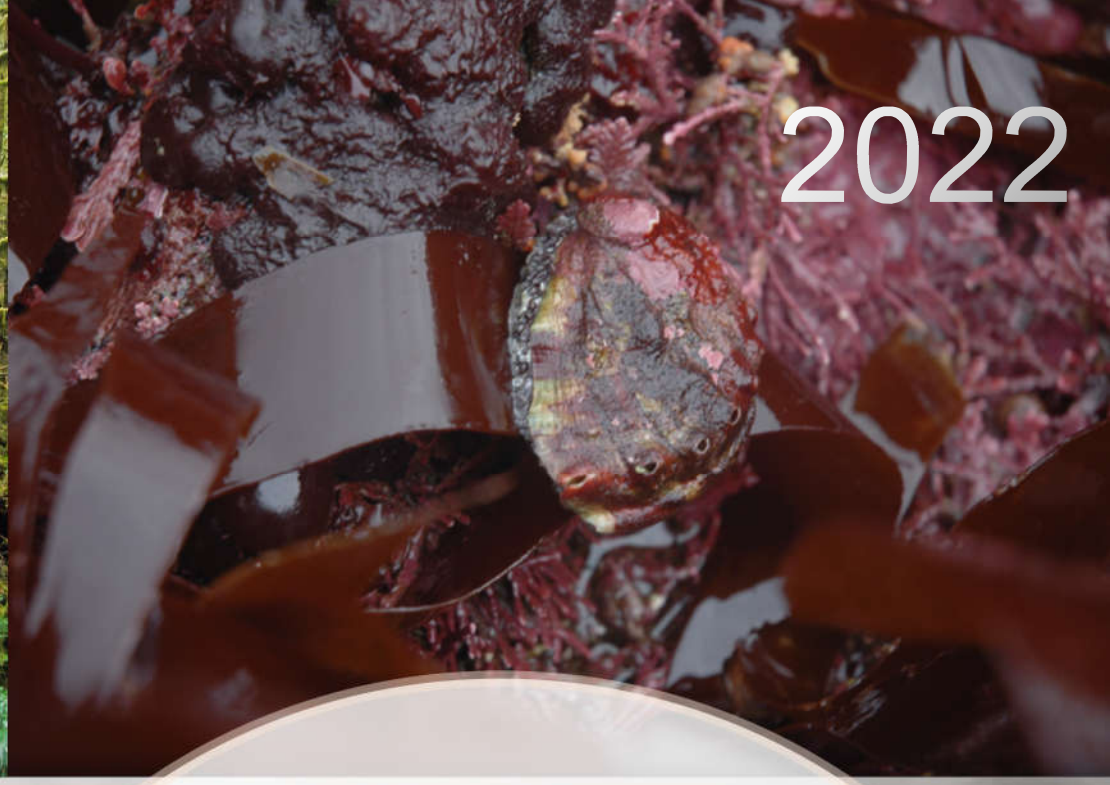


2022

IMPLEMENTATION REPORT:

MULTI-SPECIES ACTION PLAN for Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve and Haida Heritage Site (2016-2021)

Parks Canada Parcs Canada

Canada

Recommended Citation

Parks Canada Agency. 2022. Implementation Report: Multi-species Action Plan for Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site (2016 – 2021). *Species at Risk Act* Action Plan Report Series. Parks Canada Agency, Ottawa. v + 14 pp.

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:

All photos, unless otherwise stipulated are copyright of Parks Canada.

Cover illustrations, clockwise from top left: Coastal rain forest with vegetation, Parks Canada Agency (PCA); Northern Abalone, Lynn Lee, PCA; Gull and heron, PCA. **This page:** Starfish, PCA; **Page i-ii:** Ancient murrelets, PCA; **Page iii:** Coastal rainforest fungi, PCA; **Page 1, left to right:** Whale's tail, coastal rain forest with vegetation, PCA; Northern Abalone, Lynn Lee, PCA; Northern Abalone shells, Gwaii Haanas II patrol boat, sunset over the islands, Sitka Columbine, Ancient Murrelet, island cove landscape, PCA; **Page 11:** Kayakers, PCA; **Page 12:** Island cove landscape, PCA; **Page 13:** Visitor observing totem poles, PCA; **Page 14:** Whale breaching, PCA.

Également disponible en français sous le titre :

« Rapport de mise en œuvre : Plan d'action visant des espèces multiples dans la réserve de parc national, réserve d'aire marine nationale de conservation et site du patrimoine haïda Gwaii Haanas (2016-2021) »

ISBN 978-0-660-43887-0

Catalogue no. CW69-21/21-1-2022E-PDF

[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. 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 Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site, and in 2016 published the Multi-species Action Plan for Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site.

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 Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site (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] https://www.canada.ca/en/environment-climate-change/services/species-risk-act-accord-funding/protection-federal-provincial-territorial-accord.html

Acknowledgments

Parks Canada and management partners in Gwaii Haanas, Council of the Haida Nation and Fisheries and Oceans Canada, would like to acknowledge those who have contributed to implementation of the Multi-species Action Plan for Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site on Haida traditional territory.

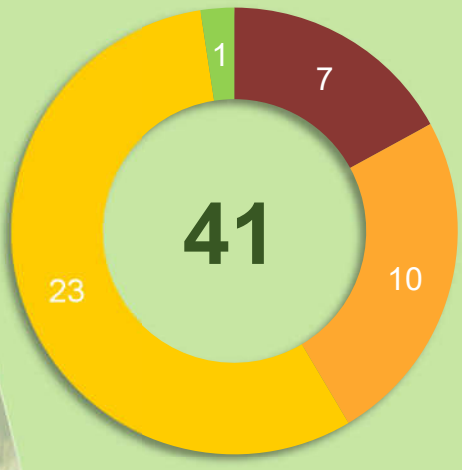
Haawa, Haaw'aa, thank you, to key partners who contributed to implementation of the plan for marine SAR, including the Haida Nation and DFO management partners, particularly the Haida Fisheries Program, Haida Marine Planning Program, DFO Ocean Science Division and Cetacean Research Program; other local members of the Haida Gwaii Marine Stewardship Group including Laskeek Bay Conservation Society, Skidegate Band Council, and Old Massett Village Council; academic partners in the Chiixuu tll iinasdll Nurturing Seafood to Grow kelp restoration project, including Florida State University, University of Oregon, University of New Brunswick, and University of British Columbia; the OceanWise Pollution Tracker Program. Key partners for terrestrial SAR include University of British Columbia; ECCC's Canadian Wildlife Service; and Watchmen and tour operators for contributing local knowledge and SAR sightings. Special thanks to all the good people on Haida Gwaii and from away who come to Gwaii Haanas to experience, learn about, share in, and contribute to recovery of SAR in many ways. We are able to know more and do more good for Species at Risk because of all of you!

EXECUTIVE SUMMARY

This document reports on implementation of the Multi-species Action Plan for Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site 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 40 SARA-listed species and one species of conservation concern. Recovery actions and population and distribution objectives were focused on five species for which Gwaii Haanas could have the largest impact on species recovery: Northern Saw-Whet Owl, Ancient Murrelet, Cassin's Auklet, Little Brown Myotis and Keens Myotis, and Northern Abalone.



SARA-listed species

- Endangered
- Threatened
- Special Concern

Non SARA-listed species[4]

- Species of Conservation Concern

[3] At the time this Multi-Species Action Plan was posted in 2016, there were 17 SARA-listed Endangered and Threatened species, 17 species of Special Concern, and 7 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

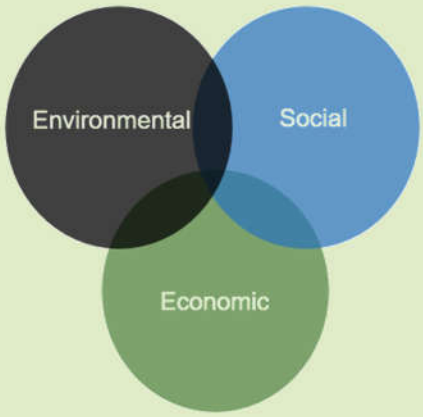
20 measures (recovery actions) were identified in the multi-species action plan. Implementation of the action plan is assessed by determining progress towards completing each measure, and is outlined in Section 2 of this report. During the five-year period, all 20 measures were initiated[5] and 16 were completed. As resources and/or partnerships became available to support the work, an additional 3 measures identified in the action plan were completed.

Ecological Impacts

5 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 3. Progress was made on all objectives[6] including 4 that were fully achieved.

Socio-Economic Impacts

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



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

TABLE OF CONTENTS

1. CONTEXT

This document reports on implementation of the *Multi-species Action Plan for Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site*[7] between 2016-2021 on lands and waters in Gwaii Haanas, assesses the progress towards meeting its population and distribution objectives, and evaluates its ecological and socio-economic impacts. It addresses 41 species, including 7 Endangered, and 10 Threatened species (which legally require SARA action plans once a recovery strategy is finalized) and 23 Special Concern SARA-listed species[8]. It also includes other species such as one species of conservation concern. Many of these species are also culturally significant species for the Haida.

Recovery actions were focused on five species for which Gwaii Haanas could have the largest impact on recovery, including: Northern Saw-Whet Owl, Ancient Murrelet, Cassin's Auklet, Little Brown Myotis and Keens Myotis, and Northern Abalone.

2. IMPLEMENTATION OF THE ACTION PLAN

Implementation of the Multi-species Action Plan for Gwaii Haanas is assessed by measuring progress towards completing the recovery measures identified in the action plan (Table 1). See original action plan for threats and recovery measures addressed by each measure.

In 2020, there were several restrictions put in place at Gwaii Haanas to combat the spread of COVID-19, including temporary restriction of park management activities. This has affected the ability of the park to complete the implementation of some parts of the action plan.

[7] Hereafter, *Multi-species Action Plan for Gwaii Haanas*; https://species-registry.canada.ca/index-en.html#/documents/2911

[8] Note that the status of these species may have changed over the reporting period.

Table 1. Progress towards completing recovery measures committed to by Gwaii Haanas. "*" 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) (and 14) Marbled Murrelet, Ancient Murrelet, Cassin's Auklet, Great Blue Heron, Peregrine Falcon, Red-necked Phalarope, Horned Grebe: Oil Spill Preparedness – planning, prioritizing sensitive sites for species at risk protection, equipment acquisition and deployment, staff training	GH is prepared for oil spill emergencies	A draft Gwaii Haanas Geographic Response Plan with site-specific Geographic Response strategies has been completed. This will dovetail with broader Haida Gwaii marine spill response planning initiatives led by the Council of the Haida Nation. Some marine spill response equipment was purchased in 2021 for training and for staging in Gwaii. Capacity building and training in spill response have been initiated.	100%
2) Ancient Murrelet, Cassin's Auklet: Early detection and biosecurity maintenance: use remote cameras to monitor seabird nesting colonies for new non-native mammal incursions/invasions (rats, racoons) so as to implement removals before they are established	Islands free of introduced mammalian predators remain predator free. ANMU and CAAU colonies on treated islands are re-established (if extirpated) or are increasing	Remote cameras were deployed at 15 critical seabird islands and "stepping stone" islands, every year for 5 years (5/5 years = 100%).	100%*
3) Ancient Murrelet, Cassin's Auklet: Prevent spread or	Reduced risk of incursion/re-invasion or new introductions	Information on invasive rats was presented during orientations for park visitors. Rat control kits and information were distributed to visitors	100%*

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
incursion/reinvasion of rats by engaging visitors (through mandatory GH visitor orientation and through business licencing), boaters and the fishing industry		and fishing vessels. Biosecurity requirements were included as conditions in business licencing. These activities were implemented every year over the 5 years (5/5 years = 100%).	
4) Ancient Murrelet, Cassin's Auklet: Update information on seabird colony status on islands in GH to guide conservation and recovery action decisions	A 30-year comparison of colony status that can support evaluations of the impacts of invasive species and their eradication and guide placement of new restoration projects	ECCC conducted surveys on some major seabird colonies. Work with ECCC to create protocol efficiencies is ongoing and will result in progress towards this measure. Most seabird colony survey field work in 2020-21 was cancelled due to Covid restrictions.	50%
5) All Species: Encourage citizen science participation from interested tour operators to collect survey / inventory data on select species (including species at risk and introduced species)	Data collected from within GH, especially information on threats, abundance and distribution.	Worked with tour operators who report on species observations in their trip logs and in the BC Cetacean Sightings Network app and supported them with photo guides.	100%*
6) Ancient Murrelet, Cassin's Auklet: Outreach to prevent burrow trampling and to mitigate at-sea light disturbance to seabird colonies during the breeding season (mid-march to mid-June)	Reduced disturbance at seabird colonies and lower probability of burrows accidentally destroyed.	Information was presented annually during visitor orientations, and relevant conditions were included in business licencing (5/5 years = 100%).	100%*

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
7) Ancient Murrelet, Cassin's Auklet: Augment access restrictions at high priority seabird colonies	Reduced disturbance at seabird colonies and lower probability of burrows accidentally destroyed.	Superintendent orders have removed visitor access to key seabird colonies to reduce nest disturbance.	100%*
8) Great Blue Heron: Minimize human disturbance around heron feeding grounds through education and outreach (through mandatory GH visitor orientation and through business licencing for tour operators)	Fewer reports of disturbance events at Great Blue Heron foraging locations	Orientation information has yet to be included for this species.	100%*
9) Little Brown Myotis, Keen's Myotis: Work with partners to keep white-nose syndrome off Haida Gwaii via outreach and implementation of decontamination protocols	Prevent or slow the arrival of white-nose syndrome to Haida Gwaii	Information was presented annually during orientations, and relevant conditions were included in business licencing (5/5 years = 100%).	100%
10) Little Brown Myotis, Keen's Myotis: Continue long-term monitoring of maternity colony at Hot Spring Island, collect data on bat presence at caves and old mine sites in GH, and obtain baseline distribution and relative	Data on bat distribution, relative abundance and long-term use of maternity colony at Hot Spring Island is collated prior to arrival of white-nose syndrome	Landscape level baseline data on bat occupancy was collected 2 out of 5 years of the action plan.	20%

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
abundance data on bats in GH			
11) Western Toad: Conduct lab testing to confirm absence of chytrid fungus from Haida Gwaii and assess need for implementation of decontamination protocols	Chytrid fungus not found on Haida Gwaii	Toad samples were tested for Chytrid fungus, confirming its absence in Gwaii Haanas.	100%
12) Northern Saw-whet Owl: Identify and map NSWO critical habitat within GH and conduct a population assessment	Map of critical habitat and population assessment completed	A survey was completed in alpine habitat, but work is still ongoing. Field work and resulting data analysis to support this measure was delayed due to Covid restrictions.	50%
13) Northern Goshawk: Monitor known breeding sites and conduct targeted field surveys to locate additional breeding sites	Updated population estimate for GH and new breeding sites identified	All known breeding sites were visited. Acoustic Recording Unit sampling and rapid surveys were used for locating new breeding locations.	100%
14) (and 1) All Marine Species: Oil Spill Preparedness – planning, prioritizing sensitive sites for species at risk protection, equipment acquisition and deployment, staff training	GH is prepared for oil spill emergencies	Draft Gwaii Haanas Geographic Response Plan with site-specific Geographic Response strategies were completed that will dovetail with broader Haida Gwaii marine spill response planning initiatives led the Council of the Haida Nation. Some marine spill response equipment was purchased in 2021 for training and for staging in Gwaii Haanas Capacity building and training in spill response has been completed.	100%

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
15) Northern Abalone: Work with partners to explore opportunities for kelp forest restoration	Assessment made of potential kelp forest restoration project	Gwaii Haanas and partners developed a successful collaborative proposal to PCA Conservation and Restoration (CoRe) fund for kelp forest restoration project in Gwaii Haanas from 2017/18 to 2021/22. Project partners are Council of the Haida Nation, Fisheries and Oceans Canada, Pacific Urchin Harvesters Association, Hakai Institute/Tula Foundation, and academia	100%
16) All Marine Mammals: Ensure all marine zoning is reflected on electronic charts	Zoning information available to visitors to improve compliance	Gwaii Haanas (GH) zoning information is published in map format in the GH Visitor Guide and website, communicated to mariners through the "Notice to Mariners" publication from Canadian Coast Guard, as well in DFO variation orders describing the strict protection zones. Electronic charts are expected to be completed in 2022.	75%
17) Northern Abalone, all marine species: Outreach & Education: prevent abalone poaching, participate in Haida Gwaii Marine Stewardship Group, include N. Abalone and other species at risk in curriculum for Mt Moresby Adventure Camp student trip to GH	Decline in abalone poaching, inclusion of species at risk in curriculum	Annual ongoing outreach and education about northern abalone and other marine SAR continuing through community events with Haida Gwaii Marine Stewardship Group (partnership with Haida Gwaii communities, ENGOs, DFO, and Council of the Haida Nation) and PCA Gwaii Haanas interpretative and outreach programs; annual CoastWatch workshops; Gwaii Haanas tour operators and visitor orientations; distribution of marine SAR outreach materials to local communities and visitors; delivery of abalone stewardship curriculum in the schools for Grades 4 and 7 students. No in-person outreach activities completed from Apr 2020 to present due to COVID-19. (5/5 years = 100%)	100%

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
18) All marine mammals: Minimize disturbance to marine mammals from visitor boats by promoting compliance with Whale Watching Guidelines through mandatory visitor orientation and business licencing	Reduced disturbance of marine mammals	Annual promotion and distribution of Be Whale Wise and other responsible whale watching guidelines, DFO marine mammal regulations, mandatory visitor orientations, and business licensing requirements for tour operators annually. No visitors or tour operations working in 2020 season due to COVID-19. (5/5 years = 100%)	100%
19) All marine mammals: Scope the concept of a "Quiet Sea Reserve" designation for GH	The quiet soundscape in the NMCAR is maintained or improved	Scoping of quiet sea reserve concept was completed via collaborative deployment of hydrophones on the east and west coasts of Gwaii Haanas with DFO. Starting in 2017, baseline ambient ocean noise levels and cetacean use were recorded. Analyses of acoustic data from summer 2017-2020 are completed for establishing a baseline for ambient ocean noise and cetacean detections.	100%
20) All marine species: Develop a baseline and conduct on-going monitoring of key threats to marine species (eg. Ocean temperature, noise) to inform a long-term monitoring program for the NMCAR	Trend information collected for key threats and available for decision-making and action	Established baseline and monitoring for key threats to marine species at risk initiated in 2016 including: ocean conditions (ocean mooring buoy in collaboration with DFO, and nearshore temperature loggers); marine debris on beaches; invasive species (tunicates and European green crab in collaboration with DFO and CHN); ambient ocean noise levels (collaboration with DFO); and marine pollution (collaboration with Pollution Tracker program of Ocean Wise).	100%

Additional measures were identified in the action plan that would be completed should resources become available within the five-year timeframe. Table 2 describes the actions that Gwaii Haanas was able to initiate during 2016-2021. Measures from the action plan that were not completed or 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)
21) Ancient Murrelet, Cassin's Auklet: Investigate the feasibility and test the use of sniffer dogs for early detection of invasive mammals and ongoing biosecurity maintenance at nesting seabird colonies	Evaluation of sniffer dogs as a tool for early detection of invasive species	Pilot project completed, partnered with ECCC and funded in part with SARA implementation funds was done in 2019.	100%*
22) Ancient Murrelet, Cassin's Auklet: Rat genetics analysis to examine movement patterns and assess rat incursion/re-invasion potential on islands identified for eradication	Rat dispersal risk estimated to prioritize restoration locations	A genetic analysis tool (Rapid Rat) was developed in partnership with Simon Fraser University. This tool was tested successfully and can be expanded to other potential eradication sites.	100%*
23) Ancient Murrelet, Cassin's Auklet: Remove non-native rats from smaller technically feasible islands (Kunga and Titul, Tanu, Huxley, Shuttle)	Additional rat-free islands to improve seabird breeding success, other ecological impacts, and biosecurity	Our first modern eradication done with only staff was completed successfully on House and Hotspring Islands.	100%*

3. 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 Gwaii Haanas[9]

Species	Site-based population & distribution objectives	Population monitoring	Progress towards site-based population and distribution objectives	Progress (% achieved)
Northern Saw-whet Owl brooksi subspecies	Maintain known population in GH – major threat (logging) no longer occurs in GH and remote location makes pop'n monitoring difficult	Opportunistically record observations and any changes to the status of the species in GH	Opportunistic observations were recorded. Two Automatic Recording Unit surveys were completed.	100%
Little Brown Myotis and Keen's Myotis	Maintain population at Hot Spring Island maternity colony	Continue long-term monitoring of maternity colony at Hot Spring Island	Monitoring was completed in 3 out of 5 years of the action plan (3/5 = 60%). Work was impacted by COVID-19 restrictions.	60%

[9] This table differs slightly from the posted action plan, as some species did not require Site-based Population and Distribution objectives. Instead, monitoring for these species was included in the Recovery Measures tables.

Species	Site-based population & distribution objectives	Population monitoring	Progress towards site-based population and distribution objectives	Progress (% achieved)
Ancient Murrelet	Maintain populations at breeding sites that never had introduced mammalian predators and increase populations on islands where predators have been removed	Continue population monitoring at sentinel sites (Rankine, George, and Ramsay islands); update seabird colony status information	ECCC continued to lead and deliver on all required population monitoring, with some logistical support from Gwaii Haanas.	100%
Cassin's Auklet	Maintain populations at breeding sites that never had introduced mammalian predators and increase populations on islands where predators have been removed	Continue population monitoring at sentinel sites (Rankine, George, and Ramsay islands); update seabird colony status information	ECCC continued to lead and deliver on all required population monitoring, with some logistical support from Gwaii Haanas.	100%
Northern Abalone	Maintain or increase the Northern Abalone population in GH	Use monitoring data collected by DFO and Haida Fisheries Program to estimate population trends for GH sentinel sites	Northern abalone population within Gwaii Haanas was maintained with evidence of increasing densities over the reporting period.	100%

4. SOCIO-ECONOMIC IMPACTS

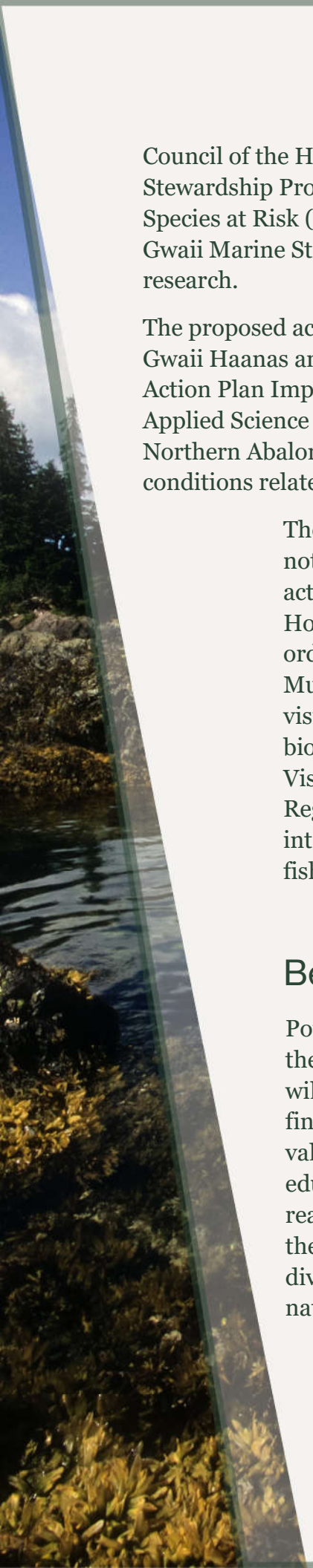
The Species at Risk Act requires the responsible federal minister to report on the socio-economic impacts of an action plan and the benefits derived from its implementation five years after the plan comes into effect.

The action plan applies only to lands and waters in Gwaii Haanas. The measures within the action plan sought a balanced approach to reducing or eliminating threats to species at risk populations and habitats, which in some cases may have resulted in indirect impacts to park visitors. The overall socio-economic impacts of the action plan, described as costs and benefits, are outlined below.

Costs

Most costs to implement this action plan were borne by Parks Canada out of existing salaries and goods and services dollars. This includes incremental salary costs, materials, equipment, and contracting of professional services for measures outlined in the action plan in Appendices C1, C2, D1 and D2. No major socio-economic costs to partners, stakeholders or Indigenous groups resulted from this action plan. Additional costs were provided by Environment Canada, Canadian Wildlife Service who provided in-kind time and leadership to implement seabird monitoring and research, which met some of our objectives listed in this action plan.

Additional costs and in-kind ship time, staff time and expertise from the DFO Ocean Science Division and Cetacean Research Program facilitated successful implementation of marine species at risk measures related to key threats. Additional funding to the



Council of the Haida Nation's Haida Fisheries Program from the federal Habitat Stewardship Program (HSP) for Aquatic Species at Risk and federal Aboriginal Fund for Species at Risk (AFSAR) supported collaborative community-based work of the Haida Gwaii Marine Stewardship Group on marine SAR outreach and education, and abalone research.

The proposed action plan measures were integrated into the operational management of Gwaii Haanas and there were no new costs. Additional funding from the PCA SAR Action Plan Implementation Fund, Conservation and Restoration project funding, and Applied Science Fund facilitated enhanced work on marine species at risk, specifically Northern Abalone and addressing key threats from ocean noise and changing ocean conditions related to climate change.

The action plan applies only to lands and waters in Gwaii Haanas, and did not bring any restrictions to resource use outside the sites. As such, this action plan placed no additional socio-economic costs on the public. However, some minor restrictions were placed on visitors. Superintendent orders were used to limit access to islands with dense colonies of Ancient Murrelet and Cassin's Auklet to protect these fragile sites. On occasion, visitor access to specific sites were temporarily restricted during larger biosecurity operations that employed the use of poison or firearms. Visitors and tour operators must follow federal Marine Mammal Regulations and were asked to follow best practises guidelines for interactions with whales and other marine mammals, as well as federal fishing regulations and zoning.

Benefits

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.

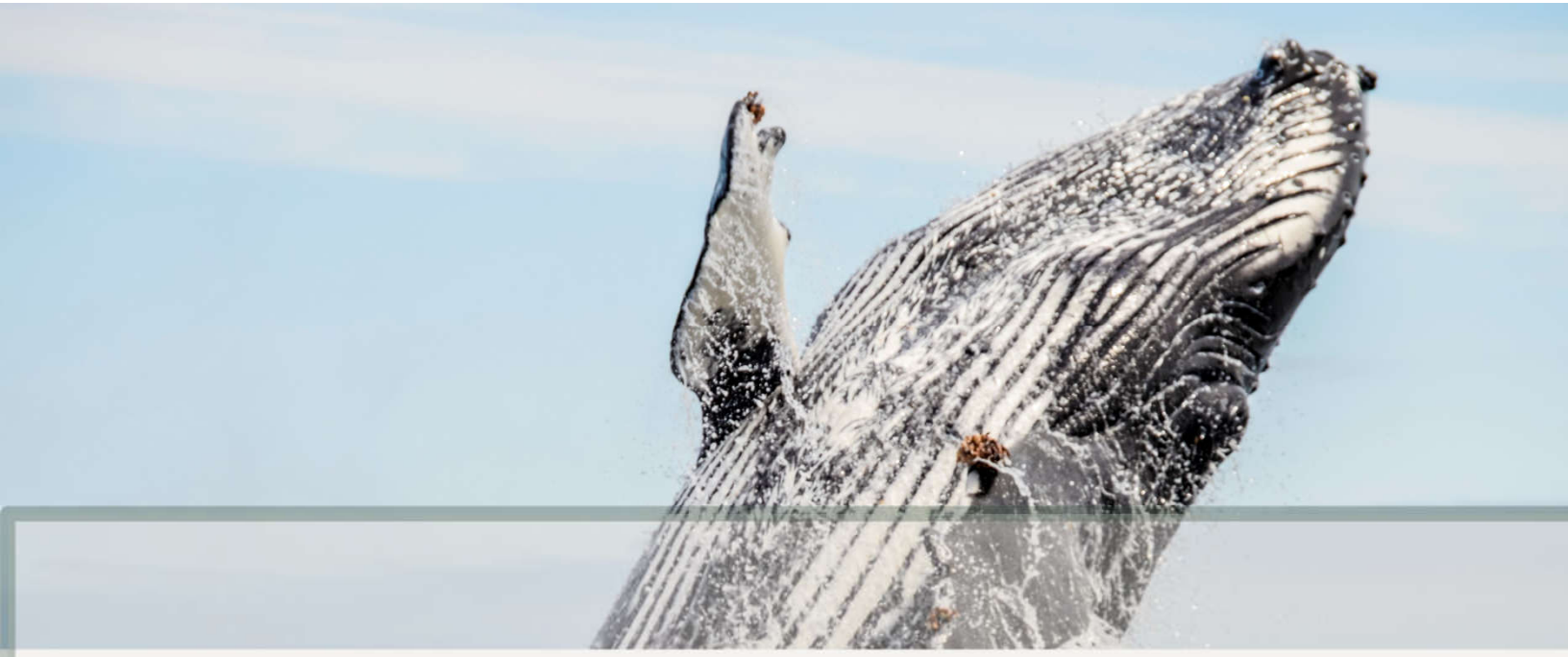
Measures presented in the action plan for Gwaii Haanas contributed to meeting recovery strategy objectives for threatened and endangered species, and also contributed to meeting management objectives for species of special concern. These measures are expected to have an overall positive impact on ecological integrity, ecological sustainability, and enhance opportunities for appreciation of the sites and the species by visitors and the general public.

These measures had an overall positive impact on ecological integrity and ecological sustainability, and contributed to efforts to increase visitor and public awareness. For marine species, partnerships are critical for working towards recovery of species at risk due to the interconnected and multi-jurisdictional nature of marine systems, in addition to the high cost of some specialized equipment and research vessels required to do specific work. For example, working with DFO management partners facilitates access to large marine research vessels and expertise not otherwise available to Gwaii Haanas. This partnership enables annual deployment and retrieval of expensive oceanographic monitoring instrumentation and hydrophones, some of which belong to DFO and others to Gwaii Haanas.

Working with our cooperative management partners, the Council of the Haida Nation and DFO, we are able to collect data on the current status of Sea Otter distribution and abundance in Gwaii Haanas, as well as determine trends in the Northern Abalone population in Gwaii Haanas. With our management partners, we actively work together on stewardship, education and outreach activities that foster the recovery of marine species at risk through on-going work of the Haida Gwaii Marine Stewardship Group. Promoting active engagement of visitors and tour operators in interpretative programs and recovery activities such as marine debris clean-up resulted in increased awareness of marine species at risk issues and reporting on their sightings.

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, or in waters outside the boundary of the National Marine Conservation Area Reserve. Direct costs of implementing this action plan were borne primarily by Parks Canada, with some costs of activities borne by management partners, Council of



the Haida Nation and Fisheries and Oceans Canada. Indirect costs were minimal, while benefits included positive impacts on ecological integrity, ecological sustainability, greater awareness of species and enhanced opportunities for engagement of visitors, local communities and Haida Nation in the cooperatively managed Gwaii Haanas National Park Reserve, National Marine Conservation Area Reserve, and Haida Heritage Site.