The State and Future of Mammal Populations in the Beaufort Sea and Arctic Ocean

*Polar Bears and Walrus as Sentinels of Arctic Change*

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U.S. Geological Survey
Habitat Loss

Subsistence

Industry

Tourism

Photo by Geoffrey Roy
Why polar bears and walrus?

- Arctic undergoing rapid change
- Both species are symbols of the Arctic
- Both species integrate change at lower trophic levels
- Both species tightly tied to sea ice – proxies for the status of the arctic ecosystem
Life History
Atlantic walrus
(90% of the world population)
General Biology
General Biology ...

A

B

C

Hiatella

Mya

Serripes
Life History
RANGE OF POLAR BEARS IN THE POLAR BASIN
Polar Bears Utilize three Ecological Strategies
Life history dependence on sea ice

- Foraging
- Reproduction
Like all bears, polar bears begin life very small.
• Females can weigh 800 pounds and males 1400 pounds
• Polar bears live for 30 years.
• There are 22,000 - 25,000 polar bears in the Arctic.
Research Challenges

In or under water 80% of time

Live on surface
Research Challenges

WALRUS
Large, segregated migrations

POLAR BEARS
Mixed populations

*Source: National Geographic
Research Challenges

Harder to capture or handle

Easier to capture or handle
Sea Ice, Arctic Climate, and Wildlife Habitat

Alaska Science Center
U.S. Department of the Interior
U.S. Geological Survey