

# Multi-species Action Plan for Kootenay National Park of Canada



2017

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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](http://www.registrelep.gc.ca/default_e.cfm)<sup>1</sup>.

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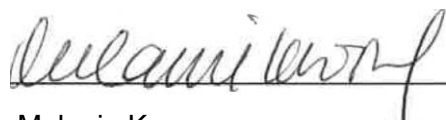
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<sup>1</sup> [www.registrelep.gc.ca/default\\_e.cfm](http://www.registrelep.gc.ca/default_e.cfm)

## Approval statement

The Parks Canada Agency led the development of this federal action plan, working together with the other competent minister(s) under the Species at Risk Act. The 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:

A handwritten signature in black ink, appearing to read 'Melanie Kwong', written over a horizontal line.

Melanie Kwong  
Field Unit Superintendent, Lake Louise, Yoho and Kootenay Field Unit,  
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 document 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, 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 Kootenay National Park 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 to the extent possible in cooperation with local First Nations, Environment and Climate Change Canada, and the Province of British Columbia 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

Thanks are owed to all those who participated to the development of this action plan. The contributions of those who took part in the site-based analysis workshops in March 2014 and January 2016 are greatly appreciated.

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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

This Multi-species Action Plan for Kootenay National Park of Canada applies to lands and waters occurring within the boundaries of the park, within adjacent federal Crown land parcels administered by Parks Canada, and within the boundaries of Kootenai House National Historic Site. 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 that regularly occur in these sites.

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 as well as by SARA. Additional measures that will contribute to the survival and recovery of the species in the park 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 the park. 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 Kootenay National Park, Kootenai House National Historic Site, or several small federal Crown land parcels adjacent to the park. 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.

## Table of contents

Preface.....	ii
Acknowledgments .....	ii
Executive summary .....	iii
Table of contents.....	iv
1. Context.....	1
1.1 Scope of the action plan.....	2
2. Site-based population and distribution objectives .....	3
3. Conservation and recovery measures.....	5
4. Critical habitat .....	7
4.1 Proposed measures to protect critical habitat .....	8
5. Evaluation of socio-economic costs and of benefits.....	8
5.1 Costs .....	8
5.2 Benefits.....	9
6. Measuring progress .....	10
7. References.....	10
Appendix A: Species information, objectives and monitoring plans for species at risk in Kootenay National Park.....	11
Appendix B: Conservation and recovery measures that will be conducted in Kootenay National Park.....	15
Appendix C: Effects on the environment and other species .....	21

## 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 recognised 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 in Kootenay National Park 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.

Kootenay National Park protects 1,406 km<sup>2</sup> of the west slope of the Rocky Mountains, extending from the peaks and glaciers of the Continental Divide to the semi-arid open forest and grassland of the Columbia Valley. The park is adjacent to Banff National Park and Mount Assiniboine to the east and Yoho National Park to the north. These parks, together with Jasper National Park and Mount Robson and Hamber provincial parks, form a 20,069 km<sup>2</sup> protected area that has been designated the UNESCO Canadian Rocky Mountain Parks World Heritage Site.

Kootenay National Park encompasses the Vermilion River watershed, the majority of the upper Kootenay River watershed, and portions of several smaller creeks draining into the upper Columbia River. Park elevations range from 900m at Radium to over 3,300m along the Continental Divide. Precipitation levels increase dramatically from west to east, and snowfall in particular is more abundant near the divide. The main ecosystem disturbance factors are wildfire, forest insects, avalanches, and fluvial erosion and deposition. This complex mountain landscape supports diverse ecosystems that include alpine meadows, moist subalpine forests, open shrub avalanche slopes, rich riparian zones and alluvial flats, and dry montane forest and grassland. These ecosystems support a diversity of species, a number of which are at risk, or are of conservation concern.

“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 the park management plan and 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. The recovery measures described in this action plan are organized in the same manner. Parks Canada's ecological integrity programs make contributions to the recovery of species at risk by providing inventory and monitoring data, through the implementation of habitat restoration projects, and other conservation measures. The species-specific measures outlined in this plan will also contribute to maintaining and improving the ecological integrity of Kootenay National Park by improving the conservation status of native species and their habitat.

In addition to status assessments, final SARA recovery strategies<sup>3</sup> have been completed for Common Nighthawk and Olive-sided Flycatcher, and proposed recovery strategies have been prepared for Little Brown Myotis and Whitebark Pine. A recovery strategy for American Badger (*jeffersonii*) is currently under development. These documents provide guidance for the recovery of individual species, including strategic directions, recovery objectives, identification of critical habitat to the extent possible, and threats. This action plan was developed and will be implemented in a manner that is consistent with these 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 lands and waters managed by Parks Canada in Kootenay National Park and adjacent federal Crown land, as well as Kootenai House National Historic Site which is situated approximately 11 km south of the park (Figure 1). This multi-species action plan has been written specifically for these lands because Parks Canada is legally responsible for species at risk on lands and waters within national parks and national historic sites, has the ability to take direct conservation action, and deals 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.

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

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<sup>3</sup> [Recovery Strategy for the Common Nighthawk in Canada](#), [Recovery Strategy for the Olive-sided Flycatcher in Canada](#), [Recovery Strategy for Little Brown Myotis, Northern Myotis and Tri-coloured Bat in Canada \(Proposed\)](#), [Recovery Strategy for Whitebark Pine in Canada \(Proposed\)](#).



Risk (SAR) Public Registry. This action plan is a SARA action plan (as per SARA s.47) for two species: Common Nighthawk, and Olive-sided Flycatcher. It is also consistent with current direction in the proposed recovery strategies for Little Brown Myotis and Whitebark Pine, and for the draft recovery strategy for American Badger (*jeffersonii*).

This action plan addresses SARA-listed species that regularly occur in Kootenay National Park which (will) require an action plan under SARA (s.47) (Table 1). The plan will be amended as required, or additional plans will be prepared, to meet SARA requirements for action planning.

Table 1. Species at risk included in the action plan for Kootenay National Park.

Species	Scientific name	SARA Schedule 1 status
American Badger ( <i>jeffersonii</i> )	<i>Taxidea taxus jeffersonii</i>	Endangered
Common Nighthawk	<i>Chordeiles minor</i>	Threatened
Little Brown Myotis	<i>Myotis lucifugus</i>	Endangered
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Threatened
Whitebark Pine	<i>Pinus albicaulis</i>	Endangered

## 2. Site-based population and distribution objectives

The potential for Parks Canada to undertake management actions at the park that will contribute to the recovery of each species was assessed. Site-specific population and distribution objectives were developed (Appendix A) to identify the contribution that the park can make towards achieving the national objectives presented in federal recovery strategies. Monitoring activities that are directly linked to the site-based population and distribution objectives are also reported in Appendix A. If there is little opportunity for the park 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, and habitat maintenance or restoration through the existing management regime at the site. This is the case for Olive-sided Flycatcher, where population and distribution objectives for Kootenay National Park are not meaningful at the scale of this action plan because threats cannot be controlled in the park or do not exist in the park (e.g., loss of overwintering habitat elsewhere, migratory impacts), and the population within the park is a very small part of the Canadian distribution.



Figure 1: Kootenay National Park

### **3. Conservation and recovery measures**

Kootenay National Park is situated on the southwest edge of a large protected area complex – the Canadian Rocky Mountain Parks World Heritage Site. Its north and east borders are functionally invisible, as similar levels of habitat and species protection occur within adjacent protected areas. The southern and western boundaries of the park are potentially more significant for species conservation as adjacent lands are managed for a variety of different land uses that affect habitat in various ways. Forest harvesting, wildfire suppression, residential development, ranching, gravel extraction, and roads are significant contributors to landscape change in the surrounding area. Collaboration with adjacent land managers will be important to conserving cross-boundary species at risk.

The main threats to biodiversity within the park are highway-related wildlife mortality, habitat change due to historic fire suppression, and the introduction of non-native invasive species (Parks Canada 2008). Climate change is also likely to have a significant influence on the biodiversity of the park over the medium to long-term. For several species included in this action plan, the known principal threats originate outside the park, and actions taken within the park will have a limited impact on species recovery. For other species there is greater potential to implement measures that can contribute to their recovery. The causes of population decline for American Badger, Little Brown Myotis, and Whitebark Pine are well known, while the causal factors responsible for the decline of Olive-sided Flycatcher and Common Nighthawk are poorly understood. For all these species, there are actions that can be taken by Parks Canada to contribute to their protection and where feasible their recovery within Kootenay National Park.

Kootenay National Park currently receives an estimated 460,000 visitors a year. Many of these visitors are travelling through on Highway 93 South and only stop briefly in the park. Popular attractions within the park include the Paint Pots ochre springs and Marble Canyon in the north, and the Redstreak area and Radium Hot Springs in the south. Communication efforts that target these few areas, along with the drive-through visitor segment, will optimize the potential to engage and connect with Canadians to build awareness of species at risk, and to encourage them to get involved in recovery efforts.

This action plan identifies measures to achieve the site-based population and distribution objectives, along with measures required to protect the species and gather more information about them. The list of measures that will be implemented is presented in Appendix B. These measures were evaluated using a ranking system, and all of these measures received either a medium or high priority. The ranking process considered the ecological effectiveness of measures, along with opportunities to work with partners, engage visitors, and connect with external audiences. Wherever possible, Parks Canada is taking an ecosystem approach, prioritizing actions that benefit more than one species to effectively and efficiently protect and recover species at risk.

Several themes are reflected in these measures: active management, disease management; filling knowledge gaps; and working together in endangered species

recovery. These themes and related conservation measures are discussed briefly below.

### **Active management**

Habitat restoration through active management is key to ensuring the viability of several species at risk. Restoring the role of fire as an ecosystem driver is the key restoration requirement in Kootenay National Park. Badgers require open forest and grassland, which has been reduced in the park through historic fire suppression and forest ingrowth. 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 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 the restoration of fire may also benefit Common Nighthawk, as this species nests on the ground in open forest and grassland habitat, and Olive-sided Flycatcher, as this species prefers a mix of live and dead trees within a mosaic of forest patches of different age structure particularly near wetlands. 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 restoration program.

The Common Nighthawk is a ground-nester, and their nests may be susceptible to accidental trampling, or harassment by off-leash dogs. If Common Nighthawk nesting sites are identified, active measures may be required to protect those nests and birds from direct disturbance. This could potentially include human-built structures, such as flat, gravel rooftops, as this species has been observed elsewhere nesting on this type of substrate.

### **Disease management**

Two exotic invasive diseases threaten two native species covered in this plan. White-nose syndrome (WNS) is an introduced fungal disease affecting numerous species of bats, including Little Brown Myotis. It has had a devastating effect on bat colonies in eastern North America, and has recently been discovered in Washington State. Addressing the threat of WNS to Little Brown Myotis in the park will be critical to the persistence of the local population. The Canada National Parks Act General Regulations prohibit anyone without a permit from entering a cave or mine in a national park, and decontamination protocols are in place for anyone granted a permit. Compliance with these measures will reduce the risk of human transmission of the disease into potential hibernacula. White pine blister rust is another introduced fungus that is affecting 5-needle pines in North America, including Whitebark Pine. The identification and propagation of blister rust resistant trees, followed by the planting of these trees in suitable habitat is the key strategy to maintain persistence of Whitebark Pine on the landscape. Efforts to identify resistant trees are underway.

### **Filling knowledge gaps**

Inventory and monitoring work is required to fill gaps in the knowledge base necessary to build programs for some species at risk. For example, more data are required to

determine occupancy and population estimates, and to identify potential maternity roosting and hibernating sites for Little Brown Myotis. More information is also required on populations and nesting sites of Common Nighthawk and Olive-sided Flycatcher. More precise data on the spatial distribution of Whitebark Pine within the park are required. Monitoring of badger occurrence and use of restoration areas will aid protection efforts and help to assess the importance of restoration as a recovery tool. This is important knowledge that can help focus and prioritize recovery efforts. Working with Indigenous communities may allow the incorporation of traditional knowledge to fill knowledge gaps for some species.

### **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. Through on-site interpretation efforts, park visitors can learn about endangered species and how personal behavior can contribute to species protection. By gaining awareness and knowledge, visitors can take an active role in recovery actions. Observant visitors can contribute occurrence data on birds, bats, and healthy Whitebark Pine, provided they know what to look for. Communication efforts can increase awareness and encourage stewardship and compliance with regulations and conditions for activities such as tree falling, building demolition and cave entry. These will be important recovery measures for Little Brown Myotis, which may be vulnerable to habitat loss or unintentional spread of white nose syndrome due to human actions. Engaging Indigenous communities may create opportunities to incorporate traditional knowledge, and work together on specific recovery actions for species at risk. 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.

## **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)). No critical habitat has been identified within Kootenay National Park for any of the species included in this plan (as of January 2016). Critical habitat for [Whitebark Pine](#) is partially identified at a landscape scale in the proposed recovery strategy based on the best available information at this time. Attributes of survival and recovery habitat, similar to critical habitat, have been defined in the draft provincial recovery plan for American Badger, but survival and recovery habitat areas have not been mapped (BC Badger Recovery Team, 2016). This may be used to help define and identify critical habitat for badger in a future federal recovery strategy. The draft federal recovery strategy for Little Brown Myotis provides a partial definition of critical habitat as any hibernacula used by bats at least once since 1995. There are no known hibernacula used by the species in Kootenay National Park. The final recovery strategies for Common Nighthawk and Olive-sided Flycatcher do not identify critical habitat due to data deficiencies at this time. As more knowledge about habitat needs, and more data about habitat use by these

species is gathered, critical habitat may be identified in upcoming or revised recovery strategies or action plans.

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

Critical habitat identified in other recovery documents within Kootenay National Park, Kootenai House National Historic Site, or federal Crown lands adjacent to the park that are managed by Parks Canada, will be legally protected from destruction as per SARA (Sec. 58 (1)).

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 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 total cost to implement the multi-species action plan for Kootenay National Park will be borne by Parks Canada out of existing salaries and budgets 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 through alternative funding mechanisms such as Parks Canada's national Conservation and Restoration (CoRe) 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 thereby will not result in additional costs to society.

The action plan applies only to lands and waters in Kootenay National Park, adjacent federal Crown lands managed by Parks Canada, and Kootenae House National Historic Site, and does not include any restrictions to land use outside of these boundaries. 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 Kootenay National Park 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 park 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 in the action plan could result in additional benefits to Canadians, such as yielding positive impacts on biodiversity, and contributing to the value individuals derive from preserving native biodiversity and ecosystems.

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 (e.g. planting Whitebark Pine), and increasing public awareness and stewardship (e.g., interpretive signage, visitor programs, and highlights in communication media).

Potential economic benefits of recovering species at risk found in the park cannot be easily quantified, as many of the values related to these species are non-market considerations that are difficult to evaluate in financial terms. Biodiversity has intrinsic worth, and may be valued by Canadians for aesthetic, cultural, spiritual, recreational, educational, historic, economic, medical, ecological and scientific reasons. The conservation of species 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.

Maintaining healthy ecosystems and a full range of native biodiversity is a key component of visitor experience in Kootenay National Park. Wildlife viewing is one of the most common visitor activities in the park and this helps support the economic health of the communities in the Columbia Valley.

Implementing this action plan is expected to have positive benefits for park visitors, local residents, and Indigenous Peoples. Some activities in the plan may create opportunities for people to become involved in the recovery of species at risk and for cooperation and community partnerships in species at risk recovery. These include opportunities to learn about and take part in the recovery of species at risk, opportunities for visitors, stakeholders and local communities to be involved in conservation issues, opportunities for integration of Indigenous traditional knowledge into biodiversity conservation, 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 which states: "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, as required by the Species at Risk Act (s. 55), will be done by assessing progress towards carrying out the specific measures outlined in the appendices. 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

British Columbia Badger Recovery Team. 2016. Recovery plan for the American Badger (*Taxidea taxus*) in British Columbia (DRAFT). Prepared for the B.C. Ministry of Environment, Victoria, B.C., February 2016, 34p.

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 and Climate Change Canada. 2017. Recovery strategy for the Whitebark Pine (*Pinus albicaulis*) in Canada (Proposed). *Species at Risk Act Recovery Strategy Series*. Environment and Climate Change Canada, Ottawa, viii + 54 pp.

Parks Canada. 2010. Kootenay National Park management plan. Parks Canada Agency. Ottawa. 63 p.

Parks Canada. 2008. Kootenay National Park of Canada, State of the park report. April 2008, 45p.



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

Species	National objectives	Site-based population & distribution objectives	Population trend in KNP (2010-2015)	Population monitoring <sup>4</sup>	General information and broad park approach
American Badger (jeffersonii)	<p>The 10-year goal is to increase the total badger population in B.C. to a minimum of 400 adults (250 in west pop'n and 150 in east pop'n). Six objectives are identified to achieve the recovery goal over a 10-year period:</p> <ol style="list-style-type: none"> <li>1. To more accurately estimate badger abundance.</li> <li>2. To better understand prey ecology, history and distribution.</li> <li>3. To protect badgers and badger habitat.</li> <li>4. To better understand distribution of preferred badger soil associations.</li> <li>5. To improve understanding of genetic structure of badgers in British Columbia.</li> <li>6. To improve knowledge of badger distribution and abundance in poorly documented regions.</li> </ol>	<p>To maintain/increase adequate amount of suitable badger habitat within the park, as part of supporting a goal to ensure a viable population of badgers throughout their historic range in B.C.</p>	<p>Unknown. Probably stable, or possibly increasing in last 5 years.</p>	<ol style="list-style-type: none"> <li>1. Hectares of currently closed forest on suitable soils that are restored/enhanced to open forest/grassland habitat areas.</li> <li>2. Level of protection from harassment/mortality by             <ol style="list-style-type: none"> <li>a) increasing patrols/education re: dogs on leash at Redstreak and Sinclair and other restored areas.</li> <li>b) enforcing SARA provisions on federal Crown lands.</li> </ol> </li> <li>3. Support for local/regional conservation initiatives having potential to increase badger presence in the park.</li> <li>4. Number of badger road mortalities.</li> </ol>	<p>Parks Canada is a significant partner in the recovery of badgers in the East Kootenay, having contributed financial and in-kind support to the translocation of badgers from Montana to the northern extent of the range, including parts of the park. Parks Canada scientists have also developed a RSF habitat model to help determine key areas of badger habitat specific to the East Kootenay. Parks Canada will maintain badger habitat through maintenance of existing restoration areas, and will attempt to increase available badger habitat through additional restoration as part of the Fire Management Plan. Parks Canada will also help with stewardship and targeted education programs to increase awareness and reduce human disturbance in badger habitat.</p>

<sup>4</sup> Where population and distribution objectives have been established for KNP, monitoring is designed to directly measure success in achieving those goals.

Species	National objectives	Site-based population & distribution objectives	Population trend in KNP (2010-2015)	Population monitoring <sup>4</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% over this time. 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 the park.	Unknown. Breeding confirmed.	Report presence through incidental observations, including those found on external databases such as eBird.	<p>Opportunistically identify nest sites and bird activity. Focus efforts in areas where nest protection measures may improve nest success.</p> <p>Outreach, education and potential seasonal activity restrictions may help prevent accidental nest destruction from off-trail recreation and may limit disturbance in confirmed breeding areas.</p> <p>Fire and invasive plant management programs may contribute to enhancing nesting habitat.</p>

Species	National objectives	Site-based population & distribution objectives	Population trend in KNP (2010-2015)	Population monitoring <sup>4</sup>	General information and broad park approach
Little Brown Myotis	The distribution objective is to maintain the pre-WNS 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. <sup>5</sup>	1. Maintain current spatial and temporal distribution. 2. Protect all known hibernacula and maternity roosts.	Data deficient <sup>6</sup> , but thought to be stable.	1. Use the North American Bat Monitoring Protocol (NABat) and opportunistic observations to identify significant bat locations (species, numbers) in natural areas and human structures. Monitor these sites to detect any changes. 2. Monitor for bat use and hibernation activity in caves and mines using roost loggers.	WNS has not yet spread to Kootenay. Primary conservation approach is to identify important habitat, in particular hibernacula and maternity roosts, and prevent the human transmission of WNS to these sites.  Protection of individuals and residences.  Continue to actively manage cave access (permit required) and use decontamination protocol to deter the spread of WNS through human vectors.
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.	No objectives established: Nests and birds are protected by the Canada National Parks Act and the Migratory Birds Act. Fire management practices may provide more nesting habitat. Kootenay is of limited importance to the species national recovery.	Declining, based on breeding bird surveys.	1. Monitor for breeding activity through existing Breeding Bird Surveys. 2. Record incidental observations including those found on external databases such as eBird.	Protection of individuals and residences.  Fire management program may be used to enhance habitat.

<sup>5</sup> Objectives are from the Proposed Recovery Strategy. The reader should consult the final version once completed for the official objectives.

<sup>6</sup> Population has not been monitored historically, as threats were not present. Data collection on bat occupancy has begun due to the westward advance of white-nose syndrome, the principal threat to this species.

Species	National objectives	Site-based population & distribution objectives	Population trend in KNP (2010-2015)	Population monitoring <sup>4</sup>	General information and broad park approach
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 throughout the species' range in the park 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. BC trend is declining.	<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>	<p>Assess stands to identify trees that are potentially resistant to white pine blister rust.</p> <p>Collect and conserve seeds from potential blister rust resistant trees; test for resistance; plant resistant trees.</p> <p>Forest management practices such as prescribed burning, thinning and wildfire impact mitigation can be used to protect and restore habitat.</p>

## Appendix B: Conservation and recovery measures that will be conducted in Kootenay National Park.

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed	Timeline
<b>FOREST COMMUNITY</b>					
American Badger	1	Encourage badger occupancy through habitat restoration and human use management.	Open forest/grassland habitat is maintained or restored, and areas that are currently closed forest on suitable soils within badger range are enhanced through forest management practices.	Natural system modifications - forest in-growth and encroachment.	Ongoing
American Badger	2	Collaborate with provincial agencies to protect potential habitat for species dispersal.	Local/regional conservation initiatives that have potential to increase badger presence in the park and vicinity are supported.	Natural system modifications; habitat loss.	Ongoing
American Badger	3	Mitigate human-caused mortality.	1. Increase level of protection from harassment/mortality on park and federal Crown lands (ex: compliance with domestic animal regulations). 2. Install badger underpasses in future highway upgrades in good quality badger habitat.	Human intrusions and disturbance; recreational activities.	Ongoing
Common Nighthawk	4	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.	Habitat disturbance and destruction.	Ongoing.
Common Nighthawk	5	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.	Direct disturbance or harm; habitat destruction.	Ongoing

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed	Timeline
Little Brown Myotis	6	Determine the distribution and relative abundance of Little Brown Myotis, with emphasis on identifying hibernacula and maternity roosting sites.	<ol style="list-style-type: none"> <li>1. Increase knowledge of bat presence and populations in caves/mines and maternity roosts over each 5 year period.</li> <li>2. Presence and populations are known for high-potential hibernacula in first 5 year reporting period.</li> </ol>	Habitat loss. Exotic invasive species (WNS).	Ongoing
Little Brown Myotis	7	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. Action plan developed for access to significant bat hibernacula and roosts before WNS arrives.</li> <li>2. Limit human caused spread of WNS through increased awareness, enforcement of restricted access, and implementation of decontamination protocols and BMPs for researchers.</li> </ol>	Disturbance or harm. Exotic invasive species (WNS).	Ongoing.
Little Brown Myotis	8	<ol style="list-style-type: none"> <li>1. Adopt best practices for the maintenance or decommissioning of park infrastructure that contains Little Brown Myotis roosts.</li> <li>2. Work with partners and the community to protect important bat sites in buildings.</li> </ol>	<ol style="list-style-type: none"> <li>1. Establish best practices for Parks Canada staff and park stakeholders to address maintenance of infrastructure that contains roosts.</li> <li>2. Important roosts are identified for infrastructure requiring maintenance, and impacts are mitigated.</li> </ol>	Disturbance or harm; destruction of hibernacula or maternity roosts.	Ongoing.
Little Brown Myotis	9	Enhance current communications aimed at raising awareness, and develop targeted communications in support of actions to prevent disturbance, disease transmission, and potential human-caused mortality.	<ol style="list-style-type: none"> <li>1. Raise awareness about this species among priority audiences.</li> <li>2. Support an integrated approach towards increased compliance to prevent habitat degradation and human-caused mortality.</li> </ol>	Habitat loss or degradation; Disturbance or harm (recreational or scientific); Invasive species (WNS).	First 5 years.

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed	Timeline
Whitebark Pine	10	<ol style="list-style-type: none"> <li>1. Identify putatively rust resistant individuals (Plus Trees) at high priority sites.</li> <li>2. Conduct Plus Tree seed resistance testing for high probability trees.</li> <li>3. Collect seed for genetic conservation.</li> <li>4. Protect high value Plus Trees from mountain pine beetle.</li> </ol>	<ol style="list-style-type: none"> <li>1. Where conditions permit, identify rust resistant trees or high value individuals, and conserve genetic resources.</li> <li>2. Where mountain pine beetle protection is required, protect high-value individual Whitebark Pine trees.</li> </ol>	Invasive non-native / alien species (white pine blister rust); Problematic native species (mountain pine beetle).	Ongoing. Identify rust-resistant stands in high risk areas by 2019.
Whitebark Pine	11	<ol style="list-style-type: none"> <li>1. Complete predictive habitat model and map of Whitebark Pine distribution for the park.</li> <li>2. Where stand assessments are completed, they include aspects of stand health (i.e., rust presence/absence and stand density).</li> </ol>	<ol style="list-style-type: none"> <li>1. Predictive map of Whitebark Pine distribution and suitable habitat 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>	Invasive non-native / alien species (white pine blister rust); Problematic native species (mountain pine beetle); Fire and fire suppression	Predictive map completed by 2017.
Whitebark Pine	12	<ol style="list-style-type: none"> <li>1. Plant putatively rust resistant seedlings, and when available, confirmed rust resistant seedlings, in priority restoration sites.</li> <li>2. Inoculate seedlings with mycorrhizal fungi to improve establishment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Plant a minimum of 2000 rust-resistant Whitebark Pine seedlings by 2019. Continue annual planting beyond 2019 as resources are available and based on priority areas for restoration need.</li> <li>2. Where available, inoculate at least 50% of seedlings with mycorrhizal fungi prior to planting.</li> </ol>	Invasive non-native / alien species (white pine blister rust); Fire and fire suppression	Ongoing.

Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed	Timeline
Whitebark Pine	13	Protect and, where feasible, increase the number and extent of existing stands and of blister rust resistant individuals through habitat management and restoration.	<ol style="list-style-type: none"> <li>1. Restore WBP 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 30 ha by 2019, and continue beyond as resources are available based on priority areas for restoration need.</li> <li>2. Mitigate threats in priority high value stands.</li> </ol>	Fire and fire suppression; Problematic native species (mountain pine beetle)	2019  Beyond 2019 if additional funding is available.
Whitebark Pine	14	Continue communication activities aimed at increasing awareness of, and reducing human-caused impacts on, Whitebark Pine as outlined in the CoRe <sup>7</sup> Whitebark Pine conservation project.	<ol style="list-style-type: none"> <li>1. Increase awareness about this species among priority audiences.</li> <li>2. Reduce accidental harm/removal of Whitebark Pine trees.</li> </ol>	Human intrusions and disturbance; recreational activities; commercial development – tourism and recreation areas.	Ongoing.
All species in plan	15	Increase general awareness about species at risk that are found in the park, through interpretive programming, targeted communications, and outreach.	<ol style="list-style-type: none"> <li>1. Increased support and action for SAR conservation and associated management activities.</li> <li>2. Priority audiences, including park visitors, youth, urban and new Canadians, learn about species at risk found in the park.</li> </ol>	Promotes general awareness of species at risk, recovery efforts, and steps that can be taken to contribute to recovery.	Ongoing.
All species in plan.	16	Provide timely and effective species-specific communications to target audiences to disseminate knowledge, enhance understanding, and ensure compliance with SARA requirements.	Visitor activities are successfully managed to prevent habitat destruction or harm to individuals of a species.	Human disturbance; habitat loss or degradation; accidental mortality.	First 5 years.

<sup>7</sup> Refers to Parks Canada's **C**onservation and **R**estoration program.



Species	Measure #	Measure	Desired outcome	Threat or recovery measure addressed	Timeline
All species in plan	17	Acquire data on species distribution and habitat use to fill knowledge gaps in order to increase efficacy of conservation and recovery actions. Data will be acquired through research and monitoring, and by promoting the reporting of observations by park staff, stakeholders, and visitors.	1. Sufficient data is gathered to increase confidence in Detailed Assessments that can be used to inform the next State of the Park Report (SOPR) and the Park Management Plan (PMP). 2. Habitat mapping provides key data for the identification of critical habitat.	All.	On-going. SOPR – 2019 PMP - 2020
All species in plan	18	Strengthen species at risk recovery by working with Indigenous communities to incorporate traditional knowledge into SAR understanding.	Indigenous traditional knowledge is incorporated to fill species knowledge gaps.	This will be specific to the particular knowledge gap.	As opportunities arise.
All species in plan	19	1. Explore the interests of various Indigenous communities in SAR education and recovery. 2. 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.	This will be specific to the species and type of action.	As opportunities arise.
All species in plan	20	Work with adjacent land management agencies, conservation scientists, and others 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 throughout the species' range.	1. Data is shared between Parks Canada and other conservation agencies involved in the protection and recovery of species at risk. 2. Different agencies collaborate and keep each other informed of species at risk planning and recovery initiatives.	All.	Ongoing

<b>Species</b>	<b>Measure #</b>	<b>Measure</b>	<b>Desired outcome</b>	<b>Threat or recovery measure addressed</b>	<b>Timeline</b>
All species in plan	21	Maintain or increase law enforcement patrols to prevent disturbance, destruction or removal of species at risk and their habitats.	Law enforcement capability is maintained or improved to prevent disturbance to SAR and associated habitat.	Disturbance or harm; habitat loss.	Ongoing.

## **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 an 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](#)<sup>8</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 Kootenay National Park. This plan puts into practice recovery goals presented in recovery strategies, which were subject to SEAs during the development of those documents. Further, this action plan was developed to benefit species at risk that regularly occur in the park; all of these species were considered in the planning process. 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 management plan (Parks Canada, 2010). Consequently activities outlined in this plan address key management priorities aimed at improving the broader ecological health of the park. Finally, this plan outlines stewardship actions, educational programs, and awareness initiatives that will involve visitors, local residents, Indigenous organizations, stakeholders, 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>8</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)