

Alaska: America's Arctic Challenges, Opportunities and Responsibilities

Fran Ulmer

Chair, US Arctic Research Commission

*President's Council of Advisors on
Science and Technology*

March 27, 2015

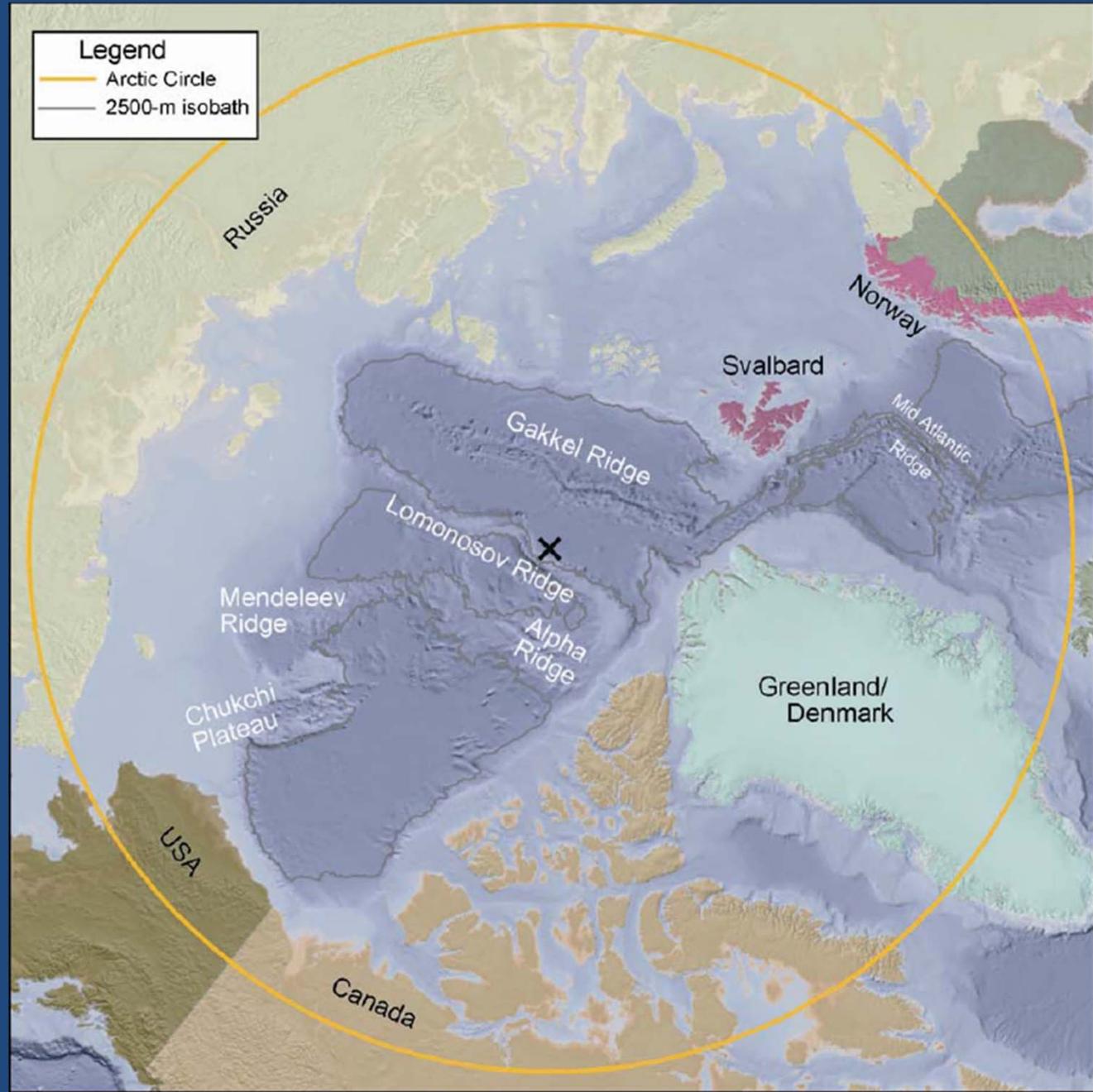


PCAST Overview

- Introduction to Arctic: current issues
- National Arctic Strategy, Implementation Plan, Executive Order and Steering Co.
- US Arctic science coordination
- Arctic Council and U.S. Chairmanship 2015-17

U.S.
Russia
Canada
Denmark
(Greenland)
Norway

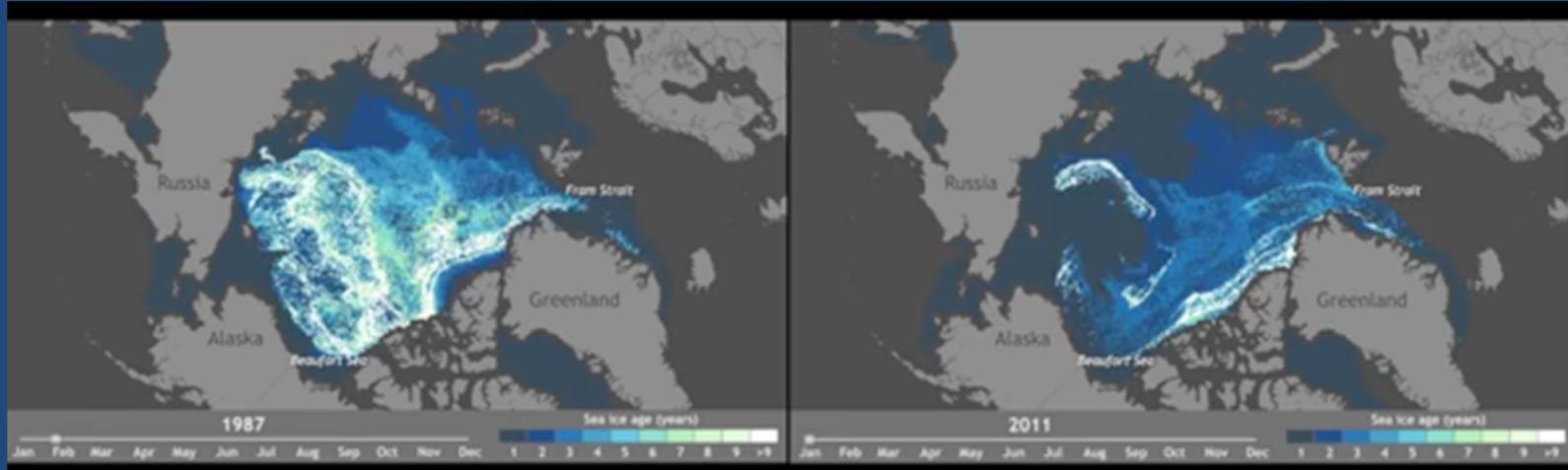
Finland
Iceland
Sweden



Arctic region defined in US law



Credit: US Arctic Research Commission

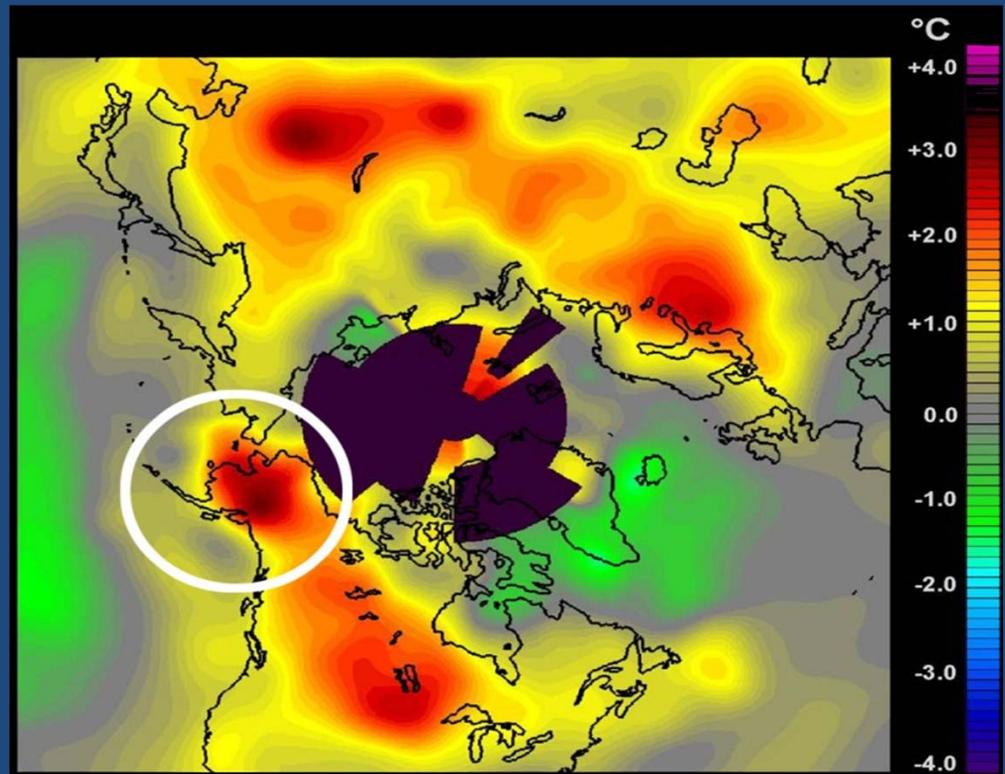


Rapidly changing environment

- Warming temperatures (twice the global rate)
- Declining sea ice (50% area, 75% volume in 30 yr)
- Evolving ecosystems (winners and losers, subsistence)
- Thawing permafrost/carbon release
- Increasing human activity (fishing, oil and gas, shipping, tourism)
- International interest (Arctic Council, UNCLOS, IMO, etc.)

How much has Alaska warmed since 1950?

~ 4° F on average, &
about 7° in winter



Source: U.S. Global Change Research Program.
<http://www.usgcrp.gov/usgcrp/Library/nationalassessment/overviewalaska.htm>

What does this mean to Arctic residents?

Impacts to subsistence foods and culture
Impacts to coastal villages and basic infrastructure
Possible regional/village economic opportunities



Changing economics



- Increasing global demand for resources
- Arctic is resource rich
- Region increasingly accessible via technology advances & climate change

Arctic has much of
world's remaining
“undiscovered”
fossil fuel

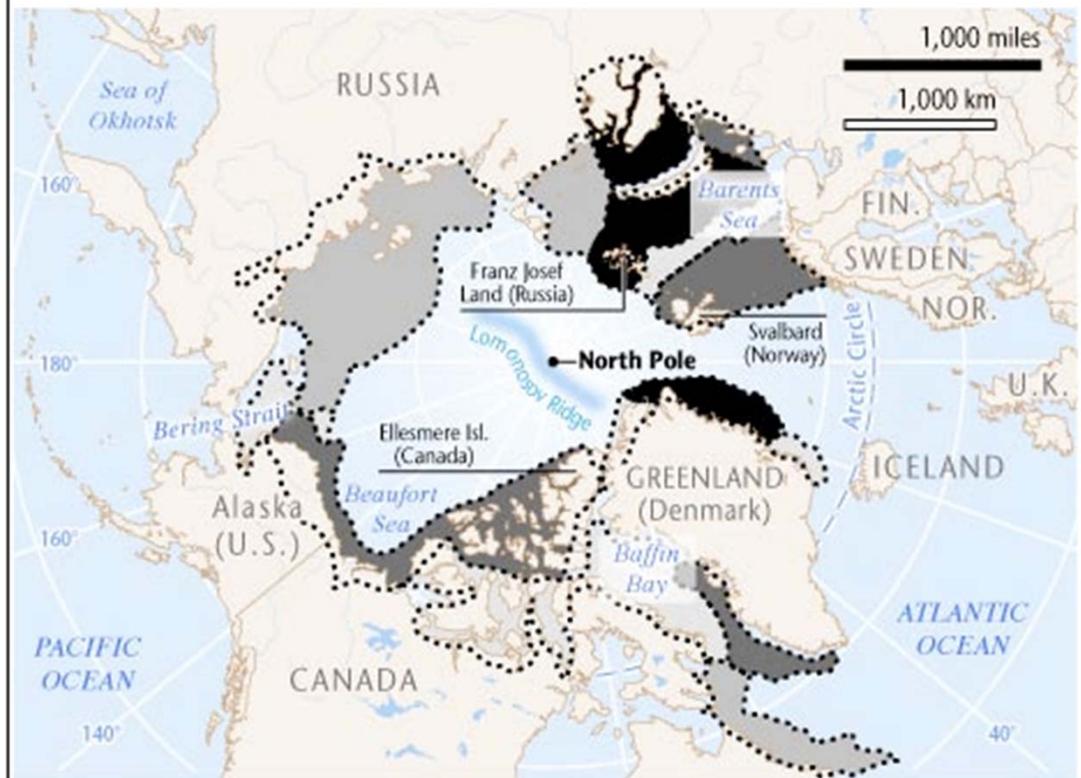
13% oil

30% natural gas

20% natural gas liquids

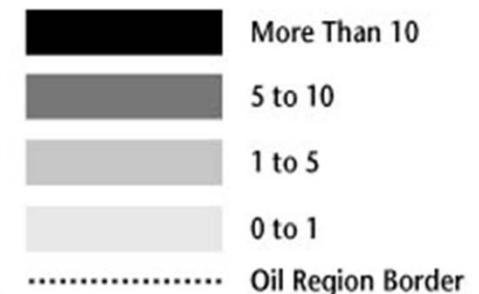
2009 USGS CARA report

Arctic Oil and Gas Potential

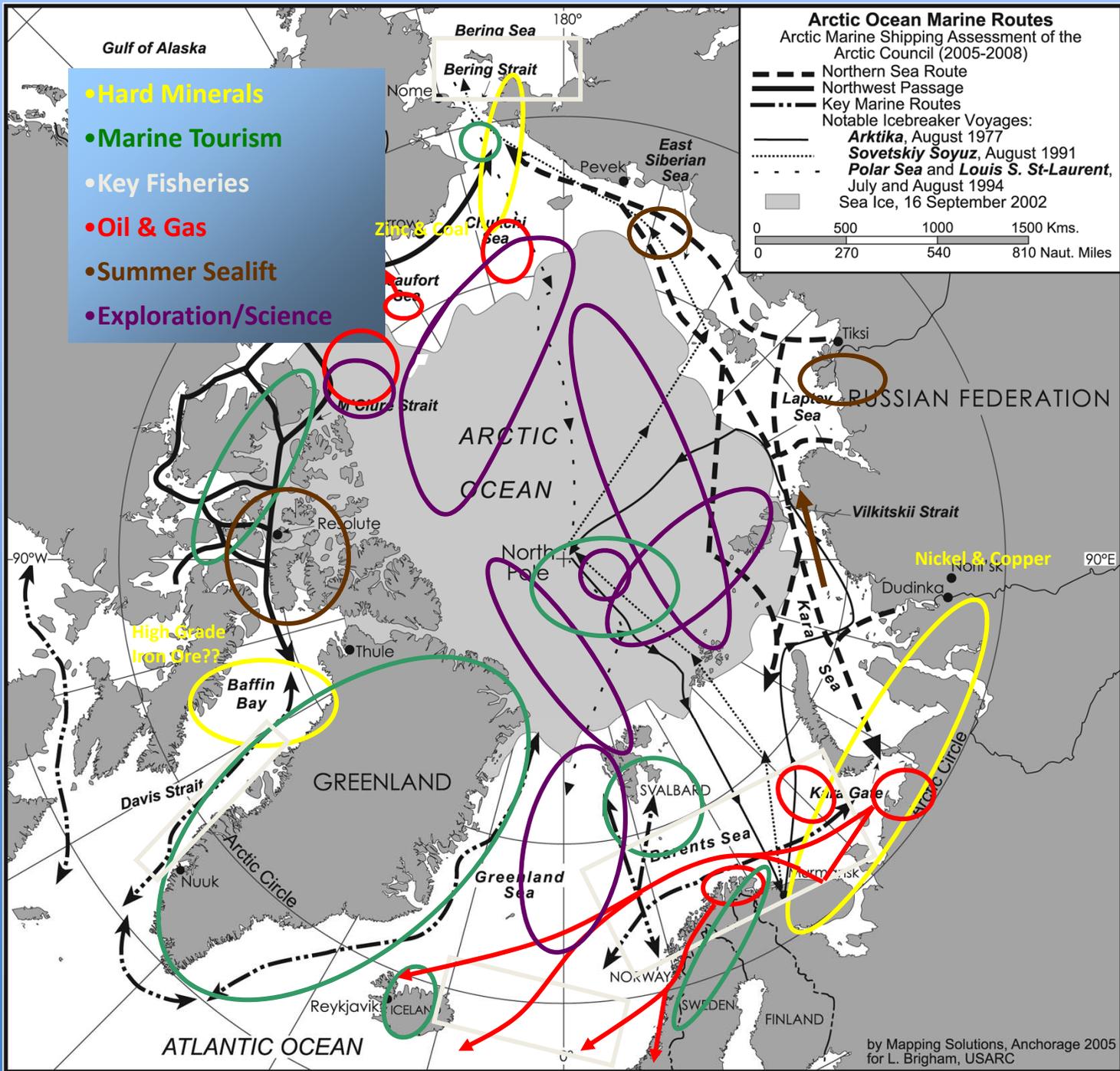


Estimated Oil, Gas Yet to Be Found

In billions of barrels of oil equivalent



SOURCE: Wood Mackenzie
Map based on a *Financial Times* graphic



by Mapping Solutions, Anchorage 2005
 for L. Brigham, USARC

Reducing risk will require:

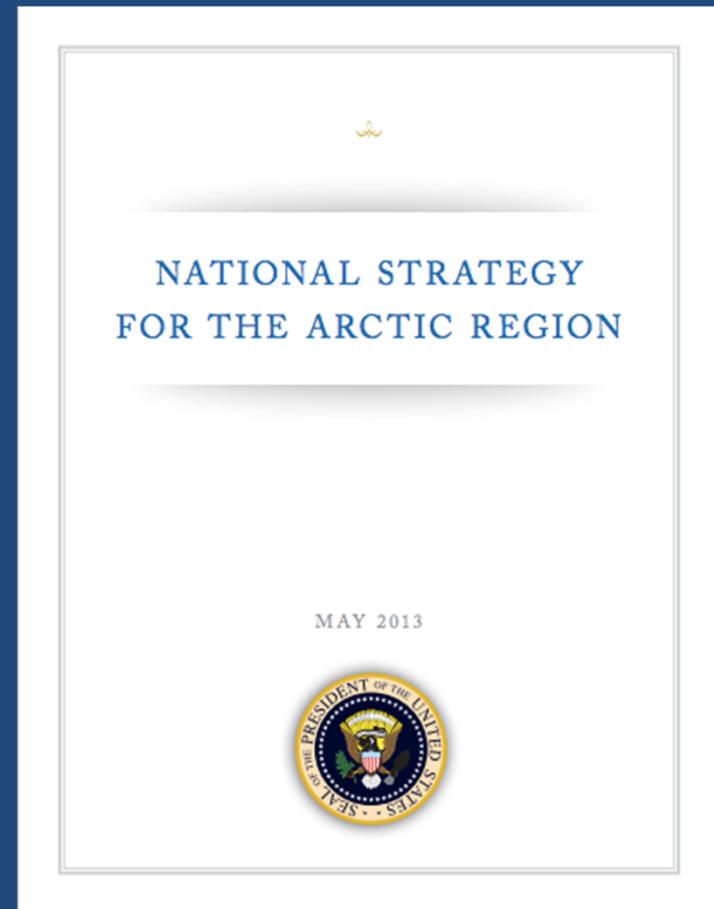
- Infrastructure
- USCG resources
- Training
- Specialized equipment
- Mapping and charting
- Navigation aids
- Communication
- IMO Polar Code
- Law of the Sea
- International cooperation



US National Strategy for the Arctic

Three Lines of Effort:

- Advance United States Security Interests
- Pursue Responsible Arctic Region Stewardship
- Strengthen International Cooperation



National initiatives on Arctic research & policy



President Obama
reassigns Arctic research
coordination from NSF
to NSTC 7/22/10

- Arctic Research & Policy Act 1984
- Arctic Region Policy reaffirmed 2009
- IARPC assigned to White House 2010
- Arctic Strategy 2013
- IARPC's Arctic Science Prog. Plan 2013
- Arctic Implementation Plan Plan 2014
- Executive Order 13689 Arctic Coordination 2015
- First Arctic Ex. Steering Co. meeting 2015

The Arctic Council

- Forum to provide cooperation, coordination and interaction among the 8 Arctic States
- Plus 20 Observers and 6 Permanent Participants (Arctic Indigenous communities)
- Projects on sustainable development and environmental protection in the Arctic



Arctic Council Structure

2015 – 2017 Chairmanship: UNITED STATES

Six indigenous groups ("Permanent Participants") participate at all levels

Ministers

Senior Arctic Officials (SAOs)

Task Force on
Scientific
Cooperation
Co-chairs:
US, RUS

Working Groups

Arctic Monitoring and
Assessment Program (AMAP)

Chair: **Finland**
U.S. representative: ??

Arctic Contaminants Action
Program (ACAP)

Chair: **Sweden**
U.S. representative: EPA

Protection of the Arctic
Marine Environment (PAME)

Chair: **??**
U.S. representative: DOC/NOAA

Emergency Prevention
Preparedness and Response
(EPPR)

Chair: **United States**
U.S. representative: DOE/NNSA

Conservation of Arctic Flora
and Fauna (CAFF)

Chair: **Norway**
U.S. representative: DOI/FWS

Sustainable Development
Working Group
(SDWG)

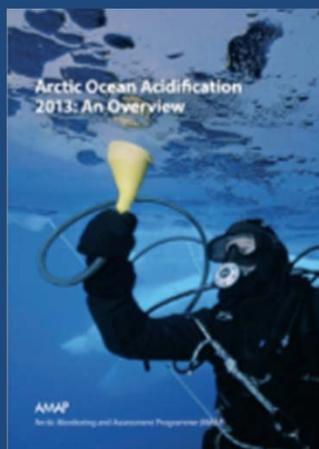
Chair: **United States**
U.S. representative: DOS

Arctic Council: Science-based Products



The Arctic Ocean Review (2009-2013)

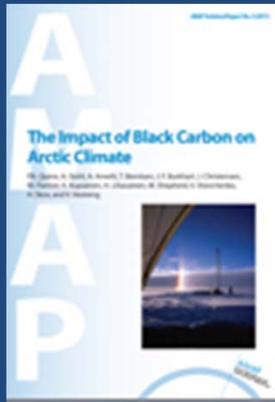
- A report on the global and regional measures in place for the conservation and sustainable use of the Arctic Ocean



Arctic Ocean Acidification Overview Report (2014)

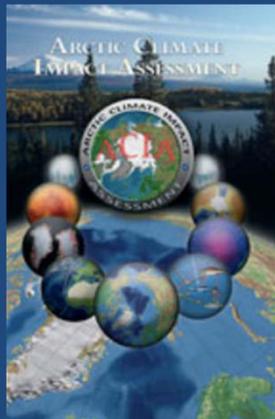
- This report introduces the issue of ocean acidification and presents the results of AMAP's 2013 Arctic Ocean Acidification assessment for a general audience

Arctic Council: Science-based Products



The Impact of Black Carbon on Arctic Climate (2011)

- A report investigating the links between black carbon emissions and Arctic climate response



Arctic Climate Impact Assessment (2005)

- A study describing the ongoing climate change in the Arctic and its consequences: rising temperatures, loss of sea ice, unprecedented melting of the Greenland ice sheet, and many impacts on ecosystems, animals, and people

Arctic agreements to promote cooperation on...

- **Aeronautical and Maritime Search & Rescue (2011)**
- **Marine Oil Pollution Preparedness and Response (2013)**
- **Scientific Research (in progress)**

U.S. Chairmanship Program: “One Arctic: shared challenges, opportunities and responsibilities”

Three themes:

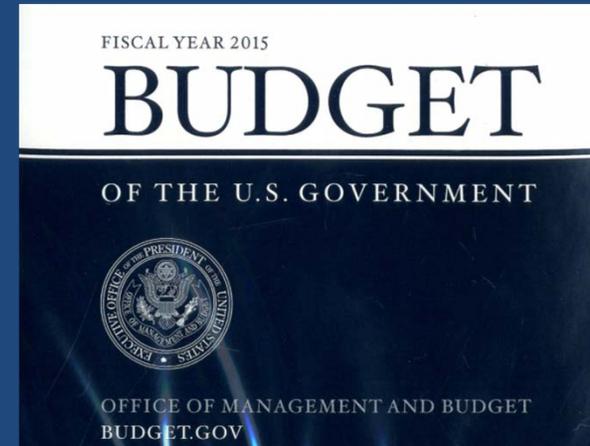
- Arctic Ocean safety, security, and stewardship
- Improving economic and living conditions
- Addressing the impacts of climate change

Two goals:

- Strengthen the Arctic Council
- Public diplomacy strategy



Federal Arctic research policy/process



USARC set goals



IARPC adopts,
creates & executes
research plan



White House:
OMB/OSTP
coordinate &
review budget



“The Commission shall, after submission of the President's annual budget request, review the request and report to Congress on adherence to the Plan.”



Congress:
Authorizes &
Appropriates



6 research themes in USARC's new "Goals" report to President Obama and Congress

- Environmental Change
- Human Health
- Built Environment
- Natural Resources & Renewable Energy
- Cultures & Community Resilience
- Intl' Sci. Cooperation

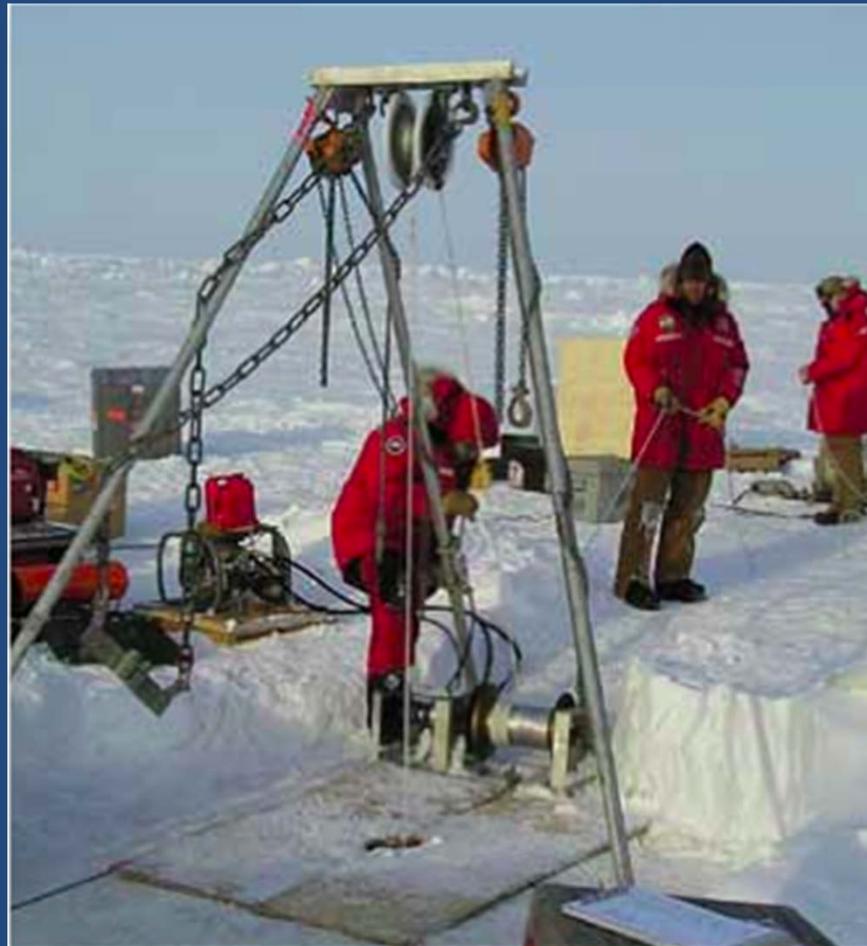




U.S. Arctic Research Commission

- Develop, recommend, and assist in implementing a national Arctic research policy
- Facilitate Arctic research cooperation among Federal, State and local governments
- Recommend improvements for data sharing among Arctic research entities
- Facilitate international scientific cooperation in the Arctic

Increasing research and investment in infrastructure is essential



Arctic development needs science-based information and understanding to:

- Identify and assess resource potential
- Assess the impacts of resource development
- Determine sustainability and consequences of development (locally and globally)
- Create and implement smart practices for development
- Determine means to assess risk, prevent problems and respond to emergencies
- Address the needs of Arctic residents, from food security to adaptation of climate-impacted infrastructure

ARCTIC UPDATE



THE US ARCTIC RESEARCH COMMISSION DAILY EMAIL NEWSLETTER

March 10, 2015

Today's Events

[Arctic Ambitions IV: Trade, Commerce, Investment. March 10-11, 2015 \(Anchorage, Alaska, USA\).](#)

This unique international event brings together corporate executives and senior government officials from around the Arctic region and the world. It focuses on trade, commerce and investment and serves as an excellent networking venue to promote your business interests in the region. Speakers include US Arctic Research Chair Fran Ulmer.



Today's Congressional Action:

The House is not in session. The Senate is expected to consider non-Arctic legislation.

Media

Sikuliaq Commissioned, Ready to Begin Research. The Research Vessel Sikuliaq was officially commissioned Saturday in a ceremony at the boat's home port in Seward. The commissioning marked the end of decades of efforts to design and build it; and the beginning of its mission to research the Earth's rapidly changing and increasingly important polar regions. [Alaska Public Radio](#)



Arctic Sea Ice Winter Maximum May be Record Low. Arctic sea ice coverage appears headed for a record-low winter maximum this year, and the annual melt appears to be off to a very early start, according to information from the Error! Hyperlink reference not valid. The maximum extent of 5.59 million square miles, reached Feb. 25, was lower than any other year's winter maximum and 6.35 percent lower than the 1981-2010 average, according to the Boulder-based center. Sea ice extent has trended down since that date; ice extent usually peaks around the middle of March and last year peaked on the spring equinox, March 21. [Alaska Dispatch News](#)

Why not spend it on icebreakers, instead?...[Opinion] Our Navy Is Big Enough. AT General Dynamics Bath Iron Works in Maine, workers are completing a warship

USARC's daily
"Arctic Update"
newsletter

Subscribe at:
www.arctic.gov