

NEXT GENERATION GPS AND ARCTIC RESEARCH
**SOLVING THE MYSTERIES OF THE
ARCTIC**



25 January 2006

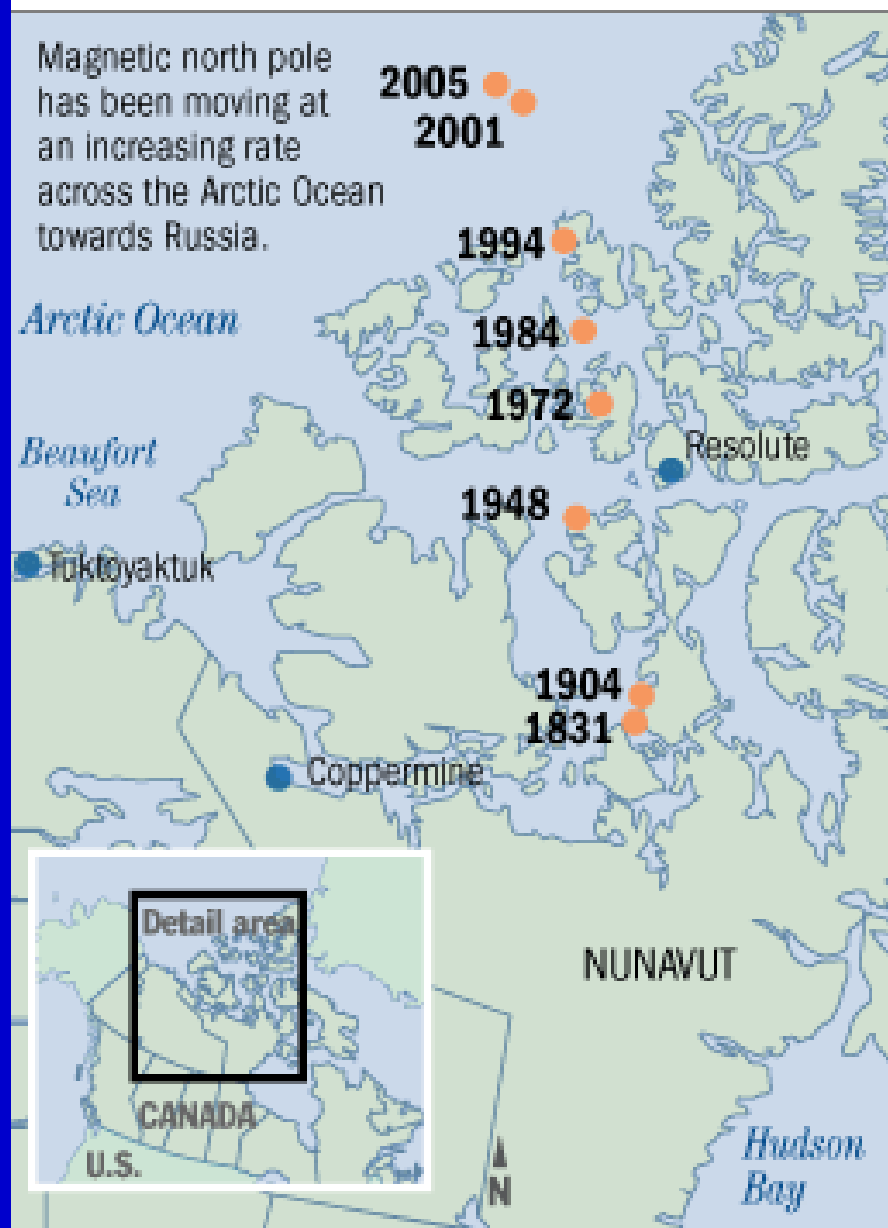
Mead Treadwell

Member, U.S. Arctic Research Commission



Shifting magnetic north pole

Magnetic north pole has been moving at an increasing rate across the Arctic Ocean towards Russia.

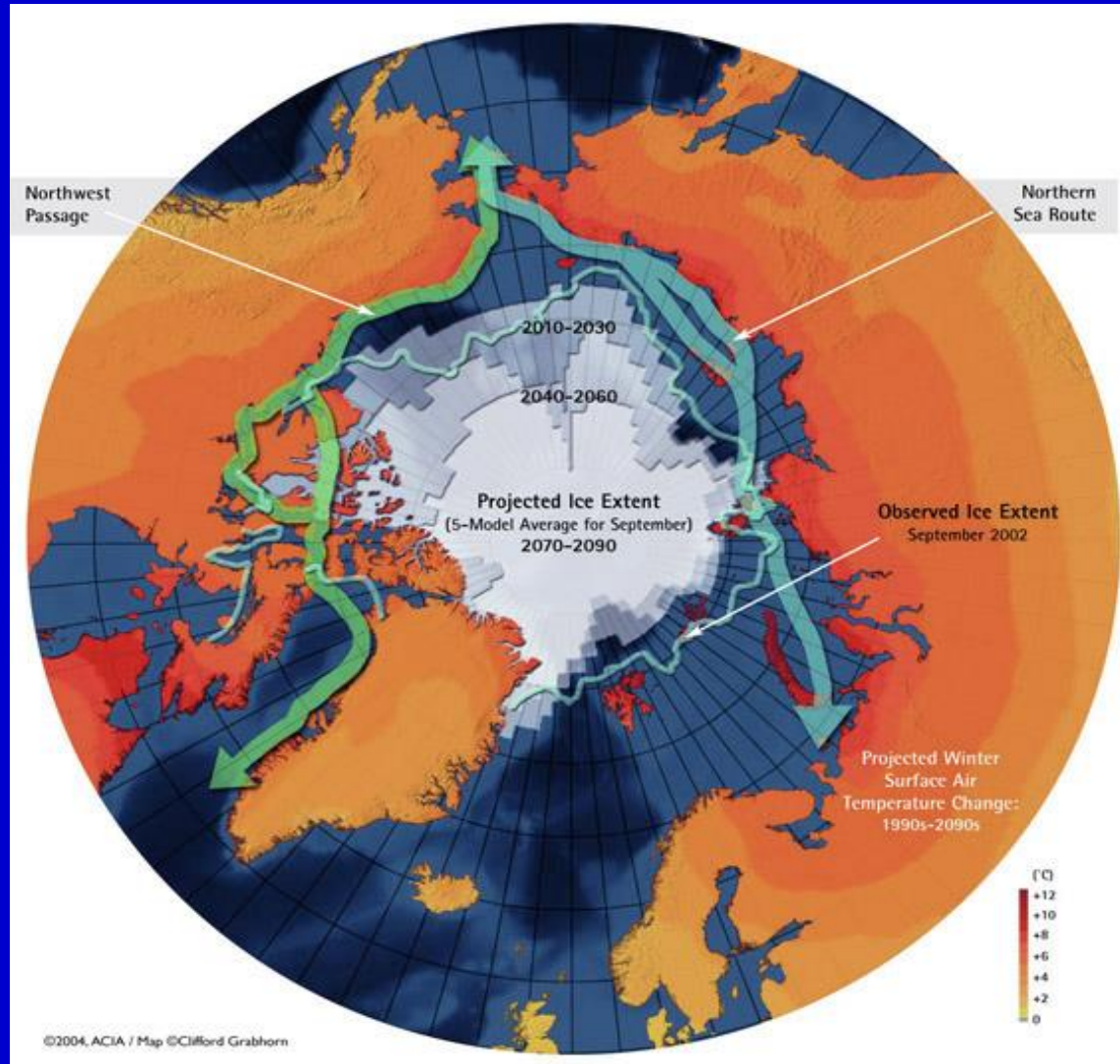








ACIA Key Finding #6: Reduced sea ice is very likely to increase marine transport and access to resources.

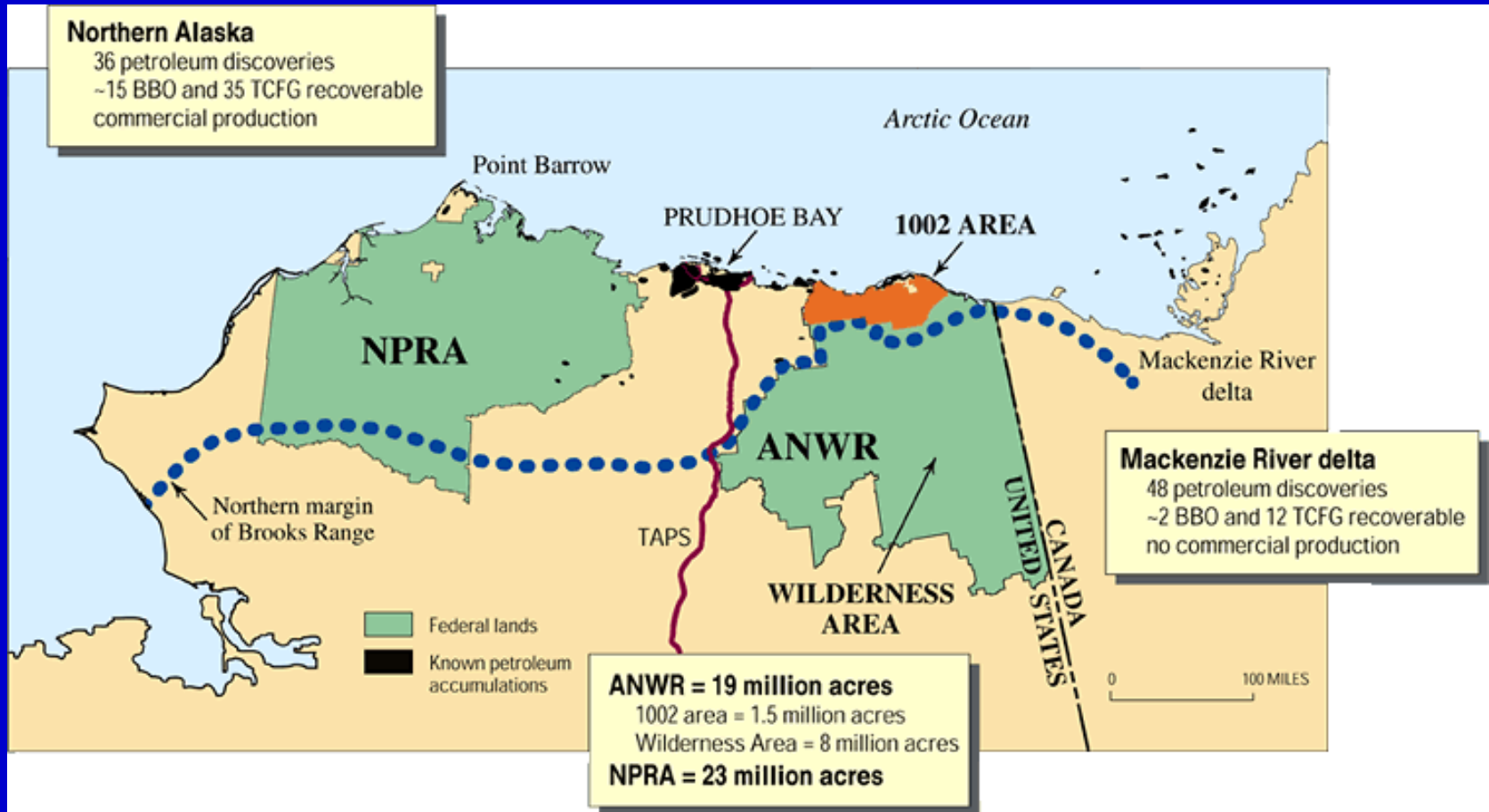








Energy supply from Alaska





“Demand for ice-class tankers has been steadily rising as oil exports from Russia’s Arctic regions become ever more attractive. The ordering pace...in the tanker industry... (reached) some \$4.5 billion in (2004) alone.”

--American Bureau of Shipping, *Surveyor*, Summer 2005

Changes across many sectors of Arctic

Plants & Vegetation



Ocean & Climate



Snow & Ice



Forest & Grassland



Fish, Sea Birds & Marine Mammals



Permafrost & Tundra



Freshwater, Lakes & Rivers



Wildlife & Waterfowl



Indigenous Culture



Human Health

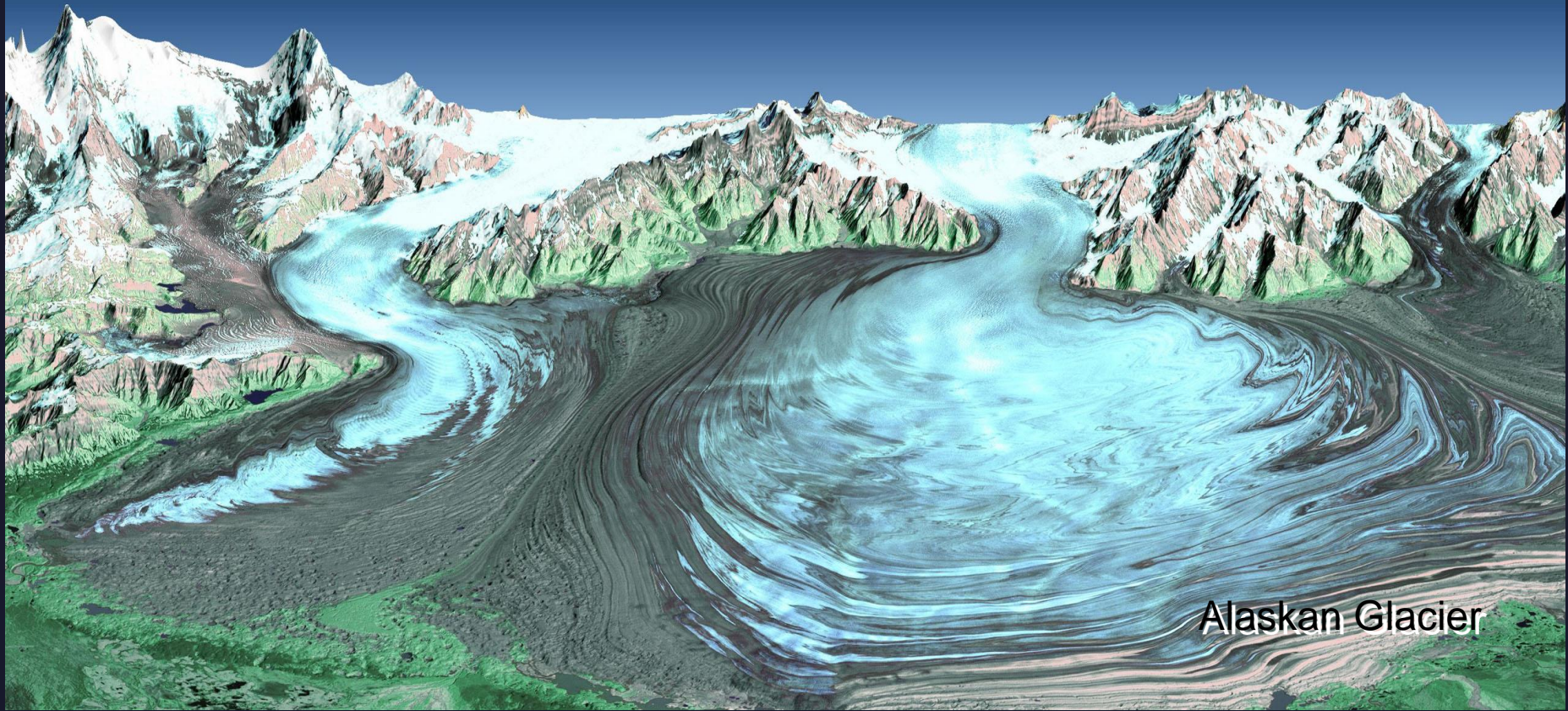


Sea Ice & Icebergs



Land Use & Agriculture





Alaskan Glacier

Retreat of Alaska glaciers totals almost half of the estimated total loss of mass by glaciers worldwide; the largest contribution by glacial melt to rising sea level for any region.

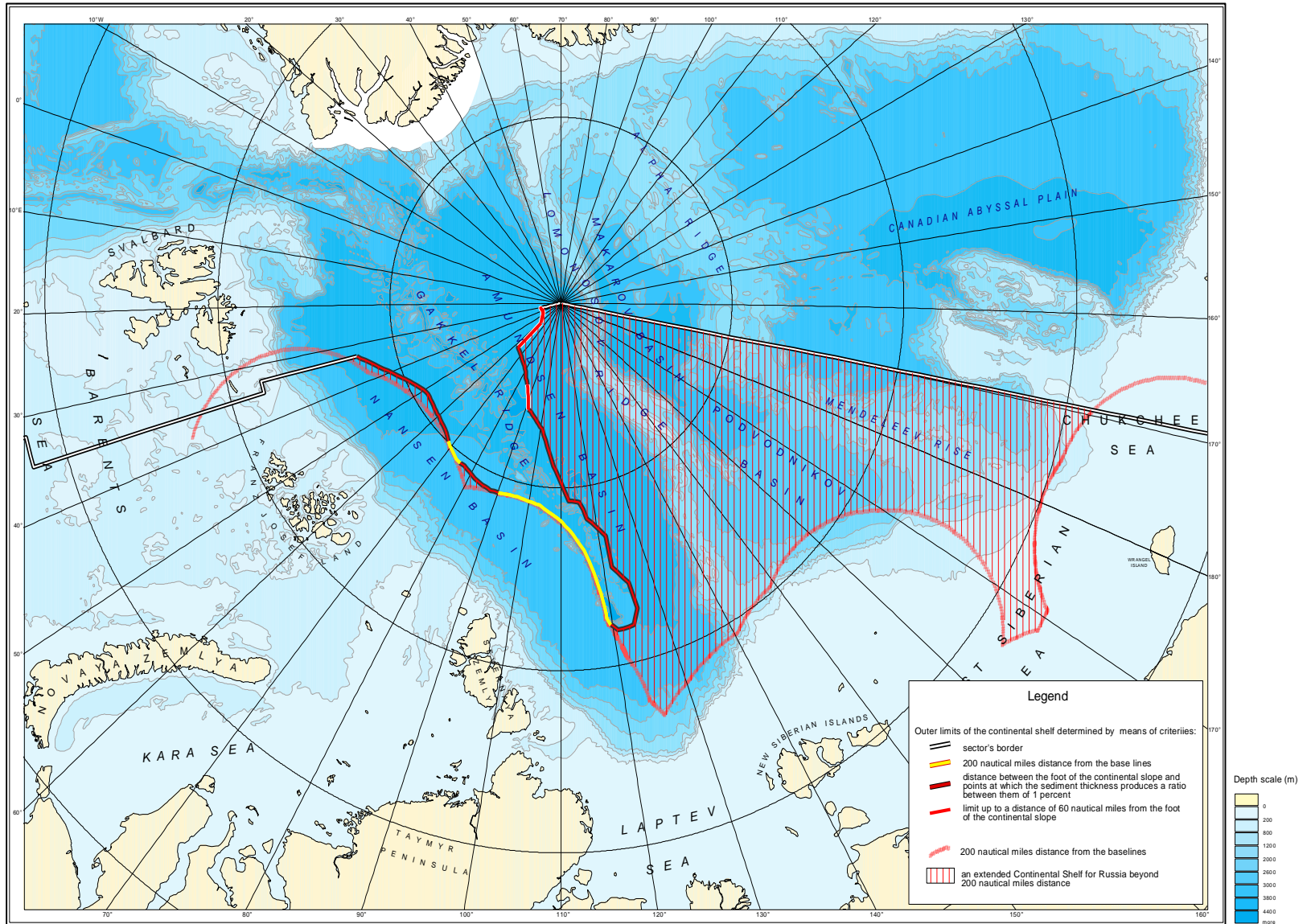


23 August 1994 near the North Pole

Historic Rendezvous: *Polar Sea, Louis S. St-Laurent, & Yamal*



An extended Continental Shelf for Russia beyond 200 nautical miles distance



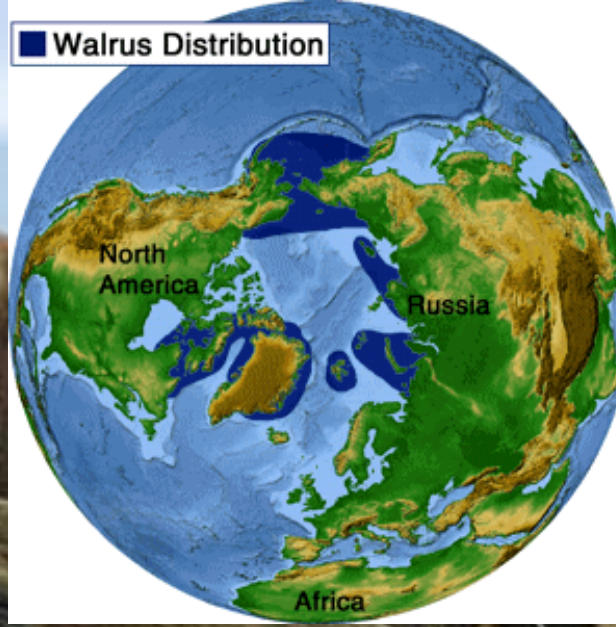








■ Walrus Distribution





Five Key Goals for U.S. Arctic Research

- SEARCH: Climate Change
- Bering Sea
- Arctic Health
- Resource Assessment
- Infrastructure Research



USARC ECUMENICAL BELIEF



- The United States must maintain its global maritime capability—as a government AND as a Nation
- If the U.S. does not exercise its visible maritime presence in the Arctic Ocean—we cede it to whomever wants it!



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