Parks Canada Parcs Canada

November 25, 2019

Dr. Mechtild Rössler
Director
World Heritage Centre
7, place de Fontenoy
75352 Paris 07 SP, France

Subject: **State of Conservation, Gros Morne National Park (Canada)**
Decision 42 COM 7B.73

Dear Dr. Rössler:

In response to the World Heritage Committee decision 42 COM 7B.73 with respect to Gros Morne National Park, please find attached a report on the state of conservation of this World Heritage site. I would also like to confirm that this report can be made available to the public through the State of Conservation Information System, as requested by the World Heritage Centre.

I look forward to receiving your confirmation that the report has been received in accordance with the December 1, 2019 deadline.

Yours sincerely,

Joélle Montminy
Vice President, Indigenous Affairs and Cultural Heritage, Parks Canada Agency
and
Head of Canadian Delegation to the World Heritage Committee

Attach.

cc: H.E. Élaine Ayotte, Ambassador and Permanent Delegate of Canada to UNESCO
Christina Komorski, Deputy Director for Specialized Agencies, United Nations Division, Global Affairs Canada
Sébastien Goupil, Secretary-General, Canadian Commission for UNESCO
Peter Shadie, Director of World Heritage Programme, IUCN

Canada

Geoff Hancock, Parks Canada Field Unit Superintendent, Western Newfoundland and Labrador Field Unit

State of Conservation Report
Gros Morne National Park
World Heritage Committee Decision 42 COM 7B.73

Gros Morne National Park (Canada) (N 419)

1. Executive Summary of the report

As per the World Heritage Committee decision (42 COM 7B.73), Canada has prepared a State of Conservation Report for Gros Morne National Park. The State Party representative, Parks Canada, is also the managing authority that is responsible for this World Heritage site. In preparing this report, Parks Canada has worked closely and consulted with the government of Newfoundland and Labrador, the Canadian province responsible for administering the lands outside the World Heritage site. The Western Newfoundland and Labrador Offshore Area, as it pertains to oil and gas, is subject to the *Canada–Newfoundland and Labrador Atlantic Accord Implementation Act*, and is therefore co-managed by the province and the federal government, through Natural Resources Canada. The Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) – the federal-provincial body that has a legislative mandate to administer oil and gas activities through the Atlantic Accord on behalf of both levels of government – has also participated in the preparation of this report. The report provides a paragraph-by-paragraph response to the World Heritage Committee decision.

Response to Paragraph 4: The pause on hydraulic fracturing in the Western Newfoundland and Labrador Offshore Area remains in place. Since the last State of Conservation Report, the government of Newfoundland and Labrador and Parks Canada have formalized their long-standing, collaborative and regulatory relationship with the establishment of a Federal-Provincial Land Use Committee regarding Gros Morne National Park and UNESCO World Heritage site.

Response to Paragraph 5: The province is not currently accepting applications that would involve hydraulic fracturing. The pause placed on hydraulic fracturing activity in November 2013 will not be lifted until the provincial government has completed a full assessment of the recommendations of the Newfoundland and Labrador Hydraulic Fracturing Review Panel.

Response to Paragraph 6: Any proposed offshore exploratory drilling in the Western Newfoundland Offshore Area would first be subject to a project-specific environmental impact review assessment, as well as a regulatory review by the C-NLOPB prior to receiving any authorization to drill.

Response to Paragraph 7: A Federal-Provincial Land Use Committee has been established to serve as a buffering mechanism that will afford Gros Morne National Park even greater consideration in regional land use management planning. Notwithstanding, Canada does not currently perceive a threat to the Outstanding Universal Value (OUV) of the World Heritage site as a result of potential hydraulic fracturing activity.

Response to Paragraph 8: There are no current calls for bids in the Western Newfoundland and Labrador Offshore Area. Parks Canada and the government of Newfoundland and Labrador are satisfied that the OUV of Gros Morne National Park was satisfactorily included in the last Strategic Environmental Assessment (SEA) review process. The C-NLOPB has therefore reiterated that the OUV of Gros Morne National Park will be a factor that must be addressed in any potential future requests for project-level environmental impact review assessments. The C-NLOPB has further committed to inviting Parks Canada to participate in the review of the next SEA update for the Western Newfoundland and Labrador Offshore Area.

Response to Paragraph 9: As the current pause on accepting applications involving hydraulic fracturing remains in place – and this has been identified in decision 42 COM 7B.73 as the impetus for a potential Reactive Monitoring Mission – it is the position of the State Party that a Reactive Monitoring Mission is not required.

2. Response to the World Heritage Committee

Response to paragraph 4:

Requests the State Party to ensure that long-term, substantive measures are introduced to prevent future oil and gas licences being awarded in the vicinity of the property as a matter of priority, and before the "pause" on hydraulic fracturing outside the property is lifted;

The pause on hydraulic fracturing in the Western Newfoundland and Labrador Offshore Area remains in place. Strategic Environmental Assessments (SEAs) conducted by the C-NLOPB are supplemented by rigorous project-level Environmental Assessments (EAs) for all project proposals. There are currently no licenses issued in the vicinity of Gros Morne National Park (the closest one is approximately 90 kilometers from the southern boundary of the park). The responsible provincial Minister will also not consider any applications that include hydraulic fracturing before the recommendations of the Newfoundland and Labrador Hydraulic Fracturing Review Panel (NLHFRP) are addressed.

Since the last State of Conservation Report (submitted in December 2017 in response to World Heritage Committee decision 40 COM 7B.94), the already robust regulatory regime that includes opportunity for Parks Canada to provide input on environmental assessment review processes for development proposals in the vicinity of the property, has been further enhanced. The government of Newfoundland and Labrador (manager of Crown lands surrounding Gros Morne National Park) and Parks Canada (manager of the national park and World Heritage site), have formalized their long-standing, collaborative and regulatory relationship with the establishment of a new Federal-Provincial Land Use Committee for Gros Morne National Park and UNESCO World Heritage site. The role of this Committee is to serve as a buffering mechanism to ensure the long-term protection of Gros Morne as a national park, and as a UNESCO World Heritage site. Through its Terms of Reference, the Federal-Provincial Land Use Committee for Gros Morne National Park (the Committee) will enable communication and cooperation between Parks Canada and relevant provincial departments in regard to potential resource extraction activities around Gros Morne National Park. The goal is to advance shared interests, including, but not limited to, ecosystem connectivity on the wider landscape and the maintenance of regional biodiversity. (See Appendix 1: Federal-Provincial Land Use Committee for Gros Morne National Park: Terms of Reference).

At minimum, the Committee will meet twice annually.

Response to paragraph 5:

Noting that the Newfoundland and Labrador Hydraulic Review Panel's recommendations were presented in May 2016, also requests the State Party to clarify when a full assessment of the recommendations will be completed, and submit the final analyses to the World Heritage Centre;

The province has indicated that it is not currently accepting applications that would involve hydraulic fracturing, and that the pause placed on hydraulic fracturing activity in November 2013 will not be

lifted until it has completed a full assessment of the recommendations of the Newfoundland and Labrador Hydraulic Fracturing Review Panel. Even if the pause were to be lifted, it would not necessarily mean that hydraulic fracturing would be proposed or permitted in the vicinity of the park. Any proposed activity would be subject to applicable regulatory review processes and environmental protection requirements, and would involve participation of the State Party.

Response to paragraph 6:

Also noting the potential negative impact on the property from hydrocarbon exploration in the Gulf of Saint Lawrence, further requests the State Party to ensure that any potential exploration licenses located in the Gulf of Saint Lawrence are subject to adequate safeguards and rigorous Environmental Impact Assessments (EIAs), in conformity with IUCN's World Heritage Advice Note on Environmental Assessment, with a specific section focusing on the potential impact of the project on the Outstanding Universal Value (OUV) of the property, and submit a copy to the World Heritage Centre for review by IUCN;

In its entirety, the Gulf of Saint Lawrence includes an area in excess of 250,000 km^2 and has a coastline measuring approximately 16,000 km in length. There are five provinces and numerous federal departments with management interests within the Gulf of Saint Lawrence, with only part of this area falling under the responsibility of the C-NLOPB. The scope of the SEA for the western portion of the Canada-Newfoundland and Labrador Offshore Area that was released by the C-NLOPB in April 2014 considered only a jurisdictional area of 36,000 km^2. Within this vast area, the coastline of Gros Morne occupies an approximate total length of 175 km – *i.e.,* <0.5% of the coast of the Gulf of St. Lawrence. (See Appendix 2: Map of Gulf of St. Lawrence, Including the Location of Gros Morne National Park). Therefore, neither the jurisdiction of park management, nor of the government of Newfoundland and Labrador, extends into the entirety of the Gulf of Saint Lawrence. While all offshore oil and gas industry activities in Canada are subject to rigorous environmental assessments and regulations, it would not be feasible, or necessary, for proposed activities across the entirety of such a vast, multi-jurisdictional area to be assessed with respect to potential impacts to Gros Morne's OUV.

At the request of the C-NLOPB, Parks Canada provided input at three distinct stages in the development of the 2014 SEA, which focuses on the offshore region relevant to Gros Morne National Park. The final 2014 SEA, which considered the impacts from potential offshore oil and gas industry activity in the marine environment adjacent to Gros Morne, included substantial detail on topics that directly or indirectly relate to the OUV and integrity of Gros Morne National Park as a World Heritage site. (These topics are enumerated in Paragraph 8). The SEA acknowledged that oil industry activity could affect the aesthetic value of protected areas such as Gros Morne and recognized stakeholder interest in pursuing mitigations to support the conservation of protected areas should development proceed, including the proximity and timing of oil industry activities.

As stated in the State of Conservation Report submitted in response to decision 40 COM 7B.94, the SEA is only the first step in Canada's tiered environmental assessment process. Updates to SEAs are public processes. The SEA outlines priorities for analysis within subsequent project-specific environmental assessments (EAs) for offshore oil and gas proposals. It is important to note that calls for nominations and calls for bids do not provide authority for any offshore activity to take place. Any proposed offshore exploratory drilling in the Western Newfoundland and Labrador Offshore

Area would first be subject to a project-specific environmental impact review assessment, or regional assessment, as well as a regulatory review by the C-NLOPB.

During project-level EAs, factors that were identified in the SEA process – including the OUV of Gros Morne National Park – would have to be considered. Where potential impacts could occur, appropriate mitigation measures would need to be identified.

Parks Canada has pledged to remain actively involved in EA review processes for any projects that are proposed in the vicinity of Gros Morne National Park, and in particular for any projects having a potential to impact the site's OUV and/or its ecological integrity. The C-NLOBP is currently not forecasting any calls for nominations or calls for bids in the Western Newfoundland and Labrador Offshore Area. However, should it come to pass that exploratory licence applications in the vicinity are to be accepted for review and consideration, the State Party commits to informing the World Heritage Centre that an EA review process is underway and to share any relevant information.

Response to paragraph 7:
Notes with appreciation that the State Party is developing measures towards formalizing protocols for interagency collaboration on resource extraction and land use management in areas adjacent to the property, and is also establishing a land-use advisory committee, but considers that the establishment of a buffer zone remains a key tool to ensure that the property will not be impacted by adverse developments such as future onshore and offshore oil and gas developments, and therefore requests furthermore to the State Party to establish an appropriate buffer zone as part of wider protection measures through transparent consultations with local communities and civil society;

A new Federal-Provincial Land Use Committee has been established to serve as a buffering mechanism that will afford Gros Morne National Park even greater consideration in regional land use management planning. Terms of Reference for the Committee (See Appendix 1) that place Gros Morne's OUV and its ecological integrity as a central focus of consideration are being used to guide this forum. Parks Canada and land managers for neighbouring areas under provincial jurisdiction will collaboratively assess any potential risks to the property's integrity and OUV, and ensure appropriate responses and courses of action are initiated. This relationship-based approach will afford the OUV of the property an appropriate, added level of protection.

The State Party, in consultation with the government of Newfoundland and Labrador, reiterates that the existing legislative and regulatory regime provides a sufficient and effective framework to ensure the protection of the property. There is a suite of federal and provincial legislation to manage resource extraction activities outside the property, and the *Canada National Parks Act* provides effective legal protection within it. Since the provincial government is not accepting proposals that involve hydraulic fracturing, and since there are currently no project proposals registered adjacent to the property, onshore or offshore, Canada does not currently consider the OUV of the World Heritage site to be at risk as a result of potential hydraulic fracturing activity.

It is to be noted that the government of Newfoundland and Labrador is also an active participant in the federally-led conservation initiative called Pathway to Canada Target 1, which aims to increase conserved lands and inland waters in Canada to 17% in efforts to meet commitments aligned with the Aichi Targets. This also addresses other international conservation targets regarding representation, connectivity, and effective management. Part of effective management of parks and

protected areas includes management strategies that ensure integration of conserved lands with the surrounding landscapes, which will be explored in the regional context of Western Newfoundland.

Response to paragraph 8:
Strongly encourages the State Party to provide input to the interim review of the Strategic Environmental Assessment (SEA) for the western portion of the Canada-Newfoundland and Labrador Offshore Area to consider the OUV of the property, particularly to review the threats of extractive industry;

The C-NLOPB's regulatory guidelines require that SEAs be updated at 10-year intervals, which was last completed in 2014 for the Western Newfoundland and Labrador Offshore Area. It has also been the practice of the C-NLOPB to review the SEA after five years to determine whether the nature of oil and gas industry activity in the area has changed to the extent that a further update is required in the case of the Western Newfoundland and Labrador Offshore Area. The C-NLOPB has stated that Parks Canada will be provided opportunity to be involved in any future SEA review processes for this area.

Opportunities for Gros Morne National Park management to contribute to the process that resulted in the 2014 SEA ensured that the document included considerable detail on topics that directly or indirectly relate to conservation of the property and consideration of its OUV as a World Heritage site. It was directly addressed in the following sections (see https://www.cnlopb.ca/sea/western/):

- 4.2.4 (p.286) indicates OUV is the basis of Gros Morne National Park's inscription as a World Heritage site;
- 4.3.6.5 (pp. 393-394) indicates that as a World Heritage site, Gros Morne National Park is an important economic driver in the region; and
- 5.4 (pp. 439-440) indicates that specific mitigations around protected areas would be a key consideration for future planning and restrictions or other measures may be required around protected areas.

Parks Canada's involvement in the development of the 2014 SEA for the Western Newfoundland and Labrador Offshore Area successfully ensured that Gros Morne National Park was recognized as a protected heritage area possessing Outstanding Universal Value and ecological integrity. As such, this is a factor that would have to be considered in any subsequent project-level environmental assessments for offshore oil and gas proposals in this area.

Parks Canada and the government of Newfoundland and Labrador will ensure that the OUV of Gros Morne National Park is fully considered in the next SEA review process for the Western Newfoundland portion of the Canada-Newfoundland and Labrador Offshore Area. Meanwhile, as envisioned in Canada's tiered environmental review processes, reliance on project-level EAs for evaluation of potential risks to OUV resulting from oil industry activities is considered adequate, especially in light of the absence of potential threats to OUV.

Further, as per the IUCN World Heritage Advice Note on Environmental Assessment, Parks Canada included a section specifically addressing the OUV of the World Heritage site in its Strategic Environmental Assessment for the 2019 Gros Morne National Park Management Plan, which is contained in Appendix 3. This assessment followed an approach that has been previously applied for other sites internationally with positive results. This approach is also being used to complete

Strategic Environmental Assessments as part of the management planning process for other natural World Heritage sites that are managed by Parks Canada. The Statement of OUV was broken into component parts, and subsequently:

(1) key examples of values or attributes were identified for each component;

(2) factors affecting those values or attributes were identified;

(3) high priority threats were evaluated; and

(4) management needs to address the highest priority threats were considered.

This assessment concluded that actions identified in the 2019 Gros Morne National Park Management Plan would be sufficient to address potential threats such that there would be no residual impacts on OUV.

In particular, **Key Strategy 1 – Protecting Treasured Landscapes,** Objective 1.6 states:

> *The Outstanding Universal Value upon which Gros Morne's World Heritage site inscription is based is protected and promoted. Further to this, targets associated to this strategy focus on the work of a Federal-Provincial Land Use Committee which meets twice a year to consider land use activities occurring both inside the park, and outside the boundary that may have an impact on the OUV of the park. In addition, a target to better define the scenic beauty of Gros Morne to ensure it is safeguarded has been included.*

Response to paragraph 9:

Also reiterates its request to the State Party to invite a joint World Heritage Centre/IUCN Reactive Monitoring mission to the property to assess the risks to the property's OUV of petroleum exploration in its vicinity, in case the "pause" on acceptance of such applications is discontinued without putting in place other appropriate measures for maintaining the OUV of the property;

The State Party notes the request by the World Heritage Committee to invite a joint World Heritage Centre/IUCN Reactive Monitoring mission to the property should the pause on hydraulic fracturing be lifted. As the current pause on accepting applications involving hydraulic fracturing remains in place, and this has been identified in decision 42 COM 7B.73 and previous Committee decisions as the impetus for a potential Reactive Monitoring Mission, it is the position of the State Party that a Reactive Monitoring Mission is not required. The creation of the Federal-Provincial Land Use Committee for Gros Morne National Park, a UNESCO World Heritage site, provides an additional, appropriate measure that will help to ensure protection for the OUV of the property. The State Party will continue to provide updates to the World Heritage Centre as new information becomes available or if there is any change in the pause on accepting applications for hydraulic fracturing activity around the property, and to work with the World Heritage Centre and IUCN to assess at that time if a Reactive Monitoring Mission is warranted.

3. Other current conservation issues identified by the State(s) Party(ies) which may have an impact on the property's Outstanding Universal Value

N/A

4. In conformity with Paragraph 172 of the *Operational Guidelines*, describe any potential major restorations, alterations and/or/new construction(s) intended within the property, the buffer zone(s) and/or corridors or other areas, where such developments may affect the Outstanding Universal Value of the property, including authenticity and integrity.

The Government of Canada has invested an estimated $148 million in Gros Morne National Park as part of broader initiatives by the Parks Canada Agency to address the need for infrastructure work within national historic sites, national parks and national marine conservation areas across Canada. The quality and reliability of visitor facilities in Gros Morne National Park have improved through infrastructure investments, allowing Canadians to discover their natural heritage. The investments include upgrades to trails, visitor facilities such as campgrounds and day use areas, as well as bridges and roadwork throughout the park. Through infrastructure investments, Parks Canada is protecting and conserving our national treasures for future generations.

Trails:

Many of Gros Morne National Park's trails, created decades ago, were in poor and deteriorating condition, resulting in concerns over public safety and the impact on visitor experience. Excessive erosion leading to sedimentation and trail braiding, was affecting the stability of some trails and thus the safety of visitors. Investments in trails will ensure the quality and reliability of visitor facilities, maintain and restore ecological integrity, and continue to allow Canadians to connect with nature.

Green Gardens, Gros Morne Mountain and Lookout Trail
Upgrades are continuing for three of the iconic trails in Gros Morne including ongoing work at Green Gardens, Gros Morne Mountain and the Lookout Trail. For each of these projects, Parks Canada has used the most up-to-date techniques for trail design, construction, and technology to create trails that are safer, more enjoyable, and more sustainable.

Western Brook Pond
In its December 2018 correspondence with the World Heritage Centre, Parks Canada outlined that investment in upgrading the trail at Western Brook Pond was considered a high priority based on its poor condition. The two-year project involved re-constructing the trail from Route 430 to Western Brook Pond, including a realignment, lowering of grades, and a hardening of trail surfaces. This investment has successfully addressed deferred maintenance issues, and resolved the known environmental issues that existed with the previous trail.

Gros Morne National Park has completed the construction phase of the overall project. The trail was reopened to the public in May, 2019. Recent responses from visitors have been positive and they have indicated an appreciation for improvements in accessibility. Vegetation restoration along the margins of the trail have been initiated. The installation and upgrade of interpretive features, rest areas and viewpoints to support the visitor experience needs for a broad range of visitors will continue in the coming years. This work will not have an impact on visitor use of the trail.

Visitor facilities:

Improvements have already been made to several visitor facilities in Gros Morne National Park including the Discovery Centre, Berry Hill Campground, and Green Point Campground. Reconstruction of the Mill Brook Day Use Area, which was damaged in a major flood in January 2018, is ongoing and is scheduled to reopen in 2020. Improvements are also being made to three

other campgrounds and day use areas at Lomond, Trout River and Shallow Bay. This has included replacing picnic tables and fire pits, and refurbishing service buildings such as showers and kitchen shelters.

In addition to the trail work carried out at Western Brook Pond, infrastructure work on other visitor use facilities associated with this location were necessary to address their deteriorating condition. This included expanding the solar powered washroom facilities and parking lot adjacent to Route 430; replacing the wharf on Western Brook Pond; and repair and replacement of the boathouse building envelope to better protect it from extreme winds.

Bridges and roadwork:

Roads that run adjacent to and through the property take people to the iconic places within the national park. With quality trails, roads, and facilities, Parks Canada is ensuring the safety of our visitors, while encouraging people to stay away from sensitive ecological areas. Certain maintenance techniques used along the highways that run through Gros Morne National Park have led to significant conservation gains. For example, culverts have been repaired or replaced in such a way to allow for fish and aquatic species to move through more easily.

This infrastructure work is in the final stages. The Strategic Environmental Assessment for the 2019 Gros Morne National Park Management Plan determined that these upgrades would result in conservation gains, and improve the outlook for long-term sustainability and visitor experience.

5. Public access to the State of Conservation Report

Canada authorizes the World Heritage Centre to publicly release this report.

6. Signature of the Authority

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Joëlle Montminy
Vice President, Indigenous Affairs and Cultural Heritage, Parks Canada
and
Head of the Canadian Delegation to the UNESCO World Heritage Committee

Appendices:

1. Terms of Reference: Federal-Provincial Land Use Committee for Gros Morne National Park, a UNESCO World Heritage site
2. Map of Gulf of St. Lawrence, Including the Location of Gros Morne National Park
3. Strategic Environmental Assessment Section, Gros Morne National Park Management Plan 2019

APPENDIX 1

Federal-Provincial Land Use Committee
for
Gros Morne National Park, a UNESCO World Heritage site

TERMS OF REFERENCE

Mandate
The Federal – Provincial Land Use Committee for Gros Morne National Park (the Committee) will enable communication and cooperation between federal and provincial departments in regard to activities in and around Gros Morne National Park with the goal of advancing shared interests, including but not limited to ecosystem connectivity and the maintenance of biodiversity.

Background
Gros Morne National Park, a UNESCO World Heritage Site, is recognized for its exceptional natural beauty and its illustration of geological processes. The Outstanding Universal Value (OUV) of Gros Morne National Park is the basis for its inscription as a World Heritage Site, and the long-term protection and maintenance of all elements that contribute to the OUV is of paramount importance to Gros Morne's conservation as a World Heritage Site.

UNESCO has highlighted that activities outside the boundary and adjacent to the national park could potentially impact the OUV of the park. Both levels of government have a longstanding history of working together to ensure the protection of Gros Morne, dating back to the establishment of the park in 1973. This terms of reference and the associated committee reinforces and solidifies this longstanding working relationship.

Objective
The Committee will increase intergovernmental communication and collaboration in support of the areas of shared interest, including: protection of the ecological integrity of Gros Morne National Park; maintenance of the park's Outstanding Universal Value as a World Heritage Site; maintenance of natural levels of landscape connectivity and conservation of ecosystems; and effective management of trans-boundary wildlife populations.

Principles
Through sharing expertise, information and perspectives, the Committee will advance common priorities and support the effective management of the park and the broader region.

The Committee recognizes the importance of identifying any potential negative impacts to the Outstanding Universal Value and ecological integrity of Gros Morne National Park as a result of activities occurring within and around the Park, and of mitigating these impacts.

The Committee understands the importance of Gros Morne National Park in supporting and bolstering the resilience of regional ecosystems, communities, and the economy.

Activities undertaken by the Committee will respect the existing jurisdictional roles and responsibilities, as well as the legislative authorities, of the federal and provincial agencies and regulators.

The Committee shall operate at the discretion of the Field Unit Superintendent for Gros Morne National Park and the Director, Land Management Division for the Province of Newfoundland and Labrador.

Committee Roles and Responsibilities

The Committee shall be co-chaired by the Director, Land Management Division for the Province of Newfoundland and Labrador and the Field Unit Superintendent for Gros Morne National Park who will be responsible for scheduling of meetings, identifying regular members and developing meeting agendas.

Regular members of the Committee from Gros Morne National Park will include:
the Resource Conservation Manager;
the park ecologist responsible for environmental impact assessment; and
the Partnering and Engagement Officer responsible for this file.

Regular members of the Committee from the province of Newfoundland and Labrador will include:
Regulatory Affairs (Energy Policy Section), Department of Natural Resources
Intergovernmental and Indigenous Affairs
Petroleum Engineering Division (Petroleum Development Section), Department of Natural Resources

Regular members will participate in meetings, propose agenda items and present information relevant to their areas of expertise or jurisdiction.

Under the guidance of the co-chairs, the Committee may also invite the participation of officials from other sectors or organisations as appropriate, to ensure an inclusive cross-sectional discussion on matters of shared interest. These participants will be asked to provide guidance and expertise on specific topics or to represent their respective jurisdictions or interests.

Committee Activities

The Committee will:

- Facilitate communication and cooperation between the Province of Newfoundland and Labrador, Parks Canada, and other relevant jurisdictions;
- Examine issues, legislation, and policies that may affect the Outstanding Universal Value and/or ecological integrity of Gros Morne National Park, a UNESCO World Heritage site;
- Work to ensure that the Outstanding Universal Value and ecological integrity of Gros Morne National Park are considered and addressed within larger regional planning frameworks. For example, in Strategic Environmental Assessment processes, in relevant project-specific Environmental Impact Assessment processes, and in relation to resource extractive activities occurring in proximity to the Park.
- Support land protection and planning efforts that maintain natural levels of connectivity and conserve biodiversity around the Park.
- Promote the effective management of species of interest, including invasive species;
- Support recovery efforts for federally or provincially listed species at risk;
- Support the effective implementation of relevant federal and provincial legislation;
- Support collaboration and sharing of expertise, best practices and resources among federal and provincial staff and departments;

- Help to facilitate Parks Canada's participation in environmental reviews and Impact Assessments for projects which could affect the Outstanding Universal Value or ecological integrity of Gros Morne National Park and World Heritage Site; and
- Seek, as appropriate, a common approach to achieve the Committee Mandate.

Meetings

The Committee shall convene in person or via teleconference two times per year. Additional meetings may be called by mutual agreement when deemed necessary by the co-chairs.

The Committee is not a decision making body, though participating departments may decide and agree, based on Committee discussions, to take certain actions to advance the objective of the Committee. The Committee shall seek consensus on actions and recommendations. Where consensus is not attained, all views will be clearly stated in the meeting minutes.

Parks Canada will provide administrative and logistical support to the Committee, including: the organization of bi-annual conference calls and meetings; developing meeting agendas in collaboration with the provincial co-chair; compiling minutes and records of decisions; and assisting in the organization of supplementary meetings or events as required to fulfill the mandate of the Committee.

Travel and Operating Costs

Parks Canada and the Province of Newfoundland and Labrador will support travel costs for their respective committee participants. Any additional travel expenses for individuals who are not supported by an organisation or stakeholder group, if first approved by Parks Canada, may be submitted to Parks Canada for reimbursement.

Appendix 1:

Definitions

Buffering Mechanism: While this term is not defined under the *Operational Guidelines for the Implementation of the World Heritage Convention*, for the purpose of this Terms of Reference, *buffering mechanisms* may best be described as mutually-agreed-upon conservation and management approaches that are integrated within their larger regional planning frameworks. As such, these mechanisms would contribute to enhancement of protection in the area surrounding Gros Morne National Park to ensure that land use planning and decision making takes into account the Outstanding Universal Value of Gros Morne National Park.

Ecological Integrity: With respect to Canada's national parks, ecological integrity refers to a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes.

Landscape Connectivity: Landscape connectivity can be defined as the degree to which the landscape facilitates or impedes the movement of organisms between resource patches. The goal is to maintain a natural level of structural landscape connectivity at a variety of temporal and spatial scales and for a range of terrestrial and aquatic species, as described in the Newfoundland and Labrador Provincial Sustainable Forest Management Strategy (2014-2024).

Outstanding Universal Value: According to the World Heritage Convention, Outstanding Universal Value (OUV) means "cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity". To be deemed to have Outstanding Universal Value, a property must demonstrate OUV under at least one of ten criteria, meet the conditions of integrity and/or authenticity, and must also have an adequate protection and management system to ensure it is safeguarded.

World Heritage Site: A World Heritage Site is a natural or cultural site that has Outstanding Universal Value and is inscribed on the World Heritage List by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage Committee. To be inscribed on the World Heritage List, sites must be of Outstanding Universal Value and meet at least one out of ten selection criteria. Other necessary elements are integrity and existence of a management framework. Gros Morne has been identified as having OUV under two criteria:

- Criterion (vii): contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance. Under this criterion, Gros Morne was recognised for being an area of exceptional natural beauty - an outstanding wilderness environment of spectacular landlocked, freshwater fjords and glacier-scoured headlands in an ocean setting.
- Criterion (viii): be outstanding examples representing major stages of earth's history, including the record of life, significant ongoing geological processes, in the development of landforms, or significant geomorphic or physiographic features. Under this criterion, Gros Morne was recognised for presenting an internationally significant illustration of the process of continental drift along the eastern coast of North America which contributes greatly to the body of knowledge and understanding of plate tectonics and the geological evolution of ancient mountain belts.

APPENDIX 2 – Map of Gulf of St. Lawrence, Including the Location of Gros Morne National Park

Gulf of St. Lawrence Boundary as described in *Limits of Oceans and Seas*, International Hydrographic Organization, 1953

APPENDIX 3 – Strategic Environmental Assessment of GMNP Management Plan

Strategic Environmental Assessment of Gros Morne National Park Management Plan

June 2019

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Summary

In accordance with the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals (2010), a strategic environmental assessment is conducted on all management plans. The purpose of strategic environmental assessment is to incorporate environmental considerations into the development of public policies, plans, and program proposals to support environmentally-sound decision making. Individual projects undertaken to implement management statement objectives at the site will be evaluated to determine if an impact assessment is required under the Canadian Environmental Assessment Act 2012, or successor legislation.

The scope of the assessment included the area within the boundary of Gros Morne National Park and considered influences from potential external local and regional stressors outside of the park. The time frame considered in the assessment was ten years from the date of the plan, at which time the plan will be reviewed. Valued components evaluated in the Strategic Environmental Assessment included marine and coastal habitat, Piping Plover, seabirds, freshwater, Atlantic Salmon, other salmonids, wetlands, forest vegetation, American Marten, Woodland Caribou, Arctic hare, Rock Ptarmigan, and alpine vegetation and terrain.

The management plan identifies various objectives to address cumulative effects to marine and coastal habitat, Atlantic Salmon, other salmonids, American Marten, Piping Plover, seabirds, Rock Ptarmigan and alpine vegetation. These include objectives for implementation of the Multi-species Action Plan (Objective 1.2) and consideration of climate change impacts (Objective 1.7). For fish, the management plan includes a target to achieve an increasing trend for the Trout River salmon population (Objective 1.3), and monitoring of salmonid populations and fisheries to improve the conservation of fish populations (Objective 1.3). For marine and coastal habitat, management approaches for marine resources within St. Paul's Inlet will be developed (Objective 2.4). Other mitigation strategies are identified in the Strategic Environmental Assessment as required. For alpine vegetation and terrain this includes planning to mitigate impacts from increasing visitation.

The forest ecosystem has been altered by hyper-abundant moose. Measures of forest health are improving with management of the moose population. For forest vegetation, Objective 1.1 identifies that the moose population will be actively managed for the purpose of maintaining or improving the ecological integrity of the forest ecosystem.

The Newfoundland population of Woodland Caribou has declined more than 60% since 2001, and is impacted by range-wide direct and indirect impacts from human activity. Objective 1.2 identifies that stressors affecting caribou will be researched and mitigations implemented where feasible. Other mitigations identified in the Strategic Environmental Assessment include collaboration with neighbouring land managers to prioritize conservation actions across caribou range through landscape planning.

For Arctic Hare, further information is needed on the factors influencing recent declines in the Gros Morne National Park population including predation, climate change, snowmobiling, and winter visitor access to determine effective management approaches. Objective 1.2 identifies a timeline for initiating research on the decline of the Arctic Hare population.

Parts of the Lomond River, Trout River and Eastern Arm watersheds in Gros Morne National Park originate outside the park in areas with forestry and cabin development. The Strategic Environmental Assessment identifies that these activities are predicted to be a low risk to freshwater quality in Gros Morne National Park over the next 10 years with continued management of these activities outside the

park. Within Gros Morne National Park, impacts from water use, discharge to the receiving environment, and recreational activities on water are expected to be minimal. The management plan identifies that a park-wide water quality measure will be added to Gros Morne National Park's ecological integrity monitoring program (Western Brook Pond Watershed Objective 1).

For wetlands, infrastructure footprint is not near a level where cumulative effects to wetland vegetation need to be considered, however project impact assessment will examine project design to minimize footprint and impacts to rare plants and communities.

The Strategic Environmental Assessment also considers the two Outstanding Universal Value criteria for which Gros Morne National Park was inscribed as a UNESCO World Heritage site in 1987, to ensure these are adequately protected by the management plan. Limited threats to the Outstanding Universal Value were identified. Objective 1.6 identifies targets for working collaboratively to manage potential impacts to Outstanding Universal Value, and for identifying options to define the natural beauty and aesthetic importance component of Gros Morne National Park's Outstanding Universal Value.

Indigenous partners, stakeholders and the public were consulted on the draft management plan and summary of the draft Strategic Environmental Assessment. Feedback has been considered and incorporated into the Strategic Environmental Assessment and management plan as appropriate.

Introduction

In accordance with The Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals (2010), a strategic environmental assessment (SEA) is conducted on all management plans. The purpose of SEA is to incorporate environmental considerations into the development of public policies, plans, and program proposals to support environmentally-sound decision making. Individual projects undertaken to implement management statement objectives at the site will be evaluated to determine if an impact assessment is required under the *Canadian Environmental Assessment Act 2012*, or successor legislation.

Management Plan

Future-oriented, strategic management of each national park, national marine conservation area, heritage canal and national historic sites administered by Parks Canada supports the Agency's vision:

"Canada's treasured natural and historic places will be a living legacy, connecting hearts and minds to a stronger, deeper understanding of the very essence of Canada."

The Gros Morne National Park Management Plan, once approved by the Minister responsible for Parks Canada and tabled in Parliament, ensures Parks Canada's accountability to Canadians, outlining how the management team of this national park will achieve measurable results in support of the Agency's mandate.

The management plan replaces the 2009 Management Plan for Gros Morne National Park. Parks Canada's many partners and stakeholders helped create this plan.

The plan sets clear, strategic direction for the management and operation of Gros Morne National Park (GMNP) over the next 10 years by articulating a vision, key strategies, and objectives. The plan builds on previous commitments and management plan objectives, furthering the achievements over the past 10 years and capitalizes on new opportunities in response to Agency priorities and standards.

Cumulative effects

Cumulative effects occur when multiple human activities and natural processes impact the same aspect of the environment. Cumulative effects within a national park may arise from infrastructure, activities and strategies within the park, pressures associated with visitation, climate change, and from sources originating outside of the park. Cumulative effects are best assessed and managed at a broader landscape scale rather than when each decision is made about an activity. As a result, Parks Canada assesses cumulative effects when preparing national park management plans to facilitate identifying strategic mitigations for cumulative effects, some of which will be included in the management plan.

This SEA and the cumulative effects assessment within it projects potential impacts over the next 10 years. Management of cumulative effects requires a deliberate and systematic multi-pronged approach, particularly for more complex cumulative effects. For example, vision, objectives, landscape planning,

impact assessment and research are some of the many tools that can be used to manage cumulative effects.

This SEA provides an overview of the methods used for assessment, a high level summary of the key aspects that are affecting Gros Morne National Park, and a summary of the cumulative effects and mitigations.

Methods

Methods will be described for the scoping of the assessment, the development of the expected changes for the next 10 years, and the effects assessment.

Scoping

The complexity of a large geographic region and many ecosystems, species, and activities requires a SEA methodology to ensure that key cumulative effects issues receive the appropriate attention. In order to achieve this goal, valued components (VCs) were selected and the appropriate level of analysis was identified for each VC. VCs include all measures in the ecological integrity (EI) monitoring program for the park. These measures have been selected to reflect key elements of the ecological integrity of the whole park and the objective of this analysis is to ensure the management plan identifies actions that are within Parks Canada's ability to implement over the next 10 years. VCs also include species at risk in the park because imperilled species are vulnerable to cumulative effects. However, some species at risk within GMNP are: 1) impacted by threats that cannot be controlled within the park or the threats do not exist at the site; 2) transient; or 3) representative of a very small part of the species' Canadian distribution. In these cases the park does not take specific management actions or measures beyond protection measures contained in the *Species at Risk Act* and maintenance of healthy, resilient ecosystems under the Canada National Parks Act. These species at risk were not included further in the analysis. VCs also include additional ecosystem components that may be impacted by cumulative activities inside or outside the park in the next 10 years. The assessment of the Outstanding Universal Value of Gros Morne as a World Heritage Site was undertaken separately and the methodology for this assessment can be found in the Outstanding Universal Value section.

The current status of each of the valued components was identified from the State of Park Assessment, where applicable (Table 1). VCs were also categorized by the contribution of the park to the management of the VC. For example, if more than 75% of the ecological unit of the VC is within the park, the park management plan will be very important to the management of cumulative effects on that VC. In these cases, detailed analysis is important to ensure cumulative effects are adequately addressed by the management plan. However, if the VC is being impacted by factors acting 100 km away, then the park management plan likely has minimal influence on the future of the VC and minimal or no further analysis is needed. The level of analysis was also determined by considering the potential for impacts over the next 10 years. If there is limited possibility of impacts to the VC over the next 10 years, minimal or no further analysis is necessary. On the other hand, if higher impacts could be expected in the next 10 years, a detailed analysis of the approach to managing cumulative effects is more warranted. Based on

these criteria, Table 1 identities the approach to analysis for each of the VCs. The freshwater VC was identified as requiring minimal analysis using the above approach, but given concerns from the public about potential influences of activities within and surrounding the park, it was decided that additional analysis would be beneficial. VCs were sometimes combined for analysis when the potential impacts or mitigations were similar and the VCs were ecologically related.

Table 1: Valued Components (VCs), their source, current status, and level of analysis in the SEA

Ecosystem	Valued Component (VC)	Source	Current Status	Level of analysis
Marine & Coastal	ocean and coastal habitat	Additional	Not currently assessed	Short analysis
	Piping Plover (*melodus* subspecies)	Species at risk	Conservation target reached over 2009-2013 COSEWIC: Endangered SARA: Endangered Nfld: Endangered	Short analysis
	seabirds	Non-EIMP* measure	Good, stable (2016)	Short analysis
Freshwater	freshwater	EIMP: *Stream hydrology, Stream thermal regime* Additional: water quality	*Stream thermal regime*: good, stable (2017) *Hydrology*: not rated Water quality: good, stable (2005)	Spatial analysis of watersheds with headwaters inside and outside the park
	Atlantic Salmon	EIMP measure: *Salmon counting fences*	Poor, stable (2017)	Short analysis
	fish – other salmonids	Additional	Unknown	Short analysis
	Beaver	EIMP: *inventory of active beaver colonies*	Good, stable (2017)	No analysis
	Harlequin Duck	EIMP: *Harlequin Duck abundance*	Good, stable (2017)	No analysis
Wetlands	wetlands	Additional	Not currently assessed	Spatial analysis of infrastructure and trail footprint in wetlands
Forest	forest vegetation	EIMP measures: *Advanced regeneration of balsam fir, understory woody plant diversity, regeneration of disturbed forest, Density of moose*	*Advanced regeneration of balsam fir:* fair, improving (2017) *Understory woody plant diversity:* good, improving (2017) *Regeneration of disturbed forest:* poor (2017) *Density of moose:* fair, improving (2017)	Spatial analysis of predicted restoration outcomes

Ecosystem	Valued Component (VC)	Source	Current Status	Level of analysis
	American Marten (Newfoundland pop.)	Species at risk	2017: Conservation target reached. Occupancy increased 77% since 2010 COSEWIC: Threatened SARA: Threatened Nfld: Threatened	Short analysis
	Birds	EIMP: *Forest bird biodiversity in winter*	Good	No analysis
Wetland / Forest / Alpine	Woodland Caribou (Newfoundland population)	Additional	Continued decline of regional population noted (2017). COSEWIC: Special Concern Nfld: Secure (2000)	Spatial analysis of caribou habitat inside and nearby the park
Alpine	Arctic Hare and Rock Ptarmigan	EIMP measures: *Arctic Hare population size, Rock Ptarmigan population size*	Arctic Hare: Poor, declining (2017) COSEWIC: Secure Nfld: Vulnerable / Sensitive Rock Ptarmigan: Good, declining (2017) COSEWIC: Not assessed	Short analysis
	alpine vegetation and terrain	EIMP: *Subtle vegetation change, Snowbed meltout phenology* Some additional components.	Unknown *Subtle vegetation change:* not rated *Snowbed meltout phenology:* good, stable	Spatial analysis of infrastructure and trail footprint in the alpine
	Herb Willow	EIMP: *Status of Herb Willow in late snowbeds*	Good	No analysis

* EIMP: ecological integrity monitoring program

Describing expected changes for next 10 years

Changes in the next 10 years may come from climate change, activities and development around the park, increased visitation, and key proposals in the park management plan. Information about these potential changes was gathered using: Parks Canada climate change model interpretation, provincial websites about land use proposals, expert opinion, visitation trend data, and park management proposals.

Effects assessment

For those VCs requiring a short analysis, the potential interactions with valued components were identified based on existing documents, and the trend was identified and summarized where there were cumulative effects predicted. For VCs where additional spatial analysis was warranted, the following analyses were undertaken:

- A watershed map was prepared to illustrate the various drainages in the park and to differentiate those with headwaters outside the park which are subject to external influences, and to illustrate those sources of potential impacts.
- Caribou range analysis was conducted to demonstrate caribou use in the park and surrounding region, for the purposes of identifying potential priorities for working beyond GMNP boundaries in collaboration with neighbours.
- Forest vegetation – a spatial representation of predicted improvements in forest vegetation condition was created.
- Infrastructure footprint analysis: a spatial analysis to consider potential expansion of existing infrastructure, to quantify impacts by ecosystem, and to determine if rare ecological classes are disproportionately impacted was carried out.

In a strategic environmental assessment, the mitigations identified need to be strategic, rather than detailed actions on the ground. In order to identify strategic mitigations for VCs, the current approach to managing cumulative effects and any gaps were identified. Effective management of very complex cumulative effects requires a suite of complementary mechanisms or tools. In national parks, these mechanisms include:

- Vision and objectives
- Land use and conservation planning
- Research
- Restoration
- Impact assessment
- Engagement, education and reporting
- Monitoring
- Regulation and enforcement

While simple cumulative effects situations may not require such a comprehensive approach, more complicated situations will likely require a multifaceted approach. Based on the analysis of current management tools and gaps, opportunities for improved management of cumulative effects were identified and included in the management plan or as mitigations in the SEA.

Expected changes for next 10 years

Climate change

The warming trend over the last century (0.9 ±0.37˚C) is projected to continue and model results indicate a further increase of 0.5 -3.5˚C by 2040 depending on the location within Gros Morne and representative concentration pathway (RCP) scenario. The trend of increasing total annual precipitation (~445 mm (45%) since 1933) is expected with an increase of up to 100 mm from 2011-2040. Relative increase in snow has been greater than that for rain. Today's "one in 100 year" rainfall event (i.e., 34.79 mm/hr) is projected to become a "one in 10-25 year" event and the future "one in 100 year" event is projected to increase to 47.43 mm/hr. A northward shift in storm track is expected to increase the storm frequency in the region (Loder et al., 2013). Relative sea level has increased in the region with an estimated vertical increase of 1 cm by 2030. By 2100, an increase of 14 to 36 cm is predicted. The growing season has already increased by 16 days since 1900 and will continue to increase 17 to 18 days from 2011-2040.

Activities and development outside the park

Activities and development outside the park that may influence aspects of the park's environment include industrial development activity such as forestry, mineral exploration, and associated roads. Use of recreational vehicles including snowmobiles and ATVs is widespread. Hunting and trapping are a source of impacts to wildlife but are also important for managing populations of introduced species such as moose and Snowshoe Hare. Outfitting operations are located within the greater park ecosystem. In the marine environment, sport and commercial fishing as well as aquaculture around the island of Newfoundland have the potential to impact park resources. Residential and commercial development near the park is focussed in eight adjacent communities. At a local level, there is incremental development in fish staging areas, as well as cabin development adjacent to the park boundary. In the next 10 years, these activities are expected to continue.

In November 2013, the provincial Minister of Natural Resources announced a pause in accepting applications involving hydraulic fracturing in Western Newfoundland. This is not a formal moratorium and the provincial government has not yet made an announcement on next steps regarding the future of hydraulic fracturing in Western Newfoundland. The primary recommendation in the Newfoundland and Labrador Hydraulic Fracturing Review Panel's final report is that the pause remain in effect while supplementary recommendations are implemented. If adopted in full by the province, there are 85 supplementary recommendations.

A future key consideration for park management are increases in traffic facilitated by road upgrades and greater connectivity of transportation networks (for example, the provincial proposal to establish a fixed link with Labrador). The establishment of a fixed link could significantly increase the traffic through Gros Morne National Park and increase regional visitation.

Increasing visitation

Gros Morne National Park is experiencing significant growth in visitation (Figure 1). The signature experience, the boat tour at Western Brook Pond, experienced 62% growth since 2014, with annual

visitation in 2018 around 39,000. Visitation at the Tablelands Trail has increased 169% since 2014, with annual visitation in 2018 by approximately 35,000 hikers.

GMNP continues to promote visitation, which is expected to continue during the life of this management plan. As an anchor tourism attraction in Newfoundland, the predicted growth in regional and provincial tourism will also serve to increase visitation in Gros Morne National Park.

Over the long term, the length of the shoulder season may increase as a result of climate change, potentially resulting in increased visitation.

Key Strategy 3 – *Revitalizing Visitor Experience* in the management plan identifies strategies to provide facilities and services that meet the needs of current and emerging target markets.

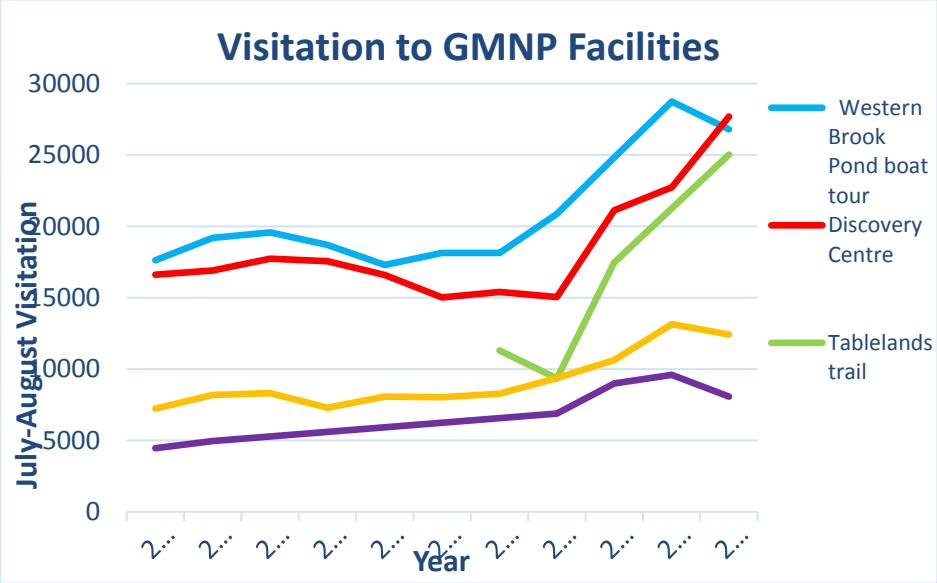

Figure 1: July and August visitation to key facilities and trails in Gros Morne National Park

Key Proposals in the Management Plan

The management plan identifies that a Trail Concept Plan will be implemented (Key Strategy 3), which will focus on an improved, sustainable trail network that appeals to a wide range of visitors.

Area management direction for Western Brook Pond Watershed and the Tablelands / Trout River Pond is provided in the management plan. Area management focuses on specific areas of GMNP that have complex management challenges including important natural and/or cultural values, high visitation, public interest, significant infrastructure, and multiple visitor experience opportunities.

Several minor amendments have been made to the GMNP Zoning Plan with the 2019 management plan to address such things as historical mapping errors; to zone some areas that were not identified in previous zoning plan; to include visitor nodes that were inadvertently omitted from previous zoning maps; and to expand a Zone 1 area based on new survey data about the rare plants it was intended to preserve.

Public and stakeholder engagement

Phase 1 of public, stakeholder and Indigenous engagement on the scoping of the management plan and discussion paper, "Building a Vision for the Future," took place from August 2018 – February 2019. Engagement included individual meetings with key stakeholders and partners, management roundtable discussions and public open houses, social media, and web content with online comment card. An area management workshop was held January 20-31, 2019 to engage stakeholders and key partners, including Indigenous groups and local communities, on the future management direction for the Western Brook Pond watershed, and the Tablelands – Trout River Pond area. Key topics that were identified in Phase 1 consultations and the area management workshop that were relevant to the SEA included ecological integrity, increasing visitation, climate change, land-use management and resource extraction adjacent to the park. The SEA includes analysis to address these issues. Preliminary results of the SEA will be made available during Phase II consultations on the draft management plan taking place during April and May 2019. Feedback received from the public, Indigenous partners, and stakeholders on the draft Management Plan and a draft of this SEA will be used to finalize the SEA and draw final conclusions.

Cumulative effects and strategic mitigation

Cumulative effects were analyzed for eleven valued components (Table 2). Strategic mitigations are discussed in the detailed explanation for each VC that follows.

Table 2: VCs, current status, and direction of potential pressures over next 10 years

Ecosystem	VC	Direction of Potential Pressures over the Next 10 Years		
		Climate Change	**External Development**	**Park activities and increased visitation**
Marine & Coastal	**ocean and coastal habitat**	Increased pressure	Increased pressure	Localized negative impacts to coastal habitat
Marine & Coastal	**Piping Plover (melodus subspecies)**	SARA aims to have stable or positive trend	SARA aims to have stable or positive trend	SARA aims to have stable or positive trend
Freshwater	**freshwater**	Increased pressure	Increased pressure	Not a major factor
	Atlantic Salmon	Increased pressure	Increased pressure	Increased pressure
	fish – other salmonids	Increased pressure	Not a major factor	Increased pressure

Ecosystem	VC	Direction of Potential Pressures over the Next 10 Years		
		Climate Change	**External Development**	**Park activities and increased visitation**
Wetlands	**wetlands**	Potential wetland expansion	Not a major factor	Not a major factor
Forest	**forest vegetation**	Increased pressure	Increased pressure	Improving trend
	American Marten (Newfoundland pop.)	Not a major factor SARA aims to have stable or positive trend.	Increased pressure. SARA aims to have stable or positive trend.	Increased pressure. SARA aims to have stable or positive trend.
Wetland / Forest / Alpine	**Woodland Caribou (Newfoundland population)**	Not a major factor	Increased pressure	Increased pressure
Alpine	**Arctic Hare and Rock Ptarmigan**	Increased pressure	Not a major factor	Increased pressure
	alpine vegetation and terrain	Increased pressure	Not a major factor	Increased pressure

Marine and coastal ecosystems

These ecosystems comprise a small portion (1.2%) of GMNP and are not monitored as part of the ecological integrity monitoring program (EIMP), though some key components of this ecosystem are monitored outside the framework of the EIMP. As most of the park boundary coincides with the ordinary low water mark (i.e. the “low tide line”), the marine component in particular is transboundary, largely falling outside the jurisdiction of GMNP, and subject to a variety of stressors including commercial and recreational fisheries, pollution, invasive species, and declining productivity and changes in abundance and distribution of aquatic species in warming waters. Coastal areas are subject to sea level rise and storm surges associated with climate change. Given the broad scale of stressors affecting the overall marine and coastal ecosystems, park management has little ability to change the stressors. However, at the scale of St. Paul's Inlet and route 430 along the shore of Bonne Bay, park management will be key. An approach for managing marine resources in this area has not yet been developed. The first step will be to assess the need for and develop management approaches for marine resources in St. Paul's Inlet over next 10 years. Managing infrastructure footprint in the coastal ecosystem and impacts from highway upgrades and adaptation to climate (Bonne Bay; e.g., armouring road embankments against storms) will be accomplished through project level IA.

Though the coastline of GMNP is long this ecosystem is essentially linear, so coastal habitat accounts for only a small proportion of GMNP. National park regulations such as prohibitions on all-terrain vehicles and free roaming pets mean that coastal ecosystems in GMNP are largely free of some stressors that occur outside of the park, such as ATV use on dunes and beaches and free roaming pets. Because coastal areas have been a focal point for human activity and visitation they (e.g. roads, wharves and boat launches, lighthouses) have a greater, though still small, proportional development footprint than other

ecosystems. Cumulative effects of increasing footprint in coastal ecosystems may need to be considered. Finer scale current mapping of the coastal vegetation units and footprint would allow project impact assessment to consider and minimize footprint in rarer vegetation classes and those that have a disproportionate development footprint. Further detail is provided in Appendix A.

Mitigations in Management Plan	
Vision and objectives	Objective 2.4: Assess the need for and develop management approaches for marine resources in St. Paul's Inlet over next 10 years
Mitigations in SEA	
Impact assessment	Project IAs will consider overall cumulative effects of increasing footprint in the coastal ecosystem unless finer scale and updated analysis demonstrates cumulative effects are not a concern. Project IAs will identify a project design that will minimize impacts to the coastal ecosystem.

Conclusion: The predicted trend for marine and coastal ecosystems is continued decline, however the development of a management approach for areas like St. Paul's Inlet within GMNP jurisdiction will contribute to conservation gains.

Piping Plover

Piping Plover did not occur in GMNP from 1975-2008, but 1-2 pairs nested there from 2009-2013; nesting has not occurred in the park since that time though individual Plovers were seen in 2014 and 2017. Two parcels of critical habitat have been identified in GMNP (Western Brook Beach and Shallow Bay Beach) and population and distribution objectives presented in the GMNP Multi-Species Action Plan and the Piping Plover Recovery Strategy were met from 2009-2013. The intent of mechanisms in place through SARA, including the protection of critical habitat and recovery measures, is to provide a coordinated approach in Canada that will be effective in mitigating impacts to the species in Canada, resulting in achieving the objectives.

Mitigations in Management Plan	
Species at risk protection and recovery targets	Objective 1.2: Recovery measures and approaches listed in the *Multi Species Action Plan for Gros Morne National Park of Canada* are fully implemented by 2021

Conclusion: Gros Morne's actions, including protection of two parcels of critical habitat, support the national recovery of Piping Plover. However there are many factors acting outside the park that influence whether Piping Plover return to the park as well as the park's ability to meet the national objectives.

Seabirds

Seabirds within GMNP include Common Eider, Common and Arctic Tern, Black-backed, Herring, and Ring-billed Gull, Black-legged Kittiwake, and Double-crested and Great Cormorant. Seabirds are impacted by warming ocean temperatures, sea-level rise, increases in the frequency and magnitude of storm surges, changing distribution of marine prey, and pollution in the marine environment, such as from

plastics. Nesting seabirds have been monitored regularly at Belldowns Island and Stearin Island since the 1970s, though these measures are not included in the Ecological Integrity Monitoring Program. In general, seabird populations in GMNP are healthy, and both species of cormorants began nesting in the park in 2008. Nesting terns were displaced from Belldowns Island and Stearin Island beginning the in 1980s by increasing gull populations, possibly due to high fish offal availability from the regional fishing industry (SOPR 2005). However terns are well known for their propensity to relocate colonies, and overall numbers of nesting pairs in the area (including on islands in St. Paul's Inlet) have remained stable, and terns have returned to Belldowns Island and Stearin Island. Common Eider nesting has increased on monitored islands, facilitated by building and installing nesting shelters that protect nests from gull predation. In 2017, regional partners initiated a pilot study to reduce plastic pollution in the marine environment by promoting disposal of plastic crab bait bags in the local landfill rather than at sea.

Conclusion: Although most stressors impacting seabirds are outside the control of GMNP, monitoring within the park contributes to understanding of the condition and trend of regional seabird populations.

Freshwater

Freshwater encompasses 8.8% of GMNP and the valued component discussed here is based on the thermal regime and hydrology measures in the EIMP, currently in good, stable condition and not rated respectively. Water quality is also a consideration for this valued component and will be added to the ecological integrity monitoring program by 2021. [Note that the EIMP for the freshwater ecosystem indicator also includes measures for Atlantic Salmon (see next VC), as well as Beaver and Harlequin Duck (no analysis beyond Table 1)]. Stressors are variable by watershed, depending on whether the headwaters originate in the park and direction of flow. Throughout the park, predicted longer term impacts of climate change on hydrology are predicted to include increased annual precipitation and a climate moisture index that is positive (wet) 70% of the time. In terms of thermal regime, the temperature of inland water is expected to increase (Olusanya and de Jong 2018). Water quality is predicted to be impacted by an exacerbation of the effects of long distance acid deposition, nutrient loading, and increased mercury toxicity (e.g., Michalak, 2016; Noyes et al., 2009). The Trout River, Lomond River and St. Paul's Inlet watersheds have sections that originate outside the park and thus are also subject to potential effects such as changes to run-off and contaminants from resource extraction activities (e.g., forestry) and other land uses (e.g., cabin development) outside the park. The western portion of the Eastern Arm (Deer Arm) watershed also drains from GMNP, whereas the eastern portion of this watershed originates in the Rocky Harbour / Norris Point enclave and is subject to various land uses including cabin development, domestic wood cutting, and ATV trail development. Within the park, potential sources of impacts to freshwater include water use, discharge to the receiving environment, and recreational activities on water.

Analysis

Within the park, impacts from water use, discharge to the receiving environment, and recreational activities on water are expected to be minimal. Specifically:

- Expanding road infrastructure (construction and maintenance) has the potential to impact water quality, for example through sedimentation and erosion, though upgrades may also mitigate

risks to freshwater by reducing the risk of washouts and erosion of road shoulders. Appropriate mitigations and monitoring as a part of project-level impact assessment are expected to mitigate this concern.

- With infrastructure for wastewater and sewage treatment that is right-sized to support the level of visitation, impacts to freshwater are avoided.

Within the Western Brook Pond watershed, potential impacts from the boat tour to the freshwater ecosystem are managed by ensuring that contracts with concessionaires and business licenses contain appropriate provisions to prevent and mitigate impacts, as well as through the provision of appropriate infrastructure for fuel storage and wastewater treatment. The freshwater ecosystem will continue to be monitored, including through existing measures within the ecological integrity monitoring program for Atlantic Salmon and Harlequin Duck, which include coverage in the Western Brook Pond watershed. Periodic monitoring of water quality and sediment contamination has also been conducted. The management plan identifies that a park-wide water quality monitoring program will be established, and that this will include Western Brook Pond. The management plan also indicates that monitoring for sediment contamination in Western Brook Pond will be conducted at 5-year intervals to evaluate management effectiveness (Western Brook Pond Watershed Objective 1). If lower emission alternatives such as electric and hybrid propulsion technologies are found to be feasible for the boat tour (Western Brook Pond Watershed Objective 3) this will also serve to further reduce the potential for freshwater impacts from hydrocarbons associated with boat tour operations.

Four major watersheds – Lomond River, Trout River, St. Paul's Inlet, and Eastern Arm – have large headwater areas outside of the park that are subject to various forms of development and land use (Figure 2). Within the St. Paul's Inlet watershed, there is little to no current land use activity that could impact freshwater, and no future changes predicted. Within the Lomond River and Trout River watersheds, forestry and cabin development are current activities that are expected to continue or expand over the next 10 years (Figure 2). Cabin development is also expected to continue to expand within the Eastern Arm (Deer Arm) watershed. Continued development of cabins along the shoreline of Eastern Arm Pond and throughout the area draining into the park raises concerns about proper treatment of wastewater, sediment runoff from ATV trails and cleared land, and other forms of land use. Standard forest management practices near waterbodies include protection of riparian areas and steep slopes (Government of Newfoundland and Labrador, 2014). These activities are most prevalent in the Trout River and Lomond River watersheds, and are predicted to be a low risk to freshwater quality in GMNP over the next 10 years with continued management of these activities outside the park.

The management plan and SEA identify the following strategies to mitigate impacts to freshwater in GMNP:

Mitigations in Management Plan	
Monitoring	Western Brook Pond Watershed Objective 1: - Park-wide target: As part of the park's ecological integrity monitoring program, a park-wide water quality measure will be established - Western Brook Pond target: Replicate the sediment contaminants study by 2021, and then again at 5 year intervals until no longer warranted, to evaluate management effectiveness.
Technology	Western Brook Pond Watershed Objective 3: Lower emission alternatives such as electric and hybrid propulsion technologies (including provision of an appropriate source of energy) are investigated by 2026 and, if feasible, incorporated into the boat tour License of Occupation when it is renewed in 2027.
Mitigations in SEA	
Collaboration	Collaboration with regional partners to ensure activities and developments (e.g., cabin development, forestry) do not impact the freshwater quality of Gros Morne. The target involving the Federal-Provincial land use advisory committee within Objective 1.6 of the management plan may contribute to this mitigation.
Research / Impact Assessment	Confirm wastewater and sewage infrastructure has sufficient capacity for anticipated visitation. Ensure any new infrastructure is designed to accommodate visitation growth projections.

Conclusion: no residual impacts to freshwater are expected with the implementation of the above mitigations.

Atlantic Salmon

This valued component is based on the salmonid counting fence measure in the EIMP, which measures returns of adult Atlantic Salmon in three rivers. This measure is in poor condition, primarily because the Trout River salmon run is critically imperilled. In general, wild salmon stocks in Newfoundland are declining (DFO 2018). Atlantic Salmon are subject to commercial harvest and sport fishing outside GMNP, and at-sea survival outside the park impacts the return of adults for spawning in GMNP. Sport fishing pressure on salmon in GMNP is expected to increase with visitation. Direct climate change impacts will likely include increasing inland water temperatures and possibly more intense storm runoff that can lead to channel instability and sedimentation.

There is a comprehensive approach for managing cumulative effects to Atlantic Salmon including management objectives, thresholds, and monitoring of three salmon runs as part of the Ecological Integrity Monitoring Program, and tools for regulation including the Parks Canada Fishing Regulations, as

well as temporary angling closures. However, there are gaps in our approach to managing cumulative effects. Mitigations to address these gaps will be developed as part of a regional Atlantic Salmon recovery project, and will include restoration, engagement, compliance, and enforcement components.

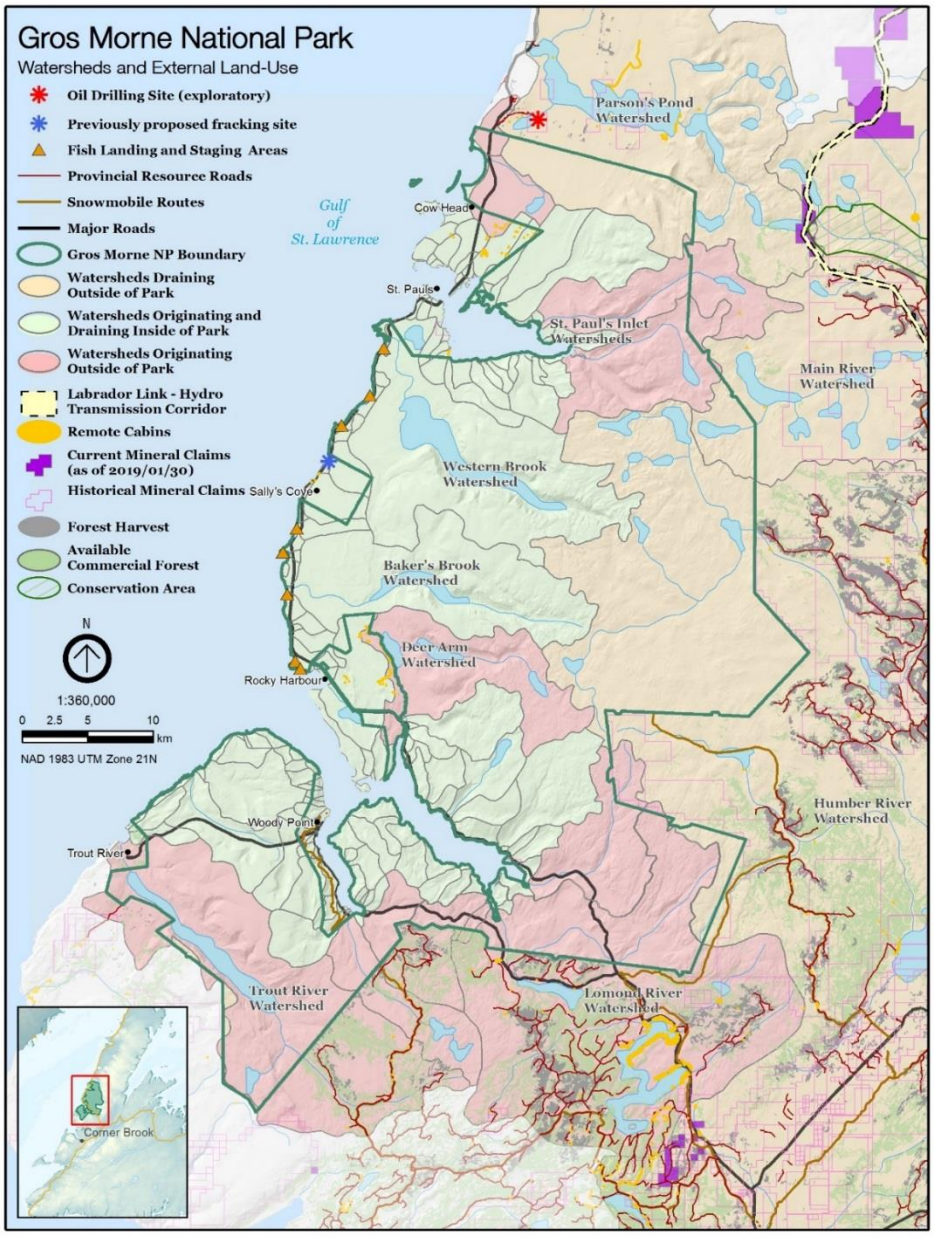

Figure 2: The watersheds of GMNP and surrounding land use activities. The Trout River, Lomond River, Eastern [Deer] Arm, and St. Paul's Inlet watersheds have headwater areas outside the park.

Mitigations in Management Plan	
Restoration	Objective 1.3: Trout River salmon population will show an increasing trend in the next State of Park Assessment. Approaches for recovery of this population will be developed as part of a regional Atlantic Salmon recovery project (CoRe).
Engagement	Tablelands / Trout River Pond Objective 1: The community of Trout River and other stakeholders are engaged in salmon restoration efforts

Conclusion: Although the return of adults for spawning in GMNP is largely beyond Parks Canada's control, impacts within the control of GMNP will be mitigated with the implementation of the above strategies.

Fish – salmonids

Fish species other than Atlantic Salmon are not currently monitored in GMNP. Fishing of salmonids (Atlantic Salmon, Brook Trout, Arctic Char) is regulated as per the *National Parks of Canada Fishing Regulations*. Data on populations and catch are lacking, and sport fishing pressure in GMNP is expected to increase with visitation. This includes trout angling, as well as ice-fishing including via snowmobile in the highlands. Lake fish in the alpine spend their full life cycle within the park, and are significant in that they are locally adapted and genetically distinct populations (Puissant et al 2005, Gomez-Uchida et al 2009, 2013).

Mechanisms are generally not in place to manage impacts to fish other than Atlantic Salmon. The management plan provides mitigations to address these gaps, outlined below.

Mitigations in Management Plan	
Objective 1.3 includes targets to improve the conservation of fish populations in Gros Morne National Park, including:	
Research Monitoring	Expand salmonid monitoring including integrating research and traditional ecological knowledge, so that by 2029 there is a better understanding of species distributions and impacts of angling.
Regulation	In consultation with stakeholders, identify representative and unique aquatic ecosystems in the national park and close them to fishing by 2024
Engagement Collaboration	Indigenous and regional partners, and local communities participate in conservation and stewardship of fish populations.

Conclusion: These mitigations provide a comprehensive approach to determining the current condition of and stressors on fish populations and adaptively managing cumulative effects.

Wetlands

Wetlands comprise 11% of GMNP and are not included in the EIMP. Predicted climate change impacts on wetlands are not well characterized, but a similar or higher climate moisture index may be expected to result in the expansion of some wetlands. The main sources of potential impacts within GMNP include

trail footprint and damage (abrasion of vegetation and surface disturbance) from snowmobile use when there is insufficient snow cover.

Analysis

Infrastructure footprint in the wetland ecosystems is not near a level where cumulative effects to wetland vegetation need to be considered. Overall, there is a below average proportion of developed footprint in wetlands (0.3% of the ecosystem, which represents approximately 44 hectares). The majority of footprint is in the *Sphagnum* bog class which is also the most abundant, resulting in approximately 0.5% footprint. One wetland class, sedge fen, has disproportionately more footprint (1.65%). Expansion of the development footprint within wetlands may need to consider strategies to limit expansion in the sedge fen class. Additional detail is provided in Appendix A. Project impact assessment will examine project design to minimize footprint and impacts to rare plants and communities.

Recapitalization of the Western Brook Pond trail has increased the footprint in peatlands but will also mitigate issues associated with the previous trail (erosion, poor drainage, altered pH due to use of limestone). Upgrades to other trails in park should reduce footprint in wetlands by relocating trails to dry ground.

Mitigation of potential impacts from snowmobile use in wetlands requires the establishment of thresholds for sufficient snow cover and monitoring of snow depth in areas of heavier use, to allow closures to be responsive to conditions (Jacques Whitford, 2007).

Some mechanisms for managing cumulative effects are in place, for example the Federal Wetland Policy, but there are gaps in the approach. Mitigations to address these gaps are identified in the table below.

Mitigations in Management Plan	
Monitoring	Objective 1.5 sets out targets for management of over-snow vehicle use. These include an expanded snowmobile research and monitoring program further addresses commitments made in response to the *Environmental Assessment of Snowmobile Use in Gros Morne National Park* (Jacques Whitford, 2007).
Mitigations in SEA	
Impact assessment	As cumulative effects are not expected, project IAs do not need to consider overall cumulative effects of increasing footprint in wetlands, unless sedge fens are being impacted. Project IAs should identify a project design that will minimize impacts to wetlands.
Regulation and enforcement	Regulation and enforcement options to prevent damage from snowmobile and illegal ATV use may be needed.

Conclusion: With the Implementation of mitigations, no residual impacts are predicted in wetlands.

Forest vegetation

The forest ecosystem comprises 44% of GMNP. This valued component is generally based on the forest indicator in the EIMP, which is rated fair and improving. The condition of forest vegetation is dependent on management of the moose population in the park. Vegetation damage from overbrowsing by moose has impacted the regeneration of forest following large scale insect disturbances and has subsequently changed normal forest succession, both inside and outside GMNP. Forest regeneration has been disturbed resulting in large areas with impaired regeneration with low stem densities, regeneration with alternate species, and regeneration failure with conversion to grasslands (Figure 3). Forest insect outbreaks occur cyclically, with Spruce Budworm, Hemlock Looper and Balsam fir Sawfly having caused the most disturbance in the past (Arsenault et al., 2016). An outbreak is forecast in the next 10 years and warmer winters are known to create favourable conditions for spruce budworm outbreaks (e.g., Gray, 2008). Moose browsing has also led to loss of woody plant diversity and opening of the understory in mature forest stands. Climate change impacts are predicted to include shifts in the composition and abundance of forest vegetation and advances of elevational tree lines over the longer term.

Analysis

Within the park, mechanisms for managing cumulative effects to forest are in place, as evidenced by the improving trend in forest condition resulting from the forest health program. Balsam fir advanced regeneration and the biodiversity of woody plants in the forest understory have both improved as the density of moose has been reduced. Continued improvements in measures of forest condition in the currently impaired areas (Figure 3) are predicted if the moose population continues to be actively managed to maintain the target density. Severely impacted sites may require silvicultural intervention to restore the expected trajectory for regeneration. If moose populations are not managed at target densities, future improvements in forest regeneration may be moderated by damage from a predicted outbreak of forest insects. Improving forest condition will contribute to gains for forest Species At Risk.

Infrastructure footprint in the forest ecosystems is not near a level where cumulative effects to forest vegetation need to be considered. Overall, there is a small proportion of developed footprint in forest (0.6% of the ecosystem, which represents approximately 592 hectares). Several forest vegetation classes have disproportionately more footprint (1.2-2.7%), including balsam fir-moss forest and balsam fir-white birch forest. Further detail is provided in Appendix A. Expansion of the development footprint within the forest ecosystem may need to consider strategies to limit expansion in the classes identified above. Project impact assessment will include examining project design to minimize footprint.

Mitigations for gaps in the comprehensive approach to managing cumulative effects to forest vegetation are identified in the table below.

Mitigations in Management Plan	
Restoration	Objective 1.1 identifies that the moose population will be actively managed at the target density that maintains or improves ecological integrity..
Mitigations in SEA	

Research	Other restoration measures may be considered, including silviculture. Research is needed on appropriate restoration techniques, for example, planting prescriptions that are appropriate for projected climatic conditions.
Impact assessment	As cumulative effects are not expected, project IAs do not need to consider overall cumulative effects of increasing footprint in the forest ecosystem. Project IAs should identify a project design that will minimize impacts to the forest ecosystem.

Conclusion: the condition of measures of forest health within GMNP's ecological integrity program are expected to improve or remain stable with the implementation of the above mitigations.

American Marten

Three parcels of critical habitat for this species-at-risk have been identified in GMNP and population objectives were established within the GMNP Multi-species Action Plan. Implementation of recovery measures has improved marten occupancy by 77% since 2012, and it is now widespread and regularly occurring outside areas that have been identified as critical habitat. Improvements are largely the result of an active program of regulation, education and enforcement regarding the mandatory use of snare wire that reduce accidental mortality of marten, and possibly also due to the spread of introduced species that serve as prey for marten. Over the life of the management plan, continued outreach on hare snaring regulations, compliance with regulations, and improvements in forest health through moose population management should contribute to improvements in status of marten and their forest habitat. Potential impacts of climate change on marten are not well understood, but are not expected to be a major factor in the next 10 years. However, increasing vehicle traffic within and near GMNP may lead to increased incidental mortality. To address this, more research is necessary to understand this risk and mitigation options. Snowmobiling is not believed to be a major source of impacts to marten, however monitoring marten response to snowmobile activity was recommended in the *Environmental Assessment of Snowmobile Use in Gros Morne National Park* (Jacques Whitford, 2007).

Mitigations in Management Plan	
Species at risk protection and recover targets	Objective 1.2: Recovery measures and approaches listed in the *Multi species Action Plan for Gros Morne National Park of Canada* (Parks Canada, 2014) are fully implemented by 2021
Monitoring	Objective 1.5 sets out targets for management of over-snow vehicle use. These include an expanded snowmobile research and monitoring program further addresses commitments made in response to the *Environmental Assessment of Snowmobile Use in Gros Morne National Park* (Jacques Whitford, 2007).
Mitigations in SEA	
Impact assessment Research	Mitigations related to highway upgrades and increasing traffic needed for marten.

Conclusion: It is expected that the above mitigation in combination with the adaptive management framework in place through SARA, including the protection of critical habitat and recovery measures, will be effective in mitigating impacts to the species, resulting in a stable or improving trend.

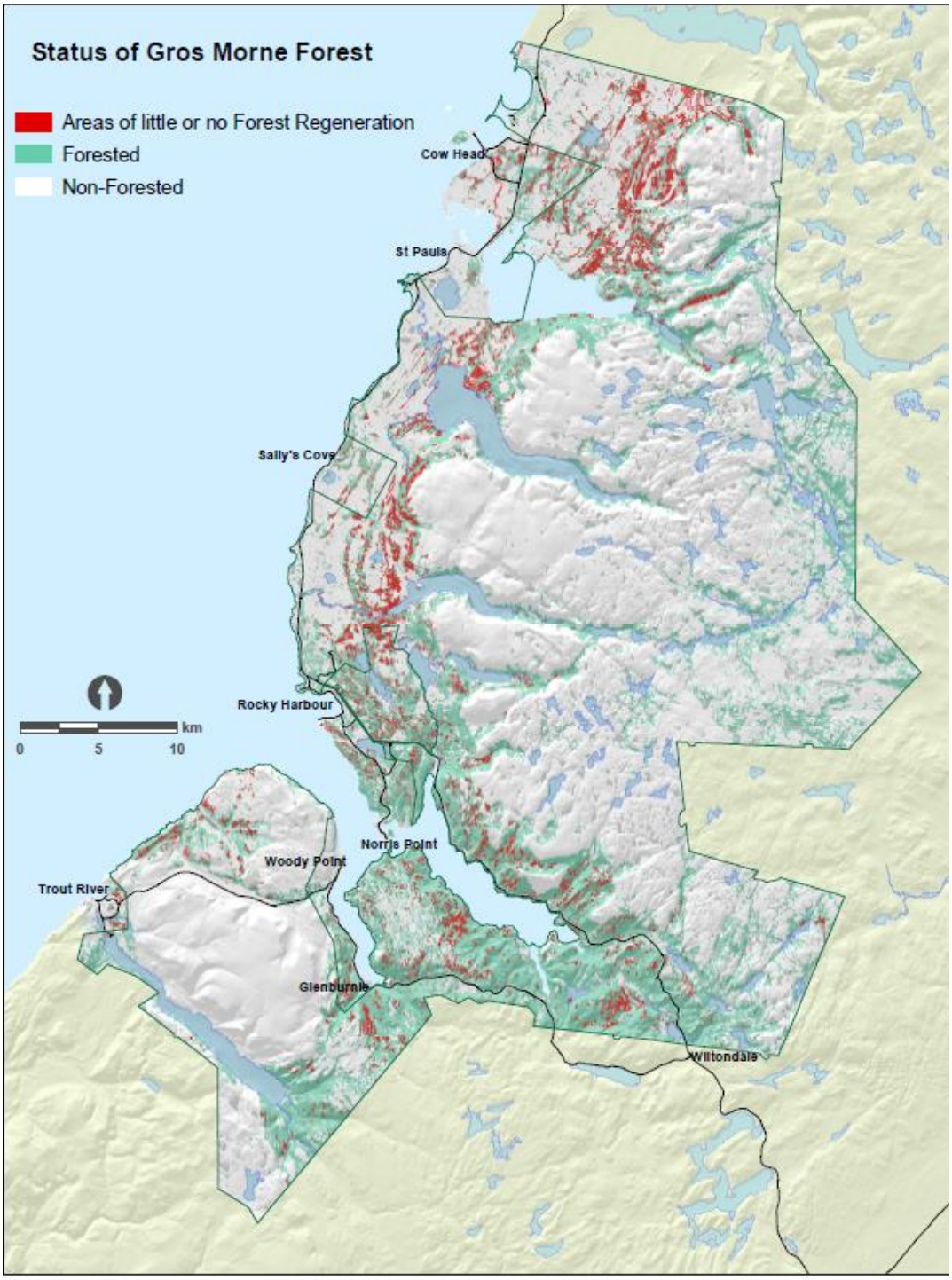

Figure 3: Status of regeneration in the forest ecosystem in GMNP. Area where regeneration is impaired (areas of little or no regeneration) is expected to decrease over the next 10 years through ongoing management of the moose population.

Woodland Caribou – Newfoundland population

This valued component is not part of the GMNP ecological integrity monitoring program, but uses most terrestrial ecosystems in the park. The Newfoundland population declined by ~60% from 2001-2013, with further declines since. This also applies to the caribou sub-populations found in GMNP, for which surveys carried out by the province suggest declines of 17-20% from 2012 to 2017. If conditions remain unchanged the population is predicted to decline ~5% annually (COSEWIC 2014). Caribou are impacted by range-wide direct and indirect impacts from human activity. External to GMNP, activities that may contribute to caribou disturbance and mortality, and that are expected to continue or increase for the next 10 years, are:

- industrial activity, e.g., forestry and associated roads, mining and quarrying
- other development near the park, e.g., cabins
- off-road vehicle traffic including snowmobiles
- highway traffic
- harvest in management areas adjacent to the park
- new or re-established predators (coyote and wolf) with the potential to significantly change predator-prey dynamics
- climate change impacts (e.g., changes in plant phenology and freezing events) may be a factor but are not well characterized

Analysis

Within GMNP, the level of linear disturbance (roads and utility corridors) is low relative to the region, however in winter, snowmobile traffic is high. Ongoing and possibly increasing highway mortality of caribou within and outside GMNP is expected to accompany increasing traffic volume, including on highways that pass through GMNP.

A framework for mitigating disturbance impacts to caribou is contained within the GMNP Snowmobile Management Plan, with additional mitigations (e.g., closures of caribou calving areas to snowmobile use) recommended in the *Environmental Assessment of Snowmobile Use in Gros Morne National Park* (Jacques Whitford, 2007). The 2019 management plan identifies that over-snow vehicle use will be managed to maintain ecological integrity and be compliant with the Snowmobile Management Plan (Objective 1.5).

Because caribou have a large transboundary range (Figure 4) with cumulative effects, management will require coordination across jurisdictions. This will be necessary for management planning resulting from a potential future SARA listing of the population. The following mitigations are identified to address the decline of Woodland Caribou:

Mitigations in Management Plan	
Research	Objective 1.2 identifies that stressors affecting caribou will be investigated and mitigations implemented where feasible, while working with partners
Monitoring	Objective 1.5 sets out targets for management of over-snow vehicle use. These include an expanded snowmobile research and monitoring program further addresses commitments made in response to the

	Environmental Assessment of Snowmobile Use in Gros Morne National Park (Jacques Whitford, 2007).
Mitigations in SEA	
Collaboration	- Significant collaboration with the province of Newfoundland and Labrador would be needed to affect change in the status of caribou - Landscape planning for caribou has been shown to be important across the country - A synthesis of available long-term data on caribou range and use of GMNP and surrounding area can contribute to landscape planning
Impact assessment Research	More information is needed to understand the risks of highway mortality and mitigation options for caribou in GMNP

Conclusion: Woodland Caribou are not part of the GMNP Multi Species Action Plan or EIMP, however Parks Canada's mandate includes maintenance and restoration of ecological integrity, and it is expected that efforts to restore forest health will benefit caribou. If population-wide conditions remain unchanged, COSEWIC predicts the continued decline of Woodland Caribou. The mitigations listed above are expected to contribute to conservation gains for caribou at the park and regional scale.

Arctic Hare and Rock Ptarmigan

This valued component is based on the Arctic Hare and Rock Ptarmigan measures in the Alpine indicator, which are both declining, and in poor and good condition respectively. The cause of the current very low density of Arctic Hare in GMNP is not known but stressors may include natural population cycles, increased predation by coyotes, climate factors (frequency and duration of icing events, snow depth and hardness, changes in vegetation patterns that decrease extent and quality of habitat) and disturbance (Newfoundland Species Status Advisory Committee, 2012). Rock Ptarmigan populations are known to be cyclic, peaking at approximately 10 year intervals, though the relative contributions of these regular fluctuations versus some longer term trend to the current population level is not known.

Analysis

Over the life of the management plan, these climate factors and disturbance are expected to continue to increase pressure on Arctic Hare and Rock Ptarmigan. Visitation in the highlands (snowshoeing, skiing, hiking, traverse experiences) may be a source of disturbance and is expected to increase over the life of the management plan. Snowmobiling in the highlands may displace animals and provide increased predator access via trails. The Snowmobile Management Plan is a mechanism for managing impacts to many VCs including Arctic Hare and Rock Ptarmigan that will be fully implemented over the life of the management plan. This is identified in Objective 1.5, and will provide for adaptive management that is responsive to research and changing circumstances. Forest restoration and management of the moose population is expected to increase food availability for Arctic Hare, which could potentially be a benefit to this species.

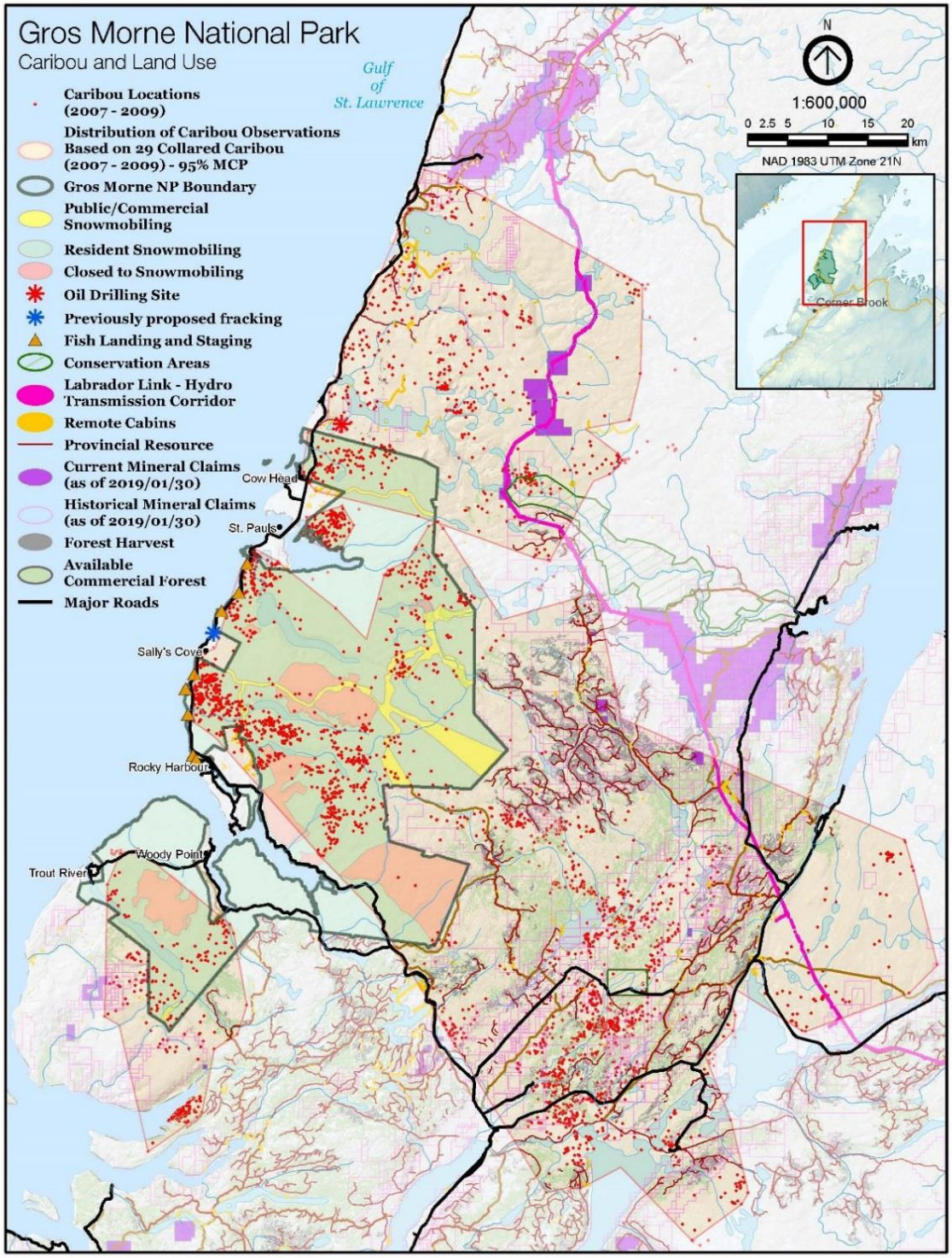

Figure 4: Figure 4: Locations of 29 collared Woodland Caribou in 2007-2009 within and near GMNP, and sources of disturbance outside GMNP. Areas where snowmobiling is permitted within GMNP are identified.

Mitigations in Management Plan	
Research and Monitoring	Objective 1.2: The population status of Arctic Hare is assessed bi-annually, and if warranted, research will be conducted to understand the impacts of potential stressors such as climate change, snowmobiling, and predation, and feasible mitigation measures implemented. Objective 1.5 sets out targets for management of over-snow vehicle use. These include an expanded snowmobile research and monitoring program further addresses commitments made in response to the *Environmental Assessment of Snowmobile Use in Gros Morne National Park* (Jacques Whitford, 2007).

Conclusion: Further research will provide the information needed to manage disturbance in the alpine / highlands if necessary. Until more is known about the role of disturbance in recent declines, it is not clear if management actions within GMNP will help to stabilize the Arctic Hare population. Rock Ptarmigan population status and trend will continue to be tracked through the EIMP, and this will guide any decision about a need for action related to this species.

Alpine vegetation and terrain

This valued component within the alpine / highlands ecosystem is not specifically captured in the EIMP, though there is a commitment to develop a retrospective remote sensing measure to assess large scale changes in vegetation cover. Concerns are focused primarily on visitation-related impacts on alpine traverse routes (Long Range Traverse, Northern Traverse), Gros Morne Mountain, and the hike up Western Brook Gorge, which are predicted to increase over the life of the management plan. Alpine ecosystems have vegetation and shallow soils that are sensitive to disturbance, and increasing visitation has caused localised trail braiding, erosion, and terrain disturbance, despite limits on visitor reservations for traverse experiences. Climate change is expected to result in changes in vegetation cover and plant community composition, moisture regime, and snowbed meltout, and snow depth and hardness. However, the EIMP does include measures of late snowbed phenology and the status of Herb Willow (a key arctic-alpine indicator plant) at snowbeds, and 11 years of monitoring data indicate that these measures are in good states of ecological integrity. There have been concerns about braiding and wildlife disturbance on the summit of Gros Morne Mountain (i.e. along the James Callaghan Trail), though some measures have already been taken to mitigate these impacts. The upper portion of the trail that traverses the summit of Gros Morne Mountain is closed to hikers in May and June, and dogs are prohibited from this section of trail. These measures are intended to reduce disturbance to nesting Rock Ptarmigan and caribou with newborn calves, as well as to protect wet, fragile soils on the summit.

Analysis

Management of timing and duration of the snowmobiling season is necessary to mitigate early/late season impacts to sensitive vegetation and terrain when the snowpack is insufficient. The Snowmobile Management Plan is a mechanism for managing impacts to many VCs, including alpine vegetation and

terrain, that will be fully implemented over the life of the management plan. This is identified in Objective 1.5, and will provide for adaptive management that is responsive to research and changing circumstances.

The alpine ecosystem has the lowest average proportion of developed footprint in GMNP (0.07% of the ecosystem; approximately 35 hectares). The majority of footprint is in the serpentine heath barrens class which is the second most abundant alpine class, resulting in approximately 0.3% footprint. Further detail is provided in Appendix A. Given the minimal level of development, there is no potential for cumulative effects to alpine vegetation from footprint. Project impact assessment will examine project design to minimize footprint and impacts to fine-scale sensitive terrain features and rare plants/communities.

In terms of impacts from trail and backcountry traverse use (disturbance of vegetation and soil, trail braiding and erosion), continued impacts are expected with stable or increasing visitation. Consideration will be given to trail capacity and landscape planning of alpine traverses. A strategy including mitigation of visitation-related impacts will be developed specifically for Western Brook Gorge (Western Brook Pond Watershed Objective 1). Mitigations to address these gaps are identified in the table below.

Mitigations in Management Plan	
Monitoring	Objective 1.5 sets out targets for management of over-snow vehicle use. These include an expanded snowmobile research and monitoring program further addresses commitments made in response to the *Environmental Assessment of Snowmobile Use in Gros Morne National Park* (Jacques Whitford, 2007).
Planning	Western Brook Pond Watershed Objective 1: A strategy to ensure the wilderness experience and mitigate potential impacts of visitation to Western Brook Gorge is initiated by 2021.
Mitigations in SEA	
Restoration	May be needed in localized areas (e.g., Western Brook Pond Gorge, Western Brook Pond look off and the summit of Gros Morne Mountain).
Planning	- Planning is needed to mitigate impacts from increasing visitation and trail braiding - VE Strategy should consider capacity of alpine trails, particularly the Long Range Traverse
Impact assessment	As cumulative effects are not expected, project IAs do not need to consider overall cumulative effects of increasing footprint in the alpine ecosystem. Project IAs should identify a project design that will minimize impacts to the alpine ecosystem.

Conclusion: With the implementation of the above mitigations, no residual impacts are expected to alpine vegetation and terrain.

Key Proposals in the Management Plan

Trails Concept Plan

The Trail Concept Plan will focus on an improved, sustainable trail network that appeals to a wide range of visitors. Trails tend to have minimal impacts when designed correctly; however trail construction and

use can impact vegetation and terrain and disturb wildlife. During development, the Trail Concept Plan will incorporate landscape planning considerations to mitigate impacts to sensitive habitats, species and timing windows. This includes consideration of cumulative effects on caribou, Arctic Hare, Rock Ptarmigan, and rare and sensitive vegetation species and communities.

Area management plans

The Western Brook Pond Watershed area management direction identifies the following as VCs within that area: freshwater, alpine, forest, and wetland ecosystems, geological features, salmonids, Harlequin Duck, Woodland Caribou, Arctic Hare, and Rock Ptarmigan. Key sources of potential environmental effects are identified as increasing visitation on trails, impacts to water and sediment in Western Brook Pond associated with the boat tour, and additional facilities for visitors (Table 3). Increased visitation may cause disturbance of caribou, Arctic Hare and Rock Ptarmigan; however, currently there is no evidence that there are local considerations that need to be addressed and as a result, the mitigations identified in the management plan and SEA are appropriate. Objective 1 specifically for Western Brook Pond Watershed in addition to other management plan and SEA mitigations will address impacts to water quality. Mitigations identified for various vegetation types in the SEA will mitigate cumulative effects to vegetation associated with trail development. No additional mitigations are required for this area concept.

Table 3: Objectives in the GMNP management plan for the Western Brook Pond Watershed (WBPW) that interact with VCs, and/or may require impact assessment

Objective	Target
WBPW 2	Trail rest stops and interpretive signage
WBPW 2	The loop trail, Snug Harbour and North Rim trails are returned to good condition with the crossing over Western Brook re-instated, subject to available funding
WBPW 3	Appropriate solutions for backcountry toilets and garbage management are investigated and priority areas identified in collaboration with third party operators by 2020.
WBPW 3	Lower emission alternatives such as electric and hybrid propulsion technologies (including provision of an appropriate source of energy) are investigated by 2026 and, if feasible, incorporated into the boat tour License of Occupation when it is renewed in 2027

The Tablelands / Trout River Pond area management direction identifies geological features (exposure of the earth's mantle and ancient ocean floor), freshwater, and Atlantic Salmon as VCs within that area. Both water and salmon are influenced by activities beyond the border of the park in this area. Within GMNP, key sources of potential environmental effects in this area are fishing and new visitor facilities and trails (Table 4). Impacts to freshwater can be addressed by project impact assessment and mitigations identified in the management plan and SEA. Impacts to Atlantic Salmon will be addressed by mitigations within management plan Objectives 1.2 and 1.3. Mitigations identified for various vegetation types in the SEA will mitigate cumulative effects to vegetation associated with trail development. No additional mitigations are required for this area concept.

Table 4: Objectives in the GMNP management plan for the Tablelands / Trout River Pond area that interact with VCs, and/or may require impact assessment

Objective	Target
T/TRP 1	Infrastructure to support the boat tour and day use area is developed for the Trout River Pond area by 2021
T/TRP 1	Wayfinding signage to facilitate navigation into and through the community of Trout River to Parks Canada's facilities is developed and installed by 2022
T/TRP 2	At the Tablelands trail, appropriate parking, a short accessible trail, washroom facilities and enhanced non-personal interpretation are provided, as resources permit.
T/TRP 2	Paved shoulders will be considered when Route 431 between the Discovery Centre and Trout River is recapitalized.

Zoning

Several minor amendments have been made to the GMNP zoning plan, including expansion of the Zone 1 area around Heather Pond to protect newly identified Mountain fern locations, and the application of zoning to estuaries. These amendments provide appropriate zoning and will have neutral to positive impacts on the ecological resources within these areas.

Outstanding Universal Value

Gros Morne National Park was inscribed on the World Heritage List under natural World Heritage criteria (vii) and (viii) in 1987. The retrospective Statement of Outstanding Universal Value for GMNP World Heritage Site was adopted by the World Heritage Committee at their July 2015 meeting in Decision: 39 COM 8E. Sites that are included on the World Heritage List are considered to be cultural and natural heritage places that are of outstanding interest on a global scale and therefore need to be conserved as part of the heritage of humanity as a whole. The Outstanding Universal Value (OUV) of a site is identified when it is inscribed on the World Heritage List. The OUV description for GMNP is included in Table 4.

Methods

To assess the impacts on the OUV, the following methodology was applied. First, the justification for inscription that describes the OUV of GMNP in broad terms was broken into elements or components that are measurable and can be more easily evaluated. This was accomplished using a method developed by World Heritage expert, Jon Day, which was employed for a similar evaluation of the Great Barrier Reef World Heritage Site and Wood Buffalo National Park World Heritage Site.

In the Great Barrier Reef case, the World Heritage value statements for properties are suggested to be "somewhat high level and nebulous, or (managers) do not understand how it might assist or help to prioritize their planning and management efforts" (Day, 2015). In order to make the World Heritage statements more assessable, the following method was used:

1) To "break the complex Statement of OUV into smaller more understandable components. This involved breaking down the full approved Statement text into smaller 'excerpts' for each of the natural criteria and integrity";

2) Sequentially to:
   a) "identify key examples of values or attributes against each Statement excerpt"

b) “identify the factors affecting those values”
c) “prioritize the highest priority threats”
d) “consider what are the priority management needs to address the highest priority threats”

The advantages to this approach are that it “helps them more readily identify the key values or attributes for their property and prioritize their management actions”, “helps to directly link the property’s values to management operations”, “clarifies the research priorities for the property” and “ensures that the committees themselves are focusing on the World Heritage values of the property when giving advice” (Day, 2015).

This methodology was used to break individual OUV criterion statements for GMNP into constituent elements. The results of the exercise are captured in a summary table (Table 4).

Second, once the key elements were identified using the methods described above, the focus shifted to determining the desired outcome(s) for each element. Desired outcomes provide benchmarks against which impacts can be measured. Finally, indicators or approaches to measuring if the desired outcomes were being achieved were identified. Table 4 summarizes the desired outcomes and current status of desired outcomes.

Key factors that may impact the OUV components were identified. Similar to other VCs in the cumulative effects analysis, a 10-year scenario for climate change, external development, and park activities was considered, taking the key factors and the 10-year management planning timeframe into account. Mitigations were identified as necessary, and residual effects after mitigation were identified.

Interpretation of OUV

Table 5: Elements of the Outstanding Universal Value (OUV) of Gros Morne National Park

Listing of Individual OUV components	Interpreted meaning	Desired Outcomes	Indicators and Current Condition and Trend
Criterion vii - Contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance			
GMNP Criterion vii – Gros Morne National Park, an outstanding wilderness environment of spectacular landlocked, freshwater fjords and glacier-scoured headlands in an ocean setting, is an area of exceptional natural beauty.			
Scenic value of: landlocked freshwater fjords , glacier scoured headlands, ocean setting, wilderness environment	The combination of these elements creates a landscape of high scenic value. Interpretation of scenic value to be determined.	1. Gros Morne continues to be a wilderness environment including landlocked, freshwater fjords and glacier-scoured headlands in an ocean setting. 2. Evidence of human intervention does not distract from the natural beauty.	Desired Outcome 1 1. Landlocked, freshwater fjords are present and intact (Qualitative): Very Good, Stable 2. Glacier scoured headlands are present and intact (Qualitative). Very Good, Stable 3. Zoning (Quantitative): The majority of the park is Zone II – Wilderness. 68% of GMNP is within Zone I (Special Preservation) plus Zone II (Wilderness). Very Good, Stable Desired Outcome 2 4. To be determined
Criterion viii - Outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features			
GMNP Criterion viii - The rocks of GMNP collectively present an internationally significant illustration of the process of continental drift along the eastern coast of North America and contribute greatly to the body of knowledge and understanding of plate tectonics and the geological evolution of ancient mountain belts. In glacier-scoured highlands and spectacular fjords, glaciation has made visible the park's many geological features.			
Elements: 1. rocks 2. landforms and topography ex. highlands, fjords Processes illustrated by the elements: 1. continental drift 2. evolution of ancient	Collectively the sequences of rocks that illustrate this geological evolution are represented by: an ancient continental crust composed of intensely metamorphosed granite and gneisses; a continental shelf with tropical carbonate sediments, containing abundant fossils; a continental slope of thick sequences of shales inter-bedded with limestone conglomerates, also with abundant fossils; a complete cross section of oceanic lithosphere including large exposures of mantle material; and significant sequences of volcanic rocks of oceanic origin.	The geology of GMNP (from the rock to landform/topography scale) is a significant illustration of the following processes: continental drift, evolution of mountain belts, and glaciation. The illustration is unique in terms of the clarity, expression and ease of access to the geological features.	Very Good, Stable. Geological features are in near-pristine condition in Gros Morne National Park (Statement of OUV 2015).

mountain belts 3. glaciation			

Effects and mitigations

Table 6: 10-year predictions, mitigations and residual impacts for OUV components

Indicators	Direction of Potential Impacts over the Next 10 Years			Mitigations	Residual Impacts after Mitigation
	Climate change	External development	Park activities and increased visitation		
Criterion vii					
1. landlocked freshwater fjords	No impact	No impact	No impact	No mitigations needed.	Not applicable.
2. glacier scoured headlands	No impact	No impact	No impact	No mitigations needed.	Not applicable.
3. wilderness	No impact	No impact	No impact	No mitigations needed.	Not applicable.
4. Indicator for scenic value – to be determined	No impact	Goals and management approach needs to be discussed with neighbouring land managers.	Area specific goals need to be discussed	Targets identified within Objective 1.6, see below.	No residual impacts.
Criterion viii					
Geological elements: **1. rocks** **2. landforms and topography ex. highlands, fjords** **Processes illustrated by the elements:** **1. continental drift** **2. evolution of ancient mountain belts** **3. glaciation**	Several natural processes occur over the long term, the rate and outcomes of which will be influenced by climate change: - Coastal erosion - Rising sea levels - processes of landscape change (ex. gravitational instability, heavy precipitation, frost heaving)	No impact	Rocks cuts and blasting from upgrades to Route 430 will result in localized impacts to rocks	In general, localized changes to visible rock cuts are not significant to the collective of geological elements which comprise the OUV (see Interpreted Meaning).	No residual impacts.

The interpreted OUV components resulting from designation under Criterion VIII are geological elements in GMNP, and the processes illustrated by the elements. In considering the desired outcome for these components, the clarity, expression and ease of access are key. Natural geomorphological processes are expected to continue to influence the rocks and landforms of GMNP over a very long time scale. Within the park and during the life of the management plan, rock cuts and blasting from the Route 430 upgrade

will result in localized impacts to rocks, and changes in the visible rock cuts. Localized changes to visible rock cuts are not significant to the collective of geological elements which comprise the OUV. Changes to visible rocks cuts may modify the expression of a feature, but will not impact the ease of access or the feature itself. There are no residual impacts predicted.

The interpreted OUV components resulting from designation under Criterion VII are scenic value, linked to landlocked freshwater fjords and glacier-scoured headlands, as well as the wilderness environment. Under Criterion VII, the natural beauty and aesthetic importance of the OUV has been recognized in the inscription, not ecosystem elements. No impacts to the intactness of the fjord and highland elements are expected, and the wilderness environment is assured by appropriate zoning. The majority of the park is designated Zone 1 (Special Preservation) plus Zone II (Wilderness), which will remain stable (Table 4). With regard to scenic values, collaborative discussion with regional stakeholders and neighbouring land managers will be needed to define indicators and desired outcomes. A collective interpretation of the scenic value component of the OUV and goals will allow for management approaches to be explored, and ensure that impacts to this component of OUV are mitigated. Objective 1.6 of the management plan provides for this with interagency collaboration, and an exploration of options for managing the scenic beauty of GMNP.

Among other opportunities for working collaboratively with partners, stakeholders, local residents, and neighbouring jurisdictions, these relationships will facilitate GMNP working beyond its borders for conservation gains within the park, and at a regional scale to better manage transboundary valued ecological components and stressors.

Mitigations in Management Plan	
Targets are identified within Objective 1.6	
Collaboration	A Federal-Provincial Land Use Committee meets at least once per year to consider land use activities occurring both inside the national park and outside its boundary that may have an impact on the Outstanding Universal Value of the national park
Research	Options to define the natural beauty and aesthetic importance component of Gros Morne National Park's Outstanding Universal Value as a World Heritage site are identified by 2024.

Conclusions

Climate Change

Climate change is expected to contribute to cumulative effects on valued ecological components in GMNP over the next 10 years. Some key impacts of concern are focussed in the alpine ecosystem. For example, climate factors including the frequency and duration of icing events, and changes in vegetation patterns that decrease extent and quality of habitat may have a role in the current poor and declining condition of Arctic Hare and Rock Ptarmigan populations in the park. Responsiveness to climate factors will continue to be key in consideration of seasonal closures for snowmobiling. Predicted future climate

and the long-term implications for ecosystems will also be a consideration when planning for successful restoration (for example, the use of planting prescriptions and silviculture may be considered in the recovering forest ecosystem). Objective 1.7 identifies targets for incorporating climate change research into park management decisions. All targets are relevant to VCs in the SEA:

Mitigations in Management Plan	
Monitoring	The ecological integrity monitoring program is evaluated by 2024 to determine if adjustments are required to understand effects of climate change on the park's ecosystems.
Research **Collaboration**	Ecological resources and archaeological sites will be assessed in terms of vulnerability and risk to climate change impacts by 2029. Research partnerships with Indigenous partners, Environment and Climate Change Canada, Fisheries and Oceans Canada, Natural Resources Canada, and academic institutions are expanded to increase understanding of climate change impacts on coastal, marine and terrestrial ecosystems.
Planning **Impact assessment**	Climate change knowledge and projections are incorporated into operational plans (e.g., asset investments, fire management, hyper-abundant species, species at risk, etc.) and impact assessments.

As a "natural solution" to climate change, Gros Morne will:

- Contribute to natural carbon dynamics, including the sequestration and storage of carbon in ecosystems;
- Protect biodiversity by providing healthy, resilient ecosystems that serve as a safe haven for species;
- Enhance connectivity and species movements within and across protected area networks;
- Provide essential ecosystem goods and services, such as clean water, erosion control; flood/storm water protection, genetic diversity, cultural opportunities, etc.;
- Serve as a benchmark for climate change related research and monitoring;
- Provide a context for social learning, good governance, and adaptive management;
- Help people and communities cope by supporting sustainable and resilient economies in and around protected areas and promoting social well-being (e.g., healthy parks – healthy people);
- Demonstrate environmental stewardship through "green" design and conservation practices; and,
- Create and facilitate meaningful experiences that help to inspire, inform, and guide actions in response to climate change.

Increased Visitation

Increased visitation was analyzed throughout the SEA when it contributed to impacts to VCs. In summary, given predictions of increased visitation, the major impact pathways from increasing visitation are:

- Wildlife disturbance

    - Increasing visitation is likely to increase disturbance to wildlife (e.g., caribou, Arctic Hare and Rock Ptarmigan) depending on the timing, location, and type and level of activity. Managing the overall disturbance regime will be key. For terrestrial species of conservation concern, targets for snowmobile management within Objective 1.5 provide for mitigation of snowmobile disturbance impacts. The Trail Concept Plan and other infrastructure proposals will incorporate landscape planning considerations to mitigate impacts to sensitive habitats, species and timing windows. A Strategic Environmental Assessment will be completed for the Trail Concept Plan.
- Wildlife mortality
    - Increasing regional traffic and park visitation are expected to increase the volume of highway traffic, potentially leading a higher incidence of wildlife mortality from vehicle collisions. This is of particular concern for caribou and marten. The key approach will involve research to better understand the risks of highway mortality and mitigation options for vulnerable species (e.g., caribou and marten) in GMNP.
    - Increasing visitation could lead to increased fish mortality from increasing sport fishing and poaching. The key approaches will focus on monitoring, research, and enforcement to ensure that appropriate limits on harvest rates are implemented to improve the conservation of fish populations (Objective 1.3).
- Habitat fragmentation surrounding the park resulting from increased development to support visitors
    - Increasing visitation could drive development near the park, resulting in increasing habitat loss and fragmentation and potential impacts to caribou and marten. See next section.

Working in Collaboration with Neighbours

Several opportunities for working collaboratively with GMNP's neighbours have been identified in the park management plan. These collaborations with partners, stakeholders, local residents, and neighbouring jurisdictions facilitate GMNP working beyond its borders for conservation gains within the park and at a regional scale to better manage transboundary valued ecological components and stressors. Such collaborations will be critical for maintaining and improving connectivity of habitat between GMNP and the surrounding area. Habitat loss and fragmentation is one of the greatest threats to biodiversity worldwide and in Canada (National Advisory Panel 2018). In the context of climate change, ecological connectivity is all the more important to enable species range shifts in response to changing conditions.

Priorities for maintaining and improving connectivity will be explored and developed through collaboration. Opportunities for collaboration include:

- Indigenous partners and local communities participate in species protection and recovery programs (Objective 1.2)
- Indigenous and regional partners, and local communities participate in conservation and stewardship of fish populations (Objective 1.3)
- A Federal-Provincial land use advisory committee meets at least once per year to consider land use activities occurring both inside the national park and outside its boundary that may have an impact on the Outstanding Universal Value of the national park. (Objective 1.6)

- Research partnerships with Indigenous partners, Environment and Climate Change Canada, Fisheries and Oceans Canada, Natural Resources Canada, and academic institutions are expanded to increase understanding of climate change impacts on coastal, marine and terrestrial ecosystems (Objective 1.7).
- Increased opportunities for dialogue about the impacts of land use adjacent to national park boundaries lead to greater stakeholder collaboration (Objective 2.4).

Federal Sustainable Development Strategy Connections

The Federal Sustainable Development Strategy (FSDS) is federal government's primary vehicle for sustainable development planning and reporting. It sets out the government's sustainable development priorities, establishes goals and targets, and identifies actions to achieve them.

The proposed Management Plan, implemented in conjunction with the recommendations within this SEA report, is anticipated to have a positive contribution to multiple FSDS goals. Those are identified below with the corresponding management plan objective.

Table 7: Connections between FSDS goals and the 2019 GMNP management plan

2016-2019 FSDS Goal	Management Plan
Effective action on climate change	Objective 1.7 contains targets that support research, monitoring and translating science into action.
Greening government	Objective 1.8 contains targets for reducing carbon emissions, improved waste management, and increased energy efficiency
Modern and resilient infrastructure	Objective 1.7 contains a target for investment in infrastructure that is resilient to climate change
Pristine lakes and rivers	Objective 1 (Western Brook Pond Watershed) contains a target for development of a park-wide water quality monitoring program
Sustainably managed lands and forests	Objective 1.1 contains targets for maintaining or improving the ecological integrity of the forest ecosystem
Healthy wildlife populations	Objective 1.2 contains targets for species at risk and species of conservation concern
Connecting Canadians with nature	Key Strategy 3 contains objectives and targets for enhancing programs and services for visitors

The SEA was focused on cumulative effects. It reviewed the potential cumulative effects from climate change, increased visitation, development activities around the park, park proposals, and the proposed management plan on various valued components including: ocean and coastal habitat, Piping Plover, freshwater, Atlantic Salmon, other fish species, wetlands, forest vegetation, American Marten, Woodland Caribou, Arctic Hare and Rock Ptarmigan, alpine vegetation and terrain, freshwater, forest vegetation, American Marten and Woodland Caribou. The SEA also considers the two Outstanding Universal Value criteria for which Gros Morne National Park was inscribed as a UNESCO World Heritage Site in 1987 to ensure these are adequately protected by the Management Plan.

The public, stakeholders and Indigenous partners will be consulted on the draft management plan and draft SEA. Feedback will be considered and incorporated into the SEA and management plan as appropriate. This process will be used to finalize the SEA and draw final conclusions.

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Appendix A: Footprint Analysis

Method

This analysis of development footprint within vegetation classes in GMNP is based on the Gros Morne National Park Biophysical Resource Inventory (1975) and the 2019 development footprint spatial data for GMNP. Vegetation changes are expected to have occurred since 1975. Therefore, this is a coarse level of analysis and further analysis of updated mapping would be needed to refine estimates particularly for less abundant vegetation classes.

Where footprint occupies >1% of a vegetation class, those classes are identified below. Some expansion of existing footprint is expected over the 10-year life of the management plan. To illustrate the outcomes of footprint expansion, the existing 2019 footprint by vegetation class was multiplied by a factor of 1.5 which was selected as a large overestimate of predicted expansion. Where the theoretical expansion resulted in >1% footprint in additional vegetation classes, those are also identified below.

Results

In general, development footprint is minimal in GMNP, representing 0.39% of vegetated area. The footprint analysis below is subdivided by major ecosystems.

Forest

Forest vegetation classes include:

- Balsam fir – herb forest
- Balsam fir – herb virgin forest
- Balsam fir – moss forest
- Balsam fir – regeneration scrub
- Balsam fir – white birch forest
- Balsam fir – white birch forest on talus slopes
- Black spruce – *Sphagnum* forest
- Upland tuckamoor

Forest ecosystems are the most abundant in the park. Overall there is a small proportion of developed footprint in forest (0.6% of the ecosystem, which represents approximately 592 hectares). Three forest ecosystem classes have disproportionately more footprint (>1%): balsam fir-moss forest, balsam fir-white birch forest, and balsam fir-regeneration scrub. Given a hypothetical expansion of all footprint in this ecosystem (factor of 1.5), 2 additional classes would have >1% disturbance: balsam fir-herb virgin forest and black spruce-*Sphagnum* forest.

Coastal

Coastal vegetation classes include:

- Coastal krumholz
- Salt marsh
- Seashore heath
- White spruce coastal forest

The individual coastal classes are among the smallest in the park, and the collective coastal ecosystem is the smallest within GMNP. Development footprint within GMNP and regionally is concentrated along the coast, including Route 430 and other roads, resulting in an above average 5.1% footprint from 8.1 hectares. Currently, all classes excluding seashore heath have >1% footprint

Wetlands

Wetland vegetation classes include:

- Alder swales
- Creek beds
- *Kalmia* heath
- Patterned fen
- Sedge bog
- Sedge fen
- *Sphaggnum* bog
- *Sphagnum* bog with flashets

Wetlands comprise approximately 9.5% of GMNP. Overall, there is a below average proportion of developed footprint in wetlands (0.3% of the ecosystem, which represents approximately 44 hectares). The majority of footprint is in the *Sphagnum* bog class, which is also the most abundant, resulting in approximately 0.5% footprint. One wetland class, sedge fen, has disproportionately more footprint (1.65%). Given a hypothetical expansion of all footprint in this ecosystem (factor of 1.5), no additional classes would have >1% disturbance.

Alpine

Alpine vegetation classes include:

- Dwarf spruce heath
- *Empetrum* heath
- Larch – juniper heath
- Serpentine heath barrens

These heath (alpine) classes comprise the second largest ecosystem within GMNP. The alpine ecosystem has the lowest proportion of developed footprint in GMNP (0.07% of the ecosystem, which represents approximately 35 hectares). The majority of footprint is in the serpentine heath barrens class, which is the second most abundant alpine class, resulting in approximately 0.3% footprint. No alpine classes have >1% footprint. Given a hypothetical expansion of all footprint in this ecosystem (factor of 1.5), no additional classes would have >1% disturbance.

Other

There are three classes within this grouping in GMNP.

Disturbed land including agricultural fields, pastures, gardens and clearings around and within towns and communities comprises 0.03% of GMNP, and has a higher than average 11.5% footprint, which is consistent with it being a disturbed class.

Unclassified vegetated land comprises less than 0.1% of GMNP.

Unvegetated land represents approximately 8% of GMNP.

Conclusions

There is a low level of development in GMNP ecosystems. Vegetation classes that currently or are predicted to have >1% footprint should be given consideration for finer scale current mapping of the vegetation units and footprint, to allow project impact assessment to consider and minimize footprint in rarer vegetation classes and those that have a disproportionate development footprint.

This includes coastal classes, which are among the smallest in GMNP and have a greater proportional development footprint than other ecosystems. This analysis suggests that the cumulative effects of increasing footprint in coastal ecosystems may need to be considered.

Expansion of the development footprint within the forest ecosystem may need to consider strategies to limit expansion in the five classes identified above.

Expansion of the development footprint within wetlands may need to consider strategies to limit expansion in the sedge fen class.

Opportunities to expand footprint within the disturbed vegetation class instead of an undisturbed class should be given consideration.