

# Governance and Management of Arctic Fisheries

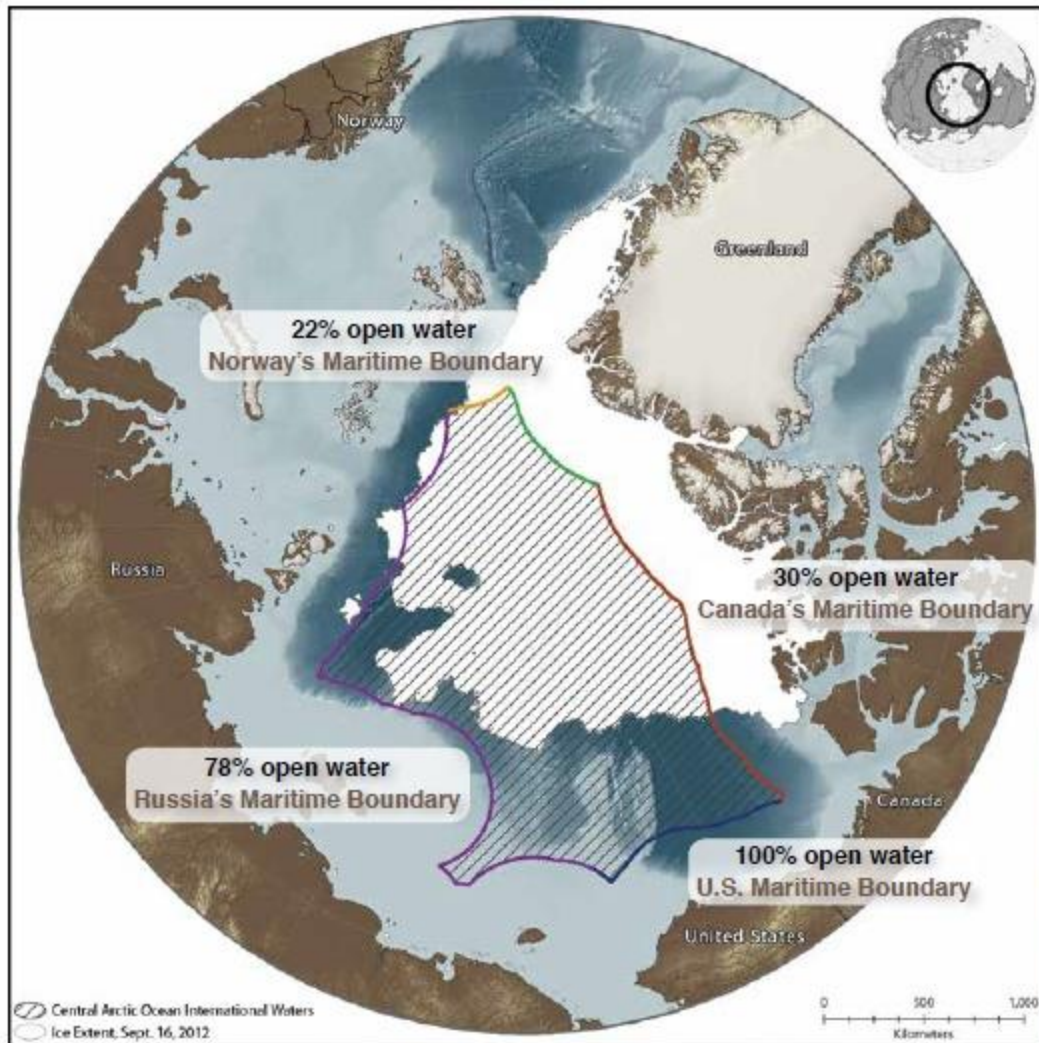
Frank Millerd

Wilfrid Laurier University  
Waterloo, Ontario, Canada

# Outline

- What is the Arctic?
- Who owns the Arctic?
- Climate change in the Arctic
- Related environmental issues
  - Shipping
  - Oil and gas development
- Arctic Fisheries, present and future
- Fisheries governance
  - Current situation
  - Moving forward





In summer 2012, four of the five Arctic coastal countries had open water on their maritime boundary with the Central Arctic Ocean.

# Boundary Issues

- US and Canada over boundary extending seaward from the border between Alaska and the Yukon
  - Extension of land border over ocean
- US and Canada over status of Northwest passage
  - 1986: Canada adopts straight baselines around the Arctic Archipelago, now internal waters
    - ‘Innocent passage’ by foreign vessels, could be suspended
  - US position: Northwest passage is international strait, foreign states have right of transit
    - ‘Transit passage’ by foreign vessels, cannot be suspended
- Canada and Denmark over status of Hans Island, between Greenland and Ellsmere Island

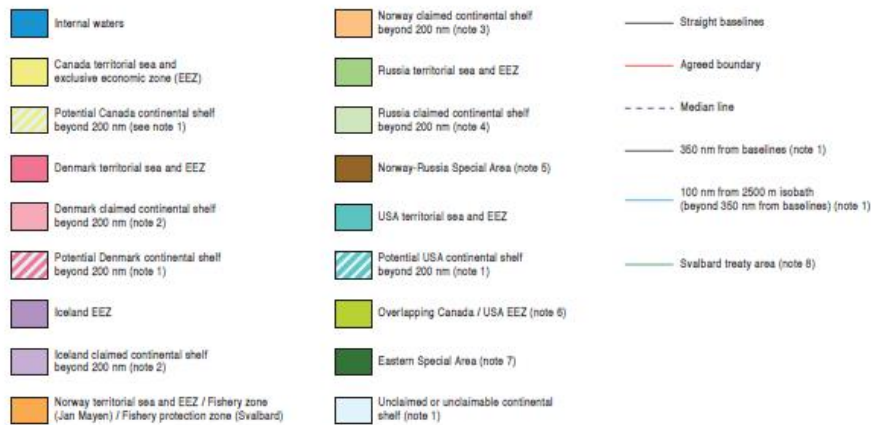




# Continental shelf, beyond EEZ

- If outer edge of continental shelf beyond EEZ states may claim jurisdiction over resources below sea bed and sedentary resources up to 350 miles from baseline or 100 miles from 2500 metre isobath
- Submissions to UN Commission on the Limits of the Continental Shelf
  - Norway claim approved
  - Canada and Russia claims being reworked
  - Denmark intends to submit claim
- Overlapping claims

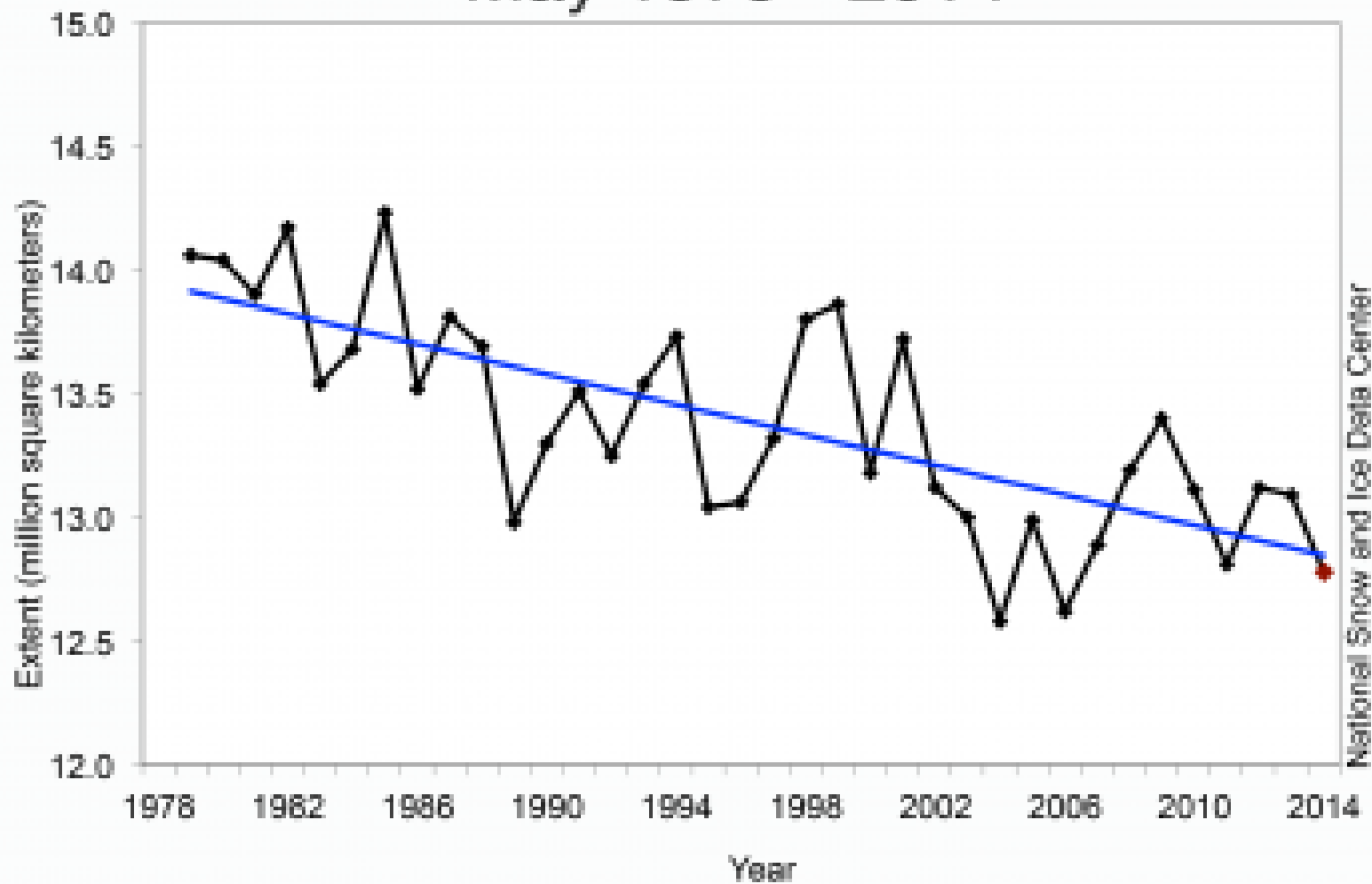




# Climate change in the Arctic

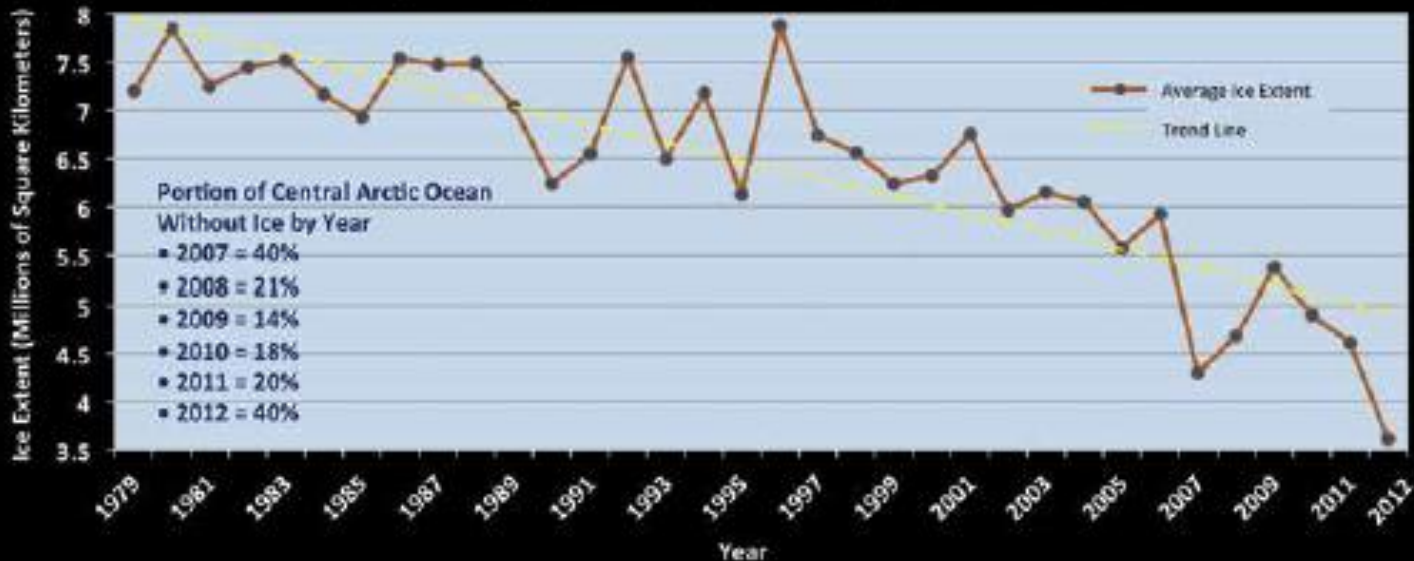
- Warming faster than global average
- Albedo effect: as Arctic warms, ice melts, uncovered water and land reflect less, more absorption of heat
- Thinning ozone layer, increased intensity of sun
- Permafrost melting
- Higher pollution levels
- **Arctic pollution levels:** 10-20 higher than over Antarctica and 10 times greater than over nonindustrial parts of North America
- Potential impact on southern climates

# Average Monthly Arctic Sea Ice Extent May 1979 - 2014

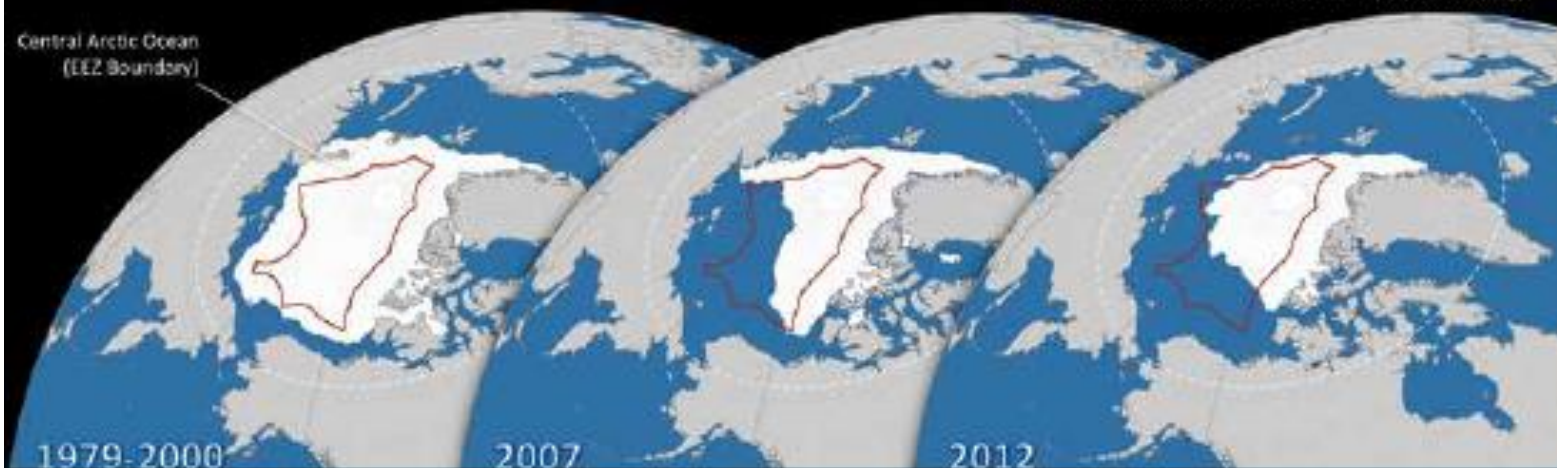


National Snow and Ice Data Center

Average Monthly Arctic Sea Ice Extent for September, 1979–2012



Data: National Snow and Ice Data Center (<http://nsidc.org>)



The international boundary of the Central Arctic Ocean shown in red.  
Sea ice data source: National Snow and Ice Data Center (<http://nsidc.org>)



# Arctic Shipping

Destination shipping and transit shipping

## Destination shipping

- Not overly sensitive to scheduling, economies of scale
- Now operating, will continue and likely expand
- Port state controls for environmental and safety standards

# Transit shipping

- Vessel modification, operating & insurance costs higher
- Depth restrictions
- Unpredictable and extreme weather, delays
- Scheduling, just in time delivery difficult
- Slower speeds, ice breaker escort
- Limited season
- Lack of charts, infrastructure, search & rescue
- Inflow of multi-year ice into the lower channels of Canadian Arctic archipelago, increased risk
- Invasive species

*Arctic routes not necessarily cheaper per unit of cargo*

# Oil and gas

- Estimated: 30% of world's undiscovered gas and 13% of undiscovered oil
- 84% offshore, mostly in EEZs
- Difficult, expensive, risky to develop
- North American development in future, other opportunities more attractive
- Norway and Russia more likely to develop sooner



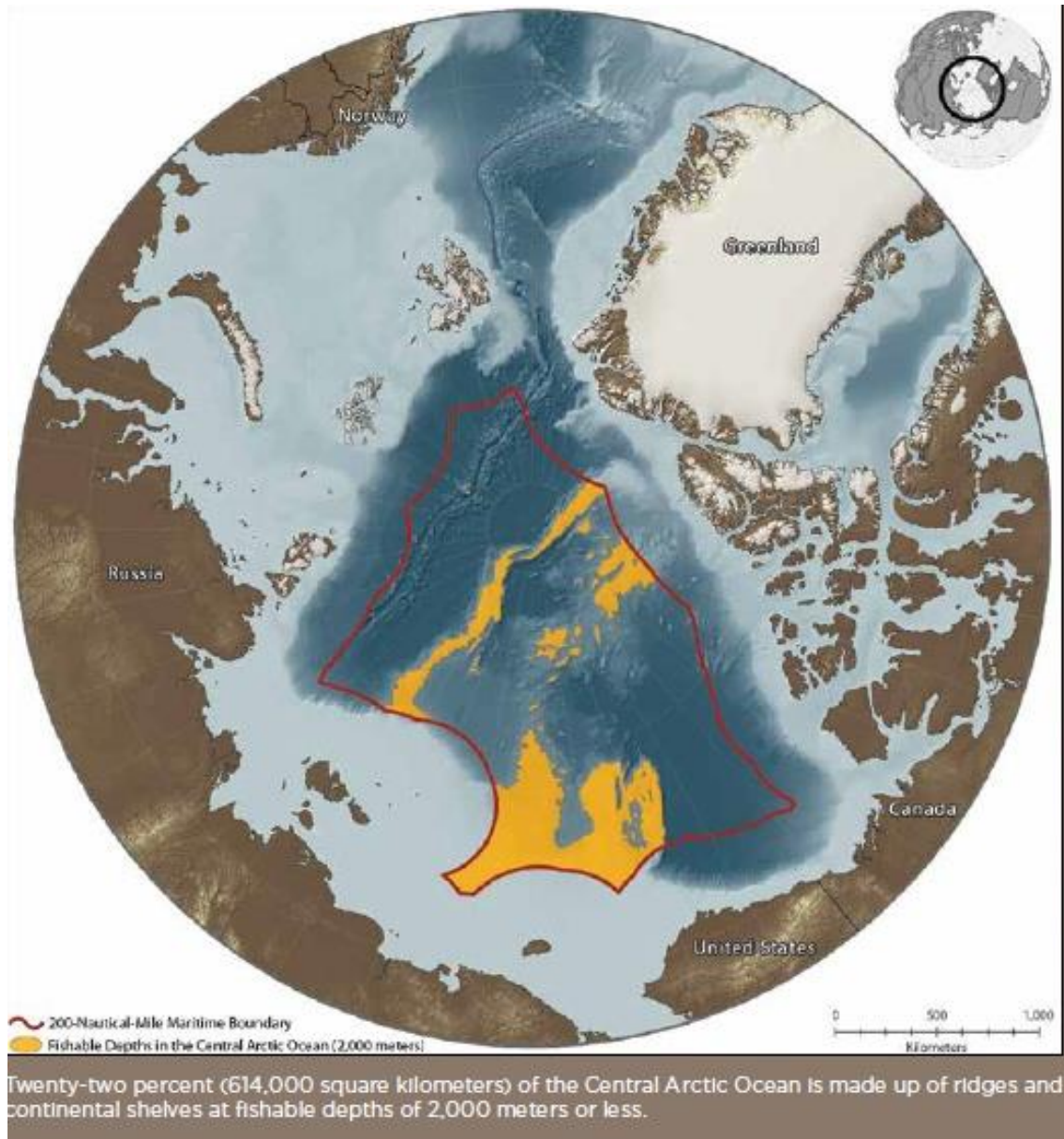
# Current Arctic fisheries

- Traditional and subsistence fisheries
  - Canada has co-management agreements with indigenous groups
- Ocean and fresh water
- Small-scale commercial, some pressure to expand
- Likely under-reported to FAO
- Recreational

# Future Arctic Fisheries

- Hallowed et al 2013
  - New areas for plankton production, new feeding areas for fish stocks
  - Panel of experts: 6 stocks had high potential to establish viable populations in Arctic, 6 others with lower potential
- Carscadden et al 2013
  - Capelin in Arctic, move of Labrador stocks
- Hedger et al 2013
  - Less ice cover detrimental to northern salmon

# Areas considered to be fishable depth

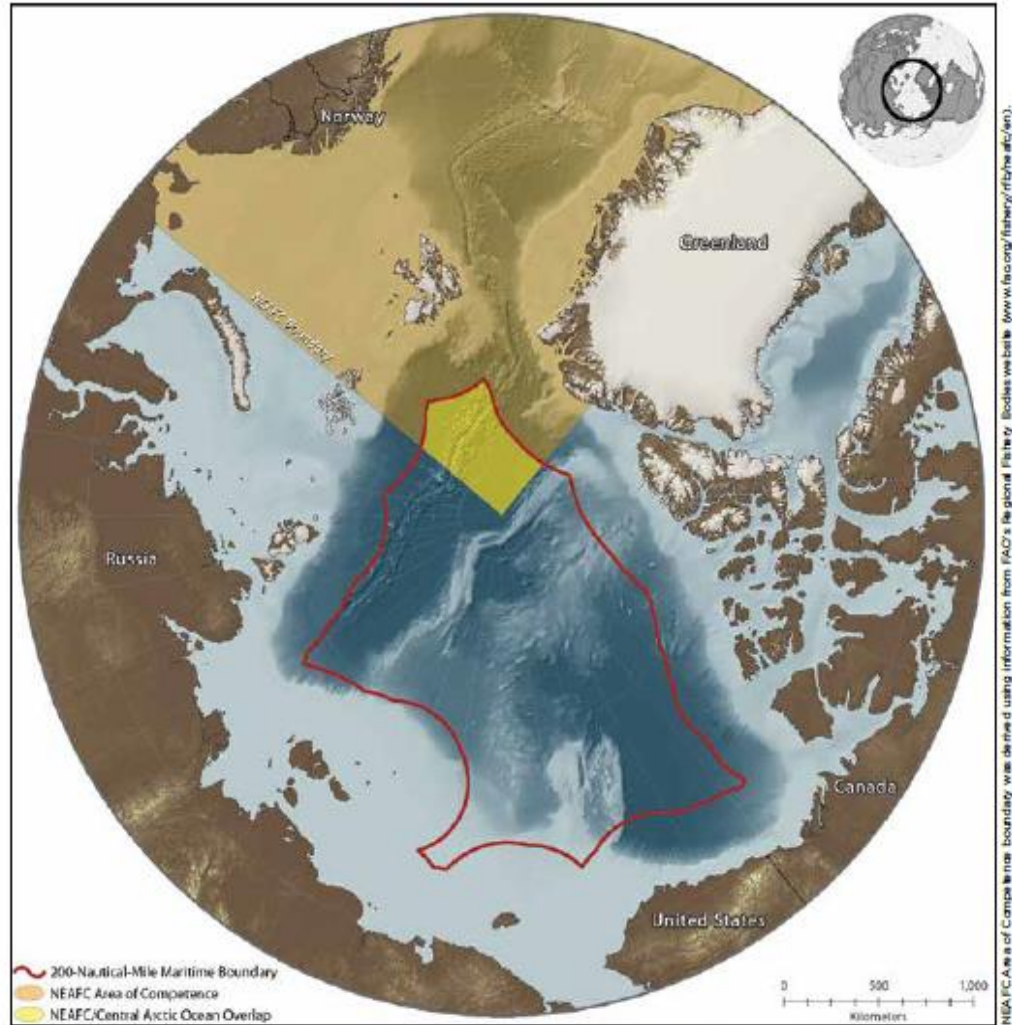


# Governance of Arctic Fisheries

- International agreements all applicable to Arctic
- UNCLOS 1982
  - 200 mile EEZs
  - Article 234: Pollution prevention in ice-covered EEZ
- Fish Stocks Agreement 1995
  - Straddling and highly migratory stocks, high seas
  - RFMO
- Soft Law
  - FAO Code of Conduct on Responsible Fishing
- Multi-nation agreements
  - NEAFC

# Within NEAFC

8% of central Arctic Ocean



Eight percent of the Central Arctic Ocean is within the North East Atlantic Fisheries Commission (NEAFC) Area of Competence. The remaining 92 percent of the Central Arctic Ocean, however, is not bound by any international rules, leaving it open to unregulated commercial fishing.

# Arctic Council

- 1996: States with territory above Arctic Circle:
  - Finland, Denmark, Sweden, Norway, Iceland, Canada, United States
- Also permanent participants and observers
  - Forum for discussion of policy issues
  - Acts by consensus
- Limited functions and authority
  - No regulatory power, no role in military security
- Research on environmental issues
- 1991: Arctic Environmental Protection Strategy, precursor to the Arctic Council

# Participants and Observers

- Participants
  - 6 indigenous peoples' organisations
  - 'Full consultation' on negotiations and decisions, may address meetings
- Observers
  - 12 non-Arctic countries, incl. China, South Korea, India
  - 9 inter-government organisations, e.g. UNDP
  - 11 NGOs
  - Invited to meetings, contribute through working groups
  - May propose project, financial contribution limited

# Recent actions of the Arctic Council

- Agreements negotiated: oil pollution response, search and rescue
- Initiatives: business forum, reducing black carbon and methane emissions
- Permanent secretariat established
- Clarification of observers' role and admittance, procedures
- 2009: Arctic Marine Shipping Assessment

*No explicit action on fisheries governance*



# Five Arctic coastal states

(United States, Canada, Denmark, Norway, Russia)

- 2008 Declaration
  - No need to develop new international legal regime to govern the Arctic Ocean
  - Responsible management by 5 states through implementing existing agreements
- February 2014: 5 Arctic coastal states agreed
  - To work towards agreement to block commercial fishing in central Arctic until more known
  - To develop interim measures, commitments by other states, possible binding international agreement
  - To promote research and cooperation

# Arctic Circle

- Non-profit organization for discussion including 'as many Arctic and international partners as possible'
- To 'support, complement, and extend the work of the Arctic Council'
- Open to businesses, NGOs, governments, scientists, activists
- First meeting, 2013: 1200 participants
- Next meeting: September 2014

# Currently

- No large-scale commercial fishing, but potential in future
- 2009: US Arctic Ocean EEZ closed to fishing
- 2012: 2000 scientists call for moratorium on commercial fishing until more research done
- Arctic Council: strengthening but limited
- Arctic Circle: role, influence?
- 2014: 5 Arctic coastal states agreed to deter commercial fishing in central Arctic until more known

# Moving forward

- Better understanding of climate change impacts
- Protection of rights of indigenous peoples
- Strengthen and extend institutions
  - Encourage Arctic Council to take the lead
    - Includes indigenous groups
    - Coordination with other Council environmental work
    - Will need support of key non-Arctic states
  - Evaluation of alternatives
  - International agreement: no fishing until more known
- Adaptive management: actions adjusted as outcomes from events and actions understood

# Moving forward (continued)

- Incorporating economic principles in governance and management
- Typically new fisheries quickly over-capitalised
- How to ensure fishery management incorporates economic principles
  - Biological scientists requested moratorium until more research. Should economists do something similar?
  - Briefs to Arctic Council, member states
- Could Arctic fisheries be a model?

# Comments

fmillerd@wlu.ca