

Last Ice Area – Recommendations for Management

An analysis of potential options for the management of pressures and threats to important areas and features of the LIA, and recommendations for their selection

HMC Services
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Executive Summary

This is the final report in a series of deliverables commissioned by the WWF to outline key features and areas within a region known as the Last Ice Area, identify the climate change and human induced development pressures threatening these features and areas, and compile an inventory of possible options for the management and mitigation of the threats and pressures.

This report builds upon prior work to identify possible management options. Each option is reviewed with further detail provided regarding process steps and the relevant parties involved in each process. A brief discussion surrounding the likelihood of implementation and support for each option at the community/grassroots level is provided, as well as an estimate of the relative effort level and resources required for implementation, the timeliness or time lag expected with implementation, and any jurisdictional or policy/governance-related considerations.

The final section of the paper recommends the most applicable options for each identified value/area in question. In most cases, multiple options are recommended for each important LIA feature or area. This is owing to the different demands on resources and the effort level required to undertake each option, as well as the likelihood of local support and implementation of each, and the timeline for expected achievement.

Given the range of options available, it is with optimism that each identified key area and feature will be subject to some future effort to conserve, preserve, or protect its integrity and existence. The more onerous and high-level options may seem a far reach, however through ongoing work at the community level and improving the visibility of the LIA and its importance to the High Arctic, including the communities and ecosystems found there, it is plausible that international level protections of this amazing land and sea-scape are within reach.

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1 Introduction

The WWF's Last Ice Area (LIA) project is focused on the preservation of the increasingly scarce Arctic summer sea ice habitat and ecology in a zone of the high Arctic where it is thought that year-round sea ice will persist the longest over the coming decades. It has two central purposes:

- To create new knowledge and acquire existing knowledge (both scientific and traditional) of this area to be used for informed decision making; and,
- To initiate a discussion with the communities, regional organizations and others on potential management responses within the area that will encourage resilience of the ecology of the LIA and of the Inuit communities (WWF, 2014a).

This report completes a series of deliverables commissioned by the WWF to better understand the areas and features of importance, both ecologically and from the perspective of communities within the LIA, in terms of the pressures facing those important areas and features, and finally, to provide recommendations regarding options for management and mitigation. The current report builds upon the previous information collected regarding potential industrial, commercial and climate change-related pressures facing the LIA, and provides recommendations regarding those mitigation and management options which may most effectively be employed to alleviate these pressures and/or limit their impacts.

The report provides further detail regarding potential options for management, and recommends those options that could be best employed to manage the threats and pressures to each of the key features and areas identified through previous work conducted on this project.

2 Potential Options for Management

Within prior reporting to the WWF, a number of options for management were identified as potential avenues for the protection, conservation and/or preservation of the LIA, either in its entirety, or in respect of its specific features and areas.

This report provides additional information including a listing of the parties at play for the varying governance levels, as well as providing a summary of the steps required to pursue each particular option, and an analysis of the following:

- Likelihood of practical implementation at community or similarly grassroots level;
- Effort level and resources required;
- Timeliness of implementation; and
- Jurisdictional and other policy/governance-related considerations.

Table 1 provides an overview and rating (low, moderate, high) for each of these considerations in respect of the particular options under consideration. Further explanation and detail related to each option is provided within the respective subsections that follow.

Section 3 identifies the specific option(s) recommended for each key feature or area of the LIA.

TABLE 1. OVERVIEW OF CONSIDERATIONS FOR MANAGEMENT OPTIONS

Overview of considerations						
Management options	Complexity of steps	Likelihood of local buy-in	Likelihood of local level implementation	Effort level and resources required	Lag time to implementation	Complexity of governance and policy considerations
IUCN Protected Areas	moderate	high	low	high	high	high
UNESCO						
World Heritage Site	high	high	low	high	high	high
MaB	moderate-high	high	low	moderate	moderate-high	high
ECCC-Protected Areas	moderate	moderate	moderate	moderate-high	moderate-high	high
DFO MPAs	high	moderate	low	high	high	high
Parks Canada						
National Marine Conservation Area	high	moderate	low	high	high	high
COSEWIC	high	moderate	low	high	high	high
GN						
Territorial Park	high	moderate	low	high	high	high
Climate Change	low	moderate	moderate-high	moderate	low	moderate
NLCA						
NWMB/HTO/RWB	low	high	moderate	moderate	low-moderate	low-moderate
NPC	moderate	moderate	moderate	moderate	moderate-high	high
NIRB	low-moderate	moderate	moderate	low-moderate	low	low
NMC	low	high	moderate	low-moderate	moderate	moderate
Other						
NGMP Secretariat	low-moderate	low-moderate	low-moderate	moderate-high	moderate-high	low
High visibility promotion of Arctic	low	high	high	high	low	low
Lobbying for renewables	moderate	moderate	moderate	moderate-high	moderate-high	low

2.1 International Options

2.1.1 International Union for the Conservation of Nature Protected Areas

The International Union for the Conservation of Nature (IUCN) has developed a voluntary Protected Areas Categories System to assist states in designating and categorizing conservation areas. The system is quite flexible in allowing users to manage protected areas under a range of governance structures: a) government, b) shared between rights holders and stakeholders, c) private individuals and organizations, and d) Indigenous peoples and/or local communities (IUCN, 2016).

Of the IUCN’s seven defined categories of protected area, the previous report noted that six categories represent viable management options for the LIA and/or its features:

Ia Strict nature reserve: Strictly protected for biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are controlled and limited to ensure protection of the conservation values

Ib Wilderness area: Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition

II National park: Large natural or near-natural areas protecting large-scale ecological processes with characteristic species and ecosystems, which also have environmentally and culturally compatible spiritual, scientific, educational, recreational, and visitor opportunities

III Natural monument or feature: Areas set aside to protect a specific natural monument, which can be a landform, sea-mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove

V Protected landscape or seascape: Where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values

VI Protected areas with sustainable use of natural resources: Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims.

As the decision to implement a protected area category rests solely with the country considering the designation, no formal external application or approval processes are required. However, the IUCN recommends that assignment of protected areas should rest on four main elements:

- Good guidance for governments and other protected area authorities;
- An agreed process for assignment;
- A system for challenging assigned categories; and

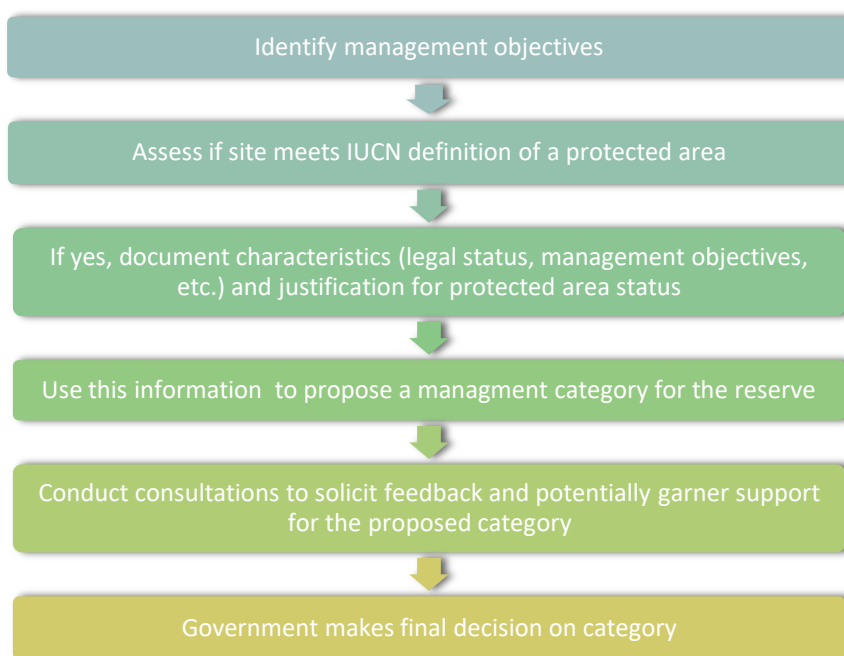
- A process of verification that could be implemented at the national level or requested from an independent body such as the IUCN (IUCN, 2013).¹

The IUCN also suggests that any category chosen should be based around primary management objectives that apply to at least three-quarters of the area under consideration (ibid.).

Summary of steps

The following diagram presents IUCN’s suggested pathway to assigning protected area categories:

FIGURE 1. PROCESS FOR ASSIGNING PROTECTED AREA CATEGORIES (adapted from IUCN, 2013)



While the ultimate inclusion of stakeholders rests with the responsible government(s), the IUCN suggests that the above pathway or process should involve multiple stakeholders, especially where local people may be affected by the assignment of an area to a particular category (IUCN, 2013). It has been contemplated that a task force be developed to review data related to protected areas and was

¹ Per the IUCN, no verification system currently exists, though one may be developed in time. Further, the IUCN suggests that an expert panel could also provide the oversight to undertake the verification of protected areas (IUCN, 2013).

further suggested that national IUCN committees could be established to undertake this work in each nation (ibid.).

Involved parties

As a voluntary initiative that would be managed from within Canada and Nunavut, the players involved would include relevant federal and territorial ministries, as well as Nunavut Land Claims Agreement (NLCA) organizations responsible for various aspects of the area(s) being considered for designation. For example, the Nunavut Wildlife Management Board (NWMB) and local Hunters and Trappers Organizations (HTO) may be involved in decisions to protect areas which infringe on wildlife or their habitat, or which intersect with important hunting or fishing grounds, or other areas of importance to Inuit. As recommended by the IUCN, involving stakeholders from affected communities is also an important consideration in pursuing a protected area designation.

Timeliness of action and likelihood of local level implementation and buy-in

The process to designate a protected area under the IUCN system does not have a formal timeline, and would be largely dependent on a) having parties come together in agreement of the area in question, definition of management objectives and selection of category type, and b) the types of regulatory and legislative changes that may be necessary to implement the category designation (i.e. to change a land use plan or create a National Park, etc.). It is unlikely the process would take less than one or more years, again depending on the requirements necessary to properly support the designation, a significant period of time may be needed.

It is unlikely that local communities or organizations would undertake to implement this management option. Given the international focus of the IUCN and need for federal, territorial and Inuit governments to work together, the complexity of the process would likely benefit from a higher level coordination. However, local communities are likely to support this option as one offering a highly visible and internationally recognized area for the protection of species, habitat, and/or areas important to their citizens.

Effort level and resources required

The effort level and resources required to pursue this option are relatively high, in terms of coordinating and managing a request through the federal, territorial, and Inuit governments, as well as to work with the different ministries and arms of those governments to develop an agreed upon framework for the designation. At the front end, and demanding a very minor amount of effort and resources, local communities could be rallied to make a request to government for it to consider the pursuit of an

IUCN protected area designation. The majority of remaining work would likely be conducted by those government agencies involved, however continuing input from the communities should be considered as an on-going and necessary requirement. The level of effort and resources needed for this type of involvement is likely to remain low and required on an intermittent basis only.

Jurisdictional, policy and governance considerations

As noted above, all three levels of government would likely be engaged in the pursuit of an IUCN designation. The complexity of the governance and jurisdictional considerations would be increased if national policy or legislation were linked to decision-making that applied to a category designation; for instance, where allowable land uses in a protected area were to be restricted because of the designation. Furthermore, working with another country such as Greenland to develop a transboundary area under IUCN designation is a possibility, and one that would increase the complexity of each of the considerations listed above, as well as at each of the governance and jurisdictional levels.

2.1.2 UNESCO World Heritage Site

World Heritage Sites are places that, because of their special cultural, natural, or physical significance, are listed by the United Nations Educational Scientific and Cultural Organisation (UNESCO) on its World Heritage List, preserving them for future generations (UNESCO, 2016). To be included on the World Heritage List, a site must be of “outstanding universal value” and meet at least one of UNESCO’s ten selection criteria (UNESCO, 2016). Once nominated by a “State Party” of UNESCO, designation as a World Heritage Site provides legal protection of the area pursuant to the Law of War, under the Geneva Convention, as well as international law (ibid.).

Summary of steps

The nomination process is complex and extensive, begins with a country or “State Party” including a proposed site on its “Tentative List” for submission to UNESCO, at least one year prior to its plan to submit a formal application nominating the site for inscription to the World Heritage List.

A Tentative List is an inventory of those properties situated within a State Party’s territory that it considers suitable for nomination to the World Heritage List (UNESCO, 2015). Nominations to the World Heritage List are not considered unless the nominated property has already been included on the State Party’s Tentative List. The listing must be submitted to the UNESCO Secretariat at least one year before the State Party plans to submit the site as a formal nomination (ibid.).

Before submitting the formal nomination, UNESCO recommends that the nominating country undertake preparatory work that includes collecting available information on

the property, conducting thematic studies and scoping studies of the potential for demonstrating Outstanding Universal Value, including integrity or authenticity, or an initial comparative study of the property in its wider global or regional context (UNESCO, 2015). UNESCO identifies Outstanding Universal Value as the primary basis for consideration of properties to be included on the World Heritage List.

To be deemed of Outstanding Universal Value, UNESCO's Guidelines stipulate that a property must also meet the conditions of integrity and/or authenticity and must have an adequate protection and management system to ensure its safeguarding (2015).

Following the inclusion of a property on a State Party's Tentative List, a formal nomination application completed and submitted to UNESCO before February 1 will be considered for nomination the following year (UNESCO, 2015).

The format for a nomination must follow UNESCO's direction set out in its Operational Guidelines, and must include the following:

1. Identification of the Property;
2. Description of the Property;
3. Justification for Inscription;
4. State of conservation and factors affecting the property;
5. Protection and Management;
6. Monitoring;
7. Documentation;
8. Contact Information of responsible authorities; and,
9. Signature on behalf of the State Party(ies).

On receipt of nominations from State Parties, the Secretariat will acknowledge receipt, check for completeness and register nominations, and then will forward complete nominations to the relevant Advisory Bodies for evaluation (UNESCO, 2015). A nomination passes through a cycle between the time of its submission and the decision by the World Heritage Committee, which normally runs one and a half years from the submission of the nomination in February of Year 1 to the Committee's decision in June of Year 2 (ibid.).

In completing the evaluation, the Advisory Bodies will evaluate whether or not properties nominated by State Parties have Outstanding Universal Value, meet the conditions of integrity and authenticity and meet the requirements of protection and management (UNESCO, 2015). Advisory Bodies then make one of three recommendations regarding the nominations: a) property is recommended for inscription without reservation; b) property is not recommended for inscription; or c) nomination is recommended for referral or deferral (ibid.).

It is the decision of the World Heritage Committee as to whether a property should or should not be inscribed on the World Heritage List, or if it should be referred back to the State Party for additional information or if it should be deferred for more in depth assessment and study, or a substantial revision by the State Party.

If accepted by the World Heritage Committee, the property is inscribed on the World Heritage List, and the State Party is responsible for implementing the management and conservation measures committed to in its nomination application. Reporting on the conservation status is required by the World Heritage Committee, at a frequency and including contents as decided by the Committee and/or Secretariat (UNESCO, 2015).

Involved parties

The UNESCO World Heritage Committee as well as its various advisory bodies and other factions are involved in the application process, as well as the relevant federal and territorial ministries, and NLCA organizations. UNESCO also recommends that local communities, indigenous peoples, governmental, non-governmental and private organizations and other stakeholders participate in the process from nomination onward, in order to facilitate their shared responsibility with the State Party in the maintenance of the property (2015).

Likelihood of local level implementation and timeliness

Given the exceedingly official nature of the tentative lists and formal nomination process,

Outstanding Universal Value

- (i) represent a masterpiece of human creative genius;
- (ii) exhibit an important interchange of human values on developments in architecture or technology, monumental arts, town-planning or landscape design;
- (iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;
- (iv) be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;
- (v) be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture(s), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;
- (vi) be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance;
- (vii) contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;
- (viii) be 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;
- (ix) be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;
- (x) contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of Outstanding Universal Value from the point of view of science or conservation (adapted from UNESCO, 2015)

it is unlikely that local organizations would become involved in the work to establish a UNESCO World Heritage Site designation. However, as recommended by UNESCO, ongoing participation by potentially affected communities and groups is expected, and would be central to the process for any area or site in Nunavut to be considered.

A significant time lag exists between the potential selection of a site internally, the federal government including a site to its Tentative List for submission to UNESCO, and finally, a year or more later, submitting the formal nomination application. There is no certainty that once submitted, UNESCO will approve the nomination; the site may be referred back to the State Party, or deferred for additional information. In the instance of Quttinirpaaq National Park, Canada included the site on its tentative list that was submitted to UNESCO in 2004, however the site has not as yet, been submitted for consideration before the World Heritage Committee. It is unclear as to whether this delay is owed to Canada not having its application at an advanced stage of preparation, or whether it is owing to UNESCO's having denied the application or referred/deferred it for additional information. Suffice it to say, 12 years have passed since the initial inclusion of the site on Canada's listing to UNESCO, and there is still no designation in place.

Effort level and resources required

The effort level and resources needed to undertake not only the development of a notification application, but also to complete the pre-notification work recommended by UNESCO in support of an application, are quite high as compared to other options being considered. The work required is likely to be completed by government departments and agencies and their relevant experts, as the expectation of UNESCO's application process are quite extensive.

Jurisdictional, policy and governance considerations

Once inscribed as a World Heritage Site, the responsibility to implement the protection and management of designated World Heritage Sites falls to the State Party on whose territory the site is located. This often requires that legislation is changed or developed to manage the use of land and resources within the area to effectively conserve and protect it indefinitely.

2.1.3 UNESCO Man and Biosphere Reserve Programme

The Man and Biosphere Reserve Programme (MaB) was initiated by UNESCO in the 1970s as an intergovernmental scientific program to establish a science-based rationale for making improvements to relationships between people and their environments (UNESCO, 2016a). UNESCO accepts nominations annually for new biosphere reserves, and assesses the applications according to a number of criteria and other considerations. General criteria for an area to be designated as a reserve include encompassing a mosaic of ecological systems representative of major biogeographic regions, be an area of significance for biological diversity conservation, provide opportunity to explore and demonstrate approaches to sustainable development on a regional scale, have appropriate size to serve three functions of the reserves,

and qualify for protection supported through legal instruments and zoning regulations (UNESCO, 2016a).

Biosphere reserves are internationally recognized, but are nominated by national governments and remain under the sovereign jurisdiction of the states where they are located. Reserves are areas comprising terrestrial, marine and coastal ecosystems, and are made up of three interrelated zones that aim to fulfil three functions – 1) a core area comprises a strictly protected ecosystem that contributes to the conservation of landscapes, ecosystems, species, and genetic variation, 2) a buffer zone surrounding or adjoining the core area(s), used for activities compatible with sound ecological practices that can reinforce scientific research, monitoring, training and education, and 3) a transition area is part of the reserve where the greatest level of activity is allowed, fostering economic and human development that is socio-culturally and ecologically sustainable (UNESCO, 2016a).

Summary of steps

Biosphere reserves are designated for inclusion in the World Network by the International Coordinating Council (ICC) of the MaB programme as follows:

- a. States, through National MaB Committees where appropriate, forward nominations with supporting documentation to the Secretariat (UNESCO) after having reviewed potential sites, taking into account the criteria as defined above;
- b. The Secretariat verifies the content and supporting documentation: in the case of incomplete nomination, the Secretariat requests the missing information from the nominating State;
- c. Nominations will be considered by the Advisory Committee for Biosphere Reserves for recommendation to the ICC;
- d. The ICC of the MaB programme makes a decision on nominations for designation.

The Director-General of UNESCO notifies the State concerned of the decision of the ICC (UNESCO, 1996).

Involved parties

UNESCO serves as the Secretariat for the MaB programme, with other international parties involved with the ICC, and the relevant federal and territorial government ministries responsible for the nomination and support of a Biosphere Reserve nomination and its potential management and oversight. As with the other international options, working with the NLCA organizations is necessary if the designated area should happen to overlap with Inuit Owned Lands (IOL), infringe on any Inuit rights protected by the NLCA, or implicate protection of wildlife species whose management is partially coordinated by the NLCA organizations.

Likelihood of local level implementation and timeliness

As the MaB program is fairly complex and requires representation by the federal government through the UNESCO application and designation processes, it is unlikely that local level implementation could be undertaken for this management option. However, it is likely that local communities and organizations will be supportive of this designation, as it clearly requires that the area in question be able to support the pursuit of sustainable development – thereby not entirely closing the door to economic development, which is so important to Nunavut and Nunavummiut, but rather looking for ways that conservation and development can co-exist.

The time lag with the MaB designation is less than other international options, however is still expected to be upwards of one or more years depending first on the process of internally selecting an appropriate area, including having government, Inuit organizations, and the public able to reach a consensus on the boundary, and further, to the nomination process, and finally, awaiting the decision of UNESCO.

Effort level and resources required

The effort level and resources required to pursue the MaB designation are moderate as compared to other international options discussed above. There is less need for ancillary information to be prepared prior to the submission of application materials, and the criteria being considered are less extensive and perhaps simpler to demonstrate through application materials.

Jurisdictional, policy and governance considerations

Since the local governments would need to provide for the management and oversight of an approved biosphere reserve, a number of considerations must be made in terms of legislative and other policy amendments or developments which would be required to support the MaB initiative. This would also include relevant NLCA organizations and their respective policies and procedures.

2.2 Federal Options

2.2.1 Environment and Climate Change Canada – Protected Areas

The identification and establishment of protected areas in Canada is the responsibility of the Canadian Wildlife Service, which works in accordance with the Protected Areas Strategy to develop areas that protect migratory birds, species at risk, and other species of national interest (Environment and Climate Change Canada, 2016).

Summary of steps

The establishment of Protected Areas follows a four-step process, starting with site identification and selection of habitat areas of national importance, the protection of which would directly benefit one or more migratory bird populations, species at risk, or other wildlife species (Environment and Climate Change Canada, 2016).

FIGURE 2. OVERVIEW OF PROCESS STEPS TO ESTABLISHING A PROTECTED AREA

Involved parties

The Canadian Wildlife Service and the Environment and Climate Change Canada (ECCC) Ministry are the primary agencies involved in the development of protected areas, along with relevant Nunavut ministries and NLCA organizations, including the Regional Inuit Association (RIA), NWMB, Regional Wildlife Board (RWB), and possibly Nunavut Tunngavik Inc. (NTI) as well.

Likelihood of local level implementation and timeliness

It is possible that the suggestion to develop a protected area could come from the grassroots level in Nunavut. The selection of an area would also need to be supported by local communities and Inuit organizations prior to the Canadian Wildlife Service proceeding with its formal designation.

As no formal timeline is contemplated by ECCC in materials describing the protected areas designation process, it is uncertain what the timing might be for the establishment of this designation. It is expected that the process could take upwards of several years, considering the completion of ecosystem and strategic environmental assessments often take one year or more to complete, and the potential need for regulatory amendment to support the necessary protection(s).

Effort level and resources required

Given the requirement for assessment, consultation, and security agreements as outlined above, the level of effort and resources required to pursue a protected area designation are expected to be moderate to high.

Jurisdictional, policy and governance considerations

Where the land area under consideration implicates Crown land and IOL, additional requirements to facilitate the agreement to the designation including official transfer of lands from Inuit to the Crown may be required. This increases the complexities of jurisdictional and governance matters considerably.

2.2.2 Fisheries and Oceans Canada and Canadian Coast Guard

Fisheries and Oceans Canada's (DFO) *Oceans Act* provides for the establishment of Marine Protected Areas (MPA), or geographically defined zones established to protect and conserve:

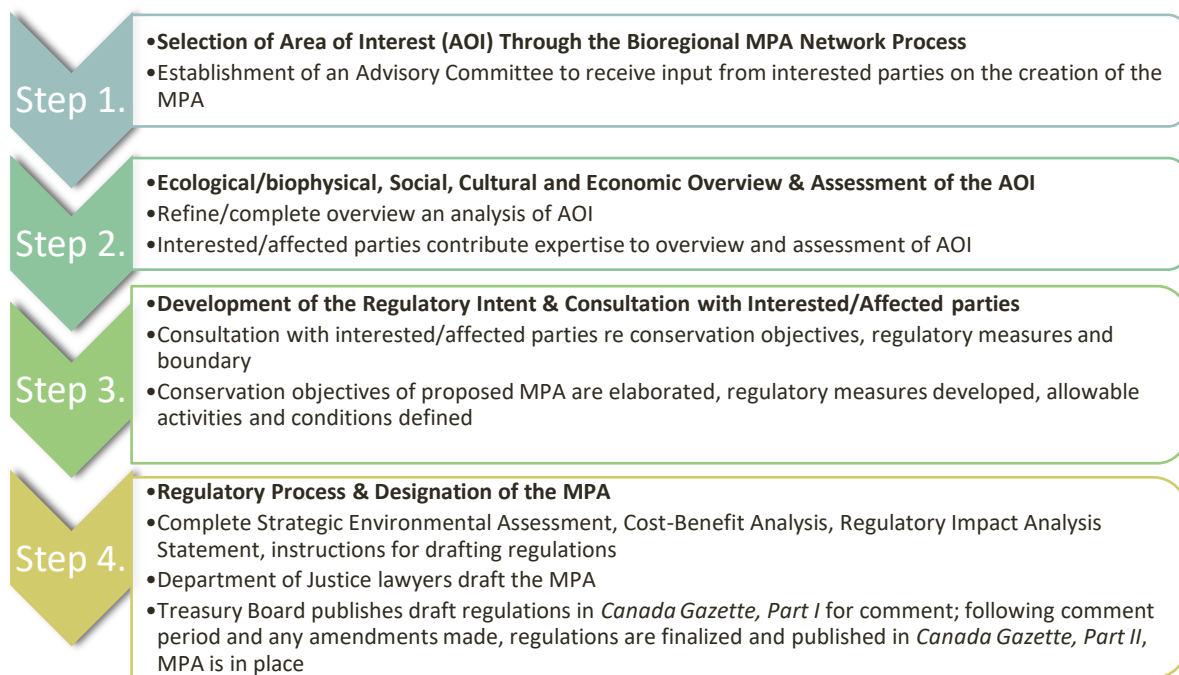
- Commercial and non-commercial fishery resources, including marine mammals, and their habitats;
- Endangered or threatened marine species, and their habitats;
- Marine areas of high biodiversity or biological productivity; and
- Unique habitats;
- Any other marine resource or habitat as is necessary to fulfil the Minister’s mandate of scientific research (Fisheries and Oceans Canada, 2016).

The Arctic Archipelago is one of 13 eco-regions that have been identified by DFO as targets for MPA development. DFO has indicated that the establishment of individual MPAs will occur as resources allow, and has not made any commitment as to the timeline for their eventual implementation (Fisheries and Oceans Canada, 2016).

Summary of steps

The process describing the establishment and management of MPAs under the *Oceans Act* can be summarized as follows:

FIGURE 3. SUMMARY OF STEPS TO ESTABLISH DFO MARINE PROTECTED AREAS (with information from Fisheries and Oceans Canada, 2016)



Involved parties

As the primary authority for the development of MPAs, DFO is a key participant in the process, along with relevant federal Ministries (i.e. Treasury Board, Justice, among others), territorial ministries, and NLCA organizations such as the NWMB, RIAs and RWBs, as well as NTI.

Likelihood of local level implementation and timeliness

The involvement of local communities is essential to consultation required under the MPA development process, however as it is a formal departmental process for DFO, it is unlikely that smaller organizations would be involved in the implementation stages beyond providing insight and input to the process.

As noted above, the federal government has no published commitment as to the timeline for implementation and development of various MPAs, noting only that the areas would be developed as resources allow. There is no consistent or published timeline associated with the process identified above, and considering the length of time it has taken to begin development of the one Arctic MPA within the LIA (eco-region 13, Arctic Archipelago per Fisheries and Oceans, 2016) it is expected that the selection and designation of any further MPAs could take a significant amount of time.

Effort level and resources required

The responsibility to develop materials and the overall process to establish an MPA rests with DFO and other government agencies and departments. The effort level and resources required to complete the process and associated tasks are likely to be quite high, considering the complexity of each of the steps outlined above.

Jurisdictional, policy and governance considerations

The jurisdictional, policy and governance considerations for the MPA network are quite extensive, considering that regulations must be developed for the establishment of each MPA, and that other legislative and policy changes are like to be required in order to support the ongoing management of each protected area. The overlap with territorial and NLCA jurisdictions introduce additional considerations that must be dealt with as the proposed MPA moves through the establishment process.

2.2.3 Parks Canada

Parks Canada (PC) is the federal department responsible for developing and designating areas within Canada as National Parks. Within Nunavut's high Arctic area including the LIA, no additional parks are planned aside from the established Quttinnirppaq National Park and Qausuittuq National Park, both of which had been contemplated through Parks Canada's National Parks System Plan. As no further parks have been envisioned at this time, no further information on the development of National Parks is included within this report.

PC is also responsible for setting up a system of marine protected areas, the National Marine Conservation Areas (NMCA) Program, to represent the full range of marine ecosystems found in Canada's Atlantic, Arctic and Pacific oceans, and the Great Lakes (Parks Canada, 2015). Established NMCAs are afforded protection from certain activities including ocean dumping, undersea mining, and oil and gas exploration and development (ibid.).

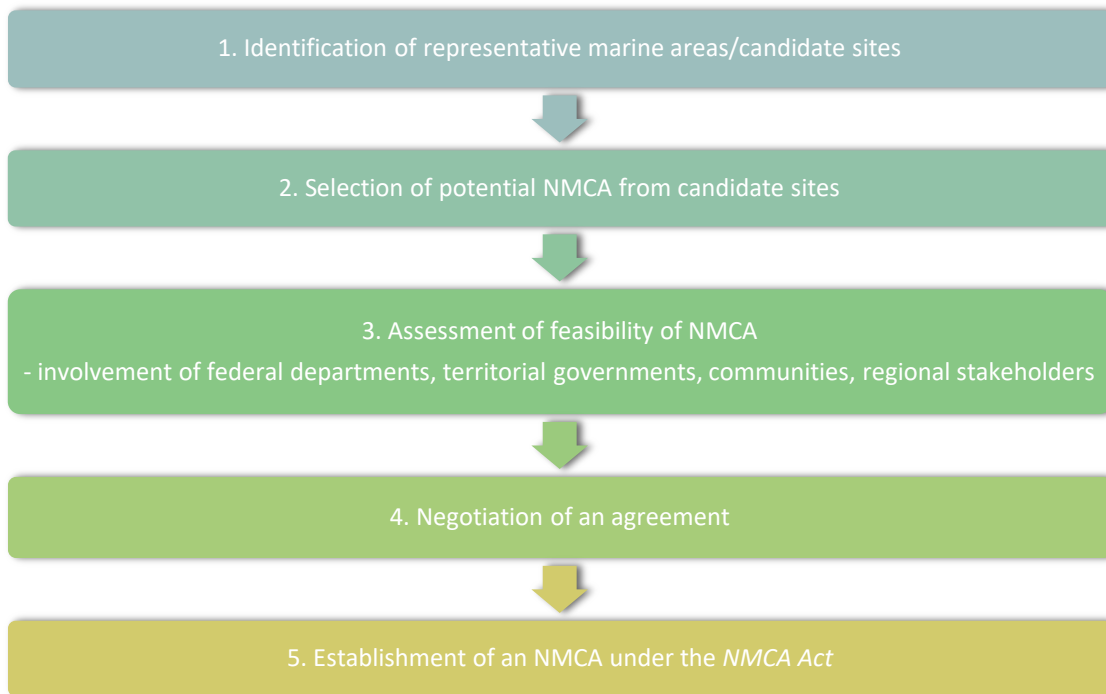
It has begun a study to assess the feasibility of designating Lancaster Sound as an NMCA. In addition to the consideration of a Lancaster Sound NMCA, PC has plans to incorporate another

NMCA with the Arctic; this may be located in the Arctic Archipelago – an area that lies along the eastern coast of Ellesmere Island (Parks Canada, 2015).

Summary of steps

The following provides a summary of steps to the establishment of an NMCA:

FIGURE 4. SUMMARY OF STEPS TO ESTABLISHMENT OF AN NMCA (with information from Parks Canada, 2015)



Involved parties

PC serves as the lead agency in developing an NMCA, however input and involvement from many other government departments and agencies, as well as the territorial government and NLCA organizations is required as part of the PC process outlined above. It is also expected that in undertaking the various assessments required, local communities will be consulted and will have an opportunity to provide input into the process of NMCA establishment (Parks Canada, 2015).

Likelihood of local level implementation and timeliness

As with the DFO MPA process outlined above, federal government processes are not often initiated by, or implemented through, local channels. This is the case with the establishment of NMCAs, however the involvement of local parties is essential to the success of the process as noted above, and is important in order to have local level support for the program itself.

The process to establish an NMCA can take a number of years, as has been the case with the potential Lancaster Sound NMCA currently under consideration.

Effort level and resources required

The level of effort and resources required to undertake the process of establishing an NMCA is quite high, and again is handled by PC as the lead government department responsible for the designation.

Jurisdictional, policy and governance considerations

As with other designations that have the potential to cross over into other areas of management – in this case, as NMCAs do not allow oil and gas exploration or development within their bounds, the federal department of Indigenous and Northern Affairs which is responsible for the decision to allow oil and gas exploration in Nunavut waters, may have concerns with the development of a conservation area that could impede economic development. Similarly, territorial government and Inuit organizations may have interests in seeing the development of these resources for the benefit of Nunavummiut. These types of jurisdictional and governance considerations would be the subject of discussion as all parties work with PC throughout the NMCA process.

2.2.4 COSEWIC / SARA

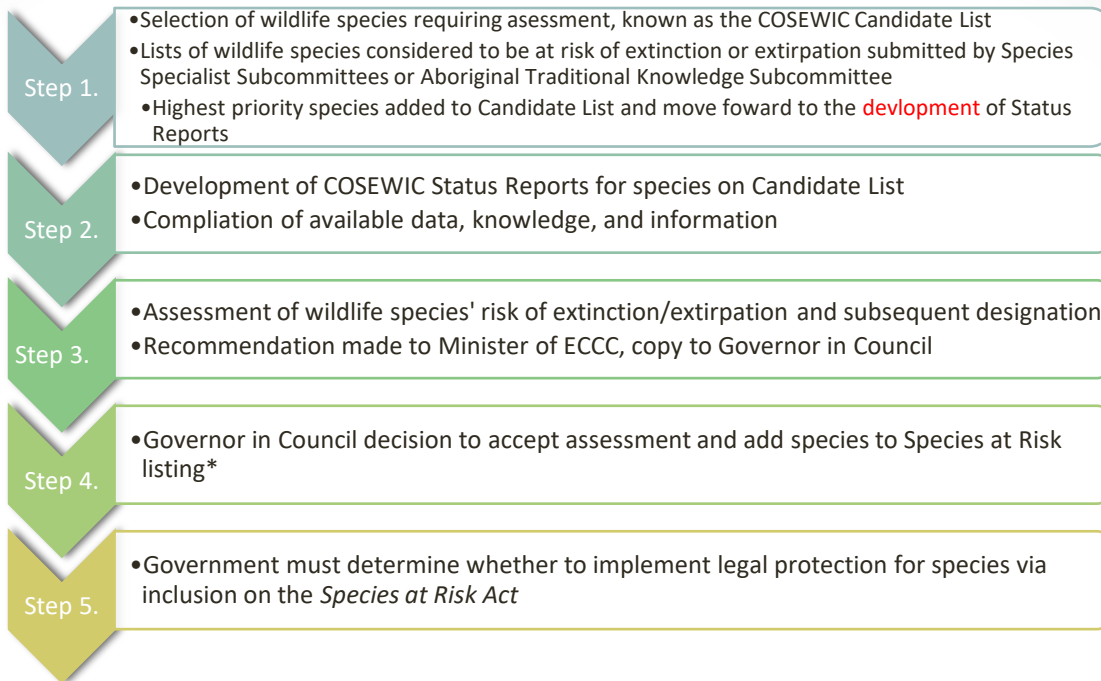
The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is a panel of experts responsible for providing a single, official, and scientifically sound national classification of those wildlife species determined to be at risk or in some danger of disappearing from Canada (COSEWIC, 2016). COSEWIC assessments inform the inclusion of species on the federal *Species At Risk Act* (SARA) listing, for those determined to be of extirpated/extinct, endangered, threatened, and special concerned status (Government of Canada, 2016).

Currently, a number of Arctic marine mammal species are listed as being of special concern, including the Beluga (Eastern High Arctic Baffin Bay population), bowhead (Eastern Canada-West Greenland population) and narwhal, polar bear, and walrus (COSEWIC, 2016). In addition, the Peary Caribou population has been on COSEWIC's threatened listing as of 2015 and is now included on Schedule 1 as being endangered per SARA (Government of Canada, 2016). In addition, the Ivory Gull and Red Knot (*rufa* subspecies) have ranges within the LIA and are also included on the SARA Schedule 1 list of endangered species (ibid.).

Summary of steps

The following process diagram provides a summary of steps in listing a species with COSEWIC and engaging formal protection through the *Species at Risk Act* (SARA):

FIGURE 5. SUMMARY OF STEPS TO LISTING WITH COSEWIC AND THE SARA (with information from COSEWIC, 2016)



* Note: For the purposes of illustrating the steps to achieving designation, only the approval course of action was contemplated in the figure above, however the Governor in Council may alternately decide not to add the species to the List, or to refer the matter back to COSEWIC.

Involved parties

COSEWIC is the advisory body responsible for the selection of candidate species and recommendations put forth to the responsible Ministry and Governor in Council for the ultimate determination on the status of species at risk in Canada. COSEWIC does maintain members from each of the provinces and territories, including Nunavut representation. Further, the Aboriginal Traditional Knowledge Subcommittee also maintains representation from Nunavut.² Participation in COSEWIC's process to determining the status of species of concern would involve the territorial government and Inuit organizations through either of the two membership positions outlined above. Furthermore, once status reports are received by COSEWIC, these are subject to thorough review by the appropriate Species Specialist Subcommittee, the Aboriginal Traditional Knowledge Subcommittee, as well as by jurisdictions that have a responsibility for the wildlife species (including governments of the provinces and territories where the wildlife species occurs, federal departments responsible for the wildlife species, and Wildlife Management Boards) (COSEWIC, 2016).

Likelihood of local level implementation and timeliness

² At the time of writing this report, both the Government of Nunavut representative and Aboriginal Traditional Knowledge Subcommittee member positions were vacant.

It is envisioned and allowed by COSEWIC that unsolicited status reports from any member of the public, when accompanied by an Application for Wildlife Species Assessment, will be given the same consideration by COSEWIC as those it commissions by experts in various fields (COSEWIC, 2016). Although unlikely, the avenue for initiation of the process of listing a species on SARA does exist, and could be undertaken by local communities or organizations in Nunavut. The timeline for consideration of a status report is generally a one year cycle, as those status reports received and meeting COSEWIC requirements are considered by its members annually.

Effort level and resources required

The requirements of status reports, including the requisite information to be collected, compiled, and analyzed result in a high level of effort and resources needed to pursue formal status on the SARA for a wildlife species. As COSEWIC is the lead agency undertaking or contracting out the work, the level of effort required on part of local communities increases significantly in the instance that it wishes to prepare and submit an unsolicited status report for a species on its own.

Jurisdictional, policy and governance considerations

As mentioned above, for any species located in Nunavut, consideration of status reports is required by the territorial government and by the NWMB. It is likely that the RIA and RWB as well as potentially affected communities would also be consulted through work of the Aboriginal Traditional Knowledge Subcommittee or through the NWMB's participation in the review of COSEWIC status reports.

2.3 Territorial Options

2.3.1 Territorial Park

The Government of Nunavut (GN) has a mandate to establish and develop Territorial Parks within the Nunavut Settlement Area. There is currently only one Territorial Park located within the LIA, the Tupirvik Territorial Park and campground, a 10-minute drive from the community of Resolute.

The park establishment process takes a number of years, and begins with the identification of an appropriate Area of Interest (Nunavut Parks, 2006). These areas are identified through the GN's Park System Plan, Community Plans or Regional Land Use Plans, and can also be proposed by communities based on their own research study, or knowledge of an important area (Nunavut Parks, 2006). Information related to the Area of Interest is compiled by the GN into a Preliminary Park Resource File, including background information on the cultural and natural resources and the recreational and economic opportunities that a potential territorial park may include, and also sets out potential benefits of park development (ibid.). From there, and in consultation with a Parks Advisory Committee made up of various community representatives, the GN completes a Feasibility Study in order to learn more about the area, community

perceptions, and the potential for various park scenarios. The community is then asked to make a recommendation for a Park Concept, approve the overall Park feasibility Project, and recommend a Park Study Area for consideration by the Minister, Department of Environment. If the Minister supports the recommendation to develop a park, the department is asked to begin negotiating an Inuit Impact and Benefit Agreement, request a federal land withdrawal for Crown lands, and, if supported by the federal government, park planning and establishment begin (Nunavut Parks, 2006).

2.3.2 Climate Change Initiatives

In 2011 the GN released a document called Upagiaqtavut that is meant to help guide climate change initiatives and projects in the Territory. The document details an approach to promoting climate change adaptation including building partnerships, engaging in research and monitoring, and ensuring education and outreach with Nunavummiut (Government of Nunavut, 2011). From its online Nunavut Climate Change Centre (www.climatechangenunavut.ca), little information is available documenting the GN's own work in terms of achieving the objectives listed in Upagiaqtavut, however it does maintain a listing of ongoing and completed projects related to climate change and relevant research conducted in Nunavut. The GN has also engaged a Nunavut Regional Adaptation Collaborative program with the objective of advancing climate change adaptation with respect to issues of particular concern to the territory, such as changes in permafrost and the related impacts of these changes to the mining sector and to the infrastructure upon which this sector depends (Nunavut Climate Change Centre, 2013).

2.4 Nunavut Land Claims Agreement Options

There are a number of organizations established through the NLCA and subsequent acts of Parliament. Each of the organizations listed within this section have specific roles to play in the management of resources within the Nunavut Settlement Area. It is through their roles and the various processes within their mandates that protection and management of key areas and features of the LIA is envisioned.

2.4.1 Nunavut Wildlife Management Board, Hunters and Trappers Organizations, and Regional Wildlife Boards

Summary of steps

The NWMB conducts its own processes in the co-management of total allowable harvest of many different species in Nunavut and also the total allowable catch for commercial fisheries in the marine waters surrounding Nunavut (Nunavut Wildlife Management Board, 2015). Through the public input parts of these processes, concern regarding specific wildlife species or

matters relating to commercial fishing can be raised directly with the organization involved in making decisions about their management.³

The NWMB is also involved in processes outside of Nunavut pertaining to wildlife and wildlife habitat for species that spend part of their time or have some of their range within the Territory's boundary. The steps relating to each of these processes are not included here, but have been outlined in preceding sections (ECCC, DFO, COSEWIC).

Similarly, HTOs and, in the High Arctic, the (regional) Qikiqtaaluk Wildlife Board (QWB) participate in various processes relating to resource management in Nunavut. These organizations can lend a voice or serve as a vessel to raise issues and concerns regarding threats and pressures to the important features and areas of the LIA.

Involved parties

The NWMB, local community HTOs and QWB would be involved in the NWMB processes, and it is likely that all three could also participate in the various processes outlined as having relevance to the protection and management of key LIA features and areas. NTI and the Qikiqtani Inuit Association (QIA) may also become involved in these processes and work either on behalf of, or alongside, the NWMB, HTOs, and QWB.

Likelihood of local level implementation and timeliness

The likelihood of local communities, people and organizations buying into and participating in the work of the NWMB, QIA, HTOs and QWB is expected to be much higher than for other more removed processes undertaken by the federal and even territorial government. The timeliness factor depends on the process in which the organization(s) is taking part. The NWMB process for determining total allowable harvest and catch levels can take months or years depending on the level of consultation, amount of background information and population data required, and whether the government accepts its recommendation or whether it is referred back to the NWMB for further information.

Effort level and resources required

A relatively low level of effort and resources are required to participate in the NWMB process and to engage the HTOs and QWB through other processes.

2.4.2 Nunavut Planning Commission

Summary of steps

The Nunavut Planning Commission's (NPC) process to develop a Nunavut Land Use Plan is expected to be complete in 2017, with the eventual development of a territory-wide plan that

³ Note that the NWMB makes recommendations to government regarding levels of total allowable harvest and total allowable catch, and ultimately, the final decision rests with the responsible government minister.

will be adopted by the federal and territorial governments as well as NTI. During this process, input to the NPC in respect of important areas and features of the LIA can be provided via technical comment submissions and in person testimony during a public hearing.

A land use plan may take into consideration those important areas and features of the LIA and afford them formal protection through land use restrictions within the plan. However, in cases where the level of protection provided is insufficient, or where no protection is established through the formal plan, there are a number of options to consider for continued input and participation that can work to manage impacts to these important areas and features.

In some cases, where restrictions on land use exist in a particular area, an interested party may wish to request permission to carry out that restricted activity anyway. In these instances, it is expected that either a minor variance would be approved by the NPC to allow for the activity to occur or, if a non-conforming use altogether, a proponent would then apply to the federal Minister of Indigenous and Northern Affairs for an exemption from the Land Use Plan. The NPC has not published its processes for the former situation, and it is not envisioned that the federal Minister would seek public input to a decision in the latter case. It is therefore essential that the important features and areas of the LIA be brought forward for the NPC's information, filed in a formal capacity during the development of the Land Use Plan if possible. In this manner, the public record will establish the importance and concern relating to the protection and proper management of this important area.

In addition to these processes, the NLCA provides that government, a Designated Inuit Organization, or any person affected by a land use plan may apply to the NPC for an amendment to the Land Use Plan (Government of Canada and TFN, 1993). This is important to consider in terms of the LIA, especially if protections afforded under the final Land Use Plan are deemed inadequate, or if climate change or other pressures should increase and jeopardize some of the important features of the LIA.

Involved parties

The NPC serves as a main player in any of the processes relating to the Land Use Plan, and as the plan is approved by federal and territorial governments as well as NTI, each of them would be involved in processes to exempt an activity or to amend a plan.

Likelihood of local level implementation and timeliness

As the processes outlined can be initiated by individuals or at the community level, it is possible to see local level implementation of some of these steps. The timeliness of action is generally quite lengthy – for matters channeled through Land Use Plan development or amendment for instance, it would likely take many years to see protections in place.

Effort level and resources required

The effort level and resources required to participate in NPC processes are quite low compared to other bureaucratic and international options outlined above, however it still would require a moderate level of effort to keep track of NPC’s timelines, make written submissions to, and appear at in-person events hosted by the NPC.

Jurisdictional, policy and governance considerations

The jurisdictional and governance considerations relating to land use planning processes are extensive, given the fact that two levels of government and NTI must sign off on developed land use plans and on any subsequent changes proposed to them.⁴

2.4.3 Nunavut Impact Review Board

Summary of steps

Processes undertaken by the Nunavut Impact Review Board (NIRB) that offer options for mitigation and management of impacts and threats to the LIA and its features include environmental assessments conducted at the initial screening stage, more in-depth review stage, and for projects that are approved to proceed, an ongoing monitoring stage. Each of these processes offers periods for public comment. In the screening level assessment, normally one two-three week comment period is provided for members of the public or organizations to provide input into the NIRB process. The review stage offers many options for public input, through commenting periods that last from 3 weeks to 60 days in length, as well as through in-person delivery of oral testimony and evidence at public meetings and formal public hearings. The NIRB’s ongoing monitoring work often provides at least one opportunity for public comment each year, and may include many more opportunities depending on the work conducted by a project proponent and other concurrent processes which may be taking place at the same time (i.e. project certificate reconsideration processes).

It would be expected that comments provided to the NIRB would relate to the LIA and its important features and areas, including recommendations about how to mitigate and manage impacts from development on the LIA. The NIRB may embody these recommendations in its decisions for a particular project, or it may not. Providing consistent input and strong evidence

⁴ Per *NUPPAA*, s. 53. “The Commission must submit the original or revised draft land use plan, which it must make public, and a written report of the proceedings at the public hearing held in respect of it, to the federal Minister, the territorial Minister and the designated Inuit organization.” And s. 54 ss.1. “As soon as practicable after receiving a draft land use plan, the federal Minister, the territorial Minister and the designated Inuit organization must accept it jointly or reject it with written reasons and return it to the Commission.” Further subsections of 54 require that any revised plan be accepted or rejected by the three parties, and upon an accepted plan, the federal minister recommends to Governor in Council, and territorial minister to the Executive Council of Nunavut, approval of the plan. Both of these must then approve the plan if it was recommended for such.

in favour of protection and mitigation will help to support the comments provided and make the NIRB more likely to incorporate those considerations in its decisions and recommendations.

Involved parties

The NIRB is the primary party involved in its own processes, however government and Inuit organizations are also heavily involved in each of the processes described above. Members of the public and local organizations are welcome and encouraged to participate in the NIRB's processes as well; a small number of community members are invited to participate at its in-person hearings, with costs for airfare and incidentals covered by the NIRB. The NIRB's decisions are often recommendations made to relevant government agencies with the responsibility to authorize specific projects, and so the federal and territorial governments also have the ultimate decision-making authority, which must be exercised at the culmination of the NIRB's processes.

Likelihood of local level implementation and timeliness

The likelihood of local level implementation and involvement is quite high, given that the process is public, transparent, and members of the general public are invited to participate. The timeliness of NIRB decisions and the subsequent management of impacts can range from very fast as with screening decisions which are expected within 45 days of its process' start, to quite slow (i.e. a number of years) in the instance of project reviews.

Effort level and resources required

The effort level and resources required to participate in the NIRB processes can range from quite low in the preparation of a comment form to be submitted for a screening, to very high if preparing expert reports in support of a technical submission to the NIRB's review process for a large industrial development project.

Jurisdictional, policy and governance considerations

As noted, government makes the ultimate decision regarding NIRB recommendations, and so a political consideration always exists in relation to NIRB processes and their outcomes. However, being a quasi-judicial administrative tribunal, the NIRB processes are supposed to run as independent and arms' length from government.

2.4.4 Nunavut Marine Council

Article 15 of the NLCA establishes the Nunavut Marine Council (NMC), which allows the NIRB, the Nunavut Water Board (NWB), the NPC and the NWMB to, together as the NMC, or individually, advise and make recommendations to other government agencies regarding the marine areas of the Nunavut Settlement Area (Government of Canada and TFN, 1993). According to the NLCA, government must consider such advice and recommendations in making decisions that affect marine areas (ibid.). The NMC's objective is to ensure the ongoing protection and wise use of marine areas for the long-term benefit of Inuit and people of

Nunavut and Canada, in a manner consistent with the principles of *Inuit Qaujimajatuqangit* and of the NLCA (Nunavut Impact Review Board, 2015).

While the NMC does not have a formalized process in place, if approached and requested, it may decide to act on behalf of an organization, community/communities, or a group of individuals to provide support for, or its own recommendation regarding the need for protection and conservation of the LIA to the Territorial and/or federal governments.

Given the open-endedness of initiating a request to the NMC, and the fact that it is a NLCA organization, it is expected that participation will be supported at the local level, and that communities or individuals may even implement the process themselves. As the effort level and resources required to do so are relatively low, provided the NMC supports the position and recommendations put forward, this option represents an accessible and fairly simple method to provide recommendations to government about the protection and management of the LIA.

2.5 Other Options

NUNAVUT GENERAL MONITORING PROGRAM

The NLCA and NUPPAA require that the territorial and federal governments establish a Nunavut General Monitoring Plan (NGMP) and that the NPC direct and coordinate general monitoring and data collection activities (Government of Canada and TFN, 1993). The NPC is required to collate information and data provided by different parties, report periodically on the ecosystemic and socio-economic environments of Nunavut, and to use the information collected to fulfill its own responsibilities for land use planning in the Territory (*ibid.*).

The federal department of Indigenous and Northern Affairs Canada (INAC) has established an NGMP Secretariat which issues a call for proposals each year, providing funding those successful applicants for work that contributes to the development and implementation of community-based and/or IQ-based monitoring projects that look at uses of land and water, cumulative impacts, the indicators and trends pertaining to the ecosystemic and socio-economic environment, and that identify and fill priority monitoring and data gaps, among others (Nunavut General Monitoring Plan Secretariat, 2016).

It is likely that study results showing the importance of the LIA to residents of the High Arctic and to wildlife species will prove of use in promoting various protections and conservation of the LIA and important features found there and the species which rely on its integrity. The NGMP Secretariat's program and provision of funding can also help to engage communities of the LIA, and potentially other communities with an interest in its preservation, in the monitoring of various indicators, trends, and impacts which affect the LIA.

The process for application is clearly laid out in the NGMP's call for proposals each year, as posted on its website. The likelihood of local level implementation for an NGMP proposal and monitoring work is difficult to gauge – depending on the community and any support it has from other potential partners such as the QIA, QWB, or WWF to name a few, local level

initiation of research related to the LIA and its protection could be quite likely. The effort level and resources required to submit an application are not extensive, and with funding available from NGMP through the process, financial resources would likely not be a major hindrance to completing the monitoring work. The effort level to conduct the actual monitoring work and to follow up with the submission of required reporting would be moderate to high, but not likely to deter local level involvement with the proper support system in place.

HIGH VISIBILITY PROMOTION OF ARCTIC

As noted in previous reporting, promoting the sensitivity of the Arctic to climate change to other regions of Canada and the world would help to make the matter more personal and may influence small changes that could in turn, have a lasting impact in the bigger picture (i.e. refusing to use plastic bags, working to implement renewable energy solutions in homes or offices, walking or taking public transport to work or school). There are local individuals and organizations with the capacity to develop inspiring mediums for reaching out to others, and given their vested interest in preserving and promoting the health of Nunavut and the Arctic, would serve as useful allies to the cause. For example, Zacharias Kunuk and Isuma Productions, as well as local film societies (Arviat Film Society) could work with communities or organizations to develop and promote messaging in line with the preservation and conservation of this important area. The GN's climate change initiative program could also set into motion something of this sort, where other departments hold contests for youth to develop anti-smoking campaign materials, perhaps a similar program campaigning for climate change awareness could be encouraged.

No formal process exists to engage this type of work, however local level participation could be expected to be quite high as the threat of climate change to sea ice extent and the wildlife which rely upon it remains an issue close to the heart of many Nunavummiut.

LOBBYING FOR RENEWABLES

Putting pressure on both the territorial and federal government to reduce greenhouse gas emissions would move Nunavut and Canada toward a more sustainable future. In particular, moving Nunavut communities from dependence on diesel power generation to renewable solar or wind energy for at least a portion of municipal power needs is another solution that, if successful, could have a small but meaningful impact in terms of slowing global warming as well as setting an example for similar changes to take place in other parts of Canada and the world.

No formal process is suggested for the lobbying of territorial and federal governments in respect of promoting renewable energy. However, engaging communities to encourage local level buy-in and support for related initiatives could help to initiate petition signings, letter writing campaigns to Members of Nunavut's Legislative Assembly and Nunavut's Member of Parliament and other small measures with local roots.

2.6 Summary of Restrictions on Use and Benefits of Management Options

The following table provides an overview of each option discussed above in terms of the need for legislative changes or regulatory considerations as well as the restrictions on land and resource use that may be present with any of the identified options. Comments outlining potential benefits of each option are provided.

TABLE 2. MANAGEMENT CONSIDERATIONS

Management options	Management Considerations						Potential Benefits of Management
	Requirements for Management		Allowable Uses				
	Legislated protection	Regulations dictating use	Hunting and Harvesting*	Industrial Activities	Industrial and Commercial Shipping	Tourism Activities	
IUCN Protected Areas							
Ia Strict Nature Reserve	likely	likely	yes	no	no	potentially	An increased international recognition of an IUCN designation may stimulate development of the local tourism economy and may also encourage the federal government to invest monies in conservation or preservation initiatives of the area(s) selected for designation
Ib Wilderness Area	likely	likely	yes	no	unlikely	potentially	
II National Park	yes	no	yes	no	potentially	yes	
III Natural Monument or Feature	likely	likely	yes	unlikely	potentially	yes	
V Protected Landscape or Seascape	likely	likely	yes	unlikely	potentially	yes	
VI Protected Areas with Sustainable Use of Natural Resources	likely	likely	yes	yes	potentially	yes	
UNESCO							
World Heritage Site	yes	yes	potentially	potentially	potentially	potentially	
Man and Biosphere Reserve	likely	likely	yes	yes	yes	yes	
ECCC-Protected Areas							Inuit allowed to hunt and use areas, conservation of species for future generations
National Wildlife Area	yes	yes	yes*	no	no	potentially	
Migratory Bird Sanctuary	yes	yes	yes**	potentially	potentially	potentially	

* Inuit hunting and harvesting rights are established through the NLCA and are thus constitutionally protected. In most cases, hunting and harvesting by Inuit may not be limited by government policies or decisions. In the case of a National Wildlife Area, where other individuals may not hunt or carry firearms, Inuit are allowed to do so. In the case of a NWMB, HTO, or RWB decision, however, limits may be placed on Inuit rights (i.e. hunting quotas, fishery allocations, etc.).

** In the case of a special designation for a wildlife species, Inuit harvesting rights may be limited (i.e. migratory bird species listed within federal regulations, threatened or endangered wildlife species).

TABLE 2. MANAGEMENT CONSIDERATIONS (CONTINUED)

Management options	Management Considerations						Potential Benefits of Management
	Requirements for Management		Allowable Uses				
	Legislated protection	Regulations dictating use	Hunting and Harvesting*	Industrial Activities	Industrial and Commercial Shipping	Tourism Activities	
DFO MPAs	yes	yes	yes	potentially	potentially	potentially	Inuit allowed to fish and use areas, may continue to allow development but may limit depending on input
Parks Canada							
National Park	yes	no	yes	no	potentially	yes	Protection of important areas, Inuit allowed to harvest and use areas, preservation and conservation for future
National Marine Conservation Area	yes	yes	yes	no	potentially	yes	
COSEWIC	yes	yes	yes**	yes	yes	yes	Conservation of species for future generations
GN							
Territorial Park	yes	no	yes	yes	n/a	yes	Preservation of area Helping to limit further degradation of the LIA and other areas
Climate Change	potentially	potentially	yes	yes	yes	yes	
NLCA							
NWMB/HTO/RWB	potentially	potentially	yes*	yes	yes	yes	Decisions or actions taken by NLCA organizations usually in line with constitutional rights, often with Inuit participation and probable support
NPC	potentially	potentially	yes	potentially	potentially	potentially	
NIRB	no	no	yes	potentially	potentially	potentially	
NMC	potentially	potentially	yes	yes	yes	yes	
Other							
NGMP Secretariat	no	no	yes	yes	yes	yes	Other options are very flexible and can be developed to suit the proponent and purpose, no legislative or regulatory requirements to limit the exercise of these options
High visibility promotion of Arctic	no	no	yes	yes	yes	yes	
Lobbying for renewables	no	no	yes	yes	yes	yes	

* Inuit hunting and harvesting rights are established through the NLCA and are thus constitutionally protected. In most cases, hunting and harvesting by Inuit may not be limited by government policies or decisions. In the case of a National Wildlife Area, where other individuals may not hunt or carry firearms, Inuit are allowed to do so. In the case of a NWMB, HTO, or RWB decision, however, limits may be placed on Inuit rights (i.e. hunting quotas, fishery allocations, etc.).

** In the case of a special designation for a wildlife species, Inuit harvesting rights may be limited (i.e. migratory bird species listed within federal regulations, threatened or endangered wildlife species).

3 Key LIA Areas, Features and Recommendations for Management

This section provides a listing of recommended management options for groupings of key features and areas of the LIA. As details regarding the processes, parties involved, and level of local involvement for each option have been covered in the preceding sections, the current section provides the recommended options and any further information that is specific and relevant to the key feature or area in question.⁵

3.1 Considering the Entire LIA for Management

One option considered over the course of the current research involves the conservation of the entire LIA, providing protection from the various pressures and threats arising from industrial and commercial activities and a changing climate on a large spatial scale. This would be a difficult undertaking, considering the buy-in that would be required at varying levels of government, Inuit and NLCA organizations, as well as local communities and individuals.

However, of the management options considered, the following present the greatest potential to be successfully applied, in some regard, to the entire LIA:

- IUCN Protected Area
- UNESCO World Heritage Site
- UNESCO MaB
- GN Climate Change Initiatives
- NWMB/HTOs/RWBs
- NIRB
- NPC
- NMC
- NGMP
- High visibility promotion of Arctic
- Lobbying for renewables

IUCN Protected Area: It is recommended that the most suitable category of protected area may be Category VI, Protected Area with Sustainable Use of Natural Resources, owing to the need to have many parties in agreement with the designation. As a voluntary initiative that would be managed from within Canada and Nunavut, the players involved would include relevant federal and territorial ministries, as well as NLCA organizations responsible for various aspects of the area being considered for designation. For example, the NWMB and local HTOs may be involved in decisions to protect areas which infringe on wildlife or their habitat, or which intersect with important hunting or fishing grounds, or other areas of importance to Inuit. As recommended by the IUCN, involving stakeholders from affected communities is also an important consideration in pursuing any protected area designation (IUCN, 2016).

UNESCO World Heritage Site: Though the process for having an area accepted as an UNESCO World Heritage Site is extensive and complex, it seems an appropriate measure matched to

⁵ Note that all options recommended are included in the initial listing for each grouping of key features or areas, however, if further information is not warranted, not every management option will be explained in further detail.

the similarly complex task of pursuing the protection of the entire LIA. As it is the federal government that must present the proposed site as a part of its Tentative List to UNESCO, it is recommended that discussions with the territorial government and federal government departments such as Indigenous and Northern Affairs Canada (INAC) and ECCC are initiated to gauge the federal appetite for moving forward with such an undertaking. In terms of identifying the UNESCO points of Outstanding Universal Value relevant to the LIA, the following represent an initial listing for the purposes of engaging these discussions:

- (v) be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture(s), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;
- (viii) be 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;
- (ix) be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;
- (x) contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of Outstanding Universal Value from the point of view of science or conservation (adapted from UNESCO, 2015).

UNESCO MaB: Given the requirement that the area being considered for inclusion within the Man and Biosphere Reserve Programme support the pursuit of sustainable development, as noted above, allowing for and economic development in an area like the LIA could prove to be the most agreeable solution to the varying government and Inuit agencies involved in the decision to pursue such protection. Also, the three zones offer varying levels of protection and permitted activity, which is well suited to having a core protected area of the LIA surrounded by buffer and transition zones that would be less strictly protected from development and human use.

NWMB/HTOs/RWBs: Working with the NWMB, either via its regular meetings or during hearings relating to the management of wildlife species, it is possible to promote the LIA and the need for conservation efforts and mechanisms to protect the habitat and wildlife species that depend on the area. Facilitating discussions with the NWMB, local HTOs and QWB may open further channels to provide information regarding these needs and to have the boards take up the charge in lobbying for protection.

NIRB: During NIRB assessments of proposed projects, providing comments to it regarding the importance of the LIA and need for its protection and conservation may help its board to make decisions which work to mitigate the impacts of industrial and commercial development. Furthermore, sharing information with the NIRB about the LIA outside of its assessment

processes may result in the LIA being a standard factor considered by the NIRB in making its recommendations about development in the area. It could also serve to highlight the LIA and inform others participating in the NIRB’s process.

NPC: As the NPC is currently developing a Nunavut Land Use Plan, the timing is ideal for making submissions to the NPC which identify the LIA as an important feature of Nunavut and to propose desired restrictions on activities within the area for inclusion into the final version of the Land Use Plan.

NMC: The NMC may be approached at any point with issues relating the marine environment, including as a way to inform it of the importance of the LIA, and of efforts WWF and others are taking to protect the area. Approaching the NMC would be a beneficial step to getting a “foot in the door” with respect to utilizing the NPC and NIRB processes for protection of the LIA as outlined above. If the NMC is informed, and in turn, is asked for assistance in furthering initiatives for the protection and conservation of the LIA, it may then inform government of these important efforts. It would also be expected that the individual Institutions of Public Government would be able to rely on the information submitted to the NMC during their individual processes (i.e. land use planning and project assessment).

NGMP: Putting forth proposals for research and monitoring within the LIA brings to the attention of INAC and the NPC, issues relating to the conservation and protection of the LIA. The research and work that could be completed under the NGMP umbrella and funding could be further utilized to inform many of the processes related to other management options discussed in this paper.

3.2 Oceanographic and Ecological Features

Non-Wildlife features

SEA ICE COVER AND RELATED FEATURES

The following options for the management of impacts and threats to sea ice cover and related sea ice features are recommended. Specific notes regarding some of the options, where relevant, are provided below.

- IUCN Protected Area
- UNESCO World Heritage Site
- UNESCO MaB
- ECCC Protected Areas
- DFO Marine Protected Areas
- PC National Marine Conservation Area
- GN Climate Change Initiatives
- NWMB/HTOs/RWBs
- NPC
- NIRB
- NMC
- NGMP
- High visibility promotion of Arctic
- Lobbying for renewables

International Options: The selection of IUCN and UNESCO designations for sea ice cover and related features was a challenging recommendation to make given the relative impermanence of ice and the fact that it is technically a marine feature and not one that is set as a land feature would be. However, the extent of summer sea ice in itself has made possible, the evolution, subsistence, and thriving nature of Inuit people and their culture, as well as supporting the survival of the many species Inuit have relied upon for generations. Allowing the extent of summer sea ice in this area to lessen and eventually disappear will eliminate an entire aspect of “the land” (i.e. sea ice) upon which Inuit culture and history were built, as well as introducing changes to the marine ecosystem which could be devastating for those species on which they rely. It is recommended that the IUCN categories most relevant to the protection of sea ice cover and features include:

- **Category Ib Wilderness area:** as these are usually large unmodified or slightly modified areas that retain their natural character and influence and are without permanent or significant human habitation, protected and managed to preserve their natural condition;
- **Category VI Protected areas with sustainable use of natural resources:** as these are generally large areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems and are mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims.

With regard to the UNESCO World Heritage Site and MaB programs, the former represents a possibility for protection in terms of Outstanding Universal Value which, per UNESCO’s listing number (iii) bears a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared; and (v) is an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture(s), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change. The MaB Programme could represent a plausible option for the management and protection of a large portion of sea ice cover given its requirement for a core area to be strictly protected, buffer zone allowing for increasing uses and a transition zone which allows for sustainable development to occur.

ICE ALGAE AND PHYTOPLANKTON

The following options for the management of impacts and threats to ice algae and phytoplankton are recommended.

- GN Climate Change Initiatives
- NWMB/HTOs/RWBs
- NPC
- NIRB
- NMC
- NGMP
- High visibility promotion of Arctic
- Lobbying for renewables

SNOW COVER

The following options for the management of impacts and threats to snow cover are recommended.

- GN Climate Change Initiatives
- NWMB/HTOs/RWBs
- NPC
- NIRB
- NMC
- NGMP
- High visibility promotion of Arctic
- Lobbying for renewables

NORTH WATER AND OTHER POLYNYAS

The following options for the management of impacts and threats to the North Water and other polynyas in the LIA are recommended.

- IUCN Protected Area
- UNESCO World Heritage Site
- UNESCO MaB
- ECCC Protected Areas
- DFO Marine Protected Areas
- PC National Marine Conservation Area
- GN Climate Change Initiatives
- NWMB/HTOs/RWBs
- NPC
- NIRB
- NMC
- NGMP
- High visibility promotion of Arctic
- Lobbying for renewables

International Options:

The IUCN Protected Area categories that may pertain to the North Water and potentially other polynyas in the LIA include:

- **Category Ib Wilderness area:** Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition;
- **Category III Natural monument or feature:** Areas set aside to protect a specific natural monument, which can be a landform, sea mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove

Flora and Fauna

MARINE FISH (COD, CHAR)

The following options for the management of impacts and threats to marine fish are recommended. Specific notes regarding some of the options, where relevant, are provided below.

- IUCN Protected Areas
- ECCC Protected Areas
- DFO Marine Protected Areas
- PC National Marine Conservation Area
- COSEWIC
- GN Climate Change Initiatives
- NWMB/HTOs/RWBs
- NPC
- NIRB
- NMC
- NGMP
- High visibility promotion of Arctic
- Lobbying for renewables

IUCN Protected Areas: It is not suggested that the IUCN Protected Areas designations apply to the marine fish species themselves, however it may be feasible that important areas for fish and fish habitat (including polynyas and other areas of high biological productivity) could be protected by areas designated under the following categories:

- **Category Ib Wilderness area:** Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition
- **Category VI Protected areas with sustainable use of natural resources:** Areas that conserve ecosystems together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims.

MARINE MAMMALS (RINGED SEAL, POLAR BEAR), INCLUDING MIGRATION ROUTES

The following options for the management of impacts and threats to marine mammals are recommended. Specific notes regarding some of the options, where relevant, are provided below.

- IUCN Protected Areas
- ECCC Protected Areas
- DFO Marine Protected Areas
- PC National Marine Conservation Area
- COSEWIC*
- GN Climate Change Initiatives
- NWMB/HTOs/RWBs
- NPC
- NIRB

- NMC
- NGMP
- High visibility promotion of Arctic
- Lobbying for renewables

**Note: Marine mammal migration routes would not be eligible for protection under COSEWIC unless defined as critical habitat in the listing of a species under the SARA*

IUCN Protected Areas: It is not suggested that the IUCN Protected Areas designations apply to the marine mammal species themselves, however it may be feasible that important areas for mammals and their habitats (including for example, polynyas and ice areas important for feeding, migration, pupping, etc.) could be protected by areas designated under the following categories:

- **Category Ib Wilderness area:** Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition
- **Category VI Protected areas with sustainable use of natural resources:** Areas that conserve ecosystems together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims.

TERRESTRIAL WILDLIFE:

The following options for the management of impacts and threats to terrestrial wildlife species including caribou, migratory birds, and others (as well as sea ice crossings) are recommended. Specific notes regarding some of the options, where relevant, are provided below.

- IUCN Protected Areas
- ECCC Protected Areas
- DFO Marine Protected Areas
- PC National Marine Conservation Area
- COSEWIC*
- GN Climate Change Initiatives
- NWMB/HTOs/RWBs
- NPC
- NIRB
- NMC
- NGMP
- High visibility promotion of Arctic
- Lobbying for renewables

**Note: Caribou sea ice crossings would not be eligible for protection under COSEWIC unless defined as critical habitat in the listing of a caribou population under the SARA*

IUCN Protected Areas: It is not suggested that the IUCN Protected Areas designations apply to the terrestrial wildlife species themselves, however it may be feasible that important areas for wildlife species and their habitat (including caribou ice crossings, for example) could be protected by areas designated under the following categories:

- **Category Ib Wilderness area:** Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition
- **Category VI Protected areas with sustainable use of natural resources:** Areas that conserve ecosystems together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims.

VEGETATION:

The following options for the management of impacts and threats to vegetation are recommended. Specific notes regarding some of the options, where relevant, are provided below.

- | | |
|---------------------------------|---------------------------------------|
| ▪ IUCN Protected Areas | ▪ NPC |
| ▪ ECCC Protected Areas | ▪ NIRB |
| ▪ COSEWIC | ▪ NMC |
| ▪ GN Climate Change Initiatives | ▪ NGMP |
| ▪ NWMB/HTOs/RWBs | ▪ High visibility promotion of Arctic |

IUCN Protected Areas: It is not suggested that the IUCN Protected Areas designations apply to vegetation species in particular, however it may be feasible that vegetation deemed essential food sources for other vulnerable species (i.e. lichens for the endangered Peary caribou population) could be protected by areas designated under the following categories:

- **Category Ib Wilderness area:** Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition
- **Category VI Protected areas with sustainable use of natural resources:** Areas that conserve ecosystems together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims.

3.2 Socio-Economic and Cultural Features

Archaeological Sites

SOD HOUSES AND OTHER ARCHAEOLOGICAL FEATURES, INCLUDING COASTAL AREAS OF SIGNIFICANCE

The following options for the management of impacts and threats are recommended with regard to sod houses as identified by residents of Arctic Bay and Pond Inlet as well as areas used by Thule, Dorset, and Inuit cultures in the region spanning the past 5000 years, and which are abundantly distributed along the coastline of Admiralty Inlet (WWF, 2014c). Specific notes regarding some of the options, where relevant, are provided below.

- IUCN Protected Areas
- UNESCO World Heritage Site
- UNESCO MaB
- National Park
- GN Territorial Park
- GN Climate Change Initiatives
- NWMB/HTOs/RWBs
- NPC
- NIRB
- NMC
- NGMP
- High visibility promotion of Arctic
- Lobbying for renewables

IUCN Protected Areas: The IUCN Protected Areas designation would best apply to sod houses and other archaeological features through the following categories:

- **Category V Protected landscape or seascape:** Where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values
- **Category VI Protected areas with sustainable use of natural resources:** Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims.

UNESCO World Heritage Sites: The UNESCO definition of Outstanding Universal Value would apply to sod houses and other areas of coastal significance through the following considerations:

- (iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared
- (iv) be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history
- (v) be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture(s), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change

UNESCO MaB: It is recommended that the MaB Programme could apply in part, to an area that includes but is not solely comprised of sod houses and other important coastal resources.

If there are other areas such as travel routes or fishing and hunting areas (see Current and Historic Cultural Sites below) that are also important and could benefit protection, including these together under one application for MaB may serve to increase the likelihood of reserve approval.

GN Climate Change Initiatives/High visibility promotion of Arctic/Lobbying for renewables:

Given the threats to coastal areas and shorelines from the changing global climate (i.e. rising sea level, increased wave action and subsequent impacts to shoreline, increased precipitation and wind events, etc.), features such as sod houses and ancient sites may become increasingly threatened. Working with the GN to highlight these important areas, documenting them through high visibility efforts such as documentaries, research programs, and public education, and lobbying the GN to move away from fossil fuel reliance, thereby lessening Nunavut's contribution to climate change, would all serve to protect these amazing and unique features.

FOSSIL FOREST AND PALAEOBIOLOGY SITES

The following options for the management of impacts and threats to palaeobiology sites and the fossil forest located on Axel Heiberg Island are recommended. Specific notes regarding some of the options, where relevant, are provided below.

- IUCN Protected Areas
- UNESCO World Heritage Site
- National Park
- GN Territorial Park
- GN Climate Change Initiatives
- NPC
- NIRB
- NGMP
- High visibility promotion of Arctic

IUCN Protected Areas: The IUCN Protected Areas categories that would best apply to the Axel Heiberg fossil forest and any similar areas of palaeobiology sites include:

- **Ia Strict nature reserve:** Strictly protected for biodiversity and also possibly geological/geomorphological features, where human visitation, use and impacts are controlled and limited to ensure protection of the conservation values
- **III Natural monument or feature:** Areas set aside to protect a specific natural monument, which can be a landform, sea mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove

UNESCO World Heritage Site: The UNESCO definition of Outstanding Universal Value as it applies to the fossil forest on Axel Heiberg Island and other instances of palaeobiology sites in the high Arctic would likely apply best using the following considerations:

- (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
- (ix) outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals

Current and Historic Cultural Areas

HUNTING AND FISHING AREAS

The following options for the management of impacts and threats to hunting and fishing areas identified by Inuit as being important for subsistence harvesting and cultural pursuits are recommended. Specific notes regarding some of the options, where relevant, are provided below.

- | | |
|--|---------------------------------------|
| ▪ IUCN Protected Areas | ▪ NPC |
| ▪ UNESCO MaB | ▪ NIRB |
| ▪ ECCC Protected Areas | ▪ NMC |
| ▪ PC National Marine Conservation Area | ▪ NGMP |
| ▪ GN Climate Change Initiatives | ▪ High visibility promotion of Arctic |
| ▪ NWMB/HTOs/RWBs | ▪ Lobbying for renewables |

International Options: It is not expected that either the IUCN or UNESCO designations would be able to protect all areas used by Inuit for fishing and hunting, given that there are many which would likely be identified as holding immense importance to Inuit and communities in the LIA. Rather, it is suggested that harvesting areas within the vicinity of other key areas or features of the LIA could both benefit from the application of international management options and the protections offered by these designations, as well as improve the likelihood of having applications for international options approved/accepted, where applicable.

INUIT TRAVEL ROUTES

The following options for the management of impacts and threats to traditional and contemporary Inuit travel routes are recommended. Specific notes regarding some of the options, where relevant, are provided below.

- | | |
|------------------------------|------------------------|
| ▪ IUCN Protected Areas | ▪ UNESCO MaB |
| ▪ UNESCO World Heritage Site | ▪ ECCC Protected Areas |

- PC National Marine Conservation Area
- GN Climate Change Initiatives
- NWMB/HTOs/RWBs
- NPC
- NIRB
- NMC
- NGMP
- High visibility promotion of Arctic
- Lobbying for renewables

International Options: As with fishing and hunting areas above, it is not expected that either the IUCN or UNESCO designations would be able to protect entire travel routes, given that there are many which would likely be identified as holding immense importance to Inuit and communities in the LIA. Rather, it is suggested that travel routes within the vicinity of other key areas or features of the LIA could both benefit from the application of international management options and the protections offered by these designations, as well as improve the likelihood of having applications for international options approved/accepted, where applicable.

3.3 Discussion of Options⁶

International Options

The number of parties that must come together to move these options forward could limit the likelihood of successful implementation of an international designation within the LIA. It may well be possible to reach consensus on the boundary of a particular area in question, however the type of designation and within that, the category of designation (i.e. UNESCO World Heritage Site and IUCN Protected Areas) may be cause for much deliberation and the dividing point for the many organizations that would be required to weigh in on any such decision. These would include federal departments (and likely more than one of them as for example, ECCC manages the IUCN process for Canada, the department of Justice would revise or prepare legislation as required, and DFO may be involved for marine species or marine areas), the Territorial government, and NLCA organizations including NTI, RIA, RWB, HTO, NWMB, NPC, and potentially the NIRB as well (i.e. should the federal government engage in a Strategic Environmental Assessment, the NIRB's process would be triggered to undertake an assessment).

⁶ Note that this section has been included at the request of WWF and represents the author's perspective and opinion. The information herein should not be considered a decisive rule on any one option or as representing the perspective or policy of those organizations involved in the management options discussed.

This is not to say the political will to protect and conserve important areas does not exist, only that the actual work of reaching an agreement on the location for a protected area and actual designation to pursue may be extensive, and could either delay or indefinitely stall, the pursuit of such an option.

Federal Options

While domestic options may involve internal steps and processes, they are no less complex than the international options when considering the number of parties that must be included at the table in making decisions about locations of areas under consideration and the types of protection or conservation to be implemented. The same listing of parties as outlined above for international options would also be involved for federal management tools under consideration.

The federal government has a number of stated intentions with regard to conservation and preservation initiatives, for example with DFO's Marine Protected Areas, and Parks Canada's plans for National Parks and NMCAs across the country. To this end, pursuing options that have been previously mentioned, committed to, or for which work has already begun (i.e. the Lancaster Sound NMCA) may present a faster route to ultimate protection of an area, and may further limit the amount of effort required by not only the federal government in exercising its responsibilities, but by other participants in the process(es).

Territorial Options

The GN has limited options that can offer the types and extents of protection and conservation discussed above in relation to international and federal options. However, the designation of new Territorial Parks is one option that presents a viable possibility, and one that can be brought forward by interested communities or groups on an ongoing basis. The fact that the selection and designation of new parks remains flexible and quite accessible makes it an attractive option for ongoing consideration, as perhaps other options under consideration may not achieve the desired outcome, or for example, should the need for a new conservation area (i.e. park) become emergent at some future time.

In addition, the ability of the territorial government to press forward with renewable energy initiatives, and to begin transitioning municipal power generation away from diesel generators and toward renewable sources, represents a tremendous opportunity to reduce Nunavut's contribution of greenhouse gases, and also to send a message to the rest of the country, and even the world about the possibilities that exist to work toward a more sustainable future, and one that protects the LIA and other areas sensitive to climate change. The GN has a small department of staff dedicated to researching and engaging in climate change initiatives; the

department could be engaged to further develop its initiatives and/or encouraged to support other activities and developments relevant to its mandate.

Given the recent attention to renewable energy options and potential in the Arctic and the overarching prevalence of climate change as an action item for the federal government and internationally, it is probable that attempts to engage the GN's climate change department and staff will be met favorably.

NLCA Options

Many of the options available per the NLCA are limited to specific regulatory processes (i.e. development or review of Land Use Plans, engagement in project-specific environmental assessments, participation in wildlife management hearings, etc.), and are thus also limited in terms of what outcomes are possible with engagement. That is not to say that these processes are not valid pathways to reaching conservation and protection objectives for the LIA and its important features. Quite the opposite is true, especially considering that the institutions of public government noted in previous sections (NPC, NIRB, NWMB) have mandated authority in the management of natural resources within the Territory and that their recommendations are independent of government and can therefore present a candid perspective that is not politically motivated. Ultimately, government has the final authority regarding decisions made following the respective processes of the Land Claim organizations, however any Ministerial decision to overturn a recommendation is subject to judicial review and must stand up to various legal tests, decreasing the likelihood of overturning a sound recommendation of the institutions of public government.

Presenting these organizations with information about the importance of the LIA, especially considering public engagement and support for its conservation and protection, will increase the likelihood of each institution of public government in turn using the evidence provided as well as supporting the case for protection and conservation in the decisions and recommendations each must make. In addition to their own determinations and processes, the land claim organizations may be approached by government for advice as with the NMC, and NWMB. HTOs, RIAs, and NTI are also engaged in most processes discussed in the preceding sections, and have special standing as land claim organizations. Working with these organizations, and especially with the support of local communities and Inuit, can help in turn, to garner the support of these organizations for various LIA management options.

4 Conclusion

The LIA is an important area to consider for conservation and protection from human induced threats, be they commercial and industrial developments or human generated climate change. Many of features of the LIA are essential to the persistence of a healthy and viable marine ecosystem and the various food webs it supports – from primary producers to Arctic cod, to migratory birds, caribou, bowhead whales and polar bears. Inuit residents of this unique ecosystem have relied upon the sea ice to facilitate what was historically nomadic lifestyle and presently subsistence harvesting and cultural pursuits. Inuit also rely on polynyas and other important areas of biological activity for the abundant hunting and fishing opportunities provided, and also to support the species on which they depend.

A range of options for mitigation and management of impacts and threats to the LIA have been discussed. From small level letter writing campaigns to intense applications for international recognition – all of the key areas and features of the LIA could benefit from some level of protection or management. This report has set out the necessary steps to achieving each level of action, and has indicated which options may be best suited to each of the features and areas considered to be most important to the preservation of the LIA.

Engaging communities and finding ways to encourage their participation in the protection and conservation of the LIA will be of the utmost importance. The information contained in this and previous reports commissioned in this series should provide an excellent starting place for providing the background information and proposing actions that will take hold with local communities and lead to meaningful protection and management of the LIA.

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