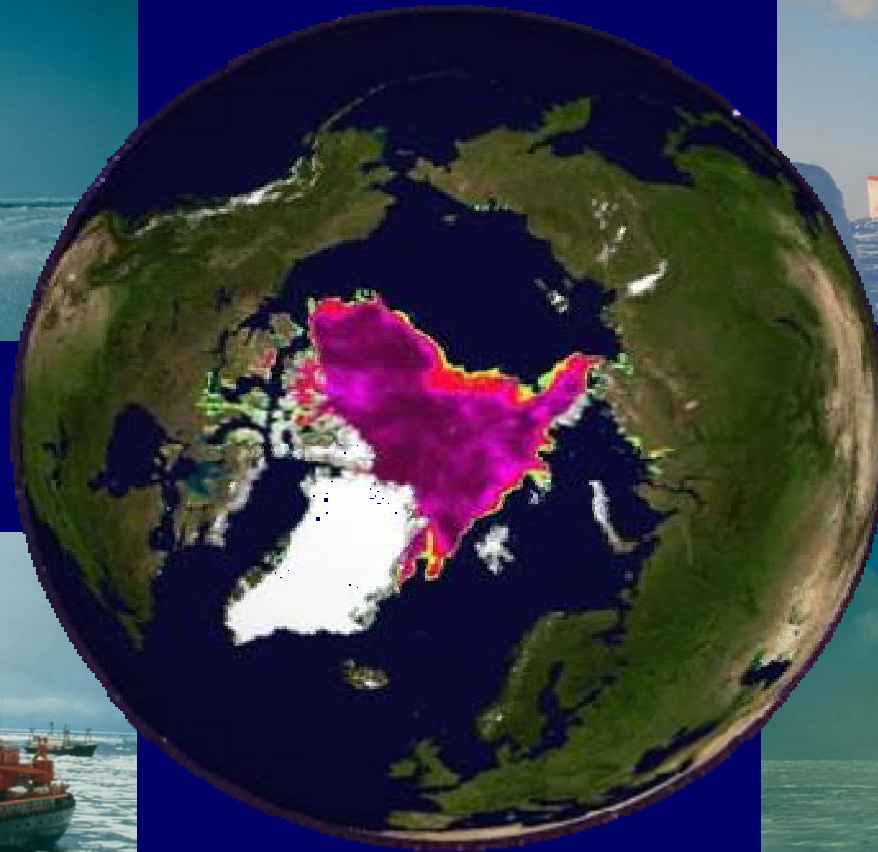


Arctic Marine Shipping Assessment Implications of a Changing Arctic

Arctic Transportation Conference

Washington, DC

5 June 2008



Ben Ellis
Institute of the North
Anchorage, Alaska



ARCTIC COUNCIL
NORWEGIAN CHAIRMANSHIP
2006-2008

Arctic Council

- The Arctic Council is an international non-binding treaty organizations comprised of the eight Arctic nations: the United States, Canada, Russian Federation, Norway, Finland, Sweden, Iceland and Denmark (Greenland/Faroe Islands.)
- It is also recognizes six international indigenous organizations. The Permanent Participants are Aleut International Association, Arctic Athabaskan Council, Gwich'in Council International, Inuit Circumpolar Council Russian Association of Indigenous Peoples of the North and the Saami Council.
- <http://www.arctic-council>

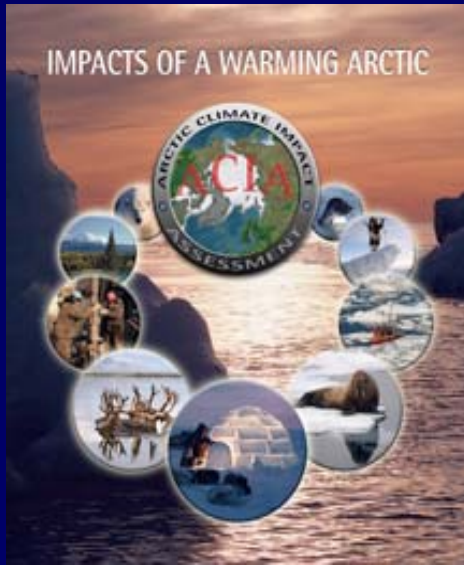
Arctic Council

Arctic Marine Shipping Assessment (AMSA)

Reykjavik Declaration, 4th Ministerial (Nov 2004)

*“ Request PAME to conduct a comprehensive Arctic marine shipping assessment as outlined in the AMSP under the guidance of **Canada, Finland, and the United States as lead countries** and in collaboration with the EPPR working group and other working groups of the Arctic Council and Permanent Participants as relevant.”*

Arctic Marine Shipping Assessment (AMSA) Key Points



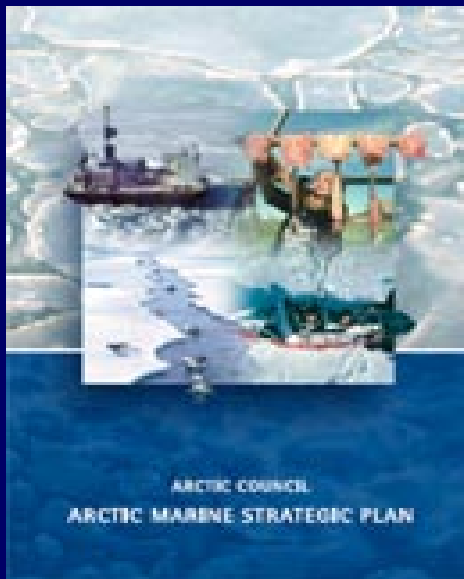
- **AMSA Natural Follow-on to:**
 - Arctic Climate Impact Assessment (ACIA)
 - Arctic Marine Strategic Plan (AMSP)

- **Circumpolar, yet Regional (Large Marine Ecosystems) and Local Focus**

- **Member State Commitment & Support with Data Collection Effort**

- **AMSA web site: [www.pame.is]**

- **ACIA web site: [www.amap.no]**



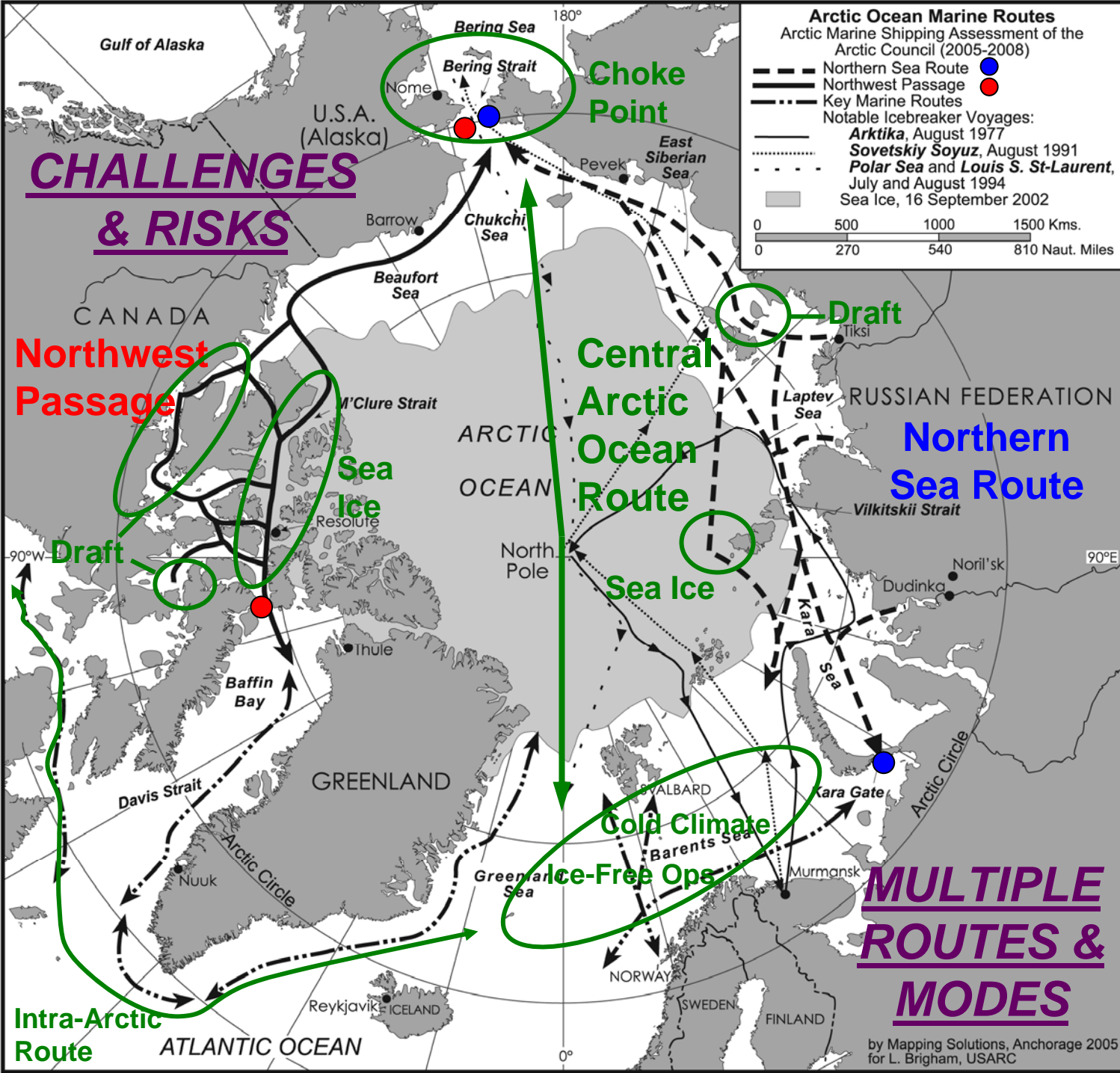
Arctic Council PAME-led Arctic Marine Shipping Assessment

- • **Lead Countries:** Canada, Finland, and USA
- • **Key Countries:** Norway & Russia (Barents), Iceland, Denmark-Greenland-Faroe Islands, Sweden
- • **Timeline:** 2005 – 2009
- • **Electronic Survey Questionnaire:** 2004 Data from 7 Arctic States (6 coastal and 1 non-coastal)
- **Inclusive Participation:** Member States, Permanent Participants, Working Groups of the Arctic Council; Council Observers; Shipping Industry; International Maritime Organization; Ship Classification Societies; Research Organizations; Non-Arctic Stakeholders (examples: Japan, Germany, UK) and Others

AMSA Chapter Outline

- **Chapter 1: Introduction**
 - Changing AO, ACIA, AMSP, Importance to Arctic residents
 - Definitions & Modes of Transport
- **Chapter 2: Geography and History of Arctic Marine Use**
 - Major Straits , LMEs, Arctic Sea Ice, Regulatory Regimes
- **Chapter 3: Current (2004) Levels of Arctic Marine Use**
 - By Season & Region (Narrative & Pictorial)
 - Shipping Data + Indigenous Use Data + LMEs + Sea Ice
- **Chapter 4: Historical & Current Indigenous Arctic Ocean Use**
 - Results of the Town Hall Meetings
- **Chapter 5: Scenarios of Future Arctic Ocean Marine Activity for 2020 and 2050**
 - Pictures, Narratives, Assumptions, Key Drivers

- **Chapter 5: Scenarios of Future Arctic Ocean Marine Activity for 2020 and 2050**
 - - Pictures, Narratives, Assumptions, Key Drivers
- **Chapter 6: Environmental Impacts of Current & Future Marine Activity**
 - - LMEs, Local 'sensitive areas', Emissions, Discharges, Ballast Water, Noise/Acoustics
 - - Risk Levels for Regions, Accidents
- **Chapter 7: Social & Economic Impacts at Current & Future Levels**
 -
- **Chapter 8: Current Arctic Infrastructure (and Anticipated Needs)**
 - - Ice Centers, SAR Response, Ports, Monitoring, Icebreakers
- **Chapter 9: Conclusions and Findings**
- **Appendices / Research Agenda**

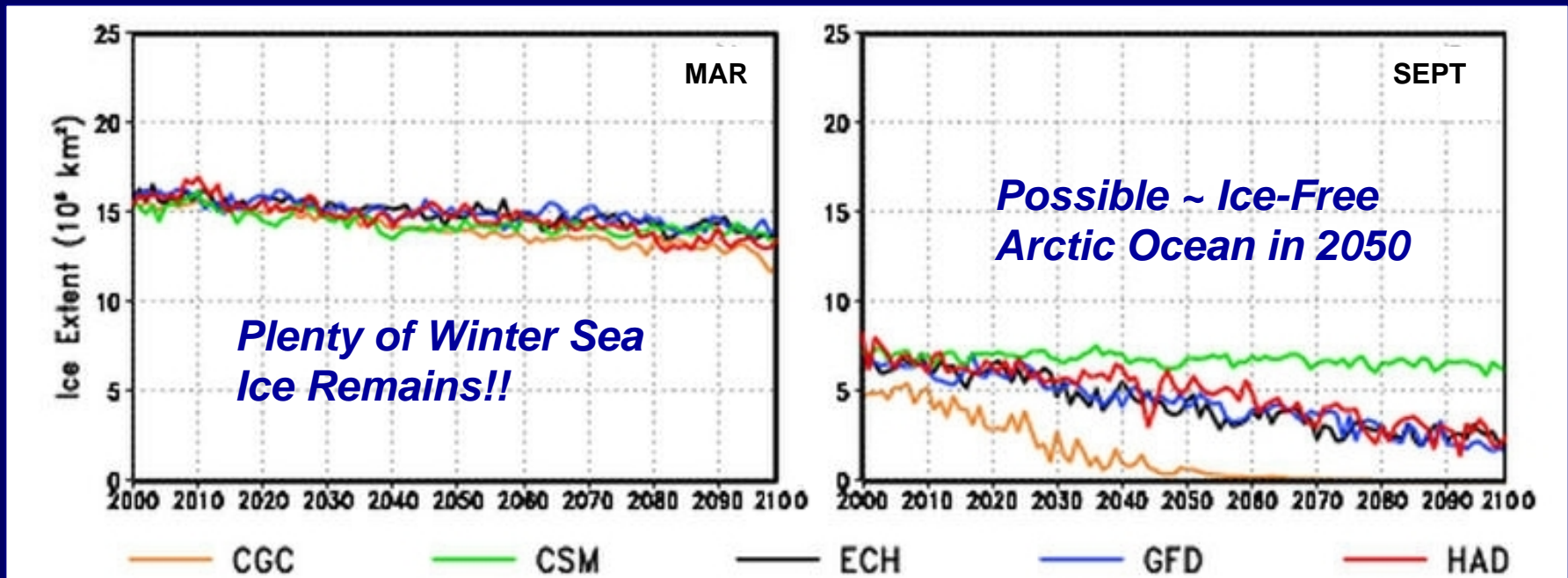


Arctic Climate Impact Assessment

Climate model projections of sea ice extent: 2000 - 2100

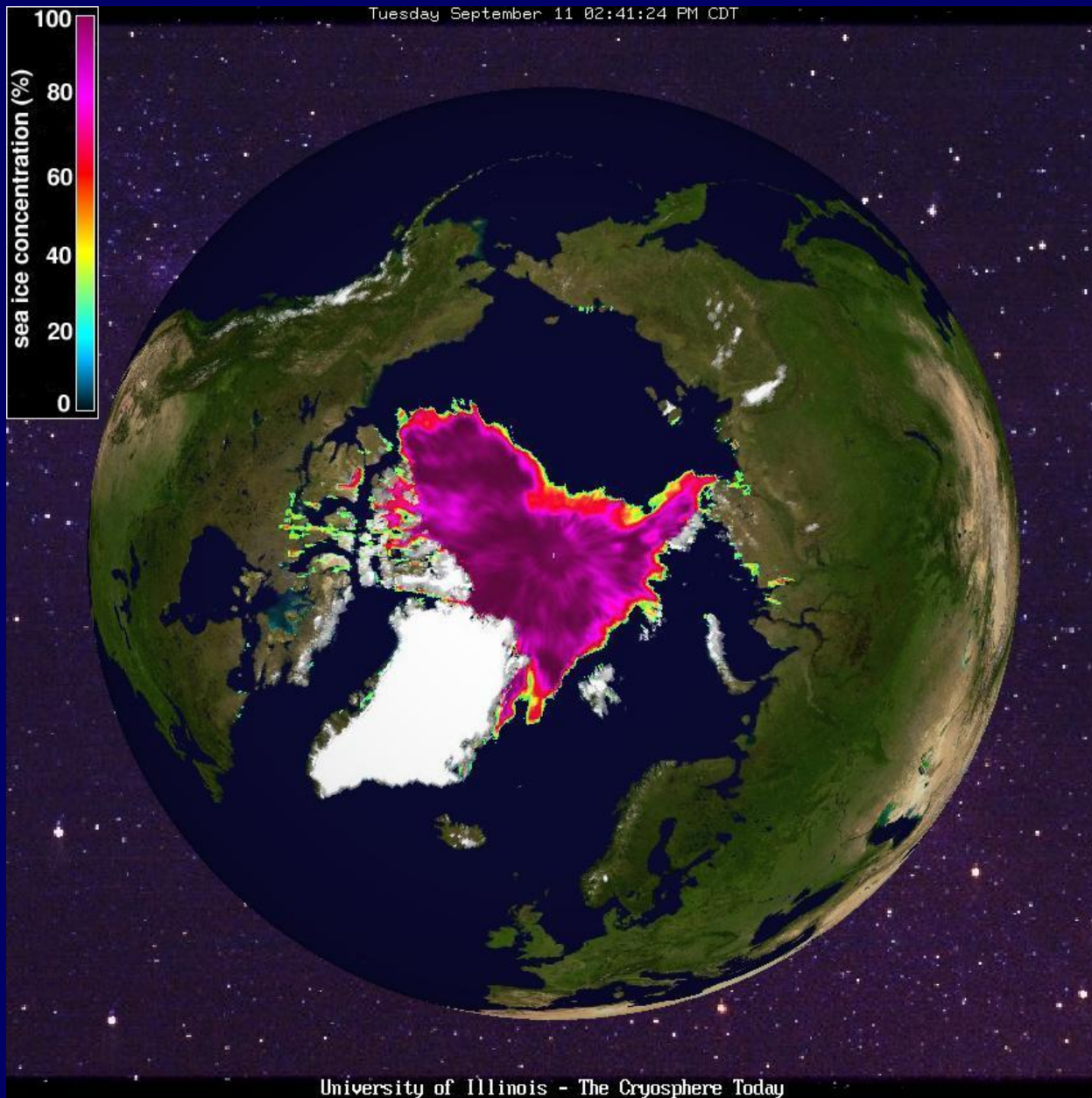
March

September

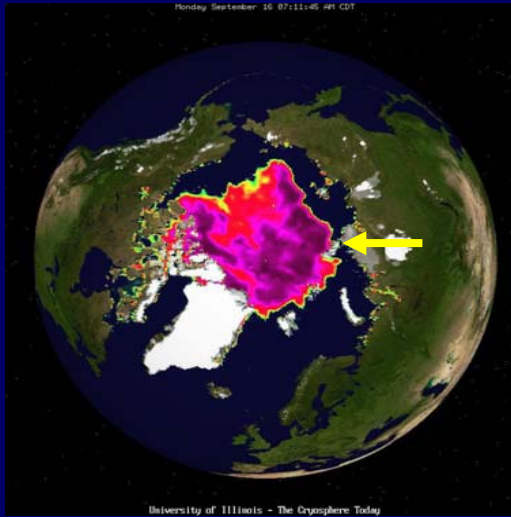


B2 IPCC Moderate Global Scenario

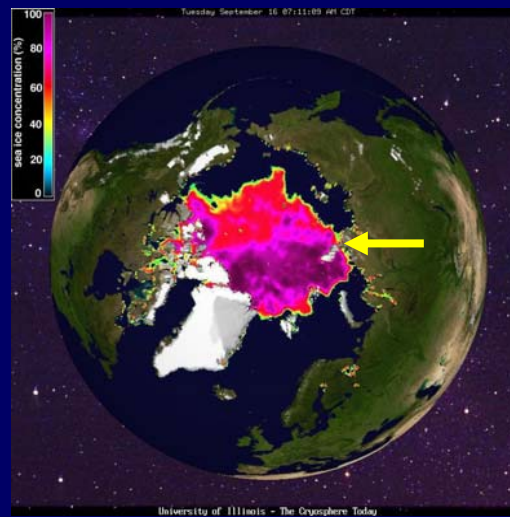
11 September 2007



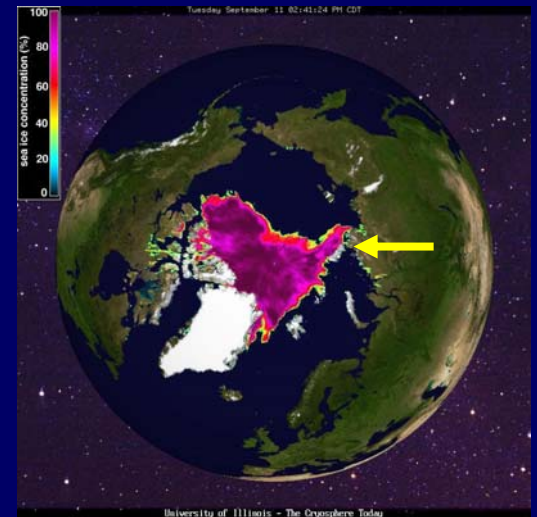
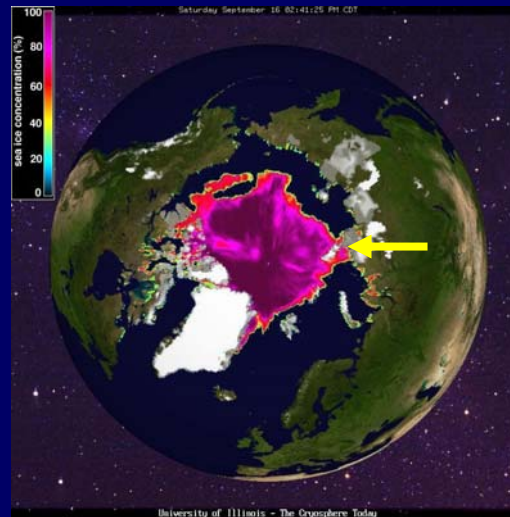
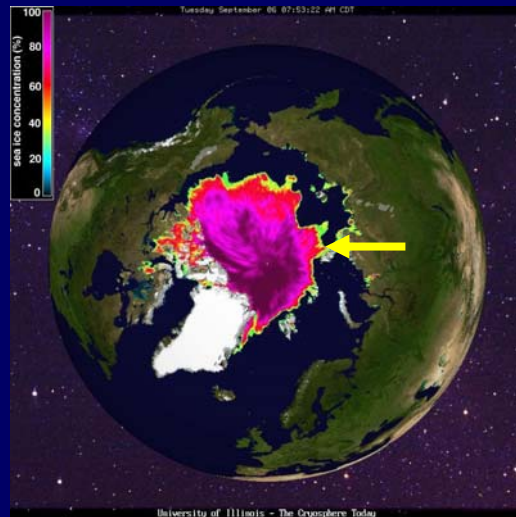
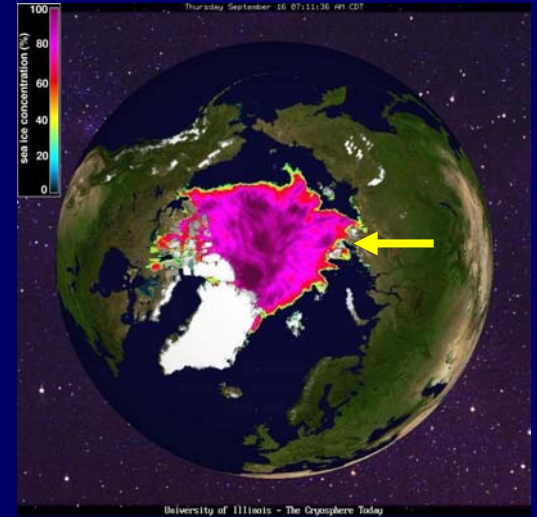
16 September 2002



16 September 2003



16 September 2004



6 September 2005

16 September 2006

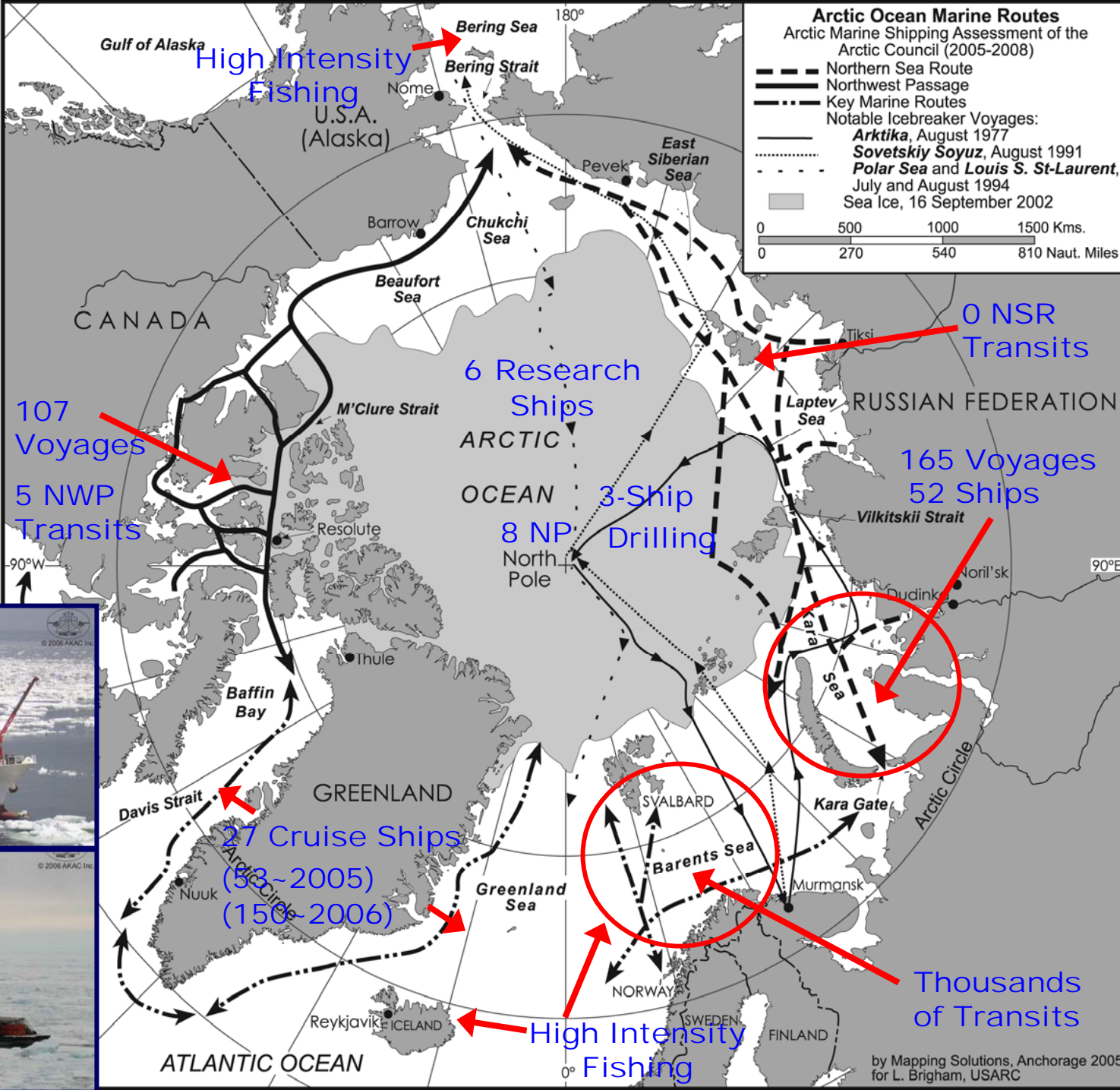
11 September 2007

The Maritime Arctic of Today

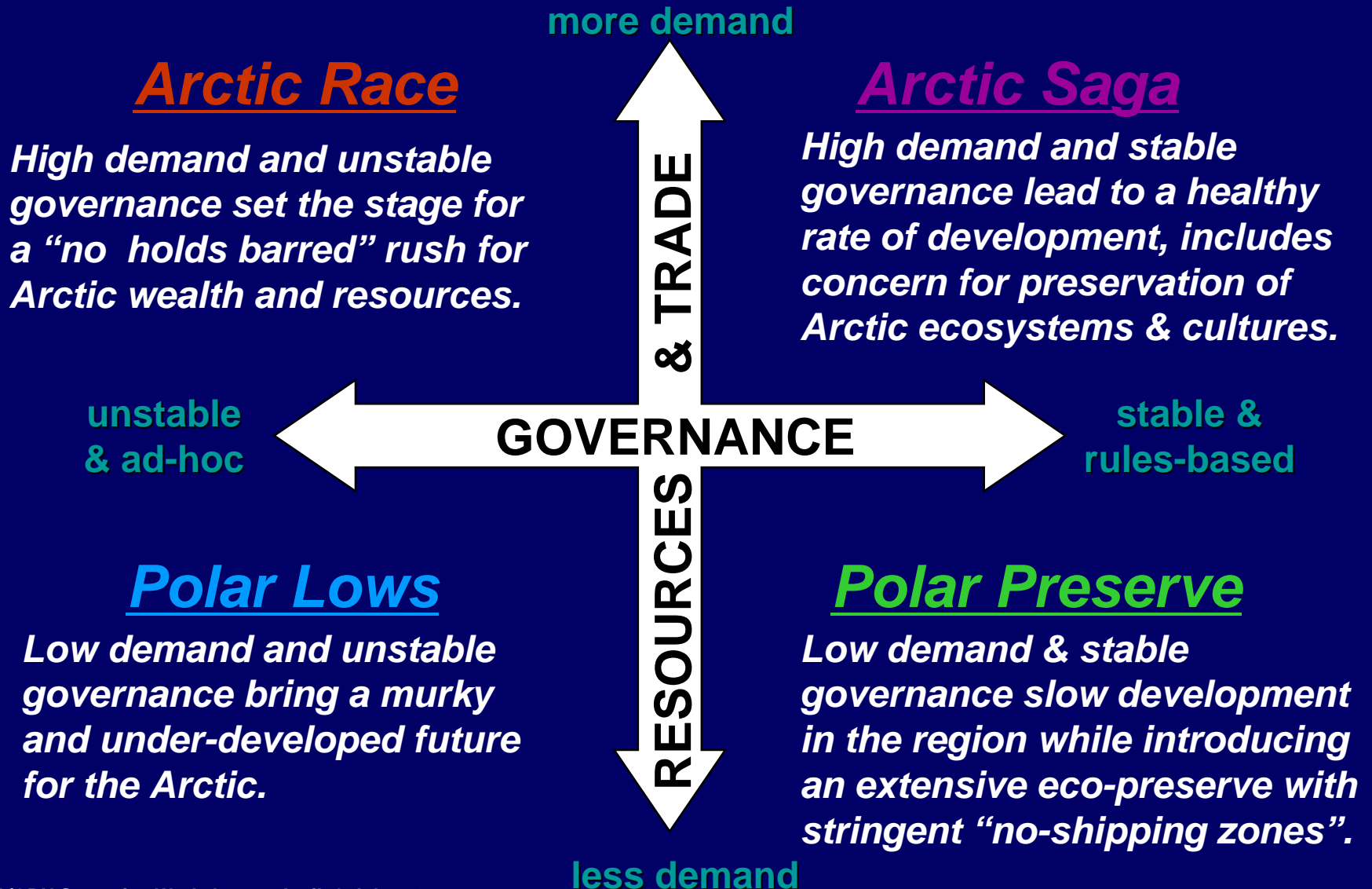
Snapshot of Summer 2004 Traffic

Modes of Arctic Marine Transport

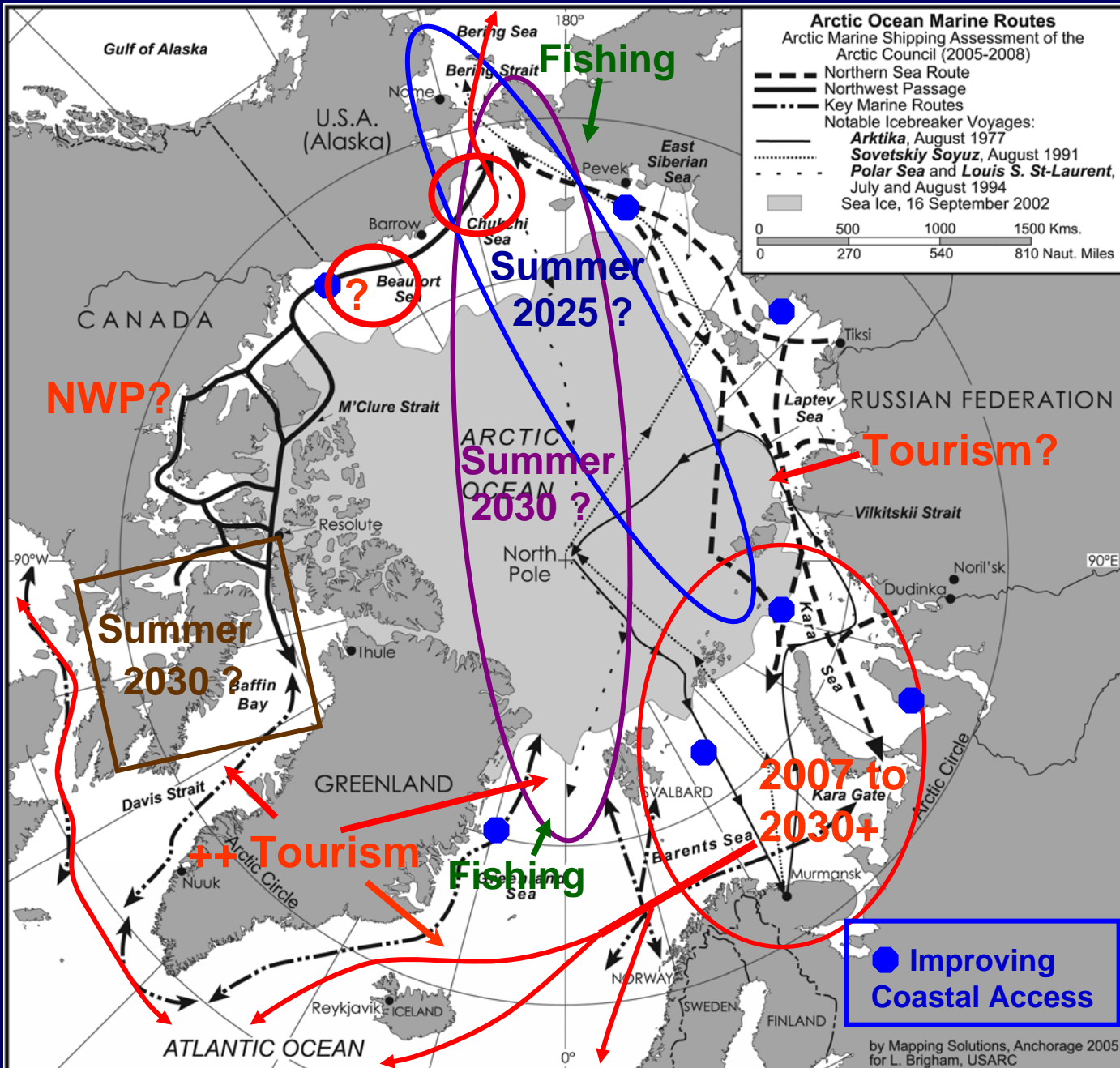
- Destinalional / Regional
- Trans-Arctic
- Trans-Arctic with Transshipment
- Intra-Arctic



AMSA Scenarios on the Future of Arctic Marine Navigation in 2050



The Maritime Arctic of the Future?



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

Thank You

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