2023

IMPLEMENTATION REPORT:

MULTI-SPECIES ACTION PLAN for Pacific Rim National Park Reserve of Canada (2017-2022)

Parks Canada Parcs Canada

Canada

Recommended Citation

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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].

Photo credits:

Cover (listed clockwise from top): Rainforest Trail, T. Hider-Holweg, Parks Canada Agency (PCA); Steller Sea Lions, PCA; Red-legged Frog, I. Cruickshank, PCA. **This page**: Grey Whale tail, K. Bohlen, PCA. **Page i:** Pink Sand-verbena, R. Vennesland, PCA. **Page ii:** c̓ašiiwa (Incinerator Rocks), J. McCulloch, PCA. **Page iii:** Forest, G. Friesen, PCA. **Page 1:** Northern Abalone, J. Yakimishyn, PCA; Silky Beach Pea, S. Tyne, PCA; PCA staff with European Green Crab, PCA; Steller Sea Lions, PCA; West Coast Trail, J. McCulloch, PCA; Seaside Centipede Lichen, I. Cruickshank, PCA; Long Beach, S. Munn, PCA; Rainforest walk, G. Friesen, PCA; Pink Sand-verbena, R. Vennesland, PCA; Sea Otter, M. Wald, PCA. **Page 7:** Trilingual Signage at ƛ̓aƛ̓aṯḥ?is (Wickaninnish Sand Dunes), Yuułu?iłʔaṯḥ Government, July 2020 Umacuk; Trilingual signage at Kiixa (Keeha Beach), PCA. **Page 8:** Killer Whale, PCA; PCA staff deploying hydrophone, PCA. **Page 9:** PCA staff monitoring Pink Sand-verbena, S. Munn, PCA. **Page 13:** Cheewaht dunes, R. Vennesland, PCA. **Page 14:** Pink Sand-verbena, R. Vennesland, PCA. **Page 15:** Killer Whale, I. Cruickshank, 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 the *Species at Risk Act* (S.C. 2002, c.29) (SARA), action plans outline measures that will be taken to implement recovery strategies for SARA-listed Extirpated, Endangered and Threatened species. Parks Canada's 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 species found in Pacific Rim National Park Reserve of Canada (PRNPR), and in 2017 published the *Multi-species Action Plan for Pacific Rim National Park Reserve of Canada*. The Action Plan was prepared in cooperation with Tla-o-qui-aht First Nation, Yuułu?ił?ath Government, Toquaht Government, Hupacasath First Nation, Uchucklesaht Tribe, Tseshaht First Nation, Huu-ay-aht First Nations, Ditidaht First Nation, and Pacheedaht First Nation, Environment and Climate Change Canada, Fisheries and Oceans Canada and the province of British Columbia as per section 48(1) of SARA, as well as in accordance with the provisions of the Maa-nulth First Nations Final Agreement, as per 48(2) of SARA.

Under section 55 of SARA, the 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 action 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 prepared this Implementation Report: Multi-species Action Plan for Pacific Rim National Park Reserve of Canada (2017-2022).

The achievement of population and distribution objectives identified within the recovery strategy or management plan for a species may require a long timeframe. 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 adapts measures taken to achieve species survival or recovery, and will report regularly on progress towards site-based population and distribution objectives.

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

Acknowledgments

We respectfully acknowledge the Nuu-chah-nulth First Nations in whose traditional territories Pacific Rim National Park Reserve is situated, the Tla-o-qui-aht First Nation, Yuułu?ił?ath, Toquaht Government, Hupacasath First Nation, Uchucklesaht Tribe, Tseshaht First Nation, Huu-ay-aht First Nations, Ditidaht First Nation, and Pacheedaht First Nation.

Pacific Rim National Park Reserve works with these Nuu-chah-nulth First Nations through cooperative management boards and working groups. Our working relationships are guided by the Nuu-chah-nulth principles of ʔiisaak (respect), hišukʔiš c̓awaak (everything is one), and ʔuʔaaɬuk (taking care of), all of which are integral to the management and operations of the national park reserve. Thanks are extended to employees and representatives of these Nuu-chah-nulth First Nations for their input and perspectives on the action plan and this implementation report. Also, a special thanks to Tla-o-qui-aht First Nation, Yuułu?ił?aṯḥ Government, Huu-ay-aht First Nations and Ditidaht First Nation for their work with restoring coastal sand ecosystems and recovering the associated species at risk.

Parks Canada would like to acknowledge all those who have contributed to the implementation of the Multi-Species Action Plan for Pacific Rim National Park Reserve between 2017-2022.

There were a number of key partners who contributed to implementation of the Multi-Species Action Plan and our improved understanding of these Species at Risk (SAR). PRNPR valued the support towards our objectives provided by Dr. Julia Baum's lab at the University of Victoria (UVic), Redd Fish Restoration Society, Fisheries and Oceans Canada, Dr. Ian Walker at University of California Santa Barbara, Jennifer Heron at the B.C. Ministry of Land Water and Resource Stewardship, and Dave Holden at the Canadian Food Inspection Agency. Dedicated volunteers from Canadian Wildlife Federation's Conservation Corps program, Ocean Bridge, UVic Parks Club, UVic Clayoquot Field School, Vancouver Island University Parks Club, Langara College, Tla-o-qui-aht Warriors youth group, Ucluelet Secondary School, and many other groups and individuals significantly contributed to the successes of the action plan.

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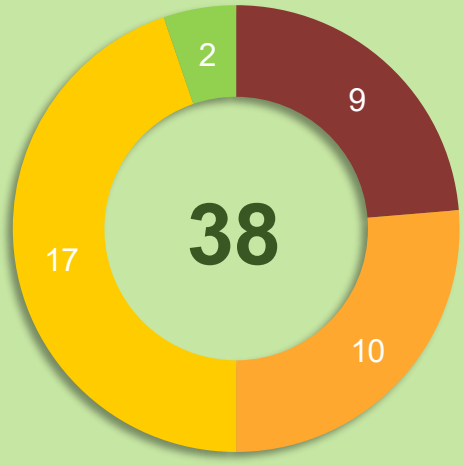
EXECUTIVE SUMMARY

This document reports on implementation of the Multi-species Action Plan for Pacific Rim National Park Reserve of Canada between 2017 and 2022. 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 38 species, 36 which are SARA-listed species and 2 species of conservation concern. Measures and site-based population and distribution objectives identified within the action plan were focused on three species, for which management actions within Pacific Rim National Park Reserve could have a substantive impact on species survival or recovery: Northern Abalone, Pink Sand-verbena, and Silky Beach Pea.



SARA-listed species

- Endangered
- Threatened
- Special Concern

Non SARA-listed species[4]

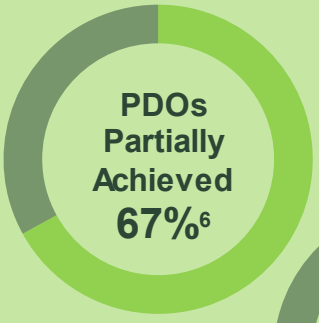
- Species of Conservation Concern

[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.
[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

7 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 (Table 1) of this report. During the five-year period, all 7 measures were initiated[5] and 2 were completed (29%). Management activities put in place to combat the spread of COVID-19 in 2020 and 2021 impacted the ability of the national park reserve to complete the implementation of the Action Plan.

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 2 objectives[6] although none were fully achieved.

Socio-Economic Impacts

Direct costs of implementing this action plan were borne by Parks Canada. Indirect costs were minimal, while benefits included positive impacts on ecological integrity, greater knowledge of species, and enhanced opportunities for engagement with First Nations, visitors and local communities (see section 5).

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

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1. CONTEXT

The Multi-species Action Plan for Pacific Rim National Park Reserve of Canada[7] was first published in 2017 and applies to lands and waters within the boundaries of Pacific Rim National Park Reserve (PRNPR). The plan was prepared in cooperation with nine Nuu-chah-nulth First Nations, Environment and Climate Change Canada, Fisheries and Oceans Canada and the province of British Columbia. Cooperative management boards and working groups are how PRNPR works together with the Nuu-chah-nulth First Nations (Tla-o-qui-aht First Nation, Yuułu?ił?atḥ Government, Toquaht Government, Hupacasath First Nation, Uchucklesaht Tribe, Tseshaht First Nation, Huu-ay-aht First Nations, Ditidaht First Nation, and Pacheedaht First Nation) in whose traditional territory the national park reserve is situated. Cooperative management describes a management model under which Indigenous groups work together with Parks Canada on the administration of its protected places. At PRNPR these working relationships are guided by the Nuu-chah-nulth principles of ʔiisaak (respect), hišukʔiš c̓awaak (everything is one), and ʔuʔaałuk (taking care of), all of which are integral to our management and operations. PRNPR and partners have been implementing the Multi-species Action Plan over the past five years.

This document reports on implementation of the *Multi-species Action Plan for Pacific Rim National Park Reserve of Canada* between 2017 and 2022, assesses progress towards meeting its population and distribution objectives, and evaluates its socio-economic impacts. It addresses 38 species, including 19 SARA-listed Extirpated, Endangered, and Threatened species (for which an action plan is required) as well as 17 SARA-listed Special Concern species[8]. Additional species of conservation concern included are Yellow Sand-verbena (the host plant for the Sand-verbena Moth) and Silky Beach Pea (COSEWIC assessed as Threatened).

Site-based population and distribution objectives were originally developed in the action plan for 5 species for which implementation measures within Pacific Rim National Park Reserve (PRNPR) could have a substantive impact on recovery: Northern Abalone, Pink Sand-verbena, Silky Beach Pea, Edwards' Beach Moth, and Sand-verbena Moth. However, Edwards' Beach Moth and Sand-verbena Moth are both extremely rare species and have only ever been recorded within PRNPR in 2001 and 2011 respectively, despite extensive surveys being conducted in 2014, 2016 and 2022. PRNPR has very limited ability to influence the population and distribution objectives for these species, so they are excluded from this implementation report. Therefore, PRNPR focused on maintaining and improving the dune habitat on which these species depend, while still working towards achieving site-based population and distribution objectives for the remaining three species (Northern Abalone, Pink Sand-verbena, and Silky Beach Pea).

[7] Parks Canada Agency. 2017. Multi-species Action Plan for Pacific Rim National Park Reserve of Canada. Species at Risk Act Action Plan Series. Parks Canada Agency, Ottawa. v + 30 pp.
[8] The status of these species may have changed over the reporting period.

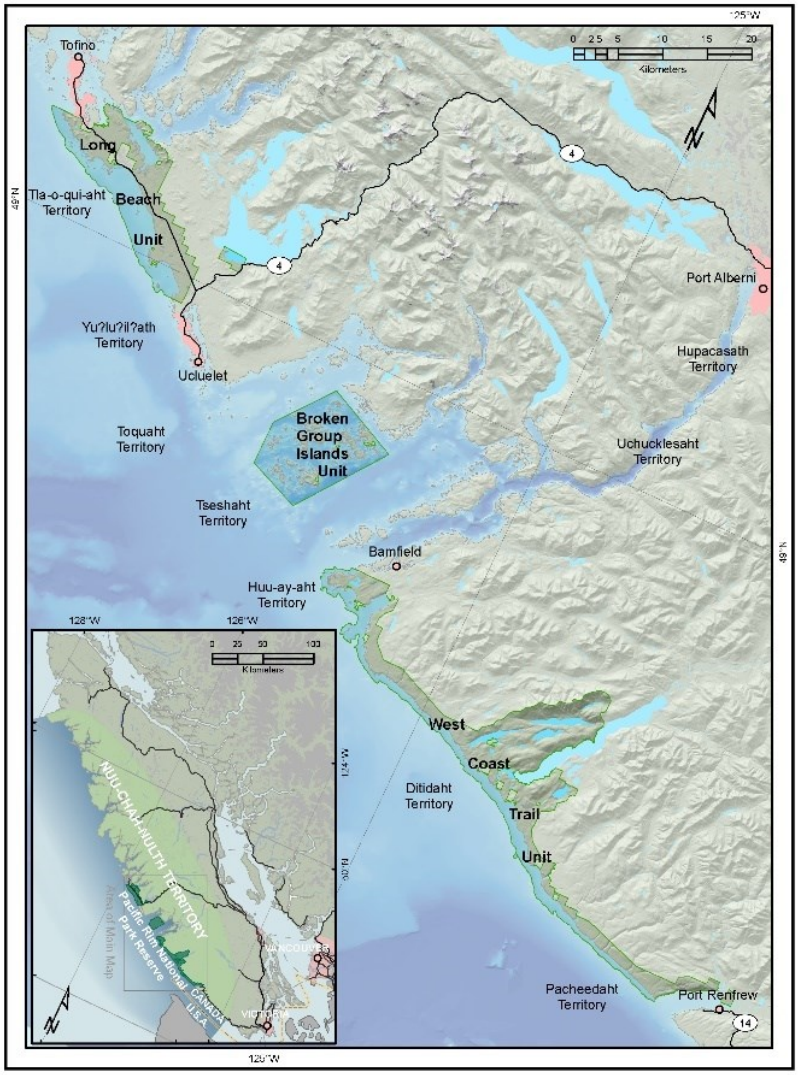

Figure 1: Location of Pacific Rim National Park Reserve, overlapping the territories of nine Nuu-chah-nulth First Nations, extending from the Long Beach unit in the north, to the West Coast Trail unit in south.

2. IMPLEMENTATION OF THE ACTION PLAN

Implementation of the Multi-Species Action Plan for PRNPR 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 for a description of each measure, the desired outcomes, and the threats that each measure addresses.

In 2020 and 2021 there were several restrictions put in place at PRNPR to combat the spread of COVID-19, including temporary restriction of national park reserve management activities. This impacted the ability of PRNPR to complete the implementation of some parts of the action plan.

Table 1. Progress towards completing recovery measures committed to by Pacific Rim National Park Reserve (* 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) Silky Beach Pea, Pink Sand-verbena, Yellow Sand-verbena, Sand-verbena Moth, and Edwards' Beach Moth: Habitat Conservation: Maintain dune habitat by removing European dune grass, tree islands, and beach logs from dunes	Maintain area containing native dune communities with free sand movement.	At 4 of the 5 restoration sites, PRNPR assessed the effects of the treatments in terms of evidence of free sand movement within the treated areas and adjacent dune and beach. The dunes and beaches were weighted by their relative importance to the recovery of species at risk. On an annual and site weighted basis, 70% of the time the treated areas and adjacent dune and beach habitat exhibited free sand movement. 70% complete.	64%*
	All previously treated dune habitat is maintained annually.	Prior to 2017, PRNPR restored (treated) dune habitat at 5 sites. In 58% of the cases, these previously restored sites were maintained annually by removing invasive (and other non-dune) plants and drift logs that re-established within the restored areas. This work was completed by PRNPR staff, contracts to Tla-o-qui-aht, Yuułu?ił?atḥ Government, Huu-ay-aht First Nations and Ditidaht First Nation and by volunteers. COVID-19 restrictions prohibited volunteers in PRNPR, which impacted the ability to maintain sites from 2020-22. 58% complete.	

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
	Populations of dune dependent rare plant and animal species remain stable or increase.	N/A - This component is addressed in the progress of individual species' population and distribution objectives (Table 3 below).	
2) Northern and Southern Resident Killer Whales, Steller Sea Lion, and Northern Abalone: Awareness and compliance with marine regulations	All marine users implement species at risk mitigations. Maintain or decrease current levels of human disturbance around Steller Sea Lion haul out sites. Density of Northern Abalone in PRNPR is maintained or increased.	Enforcement patrols by Park Wardens were focused on addressing disturbance to Steller Sea Lions at haul outs, illegal harvest of Northern Abalone, and compliance with Southern Resident Killer Whale management measures. 94% complete. SAR mitigations were communicated to all commercial business licence holders operating on the marine waters of PRNPR through annually updated Commercial Operator Standards as part of their annual business licence application between 2017 and 2022. 100% complete. NA - Density of Northern Abalone in PRNPR is addressed in the progress of individual species' population and distribution objectives (Table 3 below).	96%*
3) Olympia Oyster: Monitor European Green Crab at Joe's Bay	Awareness of population trends in European Green Crab abundance at Joe's Bay in the Broken Group Islands unit of PRNPR.	Annual trapping of this invasive predator was conducted from 2017-19. Trapping was not conducted in 2020 and 2021 due to COVID-19 restrictions which limited the number of staff able to work in close quarters on a boat together.	60%*

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
4) Red-legged Frog, Western Toad, and Seaside Centipede Lichen: Visitor awareness (Provide visitors with information regarding species protection)	Information on site importance to a variety of species and PRNPR regulations is available to visitors to PRNPR to encourage compliance and minimize human disturbance.	At least one interpretative program focused on protection of species at risk was delivered annually between 2017 and 2022. 100% complete. Interpretative and compliance signage was developed and installed for 2 out of 3 of the targeted SAR communities: Coastal sand ecosystems and marine SAR. PRNPR worked collaboratively with First Nations partners to ensure the Coastal Sand Ecosystem signs featured local First Nations languages. 66% complete.	83%*
5) All species: Develop and implement media strategy (News media stories, social media posts, and webpage development)	A total of 5 news media stories, highlighting species at risk in PRNPR is shared between 2017 and 2022.	Over 5 news media stories highlighting SAR were shared between 2017-2022. In addition, 5 or more social media posts highlighting SAR in PRNPR were shared annually here: https://www.facebook.com/PacificRimNPR In most years the target of 5 posts was exceeded; in the 2020-21 fiscal year there were 26 posts. Watch a video post here: https://www.facebook.com/PacificRimNPR/videos/2002445709785051 Furthermore, a PRNPR webpage that highlights species at risk was developed and posted in 2021: https://parks.canada.ca/pn-np/bc/pacificrim/nature/especes-species A specific webpage was developed to highlight Southern Resident Killer Whale recovery efforts in PRNPR.	100%*

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
6) All species: Incorporate species at risk monitoring and recovery into visitor opportunities.	Foster connection to place by incorporating species at risk content into visitor experience opportunities.	Six or more visitor programs or events including opportunities to monitor and/or recover species at risk were offered annually from 2017-19. For example, the PRNPR interpretive team shared messages and products specific to Southern Resident Killer Whale recovery. This has included videos, a Southern Resident Killer Whale Explorers Booklet, interpretive panels at land-based whale watching locations (i.e., Kwisitis Visitor Centre**),** interpretation and outreach programs. Due to COVID-19 restrictions, it was not permitted to provide these types of visitor activities in 2020 and 2021.	60%*
7) All species: All species at risk observations in PRNPR [9]	Opportunistically record observations and any changes to the status of species at risk in PRNPR.	Opportunistic SAR observations and survey data in PRNPR are recorded annually. As of winter 2020, PRNPR began using iNaturalist to capture and share observation data, and it now houses all records going back to 2015.	100%*

[9] Recovery measure originally from Appendix A of the Multi-species Action Plan.

3. ACTION PLAN HIGHLIGHT:
Coastal Sand Ecosystems Habitat Restoration

Installing Trilingual Signage at ʎ'aʎ'atḥʔis (Wickaninnish Sand Dunes) Yuułuʔiłʔatḥ Government, July 2020 Umacuk. Trilingual Interpretive and Compliance Signage Installed at Kiixa (Keeha Beach), Parks Canada.

Coastal sand ecosystems of PRNPR exist at the dynamic interface between ocean and forests. Strong ocean winds blow sand off beaches into forests creating dunes. These waves of sand create disturbance-driven habitats favored by rare species like Pink Sand-verbena, Silky Beach Pea, and the Edwards' Beach and Sand-verbena moths. However, over the last century, the establishment of invasive grasses and deposition of drift logs lost from forestry operations interrupted the natural process, stabilizing the upper beaches and dunes, displacing rare species, reducing natural sand transport, and accelerating succession of these sites to forest.

Volunteers from around the world have devoted over 3300 hours between 2017 and 2022 to restoring coastal sand ecosystems and recovering the associated species at risk. The positive results extended beyond physically expanding the restored dune habitat by 3 ha (since March 2015); volunteers also learned about and contributed knowledge to conserving species at risk, fostered connection to place and created conservation "ambassadors."

Contracts were also awarded to Tla-o-qui-aht First Nation, Yuułuʔiłʔatḥ Government, Huu-ay-aht First Nations and Ditidaht First Nation to assist with the restoration of coastal sand ecosystems and monitoring of Pink Sand-verbena. These contracts provided capacity building, short term employment opportunities, and built relationships. PRNPR also worked collaboratively with First Nations partners to produce trilingual interpretative and compliance signage for coastal sand ecosystems that featured Nuu-chah-nulth language. These coastal sand ecosystem signs were inspirational and opened doors to develop others.

ACTION PLAN HIGHLIGHT:

Southern Resident Killer Whale

Southern Resident Killer Whales (SRKW) are a vital part of the ecosystem and culture in and adjacent to waters of Pacific Rim National Park Reserve (PRNPR). Killer whales (Orcinus orca), known as “kaka’win” in the Nuu-chah-nulth language and “kakawad” in the Ditidaht language, are held in high esteem and viewed as guardians of the ocean by Nuu-chah-nulth Nations.

PRNPR is part of the larger Government of Canada effort to support the recovery of SRKW, conducting research and monitoring activities that address the three key threats to SRKW: prey availability, acoustic and physical disturbance, and exposure to contaminants. This work is conducted in collaboration with First Nation partners, Fisheries and Oceans Canada, Environment and Climate Change Canada, Transport Canada, non-government organizations, and academia.

Spy-hopping SRKW in PRNPR waters off the West Coast Trail (photo taken under a marine mammal research licence, PCA.)

Deploying a hydrophone during a marine mammal survey listening station to detect SRKW vocalizations, PCA.

Since the implementation of the SRKW conservation program in PRNPR, over 250 hours of survey time has been conducted by the SRKW science and research team. These nearshore vessel-based surveys combine visual and acoustic (hydrophone) techniques to provide valuable information about population size and trends, habitat use, foraging behaviour, and threats such as physical and acoustic disturbance due to vessel traffic. Research and monitoring is conducted to better understand the entire SRKW food web and ecosystem components, including SRKW’s preferred prey source, Chinook salmon. In addition, to improve compliance with applicable species at risk protection measures (for SRKW), Park Wardens conducted enhanced on water patrols.

ACTION PLAN HIGHLIGHT:

Pink Sand-verbena

Pink Sand-verbena had not been seen in Canada for half a century until two plants were found in 2000 at a remote beach along the West Coast Trail. Seeds from these plants were collected and used to propagate 6000 plants that were planted at four coastal sand ecosystem restoration sites between 2008 and 2017. This increased the annual population of these plants to over 2000 "wild" individuals in 2017 and 2018. A significant portion of this increase was associated with additional habitat restoration work that took place in 2017 and resulted in Pink Sand-verbena immediately occupying the newly restored habitat. The population has since declined to 400 "wild" plants in 2021. This decline is partially attributed to PRNPR inability to maintain restored habitat during the COVID-19 pandemic.

Monitoring Pink Sand-verbena at t'ayus (Schooner Beach), PCA.

During the period of the Action Plan, Parks Canada has worked to protect habitat and to further understand this species. This work has included collection and analysis of comprehensive fecundity and occurrence observations and support for a master's thesis on the genetic diversity and variation of Pink Sand-verbena. Continued monitoring and incorporation of the results from these studies will contribute to ongoing efforts to recover this species in Canada. Detailed information on the status and actions to recover Pink Sand-verbena will be included in the most recent Pink Sand-verbena recovery strategy implementation report.

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 for species at risk in Pacific Rim National Park Reserve of Canada[10]

Species	Site-based population & distribution objectives	Population monitoring	Progress towards site-based population and distribution objectives	Progress (% achieved)
Pink Sand-verbena	A stable or increasing population is present at Clo-oose Bay. A stable or increasing population is present at one or more additional sites within PRNPR.	Key sites are surveyed annually as part of existing ecological integrity monitoring and outlying areas are surveyed biannually and incorporated into the existing monitoring framework at PRNPR. The location and size of patches are recorded.	The total Pink Sand-verbena population initially increased in 2017 and 2018 to over 2000 "wild" individuals. This increase was associated with a successful translocation program implemented from 2008 to 2017. The population has since declined to 400 "wild" plants in 2021. This decline has been experienced at all sites including Clo-oose Bay. Difficulties maintaining habitat due to COVID-19 restrictions may have impacted populations at Schooner and Clo-oose Bay.	0%

[10] This table differs slightly from the posted action plan, as some species did not require Site-based Population and Distribution objectives.

Species	Site-based population & distribution objectives	Population monitoring	Progress towards site-based population and distribution objectives	Progress (% achieved)
Edwards' Beach Moth	Edwards' Beach Moth continues to be present.	Moth surveys in the dunes will be conducted at least once every five years. Restored dune habitat extent is maintained or increased from March 2015.	This should not have been a population and distribution objective because Edwards' Beach Moth is an extremely rare species – the only occurrence at PRNPR was recorded in 2001. Extensive surveys were conducted in 2014, 2016 and 2022 and the moth was not detected. Restored dune habitat increased from March 2015 extent by 3 ha. Refer to Table 1, recovery measure 1 for PRNPR's progress on maintenance of restored dune habitat.	n/a
Sand-verbena Moth	Sand-verbena Moth continues to be present.	Moth surveys in the dunes will be conducted at least once every five years. Restored dune habitat extent is maintained or increased from March 2015. The area/number of Yellow Sand-verbena (host plant) increases as measured by existing ecological integrity measures.	This should not have been a population and distribution objective because Sand-verbena Moth is an extremely rare species - the only occurrence at PRNPR was recorded in 2011. Extensive surveys were conducted in 2014, 2016 and 2022 and the moth was not detected. Restored dune habitat increased from March 2015 extent by 3 ha. Refer to Table 1, recovery measure 1 for PRNPR's progress on maintenance of restored dune habitat. The area/number of Yellow Sand-verbena within the Wickaninnish dunes increased by 192% since habitat restoration efforts were initiated in 2010 and 41% over the period of the action plan from 2017-2022.	n/a

Species	Site-based population & distribution objectives	Population monitoring	Progress towards site-based population and distribution objectives	Progress (% achieved)
Northern Abalone	Maintain a stable or increasing Northern Abalone density in PRNPR.	Annual species density and size monitoring by PRNPR.	PRNPR's annual species density monitoring program was suspended in 2016 and no data has been collected beyond 2016 by Parks Canada staff. In 2021, the Dr. Julia Baum's lab from the University of Victoria repeated the scuba surveys at all six of the monitoring sites. Only one site remained stable from 2013 to 2021.	17%
Silky Beach Pea	Maintain healthy dune ecosystem. Maintain stable or increasing populations of non-transient Silky Beach Pea.	Key sites are surveyed annually as part of existing ecological integrity monitoring and outlying areas are surveyed biannually and incorporated into the existing monitoring framework at PRNPR. The location and size of patches are recorded.	The populations at Radar and Schooner are increasing, and stable at Wickaninnish. The population at Clo-oose Bay has decreased, and there were no observations at Sandhill Creek during 2017-2021. Difficulties maintaining habitat due to COVID-19 restrictions may have impacted populations at Schooner and Clo-oose Bay.	60%

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 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 First Nations partners, leaseholders, licensees, residents and visitors. The overall socio-economic impacts of the Multi-species Action Plan for PRNPR, described as costs and benefits, are outlined below.

Costs

The total costs to Parks Canada to implement this action plan were borne out of existing salaries and goods and services dollars. This includes incremental salary costs, materials, equipment, and contracting of professional services for measures outlined in Table 1. No major socio-economic costs to partners, stakeholders or First Nations resulted from this action plan.

The proposed measures were integrated into the operational management of PRNPR and there were no new costs. The costs to the government were covered by prioritization of existing funds and salary dollars at the site and did not result in additional costs to society.

The action plan applies only to lands and waters in PRNPR 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. No restrictions were placed on visitor activities on regulated lands to protect and recover species at risk.

Benefits

Measures presented in the action plan for PRNPR contributed to meeting recovery strategy objectives for threatened and endangered species, and also contributed to meeting management objectives for species of special concern. The measures sought a balanced approach to reduce and eliminate threats to species at risk populations and habitats. For example, as part of PRNPR's program to restore coastal sand ecosystems and recover associated species at risk (Pink Sand-verbena, Silky Beach Pea, Edwards' Beach Moth, Sand-verbena Moth), PRNPR increased public awareness and stewardship through providing interpretive dune walks and volunteer events, creating educational social media posts and video products, and updating the website. In addition, educational and compliance signs were installed in the dunes rather than closing areas with sensitive habitat and restricting visitor access.

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. 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.

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.

Implementing this action plan had positive benefits for First Nations partners, PRNPR visitors, and local communities. Some activities in the action plan created opportunities for First Nations partners, PRNPR visitors, and local communities to become involved in the recovery of species at risk. Over 3300 volunteer hours were dedicated to restoring coastal sand ecosystems and recovering the associated species at risk. Several contracts were awarded to First Nations (including those targeting First Nations youth) to assist with the restoration and maintenance of coastal sand ecosystem habitat and monitoring of Pink Sand-verbena. These contracts provided capacity building and short-term employment opportunities. PRNPR worked collaboratively with First Nation partners to produce trilingual interpretative and compliance signage for coastal sand ecosystems and marine SAR that featured Nuu-chah-nulth First Nations' local languages. The benefits from this signage project included short term employment opportunities, fees for service and culturally appropriate honourarium for the content development and translation contracts, promotion of Nuu-chah-nulth languages, and contributed to building the relationship with PRNPR. In addition, the increased warden patrols targeting awareness and compliance with marine regulations supported the protection of species at risk as well as First Nations values of protecting and respecting the environment.

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 reserve. Direct costs of implementing this action plan were borne by Parks Canada. Indirect costs were minimal, while benefits included positive impacts on PRNPR ecological integrity, greater awareness of species at risk and enhanced opportunities for First Nations partners, engagement of visitors, and local communities.