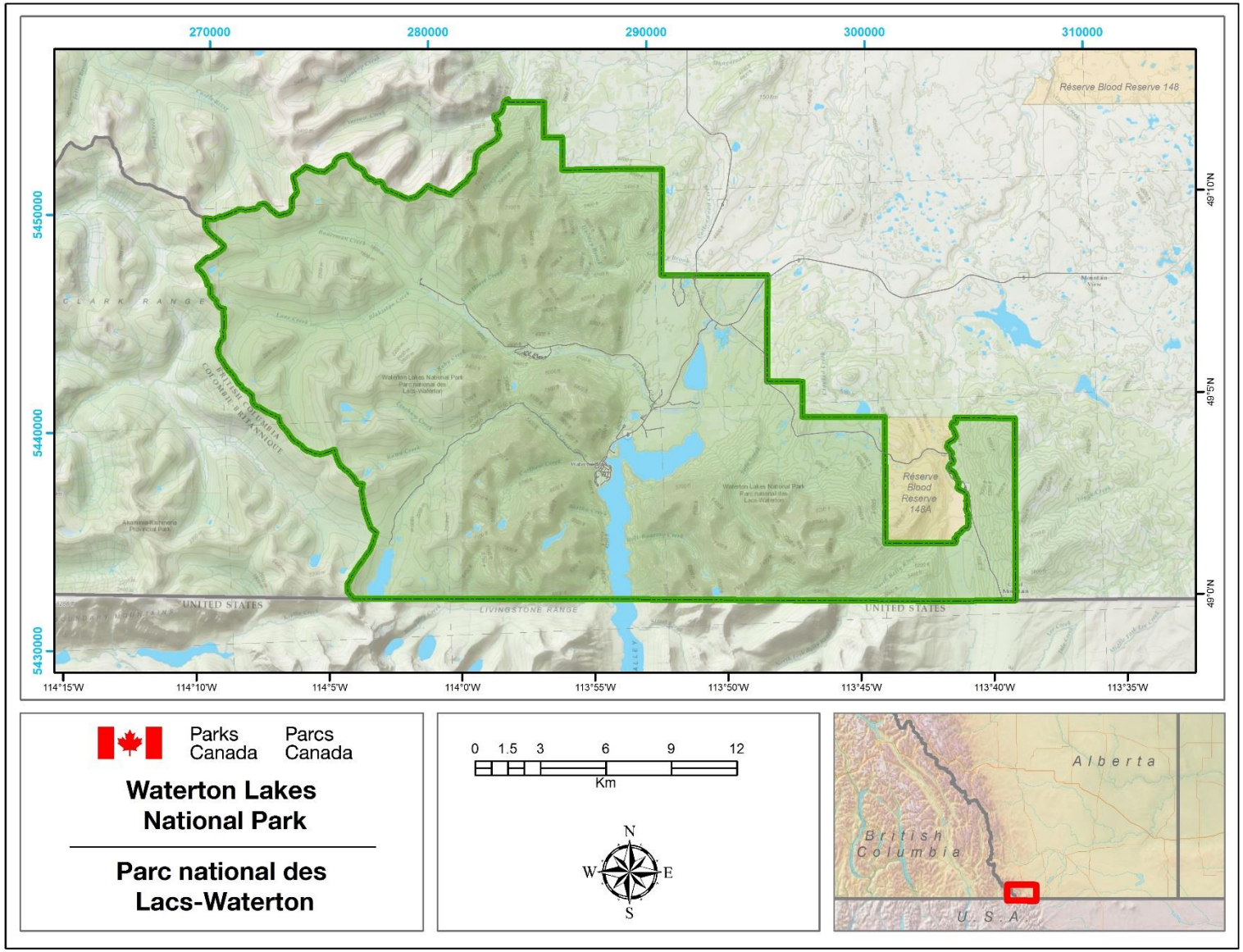

Figure 1. Map showing Waterton Lakes National Park of Canada.

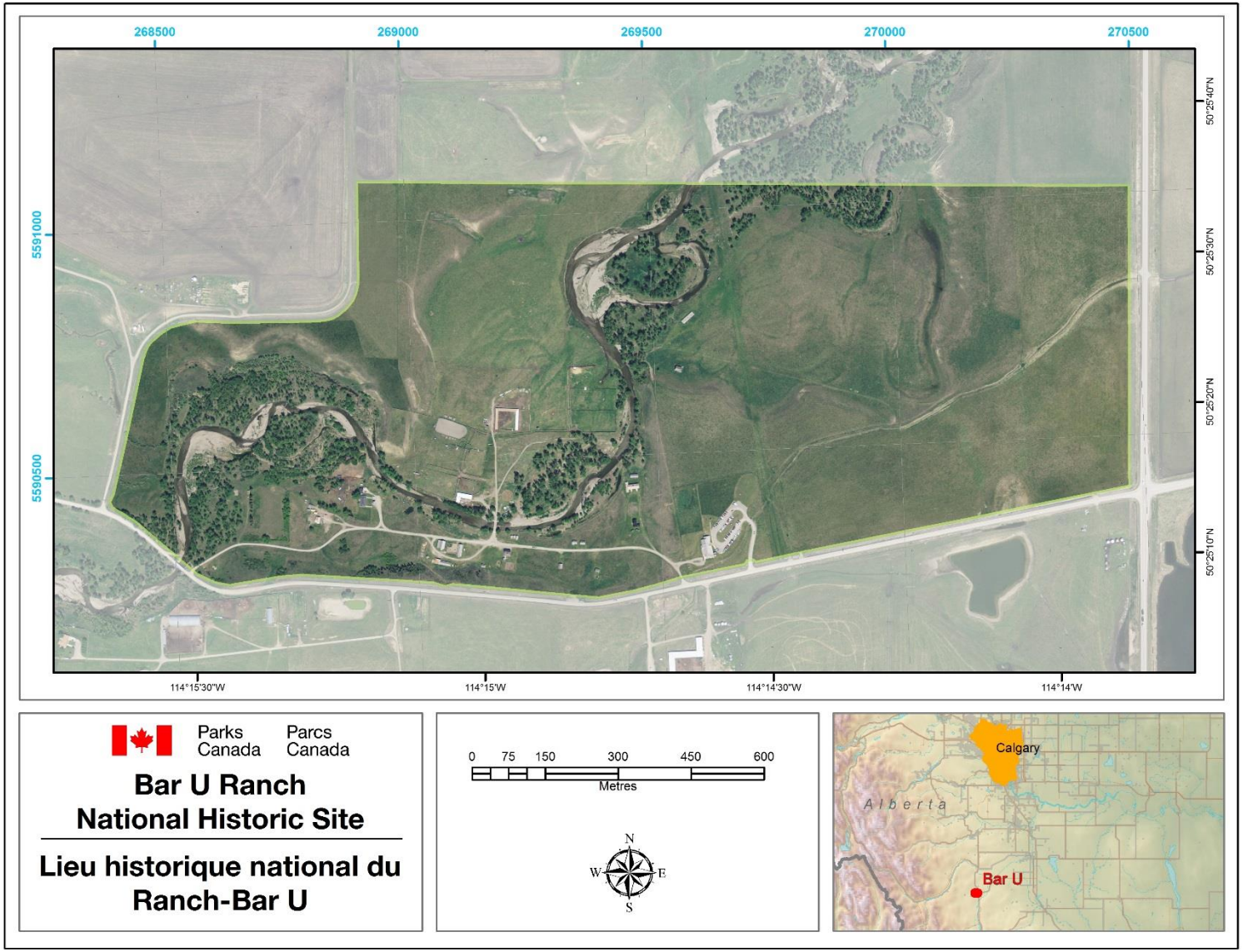

Figure 2. Map showing Bar U Ranch National Historic Site of Canada.

Table 1. Species included in the action plan for Waterton Lakes National Park (status as of January 1, 2016).

Species	Scientific Name	COSEWIC Status	SARA Schedule 1 Status	Provincial Status
Bolander's Quillwort	*Isoetes bolanderi*	Threatened	Threatened	
Common Nighthawk	*Chordeiles minor*	Threatened	Threatened	
Half-moon Hairstreak	*Satyrium semiluna*	Endangered	Endangered	
Lewis's Woodpecker	*Melanerpes lewis*	Threatened	Threatened	
Little Brown Myotis	*Myotis lucifugus*	Endangered	Endangered	Data Deficient
Olive-sided Flycatcher	*Contopus cooperi*	Threatened	Threatened	
Westslope Cutthroat Trout	*Oncorhynchus clarkii lewisi*	Threatened	Threatened	Threatened
Whitebark Pine	*Pinus albicaulis*	Endangered	Endangered	Endangered
Northern Leopard Frog	*Lithobates pipiens*	Special Concern	Special Concern	Threatened
Plains Bison	*Bison bison bison*	Threatened	Not Listed	
Bull Trout	*Salvelinus confluentus*	Threatened	Not Listed	Threatened
Grizzly Bear	*Ursus arctos*	Special Concern	Not Listed	Threatened
Limber Pine	*Pinus flexilis*	Endangered	Not Listed	Endangered
Western Bumble Bee	*Bombus occidentalis occidentalis*	Threatened	Not Listed	
Long-toed Salamander	*Ambystoma macrodactylum*	Not At Risk	Not Listed	Special Concern

Table 2. Species included in the action plan for the Bar U Ranch National Historic Site (status as of January 1, 2016).

Species	Scientific Name	COSEWIC Status	SARA Schedule 1 Status	Provincial Status
Little Brown Myotis	*Myotis lucifugus*	Endangered	Endangered	Data Deficient
Westslope Cutthroat Trout	*Oncorhynchus clarkii lewisi*	Threatened	Threatened	Threatened
Bull Trout	*Salvelinus confluentus*	Threatened	Not Listed	Threatened

to maintain open grasslands and forests for species such as common nighthawk and whitebark pine, assessing candidate site suitability and feasibility for conservation and restoration of genetically pure westslope cutthroat trout and bull trout, and completing various efforts aimed at improving whitebark pine and limber pine recovery. In addition, efforts will continue to re-establish a self-sustaining northern leopard frog population in WLNP and to mitigate roadway mortality of long-toed salamanders near Linnet Lake through the existing directional fence and under-road tunnel system.

Invasive species management

Waterton Lakes National Park and BURNHS will continue to pursue invasive species management projects, both as a means of restoring balance to site ecosystems (a priority in the park and site management plans) and as a contribution to global research on invasive species management and long-term prospects for ecosystem restoration. Waterton Lakes National Park will carry on with its innovative invasive plant inventory and control program to maintain SAR habitat; an invasive plant management plan will be prepared for BURNHS. Pesticide best management practices will be developed and implemented to reduce impacts on aerial insectivores such as common nighthawk and little brown myotis, and on insects such as half-moon hairstreak. Research will assess effects of spotted knapweed invasion and control efforts on half-moon hairstreak habitat. The threat of white-nose syndrome to little brown myotis will be addressed through increased awareness and establishment of best management practices. Further research will determine distribution of native westslope cutthroat trout and bull trout versus non-native trout in WLNP and BURNHS waterbodies.

Forging partnerships

Effective collaborations are key to the success of this multi-species action plan. Species at risk recovery will be strengthened by working with Indigenous partners to incorporate Traditional Knowledge, and explore potential collaboration on SAR education and recovery. Increasing general species at risk awareness and species-specific communications via visitor experience and outreach opportunities with priority audiences will improve support and action toward conservation and management activities.

Waterton Lakes National Park will continue to actively support partners such as the Waterton Biosphere Reserve Association in reducing grizzly bear-human conflicts on neighbouring private lands. With Indigenous partners and others, Parks Canada will continue to explore the Iinnii Initiative: a proposal to restore free-roaming bison in the transboundary region of Montana and Alberta. Cooperative partnerships will be pursued with other agencies, industry and stewardship groups toward westslope cutthroat trout and bull trout management and restoration efforts.

Filling knowledge gaps

Research and assessments are needed to fill gaps in the knowledge base and build programs for some species at risk. Many of these measures will benefit from the opportunity to work with citizen scientists and other partners. Various surveys for Lewis’s woodpecker, common nighthawk, little brown myotis and western bumble bee

will be conducted to inform park/site management. Whitebark pine and limber pine stand assessments and habitat models and maps will facilitate targeted and efficient management and recovery of those 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)). Critical habitat within WLNP/BURNHS that is identified in other recovery documents will be legally protected from destruction as per section 58 of the SARA. As of January 2016, it is not possible to identify any additional critical habitat in WLNP and BURNHS. Critical habitat has already been identified in WLNP in recovery strategies for Bolander's Quillwort, Half-moon Hairstreak and Whitebark pine. Where critical habitat identification is not complete, it will be identified in an upcoming or revised action plan or recovery strategy. Refer to the schedule of studies in relevant recovery strategies for further details.

4.1. Proposed measures to protect critical habitat

There is no new critical habitat identified in this action plan. Critical habitat within WLNP and BURNHS that is identified in other recovery documents will be legally protected from destruction as per Section 58 (1) of the SARA.

In managing species at risk and their critical habitat within national parks, Parks Canada abides by the SARA s.32, 33, 58 and 80 prohibitions, and the s.73 and 74 conditions for permitting activities. For example, SARA requirements are incorporated into the Agency's Environmental Impact Assessment process.

5. Evaluation of socio-economic costs and 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 total cost to implement the action plan will be borne by Parks Canada out of existing salaries and goods and services dollars. This includes incremental salary costs, materials, equipment, and contracting of professional services for measures outlined in Appendices C and D. No major socio-economic costs to partners, stakeholders or Indigenous groups are expected as a result of this action plan. Additional resources or partnerships will be sought to support the measures noted in Appendix D.

Many of the proposed measures will be integrated into the operational management of the sites and there will be relatively few new costs. These costs to the government will be covered by prioritization of existing funds and salary dollars at the site and thereby will not result in additional costs to society.

The action plan applies only to lands and waters in WLNP and BURNHS, and does not bring any restrictions to land use outside the sites. As such, this action plan will place no direct socio-economic costs on the public. However, minor restrictions may be placed on visitor activities on park/site lands and waters to protect and recover species at risk.

5.2. Benefits

Measures presented in this action plan for WLNP and BURNHS will contribute to meeting recovery strategy objectives for threatened and endangered species, and will also contribute to meeting management objectives for species of special concern. 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. This action plan includes measures that could result in benefits to Canadians, such as positive impacts on biodiversity and the value individuals place on preserving biodiversity.

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., managing visitor activity within Bolander's quillwort critical habitat, combined with ongoing research and monitoring), active management (e.g., prescribed burning, invasive plant management), 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 these sites cannot be easily quantified, as many of the values derived from wildlife are non-market commodities that are difficult to appraise in financial terms. Flora and fauna, in all their forms, have value in and of themselves, and are valued by Canadians for aesthetic, cultural, spiritual, recreational, educational, historical, economic, medical, ecological and scientific reasons. The conservation of flora and fauna 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. Wildlife viewing and appreciation of wildflowers and related species are very popular activities in WLNP; local wildflower and wildlife festivals held annually raise awareness of conservation challenges, engage participation in recovery measures, and benefit local tourism operators and other businesses.

Implementing this action plan is expected to have positive benefits for park/site 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 SAR 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 species at risk, opportunities for visitors and local communities to be involved in conservation issues, opportunities for integration of Indigenous Traditional Knowledge into conservation issues in WLNP and BURNHS, and greater awareness of Indigenous values and culture among local residents and visitors

to the park/site. In doing so the plan supports the goals under the Species at Risk Act "the traditional knowledge of the aboriginal 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 listed in Appendix C. 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.

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Appendix A: Species information, objectives and monitoring plans for Species at Risk Act endangered and threatened species in WLNP and BURNHS.

Species	National objectives[3]	Site-based population & distribution objectives	Population trend in WLNP[4]	Population monitoring[5]	General information and broad park/site approach
Bolander's Quillwort	Maintain the three self-sustaining populations (Summit Lake, Upper and Lower Boundary Creek Ponds) and, if feasible, restore the extirpated Carthew population.	Maintain the three self-sustaining populations (Summit Lake, Upper and Lower Boundary Creek Ponds) and, if feasible and appropriate, restore the possibly extirpated Carthew population.	Stable	Repeat Smith and Bradley (2008) methods every 5 years (next in 2018) to determine each population's status and trend.	WLNP is the only known location where Bolander's quillwort occurs in Canada. Recovery measures identified in this multi-species action plan are high priority recovery strategy items that WLNP is committed to implementing prior to 2021. Other, lower priority recovery actions will be implemented as resources become available.
Common Nighthawk	From the National Recovery Strategy: 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 WLNP.	Unknown	Conduct crepuscular surveys in historically occupied and other potential habitats, and record opportunistic observations.	Common nighthawks are known to occur in three general areas within WLNP. Nesting has been confirmed. Focus is on protecting and maintaining existing habitat.

[3] From finalized national recovery strategies unless otherwise indicated.
[4] Population trend is from 2009-2014.
[5] Where population and distribution objectives have been established for WLNP/BURNHS, monitoring is designed to directly measure success in achieving those goals.

Species	National objectives[3]	Site-based population & distribution objectives	Population trend in WLNP[4]	Population monitoring[5]	General information and broad park/site approach
Half-moon Hairstreak	From the Proposed National Recovery Strategy: To ensure the persistence of half-moon hairstreak at all known extant locations (and any new locations) within the species' range in Canada.	To ensure the persistence of half-moon hairstreak at its known location within WLNP.	Unknown	Half-moon hairstreak adult population size index and trend based on Kondla (2009).	Surveys have been completed at other potential habitats within and surrounding WLNP; no occurrences beyond the Blakiston Fan area have been recorded to date. The species is a priority consideration in management of a long-term infestation of spotted knapweed on the Blakiston Fan.
Lewis's Woodpecker	From the Proposed National Recovery Strategy: Increase breeding population of Lewis's woodpeckers to 600 pairs by 2040.	Maintain appropriate habitats for Lewis's woodpecker breeding within WLNP.	Unknown.	Opportunistically record observations and conduct targeted surveys in historically occupied and other potential habitats.	WLNP is located at the eastern periphery of the species' range. Observations have been intermittent since the 1970s and are typically pairs. Breeding has not been confirmed but is possible. The WLNP prescribed burning program positively influences potential Lewis's woodpecker habitat.

Species	National objectives[3]	Site-based population & distribution objectives	Population trend in WLNP[4]	Population monitoring[5]	General information and broad park/site approach
Little Brown Myotis	From the Proposed National Recovery Strategy: To maintain (or where applicable restore to) the pre-White Nose Syndrome (WNS) extent of occurrence (the area that encompasses the known geographic distribution of the species in Canada). Within areas not yet affected by WNS, the population objective is to maintain (and where feasible increase) the population at its current level.	Maintain little brown myotis occupancy and extent of distribution in WLNP and BURNHS.	Unknown	Use the North American Bat Monitoring Protocol (NABat) and opportunistic observations to monitor species occurrence at established monitoring sites, roosting sites, hibernacula and flyways in natural areas and human structures. Monitor these sites to detect any changes.	Little brown myotis is known to occupy several human habitations in WLNP and BURNHS. Extent of occurrence in natural habitats is not well known. WNS has not yet spread to WLNP or BURNHS.
Olive-sided Flycatcher	Short term: To halt the national decline by 2025 while ensuring that the population does not decrease more than 10% over this time. Long term (after 2025): To ensure a positive 10-year population trend. Distribution objective is to maintain the current extent of occurrence in Canada.	Maintain olive-sided flycatcher occupancy and extent of distribution in WLNP.	Unknown	1. Continue annual bioacoustic bird monitoring surveys within montane and subalpine habitats. 2. Conduct olive-sided flycatcher-specific surveys in potentially suitable habitats. 3. Collect and compile incidental observations, including those found on external databases such as eBird.	Olive-sided flycatcher occurs in montane and subalpine habitats in various portions of WLNP. The species is readily-identifiable by its characteristic breeding song. The WLNP prescribed fire management program has potential to enhance olive-sided flycatcher habitats, targeting mature conifer stands near meadows and riparian areas.

Species	National objectives[3]	Site-based population & distribution objectives	Population trend in WLNP[4]	Population monitoring[5]	General information and broad park/site approach
Westslope Cutthroat Trout - Alberta population	Protect and maintain the existing ≥ 0.99 pure populations at self-sustaining levels, and re-establish additional pure populations to self-sustaining levels, within the species' original distribution in Alberta.	1. Protect and maintain at self-sustaining levels any existing ≥ 0.99 pure populations within WLNP which genetic testing confirms are of westslope subspecies. 2. Where feasible, re-establish and maintain at self-sustaining levels pure populations of westslope cutthroat trout within their historical range in WLNP that recognizes diversity of life history strategies in Alberta.	Unknown	Determine subspecies and genetic purity of existing and reestablished cutthroat trout populations.	Subspecies of two genetically pure WLNP cutthroat trout populations are in the process of being confirmed. However, westslope cutthroat trout are expected to have been extirpated from the majority of their historic range within WLNP. Potential conservation and restoration measures for westslope cutthroat trout in WLNP may be limited by geographic features and range overlap with bull trout. Westslope cutthroat trout are known to utilize the portion of Pekisko Creek that flows through BURNHS; genetic purity of that population is uncertain.
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.	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 WLNP.	1. Disease infection, stand density and mortality rate via stand health transects. 2. Hectares of habitat created or restored. 3. Number of potentially resistant trees identified and protected and number of these with stored seeds. 4. If fire is applied, the amount of regeneration 5-years post-fire. 5. Conduct annual Clark's nutcracker surveys in conjunction with the Whitebark Pine Ecosystem Foundation.	1. Assess stands to identify trees that are potentially resistant to white pine blister rust. 2. Collect and conserve seeds from potential blister rust resistant trees; test for resistance; plant resistant trees. 3. Forest management practices such as prescribed burning, thinning and wildfire impact mitigation can be used to protect and restore habitat.

Appendix B: Species information, objectives and monitoring plans for other species at risk in WLNP and BURNHS.

Species	National objectives[6]	Site-based population & distribution objectives	Population trend in WLNP[7]	Population monitoring[8]	General information and broad park/site approach
Bull Trout - Saskatchewan-Nelson Population	From the 2012-2017 Alberta Conservation Management Plan: To restore and maintain viable, self-sustaining bull trout populations throughout the majority of the species' historic range in the province, and to once again provide some measure of harvest opportunity for the species.	1. Protect and maintain existing pure bull trout populations within WLNP at self-sustaining levels. 2. Where feasible, re-establish and maintain pure bull trout populations in sites within their historical range in WLNP that recognizes diversity of life history strategies in Alberta.	Decreasing	Conduct annual redd counts to determine spawning activity. Measure genetic purity.	Bull trout spawn in headwater streams protected by WLNP. The populations are managed and influenced by multiple jurisdictions. Bull trout are known to utilize the portion of Pekisko Creek that flows through BURNHS.

[6] From finalized national recovery strategies unless otherwise indicated.
[7] Population trend is from 2009-2014.
[8] Where population and distribution objectives have been established for WLNP/BURNHS, monitoring is designed to directly measure success in achieving those goals.

Species	National objectives[6]	Site-based population & distribution objectives	Population trend in WLNP[7]	Population monitoring[8]	General information and broad park/site approach
Grizzly Bear - Western Population	From the Draft 2016 Alberta Grizzly Bear Recovery Plan: The Alberta grizzly bear population in the Recovery Zone is not limited by human-caused mortality, has access to secure habitat, is able to successfully disperse across major road corridors, and that Albertans – in particular those living, working, and recreating in grizzly bear management zones – are supportive of grizzly bear conservation and management activities.	To contribute to the long-term viability of a self-sustaining grizzly bear population in the WLNP region.	Unknown	Continue to participate in regional monitoring efforts as they occur. Partner with Alberta Government on monitoring of BMU 6 as per Alberta Grizzly Bear Recovery Plan.	An important portion of the species' range, WLNP alone is not large enough in area to support a significant grizzly bear population. The population is managed jointly by multiple jurisdictions and a large proportion ranges on private lands within Alberta. With support of the Alberta Government, the Waterton Biosphere Reserve Association has been leading community-based grizzly bear-human conflict reduction measures since 2009. Grizzly bears are not regularly occurring at BURNHS.
Limber Pine	From the 2014-2019 Alberta Recovery Plan: To conserve existing populations and habitat while restoring populations across the species' current and historical provincial range in sufficient numbers to continue functioning in its ecological role.	To establish a self-sustaining, rust-resistant population of limber 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 WLNP.	1. Disease infection, stand density and mortality rate via stand health transects. 2. Hectares of habitat created or restored. 3. Number of potentially resistant trees identified and protected and number of these with stored seeds. 4. If fire is applied, the amount of regeneration 5-years post-fire. 5. Conduct annual Clark's nutcracker surveys in conjunction with the Whitebark Pine Ecosystem Foundation.	1. Assess stands to identify trees that are potentially resistant to white pine blister rust. 2. Collect and conserve seeds from potential blister rust resistant trees; test for resistance; plant resistant trees. 3. Forest management practices such as prescribed burning, thinning and wildfire impact mitigation can be used to protect and restore habitat.

Species	National objectives[6]	Site-based population & distribution objectives	Population trend in WLNP[7]	Population monitoring[8]	General information and broad park/site approach
Long-toed Salamander	From the 2010-2015 Alberta Conservation Management Plan: To maintain distribution and current breeding populations of long-toed salamanders in Alberta.	Maintain occupancy of long-toed salamander at known locations in WLNP.	Decreasing	Species presence at ecological monitoring sites.	Long-toed salamanders occur at most amphibian monitoring sites in WLNP. At Linnet Lake, long-toed salamander roadkill mitigation tunnels and directional fencing were installed in 2009. It serves as a foremost example of roadway mitigation for amphibians in Parks Canada and is well known to park visitors and local residents. The Linnet Lake long-toed salamander population is negatively influenced by naturally occurring predaceous fish; several other populations in WLNP are also impacted by introduced predaceous fish.
Northern Leopard Frog - Western Boreal/Prairie Populations	From the Finalized National Management Plan: To maintain and, where feasible, increase the distribution of the northern leopard frog, Western Boreal/Prairie Populations, by identifying and reducing or eliminating threats to the species and its habitat where possible.	Re-establish one or more self-sustaining northern leopard frog populations in WLNP.	Extirpated from the park since 1980.	Conduct surveys for breeding individuals at reintroduction and/or other suitable sites.	In 2007-2010, Parks Canada attempted northern leopard frog reintroduction in WLNP without sustained success. The Alberta Northern Leopard Frog Recovery Team has determined that approximately 40% of such efforts are successful. A revised effort is underway based on improved understanding of the species' habitat requirements. The Calgary Zoological Society and Waterton Biosphere Reserve Association are collaborators in this effort.

Species	National objectives[6]	Site-based population & distribution objectives	Population trend in WLNP[7]	Population monitoring[8]	General information and broad park/site approach
Plains Bison	Not Available	Maintain existing demonstration herd. As opportunities arise, explore with partners a landscape-scale, regional plains bison population.	Extirpated from WLNP since the late 1870s. Small demonstration herd established in 1952.	As appropriate, collaborate with partners to monitor distribution, density and abundance of any plains bison that may enter WLNP as part of the Iinnii Initiative.	WLNP assessed feasibility of reintroducing free-roaming plains bison in 2008; it was determined that the park was not large enough for such an effort to be ecologically viable. The Iinnii Initiative, formed in 2014, is a Blackfoot Confederacy-led effort aimed at returning free-roaming plains bison to the transboundary region of Montana and Alberta in support of ecological restoration and Indigenous culture.
Western Bumble Bee - Southern subspecies	Not Available (no recovery document published yet on the SAR Public Registry)	Maintain occupancy of western bumble bee in WLNP.	Unknown	Opportunistically record observations via researchers, volunteers, etc.	Limited records exist for western bumble-bee in WLNP but the species is known to occur.

Appendix C: Conservation and recovery measures that will be conducted for Species at Risk Act endangered and threatened species in WLNP and BURNHS. Greyed measures will be encouraged through partnerships or when additional resources become available.

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed[9]	Timeline
ACTIVE RESTORATION					
Bolander's quillwort	1	Manage visitor activity within and near Bolander's quillwort critical habitat at Summit Lake.	Minimize human disturbance to Bolander's quillwort critical habitat at Summit Lake.	• Prohibit wading by people and domestic animals and access by machinery or vehicles within occupied areas. • Restructure trail activity and monitor trail condition within and near critical habitat at Summit Lake and monitor effectiveness.	2017-2022
Bolander's quillwort	2	Collect and analyze sediment cores from Carthew Pond to investigate historical presence; if determined historically present, feasible and appropriate, proceed with re-establishment at that site.	Determine historical presence of Bolander's quillwort in Carthew Pond. If historically present, feasible and appropriate, initiate restoration of Bolander's quillwort to Carthew Pond.	• Collect and analyze sediment cores from Summit Lake (baseline) and Carthew Pond to investigate historical presence. • Determine why the population was historically extirpated and if the Carthew Pond is suitable habitat for re-establishment. • If Carthew Pond is suitable, proceed with re-establishment of population. • If re-establishment is undertaken, publish results in peer-reviewed publication.	Cores analyzed by 2018, possible re-establishment by 2022
Common Nighthawk	3	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 and their nests are protected from direct disturbance during the breeding season.	Threat of habitat disturbance and destruction.	2017-2022

[9] From existing federal recovery strategies or, when not available, provincial recovery plans or COSEWIC reports.

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed[9]	Timeline
Common Nighthawk, Half-moon Hairstreak, Lewis's Woodpecker, Olive-sided Flycatcher, Whitebark Pine	4	Implement prescribed burn plans to return regular burning intervals and maintain open forests and grasslands. Take into consideration species-specific needs/sensitivities.	Implement prescribed burns totalling at least 650 ha in grassland and 200 ha in montane/subalpine habitats.	Threat of fire suppression.	2017-2022
Little Brown Myotis	5	Adopt best practices for the maintenance or decommissioning of WLNP and BURNHS infrastructure containing little brown myotis roosts. Work with partners and community to protect important bat sites in buildings.	Mitigation of maintenance and other impacts on infrastructure containing little brown myotis roosts.	Threat of destruction of hibernacula or maternity roosts.	2017-2022
Westslope Cutthroat Trout	6	Assess candidate site suitability and feasibility for conservation and restoration of genetically pure westslope cutthroat trout; conduct translocations and removals where appropriate.	Priority sites for westslope cutthroat trout conservation and restoration are identified. Translocations and removals are initiated as feasible and appropriate.	Threat of past introductions of competitive, non-native trout species, hybridization.	2019-2022
Whitebark Pine	7	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 mountain pine beetle protection is required, protect high-value individual whitebark pine trees.	Threat of invasive non-native / alien species (white pine blister rust), problematic native species (mountain pine beetle).	2017-2022
Whitebark Pine	8	Plant putatively rust resistant seedlings, and, when available, confirmed rust resistant seedlings, in priority restoration sites. Innoculate seedlings with mycorrhizal fungi to improve establishment.	1. Plant a minimum of 3,000 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.	Threat of non-native / alien species (white pine blister rust), fire and fire suppression.	2017-2022

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed[9]	Timeline
Whitebark Pine	9	Protect and, where feasible, increase the number and extent of existing stands and of putatively rust resistant individuals through habitat management and restoration.	1. Restore whitebark pine habitat (e.g. 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 39 ha 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.	Threat of fire and fire suppression, problematic native species (mountain pine beetle).	2017-2022
INVASIVE SPECIES MANAGEMENT					
Westslope Cutthroat Trout	10	Determine distribution of pure westslope cutthroat trout vs. hybrids in WLNP and BURNHS waterbodies.	Improved knowledge of distribution of pure and hybrid westslope cutthroat trout in WLNP and BURNHS.	Threat of past introductions of competitive, non-native trout species, hybridization.	2017-2019
Common Nighthawk, Half-moon Hairstreak	11	Continue to implement WLNP invasive plant inventory and control program to maintain habitat, targeting SAR habitats as much as possible. Prepare an invasive plant management plan at BURNHS which may also positively impact SAR.	Reduced priority invasive plant density and distribution, thereby improving SAR habitat quality. Completion of BURNHS invasive plant management plan.	Threat of alien invasive species.	2017-2022 in WLNP. BURNHS plan prepared by 2018.
Common Nighthawk, Half-moon Hairstreak, Little Brown Myotis, Lewis's Woodpecker, Olive-sided Flycatcher	12	Develop and implement pesticide best management practices for WLNP and BURNHS with the recovery needs of aerial insectivore and invertebrate species at risk in mind.	Any pesticide use is consistent with the needs of aerial insectivore and invertebrate species at risk.	Threat of reduced availability of insect prey, pesticide use.	Plan developed by 2017. Implementation 2018-2022.
Half-moon Hairstreak	13	Assess spotted knapweed invasion effects and control efforts on half-moon hairstreak habitat quality and quantity within Blakiston Fan and at any additional habitats identified.	Half-moon hairstreak-specific needs are identified and integrated in spotted knapweed management efforts. Potential habitats are surveyed for additional populations.	Threat of alien invasive species. • Determine quality and quantity of habitat required to ensure persistence of a population. • Encourage research about the species by academic institutions.	Assessment completed by 2019. Integration by 2022.

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed[9]	Timeline
				• Conduct surveys to determine presence of half-moon hairstreak in potential habitat.	
Little Brown Myotis	14	Limit spread of white-nose syndrome by adopting and sharing protocols (such as the Canadian National White-nose Syndrome (WNS) Decontamination Protocol).	1. Limit human caused spread of WNS through increased awareness. 2. Establish best practices for Parks Canada staff and stakeholders to address WNS in the maintenance of infrastructure that contains roosts.	Threat of disturbance or harm, exotic, invasive species (WNS).	2017-2022
FORGING PARTNERSHIPS					
All SAR in this plan	15	Strengthen species at risk recovery by working with Indigenous communities to incorporate Traditional Knowledge into species at risk understanding.	Indigenous Traditional Knowledge incorporated to fill species knowledge gaps.	Engage First Nations in species at risk recovery and management.	By 2019
All SAR in this plan	16	Explore the interests of various Indigenous communities in SAR education and recovery. Collaborate with interested communities on outreach, education and visitor experience actions in mutually agreed upon ways.	Increased Indigenous community involvement in the delivery of SAR outreach, education and visitor experience actions.	Specific to the species knowledge gaps or outreach, education and visitor experience measures.	2017-2022
All SAR in this plan	17	Increase general awareness about species at risk that are found in the park/site, through interpretive programming, targeted communications, stakeholder engagement and outreach.	Increased support and action for SAR conservation and associated management activities. Priority audiences, including park/site visitors, youth, urban and new Canadians, learn about species at risk found in the park/site.	Specific to species knowledge gaps or outreach, education and visitor experience measures.	2017-2022
All SAR in this plan	18	Provide timely and effective species-specific communications to target audiences to disseminate knowledge, enhance understanding, and ensure	Visitor activities are successfully managed to prevent habitat destruction or harm to individuals of a species.	Human disturbance; habitat loss or degradation; accidental mortality.	2017-2022

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed[9]	Timeline
		compliance with SARA requirements			
All SAR in WLNP/BURNHS	19	Integrate use of a mobile species occurrence reporting application for WLNP and BURNHS staff, volunteers and visitors to electronically submit species at risk observations which inform management activities.	Improved knowledge of SAR abundance and distribution. Engagement of staff, volunteers and visitors in SAR protection and recovery.	Support species at risk data collection efforts for recovery and management planning and monitoring.	Application use initiated by 2017.
All SAR in WLNP/BURNHS	20	Incorporate within the service delivery agreement law enforcement patrols to prevent disturbance, destruction or removal of species at risk and their habitats.	Law enforcement capacity is improved to prevent disturbance to SAR and their habitats.	Improve species at risk protection and awareness.	2017-2022
Westslope Cutthroat Trout	21	Pursue co-operative partnerships with other government agencies, industry and public stewardship groups to conduct westslope cutthroat trout management and restoration efforts within the Belly River, Waterton River and Pekisko Creek watersheds.	Interagency meetings and other co-operative efforts are held to discuss native trout management and restoration possibilities, with a view to collaboration on potential reintroductions.	Inter-agency cooperation, facilitation of information exchange.	2017-2022
Whitebark Pine	22	Continue communication activities aimed at increasing awareness of, and reducing human-caused impacts on, whitebark pine as outlined in the whitebark pine conservation and restoration (CoRe) project.	Increased awareness about this species among priority audiences; reduction in accidental harm/removal of whitebark pine trees.	Human intrusions and disturbance; recreational activities; commercial development – tourism and recreation areas.	2017-2022
FILLING KNOWLEDGE GAPS					
Common Nighthawk	23	Identify breeding and nesting sites opportunistically, targeting high probability sites, and encourage the public to share observations.	Knowledge of common nighthawk distribution and, in particular, nesting areas, informs park management.	Threat of habitat disturbance and destruction.	

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed[9]	Timeline
Lewis's Woodpecker	24	Survey appropriate habitats to determine the extent to which WLNP is used by Lewis's woodpecker.	Improved knowledge of Lewis's woodpecker distribution and habitat use in WLNP.	Conduct research and monitoring to improve knowledge of breeding habitat use and demographic trends.	2017-2022
Little Brown Myotis	25	Assess distribution and relative abundance of little brown myotis in WLNP and BURNHS through bat acoustic inventories conducted at 13 sites throughout WLNP in 2015-2017 and through construction-related inventories at BURNHS.	Increased knowledge of distribution and relative abundance of bats in WLNP and BURNHS.	Threat of destruction or degradation of hibernacula, roosts or foraging habitats.	2017-2022
Whitebark Pine	26	Complete predictive habitat model and map of whitebark pine distribution for WLNP. Where stand assessments are completed, they include aspects of stand health (i.e., rust presence/absence and stand density).	1. Predictive map of whitebark pine distribution and suitable habitat for WLNP. 2. Assessed high-value stands in high risk areas. 3. Data inform targeted and efficient management and recovery as guided by the Crown of the Continent five-needle pine restoration strategy.	Threat of invasive non-native / alien species (white pine blister rust), problematic native species (mountain pine beetle), fire and fire suppression.	Mapping by 2018, stand assessments by 2022.

Appendix D: Conservation and recovery measures that will be conducted for other species at risk in WLNP and BURNHS. Greyed measures will be encouraged through partnerships or when additional resources become available.

Species	Measure #	Measure	Desired Outcome	Threat or recovery measure addressed[10]	Timeline
ACTIVE RESTORATION					
Bull Trout	27	Assess candidate site suitability and feasibility for conservation and restoration of genetically pure bull trout; conduct translocations and removals where appropriate.	Priority sites for bull trout conservation and restoration are identified. Translocations and removals are initiated as feasible and appropriate.	Threat of past introductions of competitive, non-native trout species, hybridization.	2019-2022
Limber Pine, Northern Leopard Frog	28	Implement prescribed burn plans to return regular burning intervals and maintain open forests and grasslands. Take into consideration species-specific needs/sensitivities.	Implement prescribed burns totalling at least 650 ha in grassland and 200 ha in montane/subalpine habitats.	Threat of fire suppression.	2017-2022
Limber Pine	29	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 mountain pine beetle protection is required, protect high-value individual limber pine trees.	Threat of invasive non-native / alien species (white pine blister rust), problematic native species (mountain pine beetle).	2017-2022
Limber Pine	30	Plant putatively rust resistant seedlings, and, when available, confirmed rust resistant seedlings, in priority restoration sites. Innoculate seedlings with mycorrhizal fungi to improve establishment.	1. Plant a minimum of 2,000 rust-resistant limber 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.	Threat of non-native / alien species (white pine blister rust), fire and fire suppression.	2017-2022

[10] From existing federal recovery strategies or, when not available, provincial recovery plans or COSEWIC reports.

Species	Measure #	Measure	Desired Outcome	Threat or recovery measure addressed[10]	Timeline
Limber Pine	31	Protect and, where feasible, increase the number and extent of existing stands and of putatively rust resistant individuals through habitat management and restoration.	1. Restore limber pine habitat (e.g. 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 4 ha 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.	Threat of fire and fire suppression, problematic native species (mountain pine beetle).	2017-2022
Long-toed Salamander	32	Mitigate roadway mortality of long-toed salamanders near Linnet Lake through maintenance and/or improvement to the existing directional fence and under-road tunnel system.	Long-toed salamander roadway mortalities near Linnet Lake are minimized through maintenance and/or improvement to the existing mitigation system.	Threat of human disturbance.	2017-2022
Northern Leopard Frog	33	Reintroduce northern leopard frogs (via egg translocation) to high quality sites within WLNP.	Successful reintroduction of self-sustaining northern leopard frog populations at one or more sites.	Implement reintroduction programs.	2017-2022
INVASIVE SPECIES MANAGEMENT					
Bull Trout	34	Determine distribution of pure bull trout vs. hybrids in WLNP and BURNHS waterbodies.	Improved knowledge of distribution of pure and hybrid bull trout in WLNP and BURNHS.	Threat of past introductions of competitive, non-native trout species, hybridization.	2017-2019
Western Bumble Bee, Northern Leopard Frog, Long-toed Salamander	35	Develop and implement pesticide best management practices for WLNP and BURNHS with the recovery needs of aerial insectivore and invertebrate species at risk in mind.	Any pesticide use is consistent with the needs of aerial insectivore and invertebrate species at risk.	Threat of reduced availability of insect prey, pesticide use.	Plan developed by 2017. Implementation 2018-2022.

Species	Measure #	Measure	Desired Outcome	Threat or recovery measure addressed[10]	Timeline
FORGING PARTNERSHIPS					
Bull Trout	36	Pursue co-operative partnerships with other government agencies, industry and public stewardship groups to conduct bull trout management and restoration efforts within the Belly River, Waterton River and Pekisko Creek watersheds.	Interagency meetings and other co-operative efforts are held to discuss native trout management and restoration possibilities, with a view to collaboration on potential reintroductions.	Inter-agency cooperation, facilitation of information exchange.	2017-2022
Grizzly Bear	37	Actively support partners in grizzly bear-human conflict reduction efforts taking place on neighbouring private lands (led by Waterton Biosphere Reserve Association).	Support reduction in grizzly bear-human conflicts on neighbouring, private lands.	Threat of grizzly bear-human conflicts.	2017-2022
Plains Bison	38	Explore with partners how WLNP may support restoration of a free-roaming plains bison population in the transboundary region of Montana and Alberta.	As feasible and appropriate, maintain the potential to re-establish plains bison in WLNP as part of a landscape-scale, regional population.	Extirpated from WLNP except for a small (<20 animals) demonstration herd.	2017-2022
FILLING KNOWLEDGE GAPS					
Limber Pine	39	Complete predictive habitat model and map of limber pine distribution for WLNP. Where stand assessments are completed, they include aspects of stand health (i.e., rust presence/absence and stand density).	1. Predictive map of limber pine distribution and suitable habitat for WLNP. 2. Assessed high-value stands in high risk areas. 3. Data inform targeted and efficient management and recovery as guided by the Crown of the Continent five-needle pine restoration strategy.	Threat of invasive non-native / alien species (white pine blister rust), problematic native species (mountain pine beetle), fire and fire suppression.	Mapping by 2018, stand assessments by 2022.
Western Bumble Bee	40	Consult with experts to determine abundance and distribution of western bumble bee in WLNP and BURNHS.	Improved knowledge of western bumble bee abundance and distribution in WLNP and BURNHS.	Improve knowledge of western bumble bee distribution and abundance to support recovery and management planning and monitoring.	2017-2022

Appendix E: 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[11] 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 WLNP and BURNHS. 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 WLNP and BURNHS; 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 and site's management plans (Parks Canada, 2005; 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.

[11] www.ec.gc.ca/dd-sd/default.asp?lang=En&n=F93CD795-1