



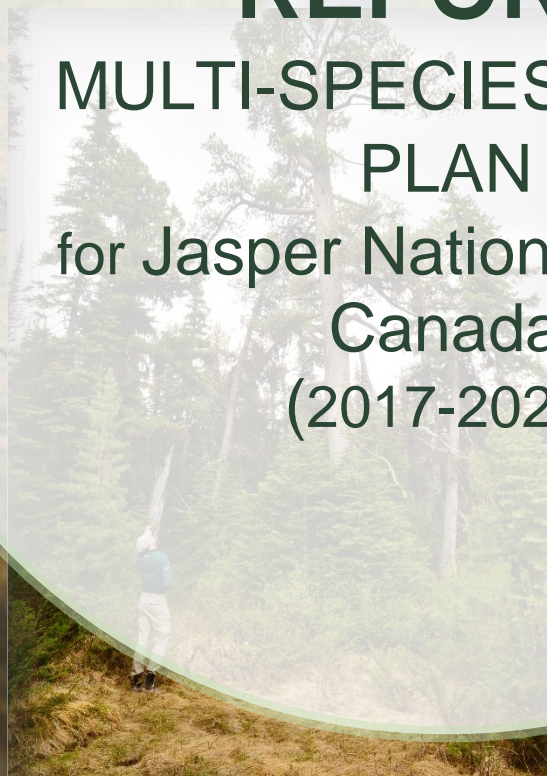
2022



# IMPLEMENTATION REPORT:

## MULTI-SPECIES ACTION PLAN

for Jasper National Park 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<sup>1</sup>.

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**Cover (listed clockwise from top right):** Woodland Caribou, Parks Canada Agency (PCA); Whitebark Pine cone collection, PCA; Whitebark Pine surveyor, I. Reid, PCA; Little Brown Myotis, G. Horne, PCA. **This page:** Tonquin Valley, L. Neufeld, PCA. **Page i:** Whitebark Pine seedling, I. Reid, PCA. **Page ii:** Bat hibernacula count, N. Veselka, PCA. **Page iii:** Woodland Caribou, L. Neufeld, PCA. **Page 1:** Woodland Caribou, L. Neufeld, PCA; Whitebark Pine, I. Reid, PCA; Whitebark Pine tree planter, I. Reid, PCA; Woodland Caribou, L. Neufeld, PCA; Whitebark Pine surveyor, S. Hazenberg, PCA; unidentified Myotis, N. Veselka, PCA; Southesk Valley, J. Stirrett-Wood, PCA; Whitebark Pine, I. Reid, PCA; Whitebark Pine cones, B. Shepherd, PCA. **Page 13:** Woodland Caribou, L. Neufeld, PCA. **Page 18:** Caribou biologist in the Tonquin Valley, M. Bradley, PCA. **Page 19:** Whitebark Pine surveyor, I. Reid, PCA; **Page 20:** Acoustic bat monitoring, PCA; **Page 24:** Whitebark pine cone collection, I. Reid, PCA.

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<sup>1</sup> <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 \(1996\)](#)<sup>2</sup> agreed to establish complementary legislation and programs that provide for effective protection of species at risk throughout Canada. Under the *Species at Risk Act* (S.C. 2002, c.29) (SARA), 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 Jasper National Park of Canada, and in 2017 published the Multi-species Action Plan for Jasper National Park of Canada.

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 has prepared this Implementation Report: Multi-species Action Plan for Jasper National Park 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 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.

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



# Acknowledgments

Parks Canada would also like to acknowledge those who have contributed to implementation of the Multi-species Action Plan for Jasper National Park of Canada.

First, Jasper National Park acknowledges that these lands are located in Treaty 6 and 8 as well as the traditional lands of the Anishinabe, Aseniwuche Winewak, Dene-zaa, Nêhiyawak, Secwépemc, Stoney Nakoda, Mountain Métis and Métis. We acknowledge the past, present, and future generations of these nations who continue to steward the land.

There were a number of other key partners who have contributed to implementation of the multi-species action plan and our improved understanding of these Species at Risk. The Whitebark Pine Ecosystem Foundation of Canada, fRI Research and the provinces of Alberta and British Columbia have continually supported the park and added value to our objectives. We have valued the experience of the various Recovery Teams, including the Haller's Apple Moss and Alberta Whitebark and Limber Pine Recovery Teams.

Finally, we would like to acknowledge the people who share our ecosystem, from those landowners who protect important habitat, to provincial land managers who are working to reduce impacts on caribou, to those who keep their dogs leashed so that ground-nesting birds are protected. The reality is that this park is large, yet we are too small to influence the status of these species on our own. If we are to succeed in maintaining biodiversity, we have to have the support from our neighbours and their neighbours, etc. Working together will be instrumental if we want to forever see this place as a place of refuge, a place of peace.

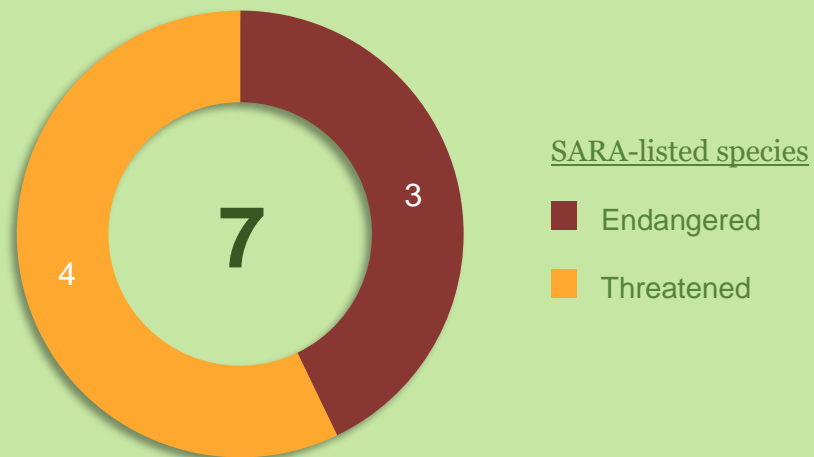
Ninaskomin, Kukstép-kuc, Maarsii, Hiy Hiy, Isniyis, Miigwech, Merci, Thank you.

# EXECUTIVE SUMMARY

This document reports on implementation of the Multi-species Action Plan for Jasper National Park 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<sup>3</sup>

The action plan addressed seven SARA-listed species. Measures and site-based population and distribution objectives identified within the action plan were focused on six species, for which management actions within Jasper National Park could have a substantive impact on species survival or recovery: Whitebark Pine, Woodland Caribou, Common Nighthawk, Haller's Apple Moss, Little Brown Myotis and Northern Myotis.



<sup>3</sup> 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.

# Implementation of the Action Plan

26 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 26 measures were initiated<sup>4</sup> and 13 were completed.

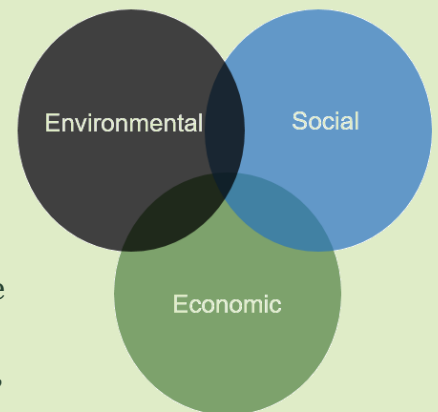


## Ecological Impacts

6 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<sup>5</sup> including three that were fully achieved.

## Socio-Economic Impacts

Direct costs of implementing this action plan were borne by Parks Canada. Indirect costs were mainly through visitor and stakeholder restrictions to certain areas of the park during winter to protect Woodland Caribou. Benefits included positive impacts on park ecological integrity, greater awareness of species and enhanced opportunities for engagement of visitors, local communities and Indigenous partners.



<sup>4</sup> Includes measures that are 100% completed.

<sup>5</sup> Includes PDOs that are fully achieved.

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# 1. CONTEXT

This document reports on implementation of the [Multi-species Action Plan for Jasper National Park of Canada](#)<sup>6</sup> between 2017 and 2022, assesses progress towards meeting its population and distribution objectives, and evaluates its socio-economic impacts. It addresses seven SARA-listed Endangered and Threatened species (for which an action plan is required)<sup>7</sup>.

Site-based population and distribution objectives were developed for six species for which implementation measures within Jasper National Park could have a substantive impact on recovery: Whitebark Pine, Woodland Caribou, Common Nighthawk, Haller’s Apple Moss, Little Brown Myotis and Northern Myotis.

# 2. IMPLEMENTATION OF THE ACTION PLAN

Implementation of the Multi-species Action Plan for Jasper 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 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 Jasper National Park to combat the spread of COVID-19, including temporary restriction of park management activities. This impacted the ability of the park to complete the implementation of some parts of the action plan.

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<sup>6</sup> Parks Canada Agency. 2017. Multi-species Action Plan for Jasper National Park of Canada. Species at Risk Act Action Plan Series. Parks Canada Agency, Ottawa. iv + 21 pp.

<sup>7</sup> The status of these species may have changed over the reporting period.



**Table 1. Progress towards completing recovery measures committed to by Jasper National Park.**

<b>Species and measure</b>	<b>Desired outcome</b>	<b>Progress towards outcome</b>	<b>Progress (% complete)</b>
<p><b>1) Whitebark Pine:</b> Identify putatively rust resistant individuals (Plus Trees) at high priority sites, conduct Plus Tree seed resistance testing for high probability trees, collect seed for genetic conservation and protect high value Plus Trees from mountain pine beetles.</p>	<p>1) Where conditions permit, identify Plus Trees (rust resistant or high value individuals) and conserve genetic resources. 2) Where protection from mountain pine beetle is required, protect high-value individual Whitebark Pine trees.</p>	<p>A total of 413 Whitebark Pine Plus Trees have been identified (target 600) and 49 parent trees are in blister rust resistance screening trials or have been pre-approved for screening once seedlings are large enough. (target 50). More than 161,400 seeds have been collected from parent trees (target 200,000), and are being grown into seedlings for restoration and for resistance testing. 88.1% of protected Plus Trees survived the mountain pine beetle outbreak.</p>	<p><b>84%</b></p>
<p><b>2) Whitebark Pine:</b> Plant putatively rust resistant seedlings, and when available confirmed rust resistant seedlings, in priority restoration sites. Inoculate seedlings with mycorrhizal fungi to improve establishment.</p>	<p>1) Plant a minimum of 3500 rust-resistant Whitebark Pine seedlings by 2019. Continue annual planting beyond 2019 as resources are available and based on priority areas for restoration need.  2) Where available, inoculate at least 50% of seedlings with mycorrhizal fungi prior to planting.</p>	<p>1) 18,054 Whitebark Pine seedlings have been planted in 21 locations in JNP.  2) 26% of seedlings were inoculated with mycorrhizal fungi prior to planting. Note: inoculating seedlings is beneficial but not required. Fungi were unavailable for the rest of the seedlings.</p>	<p><b>100%</b></p> <p><b>26%</b></p>
<p><b>3) Whitebark Pine:</b> Protect and, where feasible,</p>	<p>1) Restore WBP habitat using prescribed fire</p>	<p>1.56 hectares of thinning around high value trees has reduced competition around</p>	<p><b>78%</b></p>

<b>Species and measure</b>	<b>Desired outcome</b>	<b>Progress towards outcome</b>	<b>Progress (% complete)</b>
increase the number and extent of existing stands and of blister rust resistant individuals through habitat management and restoration.	and/or mechanical thinning to a degree that will allow the persistence or expansion of existing stands and new stands. 2) Mitigate threats in priority high value stands.	Whitebark Pine trees and increased regeneration potential (target 2 hectares).	
<p><b>4) Woodland Caribou:</b> Work with partners to determine next steps for augmentation of the Jasper/Banff Local Population Unit in Jasper National Park.</p>	Increasing population trend for one subpopulation in the short-term and other subpopulations to follow. Over the long term, the Local Population Unit is self-sustaining.	<p>The first step was to develop and obtain approval to implement a comprehensive recovery program that supports the population and distribution objectives. This included a caribou conservation breeding and augmentation program. If approved, the next goal is to reach 200 caribou in the Tonquin herd by 2031 when the program will be reassessed.</p> <p>A detailed proposal has been developed and externally validated by independent experts. Indigenous, stakeholder, and public consultations on the project and the detailed impact assessment are underway. Detailed design of the breeding facility is being completed. Work with provincial and federal partners (notably to identify source population animals for conservation breeding and also to identify areas for collaboration) is ongoing. A decision on whether to proceed with the project is expected in Winter 2022. If approved, facility construction could begin as early as Spring 2023.</p>	<p><b>35%</b></p>



<b>Species and measure</b>	<b>Desired outcome</b>	<b>Progress towards outcome</b>	<b>Progress (% complete)</b>
<p><b>5) Woodland Caribou:</b> Manage forests near caribou range to maintain and/or increase caribou habitat quality and availability. Reduce the impact of wildfire on caribou habitat through fire management planning.</p>	<p>Managed fire maintains dynamic forest mosaic ensuring adequate abundance of old forest and predator-prey dynamic conducive to caribou recovery.</p>	<p>Fire and forest clearing improves habitat for elk and deer and increases their populations. This leads to an increase in the wolf population and can intensify predation risk for caribou. The amount of fire and forest clearing is being managed using wolf density targets related to predator-prey dynamics that support caribou recovery. Wolf density has been maintained at less than 3 wolves/1000 km<sup>2</sup> across Matrix and High Elevation habitat. Declines in elk, and subsequently in wolves, have helped to decrease wolf density to a level at which caribou herds are more likely to be self-sustaining.</p>	<p>100%</p>
<p><b>6) Woodland Caribou:</b> Reduce threat of predator access to high quality caribou habitat by managing extent and timing of human activities.</p>	<p>Maintain safe and secure high quality habitat, without human-facilitated predator access.</p>	<p>Human access to large areas of high elevation caribou habitat is prohibited in winter. Packed snow on trails facilitates wolf movement and thus depredation of caribou. Progress is measured by the number of years without serious human incursions into caribou range above 1500 m and &gt;2 km of closure boundary. In the last 5 years, there were two years with serious incursions that resulted in packed trails into caribou habitat.</p>	<p>60%</p>
<p><b>7) Woodland Caribou:</b> Implement guidelines for aircraft flying over caribou habitat to reduce disturbance.</p>	<p>Direct disturbance to caribou is minimized.</p>	<p>Caribou flight guidelines are implemented annually.</p>	<p>100%</p>

<b>Species and measure</b>	<b>Desired outcome</b>	<b>Progress towards outcome</b>	<b>Progress (% complete)</b>
<b>8) Woodland Caribou:</b> Reduce highway-caused mortality.	Caribou road mortality remains at current, low levels.	No caribou were hit by vehicles from 2017-2022. Highway signs are in place in high risk zones.	100%
<b>9) Woodland Caribou:</b> Continue communication activities delivered as part of ongoing efforts to communicate and raise general awareness about Woodland Caribou.	Increased awareness about this species among Canadians and maintain public support for the implementation of caribou conservation actions.	Communications activities were conducted each year from 2017-2022 by a dedicated communication officer delivering personal and non-personal interpretation in Jasper and at various outreach events, social media, and a significant website update.	100%
<b>10) Common Nighthawk:</b> Implement measures to protect known nest sites and known nesting habitat from destruction or disturbance.	Individuals are protected from direct disturbance during the breeding season.	Signs indicating the presence of ground nesting birds, including Common Nighthawks, were installed at three index monitoring sites reminding visitors to leash dogs. Common Nighthawk presence was maintained throughout the monitoring period (2016-2019).	100%
<b>11) Haller's Apple Moss</b> Implement fire and trampling protection measures for the two known populations.	Reduce fire and trampling threats to populations.	In 2019, Parks Canada completed a research project to examine the microclimate at Haller's Apple Moss sites to identify if a fire guard would be an effective approach to protect populations from wildfire. It was determined that the risk of a fireguard was too high because it would create edge effects that would adversely affect the microclimate at the sites. The next steps are to create a fire response plan and create and implement a trampling prevention plan.	50%



<b>Species and measure</b>	<b>Desired outcome</b>	<b>Progress towards outcome</b>	<b>Progress (% complete)</b>
<p><b>12) Whitebark Pine, Woodland Caribou, Common Nighthawk, Olive-sided Flycatcher:</b> Implement prescribed fire for species at risk.</p>	<p>Increase the number of species at risk targeted burns with the goal of implementing at least two every 5 years.</p>	<p>Two prescribed fires were completed at the Henry House grassland in 2020 (30 hectares) and 2022 (375 hectares) to improve habitat for species at risk. Common Nighthawks use this grassland during the breeding season, as confirmed using Automated Recording Unit-based inventory from 2018-2021.</p>	<p><b>100%</b></p>
<p><b>13) Woodland Caribou:</b> Develop an elk and deer management strategy and continue implementing actions to address unnatural ungulate distribution and abundance; continue to monitor predator-prey populations and distribution.</p>	<p>Predator-prey processes and densities within and adjacent to caribou range are understood, and are at levels conducive to caribou recovery, as identified in critical habitat requirements.</p>	<p>An elk and deer management strategy is not yet complete; Parks Canada has focused on creating a landscape accounting tool to understand ungulate response to landscape change and predator density. (30% complete).</p> <p>Predator-prey processes and densities in and adjacent to caribou range are at levels conducive to caribou recovery, as identified in critical habitat requirements. Actions to address ungulate population issues will be identified in an elk and deer management strategy. Currently, actions mitigate impacts of habitat change to reduce attractants that contribute to elevated populations (25% complete).</p> <p>Predator-prey population monitoring uses elk aerial population surveys and remote cameras and collaring to estimate wolf density. A study to determine if remote cameras can effectively monitor deer populations is underway (100%).</p>	<p><b>52%</b></p>

<b>Species and measure</b>	<b>Desired outcome</b>	<b>Progress towards outcome</b>	<b>Progress (% complete)</b>
<b>14) ALL:</b> Maintain law enforcement patrols to prevent disturbance, destruction or removal of species at risk and their habitats.	Law enforcement capability is maintained to prevent disturbance to species at risk and associated habitat.	Law enforcement capability to prevent disturbance to species at risk was assessed by proxy, i.e., by measuring compliance with caribou closures. There have been several serious incursions into the caribou closures, but overall compliance has been high.	<b>60%</b>
<b>15) Little Brown Bat &amp; Northern Myotis:</b> Limit spread of white-nose syndrome by sharing protocols (such as the Canadian National White-Nose Syndrome Decontamination Protocol) for cave researchers, and maintaining access restrictions, to protect bats and their residences.	<ol style="list-style-type: none"> <li>1. Limit human caused spread of WNS through awareness, enforcement of restricted access, and implementation of decontamination protocols and Best Management Practices for researchers and cavers.</li> <li>2. Establish best practices for Parks Canada staff and Park stakeholders to address maintenance of infrastructure that contains roosts.</li> </ol>	<p>Parks Canada manages access to all caves in Jasper National Park using a permit system. Currently, the Park's one known hibernaculum is closed to recreational access to reduce the risk of WNS contamination.</p> <p>There have been 17 cave restricted activity permit applications since 2016. All trip participants are required to follow the Canadian National White Nose Syndrome Decontamination Protocol.</p> <p>A new national guidance document (Guidance for protecting and managing bats in Parks Canada administered places) contains decision tools on how to deal with bats in Parks Canada infrastructure. This document will be widely distributed and used to train all Parks Canada staff who deal with wildlife.</p>	<b>100%</b>
<b>16) Little Brown Bat &amp; Northern Myotis:</b> Compile existing data and knowledge using a GIS to identify and prioritize sites	Status (presence/non-detection of bats) has been determined for known hibernacula and maternity colony caves and roosts	Jasper National Park has 73 known caves (as of 2015), and the list has grown by one cave per two years on average. Sixteen caves have been inventoried. There are nine known maternity roosts, all located in buildings.	<b>22%</b>



<b>Species and measure</b>	<b>Desired outcome</b>	<b>Progress towards outcome</b>	<b>Progress (% complete)</b>
that have a high potential to be hibernacula or maternity colonies. As resources are available and based on priority, sample sites to determine their significance.	during first 5 year reporting period.	Inventories are conducted at priority caves and roosts for conservation using roost loggers to detect bats via acoustics, and when those are not effective, more detailed surveys may be completed.	
<b>17) Woodland Caribou:</b> Adopt non-invasive census techniques for population monitoring.	Use DNA scat surveys for population monitoring in place of collar-based methods.	DNA scat surveys for population monitoring in place of collar-based methods have been implemented.	<b>100%</b>
<b>18) Whitebark Pine:</b> Complete predictive habitat model and map of Whitebark Pine distribution for the Park. Where stand assessments are completed, they include aspects of stand health (i.e., rust presence/absence and stand density).	<ol style="list-style-type: none"> <li>1. Predictive map of Whitebark Pine distribution for the Park.</li> <li>2. Assessed high-value stands in high risk areas.</li> <li>3. Data inform targeted and efficient management and recovery.</li> </ol>	A Vegetation Resource Inventory (VRI) is in progress (2020-2023). Vegetation will be classified throughout the park supported by an air and ground validation program with an emphasis on Whitebark Pine. The VRI will be a better map of Whitebark Pine habitat than the planned predictive habitat model.	<b>66%</b>
<b>19) Common Nighthawk:</b> Identify breeding and nesting sites opportunistically, targeting high probability sites, and encourage the public to share observations.	Knowledge of species distribution and, in particular, nesting areas informs Park management.	Occupancy surveys were completed from 2016 - 2021 using Autonomous Recording Units at three sentinel grassland sites. The first occupied nest was discovered in 2022.	<b>100%</b>

<b>Species and measure</b>	<b>Desired outcome</b>	<b>Progress towards outcome</b>	<b>Progress (% complete)</b>
<p><b>20) Little Brown Bat &amp; Northern Myotis:</b> Adopt best practices for the maintenance or decommissioning of JNP infrastructure that contain Little Brown and/or Northern Myotis roosts. Work with partners and community to protect important bat sites in buildings.</p>	<p>Important roosts identified in infrastructure requiring maintenance and impacts are mitigated.</p>	<p>Progress is measured by identifying if inspection guidelines for built assets are being used to manage bats in buildings. The “Guidance for protecting and managing bats in Parks Canada administered places” (2022) is being used to guide decision making regarding bats in addition to implementing a suite of tools for communities and townsites to manage bats. An inventory spreadsheet keeps track of all incidents related to bats in Jasper, including any exclusions to measure cumulative impacts.</p>	<p>100%</p>
<p><b>21) Little Brown Bat &amp; Northern Myotis:</b> Implement communication actions aimed at preventing disturbance, disease transmission and potential human-caused mortality.</p>	<p>Raise knowledge and awareness about this species among priority audiences; support an integrated approach towards increased compliance to prevent habitat degradation and human-caused mortality.</p>	<p>Since 2016, multiple outreach initiatives have been completed annually to target key audiences, including a live maternity-roost bat camera. Ongoing building inspections for bats facilitate dissemination of bat conservation information regarding roosts and maternity colonies.</p>	<p>100%</p>
<p><b>22) Woodland Caribou:</b> Collaborate with Alberta government in developing the range plan for the A La Peche herd, including maintaining habitat condition that supports connectivity / migration for this population.</p>	<p>Range plan completed for A La Peche.</p>	<p>Parks Canada continues regular communication with the Alberta government about management of the A La Peche caribou herd.</p> <p>Alberta’s Draft Provincial Woodland Caribou Range Plan looks at caribou range planning province-wide. In 2019, the province created caribou sub-regional task forces to advise government on land-use planning at a local</p>	<p>60%</p>

Species and measure	Desired outcome	Progress towards outcome	Progress (% complete)
		scale, including caribou recovery actions. Recommendations from these task forces will support the development of sub-regional plans. As of 2022, the draft sub-regional plan that includes the A La Peche range is not complete.	
<p><b>23) Whitebark Pine:</b> Continue communication activities aimed at awareness of, and reducing human-caused impacts on, Whitebark Pine as outlined in the Whitebark Pine Conservation and Restoration Project.</p>	<p>Increased awareness about this species among priority audiences; Reduction of accidental harm/removal of Whitebark Pine trees.</p>	<p>Communication activities focused on target audiences: urban and new Canadians, visitors, stakeholders and youth. They included:</p> <ul style="list-style-type: none"> <li>• A Whitebark Pine film featuring Jasper landscapes and restoration;</li> <li>• A five-needle pine communications plan;</li> <li>• A Whitebark Pine Facebook live event in 2021 to showcase planting seedlings;</li> <li>• Whitebark Pine signs installed at stands at risk of accidental tree removal;</li> <li>• A demonstration planting was installed at the Mount Edith Cavell parking lot;</li> <li>• Tentree Clothing partnered with Parks Canada to produce a Whitebark Pine clothing line. They communicated via social media including producing a video on youtube in Jasper NP.</li> </ul>	<p><b>100%</b></p>
<p><b>24) ALL:</b> Work with adjacent land management agencies, government scientists and Indigenous communities to improve understanding and knowledge of populations</p>	<p>Increased coordination of recovery actions for species occurring across Jasper National Park boundaries within multiple jurisdictions.</p>	<p>There is ongoing collaboration across Jasper National Park boundaries for six of the seven species in the Action Plan. Highlights are:</p> <ul style="list-style-type: none"> <li>• North American Bat (NABat) hub with the University of Alberta, Government of Alberta, and the Alberta Biodiversity Monitoring Institute to protect</li> </ul>	<p><b>100%</b></p>



<b>Species and measure</b>	<b>Desired outcome</b>	<b>Progress towards outcome</b>	<b>Progress (% complete)</b>
of species at risk, and to increase the level of recovery of species occurring across Park boundaries within multiple jurisdictions.		<p>endangered bat populations;</p> <ul style="list-style-type: none"> <li>• Participation in the Species at Risk Coordinating Committee (Alberta) to organize recovery efforts among jurisdictions, especially important for wide-ranging species like caribou;</li> <li>• Critical habitat monitoring for Haller’s Apple Moss with the Royal Alberta Museum;</li> <li>• Used new technology created by the University of Alberta to inventory Common Nighthawks;</li> <li>• Planted Whitebark Pine seedlings with BC Park rangers in a stand that straddles the continental divide.</li> </ul>	
<b>25) ALL:</b> Increase general awareness about species at risk that are found in the Park, through interpretive programming, targeted communications, stakeholder engagement and outreach.	Increased support and action for species at risk conservation and associated management activities. Priority audiences, including park visitors, youth, urban and new Canadians, learn about species at risk found in the Park.	Progress was measured by calculating the proportion of target audiences that were reached by activities that address more than half of the species at risk in the Action Plan for at least 3 of the 5-year period. Examples of activities include: Marmot Basin Learning Centre activities, the caribou ambassador program, “What’s the Connection” mobile urban exhibit about caribou and Whitebark Pine, and significant updates to the Jasper National Park website.	<b>100%</b>
<b>26) ALL:</b> Explore the interests of various Indigenous communities in Species at Risk education	Increased Indigenous community involvement in the delivery of species at risk recovery, outreach,	Measuring progress for this measure by percent is not ideal. Success was measured by the level of active involvement in activities or opportunities offered related to species at	<b>50%</b>

<b>Species and measure</b>	<b>Desired outcome</b>	<b>Progress towards outcome</b>	<b>Progress (% complete)</b>
<p>and recovery. Collaborate with interested communities on recovery, incorporating Traditional Knowledge, outreach, education, ceremonies and visitor experience actions in mutually agreed upon ways.</p>	<p>education, ceremonial and visitor experience actions including incorporating Indigenous Traditional Knowledge to fill species knowledge gaps.</p>	<p>risk. There's an opportunity to change this approach based on the interests of Indigenous communities with a focus on collaboration for future Action Plans.</p> <p>In 2021 and 2022 there were five opportunities facilitated with Indigenous partners related to caribou conservation including consultation on the proposed conservation breeding project focused on identifying issues, concerns, mitigations, and how Indigenous knowledge, ceremony, and spirituality can inform the project. Discussions were also initiated on how Indigenous partners can collaborate on the proposed conservation breeding project if it proceeds. Information gathered will be used to refine the project and aid in the decision-making processes. Collaboration with Indigenous partners on caribou recovery will continue moving forward.</p>	

### 3. ACTION PLAN HIGHLIGHT: Proposed Caribou Conservation Breeding Project



Caribou herds in Jasper National Park have significantly declined over the last half century to very small numbers. Within the Jasper-Banff Local Population Unit, two herds are already extirpated and, without intervention, the only two remaining herds will also disappear. However, current ecological conditions in Jasper National Park support rebuilding caribou populations. Parks Canada has developed a proposal for a conservation breeding and augmentation project. Through this project, Parks Canada would:

- capture a small number of wild caribou,
- breed them in a protected facility,
- release young animals born in the facility into existing wild herds, and
- regularly assess outcomes and adapt management based on research and monitoring.

As a first step, the project proposes rebuilding the Tonquin herd to a minimum population of at least 200 animals. If this first goal is successful, then the possibility of reintroducing caribou in the Brazeau and Maligne herd will be explored, with the goal to reach populations of 300 to 400 caribou total across the Jasper-Banff Local Population Unit within 10 – 20 years after the first caribou are released.

Parks Canada's decision to move forward with a conservation breeding project will consider scientific research, feedback from Indigenous, stakeholder, and public consultation, the results of a detailed impact assessment, and discussions with provincial jurisdictions. A final decision on whether to proceed with this proposal is expected in Winter 2022.



## 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 2). See the original action plan for national Population and Distribution Objectives (where available) and General Information and Broad Park Approach for each species. A more detailed description of progress made towards the site-based population and distribution objectives for Whitebark Pine is outlined in Appendix A.

**Table 2. Progress towards achieving site-based population and distribution objectives for species at risk in Jasper National Park of Canada<sup>8</sup>.**

<b>Species</b>	<b>Site-based population &amp; distribution objectives</b>	<b>Population monitoring</b>	<b>Progress towards site-based population and distribution objectives</b>	<b>Progress (% achieved)</b>
Common Nighthawk	Maintain occupancy of Common Nighthawk at confirmed sites in appropriate habitat in JNP.	Report presence through incidental observations and nest protection measures (if required).	Occupancy was measured annually from 2017 to 2021 at four historically occupied grasslands using automated recording units. Data from 2017 to 2019 have been analyzed and all four sites were occupied annually. Data from 2019-2020 have not yet	80%

<sup>8</sup> 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.

			been analyzed, resulting in the 80% achievement rate of the objective.	
Haller's Apple Moss	Maintain or increase population sizes at both of JNP's existing locations.	Complete established population monitoring every 5 years.	Two of the ten known populations in Canada are located in Jasper National Park. Baseline monitoring was completed in 2011 and a revisit was completed in 2016. Both populations are stable. We will reduce the frequency of colony monitoring from 5 years to 10 years to reduce the risk of trampling damage.	100%
Little Brown Myotis  Northern Myotis	1. Maintain current spatial and temporal distribution.  2. Protect all known hibernacula and maternity roosts.	1. Use the North American Bat Monitoring Protocol (NABat) and opportunistic observations to identify significant bat locations in natural areas and human structures. Monitor these sites to detect changes.  2. Monitor bat use and hibernation activity in priority caves and mines using roost loggers.	Jasper participates in the NABat program to detect significant changes in bat populations due to the arrival of white-nose syndrome (WNS). Results from 2017 to 2021 indicate that WNS has not arrived in the park.  There is one confirmed hibernaculum, identified as critical habitat. As of winter 2022, the population in that cave remains stable with a minimum count of 700 bats.  Emergence counts conducted twice-annually at two maternity roosts indicate the roosts remain occupied.	100%

Whitebark Pine	To establish a self-sustaining, rust-resistant population of Whitebark Pine that demonstrates natural seed dispersal, connectivity, genetic diversity and adaptability to changing climate.	<ol style="list-style-type: none"> <li>1. Disease infection, stand density and mortality rate via stand health transects.</li> <li>2. Hectares of habitat created or restored.</li> <li>3. Number of potentially resistant trees identified and protected and number of these with stored seeds.</li> <li>4. If fire is applied, the amount of regeneration 5-years post-fire.</li> </ol>	<p>Whitebark Pine condition continues to decline. Blister rust infection rates increased from 2003 to 2019 and a mountain pine beetle outbreak impacted many whitebark pine stands. Restoration activities have been applied across the park such as identification, protection and seed collected from potentially rust resistant trees, and seedling planting.</p> <p>See Appendix A for details.</p>	3.4%
Woodland Caribou	For the Jasper/Banff National Park Local Population Unit to achieve stable to increasing numbers to a minimum of 100 animals (as defined in the Southern Mountain Caribou Recovery Strategy) as a step towards achieving self-sustaining local herds in which natural processes (dispersal, migration) can occur. Where caribou have been extirpated, examine opportunities for restoration.	Caribou population monitoring.	<p>Based on aerial surveys and scat analysis, in 2020 the population estimate for the Tonquin herd is 52 (49-55) and the Brazeau herd is estimated at fewer than 15 caribou. The number of breeding females in the Tonquin is very low (10 or fewer), which means the population is at a quasi-extinct level. The Brazeau is considered functionally extirpated.</p> <p>In the Jasper portion of the Jasper/Banff Local Population Unit, the Brazeau subpopulation is declining, the Maligne subpopulation has been extirpated and the Tonquin subpopulation is stable.</p>	30%






## 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 natural and cultural 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 MSAP for Jasper National Park, described as costs and benefits, are outlined below.

### Costs

The majority of the 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 Appendix B of the action plan (Recovery measures that will be conducted by Jasper National Park). The Caribou Recovery Program received \$38M to continue the detailed planning and implementation of the program which includes the design, construction and operation of the caribou conservation breeding facility located in Jasper. Implementation of the caribou conservation breeding project is dependent on the results of consultations with Indigenous partners, stakeholders, and the public and the results of the detailed impact assessment.



Costs incurred to stakeholders as a result of this action plan relate to closing large portions of the park during the winter season to prevent facilitated predator access and decrease predation risk to caribou. Costs include social impacts (i.e., recreation opportunities) and economic impacts (i.e., loss in income and/or increased costs for winter guides). Two backcountry lodge operators relinquished their licenses of occupation, thereby affecting winter and summer overnight roofed accommodation in the Tonquin Valley and reducing commercial horse access opportunities in the park. No other major socio-economic costs to stakeholders or Indigenous groups were reported as a result of this action plan.

Additional resources or partnerships were provided by the Whitebark Pine Ecosystem Foundation via their participation and support in the Conservation Standards Working Group for five-needle pine recovery in Canada. In addition, the Royal Alberta Museum partnered to monitor Haller's apple moss critical habitat and to help determine effective wildfire protection measures for our populations. The Alberta Bat Working Group (Alberta Biodiversity Monitoring Institute, Alberta Environment and Parks, University of Alberta and Parks Canada) provided support to effectively manage bat data across the province including Jasper National Park to support bat conservation. The Wildlife Conservation Society (Alberta Community Bat Program) worked with Jasper National Park to sample for bats at bridges to support early-detection of white-nose syndrome.

Indigenous partners worked alongside Parks Canada archaeologists as they conducted an Archaeological Impact Assessment of the proposed site for a caribou conservation breeding facility. Additionally, Indigenous partners have participated in three site visits to this proposed location to share Indigenous knowledge, issues, concerns, and potential mitigations for this site and the proposed conservation breeding project. During consultations on this project in 2022, Indigenous partners identified the importance of ceremonies being conducted prior to any work starting on the project. Parks Canada will facilitate these ceremonies.

Action plan measures were integrated into the operational management of Jasper National Park. These costs to Parks Canada were covered by prioritization of existing funds and salary dollars and did not result in additional costs to society. The action plan applies only to lands and waters in Jasper National Park, and did not bring any restrictions to land use outside the national park.



## Benefits

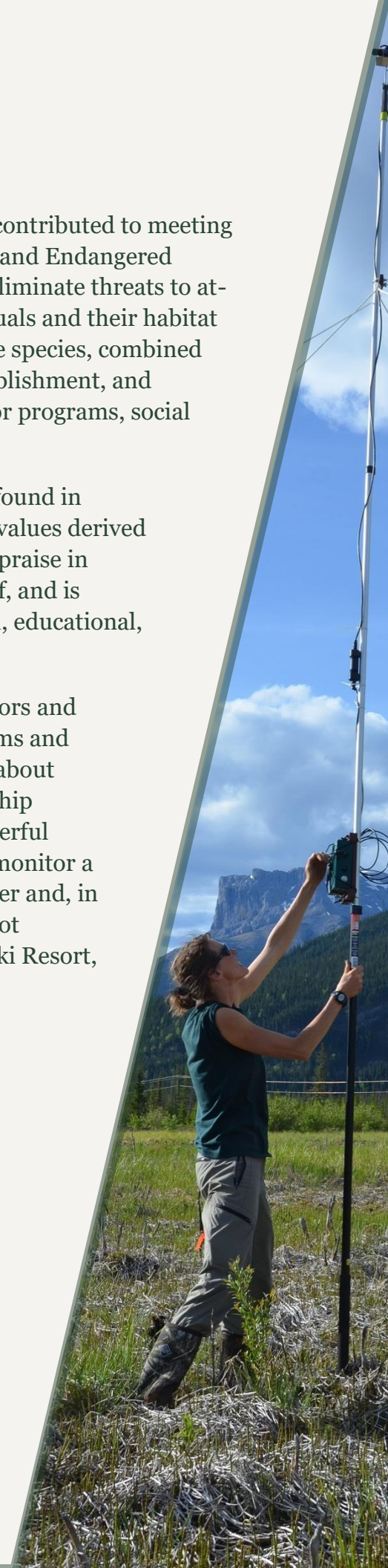
Measures presented in this action plan for Jasper National Park contributed to meeting recovery / population and distribution objectives for Threatened and Endangered species. The measures sought a balanced approach to reduce or eliminate threats to at-risk populations and habitats, and included protection of individuals and their habitat (e.g., restrictions to human activities within areas occupied by the species, combined with ongoing research and monitoring), potential species re-establishment, and increasing public awareness and stewardship (e.g., signage, visitor programs, social media outreach).

Potential economic benefits of the recovery of the species at risk found in Jasper National Park 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.

Implementing this action plan had positive benefits for park visitors and local residents. Through interpretive programming, annual forums and public consultation sessions, visitors and local residents learned about proposed caribou conservation breeding. The Palisades Stewardship Education Centre, located in Jasper National Park, provided powerful experiential learning opportunities for students. Students could monitor a bat maternity roost at the Centre via a live “bat camera” in summer and, in winter, travel into the alpine to visit Whitebark Pine at the Marmot Learning Centre which is a partnership between Marmot Basin Ski Resort, Parks Canada and the Grand Yellowhead Public School Division.

## Summary

The measures in the action plan had mostly 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 and stakeholder access to certain areas of the park during winter to protect Woodland Caribou. Benefits included positive impacts on park ecological integrity, greater awareness of species and enhanced opportunities for engagement of visitors, local communities and Indigenous partners.



# Appendix A: Technical Compendium - Population and Distribution Objectives

## Whitebark Pine

The following table supports the summary population and distribution progress statements in Table 2.

Species	Site-based population & distribution objectives	Population monitoring	Progress towards site-based population and distribution objectives	Progress (% achieved)
Whitebark Pine	To establish a self-sustaining, rust-resistant population of Whitebark Pine that demonstrates natural seed dispersal, connectivity, genetic diversity and adaptability to changing climate.	1. Disease infection, stand density and mortality rate via stand health transects.	1. Blister rust infection rates increased from 40% in 2003 to 44% in 2019; this rate remains moderate compared with most areas of whitebark pine habitat. Stand density of cone producing trees is 7.7 m <sup>2</sup> per hectare which is good (<2 m <sup>2</sup> is poor). This means that natural regeneration is still occurring.	0%
		2. Hectares of habitat created or restored.	2. We planted over 18,000 seedlings Since 2017, over 18,000 seedlings have been planted and more than 160,000 seeds collected. Based on recent restoration plans for similar areas, it is likely that 520,000 seedlings may be required to meet long-term objectives.	3.5%



		3. Number of potentially resistant trees identified and protected and number of these with stored seeds.	<p>244 potentially resistant trees have been identified and over 60 of these parent trees are in blister rust resistance testing programs. Early results found that 4 trees are not resistant and 1 tree has resistance. Progress is measured based on the Open Standards draft<sup>9</sup>.</p> <p>A mountain pine beetle outbreak from 2014 to 2019 affected more than half of the forested area of the Park, including in Whitebark Pine habitat. Pheromones were applied annually to protect high value trees. Monitoring<sup>10</sup> identified that this reduced mortality of these high value trees by 46% to 60%. While the treatment reduced mortality, it's estimated that more than 30% of mature unprotected Whitebark Pine trees were killed across at least 10 Whitebark Pine stands during the outbreak. Effective stand-level treatments to protect</p>	<p>10%</p> <p>0%</p>

<sup>9</sup> The Open Standards Whitebark and Limber Pine Working Group has drafted recommendations for the number of resistant trees needed for restoration in a region: good condition is > 10 confirmed resistant (elite) trees and > 100 parent trees, fair condition is 50-100 parents and 5-10 elite trees and poor condition is < 5 parent trees and < 5 elite trees. We measured progress our against “good condition”.

<sup>10</sup> Peer reviewed paper published on Canadian Journal of Forest Research:

<https://doi.org/10.1139/cjfr-2021-0120>

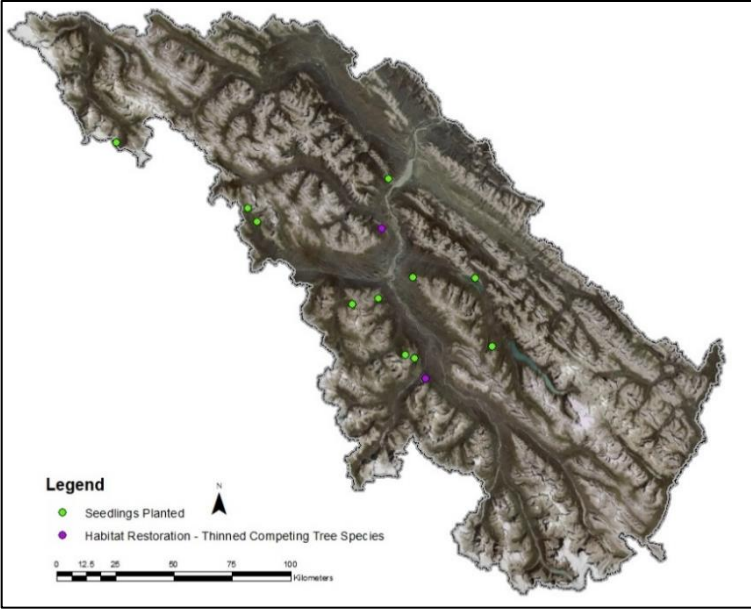
			against mountain pine beetle have not been developed.	
		4. If fire is applied, the amount of regeneration 5-years post-fire.	4. Fire has not yet been applied for Whitebark Pine restoration. Mechanical thinning has been completed in 1.6 hectares which is a small area relative to the amount of Whitebark Pine habitat.	<b>Not Reportable</b>

A monitoring program began in 2003 to measure the condition of Whitebark and Limber Pine in the Canadian Rocky and Columbia Mountains. Permanent plots from the Canada-United States border to the Willmore Wilderness in the north have been re-measured every 5-years. The data about blister rust infection levels, tree mortality and natural regeneration help direct restoration action across national parks, provincial parks, and Alberta and British Columbia provincial lands. While these data are important, Whitebark Pine is very slow-growing, and it will take many decades for this type of population monitoring to respond to restoration action such as seed collecting, seedling planting, or prescribed fire (Figure 1).

Since this action plan was written, restoration experts have identified goals to measure progress to meet population and distribution objectives for Whitebark Pine recovery<sup>11</sup>. The approach, which can be refined for a region, recommends a network of “component populations” that consist of >5,000 mature parent trees located within 12 km of another component population (within 30% of the species’ regional range). Given existing seedling survival estimates (~50%), roughly 10,000 putatively resistant seedlings should be planted in each component population. This approach synthesizes the best available datasets and science into a flexible, data-informed decision-making process that can be applied consistently across large geographic areas, and importantly, we can measure progress toward recovery. Moving forward, monitoring the condition of “component populations” may be identified as the approach to measure progress toward meeting population and distribution objectives.

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<sup>11</sup> Peer reviewed paper published on Forest Ecology and Management: <https://doi.org/10.1016/j.foreco.2022.120282>



**Figure 1.** Seedling planting sites (left) and cone collection (right) in Jasper National Park. Photo Credit: Parks Canada.