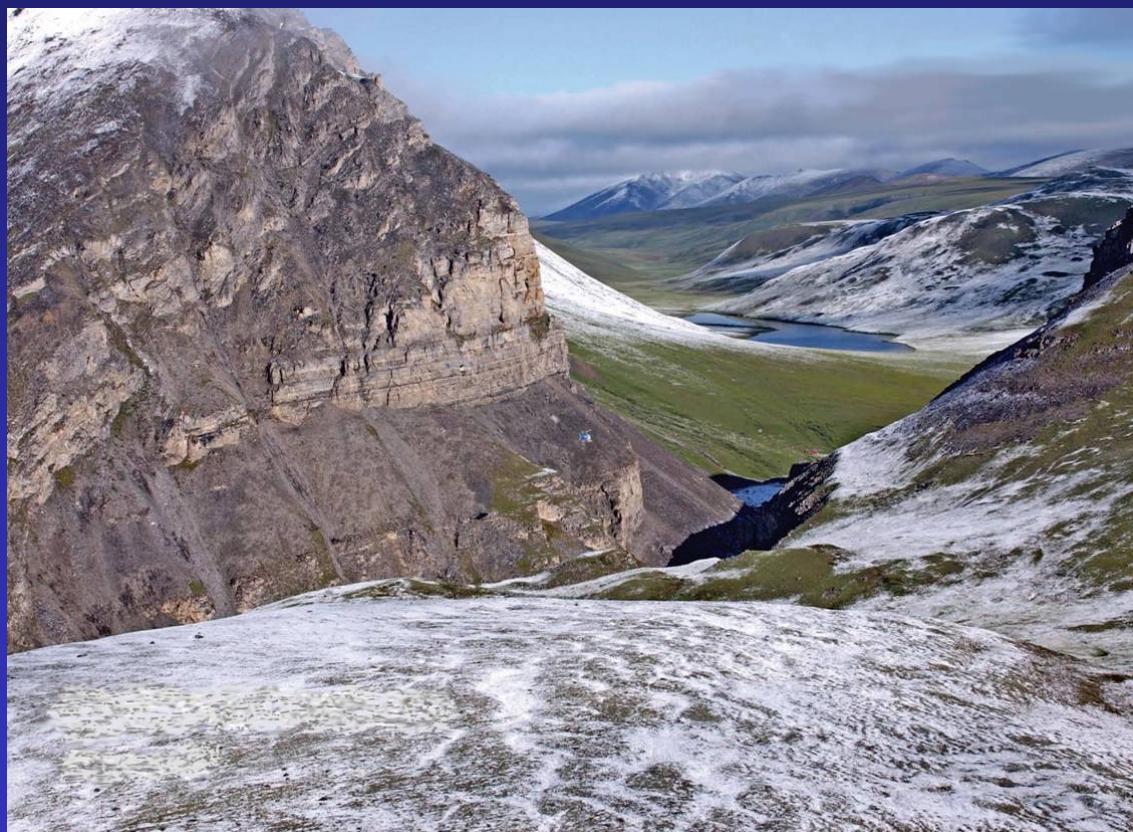




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# International Polar Year Activities and the Alaska Science Center





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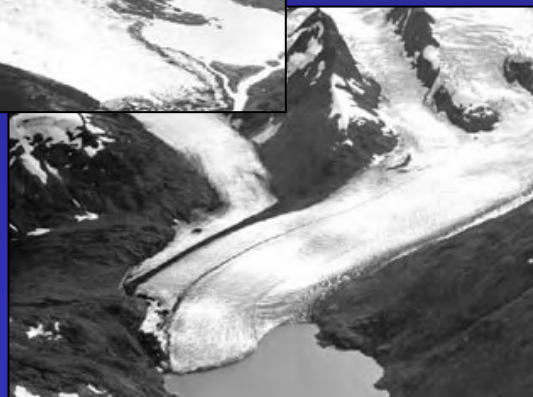
# Glaciers



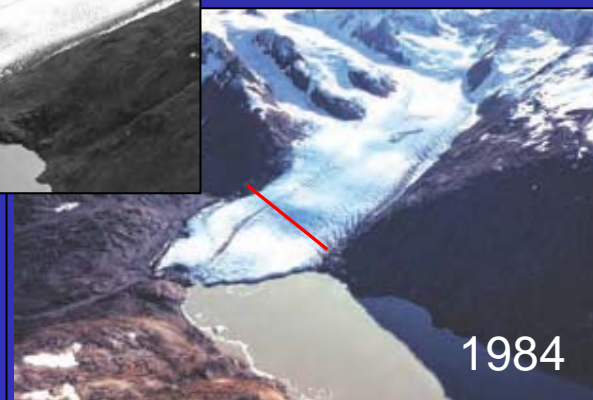
- **Glacier Volume Changes in the Gulf of Alaska**
  - Glacial retreat from the 1950's to 1990's in Alaska produced approximately 8% of the total runoff from Alaska



1914



1972



1984

Portage Glacier in southcentral Alaska receded almost 5 kilometers from the early 1900s to 1999. The red line on 1984 photo indicates the glacier terminus location in 1999.

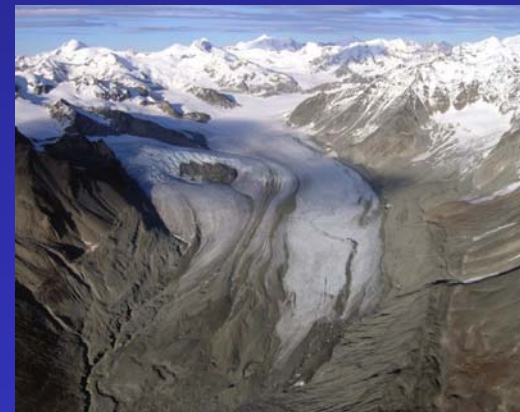
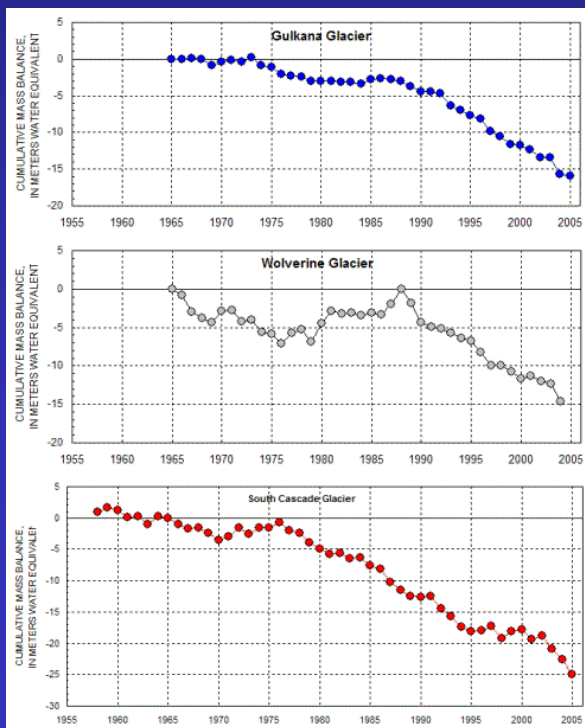




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# Glaciers

- Augmentation of USGS Benchmark Glaciers in Alaska
  - Gulkana and Wolverine Glaciers in Alaska, and South Cascade Glacier in Washington





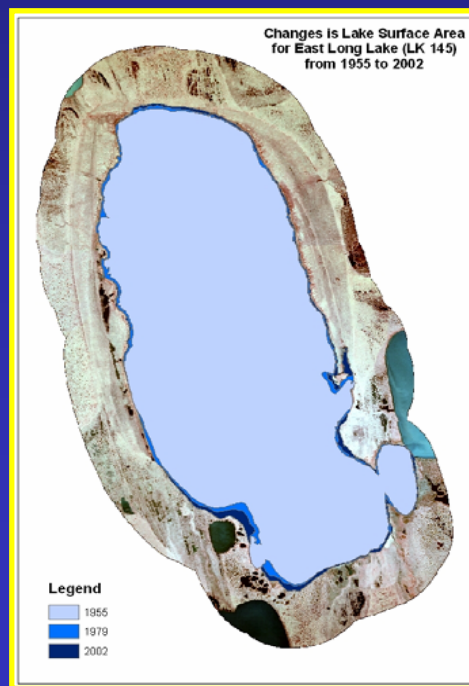
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# Arctic Landscape Change in Response to a Changing Climate

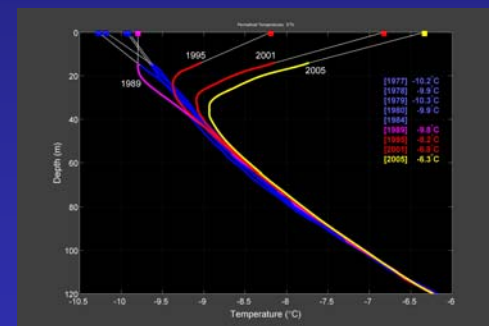
- Response of Fish and Wildlife to Ecological Change on the Arctic Coastal Plain, Alaska
  - Quantification of the distribution of terrestrial, and coastal habitats over spatial and temporal frameworks on the ACP



Changing Coastal Dynamics



Changing lake shoreline habitat



Borehole Temperatures

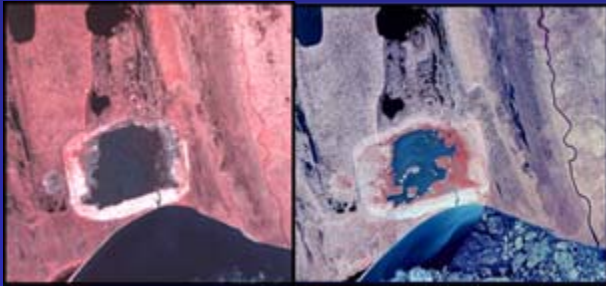




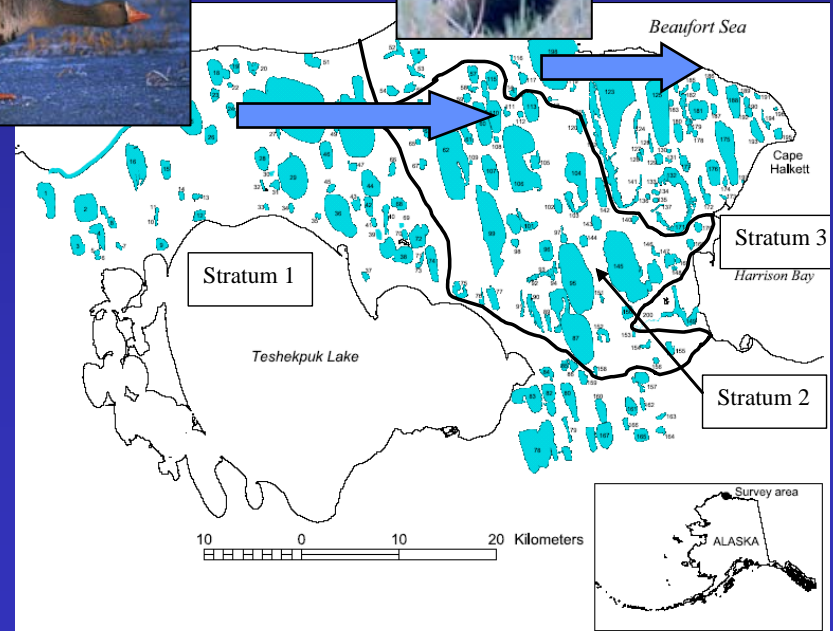
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# Arctic Landscape Change in Response to a Changing Climate

- Response of Fish and Wildlife to Ecological Change on the Arctic Coastal Plain, Alaska
  - examine how changes in pertinent habitats correlate to the spatial and temporal changes in populations of fish and wildlife.



Changes in habitat due to lake drainage, coastal erosion, and increased storm surges

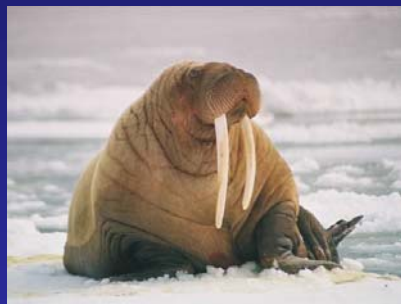
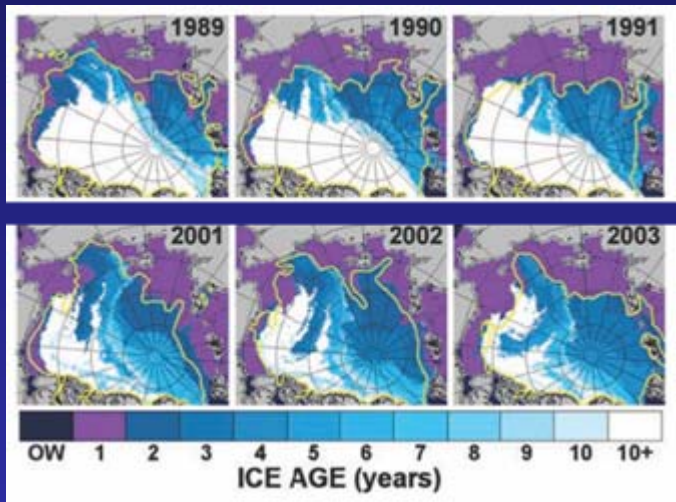




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# Sea-Ice Change and Arctic Wildlife

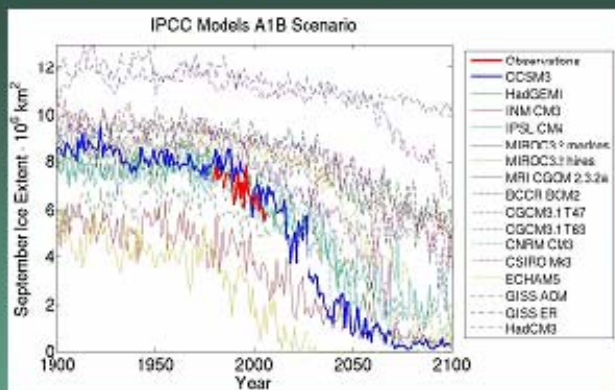
Changes in climate are predicted to have a major effect on the polar ice sheet



Arctic Ocean  
(September 2005)  
Record Minimum



## GLOBAL MODEL PREDICTIONS



Source: Intergovernmental Panel on Climate Change (IPCC)





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## Sea-Ice Change and Arctic Wildlife

Linkages of changing sea ice extent and possible effects on polar bears and walrus

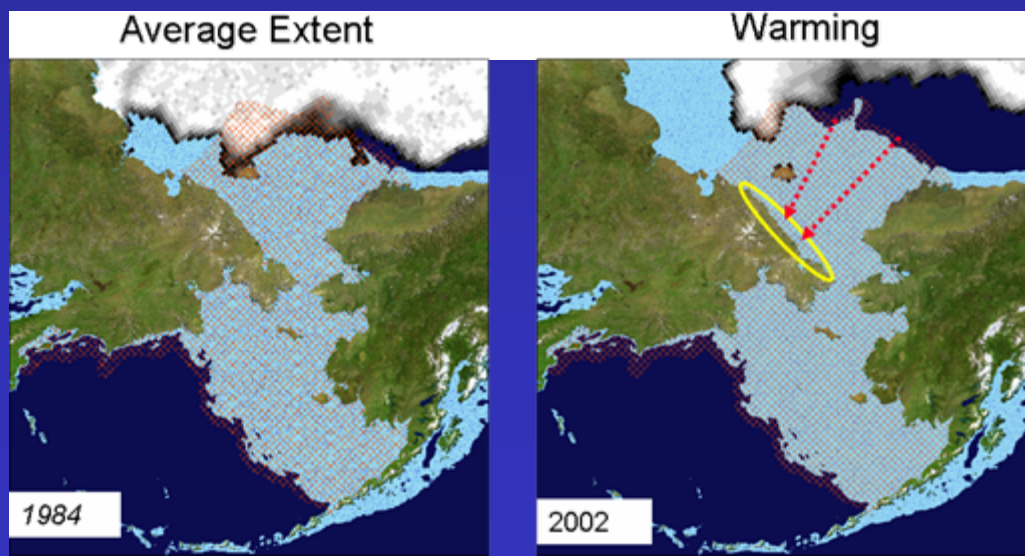
### Polar Bears

- bears summer over deep water
- reduced size
- poorer survival
- Anecdotal Sightings
- Effect on population size?



### Walrus

- Change in extent due to decreasing ice cap





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# Circumpolar Geologic Map

- Circum-polar bedrock geologic map
  - north of 60° latitude
- Participants: Canada, Denmark, Greenland, Norway, Sweden, Russia, United States
- Workshops: Calgary, Alberta, Canada Feb. 2006; Anchorage, Alaska, USA March 2007

