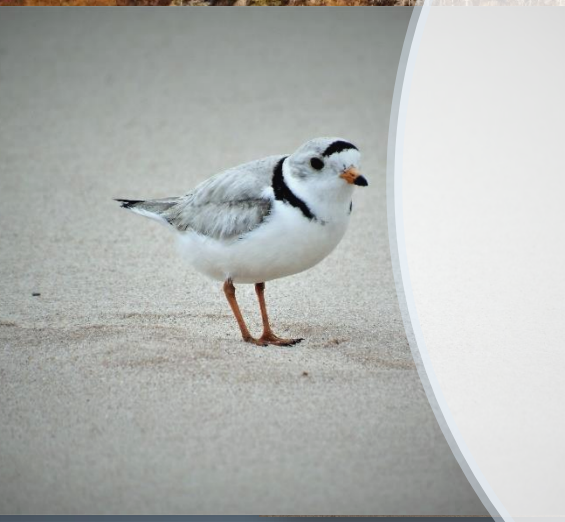
2021

IMPLEMENTATION REPORT:

MULTI-SPECIES ACTION PLAN for Prince Edward Island National Park of Canada (2016-2021)



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

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Cover illustrations (clockwise from top left): Cavendish Sandspit, S. DesRoches, Parks Canada Agency (PCA); Gulf of St. Lawrence Aster, PCA; Little Brown Myotis, J. Segers, Canadian Wildlife Health Cooperative; Piping Plover, PCA; Piping Plover nest, PCA. This page: Robinson's Island, S. DesRoches, PCA. Page i: Orby Head, PCA. Page ii: Bowley Pond, S. DesRoches, PCA. Page iii: Cavendish Sandspit, S. DesRoches, PCA.

Page 1 (from left to right): Northern Myotis, J. Segers, Canadian Wildlife Health Cooperative; Robinson's Island, S. DesRoches, PCA; Gulf of St. Lawrence Aster monitoring, PCA; Gulf of St. Lawrence Aster population, PCA; Fish Community monitoring, PCA; Laboratory grown Gulf of St. Lawrence Aster, PCA; Beach cobble (Piping Plover nesting habitat), PCA; Piping Plover, PCA; forest canopy, PCA. Page 7: Little Brown Myotis, E. Balzer, University of Waterloo; Mist net, E. Balzer, University of Waterloo; Relocated roost, PCA. Page 8: Canadian Wildlife Service and Parks Canada banding Piping Plover, PCA; Parks Canada staff releasing banded Piping Plover, PCA; Banded Piping Plover, PCA. Page 12: Greenwich, S. DesRoches, PCA. Page 13: Gulf of St. Lawrence Aster, PCA. Page 14: Resource Conservation staff holding banded Piping Plover before release, J. Rock, Canadian Wildlife Service. Page 15: Cavendish Sandspit, S. DesRoches, PCA.

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[1] http://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. Under Species at Risk Act (S.C. 2002, c.29) (SARA), one or more action plan(s) provides the detailed recovery planning that supports the strategic direction set out in the recovery strategy for SARA-listed Extirpated, Endangered and Threatened species. Parks Canada multi-species action plans address a suite of species of conservation concern within one or more Parks Canada managed areas, including species that require an action plan under SARA.

The Minister responsible for the Parks Canada Agency (the Minister of the Environment and Climate Change) is the competent minister under SARA for the species found in Prince Edward Island National Park of Canada (PEINP) and in 2016 published the Multi-species Action Plan for Prince Edward Island National Park.

Under section 55 of SARA, the federal competent minister must monitor the implementation of an action plan and the progress towards meeting its objectives, and assess and report on its implementation and its ecological and socio-economic impacts five years after the plan comes into effect. A copy of the report must be included in the Species at Risk Public Registry. The Minister responsible for the Parks Canada Agency hasprepared this Implementation Report: Multi-species Action Plan for Prince Edward Island National Park of Canada (2016-2021).

The achievement of population and distribution objectives identified within the recovery strategy or management plan for a species may require a long time frame. In these cases, a five-year reporting window may not be sufficient to show demonstrable progress towards meeting site-based population and distribution objectives identified for that species within a Parks Canada site-based action plan. Parks Canada monitors, evaluates and, as necessary, adapts measures taken to achieve species survival or recovery, and will report on progress towards meeting site-based population and distribution objectives every five years.

[2] http://www.canada.ca/en/environment-climate-change/services/species-risk-act-accord-funding.html#2

Acknowledgments

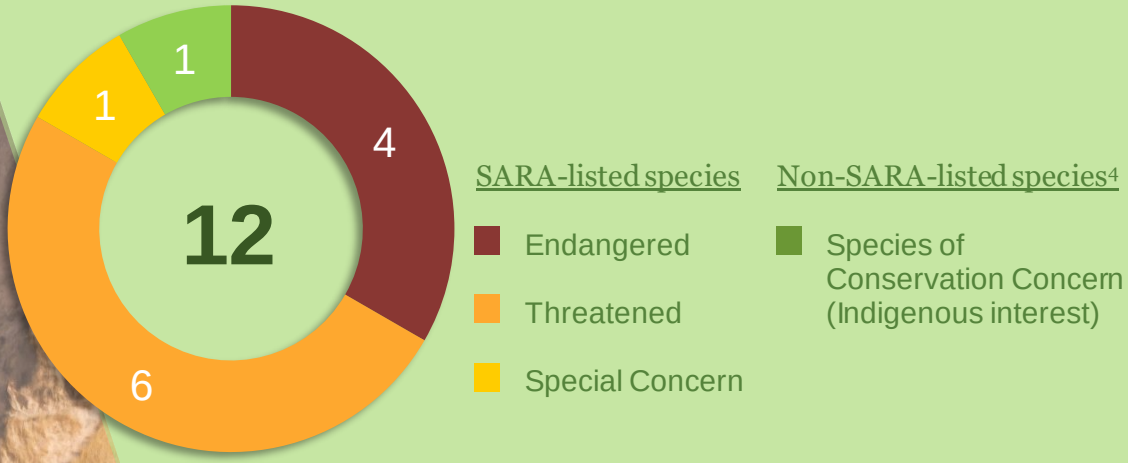
Parks Canada would like to acknowledge those who have contributed to the implementation of the Multi-Species Action Plan for Prince Edward Island National Park. In particular, thanks are extended to Sean Blaney, David Mazerolle, John Klymko, Sarah Robinson, Caitlin Porter and Colin Chapman (Atlantic Canada Conservation Data Centre); Jackie Waddell, Megan Harris, Shannon Mader, Julie-Lynn Zahavich, Vicki Johnson and Leanne Tol (Island Nature Trust); Randy Angus (Mi'kmaq Confederacy of PEI); Jordi Segers, Scott McBurney and Tessa McBurney (Canadian Wildlife Health Cooperative); Christian Lacroix (University of Prince Edward Island); Hugh Broders and Evan Balzer (University of Waterloo); and Jen Rock and Cheri Gratto-Trevor (ECCC), together with the Atlantic Piping Plover Working Group.

EXECUTIVE SUMMARY

This document reports on the implementation of the Multi-species Action Plan for Prince Edward Island National Park between 2016 and 2021. It reports on implementation of measures identified in the plan, assesses progress towards meeting site-based population and distribution objectives, and evaluates socio-economic impacts.

Species Addressed[3]

The action plan addressed 11 SARA-listed species and one species of conservation concern of Indigenous interest. Measures and site-based population and distribution objectives identified within the action plan were focused on three species, for which management actions within Prince Edward Island National Park could have a substantive impact on species survival or recovery: Piping Plover, Gulf of St. Lawrence Aster, Beach Pinweed.



[3] The SARA-listing classifications for the species in this report may differ from the Multi-species Action Plan due to changes made to Schedule 1 of the *Species at Risk Act* since the action plan was published. At the time this Multi-Species Action Plan was posted in 2016, there were 7 SARA-listed Extirpated, Endangered and Threatened species, 1 species of Special Concern, and 4 non-SARA-listed species of conservation concern.

[4] Including non SARA-listed species of conservation concern (COSEWIC assessed, provincially listed, culturally significant species) in addition to SARA listed species provides the Parks Canada Agency with a comprehensive plan for species conservation and recovery at the site.

Implementation of the Action Plan

4 measures (recovery actions) were identified in the multi-species action plan. Implementation of the action plan is assessed by determining progress towards completing each measure, and is outlined in Section 2 of this report. During the five-year period, all 4 measures were initiated[5] and all 4 were completed. An additional 8 measures identified in the action plan were initiated because resources and/or partnerships became available to support the work.

Ecological Impacts

3 site-based, population and distribution objectives (PDOs) were developed in the action plan. Ecological impacts are assessed by measuring progress towards achieving each of the site-based population and distribution objectives and are outlined in Section 4. Progress was made on all objectives including one that was fully achieved[6].

Socio-Economic Impacts

Direct costs of implementing this action plan were borne by Parks Canada. Indirect costs were minimal. Benefits included positive impacts on park ecological integrity, greater awareness of species, and enhanced engagement of visitors, local communities and Indigenous groups.

[5] Includes measures that are 100% completed.
[6] Includes PDOs that are fully achieved.

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1. CONTEXT

This document reports on implementation of the Multi-species Action Plan for Prince Edward Island National Park of Canada[7] between 2016 and 2021, assesses the progress towards meeting its population and distribution objectives and evaluates its socio-economic impacts. It addresses 12 species, including 10 SARA-listed Endangered, Extirpated, and Threatened species (for which an action plan is required) as well as one SARA-listed Special Concern species[8]. It also includes one species of conservation concern. American Eel is included in this action plan as a culturally significant species for the Mi'kmaq of Prince Edward Island.

Site-based population and distribution objectives were developed for three species for which implementation measures within Prince Edward Island National Park could have a substantive impact on recovery: Piping Plover, Gulf of St. Lawrence Aster and Beach Pinweed.

2. IMPLEMENTATION OF THE ACTION PLAN

Implementation of the Multi-species Action Plan for Prince Edward Island National Park of Canada is assessed by measuring progress towards completing the recovery measures identified in the action plan (Table 1). Refer to the original action plan[7] for a description of each measure, the desired outcomes, and the threats that each measure addresses.

In 2020 there were several restrictions put in place at Prince Edward Island National Park to combat the spread of COVID-19, including temporary restriction of some park management activities. This impacted the ability of the park to complete the implementation of some parts of the action plan.

[7] 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.

[8] Note that the status of these species may have changed over the reporting period. At the time this Multi-Species Action Plan was posted in 2016, there were 4 Endangered, 3 Threatened, and 1 Special Concern SARA-listed species. The plan also included 4 non-SARA listed species of conservation concern at the time it was posted.

Table 1. Progress towards completing recovery measures committed to by Prince Edward Island National Park (* indicates an ongoing measure that may continue into a future multi-species action plan).

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
1) Piping Plover: Reduce human disturbance on nesting beaches: Take steps to reduce disturbance of breeding plovers, including use of interpretive panels and signage to promote compliance with beach regulations and, as warranted, closure of beaches in the vicinity of nests.	Breeding pairs are provided with nesting areas that minimize direct human related disturbances and threats each year[9].	Seasonal domestic animal bans were implemented to limit disturbance and nesting areas were closed by Superintendents Order. Closures were marked with regulatory and interpretive signs. Resource Conservation staff and the dedicated Compliance Team delivered compliance messaging for closed areas and domestic animal prohibitions. Law Enforcement staff carried out regular patrols and led annual compliance blitzes.	100%
2) Piping Plover: Contribute to regional monitoring and research Initiatives: Document evidence of predation at each life stage and marked birds during breeding and migration.	Knowledge gaps are reduced; regional reporting and partnerships are continued.	Potential disturbance, including evidence of predator presence, to Piping Plover was documented during regular monitoring surveys. Trail cameras were used from 2017-2021 to document potential disturbance (humans or predators) to nests as well as to try and capture predation of nests. PEINP contributed to the Canadian Wildlife Service's Piping Plover banding project, facilitating the banding of 11 adults and 21 chicks (2014-2018), and the subsequent and ongoing	100%*

[9] The desired outcome for this measure in the original action plan was "Annual productivity is ≥1.65 chicks per pair per year (calculated as a 5 year running average)". This was revised to align better with the recovery measure. Annual productivity is captured in the site-based population and distribution objectives (Table 3).

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
		re-sight reporting. Annual reporting on Piping Plover monitoring is shared with the Canadian Wildlife Service and regional partners, including the Atlantic Regional Piping Plover Working Group.	
3) Gulf of St. Lawrence Aster: Transplant seedlings: Greenhouse raised asters are transplanted to suitable areas at the Blooming Point site.	At least 100 individual plants or inflorescences are transplanted or seeded each year for 5 years[10].	PEINP partnered with the University of Prince Edward Island (Dr. Christian Lacroix) to grow Gulf of St. Lawrence Aster from seed in the lab. This was done in order to maintain a viable seed bank as well as to transplant seed producing plants and/or distribute inflorescences to sites within PEINP known to produce healthy populations in the past (mainly Blooming Point). In total, 679 plants and 340 inflorescences have been reintroduced to suitable habitat (up until Spring of 2021).	100%*
4) Beach Pinweed: Reduce disturbance to Beach Pinweed areas: Signs indicating SAR plants in vicinity to be erected.	Maintenance of beach pinweed within PEINP.	Signs indicating sensitive areas for Species at Risk plants were erected and maintained at access points to Beach Pinweed sites. In recent years, trampling at this location has not been an issue for the population and these signs have been all that has been required for appropriate management. Monitoring will continue and management strategies will be adapted should the situation change.	100%

[10] The desired outcome for this measure in the original action plan was to "An area of 300 m² of coastal ecosystem is maintained and occupied by asters or 100 individual plants are detected annually". This was revised to align better with the recovery measure. Area occupied is captured in the site-based population and distribution objectives (Table 3).

Additional measures were identified in the action plan that would be beneficial to complete should resources become available. Table 2 describes the actions that Prince Edward Island National Park was able to initiate during 2016 and 2021. Measures from the action plan that were not initiated will be carried forward for consideration in a revised action plan.

Table 2. Progress towards completing additional recovery measures implemented because partnerships and/or resources became available (progress is influenced by the amount of funding / support received; * indicates an ongoing measure that may continue into a future multi-species action plan).

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
5) Canada Warbler & Olive-sided Flycatcher: Inventory: Breeding season surveys are conducted to assess presence, breeding activity and distribution.	Information on distribution, status and abundance is available.	Surveys were completed for Canada Warbler and Olive-sided Flycatcher each year (2016-2021) in key habitat areas during breeding season. Point count surveys were conducted by Parks Canada staff from 2016-2018 and presence was assessed using ARUs (Autonomous Recording Units) during 2019-2021. Canada Warbler was detected each year from 2016-2018 and in 2020 in PEINP. Olive-sided Flycatcher was detected in PEINP in 2018 and 2019. Data analyses for 2021 are pending.	100%*
6) Little Brown Myotis & Northern Myotis: Bat Inventory: Assess distribution and relative abundance of bats in PEINP.	The distribution and relative abundance of bats in PEINP is understood.	Extensive acoustic monitoring has been carried out in PEINP to better understand the relative abundance and temporal changes in bat activity, with focus on Myotis species. Additionally, PEINP worked with researchers from the University of Waterloo to track Little Brown Myotis from foraging sites back to roosting sites. From this	100%*

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
		work, several roosting sites on private property were identified bordering the Park (see Section 3).	
7) Bobolink: Best Management Practices: Implement existing Best Management Practices (or develop if unavailable) that mitigate potential impacts of agricultural land use on breeding Bobolinks.	Maintain presence on lands administered by PEINP.	Suitable nesting habitat was monitored annually for the presence of Bobolink and Best Management Practices have been researched and drafted. These practices have yet to be finalized and implemented. Additional resources will be required to work alongside farmers to ensure the best practices are carried out appropriately to mitigate impacts to this species on lands managed by PEINP.	40%*
8) Species at Risk – External Relations/Visitor Experience: Provide species at risk information throughout the park.	Park visitors learn about species at risk through personal programming (e.g., guided hikes, animated programs, interpretive stations) and early intervention as part of the field unit prevention/compliance program and non-personal media (e.g., interpretive panels, website content, social media platforms).	Parks Canada team members from External Relations, Visitor Experience, and Resource Conservation worked together to develop quality products to facilitate the education of employees and visitors on the Species at Risk found in PEINP including: life-sized SAR models within a portable display, SAR interpretative panels, SAR mixed-media models, SAR video for display at visitor centres and campground kiosks, rack cards, educational posters and activity sheets in staff buildings, updated website content and regular social media posts. Exposure to some of these products was minimized in 2020 due to COVID restrictions.	100%[11]

[11] Species at Risk External Relations and Visitor Experience measures were initiated in 2018 as part of an initiative to enhance and modernize Species at Risk outreach and visitor experience products for PEINP staff and visitors.

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
9) Species at Risk – External Relations/Visitor Experience: Encourage citizen science programming.	Visitors are engaged in monitoring species at risk.	PEINP developed a SAR sightings reporting line for staff and visitors to report any observations and promoted the use of this line along with the use of iNaturalist as a way for visitors to engage in citizen science.	100%[12]
10) Species at Risk – External Relations/Visitor Experience: Develop & implement media strategy.	At least one media story is produced to highlight species at risk in PEINP each year.	PEINP is dedicated to communicating SAR messaging through various media outlets. Between 2018 and 2021, SAR work within PEINP was highlighted in 51 media stories and at least 38 social media posts. The delivery of some SAR messaging was impacted in 2020 by COVID restrictions and prioritization of public safety messaging.	100%[12]
11) Species at Risk – External Relations/Visitor Experience: Implement outreach education activities.	Target audiences are aware of species at risk in PEINP.	There were 94 presentations delivered outside of PEINP (i.e., schools, libraries) between 2018 and 2021 that included information on SAR. Delivery of in-person outreach activities was impacted in 2020 due to COVID restrictions.	100%[12]
12) Species at Risk – External Relations/Visitor Experience: Engage NGOs and stakeholders to protect species at risk.	Relationships with NGOs and stakeholders are maintained and developed.	PEINP has maintained and developed relationships with local NGOs and stakeholders. Aside from regular engagement, in 2020 PEINP began to participate in Priority Places and Community-Nominated Priority Places projects under the Pan-Canadian Approach to Transforming SAR Conservation in Canada.	100%*[12]

[12] Species at Risk External Relations and Visitor Experience measures were initiated in 2018 as part of an initiative to enhance and modernize Species at Risk outreach and visitor experience products for PEINP staff and visitors.

3. ACTION PLAN HIGHLIGHT:

Little Brown Myotis and Northern Myotis

Prince Edward Island National Park (PEINP) has taken major strides in understanding the distribution and relative abundance of Myotis species utilizing habitats within the park, as well as confirming the presence of other bat species in the park. Extensive acoustic monitoring has been carried out in the wetland ecosystem of PEINP to better understand the relative abundance and temporal changes in bat activity in their foraging habitats. Parks Canada worked with the Canadian Wildlife Health Cooperative throughout the implementation of this Multi-Species Action Plan, beginning with establishing wetland monitoring sites and developing stationary and mobile acoustic monitoring protocols consistent with the North American Bat Monitoring Program (NABat). Acoustic monitoring was carried out each night (May-October) at consistent wetland pond sites from 2016-2020 and NABat monitoring was completed each July in the Brackley area. Additionally, winter monitoring protocols were developed for implementation at abandoned wells with suitable conditions to be potential hibernacula.

Parks Canada worked with researchers from the University of Waterloo to better understand the bat species that are foraging in the coastal ponds of PEINP. Bats were captured and transmitters were affixed so that the bats could be tracked back to their roosting sites. From this work, several roosting sites on private property were identified bordering PEINP. Parks Canada has been successful in working with landowners to monitor bats at the roosts identified by the University of Waterloo and to help mitigate potential negative impacts. A maternity roost site that was slated for demolition was identified and components of the roost were moved in 2020 to Parks Canada administered land for temporary preservation in the landscape. Additionally, bat boxes were added to the landscape near the identified structures to allow for additional roosting options following roost relocation and potential future exclusions.

Throughout the implementation of this multi-species action plan, PEINP has developed an understanding of habitat use by bats within the park, especially for Little Brown Myotis.

ACTION PLAN HIGHLIGHT:

Piping Plover

PEINP collaborated with the Canadian Wildlife Service (ECCC) in a Piping Plover banding project, where 11 adults and 21 chicks were banded between 2014 and 2018 on the beaches of PEINP. This work has helped facilitate a better understanding of Piping Plover site fidelity, where Piping Plover are overwintering, their migration routes, and what threats they may be subjected to throughout their range. Throughout 2014 to 2020, PEINP collaborated in banding, re-sighting and assessing quality of leg-flags used to mark Piping Plover.

4. ECOLOGICAL IMPACTS

Ecological impacts of the action plan are assessed by measuring progress towards meeting the site-based population and distribution objectives described in the action plan (Table 3). See the original action plan for national Population and Distribution Objectives (where available) and General Information and Broad Park Approach for each species.

Table 3. Progress towards achieving site-based population and distribution objectives species at risk in Prince Edward Island National Park of Canada

Species	Site-based population & distribution objectives	Population monitoring	Progress towards site-based population and distribution objectives	Progress (% achieved)
Piping Plover–melodus (Endangered)	Maintain productivity of 1.65 chicks per pair per year, calculated as a 5 year running average.	Survey suitable habitat each spring; once a pair is found, monitor productivity following Parks Canada's Piping Plover monitoring protocol. Contribute to the International Piping Plover Census every 5 years.	All pairs and chicks present in PEINP were monitored annually. Between 2016 and 2021 the number of breeding pairs ranged from 5-13 and productivity (chicks fledged per pair) ranged from 0.54 -2.17. The 5-year running average for productivity in 2021 was 1.3. PEINP participated in the International Piping Plover Census in 2016.	78%

Species	Site-based population & distribution objectives	Population monitoring	Progress towards site-based population and distribution objectives	Progress (% achieved)
Gulf of St. Lawrence Aster (Threatened)	Maintain, and if possible increase: 1) occupancy of a minimum of 100 plants[13]; and	Survey annually at occupied and historic sites. Survey suitable sites periodically.	A population of Gulf of St. Lawrence Aster has been maintained in PEINP, with the numbers of regenerated plants ranging from 5-3808 between 2016 and 2021 (five year running average of 858 individuals). These numbers are well below historic populations which included tens of thousands of individuals. The target of 100 individuals was exceeded in 3 of 6 years from 2016-2021, including the most recent assessment. Annual efforts have been carried out to reintroduce laboratory grown plants, inflorescences, and/or seeds.	100%
	2) 300m² area of occupancy in one of three priority occurrence sites in PEINP. Monitor the remainder two sites.	Survey annually at occupied and historic sites. Survey suitable sites periodically.	The area of regenerated plants has ranged from 26.3- 257.7m² between 2016-2021 (five year running average of 58.1 m²), well below the target of 300m². Annual efforts have been carried out to reintroduce laboratory grown plants, inflorescences, and/or seeds.	19%

[13] The Site-based population and distribution objective for this species in the original action plan was to "Maintain and, if possible, increase the number of individuals and 300m² area of occupancy in one of three priority occurrence sites in PEINP. Monitor the remainder two sites.". This was revised to include a target of 100 individuals.

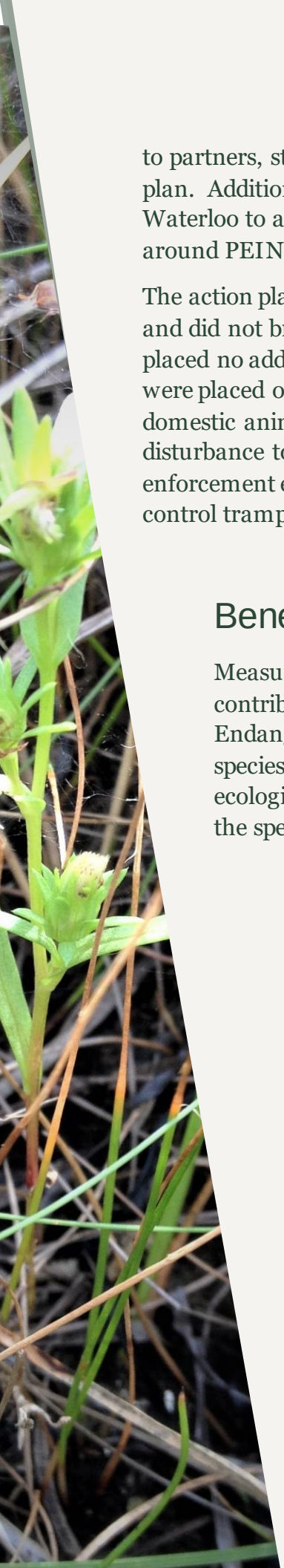
Species	Site-based population & distribution objectives	Population monitoring	Progress towards site-based population and distribution objectives	Progress (% achieved)
Beach Pinweed (Special Concern)	Maintain existing population in PEINP at: 1) an area of occupancy of at least 7519 m^2;	Survey annually at occupied and historic sites. Survey suitable sites periodically.	Surveys were completed annually between 2016 and 2019 and again in 2021. No survey was carried out in 2020 in part due to COVID restrictions and because enough baseline data exists with low variability that PEINP decided to revise the protocol to sample every other year in order to minimize the threat of trampling at this site. 1) The area occupied exceeded the target of 7519 m^2 with a five-year running average of 8760 m^2	100%
	2) population size of at least 13876 plants.	Survey annually at one known site. Monitor abundance and area occupied.	2) Population estimates between 2016 and 2021 surpassed the abundance target each year with a five-year running average of 26487 individuals.	100%

5. SOCIO-ECONOMIC IMPACTS

The Species at Risk Act requires the responsible federal minister to report on the socio-economic costs of the multi-species action plan (MSAP) and the benefits derived from its implementation. The MSAP only applies to protected lands and waters under the authority of the Parks Canada Agency, which are often subject to fewer threats (e.g., industrial activities) compared to other areas as the lands are managed to preserve ecological and commemorative integrity. This section does not include socio-economic impacts of existing permitted activities that may be occurring in Parks Canada places as those have been addressed through other processes (e.g., impact assessments). This socio-economic assessment is narrow in scope, as it is focused on the measures implemented within the action plan, and primarily focuses on Indigenous partners, leaseholders, licensees, residents and visitors. The overall socio-economic impacts of the multi-species action plan for PEINP, described as costs and benefits, are outlined below.

Costs

The total costs to implement this action plan were borne by Parks Canada out of existing salaries and goods and services dollars included in the operational management of Prince Edward Island National Park. This includes incremental salary costs, materials, equipment, and contracting of professional services for measures outlined in Appendix B (Recovery measures that will be conducted by PEINP) and Appendices C and D (Other recovery measures that will be encouraged through partnerships or when additional resources become available) of the action plan. Action plan measures were integrated into the operational management of Prince Edward Island National Park. These costs to the Parks Canada Agency were covered by prioritization of existing funds and salary dollars and did not result in additional costs to society. No major socio-economic costs



to partners, stakeholders or Indigenous groups were incurred as a result of this action plan. Additional resources and partnership support was provided by the University of Waterloo to advance knowledge of bat species composition and roosting sites in and around PEINP.

The action plan applies only to lands and waters in Prince Edward Island National Park and did not bring any restrictions to land use outside the sites. As such, this action plan placed no additional socio-economic costs on the public. However, some restrictions were placed on visitors. In order to protect nesting Piping Plover, beach closures and domestic animal bans were undertaken to minimize human and domestic animal disturbance to piping plover and other shorebirds. These restrictions were supported by enforcement efforts. Habitat warning signs were posted near Beach Pinweed sites to control trampling in these areas.

Benefits

Measures presented in the action plan for Prince Edward Island National Park contributed to meeting recovery strategy objectives for Threatened and Endangered species and also contributed to meeting management objectives for species of Special Concern. These measures had an overall positive impact on ecological integrity and enhanced opportunities for appreciation of the sites and the species by visitors and the general public.

Potential economic benefits of the recovery of the species at risk found in these sites cannot be easily quantified as many of the values derived from wildlife are non-market commodities that are difficult to appraise in financial terms. Wildlife, in all its forms, has value in and of itself, and is valued by Canadians for aesthetic, cultural, spiritual, recreational, educational, historical, economic, medical, ecological and scientific reasons. The conservation of wildlife at risk is an important component of the Government of Canada's commitment to conserving biological diversity, and is important to Canada's current and future economic and natural wealth.

This action plan included measures that likely resulted in benefits to Canadians such as positive impacts on biodiversity and the value individuals place on preserving biodiversity. The measures sought a balanced approach to reducing or eliminating threats to species at risk populations and habitats, and included protection of individuals and their

habitat, species re-establishment, and increasing public awareness and stewardship. Working with partners, PEINP was able to complete recovery actions that led to the following outcomes that benefit the ecosystems of PEINP, visitors and regional residents:

1. Raised awareness of the importance of SAR to the region and how we can help protect them;
2. Reduced disturbance to Piping Plover and Bank Swallow nesting areas;
3. Reintroduced Gulf of St. Lawrence Aster to historic sites to supplement population growth and ensure presence of a viable seed bank;
4. Engaged with visitors to promote citizen science initiatives;
5. Worked to monitor and protect important wetland habitats;
6. Identified potential Bobolink nesting areas within leased agricultural fields and worked with lease holders to protect established nests. Worked toward drafting best management practices to include in lease terms of reference;
7. Partnered with local landowners to monitor and mitigate threats to Little Brown Myotis roosting sites on private lands;
8. Shared data and information products with regional conservation partners to better understand and protect SAR that move in and out of PEINP lands

Implementing this action plan had positive benefits for park visitors, local residents, and Indigenous groups. Through interpretive programming and products, thousands of visitors received Species at Risk educational messaging. These efforts were complimented by outreach presentations in local communities and the production of school education kits and lesson plans for local schools to loan out (although distribution was impacted by COVID restrictions).

Summary

The measures proposed in the action plan had limited socio-economic impact and placed no restrictions on land outside the boundary of the national park. Direct costs of implementing this action plan were borne by Parks Canada. Indirect costs were minimal and were limited to restrictions to visitor access, while benefits included positive impacts on park ecological integrity, greater awareness of species and enhanced opportunities for engagement of visitors, local communities and Indigenous groups.