

Canada Target 15: Detailed Assessment Report

Prepared as a supplement for Canada's 6th National Report to the CBD, 2018

INTRODUCTION

This detailed assessment report supports the evaluation of progress toward Canada Target 15:

By 2020, Aboriginal traditional knowledge [Indigenous Knowledge] is respected, promoted, and where made available by Aboriginal [Indigenous] peoples, regularly, meaningfully and effectively informing biodiversity conservation and management decision-making.

In order to evaluate progress achieved toward this target, the following indicators were assessed:

1. Number of mechanisms in place for Aboriginal Traditional Knowledge (Indigenous Knowledge, or IK) to inform decision-making;
2. Case studies assessing effectiveness of established mechanisms for ATK (ITK) to inform decision-making;
3. Case studies illustrating best practices in promoting ATK (ITK) or having it inform decision-making;
4. Trends in linguistic diversity and number of speakers of Aboriginal (Indigenous) languages

SPECIAL CONSIDERATIONS

Please note that the terms 'Traditional Knowledge' (TK), 'Aboriginal Traditional Knowledge' (ATK), and 'Indigenous Knowledge' (IK) are used interchangeably throughout this report. The terms TK and ATK were formally used in the Canadian context, and the government of Canada is now turning to the use of the terms 'Indigenous' and 'Indigenous Knowledge' (IK).

INDICATOR 1: NUMBER OF MECHANISMS IN PLACE FOR INDIGENOUS KNOWLEDGE TO INFORM DECISION-MAKING

Note: In this context "mechanisms" represents all procedures and means existing within a governance structure to have Indigenous Knowledge inform biodiversity conservation, management and decision-making.

SUMMARY OF FINDINGS

Since 2014, Environment and Climate Change Canada (ECCC) has been compiling information on federal and provincial/territorial mechanisms in place across the country that allow for Indigenous Knowledge to inform government decision-making. Please see linked documents: *Canada Target 15: Baseline Report*, and *Canada Target 15: Table of IK-Decision mechanisms* for more information on these mechanisms.

Evidence shows that new mechanisms have been created since 2014, demonstrating progress. The total number of mechanisms found is **147**. This is 34 more mechanisms than in 2014. However, only 4 of these mechanisms are confirmed to have been created since 2014. Table 1, below, summarizes this status.

Table 1. Status of IK-Decision mechanisms consulted for this assessment

Total number of mechanisms (as of 2018-03-02)	147
Total number of mechanisms added to the table since 2014	34
Number of new mechanisms founded since 2014	4
Number of mechanisms added to the table since 2014 but founded before 2014	7
Number of mechanisms added to the table since 2014 but there is no information on date founded	15
Number of mechanisms added to the table since 2014 that are planned but not yet founded	3
Number of mechanisms added to the table since 2014 but suggested to be removed	5
Number of mechanisms already in the 2014 table that are suggested to be removed	5

The current list is not comprehensive, and there are other mechanisms that are not reflected in this assessment. In addition, new mechanisms will stem from current negotiations and legislation that have not yet been enacted.

Further analysis is required to validate the documentation on mechanisms that was gathered for this assessment in the Annex to the linked document: *Canada Target 15: Baseline Report*. The lack of a regular monitoring system to gather information on IK mechanisms necessitates periodic efforts to request information from federal, provincial, and territorial governments. As a result, the current assessment is based on incomplete data.

SOURCES:

Canada Target 15: Table of IK-Decision mechanisms: <http://twk.pm/keolk7elry>

Canada Target 15: Baseline Report. <http://twk.pm/m9chuiklvu>

**INDICATOR 2:
CASE STUDIES ASSESSING EFFECTIVENESS OF ESTABLISHED MECHANISMS FOR
TRADITIONAL KNOWLEDGE (INDIGENOUS KNOWLEDGE, OR IK)
TO INFORM DECISION-MAKING**

SUMMARY OF FINDINGS

A scoping study was conducted in 2014 by the federal government department of Environment and Climate Change (ECCC) to support the current assessment.

As part of this study, four case studies were conducted in 2016 to better understand the effectiveness of structures or mechanisms in place in Canada through which IK has successfully informed biodiversity conservation and management practices. Notable examples include the IK Subcommittee on the Status of Endangered Wildlife in Canada (COSEWIC), whereby the subcommittee assisted in the acquisition and integration of IK into the COSEWIC status assessment process, as well as the Nunavut Wildlife Management Board, whereby partners work together to combine the knowledge and understanding of

wildlife managers, users, and the public to make decisions concerning the management of wildlife in Nunavut.

These case studies were assessed to measure progress on this indicator as well as Target 15. They show concrete examples of efforts being made to build robust structures for a better inclusion of IK in conservation decision-making in the government.

CASE STUDY 1: **COSEWIC'S ATK SUBCOMMITTEE**

DESCRIPTION OF THE COSEWIC'S ATK SUBCOMMITTEE

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was created in 1977 to assess and determine the national status of wild Canadian species, subspecies, varieties or other designable units that are suspected of being at risk of extinction or extirpation. The Aboriginal Traditional Knowledge Subcommittee (ATKSC) was added to COSEWIC in 2000 as an independent advisory panel to the Minister of Environment and Climate Change Canada to assist in the acquisition and integration of IK (Indigenous Knowledge) into the COSEWIC status assessment process (COSEWIC 2016).

The specific functions of the ATKSC members are clearly outlined in COSEWIC's Terms of Reference (COSEWIC, 2011). These include:

- To perform their duties in an independent manner;
- To attend ATKSC, Species Specialist Subcommittees (SSCs) and other meetings in support of the functioning of the ATKSC;
- To develop and maintain relationships with IK Holders and their communities;
- To advise writers of status reports of known sources of IK, suggest wildlife species for candidate lists, facilitate access of contractors to knowledge holders or IK using approved protocols, review draft and interim reports, and provide regional expertise on the status of, and threats to wildlife species;
- To facilitate the access to relevant IK for wildlife species assessment using appropriate processes and protocols related to IK gathering; and
- To review draft and interim status reports for IK content and contribute to status assessment deliberations to the best of their knowledge and ability.

The processes and protocols to be used by the ATKSC were defined and approved by IK Holders during five workshops. The messages heard during these workshops were compiled into the "COSEWIC ATK Process and Protocol Guidelines" which was then approved by COSEWIC (COSEWIC, 2010).

The ATKSC is composed of two co-chairs who are appointed by the ATKSC and ten (10) members who are appointed by the Minister of the Environment and Climate Change according to the nomination of Indigenous organizations. The members include two representatives from each of the following organisations: the Assembly of First Nations (AFN), the Métis National Council (MNC), Inuit Tapiriit Kanatami (ITK), the Congress of Aboriginal Peoples (CAP) and the Native Women's Association of Canada (NWAC).

LEGAL FRAMEWORK

The *Species at Risk Act* (SARA) provides federal legislation to prevent wildlife species from becoming extinct and to provide for their recovery. SARA 2002 results from the implementation of the *Canadian*

Biodiversity Strategy, which is a response to Canada's obligations under the *Convention on Biological Diversity* (Minister of Supply and Services Canada, 1995). In 2003, the Act established COSEWIC as an advisory body to ensure the assessment of wildlife species using the best available scientific and Indigenous Knowledge. Under SARA 2002, the Government of Canada must consider COSEWIC's designations when establishing the legal list of wildlife species at risk (Minister of Justice, 2015).

SARA (2002, c. 29) recognizes that "the roles of the Aboriginal peoples of Canada and of wildlife management boards established under land claims agreements in the conservation of wildlife in this country are essential", and that "the traditional knowledge of the Aboriginal peoples of Canada should be considered in the assessment of which species may be at risk and in developing and implementing recovery measures" (Minister of Justice, 2015). SARA 2002 subsection 21(2) indicates that "COSEWIC must carry out its functions on the basis of the best available information on the biological status of a species, including scientific knowledge, community knowledge and Aboriginal traditional knowledge". The Act also stipulates the requirement for COSEWIC to establish the ATKSC (Minister of Justice, 2015, subsection 18(1)).

Furthermore, Indigenous and community knowledge are specifically mentioned into COSEWIC's *Terms of Reference* as a source of knowledge to be considered in the assessment of species status (COSEWIC, 2011).

CONSIDERATION OF IK IN SPECIES ASSESSMENT

The COSEWIC species assessment process is divided in three steps: (1) the selection of wildlife species requiring assessment; (2) the compilation of available data, knowledge and information; and (3) the assessment of a wildlife species' risk of extinction or extirpation and subsequent designation (COSEWIC 2015). IK can be integrated throughout each of these steps.

The ATKSC has developed the *COSEWIC Aboriginal Traditional Knowledge Process and Protocols Guidelines* (COSEWIC, 2010) to appropriately compile relevant IK on species considered for assessment. The guidelines outline an approach and specific steps to facilitating access to and the gathering of available IK, as well as the integration of that knowledge into the COSEWIC species assessment process.

Importantly, in a situation where an Indigenous community has already developed processes and protocols to gather IK, the ATKSC will use the community's protocols even if they are not specific to species assessments. However, if a topic is not specified in communities' protocols, *COSEWIC Aboriginal Traditional Knowledge Process and Protocols Guidelines* will be used.

The *COSEWIC ATK Process and Protocols Guidelines* recognizes that "ATK (Aboriginal Traditional Knowledge, now referred to as Indigenous Knowledge) is a significant gift given by the Creator. When it is shared, ATK should be treated with respect and integrity and used only for its intended purpose, in this case, for the benefit of that particular species" (COSEWIC, 2010).

The guiding principles of the *COSEWIC ATK Process and Protocols Guidelines* are as follows:

1. Subject to the terms of self-government and land claims agreements, Indigenous communities are presumed to be the primary bodies to facilitate access to IK in the assessment and classification of species at risk. Access is subject to local laws, protocols and practices.
2. In order to use Indigenous Knowledge in the assessment and classification of species at risk, permission must be secured from the IK Holders of such knowledge.
3. IK used in the assessment and classification of species at risk is to be treated as public knowledge only with the approval of the IK Holders of such knowledge. It is to be organized and

presented in a culturally-appropriate, timely and thorough manner, and - to the extent possible - in such a way as to be comprehensible by both Indigenous and non-Indigenous persons.

4. IK is to be given equal recognition and value with western Science and Community Knowledge (COSEWIC, 2010).

The guidelines also indicate that community approval along with necessary permits must be obtained prior to conducting an IK gathering project. If interviews are conducted, participants' prior informed consent must be acquired. Participants and their knowledge must be treated respectfully throughout the entire process. Finally, IK Holders can review and approve the ATK report before it is included to COSEWIC Status Reports. Only IK relevant to COSEWIC assessment criteria is summarized in the report. To date (May 2015), more than 60 ITK reports were provided to COSEWIC. These reports documented IK on species such as the Eastern box turtle, the lake sturgeon, sockeye and chinook salmon, Atlantic walrus, narwhal, grizzly bear, caribou and wolverine (Environment Canada, 2013).

The interim status report is reviewed by each of the 31 members of COSEWIC two months prior to the COSEWIC Wildlife Species Assessment Meeting which aims to assess species. During their review, ATKSC members can provide comments on the accuracy and validity of the ATK in the report. If clarification or additional information regarding IK is required, COSEWIC members have the opportunity to ask questions to the ATKSC co-chairs at the assessment meeting. Each member of COSEWIC including one of the two ATKSC co-chairs, vote on status designation. COSEWIC's recommended designation is taken into consideration towards the final decision on species status designation by the federal Minister of Environment and Climate Change.

Three types of IK can be considered for the purpose of species assessments: IK that has been published and is publicly available, IK that is documented but that is not publicly available, often held by communities, and IK that is within the minds of IK Holders and has not yet been documented.

BEST PRACTICES, CHALLENGES AND BENEFITS IN HAVING IK INFORM SPECIES ASSESSMENT AND STATUS DESIGNATION

Two interview participants shared their experiences and points of view regarding the consideration of IK into COSEWIC species assessment and decision-making. One participant works at the Secretariat. The other participant is a member of the ATKSC and is of Indigenous descent. He has participated in the elaboration of the COSEWIC ATK (IK) Process and Protocols Guidelines.

BEST PRACTICES IN HAVING IK INFORM SPECIES ASSESSMENT AND STATUS DESIGNATION

Documenting IK

The interview participants highlighted the importance of developing strong relationships with Indigenous communities involved in species assessments in order to help them understand the assessment process and its objectives and prepare adequately for the potential of an IK gathering project. It is also important to maintain this relationship to facilitate species reassessment and future access to IK. Having Indigenous members of the ATKSC communicating directly with communities is an important factor contributing to creating relationships based in trust. Indigenous members understand communities concerns and priorities and are sensitive to the political context.

Furthermore, one interviewee specified that in order for IK gathering projects to be successful, the approach used to gather IK must remain flexible and adaptable as each project is different and each community has different capacity, needs and interests.

Decision-Making

The best practices in having IK inform the COSEWIC species assessment process and decision-making on status designation can be summarized as:

- Having IK appropriately integrated in decision-making from the beginning to the end of the species assessment process;
- Adhering to the official guidelines on how to consider IK;
- Having IK and western science equally considered in the decision-making;
- Having adequate Indigenous representation on COSEWIC to assist in the process of collecting and integrating IK into the assessments and to provide support to western scientists on how to interpret conclusions that derive from IK;
- Having Indigenous peoples participating in the actual decision-making.

CHALLENGES IN HAVING INDIGENOUS KNOWLEDGE INFORM SPECIES ASSESSMENT AND STATUS DESIGNATION

Challenges mentioned by the interview participant are mainly associated with the difficulty in documenting IK applicable to species assessments.

Time and Resource Limitations

The interviewee mentioned that limited time and resources available to the ATKSC to sort through and analyse all the available IK are important challenges when considering IK into species assessments.

Considerable amount of time and resources is required to gather all the publicly available IK, differentiate IK that is legitimate (i.e. verified and acquired using communities' protocols) from the information that may or may not have been collected from Indigenous people and may look like IK but cannot be considered because it has not been collected legitimately. The ATKSC researcher must then spend time selecting the information that is relevant to COSEWIC from the legitimate IK. Examples of such information include: population trends and declines, causes for the declines, migration patterns, male or female ratios, reproductive threats, normal and abnormal population cycles. The ATKSC may also contact Indigenous groups and verify directly with them if other information is available and if the community is willing to share it with COSEWIC to fill the knowledge gaps. As time and funding permits, the ATKSC may seek knowledge directly from IK Holders via their community representatives.

With regard to resource limitation, one interviewee pointed out that available federal funding also results in the ATKSC having to select only certain species within all the new species and species being reassessed for which they will document IK. The selection depends on various pre-established criteria, such as how much IK is available or how much scientific information is available.

Limited Capacity

Even if communities are willing to work on species conservation issues, some of them may not have the sufficient capacity (personnel, time, funding, etc.) to assist the ATKSC in gathering relevant IK.

BENEFITS IN HAVING INDIGENOUS KNOWLEDGE INFORM SPECIES ASSESSMENT AND STATUS DESIGNATION

Interviewees mentioned the following benefits in having IK inform species assessment and Indigenous peoples participating in the process:

- IK contributes to making fully informed decision on status designation;

- IK fills knowledge gaps, provides detailed information on a different scale than western scientific knowledge and frequently corroborates existing evidence;
- Indigenous communities involved in the species assessment process understand better on which evidence a status designation is made.

CASE STUDY 2:

NUNAVUT WILDLIFE MANAGEMENT BOARD

DESCRIPTION OF THE NWMB

The Nunavut Wildlife Management Board (NWMB or Board) is a co-management Board established in 1994 in accordance with the *Nunavut Land Claims Agreement* (NLCA), which was ratified on May 25, 1993. The Board is an Institution of Public Government and the main instrument of wildlife management in the Nunavut Settlement Area (NSA). The Board and its co-management partners work together to combine the knowledge and understanding of wildlife managers, users, and the public to make decisions concerning the management of wildlife in Nunavut. Its mission is to conserve wildlife through the application of Inuit Qaujimagatuqangit (IQ, which is the Inuit term for Indigenous Knowledge) and scientific knowledge for the long-term benefit of all Nunavut residents while fully respecting Inuit harvesting rights and priorities” (NWMB, 2012; NWMB, 2016a and b).

NWMB consists of nine members, of which one is a non-Inuit as of March 2016. Members are appointed to a term of four years by (1) Governor in Council appoints the NWMB Chairperson based on nominations from the NWMB, (2) Kivalliq Inuit Association, (3) Qikiqtani Inuit Association, (4) Kitikmeot Inuit Association, (5) Nunavut Tunngavik Incorporated, (6) Governor in Council based on the advice of the Minister responsible for fish and marine mammals (i.e. Fisheries and Oceans Canada), (7) Governor in Council based on the advice of the Minister responsible for the Canadian Wildlife Service (i.e. Environment Canada), (8) Governor in Council based on the advice of the Minister of Aboriginal Affairs and Northern Development Canada (now the Minister of Crown-Indigenous Relations and Northern Affairs) in consultation with the Commissioner-in-Executive Council (*the appointed member is to be a resident of the Nunavut Settlement Area), (9) Commissioner-in-Executive Council (i.e. Government of Nunavut) (NWMB, 2016). The co-management partners include the Nunavut Planning Commission (NPC), the Nunavut Impact Review Board (NIRB), the Nunavut Water Board (NWB) and the Nunavut Surface Rights Tribunal (NSRT), Inuit organizations such as Nunavut Tunngavik Incorporated (NTI) and Inuit Tapirit Kanatami (ITK), Hunters and Trappers Organizations (HTOs), Regional Wildlife Organizations (RWOs), other branches of public government (territorial and federal) and other Canadian Wildlife Management Boards (NWMB, 2016a and b). NWMB is subject to the ultimate authority of the relevant Nunavut’s government Minister. All members of the Board have a vote, except for the Chairperson who only votes to break a tie. The Board members meet at least four times a year and have, on average, one teleconference per month.

LEGAL FRAMEWORK

The *Nunavut Land Claim Agreement* (NLCA) provides the legal framework of the NWMB. The NLCA seeks to achieve the following objectives: the creation of a system of harvesting rights, priorities and privileges that reflects the traditional and current levels, patterns and character of Inuit harvesting (subsection 5.1.3(a)(i)), and “the creation of a wildlife management system that fully acknowledges and reflects the primary role of Inuit in wildlife harvesting” and invites public participation and promotes public confidence, particularly amongst Inuit” (subsection 5.1.3 (b)(ii)and (v)).

The NWMB also relies upon the other provisions in requiring proper consideration of IQ (in addition to proper consideration of science) in wildlife management, including decision-making. The following list represents what the NWMB routinely reference to and is not exhaustive:

- The Preamble (12th clause), and Articles 8(j), 10(c) and (d) and 18, para. 4, of the 1992 International Convention on Biological Diversity;
- The 2007 *United Nations Declaration on the Rights of Indigenous Peoples* (fully adopted by Canada in March 2016), in particular the Preamble and Articles 11 and 31;
- Sections 1(2)(f), (m) and (n), and 8 and 9 of the *Nunavut Wildlife Act*; and
- The *Canadian Biodiversity Strategy: Canada's Response to the Convention on Biological Diversity* (Minister of Supply and Services Canada, 1995), in particular pages 17 (principle 9), 37 (strategic direction 1.63), 48 and 49 ("Indigenous Knowledge" and strategic direction 2.3) and 70 and 71 ("Indigenous Community Implementation" and strategic directions 7.1 to 7.3);
- Sections 8.1 and 18 of the *Species at Risk Act*;
- Subsection 42(j) of the *Oceans Act*;
- The Preamble and subsection 8(3) of the *Canada National Marine Conservation Areas Act*.

CONSIDERATION OF IQ INTO THE NWMB WILDLIFE MANAGEMENT DECISION-MAKING

Under the NLCA, part of NWMB responsibilities is to establish, modify or remove total allowable harvest (TAH) in Nunavut-either by setting new TAHs, removing those that are no longer needed, or changing existing ones (NWMB, 2016c). In their Governance Manual, the NWMB indicates that their "decisions and advice must be based on the best available IQ and western scientific information" (NWMB, 2012). The IQ which informs the NWMB decision-making is collected by the NWMB in written and oral submissions as part of the hearing process. When a hearing is required, it seeks to address any issue requiring a decision from the NWMB.

At least 60 days prior to a hearing, the NWMB provides a notice, including the Proposal for Decision, to the public and sends invitations to attend the hearing to concerned communities, Inuit organizations, including Hunters and Trappers' Organizations (HTOs), Regional Wildlife Organizations (RWOs) and federal and territorial government representatives. Any interested person or body may file with the NWMB a written submission and supporting documentation (reports, studies, articles, opinions) in response to the Proposal for Decision. The written submissions may contain IQ on the wildlife management issue of concern. During the hearing, IQ Holders, delegates of the HTO and RWO have the opportunity to provide IQ orally. Generally, most of the IQ considered into the Board's decision-making is provided orally; however, written submissions are being received more frequently as capacity issues are addressed at the community level.

After the hearing, the NWMB prepares a briefing note which integrates written and oral information presented at the hearing and summarizes the best available scientific, IQ and community information related to the Proposal for Decision. This briefing note is used by the Board to assist its decision-making on a particular wildlife management matter. The Board members consider scientific, IQ, and community information equally.

NWMB IQ PROGRAM

The NWMB has recently developed the IQ program to ensure the systematic and culturally-appropriate inclusion of IQ in wildlife research and management within Nunavut and to establish a strong, complementary relationship between western science and IQ, resulting in more effective wildlife

management in Nunavut (NWMB, 2016b). This program is still in its infancy. It includes an IQ coordinator, an IQ database and library available to NWMB and its co-management partners, an IQ network and panels (not yet implemented) which will consist of various wildlife experts and an IQ research fund which funds IQ specific research conducted by Nunavummiut. Only few research projects have been funded since the beginning of the IQ program. One of the aims of this fund is to have community-based research findings inform NWMB decision-making on particular wildlife management issues.

BEST PRACTICES, CHALLENGES AND BENEFITS IN HAVING IQ INFORM WILDLIFE MANAGEMENT DECISION-MAKING

The interviewee who shared his opinions on best practices, challenges and benefits in having IQ inform NWMB decision-making works for the NWMB.

BEST PRACTICES IN HAVING IQ INFORM WILDLIFE MANAGEMENT DECISION-MAKING

Documenting IK

One of NWMB's best practices is having IQ Holders at in-person hearings. It allows the Board members to clarify and validate certain Indigenous Knowledge (or IQ) information directly with IQ holders.

To ensure that the right IQ Holders participate to the hearing, the informant mentioned the importance of communicating directly by phone with the HTOs. The IQ coordinator is responsible for contacting the HTOs, providing them with support on NWMB matters and helping them identify potential hearing participants. The IQ coordinator is Inuit and speaks Inuktitut. Direct and ongoing communication contributes to building strong relationships between the NWMB and the communities.

The participant also highlighted that the success of the hearing can be attributed to the format of the hearing and the communication practices during the hearing. For example, when funding allows, the NWMB will hold public hearings in the region concerned by the Proposal for Decision (e.g. Qikiqtaaluk Region, Kivalliq Region, Kitikmeot Region), in communities with the capacity to hold such meetings (hearing space, accommodation, resources, etc.). Whenever possible, the NWMB may also hold pre-hearing consultations in smaller communities that are particularly affected by a Proposal for Decision, but do not have the capacity to host the official hearing. This ensures that IQ from IQ Holders in these communities is collected and considered into NWMB decision-making.

To enhance the ease of communication during the hearing, little scientific jargon is used and simultaneous English and Inuktitut translation is provided when possible within reason. Furthermore, to improve the quality of information that will be shared at the hearing and to make sure that IQ Holders understand the reason of their convocation, the IQ coordinator meets with community delegates the evening before the hearing. She provides them with information on the Proposal for Decision, answers their questions and briefs them on the kind of information that they will be expected to share during the hearing. Finally, all hearings start with a prayer, which is culturally important to many communities.

The interviewee emphasized the fact that the NWMB highly values IQ and makes sure that IQ Holders know that their knowledge is highly valued by the NWMB. IQ Holders are also informed of how the IQ they provide will be used and considered in the Board's decisions on wildlife management.

Decision-Making

Lastly, IQ has a central role in the decision-making process of the NWMB and can influence decision-making as much as western science. The participant provided an example of how IQ has directly influenced the Minister's decision. In the case of Baffin Island Caribou Harvest Management, the total

harvest initially proposed by the Government of Nunavut in the Proposal for Decision was increased based on the IQ provided at the hearing.

CHALLENGES IN HAVING IQ INFORM WILDLIFE MANAGEMENT DECISION-MAKING

The informant mentioned that it is often difficult to find written IQ. Most IQ is provided orally by IQ Holders during NWMB hearings. Having access to more documented IQ could contribute to improving the long-term availability of the knowledge informing the NWMB decision-making.

Moreover, the informant discussed how the amount of IQ incorporated to NWMB decision-making is limited by the number of IK Holders who can participate to the hearings. Firstly, the number of IQ Holders that can be brought to NWMB hearings is limited. Secondly, it can be difficult to contact and convene to hearings IQ Holders who hold knowledge relevant to a Proposal for Decision. The NWMB makes significant efforts to contact directly each HTO prior to a hearing to make sure that the right IQ Holders are invited to share their knowledge.

BENEFITS IN HAVING IQ INFORM WILDLIFE MANAGEMENT DECISION-MAKING

The participant stated that IQ provides valuable information, notably on long term trends, and that when combined with the best western scientific knowledge, it helps the NWNB make better informed decisions on wildlife management in Nunavut.

Finally, the interview participant pointed out that having IQ inform NWMB decisions results in a higher level of acceptance of wildlife management decisions among Nunavummiut.

CASE STUDY 3:

KOUCHIBOUGUAC NATIONAL PARK OF CANADA (KNPC) ADVISORY COMMITTEES AND MANAGEMENT PLAN

Due to the Government of Canada's legal and constitutional relationship with Indigenous peoples, the government has worked closely with a wide variety of Indigenous groups which it considers as partners, in all regions of the country. Canada maintains ongoing relations with Indigenous groups through a wide spectrum of mechanisms encompassing various legal and cultural environments (Langdon and al., 2010).

KOUCHIBOUGUAC NATIONAL PARK MANAGEMENT PLAN

As a government agency, Parks Canada's is accountable to the Parliament and to Canadians. Its corporate plan as well as parks and sites management plans are primary vehicles of accountability (Langdon and al, 2010). The purpose of a management plan is to develop clear directions for the management and operations of a park for a 10 to 15 year period. Management plans are updated every five years. It provides Parks Canada staff with a framework for decision-making, notably for achieving the protection of the ecological integrity of each park.

Kouchibouguac Management Plan was last updated in 2010. Local First Nations communities and the New Brunswick Aboriginal Peoples Council (NBAPC) were engaged in the development of the plan through informal information meetings. KNPC management plan indicates that Parks Canada acknowledges Mi'kmaq and Wolastoqiyik [or Maliseet] Aboriginal Title throughout New Brunswick and that it is dedicated to discuss with Mi'kmaq and Wolastoqiyik on its policies related to the protection and enhancement of Indigenous peoples' rights and traditions (Park Canada, 2010, p.2).

Kouchibouguac National Park of Canada (KNPC) acknowledges that the plan benefits from the inclusion of scientific knowledge and IK. KNPC also states that Parks Canada, in partnerships with Mi'kmaq, "will enhance the support of IK and endeavour to become a benchmark for IK in the region" (Parks Canada, 2010, p.8). KNPC approach is to integrate scientific knowledge with IK by working with IK advisors and when appropriate, with Elders. It may include a close collaboration with Indigenous groups for the collection of baseline information to support the conservation of species at risks that have been accorded legal protection under the SARA (e.g. American eel populations). KNPC Indigenous consultations are guided by the orientations outlined in the document *Indigenous Consultation and Updated Guidelines for Federal Officers to Fulfill the Duty to Consult* (AANDC, 2011). KNPC also follows the general guidelines defined in Parks Canada's guidance document *Working Together: Our Stories, Best Practices and Lessons Learned in Aboriginal Engagement* (Parks Canada, 2011). The renewal of *Kouchibouguac Management Plan* will start in 2018 and span over the next 10 years.

ADVISORY COMMITTEES

In order to build strong dialogue and communications, KNPC has worked since 2000 with Indigenous groups and organizations through advisory bodies created under Memorandums of Understanding (MOU) (Elsipogtog and Lno Minigog First Nations and KNPC, 2009). KNPC has worked mainly with the Elsipogtog and the Lno Minigog Mi'kmaq communities which are located near the Park, through a local advisory committee. The First Nations Advisory Committee is composed equally of Indigenous representatives and KNPC staff. The overall mandate of the First Nation Advisory Committee is to inform and advise the Chiefs and Councils of the First Nations and the Superintendent of the Park on issues of mutual interest relating to the Park. Issued considered cover First Nations' commemorative events, cultural and knowledge exchange and other areas of interests. Recommendations stemming from this committee have resulted in the implementation of several IK collaborative research projects, such as projects on the status of American eel, Atlantic salmon restoration project, and the project on the ecosystem of sweetgrass populations in the park (Vasseur and Tremblay, 2014). According to interview participants, results of these studies have influenced the Kouchibouguac Park management and decision-making. The MOU between the Elsipogtog and the Lno Minigog Mi'kmaq and the First Nations Advisory Committee has been renewed in November 2015.

KNPC is also a member of the New Brunswick First Nation Advisory Committee (NBFNAC), a provincial advisory body. It was formed in October 2010 as a result of a MOU which was signed by the Assembly of First Nations' chiefs in New Brunswick, the KNPC and the Fundy National Park of Canada (FNPC). The NBFNAC is composed of five representatives from 14 of the 15 Mi'kmaq and Wolastoqiyik First Nation communities of New Brunswick (two chiefs, two elders and one staff member of the Assembly of First Nations' chiefs), and five representatives of Parks Canada (two representatives from Fundy National Park and two from Kouchibouguac and one other staff member). The NBFNAC meets three to four times a year. The main purpose of the committee is to ensure that the interests of the Mi'kmaq and Wolastoqiyik are considered in the management of all New Brunswick's national parks and national historic sites (Parks Canada, 2011) and to build strong relationship between Parks Canada and Indigenous communities and increase awareness about Indigenous culture within the Parks. The NBFNAC may also provide avenues for initiating the involvement of Indigenous peoples in natural resources management such as ecological monitoring and environmental assessments.

CONSIDERATION OF IK IN DECISION-MAKING AND INDIGENOUS CONSULTATION

According to key informants working for KNPC, IK is highly valued and, when available, is considered as much as possible in the park management, planning and decision-making. IK has successfully influenced

some of the park management decisions on biodiversity conservation in a number of ways. For example combining western science and IK collected through specific projects with local advisory committees have provided a better understanding of the park ecosystems as well as the habitat and status of certain plants (e.g. sweetgrass) and animal species (e.g. American eel, Atlantic salmon). IK has also supported the development of conservation and protection strategies. Furthermore, IK has been considered in the design of interpretation trails such as the Cedar Trail.

IK's contribution is also highlighted in the *Kouchibouguac Management Plan*. Through the collaboration of local advisory committees, IK has informed biodiversity conservation decision-making, special projects and informal knowledge exchange opportunities. However, specific formal procedures and steps to ensure that IK is adequately considered in the decision-making process have not yet been defined by KNPC.

BEST PRACTICES

General perspectives on the consideration of IK in the decision-making process of the KNPC were collected through the interview of three key informants. Two were members of the NBFNAC (one KNPC manager and one representing the Assembly of First Nations). The other participant in the study is a scientist working closely on IK project with Indigenous communities within KNPC. The following best practices were mentioned by the participants:

- Maintain early, transparent and ongoing communication with Indigenous communities through local or provincial committees to address park management orientations, projects and conservation issues;
- Take the time to build trustful relationship with Indigenous peoples;
- Allow enough time to collect IK;
- Be respectful of Indigenous peoples and culture and have a good understanding of the general context;
- Establish local advisory committees which enhance opportunities for knowledge exchange between scientists, park managers and IK Holders.

One of the informants highlighted the fact that working on wildlife and biodiversity conservation issues were good opportunities for the KNPC to initiate an ongoing collaboration with Indigenous communities and consider IK.

CHALLENGES

One of the interviewees considers that building strong and trustful relationships with Indigenous peoples is challenging and requires ongoing efforts. It takes time and trust to collect IK. According to another informant it is also a challenge to maintain ongoing communications even within advisory committees, since members are very busy. Therefore, getting specific answers may take several months. Also, political changes within Indigenous organizations might trigger the re-composition of advisory committees. Another participant mentioned that funding IK research or projects in order to inform decision-making can also present a challenge. Advisory committees can help to find sources of funding and establish priorities. For example, additional funding needs to be allocated to conduct comprehensive baseline studies in order to gather IK to inform the Kouchibouguac Park Management Plan.

BENEFITS

To all three participants, having IK inform decision-making has helped KNPC better understand the status of animal and plant species at risk, such as the American eel, Sweet grass and Atlantic salmon. It has contributed to improving the protection of their habitat through the development and implementation of better conservation strategies. It has also informed management planning, such as the planning of the Cedar Trail. Another participant mentioned that it is essential to incorporate IK in park management plans because it provides a more holistic perspective to biodiversity than Western Science.

CASE STUDY 4: **CANADIAN ENVIRONMENTAL ASSESSMENT AGENCY (CEAA)**

DESCRIPTION AND PURPOSE

The Canadian Environmental Assessment Agency's (CEAA or Agency) was founded in 1994. Its role is to deliver Environmental Assessments (EA) in support of government decisions about major designated projects. EAs inform government decision-making by identifying opportunities to "avoid, eliminate or reduce a project's potential adverse impact on the environment before the project is undertaken, and by ensuring that mitigation measures are applied when the project is constructed, operated and decommissioned" (CEAA, 2016).

LEGAL FRAMEWORK

The legislative framework of federal EA is provided by the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) (Minister of Justice, 2014) and its accompanying regulations. One of the purposes of the CEAA 2012 is "to promote communication and cooperation with Indigenous peoples with respect to environmental assessments" (Minister of Justice, 2014, Subsection 4 (1-d)). With regard to environmental effect of a designated project, the act considers the effects on Indigenous peoples' "health and socio-economic conditions; physical and cultural heritage; the current lands and resources for traditional purposes; or any structures, sites or things that is of historical archaeological, paleontological or architectural significance" (Minister of Justice, 2014, Subsection 5 (1-c)). With regard to the consideration of IK in EA, the CEAA 2012 officially mentions IK as a factor to be considered in the EA of designated projects: "The environmental assessment of a designated project may take into account community knowledge and Indigenous Knowledge" (Minister of Justice, 2014, subsection 19 (3)). CEAA guidance recognizes that IK can be considered to include the following:

"Indigenous Knowledge (IK) is knowledge that is held by, and unique to Indigenous peoples. It is a living body of knowledge that is cumulative and dynamic and adapted over time to reflect changes in the social, economic, environmental, spiritual and political spheres of the Indigenous knowledge Holders. It often includes knowledge about the land and its resources, spiritual beliefs, language, mythology, culture, laws, customs and medicines." (CEAA, 2015)

CEAA is responsible for ensuring that Indigenous groups are sufficiently consulted for the environmental assessment decision of a project that may adversely impact potential or established Aboriginal or Treaty rights according to Section 35 of the Constitution Act, 1982. Furthermore, during an EA, CEAA acts as the Crown (federal government) Consultation Coordinator to coordinate consultation efforts of all federal departments that have decisions to make around a project; the individual departments retain the responsibility for satisfying the consultation responsibilities.

CONSIDERATION OF IK IN EAS AND INDIGENOUS CONSULTATION

To ensure that impacts on Indigenous peoples are adequately considered during the EA process, CEAA has established a series of steps during which Indigenous groups are consulted and asked to provide their views including their Indigenous Knowledge. For an EA conducted by the Agency, CEAA requires proponents to engage Indigenous groups and consider IK in its analysis of environmental effects of the Project. This knowledge may document Indigenous group's priorities, how the assessment should be conducted, valued ecosystem components (VECs) that must be considered in the assessment, the potential environmental and social impacts and possible mitigation measures. It is often collected in traditional land use studies (walk on the land, mapping exercises, focus groups) during which IK Holders (e.g. Elders, land users) and Indigenous people share their knowledge. This information is included in the proponent's EIS. The Agency reviews and analyzes the proponent's report including the information gathered with respect to Indigenous peoples. The Agency also consults Indigenous groups on the proponent's analysis and information. Indigenous groups review and comment on the proponent's engagement activities that were held and the IK collected by the proponent to verify that the information they provided is reflected adequately in the EIS. The Agency then prepares its own EA Report that documents its analysis and conclusions on environmental effects of the project, consults Indigenous groups on its findings and makes recommendations to the Minister.

Throughout the conduct of the EA, the CEAA receives IK informally, through conversations, correspondence and meetings. The CEAA is responsible for considering this information in its analysis and conclusions and making recommendations to decision makers.

In conclusion, it is clear that IK along with scientific knowledge informs the Minister of Environment's final decision. Joint decisions between an Indigenous government and the federal government can occur when a project is located on lands subject to modern treaty (ies) which defines the decision-making process.

BEST PRACTICES, CHALLENGES AND BENEFITS IN HAVING IK INFORM EAS

Perspectives in the consideration of IK into the CEAA decision-making process were collected through the interview of two key informants. One participant works for the Policy Sector where overarching policy and procedures are developed notably to integrate Indigenous consultation in EAs. The other participant works for the Operations Sector which is responsible for delivery of EAs, including the provision of project-specific advice on Indigenous consultation and the integration of IK.

BEST PRACTICES IN HAVING IK INFORM EAS

CEAA's best practices in having IK inform the EA process and decision-making are defined in the *Reference Guide Considering Indigenous Knowledge in Environmental Assessments Conducted under the Canadian Environmental Assessment Act, 2012* (CEAA 2015). This guidance document was developed by the Agency to provide a framework to EA practitioners to ensure that IK is adequately considered in EAs. Although the CEAA acknowledges that no one-size-fit-all approach to considering IK in EA is possible, it has identified six general principles:

1. Work with the community;
2. Seek Prior informed consent;
3. Access IK with the support of the community;
4. Respect intellectual property rights;

5. Collect IK in collaboration with the community;
6. Bring IK and western knowledge together.

Participants also emphasized the importance of remaining open and flexible and considering various approaches to collect and integrate IK into EAs and decision-making due to the variety of projects and EAs.

Finally, one informant highlighted the importance of engaging Indigenous groups as early as possible in the EA process in order to facilitate the integration and the consideration of their knowledge into the process.

CHALLENGES IN HAVING IK INFORM EAS

Both interviewees pointed out that the strict federal timeframe within which the EA is conducted does not always correspond to Indigenous culture timeframes. Indeed, they stated that it can be difficult for Indigenous groups to work at the same pace as the Agency and the proponent who are constrained by a legislated timeline under the CEAA 2012 (a total of 365 days to complete the EA, excluding the time that proponents collect information to support the environmental assessment including IK, prepare the EIS and respond to Information Requests). Indigenous groups have criticized the time allocated to each comment period as being inadequate to fully review and comment on documents provided by the CEAA, especially when they have to contact specialists to obtain specific expertise on certain aspects of the EA. Nonetheless, the CEAA is fully aware of this issue and remains flexible by providing more time, especially during the EIS review phase, to the extent possible.

One interviewee also mentioned that there are a variety of challenges associated with the reality of working in a cross-cultural setting, notably the reconciliation of IK and western science approaches. For example, the Indigenous Knowledge based on cultural values and norms is not as easily integrated to the EA as is the Indigenous Knowledge on biophysical elements such as wildlife, migration patterns and land use. Yet, IK and western science knowledge are equally considered during the EA process and ultimately contribute to final decision-making. The participant pointed out that this challenge could be overcome through the reinforcement of partnerships and relationships with Indigenous groups.

One informant pointed out that relationships between proponents and Indigenous groups can result in variability with respect to the collection and consideration of IK in EAs. As CEAA 2012 is not prescriptive in terms of how IK should be collected and to what extent Indigenous groups should be involved in the process, early engagement of Indigenous groups and early collection of IK is largely dependent on the proponent. In situations where this is not the case, CEAA will ask for additional information later in the process and work with the IK provided; however receiving and trying to gather IK later in the process can be challenging. This participant also affirmed that a stronger commitment from the federal government to require that the principles included in the Reference Guide be formally applied within the EA could address some of the challenges.

BENEFITS IN HAVING IK INFORM EAS

The informants agree in saying that having IK inform decision-making contributes to making better decisions that reflect Indigenous groups priorities. They referred to the *Reference Guide Considering Indigenous Knowledge in Environmental Assessments Conducted under the Canadian Environmental Assessment Act, 2012* (CEAA 2015) for the list of benefits associated with having IK informing the EA and decision-making throughout the process:

- Provides relevant biophysical information, including historical information, that may otherwise have been unavailable;
- Helps identify potential environmental effects;
- Leads to improved project design;
- Strengthens mitigation measures;
- Contributes to the building of enhanced long-term relationships between proponents, Indigenous groups, and/or the responsible authority;
- Leads to better decisions; and
- Contributes to the building of EA and IK capacity within Indigenous communities and builds an awareness of, and appreciation for, IK in non-Indigenous communities.

Furthermore, having IK inform decision-making honours the Crown’s duty to consult and accommodate Indigenous peoples and contribute to “reconcile the crown sovereignty with the pre-existing societies that existed before the assertion of the crown sovereignty”. The participant who gave this comment specified that some Indigenous groups may disagree with that statement, especially when a project is accepted but has not reached social acceptability; yet regardless of the final decision, the participant believes that reconciliation is supported simply by bringing multiple viewpoints into the decision.

**INDICATOR 3:
CASE STUDIES ILLUSTRATING BEST PRACTICES
IN PROMOTING ABORIGINAL TRADITIONAL KNOWLEDGE (INDIGENOUS KNOWLEDGE)
OR HAVING IT INFORM DECISION- MAKING**

SUMMARY OF FINDINGS

The case studies assessed as part of this indicator show concrete examples of the promotion of Indigenous Knowledge in decision-making processes, suggesting that we are increasingly developing methods to respectfully include IK in conservation decision-making; both at the policy and institutional level.

These include examples of scientists and government officials collaborating with Knowledge holders on research projects and conservation initiatives, as well as examples of IK considerations in the context of conservation agreements.

Challenges remain regarding the respectful inclusion of Indigenous Knowledge and Knowledge holders in decision-making processes. These concrete examples are however a sign of progress.

**CASE STUDY 1:
INUIT QAUJIMAJATUQANGIT (IQ): IMPACT OF LIGHT GEESE ABUNDANCE
AND RECOMMENDATIONS FOR LIGHT GEESE MANAGEMENT IN NUNAVUT (2017-2018)**

In the Canadian Arctic, populations of northern-breeding geese (primarily Lesser Snow, *Chen caerulescens caerulescens* and Ross’ Geese, *Chen rossii*, hereafter collectively referred to as ‘light geese’) have increased dramatically in the last 50 years. In the eastern and central Canadian Arctic, light geese have negatively affected vegetation over large areas near their colonies. Scientists are conducting studies to understand the impact that geese are having on the land and other animals that share the

same habitat. In Nunavut, light geese are harvested by Inuit for non-commercial use. Few studies have documented Inuit Qaujimajatuqangit (IQ, or the Inuit terminology of Indigenous Knowledge) and Traditional Ecological Knowledge (TEK) of goose populations or past and current interactions of geese with the land, water, other animals and people. Inuit and their ancestors have lived and hunted in the areas of the goose colonies for a very long time, and they have information about past patterns of population growth/decline and related impacts that western science will never have. IQ will help everyone to better understand wildlife and habitat disturbance caused by light goose abundance, and to improve the way that humans address overabundant goose populations today. Under the co-management system put in place by the Nunavut Land Claims Agreement, IQ and the perspectives of Inuit must be incorporated into decisions about management of the land and its wildlife, including decisions about bird populations. The overarching goals of this project are to document Inuit knowledge about light goose populations on Southampton Island and in the Arviat region, particularly the impact of light geese on the land, water, other animals (including other bird species) and people, and to develop IQ-derived management recommendations.

The synthesis of IQ will then allow the Inuit project participants to form their own recommendations about how to manage light geese in Nunavut. In the final stage of the project, Inuit and western scientists will be brought together to share their findings and develop joint statements or recommendations for the management of white geese in Nunavut.

Project objectives were developed by representatives of the Inniurviit and Niviallik ACMCs, the Aiviit and Arviat HTOs and the communities of Coral Harbour and Arviat:

1. Document Inuit Qaujimajatuqangit about light goose populations and their impacts on the land, water, other animals (including other bird species) and people in the Kivalliq region;
2. Articulate Inuit recommendations for light goose management that address Inuit concerns and perspectives;
3. Increase the capacity of residents of Coral Harbour and Arviat residents to undertake their own IQ research studies on wildlife; and
4. Encourage the joint use of IQ and scientific information to provide recommendations for light goose and land management.

This project is co-led by the Inniurviit ACMC, Aiviit HTO, Niviallik ACMC, Arviat HTO, and Environment and Climate Change Canada (ECCC). Members of these organizations form the Project Management Team, which is responsible for: conducting project design; promoting the study within their communities and networks; helping to formulate management recommendations; and sharing/discussing study results with scientific researchers. The IQ Research Team is mainly responsible for data collection and analysis and includes two ECCC researchers, local IQ researchers and an ECCC participant in the Inuit Learning and Development Program. Together, the Project Management Team and the IQ Research Team have been conducting this study. Research is ongoing, but to date, Inuit values and community perspectives have been directing each step of a collaborative and participatory research process. Data collection in each community was co-led by local IQ researchers and one ECCC researcher with the help local Interpreters and in collaboration with other team members. Semi-directed interviews, participatory mapping exercises and some site visits (when feasible/appropriate) were conducted with 21 participants in Coral Harbour and 15 participants in Arviat. Study participants are Coral Harbour and Arviat residents identified as knowledgeable about light geese, shorebirds and Inuit interactions with these species. Once preliminary data analysis was completed, the IQ Research Team, in consultation with the Project Management Committee, conducted validation workshops in November 2017. Workshop objectives were to: (1) present preliminary results to study participants and

local collaborators and validate themes identified during data analysis; (2) invite study participants and local collaborators to validate results and provide additional feedback/information; and (3) discuss IQ-derived management recommendations. Preliminary research results were co-presented by a local IQ researcher and an ECCC research in December 2017 at the Arctic Change Conference in Quebec City. Final data analysis is ongoing.

CASE STUDY 2:

USING INUIT TRADITIONAL ECOLOGICAL KNOWLEDGE FOR DETECTING AND MONITORING AVIAN CHOLERA AMONG COMMON EIDERS IN THE EASTERN CANADIAN ARCTIC (2018)

In recent decades, traditional ecological knowledge (TEK) has played an increasing role in wildlife management and biodiversity conservation in Canada and elsewhere. This study examined the potential contribution that Inuit TEK (which is one aspect of Inuit Qaujimagatuqangit or Inuit Indigenous Knowledge) could offer to detect and monitor avian cholera and other disease-related mortality among Northern Common Eiders (*Somateria mollissima borealis*) breeding in the eastern Canadian Arctic. Avian cholera is an infectious disease (*Pasteurella multocida*) that has been a major conservation issue because of its potential to cause high rates of disease and mortality in several bird species in repeating epizootics; it has spread geographically in North America since the 1940s. In 2004, Inuit hunters from Ivujivik, Nunavik, Québec, were the first to detect avian disease outbreaks among Northern Common Eiders nesting in northeastern Hudson Bay and western Hudson Strait. Laboratory analysis of bird tissues confirmed avian cholera in that region. From 2007 to 2009, Inuit TEK was collected about mortality among Common Eiders and among other bird species north and west of where the outbreaks were first detected. During interviews in the communities of Kimmirut, Cape Dorset, Coral Harbour, and Igloodik, Nunavut, Canada, Inuit participants reported seeing a total of 8 Common Eiders and 41 specimens of other bird species either sick or dead in northern Hudson Strait, Hudson Bay, and Foxe Basin. Most of the observed disease and mortality events were at sea, on sea ice, or on small nesting islands. Such events probably would have gone undetected by biologists, who were mainly monitoring avian cholera outbreaks on large nesting islands in that region. Inuit participants readily recalled details about the timing, location, and numbers of sick and dead birds that they observed. Some reported signs of disease that were consistent with avian cholera. Inuit also revealed knowledge of two past bird mass mortality events that took place about 60 years and a century ago. Those interviewed indicated that that bird mass mortality events potentially caused by avian cholera had not occurred in the study area prior to 2004, supporting the hypothesis that avian cholera emerged only recently in the eastern Canadian Arctic. This study demonstrated that TEK can be a valuable tool for monitoring future avian cholera outbreaks and other wildlife diseases in remote regions.

Based on interviews with 40 Inuit participants in four Nunavut communities, the study found that Inuit TEK on disease and mortality events of Common Eiders and other bird species provided information on the temporal scope of decades and on a geographical range located within a 215 km radius of communities. The findings demonstrated that Inuit TEK was valuable for detecting where disease outbreaks occurred by identifying unusual events, such as bird mortality caused by avian cholera. Although it was acknowledged that definitive scientific diagnosis of avian cholera was required by laboratory analyses, this TEK study supported the hypothesis that current and ongoing outbreaks of avian cholera are recent in the eastern Canadian Arctic, having been first detected by Inuit in the mid-2000s. Indeed, the TEK that was gathered suggested that no large-scale avian mortality events likely caused by avian cholera occurred prior to 2004 among Common Eiders and other bird species. That said, it was found that there was much individual variation in reports and experience across participants,

making it difficult for interviewees to assess whether Common Eider disease and mortality events were related to overall population trends.

Finally, this study illustrated that Inuit eider harvesters detected avian disease and mortality events in places and at times that were rarely monitored by biologists, and thus that their observations can greatly enhance wildlife disease monitoring efforts in the Canadian Arctic on an ongoing basis. At the same time, Inuit TEK collected as part of this work presented some geographical and temporal limitations. Therefore, the strengths but also the limitations of TEK should be acknowledged in order for this important source of knowledge to be meaningfully included and combined with scientific information in joint avian disease and wildlife health monitoring initiatives. The importance of collaboration among resource users, biologists, wildlife disease specialists, and wildlife managers was highlighted by the emergence of avian cholera in the eastern Arctic. Further collaboration among these stakeholders can lead to improved ecological understanding and better information provision on wildlife diseases.

CASE STUDY 3: INUVALUIT AND NANUQ – A POLAR BEAR INDIGENOUS KNOWLEDGE STUDY (2015)¹

The lands that comprise this vast territory fringe the Beaufort Sea and Arctic Ocean and meet Alaska in the west and Nunavut in the east. Observing and harvesting animals creates an intimate knowledge of the land, sea and ice. Without such knowledge and the associated skills required for travel and harvesting, the Inuvialuit way of life in the region would not be possible. The Inuvialuit Polar Bear Indigenous Knowledge (PBTk) study documents a component of this knowledge that is related to polar bears so that it can be put to use in various decision-making processes. These processes affect not just polar bears but the Inuvialuit relationship with them as well.

Contributions by the Inuvialuit and their neighbours to collective knowledge of polar bears have not always been visible in the scientific literature and its popular byproducts. This study attempted to remedy this gap and make a substantive contribution to a body of other studies that document Indigenous knowledge of polar bears and/or attempt to integrate it with western scientific understandings.

The PBTk study was from the outset a multi-party, team research project involving Inuvialuit and non-Inuvialuit in the context of wildlife co-management under the terms of the *Inuvialuit Final Agreement* (IFA), a 1984 land claims agreement between the Inuvialuit and the Government of Canada. Protection and preservation of Arctic wildlife, environment and biological productivity is one of three founding principles of the IFA. Conservation is tied to these principles and underlies the management of human relations with polar bears. The starting point for the application of PBTk and biological science in support of polar bear management begins with the requirements of conservation as defined in the IFA, where conservation means “the management of the wildlife populations and habitat to ensure the maintenance of the quality, including the long term optimum productivity, of these resources and to ensure the efficient utilization of the available harvest.” On that basis, management of human activities with respect to polar bears and other wildlife is carried out and supported by the best available scientific knowledge and Inuvialuit knowledge and experience.

During the course of this study, 72 Indigenous Knowledge Holders from the six Inuvialuit communities were interviewed. The English-language parts of the audio recordings from the interviews were transcribed, and comprise 4,764 pages of text. Spatial knowledge concerning polar bears and their world

¹ https://wmacns.ca/documents/18/394_polar-bear-tk-report-low-res.pdf

was documented using the “map biography” method. The interview transcripts and map biographies comprise the core database for the PBTk study. Numerous narratives (approximately 800) were extracted from the transcripts to include in this report so that Inuvialuit PBTk can be presented more directly to readers, and to strengthen the Inuvialuit voice in the presentation of their knowledge.

This report documented numerous elements of Inuvialuit PBTk, including knowledge of various aspects of polar bears’ lives such as habitat, mental and sensory abilities of polar bears, interactions between polar bears, foxes, wolverines and grizzly bears, diet, behaviors, body condition, movement patterns, among many others.

CASE STUDY 4:

BILL C-69 – ESTABLISHING AN INDEPENDENT ENERGY REGULATORY BODY

As part of the new Bill C-69, the Government of Canada is establishing an independent energy regulatory body that is responsible for ensuring that pipeline, power line and offshore renewable energy projects within Parliament’s jurisdiction are constructed, operated and abandoned in a safe and secure manner that protects people, property and the environment.

Reconciliation with First Nations, the Métis and the Inuit through renewed nation-to-nation, government-to-government and Inuit-Crown relationships based on recognition of rights, respect, co-operation and partnership, is a large part of this new act, and wording has been included in the *Canadian Energy Regulator Act* portion that outlines the importance of the Indigenous Knowledge of Indigenous peoples, including:

- A direction to use transparent processes that are built on early engagement and inclusive participation and under which the best available scientific information and data and the Indigenous Knowledge of the Indigenous peoples of Canada are taken into account in decision-making;
- Ensuring the Commission takes into account when making their recommendation any Indigenous Knowledge of the Indigenous peoples of Canada that has been provided to the Commission when it comes to pipelines, power lines, as well as offshore renewable energy projects or offshore power lines;
- Ensures the interests and concerns of the Indigenous peoples of Canada, including with respect to their current use of lands and resources for traditional purposes are taken in to account; and
- Ensures none of the Indigenous Knowledge of the Indigenous peoples of Canada is used without their knowledge, consent or proper disclosure.

CASE STUDY 5:

MACKENZIE RIVER BASIN BILATERAL WATER MANAGEMENT AGREEMENT (2015)

At 1.8 million square kilometers, the Mackenzie River Basin is the largest drainage basin in Canada and is among the most intact large-scale ecosystems in North America. It serves a central role ecologically, culturally and economically for users throughout the entire basin, including acting as an important transportation corridor, as a source of food and as an essential drinking water source for communities. The basin’s waters are important for traditional uses, as well as industrial and agricultural uses ranging from oil and gas extraction and hydroelectric development to farming and forestry. Five provincial and territorial jurisdictions share the basin, each with its own legal and regulatory framework. The federal government also has legislative responsibilities in the basin under such statutes as the *Fisheries Act* and

Navigation Protection Act. In addition, some Indigenous groups who live in the Northwest Territories (NWT) have settled, or are negotiating, land claims and/or self-government agreements that may set out authority and management roles with respect to water and rights to water. Monitoring and protecting this immense basin requires a cooperative approach.²

Talks on the need for bilateral agreements on transboundary water management began as early as the 1970s when a number of large oil and gas, forestry/pulp and paper, and hydroelectric projects in the Mackenzie River Basin were believed to potentially affect waters of neighbouring jurisdictions. In 1997, Canada, British Columbia, Alberta, Saskatchewan, the Northwest Territories and Yukon (the governments with jurisdiction to manage water and the environment in the Mackenzie River Basin) signed the *Mackenzie River Basin Transboundary Waters Master Agreement*. The agreement commits all six governments to work together more closely to manage the water resources of the whole Mackenzie River Basin. The agreement makes provision for neighbouring jurisdictions to negotiate bilateral water management agreements to address water issues at jurisdictional boundaries on transboundary streams and to provide parameters on the quality, quantity and flow of water.³

On March 18, 2015, the governments of Alberta and the NWT signed a transboundary water management agreement that provides a long-term framework to manage shared water resources in the Mackenzie River Basin in a sustainable manner for current and future generations.⁴ This Agreement lays the foundation for long term cooperative management of the water shared between Alberta and the NWT. The Agreement establishes decision making mechanisms between the jurisdictions and enables a strong working relationship. British Columbia completed similar bilateral water management agreements with the NWT in October of 2015, and with Yukon in March of 2017.^{5 6}

The Agreement between Alberta and NWT incorporates a multitude of ways in which TK should inform decision-making. For instance, TK is used to guide water management actions and monitoring efforts. In setting transboundary water quality objectives, the parties are also required to consider and utilize relevant traditional and local knowledge, and ensure that methods resulting from objectives are based on a weight-of-evidence approach, including science and TK. It is also considered as part of the development of both the Groundwater and Surface Water Learning Plans which guide the ecosystem approach. The Master Agreement acknowledges the importance of TK and the need to consider TK in cooperative water management decisions within the Basin. Appendix C of the Agreement provides a guideline for the meaningful inclusion of traditional and local knowledge under the Risk Information Management (RIM) approach in Bilateral Water Management. Appendix C also formally tasks the Bilateral Management Committee to develop a framework toward meaningful inclusion of Traditional and local Knowledge into decision-making related to Bilateral Water Management.

The Bilateral Management Committee (BMC) oversees the implementation of the Agreement, and must include Indigenous representatives, as does the current committee.

The Committee is developing a framework to meaningfully include traditional and local knowledge in decision making. The process for reviewing Indigenous Knowledge sources was discussed during the first BMC meeting. These sources include: *Government of Northwest Territories Indigenous Knowledge Framework*, Environmental Monitoring and Science Division of Alberta Environment and Parks, and the

² http://www.enr.gov.nt.ca/sites/enr/files/resources/ab-nwt_annual_report_web_ready_171117.pdf

³ <http://www.mrbbc.ca/information/31/index.html>

⁴ http://www.enr.gov.nt.ca/sites/enr/files/resources/ab-nwt_annual_report_web_ready_171117.pdf

⁵ http://www.mrbbc.ca/uploads/files/general/38//nwt-bc_transboundary_water_management_agreement_oct_15_2015.pdf

⁶ <http://www.mrbbc.ca/uploads/files/general/39//bc yukon bwmafina l-low-res.pdf>

Mackenzie River Basin Board Indigenous Knowledge and Strengthening Partnership Committee. Learning plans are informed by Indigenous Knowledge research for the Liard, Hay and Slave river sub-basins through the Tracking Change research project. The BMC, as well as the Mackenzie River Basin Board, are currently reviewing and discussing Indigenous Knowledge frameworks to determine what might be relevant to bilateral and transboundary water management. The ongoing goal is to identify and implement ways to synthesize and blend traditional and local knowledge, science, social science and other forms of knowledge to help set and assess transboundary water objectives.⁷

The Agreement is still new, and more time is needed to determine the way in which Indigenous Knowledge is included into decision-making, but the Agreement itself shows considerable efforts in ensuring that TK informs decision-making and that it is promoted more generally in water management.

CASE STUDY 6:

ABEGWEIT FIRST NATION – BIODIVERSITY AND ENHANCEMENT HATCHERY⁸

(Shared by the Native Women’s Association of Canada)

Launched in 2012, the Abegweit Biodiversity Enhancement Hatchery raises Indigenous fish species to restock Island rivers. This important work stems from a critical element of Mi’kmaq culture – the obligation to give back to the environment. The hatchery also plays an educational role to ensure that the younger generations are aware of the importance of the Island fishery and the role each of us can play in preserving it. This initiative prioritizes educational opportunities for youth to increase their understanding of environmental interconnectedness, and embraces Indigenous ways of knowing and Indigenous Knowledge.

The Abegweit Biodiversity Enhancement Hatchery, the Island’s only hatchery that has a restocking program operates under the Abegweit First Nation Fisheries and Natural Resources program. Currently, brook trout and Atlantic salmon are raised at the facility, which is located in Scotchfort, Prince Edward Island (PEI). Atlantic salmon is culturally significant to the Mi’kmaq community and is often used in ceremonial rites.

The Hatchery partners with the federal Department of Fisheries and Oceans, the Fish and Wildlife Division of the provincial Department of Communities, Land and Environment, the Atlantic Salmon Federation, The PEI Wildlife Conservation Fund and a number of Island watershed groups to improve the health of watercourses in the province and to preserve the integrity of its fish habitat.

The Abegweit Biodiversity Enhancement Hatchery was created to fill a gap when a previous hatchery stopped producing fish for stocking rivers. Its primary goal is to enhance the Island’s recreational fishery, which draws in tourists and contributes more than \$7 million to the Island economy.

Biodiversity, or the existence of a variety of species, is critical to maintaining habitats and ecosystems. Each habitat has a unique combination of living things, creating a precious balance. If any one species is eliminated, another one increases to take its place. The more species that are eliminated, the greater the imbalance, and the quicker the habitat begins to decay. The more complex an ecosystem, the more stable the habitat; therefore, biodiversity is essential for habitat survival.

Canada lists “sustaining viable populations of species” as one of its key objectives in its report to the international Convention on Biological Diversity. Currently, operations at the Abegweit Biodiversity

⁷ <https://open.alberta.ca/dataset/a9d6c809-b7f1-4c3a-ac50-5a2194a1b7a0/resource/b91418e2-6b35-49d9-a4ae-c76124a2e35c/download/mackenziebasinagreementappendices-feb2015.pdf>

⁸ <http://abegweithatchery.ca/story/>

Enhancement Hatchery feed directly into this objective. In future, though, the hatchery is looking to hatch other species – e.g., the striped bass – to contribute to diversification.

**CASE STUDY 7:
PARKS CANADA AND INUIT KNOWLEDGE HOLDERS COLLABORATING
ON AN INDIGENOUS KNOWLEDGE STUDY OF TORNGAT MOUNTAINS CARIBOU HERD⁹**

A place of mountains, ice and streaming wildflowers, Torngat Mountains National Park (TNMP) covers a 9,700 square-kilometre wedge of land at the northern tip of Labrador. Its name comes from the Inuit word Torngait, meaning “place where the spirits dwell.” Over centuries, Inuit residents have built up vast body of knowledge about the land, weather and wildlife. Through this initiative, that first-hand knowledge teams up with modern science to guide management of the park, and help maintain a way of life.

Torngat Mountains National Park has an all-Inuit Cooperative Management Board which advises Parks Canada on the running of the park. In addition, all park staff are Inuit. Research is closely tied to Inuit values and needs.

Food sources such as caribou top the list of resources that are important to Inuit. The park is home to the Torngat Mountains herd, which has helped sustain Inuit residents for generations. Little information is available about the Torngat Mountains herd, but limited scientific data indicate that it is quite small. To broaden the body of knowledge about the herd, the TMNP collaborated with Nunatsiavut Government (a self-governing Inuit regional government) to commission an Indigenous knowledge study.

The Torngat Mountains Caribou Herd (TMCH), inhabiting the northern tip of the Québec-Labrador Peninsula, is not well documented in regard to science or Inuit Qaujimaqatuqangit (IQ, which is the Inuit terminology for Indigenous Knowledge). Information on this herd suggests a recent population decrease. Preliminary data suggest that the TMCH may also be in a precarious state. For example, data from limited collaring initiatives in recent decades indicate very low survivorship among adult females (Torngat Wildlife, Plants & Fisheries Secretariat, unpublished data). Given the relationship between the two populations, their importance to Inuit, and the presence of numerous potential threats, understanding the poorly documented TMCH is imperative. In order to develop and implement an effective management strategy that is supported by Inuit and managers alike, basic population information and trends, like body condition and harvest levels, are required. It is also important that managers and Inuit harvesters agree on the information used to support management decisions.

The importance of the TMCH, both in social and ecological terms, emphasizes the critical need for a comprehensive, integrated examination of what information exists and where there are knowledge gaps in the IQ and western -derived knowledge. Furthermore, the transboundary and highly mobile nature of these animals emphasizes the need to facilitate cooperation among all levels of government involved in the stewardship of this herd, while encouraging the participation of local communities.

This study drew together Inuit from Nunatsiavut and Nunavik and government agencies, from regional to federal levels and across provincial borders. The Nunatsiavut Government, Makivik Corporation, Parks Canada and the Torngat Wildlife and Plants Co-Management Board partnered to inform future

⁹ See: https://www.torngatsecretariat.ca/home/files/cat6/2014-torngat_mountains_caribou_herd_inuit_knowledge_culture_and_values_study.pdf; and <https://www.pc.gc.ca/en/nature/science/autochtones-indigenous/torngat>

management discussions by working with local Inuit hunters and Elders to synthesize qualitative and spatial IQ regarding the TMCH.

Thirty-three semi-directed interviews were conducted, including participant mapping, with hunters and Elders in Nunavik and Nunatsiavut, representing over seven decades of IQ. Thematic content analysis was performed on interview narratives, highlighting IQ on this species including new information about topics like the changing role of predators and herd behavior, as well as threats to caribou such as hunting pressures, habitat degradation and growth of predator populations due to climate change. Digitized spatial data visualized the longstanding Inuit-caribou relationship in the area, while augmenting the limited existing geographic information. Considerable depth and breadth of IQ in Nunatsiavut and Nunavik regarding caribou and their ecology was evident, representing contributions to the overall understanding of TMCH ecology, particularly as it pertains to assessment and future Species At Risk Act designation for this herd. This project also represents a model for cross-border wildlife stewardship, essential for wide-ranging species.

Objectives of the study included:

- To gather and synthesize existing IQ on Torngat Mountains Caribou;
- To conduct an IQ, Culture and Value study (narrative documentation and mapping) among expert harvesters and Elders in Nunatsiavut and Nunavik to gather current IQ on the Torngat Mountains Caribou;
- To represent that knowledge in a synthesized manner with supporting qualitative and spatial (map) illustrations for review by study participants and use by the Nunatsiavut Government, Makivik Corporation, Parks Canada and the Torngat Wildlife and Plants Co-Management Board to inform future management discussions.

A large component of studies conducted in the Torngat Mountains National Park is the development of trusting relationships with the community through research that has meaning in their lives.

Another study is now underway on a seal population in the park's Kangalaksiorvik Lake. A major research question is whether the seals winter in freshwater or whether they swim downstream to the ocean. The Cooperative Management Board has asked the park to delay scientific research until an IQ study can be completed.

INDICATOR 4: TRENDS IN LINGUISTIC DIVERSITY AND NUMBER OF SPEAKERS OF INDIGENOUS LANGUAGES

SUMMARY OF FINDINGS

According to the Canada Census, there has been an increase in the number of speakers of Indigenous languages among Indigenous identity populations (First Nations, Métis, and Inuit) since 2011. However, when factoring population sizes, there is a decrease in the percentage of identity populations able to speak Indigenous languages.

Based on limited evidence, the number of Indigenous languages, as well as their status, has not shifted significantly since 2014. In absolute terms, over 60% of Indigenous languages are either threatened, moribund, nearly extinct, or dormant.

Paired with a decrease in the percentage of Indigenous populations able to speak an Indigenous language, this suggests a downward trend in linguistic diversity.

This is however based on limited evidence, due to the fact that the most comprehensive source of information on linguistic diversity, the Aboriginal Peoples Survey, will not be released until the fall of 2018 and is not considered in this analysis.

SOURCES

The following sources were used to assess progress toward this indicator in this report or in previous reports:

Aboriginal Peoples Survey (Statistics Canada): The APS is a national survey of First Nations people living off reserve, Métis and Inuit living in Canada. The 2017 APS is a thematic survey with a focus on participation in the Canadian economy, and collects important information concerning Indigenous peoples such as health, language, housing and mobility. The APS provides very specific information on languages by identity population, age, gender, and region, among others.

In Canada’s 5th report to the CBD, data on Indigenous languages was extracted from the APS to explain trends related to linguistic diversity among First Nations, Métis, and Inuit populations. The 2017 survey will only be released in the fall of 2018, and will thus not be able to inform progress toward this indicator for the 6th National report.

Canada Census of Population (Statistics Canada): The 2016 Census provides statistical information about the population, age and sex, type of dwelling, families, households and marital status, language, income, immigration and ethnocultural diversity, housing, Indigenous peoples, education, labour, journey to work, language of work and mobility and migration.

The census provides information on Indigenous languages according to Indigenous identity. The data in the table below looks at the Indigenous identity population able to conduct a conversation in an Indigenous language, and compares it to total Indigenous identity population size, between 2006 and 2016. This shows a trend in both the total number of speakers as well as the percentage of the Indigenous identity population able to conduct a conversation in an Indigenous language.

	Number of speakers	Indigenous Identity	% of population able to conduct a conversation in an Indigenous language
2006	207,210	1,172,790	21 (as stated in the 5 th report to the CBD) vs. 17.6
2011	240,815	1,400,685	17.2
2016	260,550	1,673,785	15.6

There was an increase in total number of speakers between 2011 and 2016 (or 3.1% since 2006). However, when accounting for the increase in the Indigenous population (18.9% increase), there was a 1.6% decrease in the ability to conduct a conversation in an Indigenous language between 2011 and 2016 (17.2% in 2011 vs. 15.6% in 2016).¹⁰ This suggests a downward trend. Without certainty, this can be partially explained by the sharp increase in the self-identified Indigenous population. Note that the Census provides a limited understanding of trends specific to each identity population (First Nations, Métis, and Inuit) and how they compare to one another, in order to find out which languages might be

¹⁰ <http://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016022/98-200-x2016022-eng.cfm>

seeing changes in number of speakers. The APS looks at Indigenous languages in greater detail, but will not be released in time to inform this report.

According to the Census, 70 Indigenous languages were reported to be spoken in Canada in 2016, in comparison to 60 in 2011.¹¹ The number of Indigenous languages has increased from previous census years because of several factors. Respondents who filled out the questionnaire online were prompted to provide more specific language information. For example, if a respondent filled in “Cree,” he or she may have then provided a more specific name upon prompting, such as “Woods Cree.” The population threshold for speakers of specific languages was lowered to 45, allowing for a greater number of languages to be reported.

The percentage of each Indigenous identity population (First Nations, Métis, and Inuit) within the 65yrs+ age range was more likely to be able to conduct a conversation than any other age category. However, Indigenous populations are very young. Thus there are greater numbers of younger speakers than older speakers, but they result in smaller percentages when factoring in population size.

*The Ethnologue: Languages of the World (21st Edition)*¹²: is a global tool that documents languages around the world, and provides valuable information on the status of languages in Canada. Unfortunately, the 21st edition has not been completely updated to reflect the data from the 2016 Census. Some languages reflect 2016 realities, while others are reflective of the 2011 Household Survey (the 2011 version of the Census). Nevertheless, it provides fairly up-to-date information on the status of languages in Canada.

According to the 21st edition, the number of individual languages listed for Canada is 96. All are living languages. Of these, 78 are Indigenous and 18 are non-Indigenous. They count more languages than the Census because they add additional subcategories to certain languages (ex. Inuktitut is separated between Eastern and Northern Canada). Of the 96 languages counted, 6 are institutional, 12 are developing, 1 is vigorous, 39 are in trouble, and 38 are dying.

Of the 78 Indigenous languages in Canada, they are categorized as such: 1 is provincially recognized, 1 is educational (institutional), 3 are developing, 13 are threatened, 25 are shifting, 16 is moribund, 14 are nearly extinct, and 4 are dormant. The status of languages has not shifted significantly since 2014.

Department of Canadian Heritage: is responsible for the Aboriginal Peoples Languages Initiative (ALI), which supports the preservation and revitalization of Indigenous languages through community-based projects and activities. Expected results of the ALI program include:

- Indigenous people have access to community-based projects and activities that support the preservation and revitalization of Indigenous languages and cultures;
- Indigenous communities are assisted in their efforts to enhance languages and cultures; and
- Indigenous languages and cultures are preserved and enhanced as living cultures.

Recently, the Government of Canada has committed to taking significant action to support preservation and revitalization of Indigenous languages. For example, in 2016, the Government announced that it will enact an Indigenous Languages Act, co-developed with Indigenous peoples, with the goal of ensuring the preservation, promotion, and revitalization of First Nations, Métis, and Inuit languages in Canada. Furthermore, on June 15, 2017, the Department of Canadian Heritage, the Assembly of First Nations,

¹¹ <http://www.statcan.gc.ca/daily-quotidien/171025/dq171025a-eng.htm>

¹² <https://www.ethnologue.com/country/CA>

Inuit Tapiriit Kanatami and the Métis Nation Council launched the co-development of Indigenous languages legislation and agreed on a collaborative engagement process.

In 2017, the Government of Canada also committed to invest \$89.9 million to support Indigenous languages and cultures. This investment will be in addition to existing program funding provided by the Department of Canadian Heritage, and will support community-based projects that facilitate communication in, and revitalization of, Indigenous languages. Funding will also be provided to support the digitization of Indigenous languages and oral histories.