Species at Risk Act
Action Plan Series

Multi-species Action Plan for Prince Edward Island National Park of Canada and National Historic Sites Administered by Parks Canada on PEI

2025

Canada

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

Cover illustrations (clockwise from top left): Bobolink, photo credit: Dennis Doucet; *Myotis lucifugus*, photo credit: Jordi Segers; Piping Plover adult and chick, photo credit: Parks Canada; Bank Swallow, photo credit: Dale Murchison; Canada Warbler, photo credit: Donna Martin; Gulf of St. Lawrence Aster, photo credit: Parks Canada; Beach Pinweed, photo credit: Parks Canada.

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[1] https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html

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. The Species at Risk Act (S.C. 2002, c.29) (SARA) was enacted to protect wildlife species at risk in Canada and to complement other legislation in conserving Canada's biodiversity. Today, SARA is a key contributor to achieving Canada's 2030 Nature Strategy – Halting and Reversing Biodiversity Loss in Canada, which charts a path for how Canada will implement the Kunming-Montreal Global Biodiversity Framework.

Under 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 action plans on the Species at Risk Public Registry. Under SARA, action plans provide the detailed recovery planning that supports the strategic direction set out in recovery strategies. They outline what needs to be done to achieve the population and distribution objectives identified in 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. Action plans also include an evaluation of the socio-economic costs of the plan and the benefits to be derived from its implementation. Action plans are considered one in a series of documents that are linked and should be taken into consideration together, including COSEWIC status reports, recovery strategies, and other action plans produced for the species.

The Minister responsible for Parks Canada is the competent minister under SARA for species found in Prince Edward Island National Park (PEINP) and National Historic Sites administered by Parks Canada on PEI and has prepared this action plan to implement recovery strategies that apply to the park and historic sites as per section 47 of SARA. It has been prepared in full collaboration with the two Mi'kmaq First Nations of PEI, Abegweit First Nation and Lennox Island First Nation, and in cooperation with Environment and Climate Change Canada, Fisheries and Oceans Canada, the Province of Prince Edward Island, and the Mi'kmaq Confederacy of Prince Edward Island as per section 48(1) of SARA.

Success in the recovery of these species depends on the commitment and cooperation of many different constituencies and will not be achieved by Parks Canada or any other jurisdiction alone. All Canadians are invited to join in supporting and implementing this action plan for the benefit of multiple species and Canadian society as a whole. Implementation of this action plan is subject to appropriations, priorities, and budgetary constraints of Parks Canada and participating jurisdictions and organizations.

[2] www.canada.ca/en/environment-climate-change/services/species-risk-act-accord-funding/protection-federal-provincial-territorial-accord.html

Acknowledgments

Parks Canada would like to acknowledge those who have contributed to the development of this action plan.

We acknowledge that the land upon which Prince Edward Island National Park and National Historic Sites stand is unceded Mi'kmaq territory. Epekwitk (PEI), Mi'kma'ki, is covered by the historic Treaties of Peace and Friendship. We acknowledge these traditional lands were used and continue to be used for ceremony and traditional teachings. We pay our respect to the Epekwinewaq Mi'kmaq People who have occupied this island for over 12,000 years; past, present, and future.

This plan endeavors to include Epekwitnewaq Mi'kmaw Knowledge, culturally significant species, and community perspectives in a meaningful way. The development of this Multi-Species Action Plan was carried out in full collaboration with the Mi'kmaq First Nations of PEI, Abegweit First Nation and Lennox Island First Nation. The spirit of this partnership will continue past the development of this action plan and will be integral to the ongoing work carried out on these lands.

Throughout this planning process there have been many key partners whose knowledge has contributed greatly to our understanding of species at risk and their habitats. We would like to thank Island Nature Trust for co-hosting the planning workshops and for continued collaboration on shared conservation initiatives on PEI. We would like to acknowledge all of those who devoted time to attend workshops and contribute knowledge to our planning sessions and implementation, including representatives from the Mi'kmaq Confederacy of PEI, the Nature Conservancy of Canada, PEI Watershed Alliance, the Province of PEI, the Canadian Wildlife Health Cooperative, Fisheries and Oceans Canada, the University of Prince Edward Island, the University of New Brunswick, Mersey Tobeatic Research Institute, Birds Canada, Environment and Climate Change Canada, our neighbouring Parks Canada Field Units in the Atlantic Region, and various Recovery Teams.

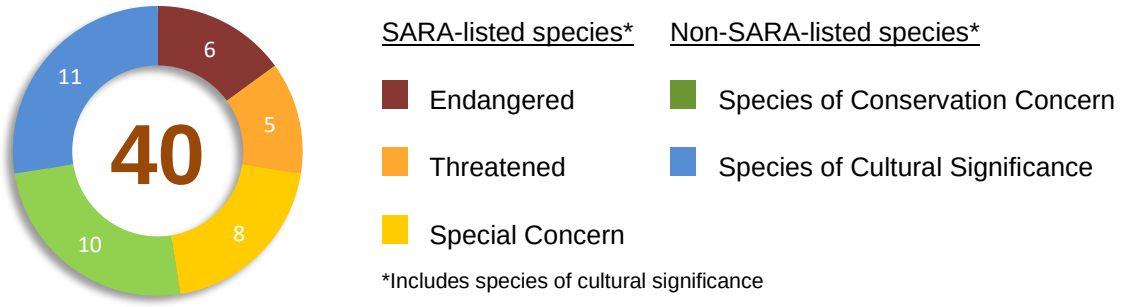
Finally, we would like to acknowledge the people who share our ecosystems. To the surrounding landowners, yearly visitors to the park, and to anyone who feels a sense of home on these lands, your support and appreciation of this landscape is essential to the continued protection of the species who also call this land home.

Wela'lin, Merci, Thank You

Executive Summary

This *Multi-species Action Plan for Prince Edward Island National Park of Canada and National Historic Sites Administered by Parks Canada on PEI* updates and replaces content in the 2016 action plan for the sites[3]. It applies to lands and waters occurring within the boundaries of Prince Edward Island National Park (PEINP), and National Historic Sites administered by Parks Canada on PEI (hereafter referred to as National Historic Sites or NHSs), as well as program lands[4] administered by Parks Canada. The plan identifies measures to conserve or recover SARA-listed species, species of conservation concern, and species of cultural significance that regularly occur[5] in PEINP and NHSs and fulfills SARA section 47 requirements for those species that require an action plan. Considerations related to landscape-scale conservation, Indigenous conservation and species of cultural significance, climate-smart conservation, adaptive management, active management, filling knowledge gaps, outreach and education were central themes in the development of this action plan.

40 species that regularly occur at PEINP and NHSs are addressed in this action plan: 19 SARA-listed species and ten additional species of conservation concern (e.g., COSEWIC assessed but not SARA-listed, provincially listed). Eleven of the SARA-listed species are Extirpated, Endangered, or Threatened (and require an action plan) and eight are Special Concern. Epekwitnewaq Mi'kmaq partners identified 14 culturally significant species for inclusion, some of which are SARA listed or included under the category of species of conservation concern. Including non-SARA-listed species of conservation concern and species of cultural importance provides a comprehensive plan for species conservation and recovery at the site.



7 site-based population and distribution objectives are identified in this plan for five species and represent the sites' contribution to range-wide objectives for the species as identified in SARA recovery strategies and management plans. Measuring progress towards achieving site-based objectives over time will determine the ecological impacts of implementing the action plan.

[3] Parks Canada Agency. 2016. Multi-species Action Plan for Prince Edward Island National Park. Species at Risk Act Action Plan Series. Parks Canada Agency, Ottawa. iv + 16 pp.
[4] Lands under the administration of Parks Canada that support its programs and are located outside of a national park, national marine conservation area, and national historic site.
[5] Occurrence of the species is, or is thought to be, consistent in the Managed Area (i.e., it may migrate in and out of the area, but it returns on a regular basis).

Conservation and recovery measures were developed to mitigate the main threats[6] to the species within the park as well as to address knowledge gaps. The five most common threats addressed within this action plan are:

54 conservation and recovery measures are identified as commitments in this action plan. An additional 42 measures will be implemented if resources and/or partnerships become available to support the work. The number of committed measures and their action categorizations[7] are presented below:

No new critical habitat is identified in this action plan. Recovery measures to protect existing critical habitat identified for species addressed in this plan are described.

The financial cost to implement this MSAP will be borne by Parks Canada, and through partnerships if resources become available. The potential negative impacts of implementing this plan are expected to be minimal, with main impacts related mainly to area closures and restrictions to visitor access, and updated terms of reference to agricultural lease agreements affecting practices on farmed lands. Where possible mitigations have been built into this plan to minimize cost impacts. Benefits of this action plan include the targeted recovery of species at risk and an overall positive impact on biodiversity, contributing to federal and global sustainability goals, such as the Kunming-Montreal Global Biodiversity Framework. Benefits also include: increased opportunities for the public to engage with species conservation; support for the shared research goals of our partner organizations; and benefits to First Nations communities Lennox Island and Abegweit First Nations, Parks Canada, and all Canadians through relationships established during the planning process.

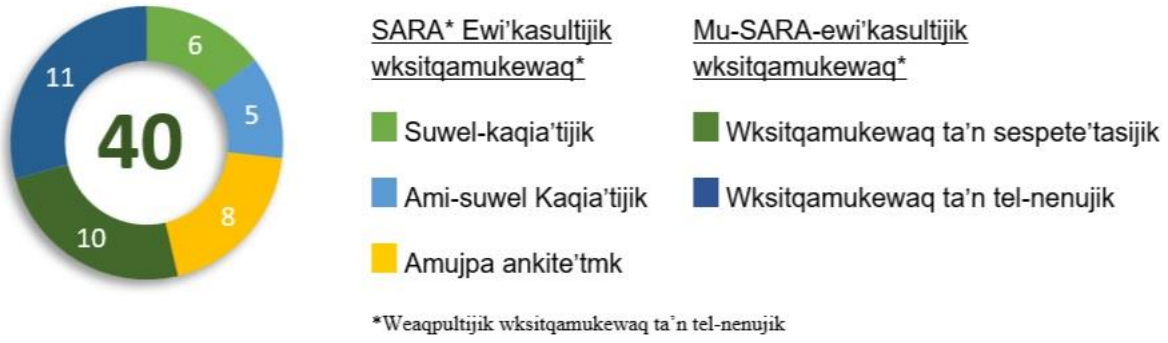
Progress toward implementation of this action plan and meeting the objectives set within will be assessed annually and a report summarizing the results will be published on the Species at Risk Public Registry after five years, as per section 55 of SARA.

[6] Threats were categorized based on the Conservation Measures Partnership Direct Threats Classification, version 2.0.
[7] Actions were categorized based on the Conservation Measures Partnership Conservation Actions Classification version 2.0.

Alsusitey Mawo’taqn

Ula Kaqi’similamu’k mimajik koqoey ketu’ tla’tu’tij maliaptasital Epekwitkewey National Park of Canada aq wije’l National Historic Sites kejikawe’l kinua’taqnn aq ika’tasik piluey ula 2016 ketu’ tla’taqɨti’tipnik wjit ula maqamikal[8]. Elukwek wjit ula maqamikal aq samqwann etekl Epekwitkewey National Park (PEINP), aq wije’l National Historic Sites (NHS), aq elt maqamikal maliaptmi’titl Parks Canada. Ula ta’n ketu’ tla’taqɨti’tij ewikasik ta’n tl-klo’ttaqq kisna apaja’tutaqq SARA –ewikasikl klo’tasin, aq waisisk, nme’jik, aq piluey koqoey, aq waisisk ta’n sa’q e’wa’tiji L’nu’k aq kaqi’sk eykik[9] PEINP aq wije’l NHS aq majulkwatkl SARA section 47 ta’n nuta’ql wjit waisisk aq ktɨk koqoey ta’n nuta’q maliaptasin. Ankite’tasikl telqamikekl telki’kl klo’tasin, L’nuey tel kweso’tekemk aq waisisk aq ktɨk koqoey nikwek L’nu’k kepmite’tmi’tij, ta’n telikiskɨkl kaqi’sipunqɨk tetpaqi klo’tasin, pila’tu telmaliaptekemk, siaw nujo’tekemk, kinua’taqn ika’tu, aq tewa’tumk aq kina’masuti na miawtekɨpnn ula eltasikek ta’n tla’taqɨtiten.

Newisga'q waisisk aq ktik koqoey nikwek kaqi’sk nemitasijik aq nemitasikl PEINP aq wije’l NHS na ewi’tasikl ula ketu’ tla’taqiti’tij: 21 SARA-ewikasijik tujiw app ukumuljin ankua’tasiji klo’tasinew (e.g. COSEWIC ankamujik katu mu SARA-ewikasikik, Epekwitk wikasinew). Newtisk’aq jel ta’pu SARA-ewikasijik, na kaqi ksika’titkik, nenestawinoqsijik, kisna nesanoqsijik(aq nuta’q na’tala’taqitinew) aq pesqunatek te’sijik maw sespete’tasijik L’nu’k toqlukutie’k ewi’ta’tipni 15 newte’ telamuksijik ta’n telo’lti’tij L’nu’k na mekite’tasijik, eykik SARAiktuk ewikasijik kisna wiaqkimujik ta’nik nuta’q klo’tasinew. Wiaqiw ta’n mu SARAiktuk ewikasi’k wjit nuta’qtn sespete’tasinew aq ta’n tekenik wjit telo’ltimk maw nuta’q iknmuksi’kw pikwelk ta’n tla’taqititen siaw klo’tasinew aq apaja’tasin ula tett.



L’uiknek maqamikal ta’n te’si’tij mimajuinu’k aq ne’nisitpi’ketuten na ewi’tasikl ula ketu’ lukwatmi’tij wjit te’sijik piluamuksultijik aq nemitasik ula teli apoqnmuekl pikwelkl

[8]Parks Canada Agency 2016 Ta’n tel milamuksijik tl-maliamaten Epekwitkewey National Park. Ta’n tel milamuksijik tl-maliamaten . Parks Canada Agency. Ottawa. iv + 16 pp.
[9]Ta’n tel milamuksijik tli wsua’laten nkutey tleyawinew apjiw ki’s nmu’j ula tett aq ki’s i’tlnmu’j na’te’l piamiw ne’wt te’s newtipunqik(e.g. jiptuk i’tew aq maja’sitew na’te’l, katu apaja’sitew apjiw

ketu' tla'taqiti'titl wjit mimajultikl nenasin ta'n SARA tli apaja'tutal aq tli maliaptital. Nikatmu'k ta'n te'sik kisa'tasik ta'n tel mnuekeykip na nmituten klapis ta'n maqamikal aq samqwan telitpiaql ke'sk pemi e'wmu'k ta'n ketu' tla'taqiti'kip

Weli anko'tmik aq apaja'tekemk na kisite'tasikipnn na'qji'jka'tun nsanoqnikl[10] wjit waisisk aq ktik koqoey mimajik parkiktuk aq elt ankaptmnew kjijitaqn ta'n nuta'q. Newkl nsanoqnikl maliaptiten ula ta'n tla'taqititen na:

Naniska'q jel ne'w te'sikl anko'tmikewe'l aq apaja'tumkewe'l e'wasikl wjit ula maliaptasitew tla'taqititen. Ankua'tasital 42 te'sikl tla'tasital l'miaq wtapsuti'l aq/kisna mawlukutimkik i'mu'tij apoqnmatmnew ula lukwaqn. Na te'sikl etekl ketu' tla'tu'titl aq ta'n tel pilu' lukutiten ewikasik pkewe'k[11]:

Mu ewi'tasinuk maqamikew ta'n maw nuta'q waisisk aq ktik koqoey ta'n nikwek kisna mimajik ula ta'n ketu' tla'taqiti'tij. Apaja'tumk tellukutimk klo'tmnenew ula maqamikal maw nuta'q klo'tasin ewi'tasik ta'n ketu' tl-lukwemk.

Ta'n tlawtitew e'wasin ula MSAP na apankittew Parks Canada aq elt ta'n toqi lukuti'tiji ta'n tujiw wtapsuti'l ika'q. Ta'n maw klu'lkital tla'sital majulkwatmu'kw ta'n ketu' tli maliaptmi'tij na ma pikwelknukl, ta'n mawi we'tuo'tten na ilta'sik koqoey naqa'luj mittukewinu'k, aq pile'l ewikasikl ta'n koqoey asite'tasitew ika'taqu'tite'wk keta'matmi'tip ajkna'tutew ika'taqumk maqamikal. Ta'n tett na'qji'jka'tumk wiaqa'tasik ula lukwaqniktuk klaman aji nisawtitew. Wlapetmuaqnn ula lukwaqn wiaqa'tasik ta'n tekenik waisisk aq ktik koqoey nikwek aq mimajik siawi apaja'sin aq msit koqoey kelu'lk wjian milamu'k koqoey mimajin, apoqnmuek kaplnu'lewiktuk aq wsitqamu'k mimaju'nuek siawian. Wlapetmuaqnn wiaqtekl atelkl kis tla'taqitinew mimajuinu'k maliaptasinew wsitqamu'kewe'k klo'tasinew, apoqnmasuti wjit newte' ilpanuijkatmu'kl kwejitla'taqiti'kl

[10]Nsanoqnikl teltepkisa'tumkipnn e'wmik CMP Direct Threats Classification, version 2.0
[11]Ta'n tellukwatmik teltepkisa'tumkipnn e'wmik Conservation Measures Partnership Conservation Actions Classification version 2.0.

ula toqlukutiekl lukwaqnl; Wlapetmikewe’l wjit L’nu Utann, Parks Canada, aq msit Canadianaq e’wasik tela’matultimkewe’l kisite’tasikipnn pem kiskaja’tu’kek ula tla’taqitinen.

Ta’n teli aji wla’sik ula tela’tumk lukwaqn aq kisa’tu’kw ta’n tel mnuekeykip na ankaptasitew ne’wt newtipunqik aq wikasitew Species at Risk Public Registryiktuk nanipunqikl pemiaq ta’n teluekip Section 55 SARA.

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1. Context

This *Multi-species Action Plan for Prince Edward Island National Park and National Historic Sites Administered by Parks Canada on PEI* updates and replaces content in the 2016 action plan (Parks Canada 2016). Under Section 52 of the *Species at Risk Act*, the competent minister may amend an action plan at any time. An amendment is being undertaken now to update species information and integrate knowledge and new information gained during implementation of the 2016 action plan. The five-year implementation report for the 2016 MSAP is available on the Species at Risk Public Registry[12].

1.1 Parks Canada Multi-species Action Planning

Parks Canada (PC) takes a multi-species, site-based approach to action planning that identifies and prioritizes conservation and recovery measures for a suite of species at one or more Parks Canada sites. This approach enables Parks Canada to consider the needs of multiple species and identify and prioritize measures that can be implemented at the site(s) to provide the greatest contributions to species conservation and recovery.

Parks Canada multi-species action plans focus on lands and waters under Parks Canada's administration; however, Epekwitnewaq Mi'kmaq First Nations, neighbouring jurisdictions, partners, stakeholders, and species and subject-matter experts are engaged throughout development and implementation of the plans. This plan was prepared in full collaboration with the Mi'kmaq First Nations of PEI, Abegweit First Nation and Lennox Island First Nation. This collaborative approach facilitates species conservation and recovery at a landscape-scale.

The action planning process considers a suite of species that occur regularly at the sites, including species at risk listed in Schedule 1 of SARA, species assessed by COSEWIC and under consideration for addition to Schedule 1 of SARA, provincially listed species, and other species of interest, including those of cultural importance. Including species that don't legally require a SARA action plan enables Parks Canada to take a holistic approach and develop a comprehensive plan for species conservation and recovery at the sites.

In many cases, federal and provincial recovery strategies and plans, management plans, and action plans have been prepared for the species included in this action plan. Along with COSEWIC status assessments, those documents provide guidance for the recovery of individual species, including the identification of threats, recovery objectives, strategic direction to achieve objectives, and critical habitat. 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.

[12] Parks Canada Agency. 2021. Implementation Report: Multi-species Action Plan for Prince Edward Island National Park of Canada (2016 to 2021). *Species at Risk Act* Action Plan Series. Parks Canada Agency, Ottawa. v + 15 pp.

Parks Canada's approach to multi-species action planning aligns with the *Pan-Canadian Approach to Transforming Species at Risk Conservation in Canada* (Canadian Wildlife Service, 2018). It considers priorities of landscape-scale conservation, ecological connectivity, climate-smart conservation, Indigenous conservation, and cultural species. In addition, Parks Canada is increasingly using the adaptive management framework Open Standards for the Practice of Conservation (i.e., Conservation Standards) to support and inform the action planning process.

Implementation of the conservation and recovery measures identified in these action plans is often integrated into the existing framework of Parks Canada conservation programs. Ecological integrity is a cornerstone of Parks Canada's mandate to protect and present significant examples of Canada's natural heritage. It is the first priority in the management of Canada's National Parks. In addition to the protections provided under SARA, species at risk, their residences, and their habitat in Parks Canada places are often protected under additional federal acts and regulations, including but not limited to the *Migratory Birds Convention Act* and regulations, *Fisheries Act*, *Canada National Parks Act,* and the *Canada National Marine Conservation Areas Act*.

1.2 Prince Edward Island National Park and National Historic Sites Administered by Parks Canada on PEI

Prince Edward Island National Park (hereafter PEINP or the park) was established in 1937 and protects approximately 3880.85 ha of coastal, freshwater, forest, and wetland ecosystems along Prince Edward Island's north coast, including gazette and program lands (Figure 1). PEINP administers 1619.3 ha of program lands which have been acquired opportunistically since the 1950's as a strategy to buffer the park against intensive land development and loss of coastal lands due to the dynamic nature of the coast and natural processes. The dominant land uses in the surrounding region on the island are agriculture, tourism, forestry, as well as commercial fishing and aquaculture along the large coastal bays. The park is located within the Atlantic Migratory Flyway, serving as a stopover for numerous species that move between their wintering and breeding grounds annually.

The park was established to protect representative examples of the Appalachian-Maritime Plain natural region. It is characterized by low-lying lands with rich estuaries, Wabanaki-Acadian forests, barrier islands, sand dunes, and sandstone cliffs. Historically, forests on Prince Edward Island (PEI) were dominated by American Beech, Yellow Birch, Sugar Maple, Red and Black Spruce, Eastern Hemlock, and White Pine. The island's original forests have long since been cleared by settlers for lumber and related wood products, and to make way for agriculture. As a result, contemporary forests, which cover 38% of the park, are largely dominated by mature, early-successional White Spruce, Balsam Fir, and White Birch forests, as well as small pockets of Black Spruce bogs on low, poorly drained flats, and krummholz forest along exposed coastal locations. The coastal ecosystem comprises 27% of the park, and the wetland and freshwater ecosystems account for 3% and 9% respectively. Unclassified

land, which includes developed lands, park infrastructure, agriculture land, and undeveloped land occupy the remaining land area (23%).

Program lands administered by Parks Canada occur proximate to the gazetted park boundary. The largest such area is found in Cavendish, with just over 986 ha, 401.8 ha of which are program lands operated under licensed agricultural lease agreements. Smaller parcels of acquired properties have been exposed to natural restoration and managed in a manner similar to lands within the park itself. The central sector (Brackley-Dalvay) contains 348 ha of program lands. In 1998, the park was expanded to include a portion of the Greenwich Peninsula in eastern PEI, with additional properties acquired in this area in the years since. Greenwich contains 296 ha of program lands. The Greenwich landscape is comprised primarily of a sandspit peninsula, containing the only parabolic dune system and associated *Gegenwälle*[13] represented in the park. This phenomenon is very rare in North America. This land also contains forest of a similar composition to that found elsewhere in the park, and freshwater ponds.

Included within the scope of PEINP is Green Gables Heritage Place (GGHP), located in the Cavendish Resort Municipality. GGHP is a 6.5 ha parcel of land composed primarily of forest, with freshwater and wetland components, and two trail systems throughout. It is considered a top tourism attraction on PEI, and as such sees high annual visitation. Additionally, PEI Field Unit administers four National Historic Sites that fall within the scope of this plan: Ardgowan National Historic Site and Province House National Historic Site located in the province's capital city, Charlottetown; Dalvay-by-the-Sea, located in the central region of PEINP; and Skmaqn—Port-la-Joye—Fort Amherst, south of Charlottetown Harbour and adjacent Rocky Point Reserve, Abegweit First Nation. All sites are accessible to the public and contain walking paths or trail systems. Ecotype classifications within all NHSs is primarily composed of forest (51%) and non-eco types (e.g. developed land or infrastructure); Skmaqn contains small portions of freshwater and wetland. Monitoring conducted at these sites has confirmed the presence of species of conservation concern or their associated habitat considered within the scope of this plan.

PEINP land exists within the traditional, unceded territory of the Mi'kmaq First Nations. There are two Mi'kmaq First Nations on PEI, Lennox Island First Nation and Abegweit First Nation, incorporated as the Epekwitk Assembly of Councils. The Epekwitk Assembly of Councils is the joint forum that oversees and governs organizations that act in the shared interest of Abegweit First Nation and Lennox Island First Nation. Bringing together the Band Councils of Epekwitk's First Nations communities, the Assembly currently administers two organizations that are provincial in scope: L'nuey and the Mi'kmaq Confederacy of PEI. Many shared interests exist between the First Nations and the park, including protection of natural and cultural resources, and the desire to build appreciation of these resources and to share this knowledge. Parks Canada-administered land serves as an area for traditional use, harvesting, and ceremony by the Mi'kmaq people. This action plan was developed in full collaboration with both First Nations.

[13] Counter ridges found on large, mobile parabolic dunes.

1.3 Scope of the action plan

Although not included in the previous action plan, National Historic Sites Ardgowan, Dalvay by the Sea, Province House, and Skmaqn—Port-la-Joye—Fort Amherst are included in this plan, as well as Green Gables Heritage Place. This plan contains an additional 413 ha of land that has been acquired by PEINP since the development of the first MSAP.

1.3.1. Geographic scope

The geographic scope of this action plan includes all Parks Canada-administered lands and waters within PEI (Figure 1). The scope also includes all lands and waters within the boundaries of the National Historic Sites that are administered by Parks Canada as federal properties under the authority of the Federal Real Property and Federal Immovables Act. This MSAP has been written specifically for PEINP and NHSs to fulfill Parks Canada's legal responsibilities, and to respond to specific threats, legislation, and management priorities at those sites, which may differ in areas outside the sites.

This plan was developed through consideration of the regional context and may be implemented more broadly than land administered by Parks Canada through collaboration with partners. PEINP occupies only a narrow strip of land on the north shore of Prince Edward Island and the species at risk found here do not exist exclusively within these boundaries, nor do the threats or pressures they face. Therefore, the development of this plan considered the greater PEINP ecosystem, as delineated by the full watershed boundaries which fall at least partially within PEINP.

It should be noted that most of the conservation and recovery measures taking place in the greater PEI landscape (outside of PEINP and NHSs) will be conducted by partners.

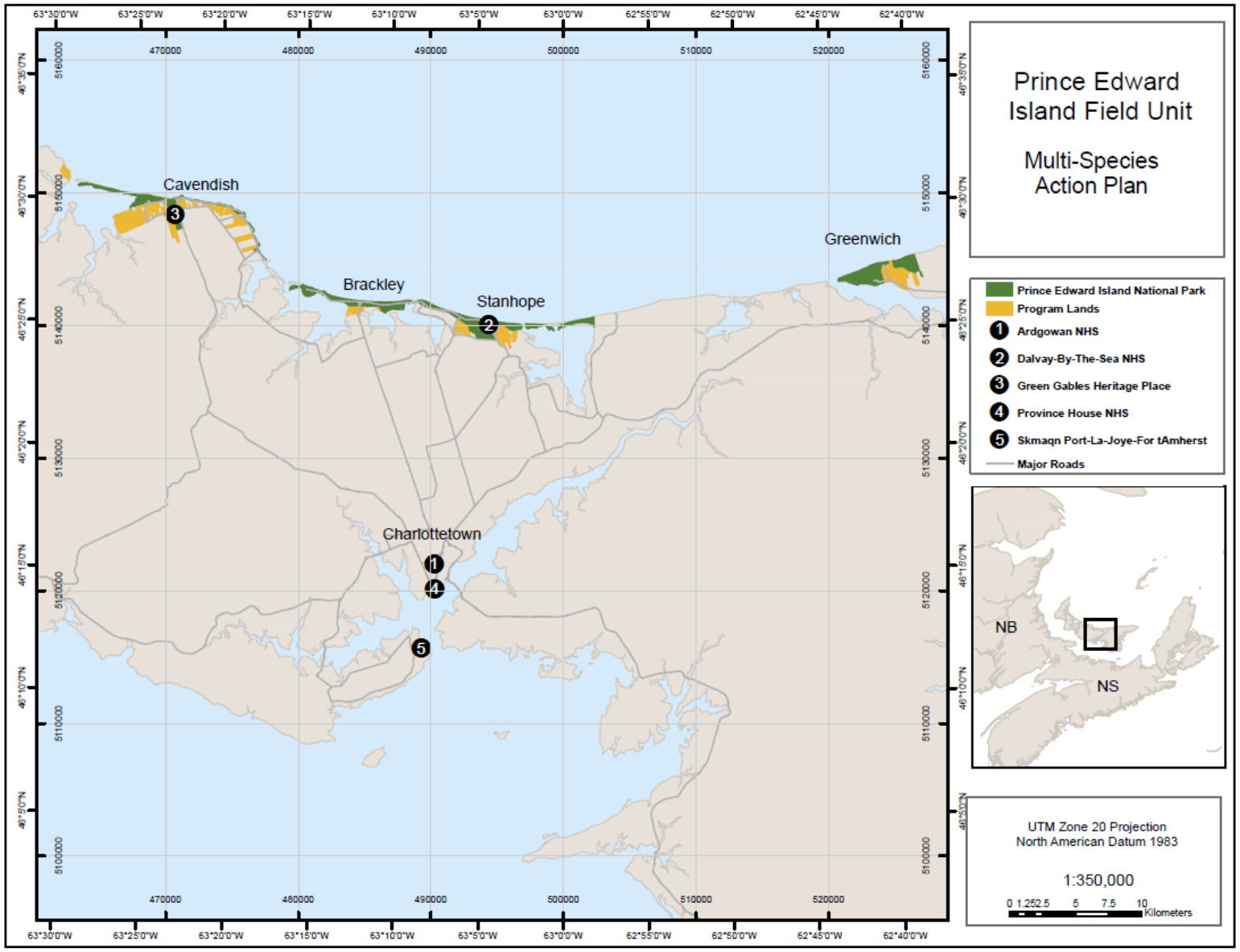

Figure 1. Prince Edward Island National Park & National Historic Sites Administered by Parks Canada on PEI.

1.3.2. Species scope

This action plan addresses a total of 40 species. This includes 19 SARA-listed species plus 10 species of conservation concern that regularly occur in PEINP and NHSs (Table 1). Eleven SARA-listed species are Extirpated, Endangered, or Threatened species (for which an action plan is required under s.47 of SARA) and eight are SARA-listed Special Concern species. Ten additional non-Schedule 1 species that are of conservation concern have been included as they are provincially rare or endemic. Fourteen culturally significant species have been identified for inclusion by the Epekwitnewaq Mi'kmaq community, three of which are also SARA listed or species of conservation concern. Additional species of conservation concern known to be provincially rare, and marine species which occur outside of lands administered by Parks Canada are addressed by recovery measures of this plan (Appendix B & C), though not explicitly listed in the species scope. The species addressed in this plan were chosen based on the following criteria: 1) the level of influence Parks Canada and partners could have on recovery and helping to achieve population and distribution objectives; 2) the ability of the species to represent the needs of other species at risk; 3) the need for regional perspectives and desire to test existing approaches to species conservation to inform effectiveness; 4) the identification for inclusion of culturally significant species by Abegweit and Lennox Island First Nations. Note that over the course of implementation of this action plan, some species' COSEWIC assessment or SARA status may change.

Table 1. Species included in the action plan for PEINP and National Historic Sites Administered by Parks Canada on PEI (Note: Those marked with an asterisk (*) are identified by the Abegweit and Lennox Island First Nations as being culturally important species).

Species	Mi'kmaq name	Scientific name	COSEWIC status	SARA Schedule 1 status
Gulf of St. Lawrence Aster	Pewoqiajkewe'l	*Symphyotrichum laurentianum*	Endangered	Endangered
Monarch	Mimikej	*Danaus plexippus*	Endangered	Endangered
Little Brown Myotis	Tupkwanamuksit na'jipuktaqne'ji'j	*Myotis lucifugus*	Endangered	Endangered
Northern Myotis	Oqwatnukewey na'jipuktaqnej	*Myotis septentrionalis*	Endangered	Endangered
Piping Plover *Melodus* subspecies	Jijuikate'j	*Charadrius melodus melodus*	Endangered	Endangered
Red Knot *Rufa* subspecies	Mekwamuksit sisip	*Calidris canatus rufa*	Endangered	Endangered
Bank Swallow	Pukwales	*Riparia riparia*	Threatened	Threatened
Barn Swallow	Pukwales	*Hirundo rustica*	Special concern	Threatened
Bobolink	Noskipkama'low	*Dolichonyx oryzivorus*	Special concern	Threatened
Canada Warbler	Watapji'jit ketapekiejit	*Cardellina canadensis*	Special concern	Threatened

Species	Mi'kmaq name	Scientific name	COSEWIC status	SARA Schedule 1 status
Eastern Whip-Poor-Will	Wikweliej	*Antrostomus vociferus*	Special concern	Threatened
Short-Eared Owl	Ti'tikli	*Asio flammeus*	Threatened	Special concern
Barrow's Goldeneye, Eastern Population	Takli'j	*Bucephala islandica pop. 1*	Species concern	Species concern
Beach Pinweed	Wasuekji'jl	*Lechea maritima var. subcylindrica*	Special concern	Special concern
Common Nighthawk	Pi'jkwej	*Chordeiles minor*	Special concern	Special concern
Eastern Wood-Peewee	Wjitpenu'key Sisip	*Contopus virens*	Special concern	Special concern
Olive-Sided Flycatcher	Teta'kilku'n (same family as Wood-peewee)	*Contopus cooperi*	Special concern	Special concern
Rusty Blackbird	Pukĩtli'skiej	*Euphagus carolinus*	Special concern	Special concern
Yellow-Banded Bumble Bee	Amu	*Bombus terricola*	Special concern	Special concern
Eastern Red Bat	Na'jipuktaqnej	*Lasiurus borealis*	Endangered	Not listed
Hoary Bat	Na'jipuktaqnej	*Lasiurus cinereus*	Endangered	Not listed
Silver-Haired Bat	Na'jipuktaqnej	*Lasionycteris noctivagans*	Endangered	Not listed
American Eel *	Kataw	*Anguilla rostrata*	Threatened	Not listed
Black Ash *	Wiskoq	*Fraxinus nigra*	Threatened	Not listed
Hudsonian Godwit	Sisip	*Limosa haemastica*	Threatened	Not listed
Lesser Yellowlegs	Nanamikties	*Tringa flavipes*	Threatened	Not listed
Atlantic Salmon, Gaspe-Southern Gulf of St. Lawrence Population *	Plamu	*Salmo salar*	Special concern	Not listed
Bald Eagle*	Kitpu	*Haliaeetus leucocephalus*	Not at risk	Not listed
Black Spruce*	Kawatkw	*Picea mariana*	None	Not listed
Chaga Mushroom*	L'ketu	*Inonotus obliquus*	None	Not listed
Eastern White Cedar*	Kaqskusi	*Thuja occidentalis*	None	Not listed
Ironwood	N'nikmu'j (the hardest wood)	*Ostrya virginiana*	None	Not listed
Labrador Tea*	Apuistekiejit	*Thermopsis rhombifolia*	None	Not listed
Peregrine Falcon Anatum/Tundrius	Pipukwes	*Falco peregrinus Tunstall 1771*	Not at risk	Not listed
Sea Sage*	Kjilmu'loqsitk	*Artemisia stelleriana*	None	Not listed

Species	Mi'kmaq name	Scientific name	COSEWIC status	SARA Schedule 1 status
Sweetgrass*	Welima'qewe'l Msiku	*Hierochloe odorata*	None	Not listed
White Birch*	Maskwi	*Betula papyrifera*	None	Not listed
Grey Birch*	Sepqoqiajk	*Betula populifolia*	None	Not listed
Red Osier Dogwood*	Psemusi	*Comus sericea*	None	Not listed
American Mountain Ash*	Aqmoq	*Sorbus americana*	None	Not listed

2. Site-based population and distribution objectives

The potential for Parks Canada to undertake direct management action at the site that will measurably contribute to the recovery of each species was assessed. Seven site-specific population and distribution objectives were developed for five species (Appendix A). These objectives identify the contribution that conservation and recovery measures implemented by the site or in collaboration with partners can make towards achieving the national objectives identified in SARA recovery strategies and management plans.

Monitoring progress towards achieving the site-based objectives over time will help determine whether implementation of the conservation and recovery measures (identified in Appendix B) is having the desired influence on species recovery.

For many species addressed in this action plan, recovery cannot be measurably influenced by management actions implemented by the site for various reasons, including: 1) The site makes up a small portion of the species' range in Canada so that the impact of management actions at the site cannot be measured (e.g., in some cases we may only see transient occurrences of these species, in other cases PEINP, as a small geographic region, does not account for a significant component of the species required habitat); 2) There are no or few known threats acting in the site (e.g., the primary threat for many migratory shorebirds or forest bird species addressed in this plan is a loss of overwintering habitat outside of the site). When there is little opportunity for direct management action at the site to measurably contribute to the recovery of a species, site-specific recovery objectives are not appropriate and conservation measures may be limited to protection measures in place under the *Canada National Parks Act*, the *Impact Assessment Act*, the *Fisheries Act, Migratory Birds Convention Act* and SARA, as well as through indirect threat mitigations such as education/outreach, habitat maintenance, and addressing knowledge gaps through inventory, research and monitoring.

3. Conservation and recovery measures

Conservation and recovery measures aimed at addressing threats to the species at the site and making progress towards achieving site-based population and distribution objectives were identified and prioritized. The prioritization process primarily considered ecological effectiveness, but also considered opportunities for landscape-scale conservation, ecological connectivity, climate-smart conservation, Indigenous conservation and cultural species, strengthened partnerships, and opportunities for visitor experience and increased awareness through education and outreach. Prioritization also considered budgetary opportunities and constraints. Wherever possible, PC is taking an ecosystem approach, prioritizing measures that benefit multiple species to maximize the effectiveness and efficiency of species protection and recovery.

In total, 54 conservation and recovery measures are identified for implementation by PC and project partners in PEINP and NHSs (Appendix B). An additional 42 measures will be encouraged through partnerships or when additional resources become available (Appendix C). Each measure is associated with one or more identified threats. The five main threats addressed by measures in this action plan are: problematic native plants and animals; annual and perennial non-timber crops; recreational activities; invasive non-native plants and animals; and knowledge gaps. Measures that do not directly address a threat have been included to address identified knowledge gaps. Each measure is also associated with a desired outcome and the anticipated timeline for achieving the desired outcome. Desired outcomes are designed to be quantifiable and achievable over the implementation period of this plan.

3.1 Conservation and recovery measure approaches

The identification of conservation and recovery measures considered opportunities to integrate the following approaches: Indigenous conservation and cultural species, landscape-scale conservation, adaptive management (i.e., Conservation Standards), active management, climate-smart conservation, filling knowledge gaps, and outreach and education.

Indigenous Conservation and Cultural Species: To support Epekwitnewaq Mi’kmaq conservation objectives, Parks Canada has worked in full collaboration with both Mi’kmaq First Nations of Prince Edward Island – Abegweit First Nation and Lennox Island First Nation – in the development of this action plan. The foundation of this approach is built upon first establishing meaningful relationships and trust within the community through joint gatherings, community visits, and shared learning. This standard for collaboration required a collective investment of time and capacity to build a sustainable structure for collaborative planning and implementation. The resulting partnership has proved invaluable and will continue beyond the development of this plan.

Conservation strategies have been developed to compliment the goals of collaborators and will be shared with partners to support collective conservation outcomes. Over the course of this collaboration, partners familiarized themselves with ecosystems and species on their collective lands of influence and carried out joint monitoring field work to provide a broader perspective on actions to be identified in the MSAP. In working with Abegweit and Lennox Island First Nations partners, project leads collaboratively developed measures for species conservation and recovery in PEINP that will highlight species of cultural significance, and jointly planned sustainable conservation actions for these species that emphasize protection of traditional knowledge. This partnership endeavoured to build capacity for community-based conservation planning and implementation within community, while also informing conservation work on lands administered by Parks Canada though both traditional knowledge and western science. Moving forward, PEINP will endeavour to adopt Etuaptmumk (two-eyed seeing) and weave the concept of Netukulimk (access and use of resources without jeopardizing the integrity, diversity, or productivity of the environment through practices of respect, responsibility, relationship, and reciprocity) into the implementation of its work.

Adaptive Management Frameworks: The Conservation Standards[14] (CS) are a set of guidelines that help guide and standardize conservation efforts and the design and adaptive management of conservation projects (Conservation Measures Partnership, 2020). To organize information and reduce the duplication of efforts across the region, Parks Canada used an abbreviated CS process to engage project partners in planning for the multi-species action plan. The abbreviated CS process enabled PEINP to engage more partners through a series of workshops that were developed to be inclusive – regardless of participant's background knowledge of CS and/or species at risk – and to reduce time commitments from partners, resulting in greater participation. Workshops focused on outcomes such as gathering regional perspectives related to species at risk conservation, developing assessments and measures for the health of species at risk, creating new strategies for supporting species at risk recovery and meeting population and distribution objectives, and developing a better understanding of the effectiveness of current actions and strategies for species recovery.

PEINP, alongside Abegweit and Lennox Island First Nations collaborators, co-hosted workshops with local non-government organization Island Nature Trust (INT), to support the development of complimentary strategies/actions for INT's Community Nominated Priority Place (CNPP) initiative. Joint planning with INT and other regional partners will help advance landscape-scale conservation efforts across the greater Prince Edward Island landscape. Further, the CS process enabled content to be shared through initiatives such as the Forested Landscape Priority Place (FLPP) and the Atlantic Canada Bank Swallow Working Group (Birds Canada), supporting collaboration across the region.

[14] Conservation Measures Partnership. 2020. Open Standards for the Practice of Conservation, version 4.0. https://conservationstandards.org/wp-content/uploads/sites/3/2023/09/CMP-Open-Standards-for-the-Practice-of-Conservation-v4.0-English.pdf

Landscape-Scale Conservation: PEINP is just one piece of the broader provincial landscape, and as such, it was important that the actions within this plan consider outcomes beyond the park boundary. Applying a landscape-scale approach involved partnerships with local and regional groups in the planning and knowledge gathering phase of this plan. Through our initial workshops, several opportunities were identified between partner organizations, including Abegweit First Nation, Lennox Island First Nations, Island Nature Trust (INT), Nature Conservancy of Canada, the PEI Watershed Alliance, the Canadian Wildlife Health Cooperative, the Canadian Wildlife Service (Atlantic Region), the Mi'kmaq Confederacy of PEI, and the Provincial Government of PEI through the Forested Landscape Priority Place Project. Strengthening our relationship with these groups allows us to work together to implement strategies at a provincial scale to improve the outcomes for species at risk recovery on PEI.

There is a clear link to landscape-scale partnership throughout this action plan both in its planning and implementation. Actions outlined in partner projects, such as the FLPP and CNPP, focus on similar habitats and species as addressed in this plan. This includes work with the Epekwitnewaq Mi’kmaq Indigenous-led Black Ash conservation project to conserve and plant Black Ash across PEI; work with INT to promote sustainable beach recreation and protect critical Piping Plover nest sites outside of lands administered by Parks Canada; work with CNPP to complete Bank Swallow landscape-scale habitat mapping for all of PEI; and work with FLPP to share and promote forest management outreach for healthy species at risk forested habitat.

At a regional scale, PEINP is working collaboratively with groups such as Fisheries and Oceans Canada, the Canadian Wildlife Service, and Parks Canada sites in the Atlantic region to contribute data to regional research priorities. Work specifically with Kouchibouguac National Park (KNP) provides the opportunity to develop a standardized approach to monitoring and management of shared ecosystems and species at risk. As a sister park to PEINP, KNP shares many species and ecosystems in common, and experiences many of the same threats to these components as PEINP. As such, adopting a standardized protocol for monitoring like species and habitats could prove mutually beneficial and allow for consistent assessment across the region.

Active Management: Active management is a course of action directed toward maintaining or changing the ecological condition to achieve specific objectives. Many measures contributing to the recovery of species at risk within PEINP focus on protecting existing habitat and mitigating known threats to species. This will be largely achieved by existing methodologies, resources, regulations and policies, and/or by ensuring protection measures of critical habitat under the *Species at Risk Act*. These efforts are commensurate with the amount of habitat available for many species at risk within PEINP and NHSs, as their size is often modest when viewed on a regional or national scale. However, for species such as Gulf of St. Lawrence Aster, Beach Pinweed, or Piping Plover, the park’s habitat contributes significantly to regional populations. It is therefore imperative that active management such as law enforcement and compliance team patrols, area closures, and in the case of Gulf of St. Lawrence

Aster, transplants for site colonization and naturalization, be used to maintain or improve favorable conditions for the species in the landscape.

Following the implementation of the MSAP, Parks Canada monitors, evaluates and, as necessary, adapts measures taken to achieve species survival or recovery. PEINP will use the abbreviated CS process to incorporate components of adaptive management in the implementation of the MSAP. Using adaptive management, PEINP and partners will evaluate and adjust actions/strategies throughout the MSAP implementation to improve species at risk conservation in real time. The species-directed measures outlined in this plan will in turn contribute to maintaining and improving the ecological integrity of PEINP by improving the conservation status of native species and their habitat. Species at risk information will be integrated into the park's comprehensive visitor experience, prevention and compliance, and education and outreach programs, helping to improve awareness, appreciation, and support for recovery efforts in the park and beyond.

Climate-smart Conservation: In order to reflect current and future climate-related threats to species at risk conservation, this amendment was undertaken using a climate change lens. This work involved researching potential future climate conditions within the defined geographic scope, reviewing literature to infer the adaptive capacity of focal species, and identifying a spectrum of possible adaptation options including both active management and monitoring strategies. The process of identifying adaptation options was informed by projected future climate scenarios (Bush & Lemmen, 2019) and the Resist-Accept-Direct (RAD) framework (Schuurman et al., 2020); a framework designed to enable natural resource managers to consider a diverse range of forward-looking adaptation strategies. As PEINP is a low-lying, coastal landscape, it is especially vulnerable to climate change impacts such as an accelerating rate of coastal erosion, sea-level rise and storm surge, and an increased frequency and severity of extreme weather events (Parks Canada Agency, 2023). This has been observed in recent years during post-tropical storms Dorian (2019) and Fiona (2022) where PEINP experienced unprecedented levels of coastal erosion and forest windthrow. Further, as many of the species included in this action plan inhabit the coastal ecosystem, it is important to consider the influence climate change will have on Parks Canada's ability to achieve population and distribution objectives for species at risk, and what current and new pressures species and ecosystems face due to anticipated climate change threats.

All actions included in this plan were classified using the RAD framework. This exercise was important to ensure the strategies selected were diverse in their approach, (i.e. not all actions attempt to resist change), allowing PEINP to identify a broad range of adaptation options. In fitting with Climate-Smart conservation principles, these strategies embrace adaptive management and will be reassessed during implementation based on evidence gathered. Recognizing that climate change impacts are inevitable and already taking place, PEINP will focus efforts on increased monitoring plans to better understand these impacts on species, and to inform long-term adaptation approaches and potential threat mitigation.

Filling knowledge gaps: This plan has been updated to include seven additional species at risk, seven species of conservation concern, and 14 culturally significant species identified for inclusion through the collaborative planning processes with Abegweit First Nation and Lennox Island First Nation partners. The actions included in this plan will contribute to research and monitoring that will help address knowledge gaps for these species and associated habitats. These knowledge gaps have been identified in the species' recovery documents, through ongoing Park monitoring and implementation of the 2016 MSAP, and by partners during the initial planning workshops. Primary knowledge gaps addressed by this plan include habitat availability and use; refined population sampling strategies; and lesser understood threats, such as prey availability, disease/pathogen prevalence, pollutants, and climate change.

Identifying and mapping habitat is required to inform management decisions and recovery actions for several species. This includes work to better understand Bank Swallow critical habitat within the park; research to understand habitat selection for bat hibernacula and maternity roosts in the park; and better understanding of habitat selection by breeding Piping Plover. Comprehensive species occurrence mapping for all extant species and mapping/modelling of potential future habitat to facilitate species translocation will also be explored.

A knowledge gap identified throughout the planning process and in many recovery strategies involves how species will be impacted by predicted climate change scenarios. By approaching this plan with a climate change lens, PEINP will attempt to learn how the effects of climate change will impact the ability to achieve population and distribution objectives, and what current and future pressures species and ecosystems face due to anticipated climate change threats. This is a focal point for many of the species at risk within the coastal ecosystem due to its dynamic and vulnerable habitat. Additionally, threats that may be limiting factors to species recovery—such as climate change, invertebrate prey availability, local disease/pathogen prevalence in bat populations, and aquatic pollutants—are poorly understood in PEINP and NHSs. Research and monitoring actions have been defined to gather knowledge on these threats, however, as with other actions in this plan, implementation may rely on additional resources and/or partner support.

Outreach & Education: In addition to the implementation of measures that contribute to species conservation and recovery, Parks Canada has an important role in promoting awareness and appreciation of species at risk. Providing opportunities for the public to learn about and experience national parks is a central component of Parks Canada's mandate. Thus, national parks afford an opportunity and an imperative for engaging the public in species at risk recovery. A suite of public outreach, education and visitor activities have been developed as part of the action planning process. These will engage audiences using a broad range of approaches and levels of participation, including promotion of citizen science platforms, volunteer opportunities, sustainable infrastructure development, and traditional media/outreach campaigns.

The development of a park communication and engagement plan will focus on priority messages about species of conservation concern, the habitats that support them, the threats they face, and what the public can do to help. The promotion of citizen science programming will help fill knowledge gaps on species occurrences within and outside of PEINP. Additionally, we will continue to work to develop and maintain relationships with partner organizations to share and promote consistent conservation messaging to a broader audience in a landscape-scale approach to outreach. The province-wide Dune Conservation Campaign, implemented with Nature Conservancy of Canada (NCC) and INT, is an example of this approach to habitat conservation on PEI where messaging extended province-wide.

Outreach and education activities defined in this plan consider previously mentioned conservation and recovery approaches. PEINP will continue to work with Epekwitnewaq Mi'kmaq partners to develop best practices for sharing information on culturally significant species, Indigenous Knowledge, two-eyed seeing, and Indigenous truths, which prioritize Indigenous Knowledge sovereignty. This will include the development of the Sister Trails Network in collaboration with First Nations partners. This system of trails, located on Lennox Island, Scotchfort, and PEINP, will host a space for Epekwitnewaq Mi'kmaq peoples and visitors to make meaningful connections with Mi'kmaq culture and ways of knowing, while sharing messaging on culturally significant species, species at risk and climate change impacts on PEI.

3.2 Classification of measures

Measures identified in this plan are categorized based on Conservation Measures Partnership (CMP) Conservation Actions Classifications[15]. The following action classifications are addressed in this plan:

Land / Water Management:
Prince Edward Island National Park is highly impacted by the history of past and present human use, from traditional practices, such as forest clearing for agriculture, to more recent development of land to facilitate visitor access to Parks Canada places. Measures in this plan have been selected to enhance site stewardship within this altered landscape and in consideration of the realities of visitor use. As visitation to PEINP continues to grow, initiatives to direct human use on the landscape will focus on the protection of vulnerable ecosystem components and critical habitat through seasonal area closures. Site stewardship to reduce stressors within the environment and enhance existing ecosystem processes, such as invasive species management and targeted planting to create and/or restore existing habitat, will be key to ensure conservation and recovery measures for many species are addressed by this plan.

[15] Conservation Measures Partnership Conservation Actions Classification version 2.0 is an international standard designed to provide a simple, hierarchical, comprehensive, consistent, expandable, exclusive and scalable classification of all conservation actions.

Species Management:
Prince Edward Island National Park is predominantly encompassed by the coastal ecosystem, wherein several of the species addressed in this plan have associated habitat. Anticipated impacts of climate change are predicted to result in range shifts, loss of existing habitat, and creation of new suitable sites for reintroduction and nesting opportunities. Actions taken by this plan will include ex-situ preservation efforts, in the form of seed collection, which can be key in the conservation of genetic diversity for declining species. By contributing to research, ecological restoration, population reintroduction and assisted migration, the collection and preservation of seed lots can play an important role in regional climate change adaptation. Identifying future suitable habitat for vulnerable species to facilitate potential re-introduction and assisted colonization beyond the current extant or historical population will further support the population and distribution objectives herein.

Awareness Raising:
Species at risk information will be integrated into the park's comprehensive visitor experience, compliance, education, and outreach programs, helping to improve awareness, appreciation, and support for recovery efforts in the park and beyond. Directing signage and information campaigns to the broad and diverse visitor base provides opportunities to connect with the public through direct involvement in species recovery and to draw upon citizen science and volunteers in resource conservation. Campaigns will be directed to mitigate threats within the PEINP landscape by improving awareness of localized issues, such as the impact of domestic animals on wildlife. When possible, awareness campaigns and outreach activities will support standardized messaging with partner organizations in a landscape-scale approach.

Research & Monitoring:
Knowledge gaps represent major impediments to the development and implementation of effective conservation and recovery measures for many species of conservation concern. Information obtained through research and monitoring will provide a better site-level and regional understanding of species ecology, distribution, status and population trends, allowing for better protection and timely implementation of active management and threat mitigation. Desktop research and analysis to inform habitat assessments, habitat connectivity analyses, and modeling of climate change-driven habitat changes and loss will provide useful decision-making tools to guide future landscape-scale conservation action, climate change adaptation, and inform site-specific species management. The park benefits from strong relationships with local academic institutions, such as the University of Prince Edward Island's (UPEI) Biology Department, UPEI's Canadian Centre for Climate Change and Adaptation, Holland College, and Atlantic Veterinary College to facilitate such research. Academic interest in PEINP sites provides a consistent source of research that informs management and restoration efforts and helps to fill current knowledge gaps on species ecology.

Partnerships/collaborations[16]:
This action plan provides the opportunity for PEINP to partner across the landscape to have a greater impact on the species of conservation concern beyond the boundary of lands administered by Parks Canada. Its implementation will require continued collaboration with First Nations partners, academic institutions, regional partners, and local conservation groups working towards the mutual goal of species conservation. Parks Canada will continue to engage local communities, visitors, and volunteers to improve the ecological health of PEINP and NHSs and support the recovery of species at risk. PEINP will work to maintain existing partnerships and cultivate new ones related to conservation issues and research questions of mutual interest.

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)). Where the recovery strategy for a species states that the identification of critical habitat is not complete, a schedule of studies is included towards gathering additional information to complete the identification. Additional critical habitat can be identified in an amended recovery strategy or in an upcoming or amended action plan for the species.

Critical habitat was identified in PEINP within the recovery strategies for Piping Plover, Gulf of St. Lawrence Aster, Bank Swallow, and Little Brown and Northern Myotis. No additional critical habitat for any species is identified in this action plan.

4.1 Proposed measures to protect critical habitat

Critical habitat identified in PEINP and NHSs in recovery strategies for species addressed in this plan must be legally protected from destruction as per section 58 of SARA. SARA requires that critical habitat identified in a federally protected area[17] be described in the *Canada Gazette* within 90 days after the final recovery strategy or action plan that identified the critical habitat is posted to the SAR public registry. A prohibition against destruction of critical habitat under section 58(1) will apply 90 days after the description of the critical habitat is published in the *Canada Gazette*. For critical habitat located on other federal lands (e.g., National Historic Sites or National Park Reserves), the competent minister must either make a statement on existing legal protection or make an Order so that the prohibition against destruction of critical habitat applies. If it is determined that any portions of critical habitat are not protected, and

[16] The CMP actions classification title is *Institutional Development*. We have changed the title to better reflect Parks Canada’s approaches and relationships with partners.
[17] SARA ss. 58(2) describes a federal protected area as a national park of Canada named and described in Schedule 1 to the Canada National Parks Act, the Rouge National Urban Park established by the Rouge National Urban Park Act, a marine protected area under the Oceans Act, a migratory bird sanctuary under the Migratory Birds Convention Act, 1994 or a national wildlife area under the Canada Wildlife Act.

steps are being taken to protect those portions, those steps will be communicated via the Registry through the reports referred to in section 63 of SARA.

5. Evaluation of socio-economic costs and benefits

The *Species at Risk Act* requires the competent minister to undertake an evaluation of the socio-economic costs of the action plan and the benefits to be derived from its implementation (s.49(1)(e)). This socio-economic assessment is narrow in scope, as it applies only to protected lands and waters in PEINP and NHSs, which are often subject to fewer threats (e.g., industrial activities) compared to other areas because the lands are managed to maintain and restore ecological and commemorative integrity. Further, this evaluation addresses only the incremental socio-economic costs and benefits of implementing the measures outlined in this action plan and does not include socio-economic impacts of existing activities or management regimes in those Parks Canada sites. It does not address total cumulative costs or benefits of species recovery in general nor does it attempt to conduct a full cost-benefit analysis as is done to support a regulatory initiative.

The protection and recovery of species at risk can result in both costs and benefits, which affect various groups of Canadian society in different ways. The proposed measures in this action plan seek a balanced approach to reducing or eliminating threats to species at risk populations and habitats. Potential socio-economic costs as well as the social and environmental benefits that may occur through implementation of this action plan are outlined below. Information for this summary was collected through cooperation and consultation and focuses on the potential impact to terms of references for agricultural leases, Epekwitnewaq Mi’kmaq communities, and visitors to PEINP and NHSs.

5.1 Costs

The total incremental cost to implement the measures outlined in Appendix B will be borne by Parks Canada out of existing salaries and goods and services dollars that are integrated into the operational management of the site and thereby will not result in additional cost to society. Implementation of the measures in this plan is subject to appropriations, priorities, and budgetary constraints. Measures outlined in Appendix C will only be implemented through partnerships or if additional resources become available.

Socio-economic costs to Epekwitnewaq Mi’kmaq communities, park visitors, and agricultural leases, through modified terms of references, may result from implementation of this action plan. These costs were determined through consultation and discussion and wherever possible, minimized. The main impacts of implementing this action plan were identified as restricted access to certain areas of the park due to seasonal closures to protect species at risk and associated habitat. This may negatively impact Park visitors’ enjoyment and access to the landscape, and Epekwitnewaq Mi’kmaq communities’ access to areas for traditional usage. Where possible, such

impacts to traditional Mi'kmaw practices will be mitigated through co-developed stewardship plans. Agriculture lease holders may be impacted by formalizing best management practices implemented to protect Bobolink and their habitat. Parks Canada has given these costs considerable examination and does not underestimate their potential significance to our stakeholders. In many cases mitigations are currently in practice and, where possible, have been anticipated and built into this plan to minimize impacts.

5.2 Benefits

Potential economic benefits of the conservation and recovery of species at risk at this site 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 species at risk is an important component of the Government of Canada's commitment to conserving biological diversity and is important to Canada's current and future economic and natural wealth. Measures in this plan help to meet the Federal Sustainable Development Strategy goal of protecting and recovering species and conserving Canadian biodiversity. It also contributes to the global goal of ensuring "biodiversity is sustainably used and managed and nature's contributions to people, including ecosystem functions and services, are valued, maintained and enhanced, with those currently in decline being restored" (Kunming-Montreal Global Biodiversity Framework, December 2022).

The protected natural capital assets (forests, grasslands, wetlands, freshwater, coastal and marine areas) of national parks and national marine conservation areas provide a flow of ecosystem services (e.g., climate regulation, provision of habitat, water supply and regulation) that benefit individuals and communities across Canada. Parks Canada works to sustain and improve the ecological condition of the national network of protected places. Efforts that improve species' condition and their role in the ecosystem, such as recovery measures in this action plan, have an impact on the overall health of the ecosystem. For PEINP, the potential annual value of ecosystem services has been estimated to range between $9 million and $45 million (medium value $27 million)[18] (Mulrooney & Jones, 2023). Implementing the measures within this MSAP will contribute to sustaining the valuable flow of ecosystem services to Canadians.

[18] Caveats: natural assets were assumed to be in good condition, so it is possible that potential benefits may differ from realized or actual benefits. Study area hectares may differ from regulated area hectares (estimate based on satellite imagery and GIS layers employed by the Commission for Environmental Cooperation (CEC) - North American Land Change Monitoring System). Estimates used 2020 Canada land cover map and were valued in 2020 Canadian dollars. Estimated ecosystem value does not represent the total value of the protected area.

Measures presented in this action plan 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. Recovery Strategies, Action Plans and Management Plans for SARA listed species are an integral part of species management aimed at species' survival and recovery, maintaining biodiversity in Canada and conserving Canada's natural heritage.

The measures outlined in this document are expected to have an overall positive impact on ecological integrity and enhance opportunities for appreciation of the park and the species by visitors and the general public. The measures are expected to have overall positive benefits to the environment and Canadians, such as positive impacts on biodiversity and the value individuals place on preserving biodiversity.
Additional potential benefits include positive impacts experienced by park visitors, volunteer groups, and naturalists resulting from the preservation of areas for future enjoyment, and increased opportunities to participate in species conservation. A greater connection to the land through community involvement may have supplementary landscape-scale benefits, such as reducing human-wildlife conflict and increased compliance outside of lands and waters administered by Parks Canada. Additionally, partner organizations (academic institutions, NGOs, neighbouring PCA sites) may benefit through activities which support the shared needs of these groups. This includes access to PEINP for new and ongoing research projects, access to long-term data sets to address knowledge gaps in species research and recovery, and greater reach for co-developed conservation messaging.

The two-eyed seeing approach, which has been interwoven into the drafting of this plan, is intended to have far reaching societal benefits. Partners from Lennox Island and Abegweit First Nations have acknowledged that the relationship resulting from the collaborative planning process has been of significant value within each community, by supporting greater involvement by community members in conservation activities, the protection of traditional land, fostering a connection to that land, and the protection and promotion of culturally significant species. Additionally, park staff, park visitors, and the public benefit from the opportunity to further engage with and learn from Indigenous ways of knowing.

6. Measuring progress

Reporting on implementation of the action plan (under section 55 of SARA) will be done by assessing progress towards implementing the measures listed in Appendix B and Appendix C when possible. Reporting on the ecological impacts of the action plan will be done by assessing progress towards meeting site-based population and distribution objectives (Appendix A). Progress will be monitored annually and an implementation report summarizing the results of this plan will be posted to the SAR Public Registry five years following publication of the final version. The five-year report will also include a summary of the socio-economic impacts from implementing the action plan.

7. References

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

Species	National objectives[19]	Site-based population & distribution objectives	Population and Distribution Context	Population monitoring[20]	Site-based Recovery Approach(es)
Gulf of St. Lawrence Aster (GSLA)	Maintain and, if possible, increase the number of individuals and area of occupancy within each of the 16 occurrence sites	By 2035, a minimum of two occurrences of GSLA are maintained in PEINP	Population is very low relative to historical populations (pre-2005). Current population trend is stable (2019-2023).	Survey annually at occupied (n=2) and historic sites (n=8) to complete a count or estimate of population and measure extant area (m^2) of all plants within PEINP. Habitat suitability is assessed annually at occupied sites.	Actions to protect habitat from human disturbance are implemented annually (e.g., area closures and signage); identification of suitable habitat and introduction of seed to new and existing sites is carried out annually, ex-situ seed lot preservation.
Gulf of St. Lawrence Beach Pinweed (BPW)	No National Recovery Strategy developed; from Management Plan (2013): 1) Maintain existing populations 2) Establish ex-situ seedbank	By 2035, maintain or increase: 1) A minimum self-sustaining population of 13,900 individuals 2) A minimum area of occupancy of 7500m^2	The one extant occurrence in PEINP is the most eastern occurrence of BPW and is significant to the species' range. Population trend is currently stable (2017-2023).	Ground surveys are conducted biannually (every 2 years) at one known site to determine population estimate based on density; extant population area (m^2) is measured.	To reduce site disturbance, surveys are conducted bi-annually; educational signage and dune closures are implemented to increase compliance of protective measures at known population site; impacts of severe storms are monitored.
Monarch	National Objectives in development From Management Plan (2016): The long-term goal is to ensure the conservation of the Monarch butterfly migratory phenomenon	Increase the amount of breeding habitat for Monarch in PEINP by establishing at minimum 3 self-sustaining swamp milkweed patches (1 in each geographic section of the park) by 2035	Population and distribution within PEINP are unknown; incidental sightings of monarch observed in PEINP are tracked. Expected Northward shift of range due to climate change.	Atlantic Canada Conservation Data Centre (ACCDC) mapped milkweed species occurrence in 2020 and identified suitable habitat for reintroduction. Planting occurred in 2018 in Cavendish Campground, and 2021 in Greenwich; sites monitored annually.	Identify suitable habitat for milkweed species planting that will avoid human disturbance; monitor survivorship of plantings annually; supplement or add new sites as necessary; carry-out annual surveys to determine occupancy of milkweed plants by Monarch.

[19] National objectives as per the most recent version of relevant recovery documents found in References section.
[20] Where population and distribution objectives have been established for PEINP, monitoring is designed to directly measure success in achieving those goals.

Species	National objectives[19]	Site-based population & distribution objectives	Population and Distribution Context	Population monitoring[20]	Site-based Recovery Approach(es)
Piping Plover—*Melodus* subspecies	1) Maintain at least 255 pairs in Atlantic Canada, increasing to 310 pairs over time 2) Fledge at least 1.65 chicks per pair	Measured as 5-year running average: 1) At least 10 breeding pairs of Piping Plover are sustained in PEINP annually over the next 10 years 2) By 2035, achieve and sustain productivity of 1.65 chicks/ breeding pair/year	1) Breeding pair trend is stable (2019-2023) 2) Productivity is stable (2019-2023)	The number of breeding pair and fledgling success is monitored on PEINP beaches annually through regular beach surveys following Parks Canada's Piping Plover Monitoring Protocol. PEINP contributes survey data to the provincial PIPL census annually, and International PIPL census every 5-years.	PEINP monitors all beaches within the park during the nesting season. When pairs are discovered, protective measures are implemented (area closures by order of the superintendent) until chicks have fledged; strategies to promote compliance (directed compliance and law enforcement patrols, educational and regulatory signage) are implemented seasonally during the breeding season.
Black Ash	No National Recovery Strategy developed; from Recovery & Action Plan for Black Ash in Nova Scotia, long-term recovery goal: 1) Ensure conditions allow for restoration of self-sustaining populations 2) Populations support sustainable traditional use	By 2035, increase the number of known occurrences of self-sustaining Black Ash within PEINP by at least 25 individuals via propagation in suitable habitat through support of the Indigenous-led Black Ash Conservation Project	No current trend; only two known existing Black Ash in PEINP, one planted in 2021, and one naturally occurring. The latter had been in decline, though 2023 surveys found regenerating health	Ground truthing is carried out opportunistically to detect additional occurrences within the park; suitable habitat for reintroduction is identified and mapped with support of partners; tree seedling health is monitored following planting.	Recovery activities for this species will be guided through Indigenous-led conservation of Black Ash, led by Abegweit Conservation Society. PEINP's approach may include installation of tree guards to ensure seedling success and to deter browse.
All other species included in the scope of this plan—refer to Species Table (section 1.3.2)	No objective established because there are no or few known threats acting in the site, no known management actions to address threats and/or the site is of limited importance to the species' recovery.		N/A	Recording incidental observations.	The site will continue to protect individuals and critical habitat, protect suitable habitat, and support partners in recovery and protection of these species where feasible. Additionally, the site will work with partners to conduct opportunistic surveys for under-surveyed species in the site and adjust management approaches appropriately when new populations are found.

Appendix B: Conservation and recovery measures that will be implemented.

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
1.1. All species in this plan	Implement Multi-Species Action Plan in Collaboration with Abegweit First Nation and Lennox Island First Nation: Implementation and adaptive management of this plan will continue to be in full collaboration with Abegweit First Nation and Lennox Island First Nation. PEINP will continue to build connection and relationships between Parks Canada and Epekwitnewaq Mi'kmaq partners during the implementation of this plan.	The Multi-species Action plan for PEINP and NHSs is implemented in full collaboration with both Mi'kmaq First Nations of PEI thoughout its 10-year duration.	High	Knowledge gaps	10.3.2 Maintaining or strengthening relationships	Annually
1.2. All species in this plan	Support Two-Eyed Seeing: Implement two-eyed seeing approaches to support habitat management planning in collaboration with Abegweit and Lennox Island First Nations communities to inform potential actions that can be taken to improve habitat quantity and quality for species at risk.	Two-eyed seeing is present in habitat management throughout the 10-year duration of this plan.	High	Knowledge gaps	10.3.4 Knowledge sharing	Annually
1.3. All species in this plan	Implement Epekwitnewaq Mi'kmaq Knowledge Best Practices: Follow/implement Indigenous developed best practices and guidance for seeking, acquiring, and using Indigenous Knowledge, and	Indigenous knowledge best practices that have been developed or shared by Abegweit First Nation and Lennox Island First	Medium	Knowledge gaps	10.3.4 Knowledge sharing	Annually

[21] Recovery Measures were prioritized as described in Section 3.0
[22] Threats were classified using the CMP (Level 1 and 2) and Quebec (Level 3) threats classification system.
[23] Recovery Measures were classified using the CMP (level 1 and 2) and CWS (Level 3) action classification system.

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
	prioritizing Indigenous sovereignty over that knowledge.	Nation are implemented annually.				
Coastal Ecosystem						
2. Piping Plover, Bank Swallow, Red Knot, Lesser Yellowlegs, Hudsonian Godwit, Marine animals	Reduce Human Disturbance on Piping Plover Beaches: Annual implementation of domestic animal ban on PEINP beaches, close areas for breeding Piping Plover, and sign/barrier installation for notice and education of these regulations.	Domestic animal ban is implemented annually from April 1 - Oct 15 on all PEINP beaches; Beach closures are implemented during the Piping Plover nesting season until all chicks are fledged each year.	High	6.1.2 Hiking	1.1.9 Visitor management	Annually
3. Piping Plover	Conduct Statistical Analysis of Piping Plover Data: PEINP maintains long-term datasets on Piping Plover abundance and productivity, with records of activity on PCA beaches from 1983-2023. In partnership with Island Nature Trust, PEINP will conduct statistical analyses of Piping Plover data across the PEI landscape to help inform regional recovery objectives.	Statistical analysis of long-term dataset is completed by the end of the 10-year cycle.	Medium	Knowledge gaps	8.1.2 Desktop/benchtop research and analysis	10 Years
4. Piping Plover	Document Individual Piping Plover Breeding Pair/Brood Area Use: Through non-invasive Piping Plover productivity monitoring, document family unit range from the point of nest establishment to fledging of chicks to help refine core use areas within critical habitat.	Geographic information for each Piping Plover breeding pair and brood is documented annually.	Low	Knowledge gaps	8.1.1 Field Research/Monitoring	Annually

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
5. Bank Swallow	Monitor Population of Bank Swallow: Conduct annual Bank Swallow surveys to determine relative abundance and colony distribution throughout PEINP. Monitor habitat use throughout the park, including ephemeral nesting habitat (e.g., nesting in sandstone/till banks versus dune) on a regular basis and following significant erosion events to help address knowledge gaps around habitat use.	Bank Swallow population monitoring is carried-out every year during the 10-year cycle.	Medium	Knowledge gaps	8.1.1 Field Research/Monitoring	Annually
6. Bank Swallow	Understand Roosting Habitat of Bank Swallow: In partnership with the Atlantic Regional Bank Swallow Working Group, pilot monitoring methodologies in targeted wetlands to determine presence/absence of roosting Bank Swallows. Data will address knowledge gaps to better understand important roosting sites for this species and inform the best methodology for data collection.	The feasibility of two methodologies for targeted monitoring of potential roost habitat is piloted by the end of the 10-year cycle.	Medium	Knowledge gaps	8.1.1 Field Research/Monitoring	10 Years
7. Bank Swallow	Reduce Human Disturbance on Bank Swallows: Close areas during active nesting/brood rearing around known colonies susceptible to human disturbance by installing signage and physical barriers, where appropriate.	Closures are implemented annually over the 10-year cycle from May-August during the active nesting season.	Low	6.1.2 Hiking	1.1.9 Visitor management	Annually
8. Bank Swallow	Conduct Bank Swallow Landscape Mapping: Work with Community Nominated Priority Place project lead, Island	Bank Swallow landscape-scale habitat mapping for	Medium	Knowledge gaps	8.1.2 Desktop/benchtop research and analysis	3 Years

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
	Nature Trust, to complete site-level mapping across the PEI landscape to better understand where biophysical attributes exist that are critical to Bank Swallow and what habitat characteristics are present at nesting sites. A more robust understanding of the habitat supporting Bank Swallows will assist in future management of the sites.	PEI is completed by 2027.				
9. Gulf of St. Lawrence Aster	Propagation, Cultivation, and Reintroduction of Gulf of St. Lawrence Aster: Through collaboration, such as existing partnership with UPEI, utilize greenhouse propagated and cultivated seedlings and/or seed to reintroduce seed source in historic sites, augment extant occurrences, and establish new occurrences within identified suitable habitat.	A minimum of 50,000 GSLA seeds are introduced to PEINP every year over the 10-year cycle.	High	Knowledge gaps	2.1.3 Reproductive management	Annually
10. Gulf of St. Lawrence Aster	Study of Germination and Growth Requirements for Gulf of St. Lawrence Aster: In collaboration with partners, PEINP will conduct trials to better understand the optimal germination and growth requirements of Gulf of St. Lawrence Aster, as well as the structure of its populations.	Within 10 years, continued research in collaboration with the University of Prince Edward Island's Biology Department is completed to increase the understanding of the optimal germination and growth requirements for GSL Aster.	High	Knowledge gaps	8.1.1 Field Research/Monitoring	3 years
11. Beach Pinweed	Reduce Human Disturbance to Beach Pinweed Sites: Implement annual sign strategy	Sign strategy, closures, and compliance	High	6.1.2 Hiking	1.1.9 Visitor management	Annually

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
	and/or area closures in combination with regular compliance/law enforcement patrols to reduce disturbance on Beach Pinweed population.	monitoring of Beach Pinweed areas are implemented every year over the 10-year cycle.				
12.1. Piping Plover, Bank Swallow	Monitor Predator Populations and Deter Unsustainable Predation: Continue to document occurrence of known predators to species of conservation concern, such as Piping Plover and Bank Swallow during Ecological Integrity (EI) monitoring surveys (e.g., recording predator tracks or sightings during Piping Plover surveys).	Evidence of predator populations is documented during regular monitoring activities of Piping Plover and Bank Swallow every year of the 10-year cycle.	Low	8.2.5 Increased predation by mesopredators	8.1.1 Field Research/Monitoring	Annually
12.2. Piping Plover, Bank Swallow	Manage Human-Wildlife Coexistence: Manage human wildlife coexistence by removing attractants, such as garbage and occurrences of wildlife feeding. This will deter high concentrations of predator populations from impacting species of conservation concern, such as Piping Plover and Bank Swallow. Human wildlife coexistence will be further enforced through support from Law Enforcement and Resource Management Officers.	Human-Wildlife Coexistence best practices are implemented annually over the 10-year cycle, and all occurrences are documented in the Incident Event Management system.	Low	8.2.5 Increased predation by mesopredators	1.1.9 Visitor management	Annually

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
13. Bank Swallow, Piping Plover, Beach Pinweed, Gulf of St. Lawrence Aster, culturally significant species, Short-eared Owl	Dune Closures: The dynamic and fragile coastal dunes of PEINP influence much of the coastal landscape and protection is critical to the habitat that supports species of conservation concern and culturally significant species. Access to dunes will be prohibited by the implementation of annual closures of all dune systems in PEINP.	Park-wide dune closures are implemented annually.	High	6.1.2 Hiking	1.1.9 Visitor management	Annually
14. Piping Plover, Bank Swallow	Support Partner-Led Research on Piping Plover and Bank Swallow: Support national and regional research on species at risk to help address knowledge gaps and research priorities for these species.	Partner-led research on Piping Plover and Bank Swallow is supported as needed every year during the 10-year cycle.	Medium	Knowledge gaps	8.1.1 Field Research/Monitoring	Annually
Forest, Freshwater & Wetland Ecosystems						
15. Black Ash	Support Indigenous-Led Conservation of Black Ash: Work with First Nations partners to support conservation of Black Ash across the greater landscape of PEI, through participation on advisory committees, identification of potential sites of suitable habitat for Black Ash planting and supporting capacity needs.	Suitable habitat for Black Ash is identified throughout PEINP and at least 25 Black Ash trees are introduced to PEINP over the 10-year cycle.	High	8.1.2 Terrestrial plants	10.3.2 Maintaining or strengthening relationships	10 Years

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
16. Northern Myotis, Little Brown Myotis, Eastern Red Bat, Hoary Bat, Silver-Haired Bat	Bat Population Monitoring: Assess distribution and relative abundance of bat species in PEINP and explore additional resources to better understand habitat requirements and population and distribution of these species. Partner with neighboring landowners to monitor known colonies and share species information and best practices.	Bat data are collected annually for North American Bat Monitoring Program; targeted acoustic data are collected 3 times within the 10-year cycle (on a 3-year rotation); Collaboration with partners occurs as opportunities arise throughout the 10-year cycle.	High	Knowledge gaps	8.1.1 Field Research/Monitoring	Annually; every 3 years; & as necessary
17. Olive-sided Flycatcher, Eastern Wood-Pewee, Canada Warbler, Bank Swallow, Yellow-Banded Bumble Bee	Restore Krummholz Habitat: Work with partners to understand the importance of krummholz to species of conservation concern and culturally significant species, and work to enhance krummholz habitat through restoration efforts at sites throughout PEINP.	Krummholz habitat is enhanced through restoration efforts at a minimum of 2 identified sites in PEINP over the 10-year cycle.	Medium	Multiple threats	1.2.2 Planting vegetation to create habitat	10 Years
18. Canada Warbler, Olive-Sided Flycatcher, Eastern Wood-Pewee, Rusty Blackbird, Bank Swallow (roosting)	Forest and Wetland Bird Population Monitoring: Identify populations/ occurrences of species at risk and other forest birds and monitor their long-term populations in PEINP by implementing avian monitoring protocols in PEINP and NHSs.	Forest and wetland bird population monitoring is conducted every year of the 10-year cycle.	Medium	Knowledge gaps	8.1.1 Field Research/Monitoring	Annually

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
19. Atlantic Salmon	Support Indigenous-Led Atlantic Salmon Conservation: Recovery of Atlantic Salmon is a regional priority for Parks Canada and supporting recovery is critical beyond the boundaries of Parks Canada administered sites. Work with First Nations partners to support conservation of Atlantic Salmon across PEI, through participation on advisory committees, sharing information and data on regional Atlantic Salmon initiatives carried out by Parks Canada, and supporting capacity needs of partners.	Indigenous-led Atlantic Salmon conservation projects are supported according to the specific needs and priorities identified by partners throughout the 10-year cycle.	Medium	Knowledge gaps	10.3.2 Maintaining or strengthening relationships	As necessary
20. American Eel	Support Indigenous-Led American Eel Research and Knowledge Sharing: Partner with First Nations collaborators to present data on this culturally significant species to First Nations communities in a meaningful way, including providing access to long-term data sets on American Eel population and distribution in PEINP.	Data on American Eel is collected annually within PEINP and shared annually with Abegweit and Lennox Island First Nations partners.	Medium	Knowledge gaps	10.3.4 Knowledge sharing	As necessary
21. American Eel	Monitor Population of American Eel and Other Freshwater Species: Conduct annual monitoring of fish communities in four freshwater ponds throughout PEINP to assess population and distribution of American Eel and other freshwater species.	Fish community monitoring is annually carried-out during the 10-year cycle.	Low	Knowledge gaps	8.1.1 Field Research/Monitoring	Annually

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
Other/Multiple Ecosystems						
22. Yellow-Banded Bumble Bee, Monarch, Little Brown Myotis, Northern Myotis, Bobolink, Bank Swallow, Eastern Wood-Pewee, Canada Warbler, Olive-Sided Flycatcher, Rusty Blackbird	Increase Buffer Zones: Increase quantity and quality of buffer zones and other insect supporting habitat throughout PEINP through reduced mowing and supplemental planting to provide more suitable habitat for insects in the effort to increase insect biomass.	Adequate buffer zones are developed and maintained annually over the 10-year cycle.	Low	Multiple threats	1.2.2 Planting vegetation to create habitat	Annually
23. Monarch	Establish Monarch Habitat: Establish monarch host plant occurrences to support breeding monarch and increase connectivity of suitable habitat across the greater landscape of PEI. Host plant species (Common Milkweed, Swamp Milkweed) are native in the Maritimes provinces, but PEINP does not presently host self-sustaining occurrences (less than five known individual plants). Work will be completed by planting in targeted suitable habitat in all three regions of the park (west, central, and east), and conducting survivorship and monarch occupancy surveys	Three patches of self-sustaining Monarch habitat are established by year 10 of the 10-year cycle; patches are monitored annually following establishment.	Medium	Knowledge gaps	1.2.2 Planting vegetation to create habitat	10 Years; Annually

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
	following milkweed establishment.					
24. Yellow-Banded Bumble Bee	Monitor Occurrence of Yellow-Banded Bumble Bee: Conduct systematic surveys for bees throughout the months of May – September and explore additional resources to better understand habitat requirements, occurrence and distribution of Yellow-banded Bumble Bee throughout PEINP and NHSs.	Surveys for Yellow-banded Bumble Bee are conducted every year during the 10-year cycle to increase knowledge on distribution and habitat requirements.	Low	Knowledge gaps	8.1.1 Field Research/Monitoring	Annually
25. Bobolink	Monitor Population of Bobolink: Annual grassland monitoring for Bobolink is carried out to better understand population, distribution and habitat needs within PEINP and NHSs. Survey all suitable agriculture and grassland land annually for presence/absence.	Bobolink population and habitat monitoring is conducted every year of the 10-year cycle.	High	Knowledge gaps	8.1.1 Field Research/Monitoring	Annually
26. Bobolink	Implementation/Improvement of Best Management Practices for Bobolink: Implement a delay of hay harvest for leased agricultural fields when Bobolink is present and update terms of reference for leased agricultural fields to ensure protective measures for Bobolink are well communicated to lease holders. Ensure updated terms of reference are compliant with buffer zone requirements and Integrated Pest Management and adopts current agricultural best practices where appropriate. Work to	Best practices are implemented annually in fields where Bobolink are detected. Best management practices for Bobolinks are updated concurrently and reflected in PEINP's updated Agricultural Lease Agreement by the end of the 10-year cycle.	High	2.1.2 Perennial cropping systems	1.1.11 Implementation of better management practices or land use guidelines	Annually; 10 Years

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
	build/maintain relationships with farmers (lease holders) to support advancement of sustainable farming practices.					
27.1. All species in this plan	Conduct Invasive Species Detection: Conduct annual invasive species detection surveys, monitoring of known invasive species, and active management. Expand program to target invasive species that are known to have negative impacts on species at risk and their habitats.	Invasive species detection surveys are conducted for priority invasives every year during the 10-year cycle.	High	8.1.2 Terrestrial plants	8.1.1 Field Research/Monitoring	Annually
27.2. All species in this plan	Conduct Invasive Species Management: Conduct annual invasive species active management, targeting removal of priority invasive species.	Occurrences of priority invasive species are managed every year over the 10-year cycle.	High	8.1.2 Terrestrial plants	1.1.1 Removing invasive species, pests, weeds or problem species	Annually
28. All species in this plan	Support Park Compliance: Continue to support further compliance of park regulations and management actions (e.g., enforcement of closed areas for nesting Piping Plover); ensure staff are adequately resourced and trained in delivering compliance messaging to visitors.	Park compliance efforts are supported to protect species at risk every year during the 10-year cycle.	High	6.1.2 Hiking	1.1.9 Visitor management	Annually
29. All species of conservation concern (e.g., Rusty Blackbird, Evening Grosbeak, Short-Eared Owl, Gypsy Cuckoo	Continue to Build Inventory of Occurrence Data for Species of Conservation Concern: Support efforts to build knowledge on occurrences of species of conservation concern, especially for species where distribution is not well known in PEINP and NHSs. This will include provincially rare species,	Occurrences of species of conservation concern are documented and a database of occurrences is maintained and updated annually over the 10-year cycle.	Low	Knowledge gaps	8.1.1 Field Research/Monitoring	Annually

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
Bumble Bee, Northern Otter, Smooth Horsehair Lichen, Eastern Pearlshell, Endemic Species such as Fernald's Serviceberry and Frankton's Saltbush)	endemic species (e.g., Ours to Save listed species: Fernald's Serviceberry, Frankton's Saltbush, etc.) and those ranked S1-S2 (critically imperiled/imperiled) according to Sub-national ranks maintained by Conservation Data Centers and NatureServe.					
30. Culturally significant species	Implement Conservation of Species of Cultural Significance within PEINP: Engage with Abegweit and Lennox Island First Nations to determine which, if any, species of cultural significance should be inventoried, monitored, protected, or have other recovery measures taken within PEINP and NHSs.	Occurrence and protection of culturally significant species within PEINP is documented and shared with Abegweit and Lennox Island First Nations every year of the 10-year cycle.	Medium	Knowledge gaps	10.3.4 Knowledge sharing	Annually
Partnerships & Collaborations						
31.1. All species in this plan	Support Landscape-Scale Conservation: Participate in and support active community of practices, working groups, and advisory committees, etc., throughout implementation.	Landscape-scale conservation is supported annually during the 10-year cycle.	High	Knowledge gaps	10.3.4 Knowledge sharing	Annually
31.2. All species in this plan	Support Priority Place Initiatives: Participate in and support regional/national initiatives, such as the PEI Forested Landscape Priority Place for Species at Risk and the Community Nominated Priority Place for	Priority place initiatives are supported annually during the 10-year cycle.	High	Knowledge gaps	10.3.2 Maintaining and strengthening partnerships	Annually

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
	Species at Risk - Coastal Ecosystem.					
32. All species in this plan	Develop Sister Trails Network with Epekwitnewaq Mi'kmaq Collaborators: Work with Abegweit and Lennox Island First Nations collaborators to develop a "Sister Trails" network through engagement with First Nations communities. Work with existing infrastructure in combination with new infrastructure to develop three trails (one in each of the two First Nations communities and one in PEINP) that use consistent messaging and two-eyed seeing to highlight culturally significant species, species at risk and climate change impacts. These trails will also host a space for Epekwitnewaq Mi'kmaq peoples and visitors to make meaningful connections with Mi'kmaq culture and ways of knowing.	Development of the Sister Trails project is completed within the 10-year cycle.	High	No Direct Threat	3.1.1 Raising awareness	10 Years
33. Bank Swallow, Northern Myotis, Little Brown Myotis, Olive-Sided Flycatcher, Canada Warbler, Rusty Blackbird	Support Indigenous-Led Species at Risk Monitoring in Abegweit First Nation and Lennox Island First Nation Communities: Species at risk monitoring within First Nations communities is achieved through reciprocal support of community members and PEINP, by means of sharing equipment, protocols, knowledge, and/or supporting capacity needs.	Species at risk monitoring within Abegweit First Nation and Lennox Island First Nation Communities is supported every year during the 10-year cycle.	High	Knowledge gaps	10.3.2 Maintaining and strengthening partnerships	Annually

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
34. All species in this plan	Knowledge Sharing with Partners: Work with partners to ensure results of work completed in PEINP is readily available to partners and the public, and where possible published as primary literature and open data.	Knowledge sharing is carried out every year during the 10-year cycle, and documented as published reports, updates to open data, and responses to requests from partners.	Medium	Knowledge gaps	10.3.4 Knowledge sharing	Annually
35. Beluga Whale -St. Lawrence Estuary population, North Atlantic Right Whale, Atlantic White-sided Dolphin, Harbour Porpoise, Harp Seal, Hooded Seal, Leatherback Sea Turtle and other marine animals	Work with Fisheries and Oceans Canada & Partners to Report Strandings and Support Necropsies of Marine Species at Risk: Partner with the Atlantic Veterinary College (AVC), Canadian Wildlife Health Cooperative (CWHC) and the Marine Animal Response Society (MARS) to report stranded marine animals and seabirds, support access to animals within PEINP, and support necropsies of species/specimen of concern by collecting and delivering marine animals, as required.	Information is shared every year throughout 10-year cycle, quantified by reports tracked in Incident Event Management software, and access to specimens by the AVC/CWHC for necropsy is facilitated.	Medium	Knowledge gaps	10.3.4 Knowledge sharing	Annually
36. Beluga Whale -St. Lawrence Estuary population, North Atlantic Right Whale, Atlantic White-sided Dolphin, Harbour Porpoise, Harp Seal, Hooded	Collaborate with Fisheries and Oceans Canada to reduce Human Disturbance to Marine Species at Risk: Protect marine animals that are found in the terrestrial landscape of PEINP from human disturbance.	Action is taken to prevent human disturbance to marine animals within PEINP when reported within the terrestrial landscape as needed over the 10-year cycle. Human disturbance to marine animals is prevented by collaborating with	Medium	6.1.2 Hiking	1.1.9 Visitor management	As necessary

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
Seal, Leatherback Sea Turtle and other marine animals		DFO and responding to live-standings as needed over the 10-year cycle.				
37. Piping Plover, Bank Swallow, Gulf of St. Lawrence Aster, Beach Pinweed, Red Knot, Hudsonian Godwit, Lesser Yellowlegs	Partner with Island Nature Trust on Coastal Stewardship: Partner with Island Nature Trust (INT) on a campaign to bring awareness to coastal species of conservation concern and educate beach goers on best practices for sharing the beach through sustainable recreation.	A coastal stewardship project is co-developed with the INT to increase awareness around coastal species by 2030 and implemented annually once developed.	Medium	6.1.2 Hiking	3.1.1 Raising awareness	Annually; 2030
38. All species in this plan	Partner with NGOs and Stakeholders to Protect Species at Risk: Work to develop and maintain relationships with partners to support the planning and implementation of landscape-scale conservation measures for species of conservation concern across PEI.	Annually partnered with NGOs and stakeholders to protect various species at risk.	High	Knowledge gaps	10.3.2 Maintaining or strengthening relationships	Annually

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
39. Little Brown Myotis, Northern Myotis, Olive-Sided Flycatcher, Eastern Wood-Pewee, Canada Warbler, Black Ash, Eastern Red Bat, Silver-Haired bat, Hoary Bat	Share and Promote Forest Management Outreach: Work with local conservation organizations (e.g., PEI Forest Landscape Priority Place project, Island Nature Trust, MacPhail Woods Forestry Project) to share educational materials on species at risk in the forest ecosystem and how to support healthy species at risk forested habitat.	Educational materials are shared on species at risk within the forest ecosystem annually over of the 10-year cycle.	Medium	Knowledge gaps	10.3.4 Knowledge sharing	Annually
Outreach, Education, & Visitor Experience						
40.1. All species in this plan	Develop and Implement Outreach Education Activities: Work with partners to deliver education through outreach programs outside of PEINP and NHSs, including presentations, displays, school visits, etc.,	Outreach and educational activities are developed with partners annually throughout the 10-year cycle.	Medium	Knowledge gaps	3.1.1 Raising awareness	Annually
40.2. All species in this plan	Develop and Implement Communication and Engagement Plan: Deliver messaging to key audiences using a variety of tactics to communicate about species of conservation concern, their habitats and actions to support the recovery of these species.	Communication and engagement plan is developed by 2026 and implemented annually following its development.	Medium	Knowledge gaps	3.1.1 Raising awareness	2026; Annually
40.3. All species in this plan	Promote and Encourage Citizen Science Programming: Share ways for staff, visitors, and public to get involved in citizen science to promote reporting of species occurrences within and outside of PEINP and NHSs.	Citizen science programs are promoted and encouraged every year over the 10-year cycle. >500 SAR sightings are received	Medium	Knowledge gaps	3.1.1 Raising awareness	Annually

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
		from the public over the 10-year period.				
40.4. All species in this plan	Provide Information on Species of Conservation Concern throughout PEINP: Provide accessible information using a variety of media on species at risk and other species of conservation concern to staff and visitors throughout PEINP. Work with partners to develop/share common messaging for consistency across the greater PEI landscape.	Information on species of conservation concern throughout PEINP is provided every year over the 10-year cycle. >5000 people are reached through posters, social media, and outreach/training events to increase awareness on SAR.	Medium	Knowledge gaps	3.1.1 Raising awareness	Annually
41. All species in this plan	Provide Opportunities for Volunteers to Participate in Habitat Restoration for Species at Risk: Provide opportunities for volunteers/partners to assist with habitat restoration projects and learn more about the importance of healthy habitats.	Three group volunteer opportunities are provided annually and participation (number of volunteer hours) is documented annually over the 10-year cycle.	Medium	Knowledge gaps	10.3.2 Maintaining and strengthening partnerships	Annually
42. Piping Plover, Bank Swallow, Beach Pinweed, and potentially all other species in this plan	Install Educational Signage for Species at Risk: Installation and development of signs promoting education of species at risk and measures in place to protect these species. Work with partners to standardize messaging, where possible, and re-evaluate messaging on an annual basis to ensure signs will successfully support education and protection of species at risk.	At least ten educational SAR signs are developed, and updated as necessary with partners to increase awareness throughout the 10-years. Species at risk educational signage is installed every year over the 10-year cycle.	Medium	Knowledge gaps	3.1.4 Educational signage	Annually

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
43. Piping Plover, Bank Swallow, Gulf of St. Lawrence Aster, Beach Pinweed, Red Knot, Hudsonian Godwit, Lesser Yellowlegs, Monarch, Yellow-Banded Bumble Bee, Short-Eared Owl	Implement Dune Protection Campaign: Continue to participate, develop, and implement dune protection campaign created with partners (Island Nature Trust, Nature Conservancy of Canada) to support protection of habitats vital for species of conservation concern across the landscape.	Dune protection campaign is implemented every year over the 10-year cycle.	High	Multiple threats	1.1.11 Implementation of better management practices or land use guidelines	Annually
44. Little Brown Myotis, Northern Myotis, Eastern Red Bat, Silver-Haired Bat, Hoary Bat	Share and Promote Educational Materials on Bat Species: Share existing outreach materials, guidance, and best practices related to species at risk listed bat species, the threats they face, and what can be done to help. Continue to promote awareness of Canadian Wildlife Health Cooperative resources, such as the Atlantic Bat Hotline and health surveillance program.	Educational materials are shared annually over the 10-year cycle. At least 2000 people are reached through sharing education materials on bats annually.	Medium	Knowledge gaps	10.3.4 Knowledge sharing	Annually

Species and Measure Number	Recovery Measure	Desired Outcome	Activity Priority (High, Medium, Low)[21]	Threat[22] Classification	Action[23] Classification	Timeline
45. All species in this plan	Epekwitnewaq Mi'kmaq Engagement and Outreach: Work with collaborators from Abegweit and Lennox Island First Nations to share information within communities about species at risk and the work Parks Canada and First Nations collaborators are completing together (e.g., share details on species at risk monitoring being completed in First Nations communities, recovery measures that have and will take place in PEINP, individual species at risk, work related to culturally significant species within PEINP, etc.).	Work completed in collaboration with Abegweit and Lennox Island First Nations partners is promoted and shared in an annual written report every year over the 10-year cycle.	High	Knowledge gaps	10.3.4 Knowledge sharing	Annually
46. Beluga Whale -St. Lawrence Estuary population, North Atlantic Right Whale, Atlantic White-sided Dolphin, Harbour Porpoise, Harp Seal, Hooded Seal, Leatherback Sea Turtle and other marine animals	Collaborate with Fisheries and Oceans Canada to Implement Marine Species at Risk Education: PEINP is shaped and influenced by the ocean, and it is important to educate visitors on the species at risk that inhabit the waters just offshore of lands administered by Parks Canada. Work with Fisheries and Oceans Canada & partners to educate staff and visitors on marine species at risk, including housing a featured marine species at risk display and sharing partner developed messaging about these species.	Messaging on marine species at risk is shared and education of these species is promoted through materials/displays in PEINP and NHSs in collaboration with DFO and partners every year during the 10-year cycle. At least 20,000 people are reached annually by promoting education with partners on marine species through increased messaging (e.g., social media) and featured marine SAR display annually.	Medium	Knowledge gaps	3.1.1 Raising awareness	Annually

Appendix C: Other conservation and recovery measures that will be implemented if partnerships or additional resources become available.

Species and Measure Number	Recovery Measure	Desired Outcome	Threat[24] Classification	Action Classification[25]
Coastal Ecosystems				
47. Piping Plover	Understand Knowledge Gaps on Piping Plover Habitat Selection and Prey Availability: With partners, work to understand the influence of invertebrate population, distribution, and abundance on habitat selection by Piping Plover and whether prey availability is affecting adult and juvenile fitness.	Data on Piping Plover habitat use is collected annually; 3-year study on prey availability is completed by the end of the 10-year cycle.	Knowledge gaps	8.1.1 Field Research/ Monitoring
48. Piping Plover	Understand Piping Plover Breeding Habitat Selection: Compare characteristics of occupied habitat to apparently suitable but unoccupied habitat. Use annual drone imagery, flown prior to Piping Plover arrival, to better understand habitat selection and how selection changes overtime in a dynamic ecosystem.	Data is collected annually over the 10-year cycle to contribute towards knowledge of Piping Plover habitat selection.	Knowledge gaps	8.1.2 Desktop/benchtop research and analysis
49. Bank Swallow	Understand Inland Critical Habitat for Bank Swallow: PEINP completes comprehensive surveys of the north shore of the park to determine the relative population size and distribution of Bank Swallow. However, knowledge gaps exist for where Bank Swallow may be nesting more inland, such as dune systems not visible from beaches/waters of the north shore. Work to survey potential inland critical habitat for Bank Swallow presence will be carried out; surveys of potential identified habitat sites will be conducted twice over the 10-year cycle; if colonies are detected in inland habitat, those sites will be monitored annually.	Surveys to understand inland critical habitat for Bank Swallow are carried out twice over the 10-year cycle; locations with confirmed colony activity are monitored annually.	Knowledge gaps	8.1.1 Field Research/ Monitoring

[24] Threats were classified using the CMP (Level 1 and 2) and Quebec (Level 3) threats classification system.
[25] Recovery Measures were classified using the CMP (level 1 and 2) and CWS (Level 3) action classification system.

Species and Measure Number	Recovery Measure	Desired Outcome	Threat[24] Classification	Action Classification[25]
50. Bank Swallow	Understand Impacts of Human Disturbance on Bank Swallow Behaviour: Work to understand if/when presence of visitors near Bank Swallow colonies result in changes in behaviour and/or visible disturbance.	Data are gathered on human disturbance impacts to Bank Swallow as they occur; disturbance events are summarized annually.	6.1.2 Hiking	8.1.1 Field Research/ Monitoring
51. Bank Swallow	Revegetate Top of Nesting Cliffs for Bank Swallow: Revegetate top of nesting cliffs and banks that have been cleared through previous land management to promote cliff stability and protection of burrows from accelerated erosion, heavy surface water runoff, storm events, and predation.	Habitat restoration is carried out atop cliffs suitable for Barn Swallow nesting as required over the 10-year cycle; success is tracked by number of sites restored by the end of the 10-year cycle.	11.5.2 Storm surge	1.2.2 Planting vegetation to create habitat
52. Beach Pinweed	Continue to Support Research on Germination and Growth Requirements of Beach Pinweed: In collaboration with partners (e.g., Kouchibouguac National Park and the National Tree Seed Centre), PEINP will support ongoing trials to identify the germination, growth, and transplant requirements of Beach Pinweed.	3-year study of germination and growth requirements for Beach Pinweed is completed as part of an academic research project, by the end of the 10-year cycle.	Knowledge gaps	8.1.1 Field Research/ Monitoring
53.1. Beach Pinweed	Support Development of Standardized Beach Pinweed Monitoring Protocol: Support development of a standardized national protocol for the monitoring of Beach Pinweed populations in partnership Kouchibouguac National Park.	Standardized Beach Pinweed monitoring protocol is developed within the 10-year cycle.	Knowledge gaps	6.4.2 Species specific plan
53.2.	Implementation of Standardized Beach Pinweed Monitoring Protocol: Implement a standardized national protocol for the monitoring of Beach Pinweed populations in partnership Kouchibouguac National Park.	The standardized Beach Pinweed monitoring protocol is implemented at least once within the 10-year cycle following development.	Knowledge gaps	8.1.1 Field Research/ Monitoring
54.1. Beach Pinweed	Develop Standardized Dune Morphology Monitoring Protocol: Climate change is now significantly altering the evolution of intrinsically dynamic dune ecosystems. This project focusses on refinement of ongoing dune monitoring measures, including complete coverage of the dunes by drone for beach pinweed habitat, with data processing, development of digital elevation models, detailed habitat mapping, quantification of potential habitat, etc. Components will be brought together to assess trends in the distribution and total area of suitable Beach Pinweed habitat. Monitoring methods will be standardized.	Standardized dune morphology monitoring protocol is developed by the end of the 10-year cycle.	Knowledge gaps	6.4.2 Species specific plan

Species and Measure Number	Recovery Measure	Desired Outcome	Threat[24] Classification	Action Classification[25]
54.2.	Implementation of a Standardized Dune Morphology Monitoring Protocol: Implementation of a new and more comprehensive dune morphology monitoring program incorporating both on-the-ground and drone-based data collection, with a component focused on assessing trends in the distribution and total area of suitable Beach Pinweed habitat.	Once developed the dune morphology monitoring protocol is implemented once within the 10-year cycle.	Knowledge gaps	8.1.1 Field Research/ Monitoring
55. Gulf of St. Lawrence Aster	Gulf of St. Lawrence Aster Habitat Modification: Work with partners to implement habitat modification at test site(s) for at least one selected form of GSLA habitat modification: (1) Manual scouring in areas of extant occurrence where vegetation succession and deposition of eel grass, in combination with lack of nearshore ice scouring, has reduced the quantity and quality of habitat; (2) Active removal and/or installation of structures to prevent deposition of excessive eel grass at suitable habitat sites; or (3) Active removal of competitive vegetation negatively impacting the quantity and quality of suitable habitat at a selected site.	At least one type of habitat modification is piloted at a determined test site once within the 10-year cycle, and monitored annually for species regeneration, measured as area occupied by GSLA (m^2).	8.2.8 Interspecific competition with a favoured species	1.2.5 Mechanical actions
56. Gulf of St. Lawrence Aster, Beach Pinweed	Map Current Habitat Conditions and Model Future Habitat Conditions for Gulf of St. Lawrence Aster and Beach Pinweed: Map current conditions and model future expected conditions based on climate scenarios in areas adjacent to extant Gulf of St. Lawrence Aster and Beach Pinweed occurrences. Mapping will be used to inform selection of future transplant sites in anticipation of climate change impacts on existing habitat.	Suitable habitat for coastal species at risk flora is mapped based on predictive climate change models once over the 10-year cycle.	11.1.1 Change in vegetation communities	8.1.2 Desktop/benchtop research and analysis
57. Gulf of St. Lawrence Aster, Beach Pinweed	Support Understanding of Threats to Coastal Plants of Conservation Concern: Work with partners to better understand the threats associated with coastal species at risk flora.	A greater understanding of the threats to coastal plants is obtained through collaboration with partners and collection of population data every year during the 10-year cycle.	Knowledge gaps	8.1.1 Field Research/ Monitoring

Species and Measure Number	Recovery Measure	Desired Outcome	Threat[24] Classification	Action Classification[25]
58. Gulf of St. Lawrence Aster, Beach Pinweed	Assisted Establishment of Gulf of St. Lawrence Aster and Beach Pinweed: Work with partners to identify new suitable sites for species introduction outside of extant and historic sites for Gulf of St. Lawrence Aster and Beach Pinweed. Pilot introduction at test site(s) where/when appropriate and monitor annually following inaugural introduction.	At least one new site is identified for introduction per species and seed stock is introduced annually for GSLA and as recommended for BPW by the end of the 10-year cycle; monitoring is implemented annually to track the success of the introductions.	Knowledge gaps	2.1.3 Reproductive management
59. Piping Plover, Bank Swallow, Gulf of St. Lawrence Aster, Beach Pinweed	Build Awareness of Nature-Based Solutions for Shoreline Management: Work with partners and neighbouring property owners to share information and provide opportunities to access techniques of nature-based solutions to shoreline management. Promote and support nature-based solutions guidance and best practices.	Nature-Based solutions to shoreline management are promoted annually throughout the 10-year cycle as documented through sharing of educational tools/materials.	11.5.2 Storm surge	10.3.4 Knowledge sharing
Forest, Freshwater and Wetland Ecosystems				
60. Northern Myotis	Develop and Implement Systematic Sampling Plan for Monitoring the Population of Northern Myotis: The Atlantic region of Canada requires more systematic sampling efforts to clarify the current distribution, abundance, and habitat use of Northern Myotis to support the conservation of important habitat features. The development of this sample protocol will likely require research support from species experts. Sampling techniques will be explored to establish baseline data on Northern Myotis populations; these may include targeted acoustic surveys, standardized capture surveys at summer roosting areas and swarming sites, and work carried out through regional Parks Canada partnerships to address knowledge gaps for this species.	A minimum of 3 years of baseline data are collected within the 10-year cycle to inform the development of a long-term systematic sampling plan for this species.	Knowledge gaps	8.1.1 Field Research/ Monitoring
61. Little Brown Myotis	Support the Construction of Bat Boxes Following Best Management Practices: When appropriate, work with landowners neighbouring PEINP and NHSs to support the construction of bat boxes following best management practices as alternative roosting habitats where existing roost sites are to be removed or altered in a way that makes them unusable/unsuitable for Little Brown Myotis.	Bat boxes are constructed and installed as required for compensatory habitat in PEINP and with the cooperation of surrounding landowners following the exclusion of colonies from anthropogenic structures. Bat boxes are monitored annually by emergence	Knowledge gaps	2.1.1 Species-structure creation

Species and Measure Number	Recovery Measure	Desired Outcome	Threat[24] Classification	Action Classification[25]
		counts/guano presence to determine their success.		
62. Little Brown Myotis, Northern Myotis	Understand Prevalence of Myotis spp. Pathogens: Support research to better understand prevalence of pathogens associated with bats (e.g., Rabies, Histoplasmosis, White-nose Syndrome). Data will be collected at known roost and colony sites in PEINP and NHSs opportunistically to support ongoing research. Any data collected will be shared with partners to contribute towards this knowledge gap.	Data collection occurs opportunistically/as required to support research needs throughout the 10-year cycle.	8.4.3 Fungal pathogens	8.1.1 Field Research/ Monitoring
63. Little Brown Myotis, Northern Myotis	Understand Habitat Selection of Bat Hibernacula in PEINP: Work with partners to understand what habitats/structures bats may be using as hibernacula in PEINP. Monitor any known/identified hibernaculum sites.	Occurrences of bat hibernacula are documented and research is conducted to determine the suitability of structures for use as hibernacula as opportunity allows over the 10-year cycle.	Knowledge gaps	8.1.1 Field Research/ Monitoring
64. Little Brown Myotis, Northern Myotis, Bank Swallow, Piping Plover, Eastern Wood-Pewee, Olive-Sided Flycatcher, Canada Warbler, Rusty Blackbird, Culturally Significant Species (fish)	Understand Impacts of Aquatic Pollutants in PEINP: In collaboration with partners, determine current levels of pollution in aquatic ecosystem (e.g., persistent organic pollutants, heavy metals, micro plastics, other commonly occurring contaminants) and, where possible, assess the impacts these pollutants may have on site-specific food chains. Data will be collected using current Canadian Aquatic Biomonitoring Network (CABIN) protocols in place; other means of sampling will be explored over the 10-year cycle.	Monitoring programs such as CABIN are implemented annually during the 10-year cycle to determine the level of pollution within PEINP aquatic systems; Impacts of these pollutants on species at risk are summarized by the end of the 10-year cycle.	9.1.2 Runoff	8.1.1 Field Research/ Monitoring
65. Ironwood	Ironwood Planting and Seed Collection: One small occurrence of Ironwood exists within PEINP, this species has been identified as a priority species where measures will be taken to supplement the population. Work will be completed with partners, such as the National Tree Seed Centre, to germinate seeds collected from the park and plant seedlings in optimal habitat and guard them against browse. This work is reliant on adequate seed source collection from the extant occurrence.	Ironwood seed is collected as available over the 10-year cycle; success of any plantings is monitored annually.	Knowledge gaps	2.1.3 Reproduction management

Species and Measure Number	Recovery Measure	Desired Outcome	Threat[24] Classification	Action Classification[25]
Other/Multiple Ecosystems				
66. Yellow-Banded Bumble Bee, Monarch, Little Brown Myotis, Northern Myotis, Bobolink, Bank Swallow, Eastern Wood-Pewee, Canada Warbler, Olive-Sided Flycatcher, Rusty Blackbird	Develop and Implement Pollinator Garden Program: Develop and implement a pollinator garden/trail program and outreach strategy to improve quality and quantity of insect (pollinator) habitat throughout the greater landscape, by establishing a minimum of 3 pollinator garden sites on lands administered by Parks Canada. This program will aim to increase the amount of pollinator habitat and overall connectivity of pollinator supporting habitat in PEINP and work with partners in the surrounding landscape to make commitments to increasing the quantity and quality of insect supporting habitat in the province at a landscape-scale.	At least three pollinator gardens are created in PEINP and NHSs within the 10-year cycle; work is undertaken with at least one partner on outreach and implementation of the pollinator garden program in the surrounding landscape (outside of land administered by Parks Canada) by the end of the 10-year cycle.	Knowledge gaps	1.2.2 Planting vegetation to create habitat
67.1. Little Brown Myotis, Northern Myotis, Piping Plover, Bank Swallow, Eastern Wood-Pewee, Olive-Sided Flycatcher, Canada Warbler, Rusty Blackbird, Red Knot, Lesser Yellowlegs, Bobolink	Develop Improved Invertebrate Monitoring Plan: Global insect decline is a known threat to multiple species at risk that inhabit PEI National Park. The objective will be to develop an invertebrate monitoring plan to determine main drivers of invertebrate abundance, targeting key times and locations within PEINP and NHSs.	An invertebrate monitoring plan that assesses insect biomass, quality, and availability at key times is developed within the 10-year cycle.	Knowledge gaps	6.4.3 Planning for thematic projects or programs
67.2.	Implement Improved Invertebrate Monitoring Plan: Quantity of invertebrates and quality of their associated habitats is assessed through implementation of improved invertebrate monitoring plan.	An improved invertebrate monitoring plan is implemented at least once within the 10-year cycle following its development.	Knowledge gaps	8.1.1 Field Research / Monitoring

Species and Measure Number	Recovery Measure	Desired Outcome	Threat[24] Classification	Action Classification[25]
68. Gulf of St. Lawrence Aster, Beach Pinweed, Ironwood, Culturally Significant Species	Preservation of Seed Lots and Genetic Samples: Ex-situ preservation of seeds can be key in the conservation of genetic diversity for declining species and has been identified as a management objective for some species at risk. By contributing to research, ecological restoration, population reintroduction and assisted migration, the collection and preservation of seed lots can play an important role in regional climate change adaptation. Conducted with regional partners, this project will focus on the collection of seed lots for numerous priority species and will explore the desire of First Nations to preserve seed lots and genetic samples for culturally significant species. Priority species will be identified through discussions with the Mi'kmaq First Nations of PEI and other regional conservation partners.	A protocol for preservation of seed lots and genetic samples is developed within the 10-year cycle and implemented as recommended based on the target species' ecology following its development.	11.1.1 Change in Vegetation communities	2.3.3 Gene banking
69. All species in this plan	Develop Species at Risk Climate Change Monitoring Plan: Better understand the impacts of climate change on species of conservation concern and their habitats across the PEI landscape through development of species at risk climate change monitoring plan.	Species at risk climate change monitoring plan is developed by year 5.	Knowledge gaps	6.4.3 Planning for thematic projects or programs
70. All species in this Plan	Develop Species at Risk Best Practices for Visitor Use & Land Management: Develop species at risk guidance to inform visitor use management decisions in Parks Canada administered sites within the PEI Field Unit and to support a land-use management, including the identification and acquisition of new property with desired resource values. Guidance may help to inform areas closures, fencing/signing of restricted areas, restoration plans, infrastructure project management, redirecting visitor use to less sensitive areas, boundary delineation priorities, park zoning, identifying less-impactful recreational activity options, etc.	Species at risk best practices for visitor use and land management are developed by the end of the 10-year cycle.	Knowledge gaps	6.4.3 Planning for thematic projects or programs

Species and Measure Number	Recovery Measure	Desired Outcome	Threat[24] Classification	Action Classification[25]
71. All species in this plan	Conduct Comprehensive Species at Risk Occurrence Mapping: Map occurrence data for all extant species at risk and species of conservation concern, including culturally significant species where it is of interest to Epekwitnewaq Mi'kmaq partners to have occurrence data documented in PEINP.	Comprehensive species at risk occurrence mapping is completed within the 10-year cycle.	Knowledge gaps	8.1.2 Desktop/benchtop research and analysis
72. All species in this plan	Establish Criteria for Accepting Change: Work with partners to better understand, in the face of existing and future climate scenarios, if/when recovery measures can no longer have positive impacts on the recovery of a species and effort should shift to updating recovery measures and/or to solely monitoring existing occurrences.	Criteria for accepting change is established for targeted species/habitats within PEINP by the end of the 10-year cycle.	Knowledge gaps	8.2.2 Cross-project or program level evaluations
73. Focal Species of Conservation Concern in this plan	Understand Structural and Functional Connectivity for Species of Conservation Concern in PEINP: Complete, and where possible partner on, structural and functional connectivity assessments for the species of conservation concern found in PEINP.	Structural and functional connectivity analysis for focal species is conducted once within the 10-year cycle.	Knowledge gaps	8.1.2 Desktop/benchtop research and analysis
74. All species in this plan	Understand Impacts of Prey Availability on Species at Risk: Work with partners to establish if species at risk are limited by the invertebrate prey available in PEINP, and if this prey may be limited by the quantity/quality of habitat that exists within PEINP.	3-year study to determine if prey availability is a limiting factor to species at risk in PEINP and NHSs is completed by the end of the 10-year cycle.	Knowledge gaps	8.1.1 Field Research/ Monitoring
75.1. Little Brown Myotis, Northern Myotis, Eastern Red Bat, Silver-Haired Bat, Hoary Bat, Bank Swallow, Piping Plover, Eastern Wood-Pewee, Olive-Sided Flycatcher, Canada Warbler	Develop Program to Audit and Reduce Light Pollution in PEINP: Work to audit light pollution throughout PEINP and NHSs and identify and implement alternative options for lighting to reduce impacts on the night sky and nocturnal species at risk. Implement a complimentary program to monitor the effectiveness of management decisions, measuring an overall reduction in light pollution from the time of audit to end of the 10-year cycle.	Audit is completed over 2-years within the 10-year cycle; data collected informs recommendations to improve light pollution throughout PEINP; light pollution audit completed at the end of the 10-year cycle to measure the effectiveness of the program.	9.6.1 Light pollution	6.4.3 Planning for thematic projects or programs
75.2.	Assess Feasibility of Decreasing Light Pollution at a Targeted Area in PEINP: Assess the feasibility of protecting nightscape from light pollution in a broad area of PEINP (e.g. dark sky preserve, nocturnal reserve, dedicated lights free area) to act as a refuge for nocturnal species of conservation concern against the threat of light pollution.	The establishment of a dark-sky preserve, or similar designation, is achieved at one area within PEINP by the end of the 10-year cycle.	9.6.1 Light pollution	6.4.3 Planning for thematic projects or programs

Species and Measure Number	Recovery Measure	Desired Outcome	Threat[24] Classification	Action Classification[25]
Education, Outreach and Visitor Experience				
75.3.	Develop Light Pollution Outreach Campaign: A campaign is developed to 1) educate the public on light pollution and the impacts unsustainable light use has on species at risk and other species across the landscape, and 2) highlight the benefits related to the natural environment, human health, and climate change if this threat is reduced.	Outreach campaign is developed and implemented by the end of the 10-year cycle.	9.6.1 Light pollution	3.1.1 Raising awareness
76. Piping Plover, Bank Swallow, Gulf of St. Lawrence Aster, Beach Pinweed, Red Knot, Hudsonian Godwit, Lesser Yellowlegs, Beach Pinweed	Develop Four-Legged Friend Visitor Guide: Develop educational materials to provide to visitors with domestic animals to promote sustainable pet visitation (information on pet-friendly visitor experiences, safety issues such as poison ivy exposure, information on site-specific regulations, etc.). Collaborate with partners during the creation of this tool for landscape-scale application.	Four-legged friend visitor guide is developed by the end of the 10-year cycle.	Knowledge gaps	6.4.3 Planning for thematic projects or programs
77. Piping Plover, Bank Swallow, Red Knot, Lesser Yellowlegs, Gulf of St. Lawrence Aster, Beach Pinweed.	Develop Eco-Guardian Program to Share Educational Messaging: Work to develop program where beach stewards/eco-guardians are present on beaches throughout PEINP to deliver consistent species at risk and habitat protection messaging to visitors. Work with partners to develop messaging and approach to deliver complimentary messaging and programs across the landscape.	Eco-guardian program is developed by the end of the 10-year cycle and implemented annually following development; development to occur by the end of the 10-year cycle.	Knowledge gaps	6.4.3 Planning for thematic projects or programs
78. Culturally significant species	Implement Education and Outreach Highlighting Culturally Significant Species: Share information throughout through outreach to educate park staff, visitors, and the public on culturally significant species, Indigenous Knowledge, two-eyed seeing, and Indigenous truths. Work with Epekwitnewaq Mi'kmaq partners to develop best practices for sharing this information.	Information on culturally significant species, Indigenous knowledge and truths is shared with the public through outreach activities annually over the 10-year cycle.	Knowledge gaps	3.1.1 Raising awareness
79. Little Brown Myotis, Northern Myotis, Eastern Red Bat, Silver-Haired bat, Hoary Bat	Develop and Implement Campaign Promoting Bats as Charismatic Species: Share information on what makes bats unique species in the landscape. This campaign will aim to debunk common misconceptions about bats and work toward changing mind-sets about these species.	Campaign promoting bats as charismatic species is developed once over the 10-year cycle and implemented annually following development.	Knowledge gaps	3.1.1 Raising awareness

Species and Measure Number	Recovery Measure	Desired Outcome	Threat[24] Classification	Action Classification[25]
80. Monarch, Yellow-Banded Bumble Bee, Little Brown Myotis, Northern Myotis, Bank Swallow, Piping Plover, Olive-Sided Flycatcher, Eastern Wood-Pewee, Canada Warbler, Red Knot, Lesser Yellowlegs, Hudsonian Godwit, Rusty Blackbird, Bobolink, Eastern Red Bat, Silver-Haired Bat, Hoary Bat	Implement Awareness Campaign on Insects: Share information on the importance of insects and other invertebrates in our ecosystems to help improve public perception of insects. Share important facts about insects, the threats they face, and what can be done to help.	Implementation of awareness campaign promoting insects is carried out annually following development during the 10-year cycle.	Knowledge gaps	3.1.1 Raising awareness
81. Bank Swallow, Northern Myotis, Little Brown Myotis, Eastern Red Bat, Silver-Haired Bat, Hoary Bat, Canada Warbler, Rusty Blackbird	Promote Education and Outreach Programs on Healthy Wetlands: Work with partners (e.g. Island Nature Trust Community-Nominated Priority Place project) to share information on the importance of healthy wetland ecosystems and best practices for keeping these essential habitats healthy for future generations.	Education and outreach on healthy wetlands are carried out annually over the 10-year cycle.	Knowledge gaps	3.1.1 Raising awareness