

# Multi-species Action Plan for Terra Nova National Park of Canada and the National Historic Sites of Canada in Eastern Newfoundland [Proposed]



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](#)<sup>1</sup>.

**Cover illustration:** Bread Cove Pond, Terra Nova National Park, Janet Feltham, Parks Canada © 2016

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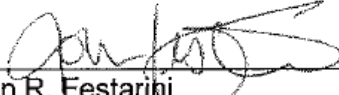
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<sup>1</sup> <http://sararegistry.gc.ca/default.asp?lang=En&n=24F7211B-1>

## 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:



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John R. Festarini  
Acting Field Unit Superintendent, Newfoundland East 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 strategy 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 strategy, 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 have 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 report, the recovery strategy, 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 Terra Nova National Park (TNNP) and the national historic sites within eastern Newfoundland and has prepared this action plan to implement the recovery strategies as they apply to the park and the national historic sites, as per section 47 of SARA. It has been prepared in cooperation with Miawpukek First Nation, Environment and Climate Change Canada, Fisheries and Oceans Canada and the Province of Newfoundland and Labrador, 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 extended to all those who contributed their time, expertise and information in the development of this plan including: Gregory Jeddore (Miawpukek First Nation), Andre Arsenault (Canadian Forest Service), Kathy St. Laurent (Environment and Climate Change Canada), and John Gosse.

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

## Executive summary

The Multi-species Action Plan for Terra Nova National Park of Canada and the National Historic Sites of Canada in Eastern Newfoundland applies to lands and waters occurring within the boundaries of Terra Nova National Park of Canada (TNNP) as well as the national historic sites (NHS) of Canada within eastern Newfoundland, including Ryan Premises, Hawthorne Cottage, Castle Hill, Signal Hill, and Cape Spear Lighthouse National Historic Sites of Canada. 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 within TNNP and in the national historic sites in the region.

Where it has been determined that the sites can conduct management activities to help recover and/or manage a species, site-specific objectives are identified in this plan and represent the site's contribution to objectives presented in federal recovery strategies and management plans. Species at risk, their residences, and their habitat are protected by existing regulations and management regimes in national parks and national historic sites as well as by SARA. Additional measures that will contribute to the survival and recovery of the species at the sites are described in this plan. These measures were identified based on threats and actions outlined in federal and provincial status assessments and recovery documents, as well as knowledge of the status and needs of each species at each site. Population monitoring measures are also identified for the species for which management activities at the sites can contribute to recovery.

Critical habitat for American Marten (Newfoundland population) in TNNP was identified in the recovery strategy (Environment Canada 2013) and Parks Canada has legally protected these parcels of land. No new information exists to identify additional critical habitat in this action plan. Measures to protect existing critical habitat in the Park are presented in this action plan.

Measures proposed in this action plan will have limited socio-economic impact and place no restrictions on land use outside of TNNP or the national historic sites. 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

Terra Nova National Park (TNNP) is 404 km<sup>2</sup> in size and is located on the east coast of the island of Newfoundland (Figure 1). It is the most easterly national park in Canada. Part of the Appalachian Mountain System, the area is characterized by low relief and a series of rounded hills rising to 200 m above sea level. The park represents the easternmost extent of the boreal forest, which spans the entire country westward to the Rocky Mountains and into Alaska. Established in 1957, the park is situated within two ecoregions: Central Newfoundland Ecoregion and the North Shore Ecoregion (Damman 1983). Much of the park was logged during the years prior to park establishment. The Terra Nova Migratory Bird Sanctuary consists of the upper portions of two tidal inlets that are nearly totally enclosed by lands within the park. Although the waters below mean low tide are excluded from the park, there is a strong marine influence with over 238 km of coastline, 100 islands, and no point in the park being located more than 5 km from the ocean.

The park protects four main types of ecosystems – forest, freshwater, wetland and coastal. Almost 80 percent of the terrestrial component of the park is forest, with Black Spruce and Balsam Fir the dominant tree species. Varying mixtures of White Birch, Trembling Aspen, White Pine, Red Maple and larch exist within forested areas of the park. Numerous bogs and fens (15% of park area), barrens (1.2%), ponds and streams (> 6%) are distributed across the park. TNNP supports a high diversity of flora and fauna including many species at risk. There are 523 species of vascular plants, 427 of which are indigenous. There is a limited number of animal species. Eighteen species of terrestrial mammals occur in the park, of which only 12 are native to insular Newfoundland and Labrador. Non-native mammals present in the park include moose, Snowshoe Hare and Red Squirrel. Approximately 170 bird species are found in the park, with 63 using the park as their breeding grounds. Freshwater or anadromous fishes include native Brook Trout, Atlantic Salmon and Arctic Char.

TNNP received approximately 26 000 visitors in 2016 and the campgrounds at Newman Sound and Malady Head in combination with the backcountry campsites attracted approximately 20 000 camping nights. The visitors are primarily from the Avalon Peninsula and eastern part of insular Newfoundland. The park is divided by a 43 km section of the Trans Canada Highway, which is the main transportation corridor for the island.

The majority of land adjacent to the park is under provincial jurisdiction. The primary land uses in the park's greater ecosystem include forestry (commercial and domestic timber harvesting) and recreational development (cabins). Small-scale resource extraction (sand, gravel, and rock) occurs along the western and northwestern edges of the park. To the south of TNNP is the provincial Bay du Nord Wilderness Reserve, an area representative of the Maritime Barrens-Central Barrens sub-region. This 2895 km<sup>2</sup> area includes the Bay du Nord River, a Canadian Heritage River, and protects much of the Middle Ridge caribou herd range.

Many shared interests exist between the Miawpukek First Nation (MFN) and Terra Nova National Park, including the protection of natural and cultural heritage and the desire to build appreciation of the natural and cultural resources, and to share this knowledge with others. The development of this action plan was strengthened by the partnership that exists between TNNP and MFN.

Maintenance and restoration of ecological integrity is the first priority of national parks (*Canada National Parks Act* s.8(2)(CNPA)). 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 on federal lands 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. Parks Canada's ecological integrity programs make contributions to the recovery of species at risk by providing inventory and monitoring data, and through the implementation of habitat restoration projects and other conservation measures. The species-directed measures outlined in this plan will in turn contribute to maintaining and improving ecological integrity at Terra Nova National Park by improving the conservation status of native species and their habitat and maintaining biodiversity.

There are also several national historic sites (NHS) within eastern Newfoundland. Signal Hill NHS – a local, provincial and national symbol – overlooks the entrance to St. John's Harbour and reflects three centuries of Canada's defense and communications history. The site consists of 106 hectares and encompasses the major portion of the Signal Hill Peninsula. Cape Spear Lighthouse NHS was designated by reason of its age and architecture. The Lighthouse is the oldest surviving lighthouse in the province (180 years old) and is the most easterly national historic site in Canada. It is located within 49 hectares of land. Castle Hill NHS was designated in 1968 for the important role its defenses played in defending the town of Placentia from 1692 to 1811. The 24-hectare site occupies a strategic position high on a hill overlooking Placentia. Located in Bonavista, Ryan Premises NHS consists of six historic buildings on 2.4 hectares of land adjacent to Bonavista Harbour. These buildings were once the headquarters of James Ryan Ltd., which played a major role in the inshore fishery, the Labrador fishery and the seal hunt. The buildings are an excellent example of a traditional Newfoundland mercantile complex of the saltfish era. Hawthorne Cottage NHS, located in the town of Brigus, is historically important because it was the Brigus home of Captain Robert Abram (Bob) Bartlett, captain on a number of Arctic expeditions. Architecturally, the cottage represents a good example of a gentleman's modest suburban residence in 1830s eastern British North America. The cottage is situated on 0.24 hectares of land.



A number of federal and provincial recovery strategies and plans, management plans, and action plans have been prepared for species considered in this multi-species action plan. Along with status assessments, those documents provide guidance for the recovery of individual species, including strategic directions, recovery objectives, critical habitat, and threats. This action plan was developed and will be implemented in a manner that is consistent with those recovery documents, and should be viewed as part of this body of linked strategies and plans.

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

The geographic scope of this action plan includes all lands and waters within the boundary of Terra Nova National Park (Figure 1). The scope also includes all lands and waters within the boundaries of the five national historic sites in eastern Newfoundland (Figure 2) since Little Brown Myotis and Northern Myotis may occur at these sites, either within the built assets or on the associated lands. Presently, no other species at risk are known to regularly occur at these national historic sites however, Boreal Felt Lichen is present in the area around Castle Hill NHS. This multi-species action plan has been written specifically for these federally-owned lands because Parks Canada is legally responsible for species at risk on Parks Canada administered lands and has the ability to take direct conservation action to contribute to the recovery of species at risk.

This action plan addresses SARA-listed species that regularly occur in TNNP and the national historic sites in eastern Newfoundland that require an action plan under SARA (s.47), as well as other species of conservation concern (Table 1). 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.

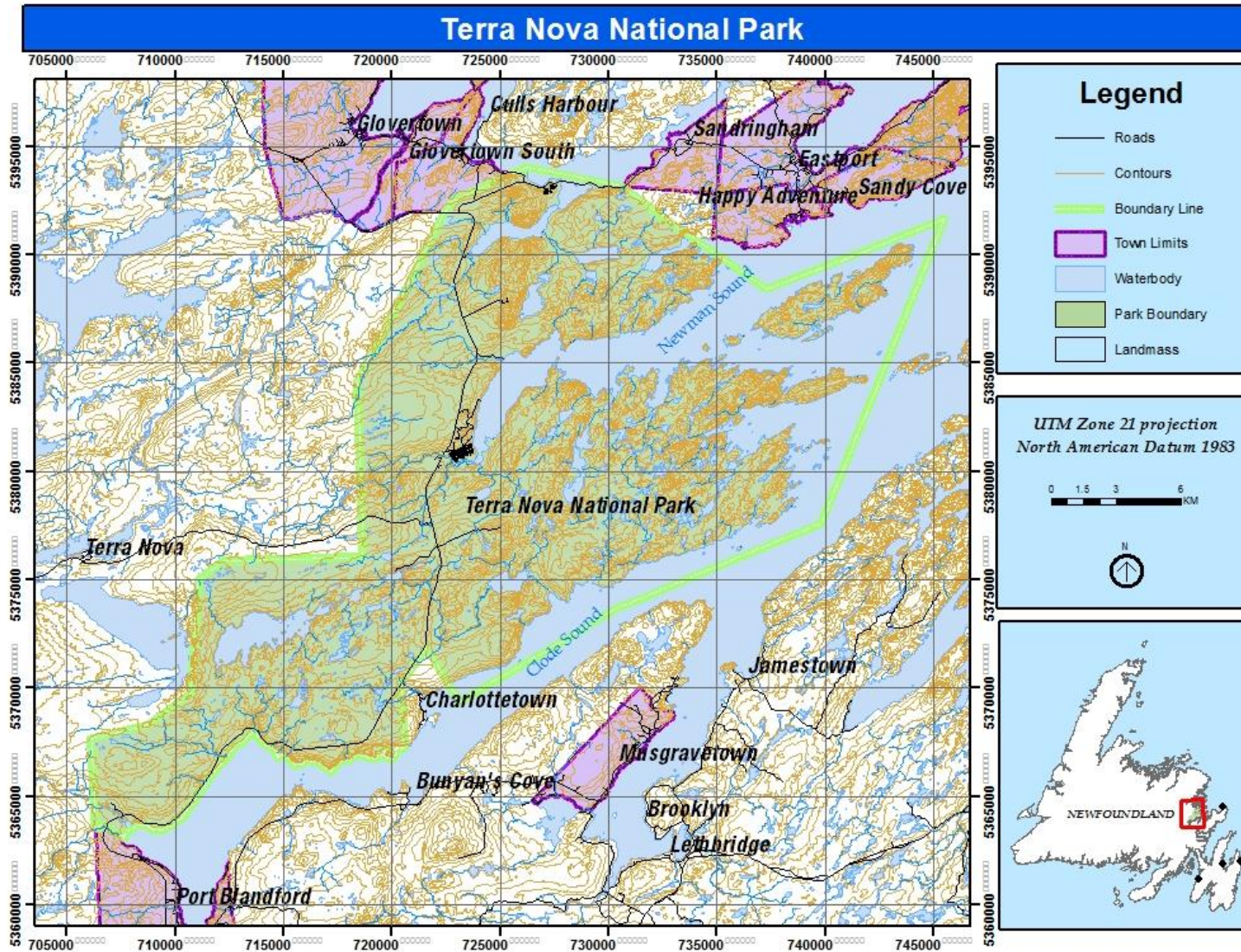


Figure 1. Terra Nova National Park, located in Eastern Newfoundland.



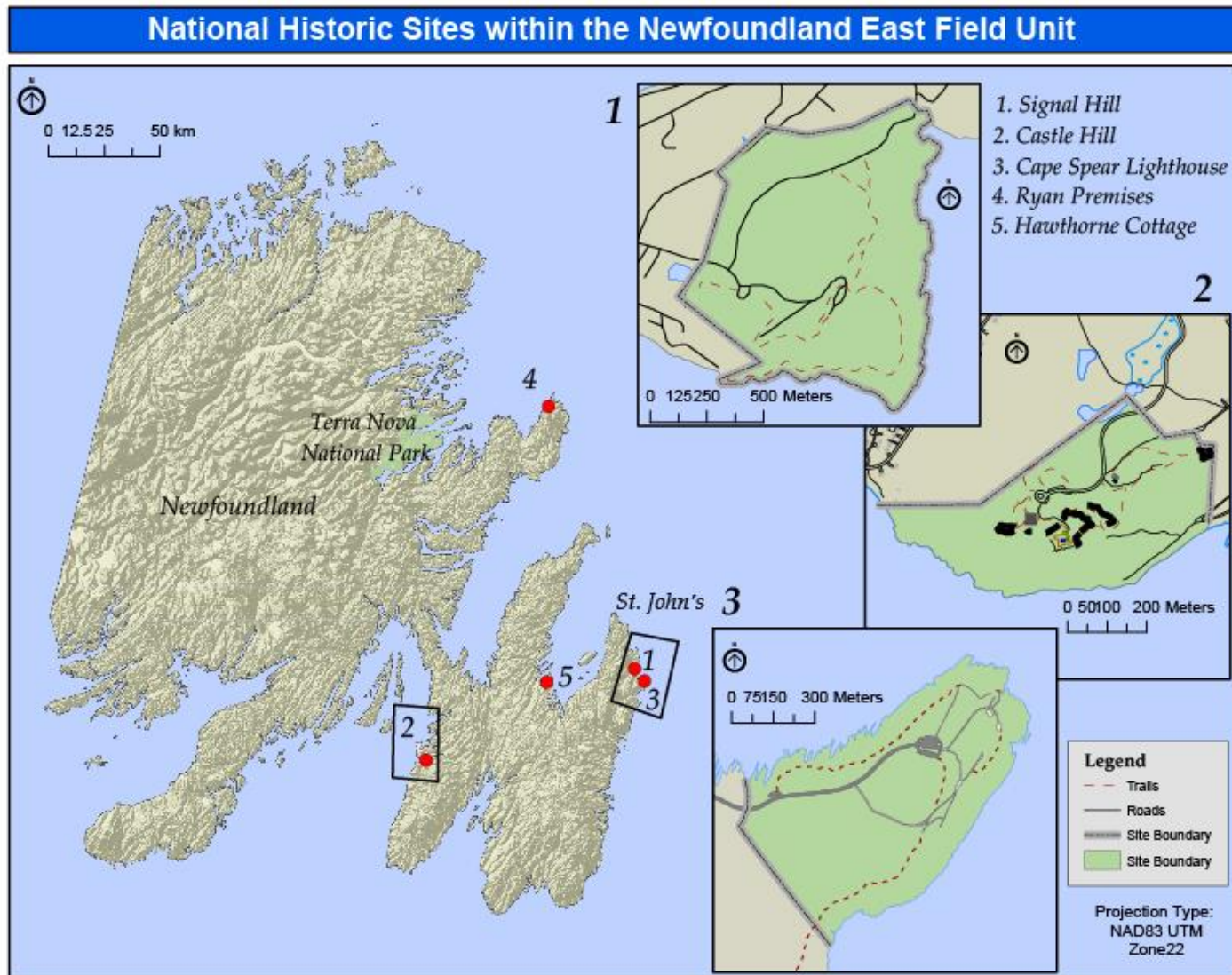


Figure 2. The five national historic sites within the Newfoundland East Field Unit included in the scope of this action plan. All sites are on the Avalon Peninsula with the exception of the Ryan Premises NHS. The three sites shown in detail contain significant land masses within their boundaries.

Table 1. Species included in the Multi-species Action Plan for Terra Nova National Park and the national historic sites in eastern Newfoundland.

Species	COSEWIC status	SARA Schedule 1 status
Little Brown Myotis ( <i>Myotis lucifugus</i> )	Endangered	Endangered
Northern Myotis ( <i>Myotis septentrionalis</i> )	Endangered	Endangered
Red Crossbill ( <i>percna</i> subspecies) ( <i>Loxia curvirostra percna</i> )	Threatened	Endangered
Olive-sided Flycatcher ( <i>Contopus cooperi</i> )	Threatened	Threatened
American Marten, NF population ( <i>Martes americana atrata</i> )	Threatened	Threatened
Boreal Felt Lichen, Boreal population ( <i>Erioderma pedicellatum</i> )	Special Concern	Special Concern
Rusty Blackbird ( <i>Euphagus carolinus</i> )	Special Concern	Special Concern
Barrow's Goldeneye, Eastern pop. ( <i>Bucephala islandica</i> )	Special Concern	Special Concern
Blue Felt Lichen ( <i>Degelia plumbea</i> )	Special Concern	Under listing consideration
American Eel ( <i>Anguilla rostrata</i> )	Threatened	Under listing consideration
Caribou, Newfoundland population ( <i>Rangifer tarandus</i> )	Special Concern	Under listing consideration
Atlantic Cod, NF & Labrador pop. ( <i>Gadus morhua</i> )	Endangered	Under listing consideration

## 2. Site-based population and distribution objectives

The potential for Parks Canada to contribute to the local and/or national recovery of each species through management actions at TNNP and the national historic sites in eastern Newfoundland was assessed and incorporated into this plan. 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 tables of recovery measures (Appendices B and C). In some cases, the opportunity for the Park to contribute to the recovery of a species is relatively small because: (i) threats cannot be controlled in the park or do not exist in the site (e.g., wide-spread disease, loss of overwintering habitat elsewhere); (ii) the species is only transient within the park; and/or (iii) the population within the site is a

very small part of the Canadian distribution or is unknown or unconfirmed and the species distribution within the site is a small proportion of its Canadian range. In these cases, site-specific objectives and conservation actions may be limited to protection measures in place under the *Canada National Parks Act* and SARA, population monitoring, habitat maintenance and restoration through the existing park management regime.

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

Terra Nova National Park plays an important role for certain species at risk as the largest protected land mass on the east coast of Newfoundland where American Marten are known to occur. Threats such as accidental mortality due to trapping and snaring exist within the land adjacent to TNNP for American Marten. Cabin development and forestry operations are also occurring within the greater ecosystem, which have the potential to impact several species at risk that occur in the region. Within the park itself, forest health is poor due to moose overbrowsing and a history of fire suppression on the landscape. Risk of mortality associated with the Trans Canada Highway exists for American Marten and other species at risk such as Woodland Caribou and potentially Red Crossbill.

Management efforts over the past several years to reduce the moose population are having a positive effect on forest health. An increase in the density and height of young balsam fir and hardwood trees due to lower browse rates is leading to improvements in forest structure, which will have long-term positive effects on American Marten, Red Crossbill and Boreal and Blue Felt Lichen and will likely improve habitat for other species at risk such as Caribou, Little Brown Myotis and Northern Myotis. Within the prescribed fire program, TNNP is re-establishing a natural disturbance process and creating suitable post-fire habitat for Olive-sided Flycatchers.

With all of these factors considered, the opportunities for TNNP and the national historic sites in eastern Newfoundland to contribute to national population and distribution goals for species at risk have been assessed and prioritized. Parks Canada works closely with the Miawpukek First Nation as well as other federal departments, the Province of Newfoundland and Labrador and academic partners and many recovery measures outlined in this plan are in collaboration with these partners. Academic interest in the park has also meant a consistent source of research that informs management and restoration efforts. Additionally, TNNP continues to engage visitors and volunteers to improve the ecological health of the park and support the recovery of species at risk. The broad visitor base of the park provides opportunities to connect with visitors through direct involvement in species recovery and to draw upon citizen science and volunteers in resource conservation. Visitor facilities at the park have been re-designed and continuously improved to provide meaningful experiences while protecting habitats and species.

This action plan identifies measures to achieve the site-based population and distribution objectives, along with measures required to protect the species and learn

more about them. For each measure, timelines and desired outcomes were established. A prioritization process was used to determine which measures will be conducted by the park or site (Appendix B) and which measures will be encouraged through partnerships or when additional resources come available (Appendix C). The prioritization process primarily considered the ecological effectiveness of measures, and also included consideration of opportunities to increase the value of the visitor experience at 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. Four themes emerge from the identification of measures: Habitat restoration through active management; Threat reduction and mitigation; Working together to fill knowledge gaps; and Visitor engagement, education and outreach.

### **Habitat restoration through active management**

Terra Nova National Park is presently restoring its boreal forest ecosystem that provides habitat to three quarters of the park's species at risk. Most of the park has been identified as critical habitat for the American Marten, and both Boreal and Blue Felt Lichen rely on mature Balsam Fir and hardwood trees as hosts. Little Brown Myotis, Northern Myotis and Caribou also live within these forested habitats in TNNP. Red Crossbills rely on mature cone-producing trees such as Black Spruce and Balsam Fir for food. Olive-sided Flycatcher exhibits a preference for recently burned habitat. The park will continue habitat improvements for these species at risk that depend on Black Spruce, Balsam Fir and hardwood forests through reducing the hyperabundant moose population, using prescribed fire, and replanting target native tree species. Implementation of this initiative has already begun to demonstrate improvements in native Balsam Fir and hardwood tree densities.

### **Threat reduction and mitigation**

While habitat restoration is important for many species at risk at TNNP, there continue to be risks and threats to certain species that need to be addressed and mitigated. Actions related to risk reduction include the development and implementation of best management practices to reduce disturbance to caribou in areas where they are known to occur. Lichen surveys in areas where projects or activities are planned will continue through the environmental impact assessment process. New occurrences of Boreal or Blue Felt Lichens will be documented and the area protected from disturbance. National best management practices for bats in built assets and infrastructure are in place in TNNP and the national historic sites in eastern Newfoundland and inspections are incorporated into the environmental impact assessment process. Prior to any work commencing, built structures will be inspected, and if necessary, measures taken to prevent harm to individuals (e.g., allow bats to leave the area before work commences, install "bat tubes" to prevent re-entry, erect bat boxes nearby so that alternative roosts are available). Steps will also be taken to protect roosts and hibernacula if they are found in the park (e.g., restricting access, decontamination protocols). Measures to reduce highway mortality for species at risk such as American Marten, Red Crossbill and Caribou include exploring the effectiveness of modified culverts as underpasses,

identifying wildlife crossing hotspots along the Trans Canada Highway, signage, creating vegetated zones to guide wildlife to appropriate highway crossing locations, and exploring salt alternatives or salt reductions. Parks Canada will also work closely with regional partners to reduce accidental trapping and snaring of American Marten in the greater ecosystem. This work will involve trapper education and awareness sessions within local communities, supporting trapping/snaring-free zones in the surrounding area, and the distribution of floating mink boxes and appropriate snare wire to local trappers. Work is also underway towards obtaining Dark Sky Preserve designation for TNNP. This action will help preserve and maintain light pollution-free habitat for nocturnal species at risk such as Little Brown Myotis and Northern Myotis.

### **Working together to fill knowledge gaps**

Many of the measures outlined in this plan involve ongoing collaboration and cooperation with partners. Research and monitoring is needed to address gaps in knowledge necessary to identify active recovery measures for some species at risk as well as to measure progress towards recovery and assess effectiveness of recovery measures. In particular, TNNP will work with the Canadian Forestry Service to conduct a comprehensive inventory to determine the distribution and abundance of Boreal and Blue Felt Lichen in the park through modelling and surveying potential habitat. Parks Canada will continue to work with the Province of Newfoundland and Labrador and Miawpukek First Nation to better understand threats, survivorship and habitat use of American Marten in the park and the greater ecosystem. TNNP will continue to participate in the North American Bat Monitoring Program to determine bat species presence and distribution throughout the park and in the national historic sites. As part of the Ecological Integrity Monitoring Program for TNNP, Parks Canada will continue to assess eelgrass extent and implement best management practices within the environmental impact assessment process for marine-related projects in order to track and protect juvenile Atlantic Cod habitat in near-shore areas. Finally, knowledge of the occurrence and distribution of all species at risk in the park will be enhanced through the establishment of a wildlife observation reporting and tracking system that will be used by visitors, partners and park staff. Information received through this database will supplement the park's existing Ecological Integrity Monitoring Program.

### **Visitor engagement, education and outreach**

Visitor experience, education and outreach opportunities are key to the success of this multi-species action plan (Appendix D). The park will contribute to broader species conservation by building awareness and encouraging stewardship among the visiting public. Guided hikes, animated programs, and interpretive stations will be used to provide information during the peak visitor season each year and interpretive panels will be installed at strategic locations within the park and surrounding areas to provide year-round information on species at risk in the area. TNNP will also engage and involve the public in meaningful recovery actions for species at risk through volunteer opportunities. Visitors will be encouraged to participate in species at risk inventory and monitoring by reporting sightings to the wildlife observation reporting system. This reporting system will also enhance public awareness and support for species at risk by providing

information on life history, threats, population distribution and abundance for each species in the park and greater ecosystem.

## 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, it was not possible to identify any additional critical habitat in the park. Critical habitat is identified in TNNP in the SARA recovery strategy for American Marten (Newfoundland population) and includes most of the park (Environment Canada 2013). As more knowledge about habitat needs, and more data about habitat use by other species in the park is gathered, additional critical habitat may be identified in an upcoming or revised action plan or recovery strategy. Refer to the schedule of studies in relevant recovery strategies for further details (e.g., bats, Olive-sided Flycatcher, Red Crossbill *percna* subspecies).

### 4.1. Proposed measures to protect critical habitat

There is no new critical habitat identified in this action plan. Critical habitat identified in Terra Nova National Park for American Marten is legally protected from destruction as per section 58 of the SARA.

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

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

### 5.1. Costs

The total cost to implement this 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 Appendix B. No major socio-economic costs to visitors or the public, 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 identified in this action plan (i.e., Appendix B) 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 therefore will not result in additional costs to society.

The action plan applies only to lands and waters in TNNP and the national historic sites in eastern Newfoundland 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 TNNP and the national historic sites in eastern Newfoundland will contribute to meeting recovery strategy objectives for threatened and endangered species and will also contribute to meeting management objectives for species of special concern. These measures are expected to have an overall positive impact on ecological integrity and enhance opportunities for appreciation of the sites and the species by visitors and the general public. This action plan includes measures that could result in benefits to Canadians, including positive impacts on biodiversity and protection and enhancement of ecosystem services.

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), ecosystem restoration, 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, medical, ecological and scientific reasons. The conservation of wildlife at risk is an important component of the Government of Canada's commitment to conserving biological diversity (Environment and Climate Change Canada 2016), and is important to Canada's current and future economic and natural wealth.

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

## 6. Measuring progress

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

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## Appendix A: Species information, objectives and monitoring plans for species at risk in TNNP and the NHS in eastern Newfoundland.

Species	National objectives <sup>3</sup> (from recovery strategy or management plan)	Site-based population & distribution objectives for TNNP	Population trend in TNNP <sup>4</sup>	Population monitoring <sup>5</sup>	General information and broad park approach
American Marten (Newfoundland population)	1. Increase the wild population of American Marten to establish a stable and self-sustaining population in Newfoundland; 2. Maintain areas currently occupied by marten and establish marten in areas adjacent to known populations where the potential for occupancy is high.	Maintain existing marten population in TNNP (i.e., catch per unit effort of at least 2.59 captures/100 trap nights), with stable or increasing trend over time.	Stable; Population is estimated to be between 35-40 individuals in the park (PCA 2015).	Marten abundance is assessed annually using a systematic mark recapture survey along a consistent route. Trapped individuals are instrumented with PIT tags for future re-sighting.	Key threats to the population in and around TNNP include road mortality, accidental trapping, and ensuring protection of suitable habitat. Management actions will focus on these threats to maintain and increase the population over time. Additionally, modelling future forest composition suggests that it will become less suitable for marten unless large-scale efforts to restore the boreal forest are implemented (i.e., moose management, prescribed burns, Black Spruce planting).
Olive-sided Flycatcher	1. Halt the national decline by 2025 and ensure a positive 10-yr trend; 2. Maintain current extent of occurrence.	Increase the total area of breeding habitat for Olive-sided Flycatcher in the park by 100 ha/year using prescribed fire.	Unknown; Species is widespread but occurring in low abundance in TNNP.	Prescribed burn areas and vegetation land cover are mapped every five years to track the increase in suitable habitat for Olive-sided Flycatcher. Breeding bird point count surveys are conducted in post-burn areas to detect Olive-sided Flycatcher occurrence. Monitoring could be implemented in other suitable habitat.	Olive-sided Flycatcher breeds in forest throughout TNNP and has a strong association with post-burn habitat as well as late successional wind-blown conifer forest (Environment Canada 2016). An increase in available habitat will potentially maintain or increase the current abundance and distribution at the site. Prescribed burns are implemented to restore boreal forest and post-burn areas are monitored to detect occurrence and assess distribution of Olive-sided Flycatcher.

<sup>3</sup> National objectives as per most recent versions of relevant recovery documents found in References section.

<sup>4</sup> Population trend is from 2011-2016.

<sup>5</sup> Where population and distribution objectives have been established for TNNP, monitoring is designed to directly measure success in achieving those goals.

Species	National objectives <sup>3</sup> (from recovery strategy or management plan)	Site-based population & distribution objectives for TNNP	Population trend in TNNP <sup>4</sup>	Population monitoring <sup>5</sup>	General information and broad park approach
Boreal Felt Lichen (Boreal population)	To maintain and enhance where necessary, self-sustaining populations of the Boreal Felt Lichen within its current geographic distribution in Newfoundland.	Maintain occupancy and enhance current geographic distribution of Boreal Felt Lichen in TNNP.	Stable in low numbers; 8 individuals identified in 2010.	Known sites are surveyed annually to confirm occupancy. Suitable habitat will be identified using predictive models and surveyed for additional occurrences in the future.	TNNP continues to protect and maintain habitat for Boreal Felt Lichen at known sites and assess and mitigate threats. A key priority is to better understand distribution and status through broader inventory of suitable habitat. Additionally, forest restoration efforts (i.e., moose management, Black Spruce planting) help ensure that host trees for these species are present and self-sustaining in TNNP.
Blue Felt Lichen	Not applicable	Maintain occupancy and enhance current geographic distribution of Blue Felt Lichen in TNNP.	Unknown; A comprehensive inventory has not yet been conducted; 11 individuals identified in 2010.	Known sites are surveyed annually to confirm occupancy. Suitable habitat will be identified using predictive models and surveyed for additional occurrences in the future.	TNNP continues to protect and maintain habitat for Blue Felt Lichen at known sites and assess and mitigate threats. A key priority is to better understand distribution and status through broader inventory of suitable habitat. Additionally, forest restoration efforts (i.e., moose management, Black Spruce planting) help ensure that host trees for these species are present and self-sustaining in TNNP.
Little Brown Myotis, Northern Myotis	1. Short-term: Maintain and increase (where feasible) the current level of the population; Long-term: Self-sustaining, resilient, redundant and representative population; 2. Maintain or restore the pre-white-nose syndrome (WNS) extent of occurrence.	Maintain occupancy in TNNP and national historic sites in Eastern Newfoundland	Unknown; Both species are present in the park and relatively common in surveys conducted in 2013 and 2014 (Shanahan 2015).	Ultrasonic acoustic surveys are conducted annually along a fixed transect according to North American bat monitoring protocols to detect species presence and distribution (see recovery measure #8). NHS are opportunistically monitored for species presence.	Status in TNNP and the national historic sites in eastern Newfoundland is poorly understood. No hibernacula have been identified within the park. WNS has not yet been detected in area. Best management practices, monitoring, decontamination protocols and education related to WNS prevention will be implemented.

Species	National objectives <sup>3</sup> (from recovery strategy or management plan)	Site-based population & distribution objectives for TNNP	Population trend in TNNP <sup>4</sup>	Population monitoring <sup>5</sup>	General information and broad park approach
Woodland Caribou (Newfoundland population)	Not applicable	Maintain occupancy in TNNP	Relative abundance appears to be increasing in the park	Aerial surveys are conducted to determine distribution and abundance of caribou within TNNP.	The park will continue to work with regional partners to determine distribution and abundance of caribou. Best management practices and mitigation measures will be implemented to reduce disturbance to caribou.
Red Crossbill ( <i>percna</i> subspecies), Rusty Blackbird, Barrow's Goldeneye (Eastern population), American Eel, Atlantic Cod (Newfoundland and Labrador population)		No objective established: There are no known threats in the park or no park management actions that can contribute to conservation within the park; TNNP is of limited importance to the species' national recovery.	Unknown	Incidental observations are recorded for all species at risk.	The park will continue to protect individuals and protect suitable habitat on park lands and support partners where feasible on recovery and protection of these species. Additionally, TNNP will work with partners to conduct opportunistic surveys for under-surveyed species in the park and adjust management approaches appropriately when new populations are found.

## Appendix B: Conservation and recovery measures that will be conducted by TNNP and the NHS in eastern Newfoundland.

Species	Measure #	Measure	Desired Outcome	Threat or recovery measure addressed <sup>6</sup>	Timeline
American Marten, Red Crossbill, Boreal Felt Lichen, Blue Felt Lichen, Little Brown Myotis, Northern Myotis	1	<u>Restore boreal forest and species at risk habitat</u> through moose population reduction, prescribed burns, and replanting of target species.	Boreal Forest Restoration targets are met (i.e., the number of bF saplings > 30 cm in height is double on all sites by 2018; the number of bF seedlings is increased by 25% in all severely impacted sites by 2018; the proportion of hardwoods browsed is < 20% on all severely impacted sites by 2018; there is 60% survival of planted bF seedlings by 2018).	Habitat loss and/or degradation (Environment Canada 2013); Reduction of fir regeneration due to moose browse (Environment Canada 2010)	2017-2019
Olive-sided Flycatcher	2	<u>Increase amount of habitat for Olive-sided Flycatcher</u> through prescribed fire.	Increase the total area of breeding habitat for Olive-sided Flycatcher in the park by 500 ha by 2018.	Fire suppression (Environment Canada 2016)	2017-2019
American Marten, Red Crossbill, Caribou	3	<u>Explore effectiveness of mitigation methods to reduce amount of road mortality</u> on the Trans Canada Highway (e.g., oversized culverts/underpasses, vegetated zones, road salt alternatives or reductions)	Identified and tested mitigation measures to reduce road mortality by 2019. If methods are effective, implement more broadly by 2021.	Road construction (Environment Canada 2013); Habitat loss or degradation (Environment Canada 2006); Disturbance (including natural disturbances and fire) (COSEWIC 2002; Environment and Climate Change Canada 2016)	2017-2021

<sup>6</sup> Threat or recovery measures as per most recent versions of relevant recovery documents found in References section.

Species	Measure #	Measure	Desired Outcome	Threat or recovery measure addressed <sup>6</sup>	Timeline
American Marten	4	<u>Work with partners to reduce accidental trapping in the greater ecosystem</u> by increasing use of modified traps and snares (i.e., trapper education and compliance program, supporting trapping/ snaring-free zones)	Complete compliance of trappers to using modified traps and snares by 2021.	Trapping and snaring (Environment Canada 2013)	2017-2021
Boreal Felt Lichen, Blue Felt Lichen	5	<u>Conduct a comprehensive inventory</u> to determine distribution of rare lichens in TNNP through modelling and surveying potential habitat in collaboration with partners.	Inventory completed and distribution of rare lichens in park known by 2021.	Knowledge gaps; Habitat management and protection (Environment Canada 2010)	2017-2021
Boreal Felt Lichen, Blue Felt Lichen	6	<u>Implement lichen best management practices</u> to avoid disturbance of lichens and their habitat, in collaboration with regional partners.	Park-specific BMP is developed or adapted from other available BMPs by 2017. Known and potential Boreal and Blue Felt Lichen sites are protected through the application of best management practices.	Habitat management and protection (Environment Canada 2010)	Ongoing
Woodland Caribou	7	<u>Implement caribou best management practices</u> to reduce disturbance in areas where caribou are known to occur, in collaboration with regional partners.	Park-specific BMP is developed or adapted from other available BMPs by 2017. Potential disturbance and impact to caribou and their habitat is mitigated through the application of best management practices.	Habitat loss and degradation; Disturbance (including natural disturbances and fire) (COSEWIC 2002; Environment and Climate Change Canada 2016)	Ongoing
Little Brown Myotis, Northern Myotis	8	<u>Implement North American bat monitoring program</u> to determine species presence, distribution, and potential critical habitat in TNNP and NHS in eastern Newfoundland.	Increased understanding of bat distribution, relative abundance, habitat use and potential critical habitat throughout the park.	Knowledge gaps: Monitoring and surveys (Environment and Climate Change Canada 2016)	Annually



Species	Measure #	Measure	Desired Outcome	Threat or recovery measure addressed <sup>6</sup>	Timeline
Little Brown Myotis, Northern Myotis	9	<u>Implement bat best management practices</u> to protect roosts, individuals and potential critical habitat in TNNP and NHS. Implement decontamination protocols as required to prevent spread of WNS in TNNP and NHS in eastern Newfoundland.	Potential impacts to bats are mitigated through the application of best management practices.	Habitat and species conservation and management (Environment and Climate Change Canada 2016)	Ongoing
Little Brown Myotis, Northern Myotis	10	<u>Deliver outreach and education to the public</u> on the importance of maintaining maternity roosts and hibernacula and the consequences of WNS. Encourage broader implementation of BMPs, decontamination, and monitoring protocols.	Increased awareness and understanding of bat conservation issues and enhanced contribution to their protection and recovery.	Education and awareness, partnerships and stewardship (Environment and Climate Change Canada 2016)	2017-2021
Little Brown Myotis, Northern Myotis	11	<u>Obtain dark sky preserve status</u> for TNNP.	Dark Sky Preserve certification is achieved through the Royal Astronomical Society of Canada by 2018.	Habitat and species conservation and management (Environment and Climate Change Canada 2016)	2018

## 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 <sup>7</sup>
American Marten	12	<u>Assess threats, survivorship and habitat use of American Marten</u> in the park and the greater ecosystem through tracking movement in collaboration with regional partners.	Increased understanding of American Marten distribution and habitat use (including post-burn habitat) throughout park and greater ecosystem.	Knowledge gaps: Population monitoring, habitat protection (Environment Canada 2013)
Red Crossbill	13	<u>Continue to inventory and track winter abundance of Red Crossbill</u> through targeted surveys in suitable habitat using standard protocols, in collaboration with regional partners.	Increased understanding of Red Crossbill distribution and habitat use throughout park and greater ecosystem.	Knowledge gaps: Confirm presence, conduct surveys, develop and implement long-term monitoring protocols (Environment Canada 2012)
Atlantic Cod	14	<u>Continue to assess the extent of eel grass</u> in intertidal areas of TNNP	Increased understanding of available habitat for Atlantic Cod in the park.	Habitat alteration (COSEWIC 2010)
All species	15	<u>Develop and promote a multi-media standardized species observation reporting system</u> for park staff, visitors, partners, and volunteers to track SAR occurrences in the park and greater ecosystem.	Current database of species observations.	Knowledge gaps: Distribution and occurrence of species at risk at TNNP.

<sup>7</sup> 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 TNNP

Measure	Measure Number	Desired outcome	Measure Description	Timeline
Develop & implement media strategy	1	At least one media story is produced to highlight species at risk in TNNP each year.	Develop and implement a media plan to disseminate species at risk messaging through news media, web content and social media.	Annually
Provide species at risk information throughout park	2	Park visitors learn about species at risk through personal programming (e.g., guided hikes, animated programs, interpretive stations) and non-personal media (e.g., interpretive panels, website content, social media platforms).	Include species at risk information in content for personal programming, guided activities and self-guided media (e.g., Night Sky program and Night Watch hike on bats; Naturepalooza Event). Install interpretive panels at strategic locations within the park and surrounding areas (e.g., install species at risk exhibit at Ochre Hill; provide information on species at risk at Visitor's Center, kiosks, park bulletin boards, and in Terra Nova Sounds visitor guide).	Ongoing
Engage local communities, NGOs and stakeholders in species at risk recovery	3	Relationships with local communities, NGOs and stakeholders are maintained and developed.	Engage local communities, NGOs and stakeholders to collaborate on species at risk awareness. For example, collaborate with the provincial government in supporting the delivery of a trapper education and compliance program to increase use of modified traps and snares.	Ongoing
Encourage citizen science programming	4	Visitors are engaged in monitoring species at risk.	Develop and promote a multi-media standardized species observation reporting system and encourage visitors to participate in SAR monitoring by reporting species at risk sightings.	2017-2021

## 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 [Federal Sustainable Development Strategy](#)'s<sup>8</sup> (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 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 Terra Nova and the National Historic Sites in Eastern Newfoundland. This plan puts into practice measures presented in recovery strategies 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 Terra Nova and the National Historic Sites in Eastern Newfoundland. 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 ecological integrity monitoring program at Terra Nova and by the park management plan. 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 measures, educational programs, volunteer opportunities, and awareness initiatives involving park visitors, local residents, Indigenous Peoples and organizations, and the general public. This will lead to greater appreciation, understanding, and action towards the conservation and recovery of species at risk in general.

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<sup>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)