

COSEWIC Assessment and Update Status Report Summary of the Polar Bear (Special Concern 2008)

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Reason for Special Concern Designation

- Although the overall population and habitat trends in Canada did not meet the criteria for the polar bear to be considered Threatened or Endangered, the information about declines in some subpopulations combined with concern about long-term trends related to climate change, motivated COSEWIC to recommend that it be considered a species of Special Concern.
- Subpopulations that are currently decreasing in size are thought to be declining because they cannot support the current level of harvest and/or because the effects of climate change are reducing the health of the population. Other potential limiting factors are intraspecific predation, pollution from development, and environmental contaminants. Climate change will affect all of these and will likely be the ultimate factor influencing long-term population trends.

Where polar bears are found in Canada: Yukon, Northwest Territories, Nunavut, Manitoba, Ontario, Quebec, Newfoundland and Labrador

Status History

- 2008: Status re-examined and recommended as Special Concern
- 2002: Confirmed as Special Concern
- 1999: Confirmed as Special Concern
- 1991: Status re-examined and uplisted to Special Concern
- 1986: Designated Not at Risk

Special Concern (SC) – A wildlife species that may become threatened or an endangered species because of a combination of biological characteristics and identified threats.

Background

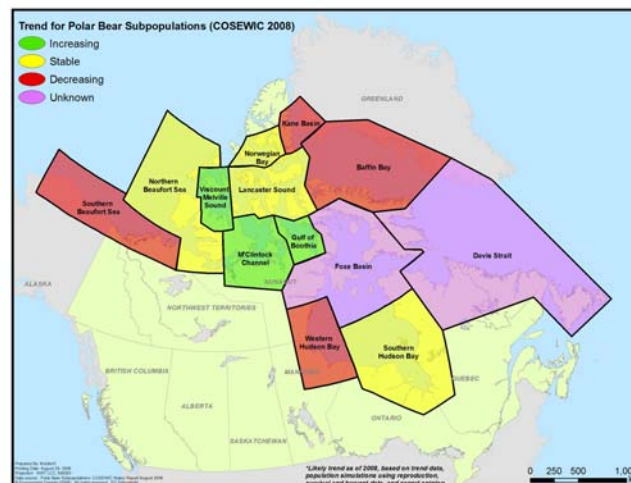
- Polar bears are the top predator in the arctic marine ecosystem.
- Polar bears are important to the culture of Canadian people, and are also very important spiritually and economically to northern people.

- In Canada, polar bears are divided into 13 subpopulations but they move and breed between these subpopulations, so are considered part of a single unit (Designatable Unit) for the status assessment.
- Trends (up, down, stable) for the subpopulations are described in the report. Harvest is managed on a subpopulation basis and changes due to climate warming are not expected to be consistent across the arctic, which is important to understanding the trends in subpopulations.
- The total population of polar bears in Canada is estimated to be 15,500 bears. These bears are shared by Canada and its neighbours, Greenland and the United States.

Subpopulation Trends

- The best available data from western science and Aboriginal Traditional Knowledge suggests the following trends in the 13 polar bear subpopulations:

Polar Bear Subpopulation	Trend	Number of Sub-populations	Percent (%) of total population
<ul style="list-style-type: none"> • Western Hudson Bay • Southern Beaufort Sea • Baffin Bay • Kane Basin 	↓ Declining	4 of 13	28%
<ul style="list-style-type: none"> • Northern Beaufort Sea • Southern Hudson Bay • Norwegian Bay • Lancaster Sound 	Stable	4 of 13	29%
<ul style="list-style-type: none"> • Viscount Melville Sound • M'Clintock Channel • Gulf of Boothia 	↑ Increasing	3 of 13	14%
<ul style="list-style-type: none"> • Davis Strait • Foxe Basin 	? Data deficient	2 of 13	29%



What is COSEWIC?

- COSEWIC stands for the Committee on the Status of Endangered Wildlife in Canada
- COSEWIC is a group of experts that compile and review the best available information and decide which wild species are in some danger of disappearing from Canada.
- COSEWIC assesses the status of wildlife species in Canada and provides advice to the Minister of the Environment and the Canadian Endangered Species Conservation Council (CESCC).

What is a Species Status Report and Assessment?

- A species status report is a technical report that gathers and analyzes the best available information (science and Aboriginal Traditional Knowledge) on a species' status in Canada.
- Using information in a status report, COSEWIC assesses the national status of a species and classifies it as being extinct, extirpated, endangered, threatened or of special concern. They can also decide that a species is Not at Risk or data deficient.

Aboriginal Traditional Knowledge (Inuit Qaujimajatuqangit)

Aboriginal Traditional Knowledge (Inuit Qaujimajatuqangit) was considered with respect in the current COSEWIC status report:

- Personal communications with respected elders and hunters
- Update on ATK on polar bears in Inukjuak and Puvirnituq, Nunavik (2006)
- Inuit Qaujimaningit Nanurnut – Gjoa Haven HTO (2005)
- Inuit perspectives on climate change in Nunavut (NTI 2005)
- Dowsley
 - 70 interviews with elders and active hunters about polar bear management,
 - Management consultations - Qikiqtarjuaq, Clyde River, Pond Inlet, Western Hudson Bay communities (2006)
 - In-depth review of Igloodik oral history archives on the traditional use of polar bears by Inuit
 - Inuit knowledge regarding climate change and Baffin Bay polar bear (2005)
- Paulatuk oral history project (2004)
- Aklavik Inuvialuit describe status of birds and animals in the Yukon North Slope (2003)
- Collection of local knowledge about polar bears in Alaska (1997)
- Inuit land use across the arctic (1976)

**Both Aboriginal Traditional Knowledge and Western Science
were used in this assessment.**

The COSEWIC Status Report assesses the status of polar bears in Canada. The text that follows gives a brief description of the information in the status report. This is a **plain language or layperson's summary** of the full English COSEWIC Status Report on Polar Bears. The English and Inuktitut translation of the full COSEWIC Status Report has been provided to the HTO and is available from the Canadian Wildlife Service upon request.

This report:

- Describes the information in the full English version of the COSEWIC Status Report
- Is organized by the page numbers in the COSEWIC English status report
- Non-italicized text is a summary of information in the status report. Text in **bold** is either of particular interest or is directly relevant to Nunavumiut.
- *Italicized text* is more detailed information taken directly from the COSEWIC Status Report.

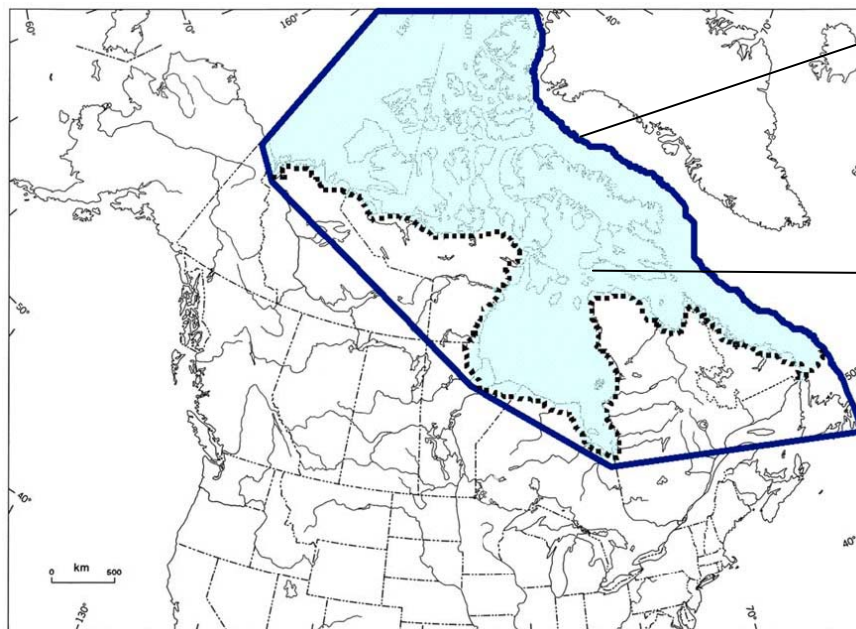
What polar bears look like and their genetics (Page 5 – 8 of the COSEWIC Status Report)

- This section of the COSEWIC Status Report describes what polar bears look like and how scientists have grouped polar bears. Genetic information tells us that there are small differences between the different subpopulations but not enough to call them different subspecies.
- Polar bears evolved from Grizzly (Brown) bears and many of the changes are adaptations to hunting arctic seals.

English name: Polar bear
French name: ours blanc
Inuktitut name: Nanuq, Nanuk
Cree name: Wapusk
Latin name: <i>Ursus maritimus</i>

Where polar bears are found in Canada (Page 8 – 13 of the Status Report)

- This section of the COSEWIC Status Report describes where polar bears are found around the circumpolar north and where they occur in Canada, shown below. There has been little change in the present and historic range of polar bears since the end of the last major glacier retreat.

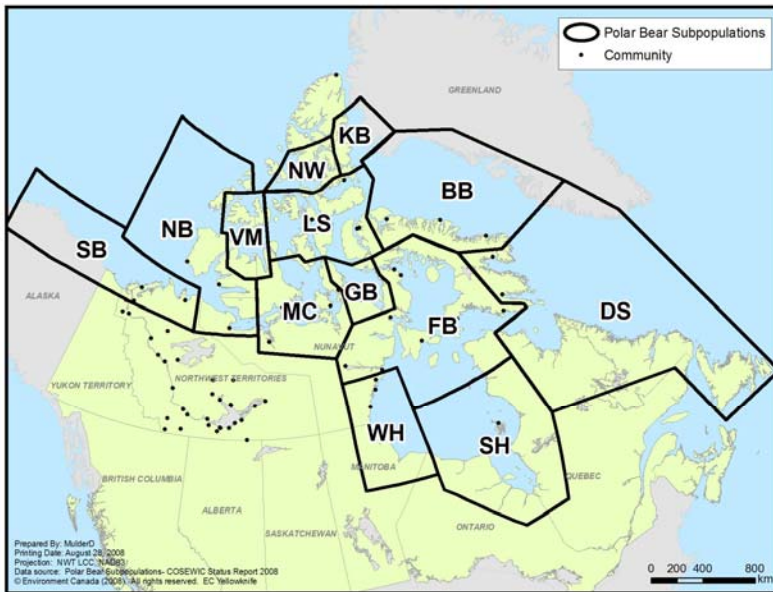


The bold line shows the outer boundary of where polar bears are found in Canada (extent of occurrence) (8,700,000 km²)

The shaded area is where polar bears are found in Canada (5,600,000 km²)

- Polar bears can move very large distances but research shows they do not wander as nomads through the whole Arctic as we used to think. **From season to season, polar bears stay in the same general area (seasonal fidelity).**

- Polar bears in Canada are divided into thirteen (13) subpopulations that range into or are entirely within Canada.

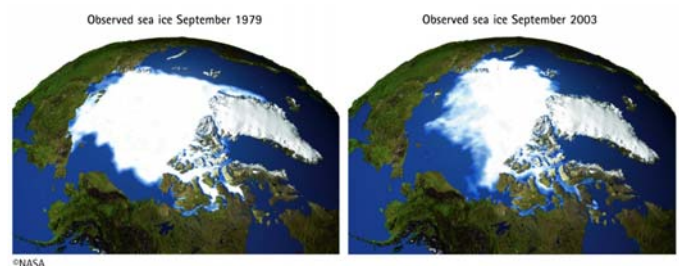


- Viscount Melville Sound (VM)
- Norwegian Bay (NW)
- Kane Basin (KB)
- Lancaster Sound (LS)
- Baffin Bay (BB)
- Davis Strait (DS)
- Southern Hudson Bay (SH)
- Western Hudson Bay (WH)
- Foxe Basin (FB)
- Gulf of Boothia (GB)
- M'Clintock Channel (MC)
- Southern Beaufort Sea (SB)
- Northern Beaufort Sea (NB)

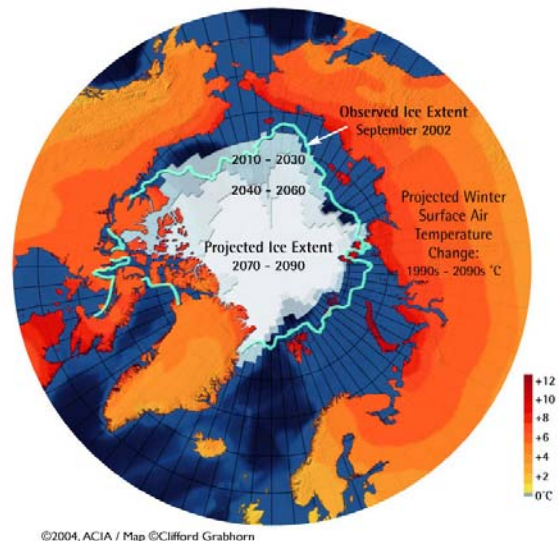
- Subpopulations have varying degrees of genetic differences between them but the differences are not strong enough to identify the subpopulations as unrelated or as subspecies.
- Subpopulations are useful to describe local trends in population growth and for managing populations but for COSEWIC different polar bear subpopulations in Canada are related closely enough that there is only one national status for the species (i.e. polar bears were considered a single “Designatable” unit.)

Habitat (Page 14 – 20 of the COSEWIC Status Report)

- This section of the COSEWIC Status Report describes the main features of good polar bear habitat. Good habitat is closely linked to sea ice and good habitat for ringed seals (beside pressure ridges, between multi-year and first-year ice, and at the floe edge). Any changes in where seals are found due to climate change are certain to impact where polar bears are found.
- Sea-ice cover gives polar bears access to seals, so the distribution of polar bears in most areas changes as sea-ice cover changes from season to season.
- The north-south movement of bears seems to depend on the seasonal melting and freezing of ice near the shore. Polar bears are forced onto land (summer retreat areas) for several months during the open water season.



- **Trends in Habitat** (Page 15 - 19) – Describes changes in polar bear habitat and sea ice reported by scientific observations and from Aboriginal Traditional Knowledge. The main concern for the status of polar bears is how climate warming will impact the types of sea ice and where it is found, and the length of the open-water season.
- Satellite data shows sea ice extent has gone down by 2.7% per decade since 1978. Sea ice covering arctic waters in the summer has declined by 7.4% per decade since 1979 and in the central Arctic the average thickness has likely decreased up to 1 metre from 1987-1997.
- Spring temperatures are increasing in many parts of the Arctic and spring ice break-up is occurring up to a month earlier (1970s to the present) in some areas, although this is not consistent across the Arctic.
- There are many different predictions about how climate and sea ice will change in the future: the Arctic will continue to warm; more precipitation in winter; Less multi-year ice; replaced with a thinner, annual ice formation; in summer, more ice will melt in areas that now have ice year round.
- Polar bears depend on sea ice and there is concern that major reductions in the amount of sea ice (how much there is and how long it lasts) will have negative effects on the survival of polar bears.
- Higher temperatures and loss of sea ice in the Arctic is not good for the future of the polar bear; some predict the loss of 2/3 of the world's polar bears in 45 years.
- **Habitat Protection** (Page 20) – This section describes the parks and protected areas across the polar bears' range. There is no formal protection for most of the polar bear habitat in Canada.



Biology (Page 20 – 27 of the COSEWIC Status Report)

- This section of the COSEWIC Status Report reviews general information about polar bear reproduction, denning, predation, physiology, home ranges, movements, and behaviour.
- **Life Cycle and Reproduction** (Page 20 – 24) - Reproduction rates differ between subpopulations but all are relatively low. Females usually have their first litters

between 4-6 years and have litters of no more than 1-2 cubs every 3 years. Most males usually start to breed between the ages of 8-10 years.

- **Predation** (Page 25) – Polar bears have no natural predators but killing by/of other polar bears does happen. There may be more conflicts and predation between polar bears if climate change reduces the number of bears an area can support.
- **Physiology** (Page 25) – Bears fast for long periods of time during the ice-free periods and while on land they must rely on stored fat reserves. Pollution and contaminants in the environment could affect polar bear survival and reproduction.
- **Home Ranges, Movements, Dispersal** (Page 26 – 27) –Home range size varies depending on how much sea ice is around and on special places such as polynyas, which attract bear. Home ranges are larger for bears that use land during the ice-free season or who live in areas with a lot of seasonal changes in the type of ice cover than bear with year round access to ice. Research shows that as the sea ice thins, the home range size get bigger.
- **Behavioural Adaptations** (Page 27) – ATK studies in Gjoa Haven, Cambridge Bay and Taloyoak reported that polar bears change their movements to changes in the environment and availability of food, but are sensitive to human activity. Garbage and other harmful substances are known to attract bears. Bears can get used to people and this can lead to problem bears and defense kills.

Limiting Factors and Threats to Polar Bears (Page 28 – 35 of the COSEWIC Status Report)

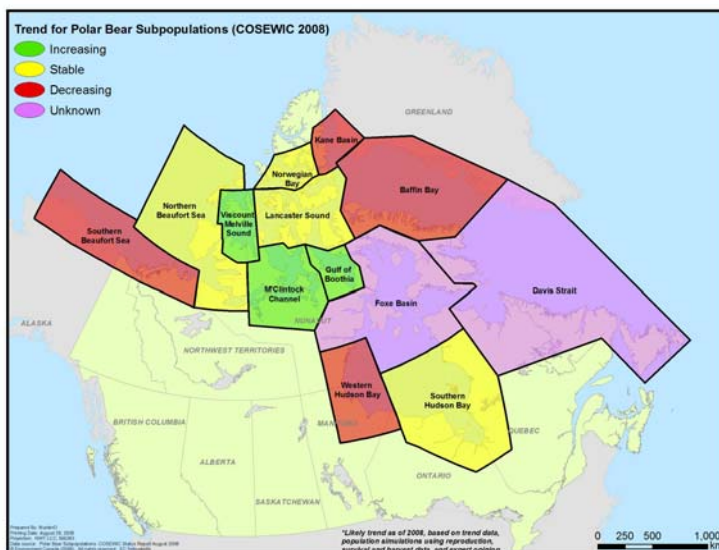
- This section of the COSEWIC Status Report describes general factors that might cause polar bear populations to decline, or prevent them from increasing. There are two main factors that limit where and how many polar bears we have in Canada:
- **Starvation** (access to and abundance of ice-dependent seals) - Research in Western Hudson Bay shows that ringed seal numbers have been reduced by climate warming (earlier break-up of sea ice) and that polar bears may be responding to these declines in the number of seals.
- **Human-Caused Mortality** - Harvest data for the Canadian population is reviewed. Hunting in Canada is regulated through quotas. There is concern that quotas for some subpopulations may be too high because they may have been based on outdated or potentially inaccurate information. Until 2006, some shared subpopulations were harvested in Greenland and not based on quotas, so may not have been sustainable.
- Current management mainly seeks the maximum sustainable harvest, which may cause declines if we don't have current/accurate population numbers.

Other potential limiting factors are reviewed:

- Intraspecific predation – killing by/of other polar bears does happen
- Pollution, especially from offshore oil and gas development, and increased ship traffic
- Build up of environmental contaminants in tissues of polar bears
- Climate change is likely to influence all of the factors above and should be treated as the ultimate limiting factor to polar bears. If the climate continues to warm as projected by the Intergovernmental Panel on Climate Change (IPCC), all populations of polar bears will eventually be affected.

Population Size and Trends (Page 35 – 51 of the COSEWIC Status Report)

- This section of the COSEWIC Status Report describes the harvest quota and best available population estimate data for each subpopulation of polar bears in Canada, using western science and Aboriginal Traditional Knowledge (ATK). For a few polar bear subpopulations, scientific estimates of numbers and trends and ATK did not agree.
- All estimates of current population growth are based on available data and do not account for the possible effects of climate change.
- The world population of polar bears is estimated at 20,000 and 25,000 bears. The Canadian population is estimated to be 15,500 bears. These bears are shared by Canada and its neighbours, Greenland and the United States.



Population models project that 4 of 13 subpopulations (including approximately 28% of 15,500 polar bears in Canada) have a high risk of declining by 30% or more over the next 3 bear generations (36 years). Declines are partly attributed to climate change for Western Hudson Bay and Southern Beaufort Sea, but are mostly due to unsustainable harvest in Kane Basin and Baffin Bay. Seven subpopulations (about 43% of the total population) are

projected to be stable or increasing. Trends currently cannot be projected for 2 subpopulations (29% of the total population). Bears in some subpopulations show declining body condition and changes in denning location linked to decreased availability of sea ice. For most subpopulations

with repeated censuses, data suggest a slight increase in the last 10-25 years. All estimates of current population growth rates are based on currently available data and do not account for the possible effects of climate change.

Why polar bears are important (Species Significance) (Page 51 of the COSEWIC Status Report)

- This section of the COSEWIC Status Report discusses why polar bears are important – as an indicator species of important environmental issues such as climate change and pollution.
- Polar bears are important to the culture of Canadian people, particularly in the North, and are also very important spiritually and economically to northern native people.
- Canada has a responsibility (nationally and internationally) to study, manage and protect polar bears, especially since we manage 55-65% of the world's polar bears.

Status and protection polar bears have now (Page 52 – 56 of the COSEWIC Status Report)

- This section of the COSEWIC Status Report reviews the status of polar bears in other parts of the world. Globally the polar is listed as Vulnerable. In May 2008, the United States announced it would list polar bears as Threatened under the US Endangered Species Act.
- Management of polar bears within Canada is by the provinces and territories. The decision-making process for some is shared with Aboriginal groups as part of their settled land claim.
- 80% of the hunting of polar bears happens in the Northwest Territories and Nunavut. Management agreements and/or memoranda of understanding with local communities help ensure all human-caused mortality (hunting or problem bears) is sustainable.
- **Risks from Lack of Protection/Trends in Management** (Page 55 - 56) - Describes how current polar bear management focuses mainly on harvest and the concerns with this approach.
- Discusses the importance of co-management agreements where jurisdictions share polar bears subpopulations. There is a risk of harvesting too many bears (unsustainable harvest) if these inter-jurisdictional agreements are not in place, such as between Nunavut and Greenland.

- Stresses the importance of the “precautionary approach” to harvesting of polar bears and the need to think about the potential effects of climate warming when planning for management and conservation.