Species at Risk Act
Action Plan Series

Multi-species Action Plan for Kouchibouguac National Park of Canada and associated National Historic Sites 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

Approval Statement

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

Approved by:

Géraldine Arsenault
Superintendent, Northern New Brunswick Field Unit,
Parks Canada Agency

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 Kouchibouguac National Park of Canada (KNP) and associated National Historic Sites of Canada (NHS) and has prepared this action plan to implement the recovery strategies as they apply to the park and NHS, as per section 47 of SARA. It has been prepared in cooperation with Environment and Climate Change Canada, the Department of Fisheries and Oceans, the Province of New Brunswick, the Province of Nova Scotia, the Elsipogtog First Nation, the Metapenagiag First Nation, the Eel Ground First Nation, the L'no Minigog First Nation, Nature NB, the Ami(e)s de la Kouchibouguacis, the Atlantic Canada Conservation Data Centre, and Bird Studies Canada, 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.

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

Acknowledgments

We wish to thank our multiple partners in species at risk conservation for providing valuable input and insights considered during the development of this plan. Parks Canada is extremely grateful for the input of the following individuals: Jos Clair and Blayne Peters (Elsipogtog First Nation), Nelson Cloud (Metapenagiag First Nation), Candida Paul (Eel Ground First Nation), Cody Clair (L'noo Minigog First Nation), Lewnanny Richardson (Nature NB), Anita Doucet and Samuel Chiasson (Ami(e)s de la Kouchibouguacis), David Mazerolle and John Klymko (Atlantic Canada Conservation Data Centre), Paul Johanson, Julie McKnight, Samara Eaton and Andrew Boyne (Environment and Climate Change Canada - Canadian Wildlife Service), Diane Amirault-Langlais and Fabiola Akaishi (Department of Fisheries and Oceans), Maureen Toner (New Brunswick Department of Natural Resources) and Mark Elderkin (Nova Scotia Department of Natural Resources).

Executive Summary

The *Multi-species Action Plan for Kouchibouguac National Park of Canada and associated National Historic Sites of Canada* applies to lands and waters occurring within the boundaries of the four sites: Kouchibouguac National Park of Canada (KNP) and other land managed by Parks Canada in the Northern New-Brunswick Field Unit offering adequate habitat for the species targeted in this action plan (Fort Beauséjour – Fort Cumberland National Historic Site of Canada (NHS), Beaubassin – Fort Lawrence NHS, Grand-Pré NHS). 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 in KNP and associated NHS.

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 the 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. Additionally, measures used for protection of 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 KNP and associated NHS. 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

Kouchibouguac National Park of Canada (hereafter Kouchibouguac National Park, the Park or KNP) was established in 1969 and protects 238 km^2 of land and waters along the Northumberland Strait coastline. The Park was established to protect representative examples of the Maritime Plain Natural region and the Atlantic-Gulf of St. Lawrence Marine region. Kouchibouguac National Park lies in the New Brunswick lowlands, part of the physiographic region classified as the Maritime Plain. Sloping gently to the coast, the land is generally flat, with some small knolls separating river basins and short, steep river banks in spots (maximum elevation: 30 m above sea level near SW boundary; minimum elevation: minus 6 meters in the estuary channels). The forests of Kouchibouguac National Park include remnants of the Acadian Forest and cover 54% of park area (coniferous forests dominate, accounting for approximately 70% of the wooded area, while hardwoods occupy approximately 23% and mixed forests 7%). The rest of the Park supports peat bogs (21% of the Park's area), salt marshes (3%), barrier island systems (2%), estuarine systems (18%) and freshwater habitats (1%). The Park boasts the second largest Common Tern colony in North America. In 2009, Kouchibouguac National Park was declared a Dark Sky Preserve by the Royal Astronomical Society of Canada.

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 sites must be legally protected within 180 days of being identified.

Recovery measures for species at risk will be integrated within the framework of Parks Canada's ongoing ecological integrity programs. National parks maintain 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 therefore 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, 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 the ecological integrity of Kouchibouguac National Park and associated NHS by improving the conservation status of native species and their habitat and maintaining biodiversity.

As well as being responsible for KNP, the Field Unit Superintendent for the Northern New Brunswick Field Unit within Parks Canada is also responsible of National Historic Sites in the area (Figure 1). Fort Beauséjour - Fort Cumberland National Historic Site of Canada is a star-shaped late 18th- and early 19th-century military fortification situated on the narrow neck of land between Nova Scotia and New Brunswick at the

southwestern end of the Cumberland Ridge near Aulac, New Brunswick. The designation refers to the site of the fortification as well as Butte à Roger (a French observation post just east of the fortress area), Ile de la Vallière (Tonge's Island), Chipoudy Point, the site of a French redoubt at the river crossing at Pointe de Bute (Pont à Buot), and Inverma Farm (to the north on the Cumberland Ridge). It is a 24 hectare property.

Beaubassin National Historic Site of Canada is located on the southwestern edge of Fort Lawrence Ridge, formerly known as Beaubassin Ridge, in Nova Scotia. The site, largely comprised of hayfields, pasture and marshland, is divided into two parts by the main Canadian National Railways line, and also contains Fort Lawrence National Historic Site of Canada. It is a 43.36 hectare property. Fort Beauséjour – Fort Cumberland NHS and Beaubassin NHS are part of the Isthmus of Chignecto.

Grand-Pré National Historic Site of Canada is located at the former Acadian village of Grand-Pré, beside the upper Bay of Fundy, north of Wolfville, Nova Scotia. The site consists of a memorial park created to commemorate the deportation of the Acadians, who settled in the area between 1682 and 1755. The designation includes commemorative buildings, archaeological remains, landscape features and a collection of objects which reflect the presence of Acadians at the site. It is a 24 hectare property.

Other National Historic Sites of Canada of the Northern New Brunswick Field Unit are not included in this action plan because species at risk are not present on these sites.

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. In addition to 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 Kouchibouguac National Park. The scope also includes all lands and waters within boundaries of three NHS managed by Parks Canada in the Northern New-Brunswick Field Unit offering habitat for the species targeted in this action plan (Fort Beauséjour – Fort Cumberland National Historic Site of Canada (NHS), Beaubassin – Fort Lawrence NHS, Grand-Pré NHS) (Figure 1). This multi-species action plan has been written specifically for KNP and associated NHS because the Parks Canada Agency (PCA) is legally responsible for species at risk on PCA lands and waters, has the ability to take direct conservation action, and deals with different threats, legislation, and management priorities than areas outside the park and NHS.

Figure 1. Geographic scope for the *Multi-species Action Plan for Kouchibouguac National Park of Canada and associated National Historic Sites of Canada*. The Park is located in New Brunswick and includes lands and water totaling 238 km^2. One of the National Historic Sites is located in New Brunswick and the other two are located in Nova Scotia.

This action plan addresses SARA-listed species that regularly occur in KNP and associated NHS which require an action plan under SARA (s.47), 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 Parks Canada with a comprehensive plan for species conservation and recovery at these sites. The plan will be amended as required to meet SARA requirements for action planning.

Table 1. Species included in the action plan for Kouchibouguac National Park.

Species	Scientific name	COSEWIC Status	SARA status
Little Brown Myotis	*Myotis lucifugus*	Endangered	Endangered
Northern Myotis	*Myotis septentrionalis*	Endangered	Endangered
Piping Plover – *melodus* subsp.	*Charadrius melodus melodus*	Endangered	Endangered
Red Knot – *rufa* subsp.	*Calidris canutus rufa*	Endangered	Endangered
Canada Warbler	*Cardellina canadensis*	Threatened	Threatened
Chimney Swift	*Chaetura pelagica*	Threatened	Threatened
Common Nighthawk	*Chordeiles minor*	Threatened	Threatened
Eastern Whip-poor-will	*Antrostomus vociferus*	Threatened	Threatened
Gulf of St. Lawrence Aster	*Symphyotrichum laurantianum*	Threatened	Threatened
Olive-sided Flycatcher	*Contopus cooperi*	Threatened	Threatened
Wood Turtle	*Glyptemys insculpta*	Threatened	Threatened
Beach Pinweed	*Lechea maritima*	Special concern	Special concern
Monarch	*Danaus plexippus*	Special concern	Special concern
Rusty Blackbird	*Euphagus carolinus*	Special concern	Special concern
Short-eared Owl	*Asio flammeus*	Special concern	Special concern
Snapping Turtle	*Chelydra serpentina*	Special concern	Special concern
American Eel	*Anguilla rostrata*	Threatened	Not listed
Bank Swallow	*Riparia riparia*	Threatened	Not listed
Barn Swallow	*Hirundo rustica*	Threatened	Not listed
Bobolink	*Dolichonyx oryzivorus*	Threatened	Not listed
Eastern Meadowlark	*Sturnella magna*	Threatened	Not listed
Wood Thrush	*Hylocichla mustelina*	Threatened	Not listed
Atlantic Salmon – Gaspe-Southern Gulf of St. Lawrence pop.	*Salmo salar*	Special concern	Not listed
Eastern Wood-pewee	*Contopus virens*	Special concern	Not listed
Striped Bass – Southern Gulf of St. Lawrence pop.	*Morone saxatilis*	Special concern	Not listed
Bald Eagle	*Haliaeetus leucocephalus*	Not at risk	Not listed
Canada Lynx	*Lynx canadensis*	Not at risk	Not listed
Southern Twayblade	*Listera australis*	Not assessed	Not listed

Table 2. Species at risk included in the action plan for associated NHS.

Species	Scientific name	COSEWIC Status	SARA status
Little Brown Myotis	*Myotis lucifugus*	Endangered	Endangered
Northern Myotis	*Myotis septentrionalis*	Endangered	Endangered
Short-eared Owl	*Asio flammeus*	Special concern	Special concern
Barn Swallow	*Hirundo rustica*	Threatened	Not listed
Bobolink	*Dolichonyx oryzivorus*	Threatened	Not listed
Eastern Meadowlark	*Sturnella magna*	Threatened	Not listed

2. Site-based Population and Distribution Objectives

The potential for Parks Canada 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 (Appendix A) 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 Appendix A rather than in the table of recovery measures (Appendices B, C, 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 Park Act* or *National Historic Sites of Canada Order* and SARA, population monitoring, habitat maintenance, and restoration through the existing management regime for the site. For many species, population and distribution objectives are not meaningful at the scale of this action plan for various reasons, including: (1) the primary threats that a species may face occur outside the Park or NHS (e.g., wide-spread disease, loss of overwintering habitat elsewhere); (2) species is only transient within the Park or NHS; or (3) the population within the site is a very small part of the Canadian distribution or its distribution is unknown or unconfirmed within the Park or NHS.

3. Conservation and Recovery Measures

The lands and waters of Kouchibouguac National Park are representative of New Brunswick Maritime Lowland Ecoregion and they are rich and biologically diverse. The protection offered by KNP provides us with an opportunity to do active management for the recovery of species at risk, to investigate restoration techniques and fill knowledge gaps, and to contrast ecological and life history parameters with lands outside the site in a working landscape with development and industrial activities.

KNP 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 better management and restoration efforts. Visitor facilities have been designed to provide meaningful experiences while protecting park habitats and species.

This 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 (Appendix B and D) and which measures will be encouraged through partnerships or when additional resources come available (Appendix C) 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 species at risk.

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

Active Management

Active management to support conservation and recovery of species at risk at KNP will include reducing disturbance of breeding Piping Plovers and conservation of Gulf of St. Lawrence Aster and Beach Pinweed habitat. The feasibility of reintroducing the Gulf of St. Lawrence Aster will be explored. The park will also contribute to a national seed bank for Beach Pinweed and improve Atlantic Salmon productivity with stock enhancement in KNP's rivers. Best management practices for bats, Barn Swallow, Bobolink, Eastern Meadowlark and Short-Eared Owl will be developed and implemented. KNP will also provide expertise and logistical support to First Nations partners to support recovery actions outside of KNP for Piping Plover, Wood Turtle and Atlantic Salmon.

Filling Knowledge Gaps

Research and monitoring is needed to fill gaps in the knowledge base necessary to build programs for some species at risk. Many of these measures will require partnerships and/or additional funding and will benefit from the opportunity to work with First Nations, the academic community and citizen scientist programs. Studies to learn more about the population, habitat or threats to species at risk such as bats, Bank Swallow, Gulf of St. Lawrence Aster and Wood Turtle are planned. Moreover, KNP will explore the feasibility of artificial propagation of Gulf of St. Lawrence Aster and introduction to suitable habitat in the Park with the academic community and other interested partners.

Working Together

Visitor experience and outreach opportunities are key to the success of this multi-species action plan. KNP will increase species at risk awareness through traditional media and social media communication strategies and also with urban outreach activities targeting young families and youth. An Atlantic Salmon education kit will be developed in addition to existing Piping Plover and American Eel education kits and they will be translated in Mi'kmaq. These kits will be available on a loan system for New Brunswick schools, First Nations communities and non-governmental organizations. KNP will carry out targeted and public presentations to inform and engage local residents on the Wood Turtle protection and will promote stewardship for the protection of Barn Swallow. The Park will develop a comprehensive volunteer program for species at risk and other conservation projects. A visitor experience program called "Biologist for a day" will be developed to engage visitors in the protection of the Park and increase their awareness of species at risk.

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)). At the time of writing of this document, it was not possible to identify any new or additional critical habitat for any species in KNP and associated NHS. Where critical habitat identification is not complete, it will be identified in an upcoming or revised action plan or revised recovery strategy; refer to the schedule of studies in relevant recovery strategies for further details.

4.1 Proposed Measures to Protect Critical Habitat

Critical habitat identified in other recovery documents within KNP of Canada is legally protected from destruction as per section 58 of the SARA.

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 B, 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 outlined in Appendix C.

Many of the proposed measures will be integrated into the operational management of the sites and there will be 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 KNP and associated NHS managed by Parks Canada in the Northern New Brunswick Field Unit offering adequate habitat for the species targeted in this action plan (Fort Beauséjour – Fort Cumberland NHS, Beaubassin – Fort Lawrence NHS, Grand-Pré NHS), and does not bring any restrictions to land use outside the sites. As such, this action plan will place no socio-economic

costs on the public. However, minor restrictions may be placed on visitor activities on park lands and waters to protect and recover species at risk.

5.2 Benefits

Measures presented in this action plan for KNP and associated NHS 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 the 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., restrictions to human activities within areas occupied by the species, combined with ongoing research and monitoring), potential species re-establishment, and increasing public awareness and stewardship (e.g., signage, visitor programs, and highlights in communication media).

Potential economic benefits of the recovery of the species at risk found in 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. Wildlife, in all its forms, has value in and of itself, and is valued by Canadians for aesthetic, cultural, spiritual, recreational, educational, historical, economic, medicinal, ecological and scientific reasons. The conservation of wildlife at risk is an important component of the Government of Canada’s commitment to conserving biological diversity, and is important to Canada’s current and future economic and natural wealth.

Implementing this action plan is expected to provide benefits for park visitors, local residents and Indigenous groups. Some activities in the plan may create opportunities for local residents to become involved in the recovery of species at risk and for cooperation and community partnerships in species at risk recovery. Benefits should be relatively evenly distributed across individuals in local communities, and opportunities for involvement will be available to all local residents. These include opportunities to learn about and take part in the recovery of culturally important species at risk, opportunities for visitors and local communities to be involved in conservation issues and greater awareness of Indigenous values and culture among local residents and visitors to the parks.

6. Measuring Progress

Reporting on implementation of the action plan (under s. 55 of SARA) will be done by assessing progress towards implementing the measures. Reporting on the ecological

impacts of the action plan will be done by assessing progress towards meeting the site-based population and distribution objectives.

7. References

Department of Natural Resources. 2007. Recovery Strategy for the Gulf of St. Lawrence Aster (*Symphyotrichum laurentianum*) in New Brunswick, Canada. New Brunswick Department of Natural Resources, Fredericton, New Brunswick. 29 pp.

Environment Canada. 2012a. Recovery Strategy for the Gulf of St. Lawrence Aster (*Symphyotrichum laurentianum*) in Canada. *Species at Risk Act* Recovery Strategy Series. Environment Canada, Ottawa. v + 18 pp.

Environment Canada. 2012b. Recovery Strategy for the Piping Plover (*Charadrius melodus melodus*) in Canada. *Species at Risk Act* Recovery Strategy Series. Environment Canada, Ottawa. v + 29 pp.

Environment Canada. 2013. Management Plan for the Beach Pinweed (Lechea maritima) in Canada. Species at Risk Act Management Plan Series. Environment Canada, Ottawa. iii + 18 pp

Environment Canada. 2014. Management Plan for the Monarch (*Danaus plexippus*) in Canada [Proposed]. *Species at Risk Act* Management Plan Series. Environment Canada, Ottawa. iv + 39 pp.

Environment Canada. 2015. Recovery Strategy for Eastern Whip-poor-will (*Antrostomus vociferus*) in Canada [Proposed]. *Species at Risk Act* Recovery Strategy Series. Environment Canada, Ottawa. vii + 57 pp.

Environment Canada. 2016a. Recovery Strategy for Canada Warbler (*Cardellina canadensis*) in Canada. *Species at Risk Act* Recovery Strategy Series. Environment Canada, Ottawa. vii + 62 pp.

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

Environment Canada. 2016c. Recovery Strategy for Olive-sided Flycatcher (*Contopus cooperi*) in Canada. *Species at Risk Act* Recovery Strategy Series. Environment Canada, Ottawa. vii + 57 pp.

Environment Canada. 2016d. Recovery Strategy for the Wood Turtle (*Glyptemys insculpta*) in Canada [Proposed]. *Species at Risk Act* Recovery Strategy Series. Environment Canada, Ottawa. v + 48 pp.

Parks Canada. 2010. Kouchibouguac National Park of Canada Management Plan. Parks Canada, Kouchibouguac National Park, NB. x + 91 pp.

Appendix A: Species information, objectives and monitoring plans for species at risk in KNP and associated NHS.

Species	National objectives	Population & Distribution objectives	Population Trend in KNP[1]	Population monitoring[2]	General Information and Broad Park Approach
Piping Plover – *melodus*	(1) Maintain at least 255 pairs in Atlantic Canada, increasing to 310 pairs over time; (2) fledge at least 1.65 chicks per pair	Maintain productivity of 1.65 chicks per pair per year, calculated as a 5 year running average	Slow decrease	Annual monitoring of the nesting population. Identify and monitor every Piping Plover nest in the Park to determine productivity. Participate in the International Piping Plover Census every 5 years.	Each spring all suitable breeding habitat is surveyed and when a nesting pair is observed the section of beach is closed to the public until chicks are 28 days old. Interpretive panels and signage are used to promote compliance with beach regulations and, when closures occur, to redirect visitors to open beaches. Provide expertise and logistical support to First Nations, NGOs and other partners to help recovery efforts outside the Park. Average nesting pairs of 14.3 (1986-1995), 11.5 (1996-2005) and 10.9 (2006-2015).
Gulf of St. Lawrence Aster	Maintain and, if possible, increase the number of individuals and area of occupancy within each of the 16 occurrences identified as priority targets (4 in New Brunswick)	Species potentially extirpated from the Park. Possibility of reintroduction to re-establish/ maintain occupancy in park	Decrease and/or potentially extirpated from the Park	Annual field inventory of sites where the species was present in 2004 (last year the species was observed in KNP) and suitable potential habitat.	Although habitat at some historical sites may no longer be suitable, potential and critical habitat within the Park boundaries will be surveyed for presence of the plant. Possibility of reintroduction/restoration of plant within the Park.
Beach Pinweed	From Management Plan: 1) Maintain existing populations; 2) Preservation of seeds in a long-term, ex situ seed bank facility	Maintain current area of occupancy of Beach Pinweed (impacts of severe storms cannot be mitigated)	Stable but fragile	Conduct survey every 5 years to monitor abundance and habitat, including the extent of area occupied.	Conservation priority for KNP as a large proportion (60%) of the global population is located on park land. Plants are protected under the Canada National Parks Act.

Species	National objectives	Population & Distribution objectives	Population Trend in KNP[1]	Population monitoring[2]	General Information and Broad Park Approach
Wood Turtle	Long-term: to ensure the viability of local populations in watersheds where species currently occurs. Medium-term: Increase population abundance in streams where species is declining and maintain, and if possible, increase available suitable habitat; reduce or mitigate threats that may be causing population declines; determine baseline abundance or trend information for streams inhabited with unknown abundance and population trend.	Support species recovery through nest and hibernation site protection.	Unknown	Nest sites and individuals will be monitored.	Habitat and species are fully protected within national park boundaries. Conduct pilot project of new survey methods (conservation dogs or eDNA) to locate Wood Turtles and nesting sites for improved knowledge of local populations. Provide expertise to Metepenagiag Mi'kmaq Nation to support recovery outside the park. Minimize the road mortality threat.
Atlantic Salmon – Gaspe-Southern Gulf of St. Lawrence population	N/A	Improve productivity above current level.	Decline	Assess adult migration, health and growth rates in estuaries of KNP, Richibucto River, Kouchibouguac River, Kouchibouguacis River. Assess productivity of juveniles per 100m^2 of habitat.	Continue monitoring efforts and productivity determination in the park. KNP will support First Nations and non-governmental organisation (Friends of Kouchibouguacis) partners for the recovery of the species outside the park. Evaluate option to enhance Black River and Fontaine River stocks within Kouchibouguac National Park.

Species	National objectives	Population & Distribution objectives	Population Trend in KNP[1]	Population monitoring[2]	General Information and Broad Park Approach
Bobolink, Eastern Meadowlark, Short-eared Owl	N/A	Maintain adequate habitat in the National Historic Sites	Unknown	Recording incidental observations.	Development and implementation of vegetation best management practices.
Barn Swallow	N/A	Maintain occupancy in the Park	Declined since 1969.	Barn Swallow presence at both wharves (and other infrastructure) will be monitored, where possible.	Removal of barns and other infrastructure has reduced nesting opportunities; open fields have been regenerating into forest over the last 40 years. Species currently depends on human-made structures for nesting. All efforts will be made to retain nesting structures for the benefit of Barn Swallows. Monitoring of the Barn Swallow shelter constructed at Fort Lawrence.
Red Knot (*rufa* subspecies), Little Brown Myotis, Northern Myotis, Olive-sided Flycatcher, Chimney Swift, Canada Warbler, Eastern Whip-poor-will, Bank Swallow, Snapping Turtle, Common Nighthawk, Rusty Blackbird, Striped Bass - Southern Gulf of St. Lawrence pop., Monarch, American Eel, Wood Thrush, Southern Twayblade, Eastern Wood-pewee, Bald Eagle, Canada Lynx		No objective established: No threats known in KNP or no management actions can contribute to conservation within the Park. KNP is of limited importance to the species' national recovery.	Unknown	Record incidental observations and share with partners. For forest birds, a monitoring program will be initiated in anticipation of aligning with national protocols and contributing to a national database when available.	Continue to contribute to drafting of recovery strategies and management plans and identification of critical habitat. The Park and associated NHS will continue to protect individuals, protect suitable habitat and support partners where feasible on recovery and protection of these species. Additionally, KNP and associated NHS will work with partners to conduct opportunistic surveys for under-surveyed species in the Park or associated NHS and adjust management approaches appropriately when new populations are found.

[1]Population trend is from 2009-2014.
[2]Where population and distribution objectives have been established for KNP, monitoring is designed to directly measure success in achieving those goals.

Appendix B: Conservation and Recovery measures that will be conducted by KNP and associated NHS.

Species	Measure #	Measure	Desired Outcome	Threat or recovery measure addressed[1]	Timeline
Piping Plover - *melodus*	1	Reduce human disturbance of breeding plovers: Interpretive panels and signage to promote compliance with mitigation measures (e.g., dogs on leash) and area closures in the vicinity of nests to redirect visitors to nearby open beaches, where required.	Annual productivity is ≥1.65 chicks per pair per year (calculated as a 5 year running average)	Reduce human disturbance of breeding pairs (Environment Canada 2012b)	Ongoing
Piping Plover - *melodus*	2	Predator management: Control of Red Fox (*Vulpes vulpes*) on South Kouchibouguac Dune using humane wildlife control techniques.	Restore the Piping Plover to historic abundance at South Kouchibouguac Dune (2 nesting pairs)	Reduce predation of adults, eggs, and young (High level threat; Environment Canada 2012b)	Ongoing
Gulf of St. Lawrence Aster	3	Reduce disturbance to potential Gulf of St. Lawrence Aster areas and critical habitat: Minimize human traffic on dune and salt marsh vegetation. Investigate opportunity of reintroduction based on the favorable results obtained at Prince Edward Island National Park.	Natural regeneration of the species	Reduce disturbance and harm caused by recreational activities (Medium level threat; Environment Canada 2012a)	Ongoing
Beach Pinweed	4	Reduce disturbance to Beach Pinweed areas: Minimize human traffic on the dune vegetation	Maintain undisturbed habitat of the species; Maintain abundance of plants at current level	Reduce trampling of plants (conservation measure 3.3; Environment Canada 2013)	Ongoing
Wood Turtle	5	Improve Wood Turtle habitat connectivity and reduce road mortality on Highway 117	Install two Wood Turtle crossings on Highway 117 located within Wood Turtle critical habitat.	Road networks – Habitat fragmentation and road mortality (High level threat - Environment Canada 2016)	2016

Species	Measure number	Measure description	Desired Outcome	Threat or recovery measure addressed[1]	Timeline
Little Brown Myotis and Northern Myotis	6	Bat inventory: Assess distribution and relative abundance of bats in KNP using digital ultrasonic activity recorders	Distribution and relative abundance of bat species in KNP is understood and a long-term bat monitoring protocol is implemented.	Clarify population status in KNP	2016
Little Brown Myotis and Northern Myotis	7	Bat Best Management Practices: Implement Best Management Practices for maintenance of infrastructure used by roosting bats	Bat Best Management Practices implemented	Protection of individuals and residences	2016
Barn Swallow	8	Barn Swallow Best Management Practices: Develop and implement Best Management Practices for maintenance of infrastructure used by nesting birds	Maintain monitoring of the colony present at Cap St. Louis wharf	Maintain current habitat (no habitat loss)	Ongoing
Bank Swallow	9	Inventory of known and potential suitable habitat. Thereafter annual monitoring	Annual monitoring of known colonies and identification of new sites in relation to coastal zone changes	Monitor loss and/or creation of breeding habitat related to coastal zone changes	Ongoing
Bobolink, Eastern Meadowlark and Short-eared Owl	10	Vegetation Best Management Practices: Develop and implement Best Management Practices for the conservation of nesting grassland birds in National Historic Sites	A protected and productive population of nesting grassland birds (Bobolink) in National Historic Sites of Northern New-Brunswick Field Unit	Incidental mortality from agricultural operations	2016-2018

[1]Threat or recovery measures as per most recent versions of relevant documents found in References section.

Appendix C: Other conservation and recovery measures that will be encouraged through partnerships or when additional resources become available.

Species	Measure #	Measure	Desired Outcome	Threat or recovery measure addressed[1]
Piping Plover - *melodus*	11	Provide expertise and logistical support to First Nations, NGOs and other partners to support recovery in areas adjacent to the park	Partners outside the park engaged in recovery efforts	Nest disturbance
Gulf of St. Lawrence Aster	12	Inventory of suitable potential habitat with Atlantic Canada Conservation Data Centre (ACCDC)	Find new potential habitat for Gulf of St. Lawrence Aster	Knowledge gap of suitable habitat in KNP (recovery activity of medium priority, Environment Canada, 2012a)
Gulf of St. Lawrence Aster	13	Explore feasibility of artificial propagation and introduction to suitable habitat in KNP (with University of Prince Edward Island and other interested partners)	Restoration of population in suitable habitat	Reintroduce or increase number of individuals at priority target sites (Environment Canada 2012a). Decrease likelihood of extirpation from KNP
Beach Pinweed	14	Contribute to a national seed bank	National seed bank has contribution from KNP	Finalize seed collection protocol and prioritize seed banking efforts (conservation measure 2.2; Environment Canada 2013)
Wood Turtle	15	Pilot project for new survey methods (conservation dogs) in collaboration Dalhousie University, Metepenagiag First Nation and New Brunswick Department of Natural Resources or eDNA	Evaluate survey technique for location of turtles and nests	Improved knowledge of local populations

Species	Measure #	Measure description	Desired Outcome	Threat or recovery measure addressed[1]
Atlantic Salmon – Gaspé-Southern Gulf of St. Lawrence pop	16	Stock enhancement at Black River and Fontaine River in collaboration with Fisheries and Ocean Canada	Reintroduction of 15 000 fry per year in Black River and 10 000 fry per year in Fontaine River. Density of 10 parr / 100m^2	Improve productivity
Atlantic Salmon – Gaspé-Southern Gulf of St. Lawrence pop	17	Provide expertise to First nations and non-governmental organisation partners for the recovery of the species outside the park. Atlantic Salmon population assessment for Richibucto and Kouchibouacis Rivers. Stock enhancement	Monitoring and enhancement in Richibucto and Kouchibouguacis rivers	Improve knowledge and productivity in Richibucto and Kouchibouguacis rivers

[1] Threat or recovery measures as per most recent versions of relevant recovery documents found in References section.

Appendix D: Outreach, education and visitor experience measures related to species at risk in KNP.

Measure[1]	Measure number	Desired Outcome	Proposed Measures[2,3]
Implement urban outreach targeting young families and youth	1	Increase by 5% the number of direct or facilitated contacts with Canadians outside of KNP compared to 2014	Implement species at risk awareness activities in urban outreach
Implement a traditional and social media communications strategy	2	Increase awareness, reach, visibility and initial connections by increasing number of media and social media posts specifically on species at risk	Develop three media stories on species at risk work conducted in KNP per year; 15 to 20 Facebook posts on species at risk per year
Offer education kits (Piping Plovers, American Eel, Atlantic Salmon)	3	Increase awareness, connections, and interactions with younger Canadians; grow and diversify base of support	Eel and Plover education kits available on a loan system for schools, First Nations and non-governmental organisations; develop Atlantic Salmon education kit; initiate translation of education kits into Mi'kmaq
Undertake stewardship for protection of Barn Swallow	4	Increase awareness; engage stakeholders in protection	Collaborate with wharf authorities to implement Best Management Practices
Deliver public presentations on Wood Turtle	5	Increase awareness; engage stakeholders in protection	Presentation with Forestry Board and ATV club; inform and engage local residents (through partners); identify opportunities to raise awareness of road mortality and other threats
Develop a volunteer program for species at risk	6	Stakeholders and partners engaged in protection of species at risk in KNP	Develop a volunteer conservation program for KNP, focused on species at risk
Develop visitor experience program that profiles SAR	7	High quality visitor experience to increase awareness	Visitors will participate in citizen science activities as a "biologist for a day"

[1]All activities will be implemented on an annual, ongoing basis.
[2]Actual actions may vary from year-to-year based on available resources, opportunities, and emerging program needs.
[3]In collaboration with partners when possible

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[3] (FSDS) goals and targets.

Recovery planning is intended to benefit species at risk and biodiversity in general. However, it is recognized that recovery measures 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 on non-target species or habitats. The results of the SEA are incorporated directly into the action 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 Kouchibouguac National Park and associated National Historic Sites. 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 Kouchibouguac National Park and associated National Historic Sites. Consequently all of these species were considered in the planning process, any potential secondary effects were evaluated and mitigated, and, where appropriate, measures were designed to benefit multiple species. The planning process was also guided by priorities identified in the Park's ecological integrity monitoring program, and the Park's management plan (Parks Canada, 2010). As a result, measures 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 involving park 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.

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