

***Polar Bear
Management
in the
United States***

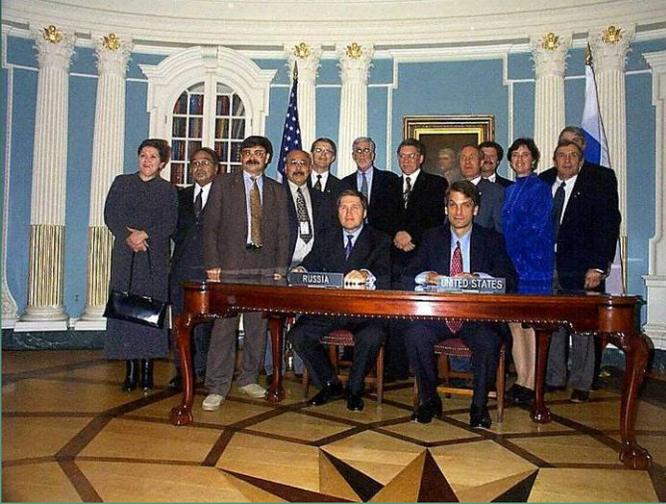


Dale Hall

Director - USFWS



Laws/Agreements



- 1973 International Agreement on the Conservation of Polar Bears
- Marine Mammal Protection Act (co-management)
- CITES (Convention on International Trade of Endangered Species of Wild Flora and Fauna)
- Endangered Species Act
- Inuvialuit-Inupiat Agreement – Southern Beaufort Sea population
- U.S./Russia Bilateral Agreement – Chukchi Sea population

Partnerships

- State of Alaska
- Alaska Nanuuq Commission
- North Slope Borough
- Marine Mammal Commission
- USGS





**Polar Bear
Proposed Rule to List
as a Threatened Species -
ESA**



ESA Proposed Rule Listing Factor A

Loss of sea ice threatens the species range-wide

- Reduced extent and characteristics of occurrence of pack ice will impact polar bears
- Reduced prey numbers
- Reduced access to prey
- Altered polar bear distributions
- Increased movements and energetic costs
- Reduced physical condition and fitness



**MMPA designated U.S.
Fish and Wildlife
Service authority for
conservation,
management and
oversight of:**

- Polar bear
- Walrus
- Sea and marine otters
- Manatees and dugong



Details of the Main Issues that have been Introduced

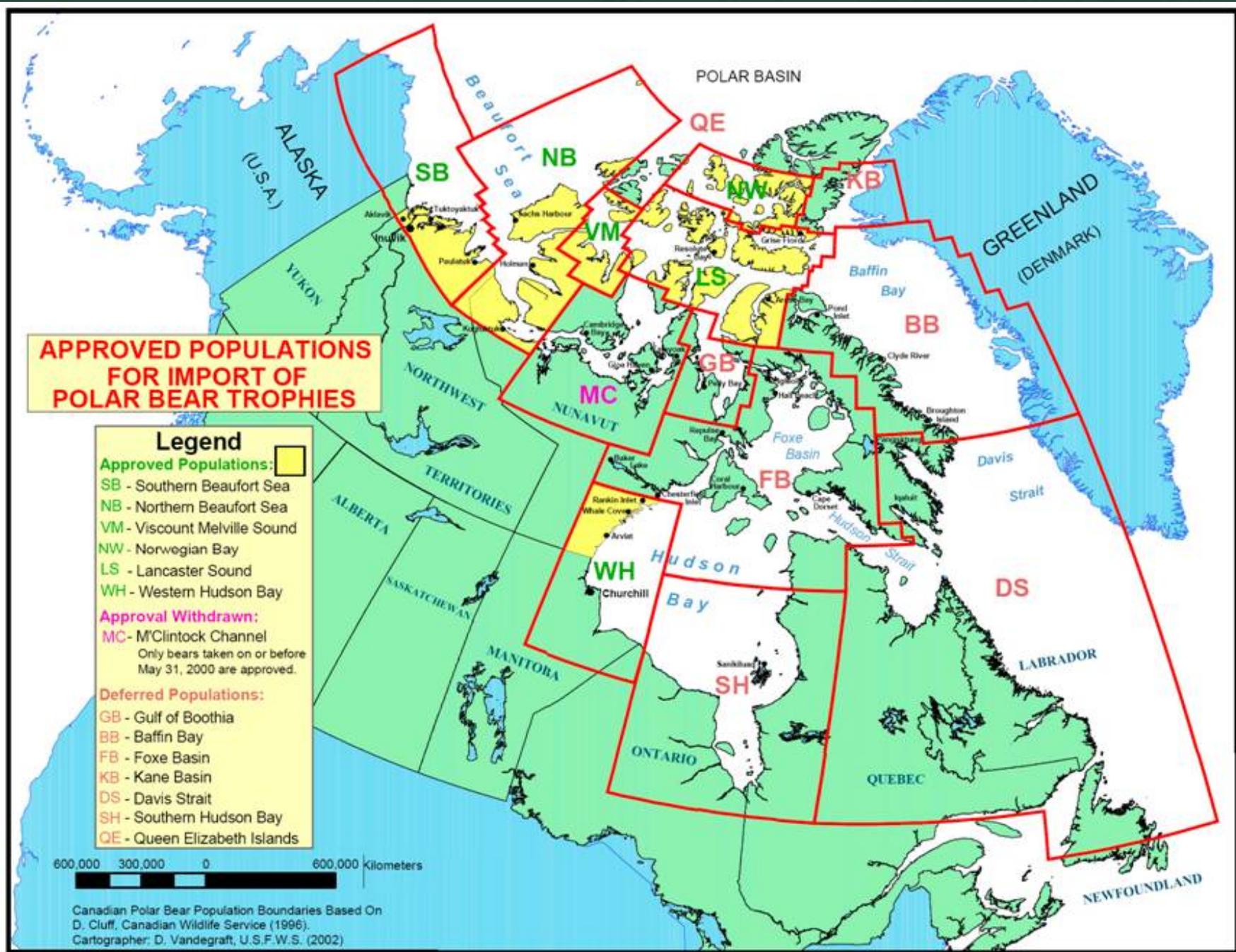
- **Sports Harvest**
- **Import/Export/CITES**
- **Native Subsistence Harvest**
- **Increased potential for bear – human interactions**
- **USGS Research Program**

MMPA – Exceptions



- Scientific research
- Native subsistence
- Incidental Take
- Intentional Take
- Public display
- Enhancement
- Sport hunted polar bear trophies
- Defense of life





**APPROVED POPULATIONS
FOR IMPORT OF
POLAR BEAR TROPHIES**

- Legend**
- Approved Populations:**
- SB - Southern Beaufort Sea
 - NB - Northern Beaufort Sea
 - VM - Viscount Melville Sound
 - NW - Norwegian Bay
 - LS - Lancaster Sound
 - WH - Western Hudson Bay
- Approval Withdrawn:**
- MC - M'Clintock Channel
Only bears taken on or before
May 31, 2000 are approved.
- Deferred Populations:**
- GB - Gulf of Boothia
 - BB - Baffin Bay
 - FB - Foxe Basin
 - KB - Kane Basin
 - DS - Davis Strait
 - SH - Southern Hudson Bay
 - QE - Queen Elizabeth Islands

600,000 300,000 0 600,000 Kilometers

Canadian Polar Bear Population Boundaries Based On
D. Cluff, Canadian Wildlife Service (1996).
Cartographer: D. Vandegraaf, U.S.F.W.S. (2002)

Changes to Approvals?

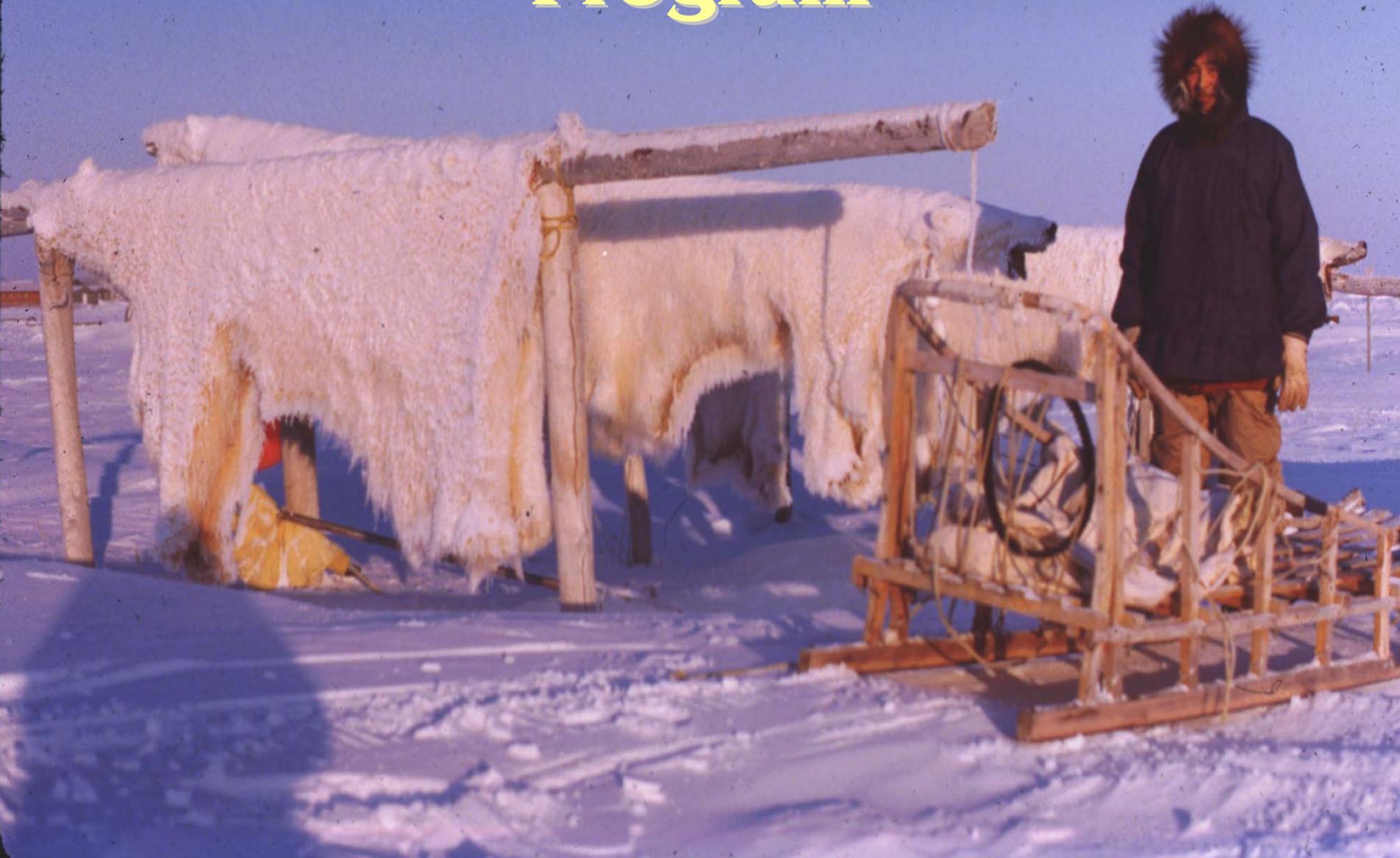
- Currently reviewing whether to make any changes to the approved populations
- Focus is on Gulf of Boothia (currently deferred) and Western Hudson Bay (currently approved)
- If changes are necessary, we will publish proposed changes and request comments

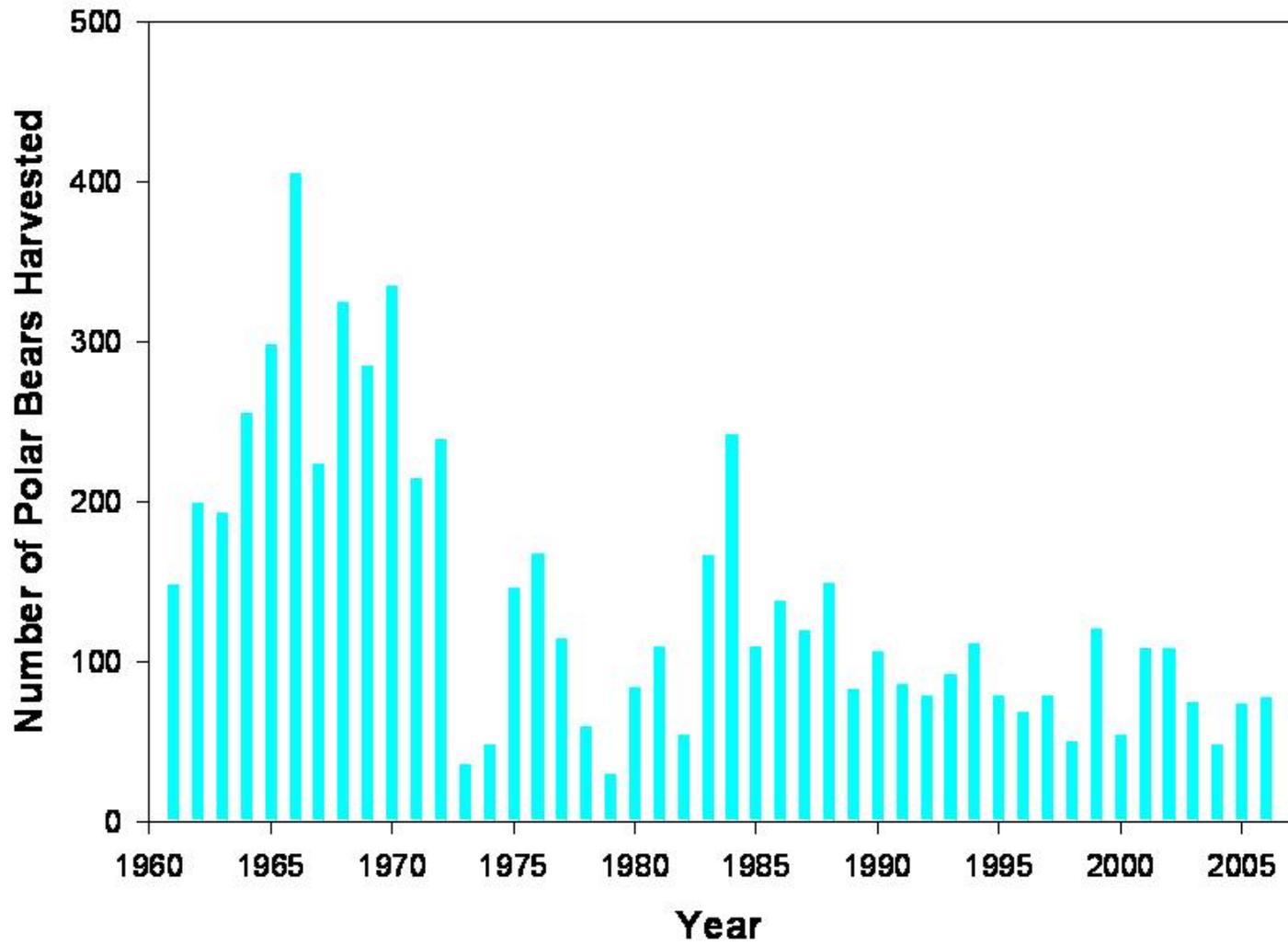
US Legal Requirements

A polar bear is lying on a snowy surface, looking directly at the camera. The bear's fur is white and appears thick and textured. The background is a vast, flat, snow-covered landscape under a clear sky.

- **1973 Agreement on Conservation of Polar Bears**
- **Marine Mammal Protection Act of 1972**

Polar Bear Harvest Monitoring Program





Inupiat-Inuvialuit Polar Bear Agreement

Southern Beaufort Sea

- Initiated in 1988
- Local hunters agreement
- Sustainable harvest limits
 - Monitoring and compliance of reporting
 - Protection of females and family groups
 - Annual exchange of information (harvest, research, management initiatives and study results)
 - Review of effectiveness of agreement
- 10 year evaluation 1988-1998



US-Russia Bilateral Agreement

- Shared population
Chukchi/Bering Seas
- Discussions began in 1990s
(State of Alaska, ANC, NGOs,
MMC, NSB)
- Agreement signed in October
2000
- Implementing legislation signed in
US Jan. 2007
- Entry into force pending
- Appointment of U.S.
Commissioners pending
- Collaborative Research Planned





Polar Bear – Human Interactions

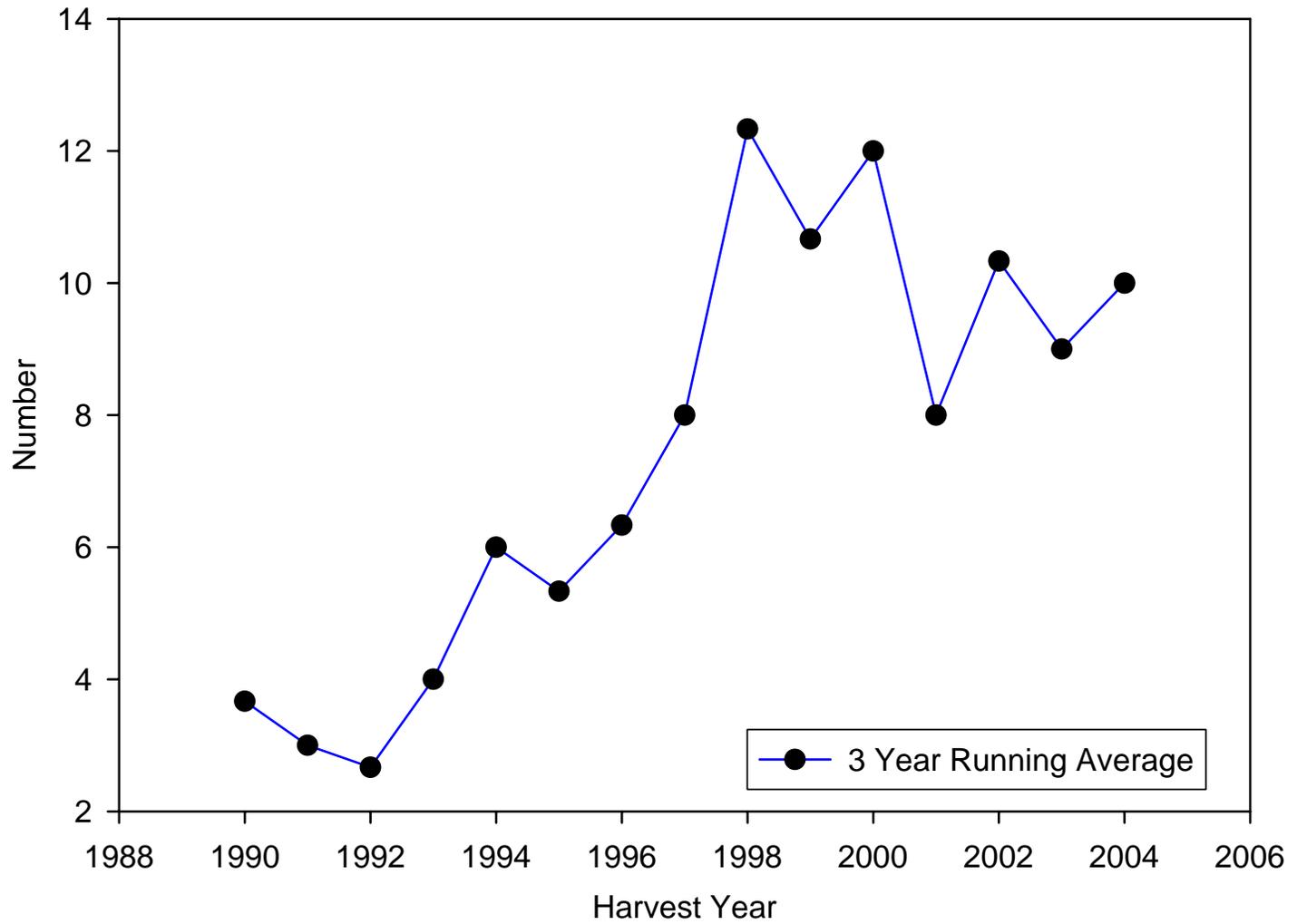
An issue of increased concern

Aerial coastal surveys were flown from 2000-2005 to document polar bear use of terrestrial habitats



Survey Findings

- A maximum of 8% (122 bears) of the Southern Beaufort Sea population came on land
- 80% occurring near subsistence-harvested whale carcasses.
- The number of bears on land increased when sea-ice was further retracted from the shore
- Polar bear density on land appeared also to be related to the density of ringed seals in offshore waters (MMS ringed seal data)
- Long-term reductions in sea-ice could result in an increasing proportion of the Southern Beaufort Sea polar bear population coming on land during the open-water period
- Foraging on subsistence-harvested bowhead whales may mitigate nutritional effects of this change, however bears could be exposed to other risks such as extended open water swimming and increased bear-human interactions.



Number of bears killed for safety reasons since 1990

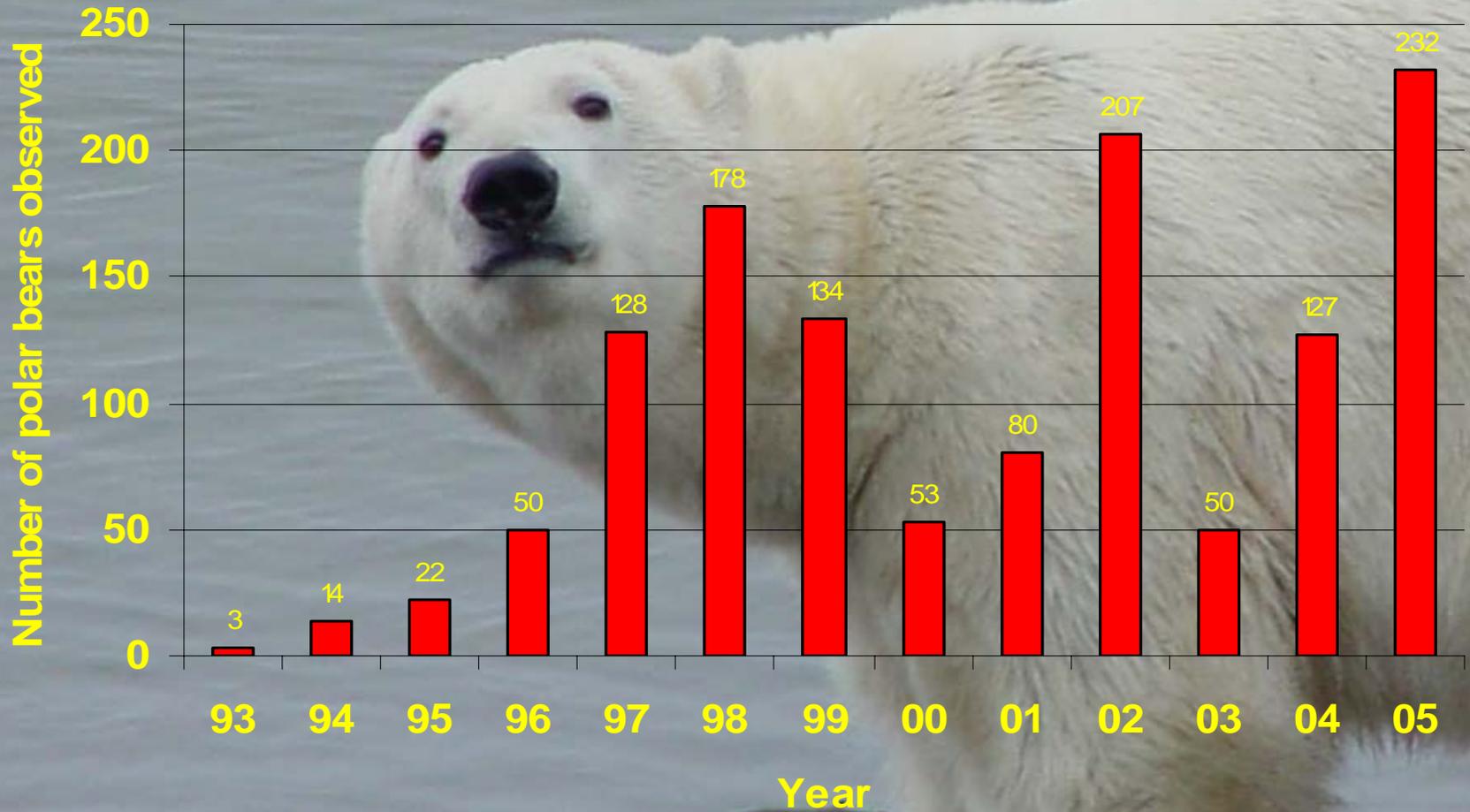


- NSB has supported polar bear patrols since 1990s
- FWS has provided hazing authorizations and technical assistance
- A community based polar bear interaction plan - initiated in Kaktovik in 2007
- FWS-Tribal Grants Program provides funding for this effort

History of Incidental Take Regulations

- Chukchi Sea
 - June 1991-96
 - Proposed regulation currently in review for 2008-2012
 - Beaufort Sea
 - November 1993
 - January 1999
 - March 2000
 - March 28, 2005
 - August 2, 2006
- 
- A black and white photograph of a polar bear walking across a snowy, textured surface. The bear is captured in profile, moving from left to right. Its shadow is cast on the snow to its right. The background shows a vast, flat expanse of snow with some subtle textures and shadows.

Number of Bears Observed during Oil and Gas Activities (1993-2005)



Harassment/Intentional Take

Authorization:

Sections 109(h) and 112(c) of MMPA

Types:

Level A: potential injury

Level B: potential disturbance





Increased polar bear viewing and photography - recently

Recommendations/Future needs

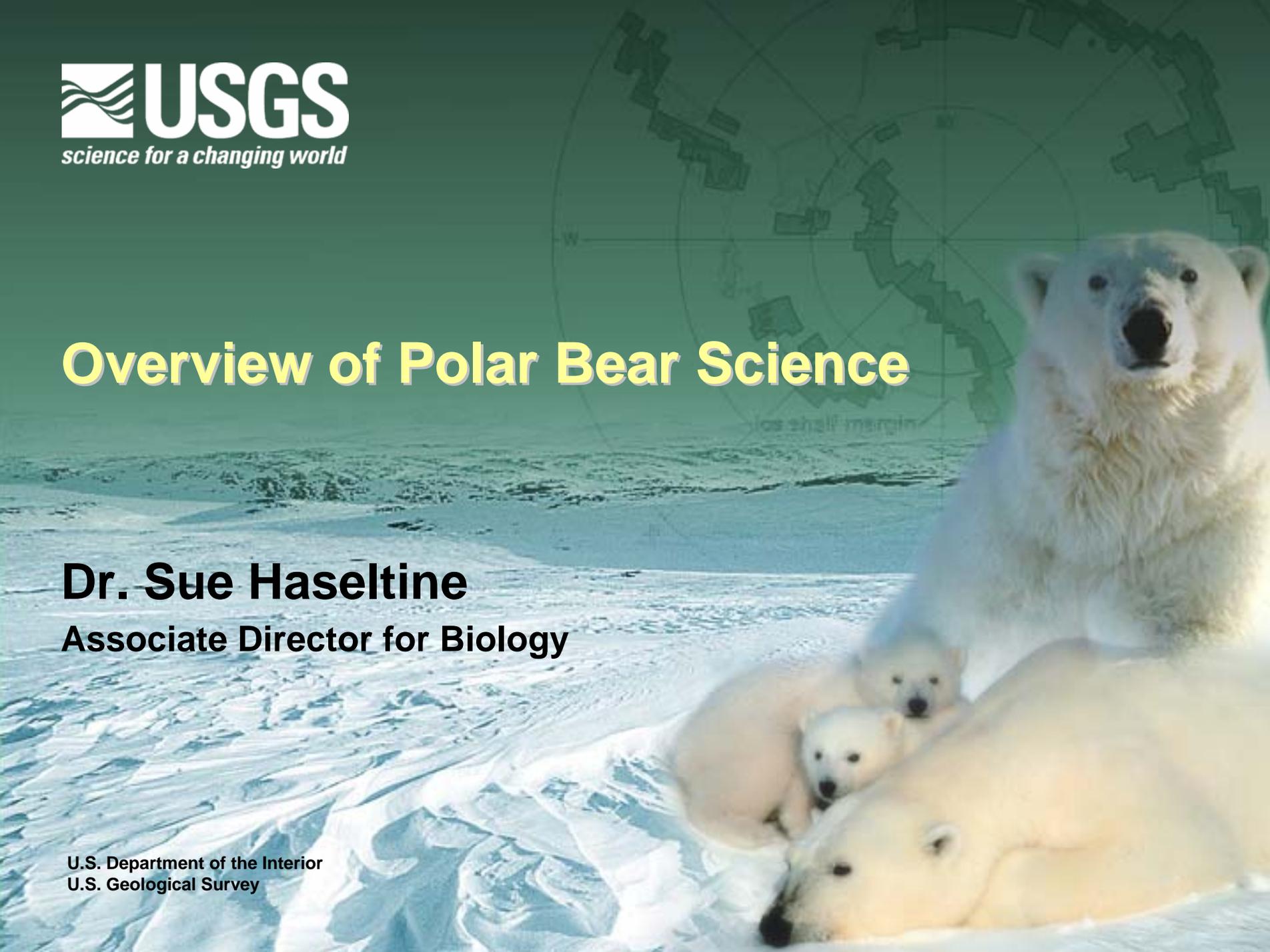
Bear-Human Interactions

- Continued monitoring of polar bear distribution and use of coastal habitats
- Continued monitoring of defense of life/property takes
- Community based polar bear interaction plans
- Increased interactions with Industry
- Guidelines for viewing and photography

Overview of Polar Bear Science

Dr. Sue Haseltine

Associate Director for Biology



Current Research Focus in Alaska

- **Capture-recapture studies to estimate polar bear vital rates and numbers**
- **Developing models to describe sea ice habitat use by polar bears**
- **Mapping polar bear maternal den habitat on the Arctic coastal plain**
- **Assessing polar bear health**
- **Development of new identification tags**

Polar Bear – Sea Ice Relationships

Satellite telemetry enables us to mathematically describe how polar bears use sea ice (Resource Selection Functions)

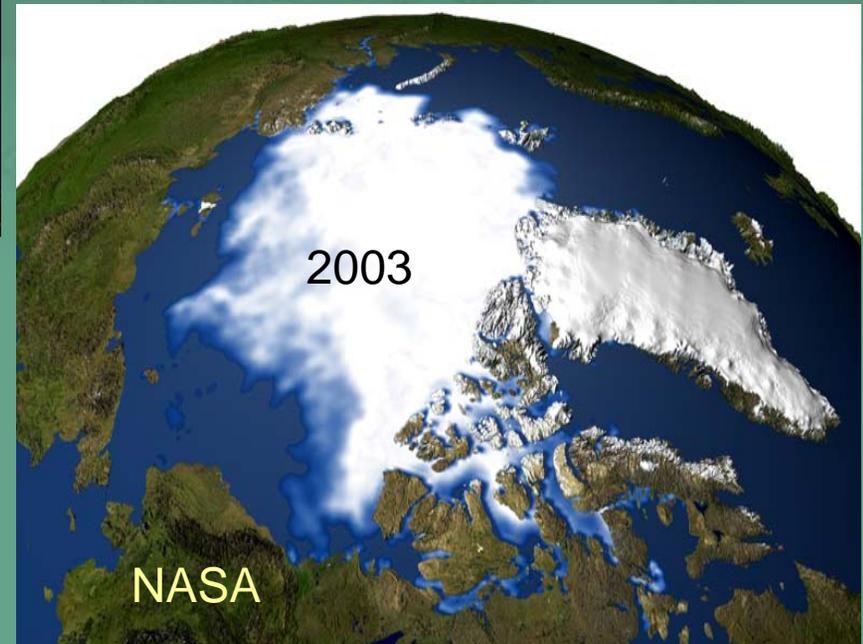
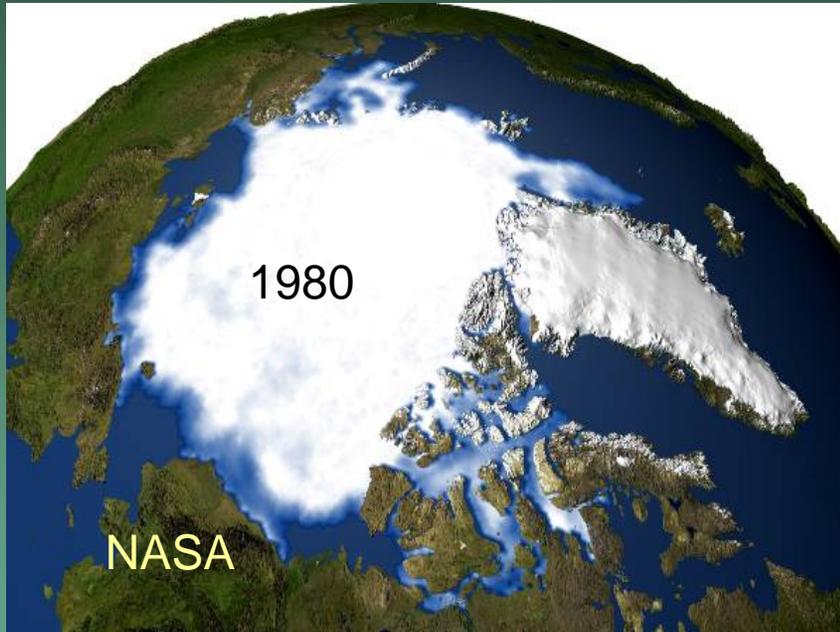
Sea ice over shallower water

>50% ice coverage but <100%

Edges between sea ice types (e.g. shorefast and pack ice)

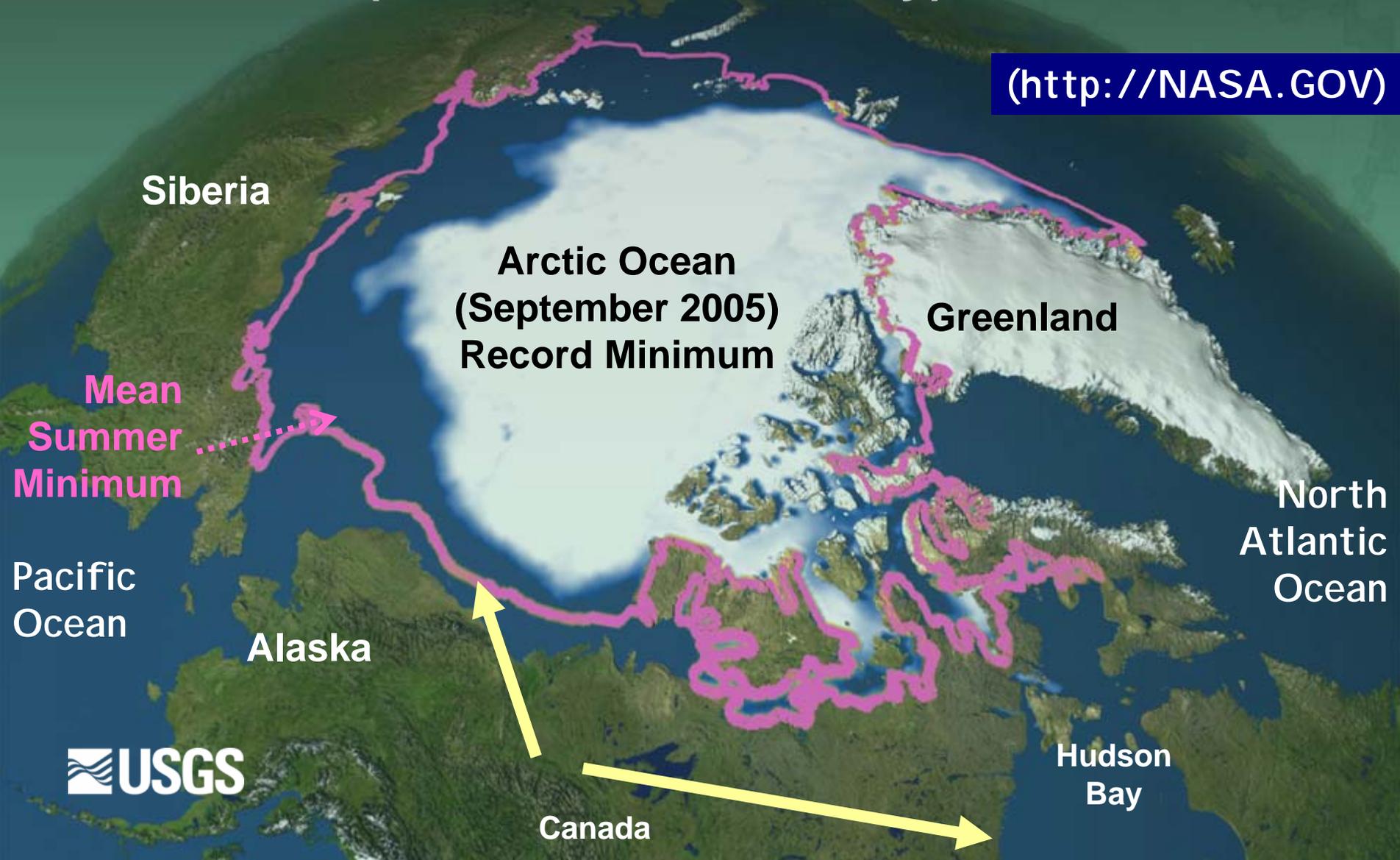
Combinations of ice thicknesses and floe size diameters

Age and Extent of Sea Ice is Changing:



Two Case Studies – Pelagic (Southern Beaufort Sea) and Seasonally Ice-Free Areas (Western Hudson Bay)

(<http://NASA.GOV>)



Siberia

Arctic Ocean
(September 2005)
Record Minimum

Greenland

North
Atlantic
Ocean

Mean
Summer
Minimum

Pacific
Ocean

Alaska

USGS

Canada

Hudson
Bay

Key Findings – Southern Beaufort Sea

- Sea ice retreats far offshore in SBS in late summer/early fall
- Declines in body size and condition
- Reduced survival of cubs of year
- Proportion of dens on sea ice in Beaufort Sea has declined
- Unable to detect change in SBS polar bear numbers

Key Findings - Western Hudson Bay

- 3 weeks earlier sea ice break-up
- Declines in body condition
- Reduced survival of cubs of year, juveniles and senescent bears
- 22% decline in WHB bears between 1987 and 2004

Pollution and Environmental Contaminants

- USGS is collecting data on pollutants in Alaskan polar bears by measuring a wide range of organochlorine chemicals in blood and subcutaneous fat.
- Concentrations of most organochlorines were lower in Southern Beaufort Sea polar bears than other reported populations.
- Contaminant concentrations in Alaska populations are presently not known to have population level effects.



Science to Inform Decision-making

- **Continue long-term monitoring of body metrics, demographics and sea ice**
- **Develop a life history model and population projection for the SBS population**
- **Integrate sea ice projections and models of sea ice/polar bear relationships to forecast future polar bear distributions in the polar basin**
- **Characterize uncertainty in sea ice projections by examining among model and within model variability**
- **Synthesize available information into a model of the future status of polar bears worldwide**

Long-term Science Needs

- Standard information on all IUCN sub-populations, e.g., numbers, vital rates, movements and distribution
- Long-term, intensive studies on how polar bears respond to changes in the Arctic
- In Alaska, relatively little known about polar bears in Chukchi Sea
- Standardized monitoring and technology on bears and sea ice change



Future Conservation Challenges

- Expand research to provide for information needs
- Increased understanding of effects of a changing environment
- Improved harvest management/reporting
- Implementation of the Bilateral US-Russia Treaty
- Expanded Oil and Gas activities and monitoring
- Bear-human conflict management
- Potential ESA Listing and recovery planning

