

Traditional Ecological Knowledge inclusion in Management and Research in Canada

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Inuit and polar bear

- Inuit have been hunting and living with polar bears for generations, and as long as memory serves.
- Sharing of information, knowledge and understanding of polar bears from one generation to the next, based on experience, is the very foundation of Inuit Traditional Knowledge (ITK).



Multiple terms are often used: Inuit Traditional Knowledge (ITK), Traditional Ecological Knowledge (TEK), Traditional Knowledge (TK), Inuit Qaujimagatuqangit (IQ), etc.

Inuit have been practicing wildlife management and conservation using TK for generations

“We had to leave the area for some period of time because the land and its animals had to cool down” – The late Enookie Kunuk

Spoke to an understanding that animals, land and waters had to be left alone by humans for a long time, so that they could replenish themselves.



Northern Indigenous peoples have developed a strong knowledge base relating to animal ecology and weather, snow and ice conditions. This is inextricably linked to a long-standing, constantly evolving, reliance on the environment for various aspects of their livelihoods. The relationship between the polar bear (*nanuq* in Inuktitut; *wapusk* in Cree) and Indigenous groups is complex and multi-dimensional.

Traditional Knowledge can be defined in many ways, but it is founded on experiential knowledge of the environment, knowledge of past and present use of the environment.

The Range States recognize the importance of TK in the 2013 *Declaration of Representatives of the Parties*

- *RECOGNIZE the importance and value of Traditional Ecological Knowledge in informing management decisions and ACKNOWLEDGE the need for the range states to develop a common understanding of what constitutes Traditional Ecological Knowledge and how it should be used in polar bear management decisions.*

CAP TEK WG Definition

- The Traditional Ecological Knowledge (TEK) Working Group under the Circumpolar Action Plan (CAP) came to a consensus on a definition:
 - *Traditional Ecological Knowledge (TEK) refers to a cumulative body of knowledge about the relationships of living beings with one another and with their environment, which is generated from the cultural practices, lived experiences and traditions of local and Indigenous peoples. TEK is specific to place, usually transmitted orally, and rooted in the experience of multiple generations including those most recent. It is a holistic and evolving body of knowledge that includes empirical observations about the environment, factual knowledge about past and current use of the environment, as well as values and beliefs, including moral or ethical statements about how to behave with respect to animals and the environment. TEK includes knowledge transmitted from past generations, as well as innovations and new knowledge transmitted to subsequent generations.*

Circumpolar Action Plan and TK

Knowledge of experienced Indigenous hunters can contribute to the collective body of knowledge of the health, reproductive rates, survival rates and diet of polar bear. TEK research in generating observations, theories and hypotheses can work in parallel with and contribute to scientific hypothesis and aid in the interpretation of scientific research results and establish research priorities.

Another definition, & usage in Canada

- As of 2017, Canada's Polar Bear Technical Committee (PBTC) has used:
 - *“Known also by many related terms, such as indigenous knowledge, local and traditional knowledge, traditional ecological knowledge, Inuit Qaujimajatuqangit, etc. While there are some differences in how and where these terms are used, the basic idea is similar: knowledge that has been gained by experience and shared among members of a group or community, often across generations.”* (Huntington 2013)
- In the PBTC:
 - TK holders from Inuit organizations and Wildlife Management Boards (WMBs) sit on the PBTC as full, participating members, together with scientists/managers.
 - The PBTC considers TK in all assessments of the status of polar bear subpopulations in Canada.
 - Input reflected in PBTC annual status table's column: “Local and/or TEK assessment”.
 - Various TK data sources are considered: published papers, public hearings, reports from researchers and Inuit organizations.

Examples of TK use in Canada

- Usage is a policy for the Territorial Governments and is incorporated into governance including wildlife management
 - E.g. Species at Risk Act- NWT. “...should use the best available information, including Aboriginal traditional knowledge, community knowledge and scientific knowledge, and be based on an ecological approach.”
- Government of Canada policy to include in species assessments for *Species at Risk Act*, COSEWIC, CITES Scientific Authority Non-detriment Finding assessments
- Used by jurisdictions in management in a Land Claims Agreement context.



TK use in a Lands Claims context

- Within the Land Claims Agreement context within the Canadian North, WMBs are obligated to give equal consideration to science and TK in their decision-making.
 - E.g. harvest quota decisions
- WMBs have the primary responsibility for wildlife management, with decisions being implemented and enforced by the responsible Minister.



Many Canadian Land Claims establish legal requirements to include TK in decision-making

- E.g., *The relevant knowledge and experience of both the Inuvialuit and scientific communities should be employed in order to achieve conservation.* **Section 14(5) Inuvialuit Final Agreement**
- E.g., *There is a need for an effective system of wildlife management that complements Inuit harvesting rights and priorities and recognizes Inuit systems of wildlife management that contributes to the conservation of wildlife and protection of wildlife habitat. There is a need for an effective role for Inuit in all aspects of wildlife management, including research.* **Section 5.1.2(e) (h) Nunavut Land Claim Agreement**



Benefits of using TK in management

- Reaching the best possible decisions in support of polar bear management
 - Need to make effective use of both science and TK to ensure optimal advice and appropriate decisions;
 - Two key sources of information for conservation decision making;
 - Can present seemingly conflicting information;
 - Roles of each need to be applied carefully and in the right context,
- Effective implementation
 - Community engagement is critical in Arctic environment decisions
 - Northerners are effective monitors of Arctic ecosystems
 - Ignoring TK could lead to community alienation and disengagement

Using Science and TK

Best available Information

- Using TK in combination with scientific information often provides a better understanding of polar bear ecology and insights relevant to management and conservation of the species.
- TK can enhance scientific knowledge & Inuit know that science contributes greatly to their knowledge about species and the environment.



Polar bear TK can provide insight into:

- Health, abundance, habitat preferences and dependences, movement patterns, denning behavior, interaction of other animals;
- Identifying changes in climate, weather, sea state, sea ice and snow;
- How polar bear, seals and other wildlife respond to changes;
- Etc.



Using of TK with science

- In research:
 - Communities engaged in development and implementation of monitoring systems in the Arctic;
 - Consideration of TK and community perspectives in developing and undertaking research;
 - Discussions with communities and Inuit organizations about interpretation of research results.



Benefits of using TK in scientific studies

- Inclusion during the early stages of research of TK or community inputs can make the project stronger;
- TK is useful in informing or determining research questions;
- TK helps to supplement the existing scientific information;
- TK stands on its own as a knowledge source.

Specific examples: Southern Beaufort Sea survey, Southern Hudson Bay aerial survey.

Examples of recently completed TEK studies relating to polar bear in Canada

- Nunavik Inuit Knowledge of Polar Bears Project (expected release 2018)
- Inuvialuit Knowledge of Nanuq: Community and Traditional ecological knowledge of Polar Bears in the Inuvialuit Settlement Region. Wildlife Management Advisory Council (NWT and North Slope) & Inuvialuit Game Council. (2015)
- Labrador Polar Bear Traditional Ecological Knowledge Final Report. Happy Valley-Goose Bay, Newfoundland and Labrador: Torngat Wildlife Plants & Fisheries Secretariat. (2015) [York et al.].
- Demographic and traditional knowledge perspectives on the current status of Canadian polar bear subpopulations. *Ecology and Evolution*, 6(9): 2897-2924. (2016) [York et al.]

Take home messages

- **TK can make a valuable contribution in the management and understanding of polar bear nationally and internationally.**
- **TK is a valuable and respected knowledge source that can lead to effective management decisions and that can inform/enhance scientific studies.**