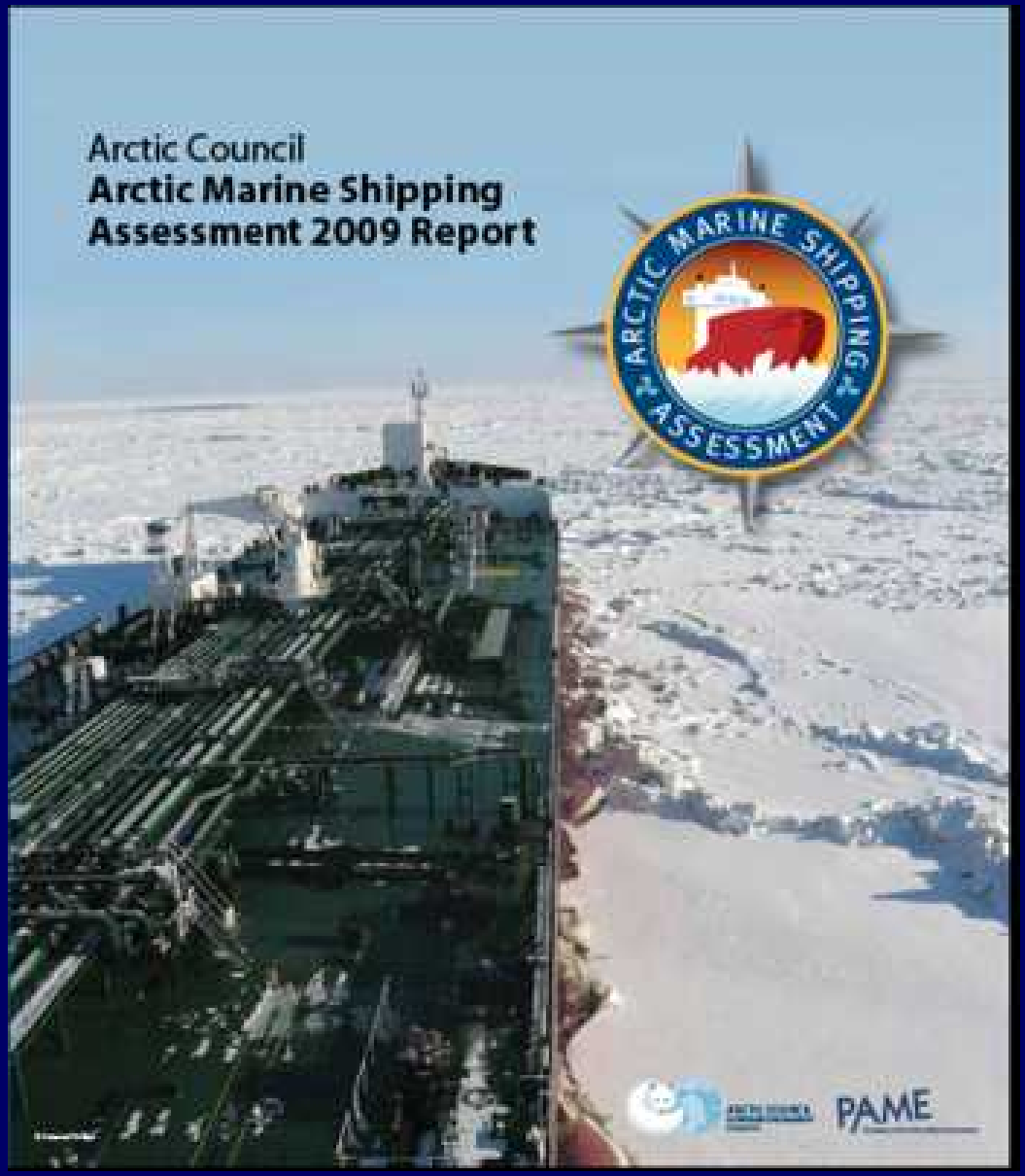
# Arctic Marine Transport: Today & Tomorrow




***3rd Symposium on the Impacts of an Ice-Diminishing Arctic on Naval and Maritime Operations***

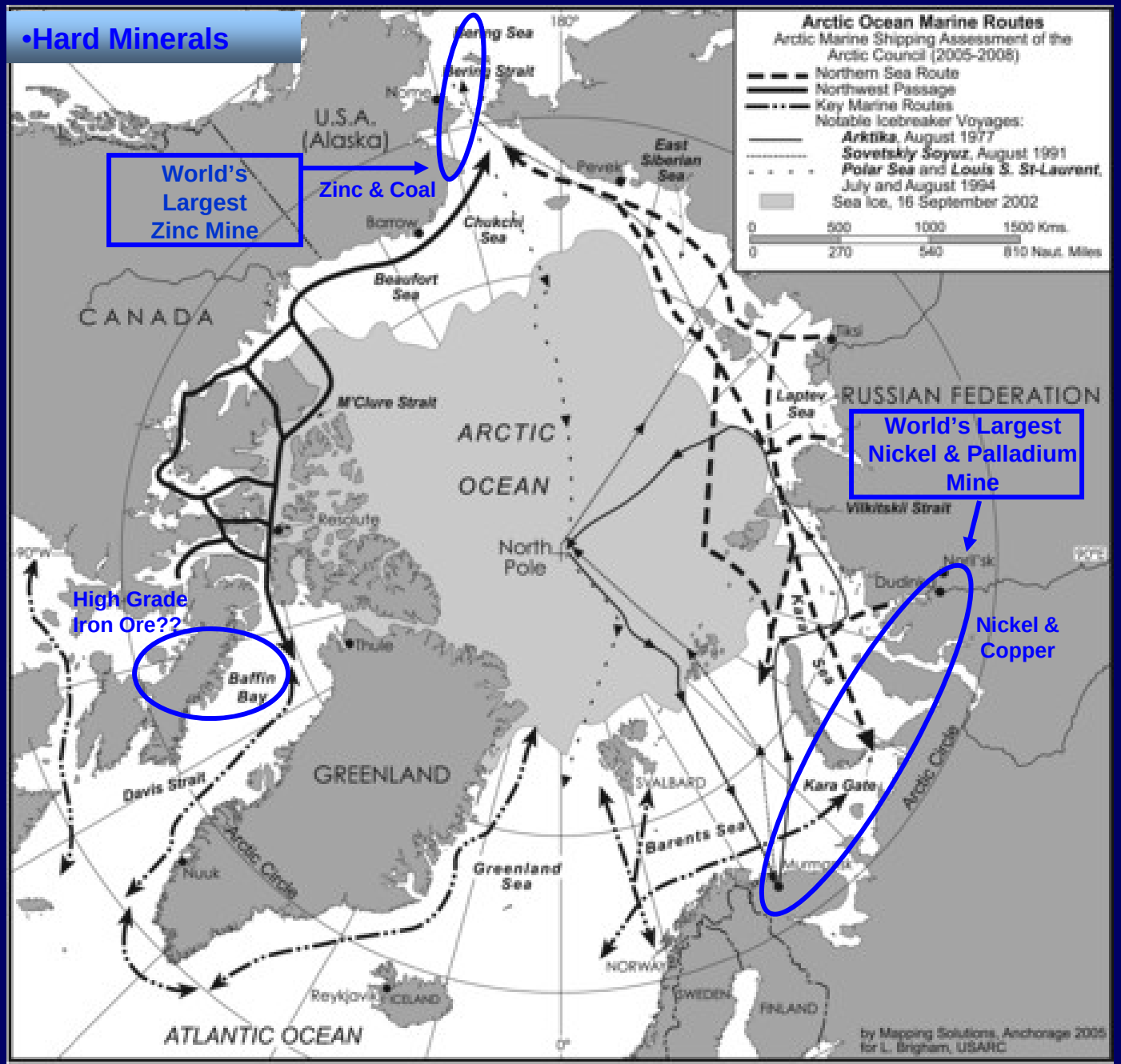
***USNA ~ 10 June 2009***

**Ben Ellis**
**Co-Editor AMSA 2009 Report**
**Managing Director, Institute of the North**
**Anchorage, Alaska**

# Topics:

- **Brief Review ~ Current Arctic Marine Use**
- **Arctic Marine Shipping Assessment 2009 Report**

# Today's Arctic Marine Use



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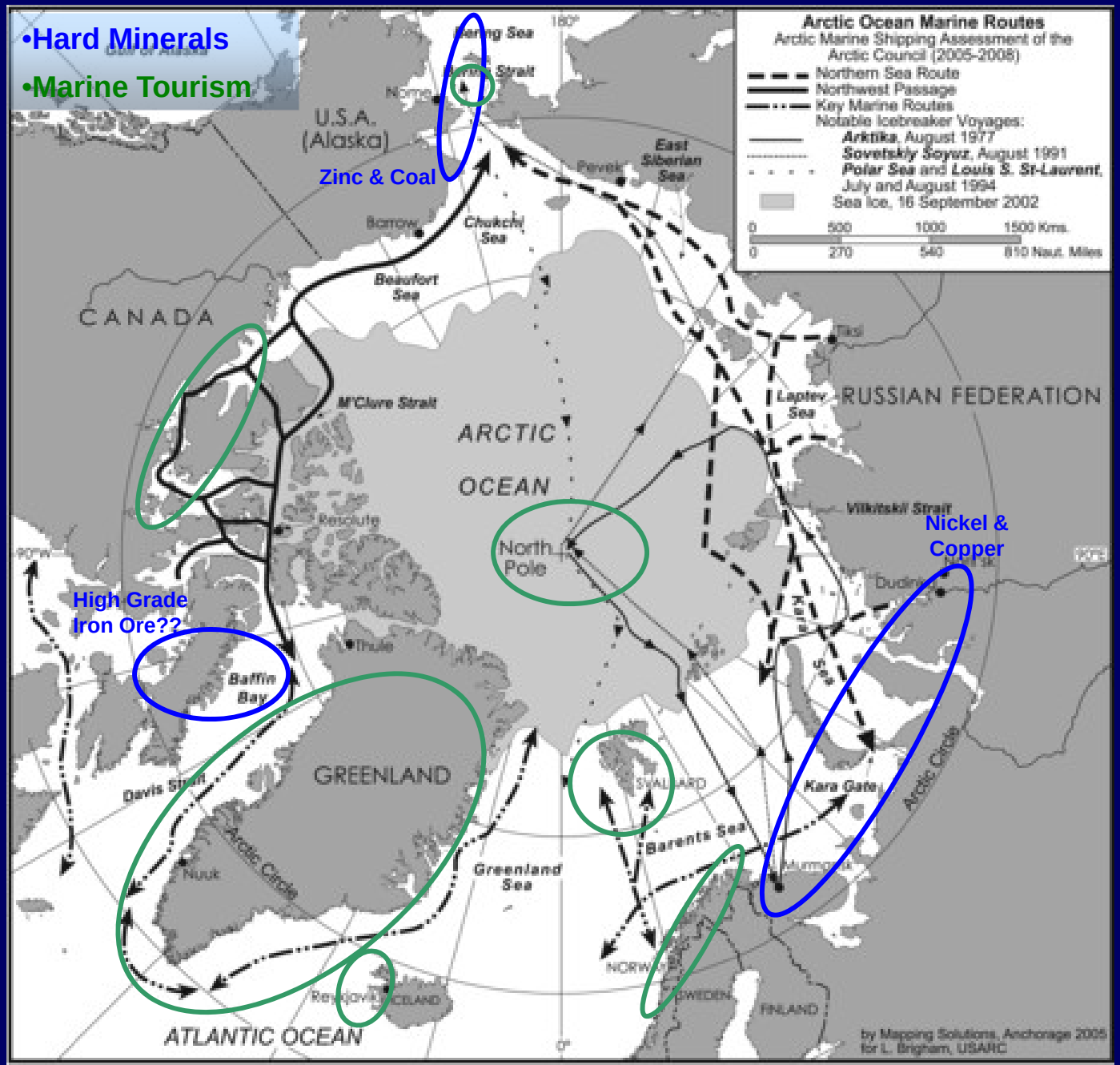

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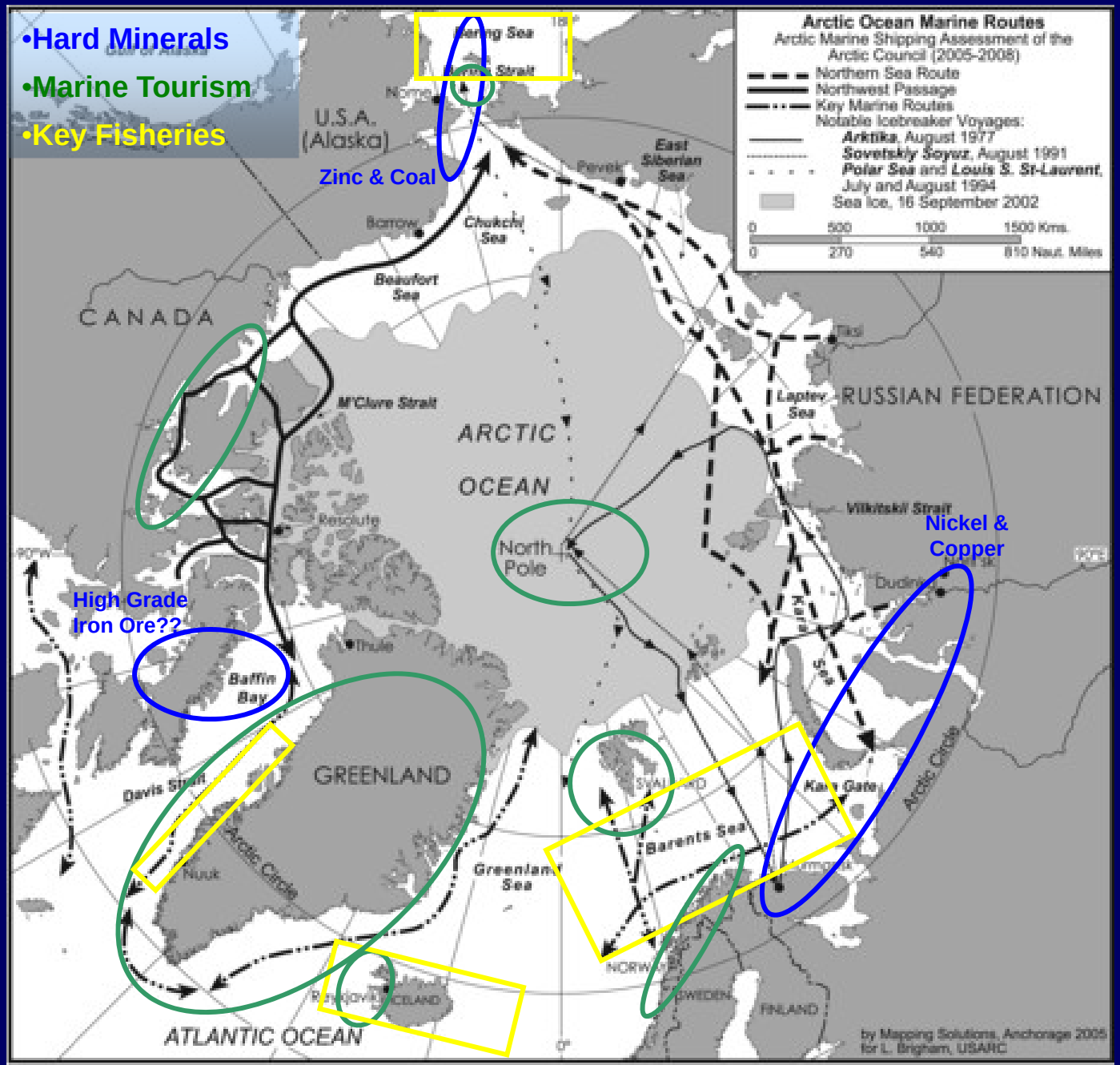

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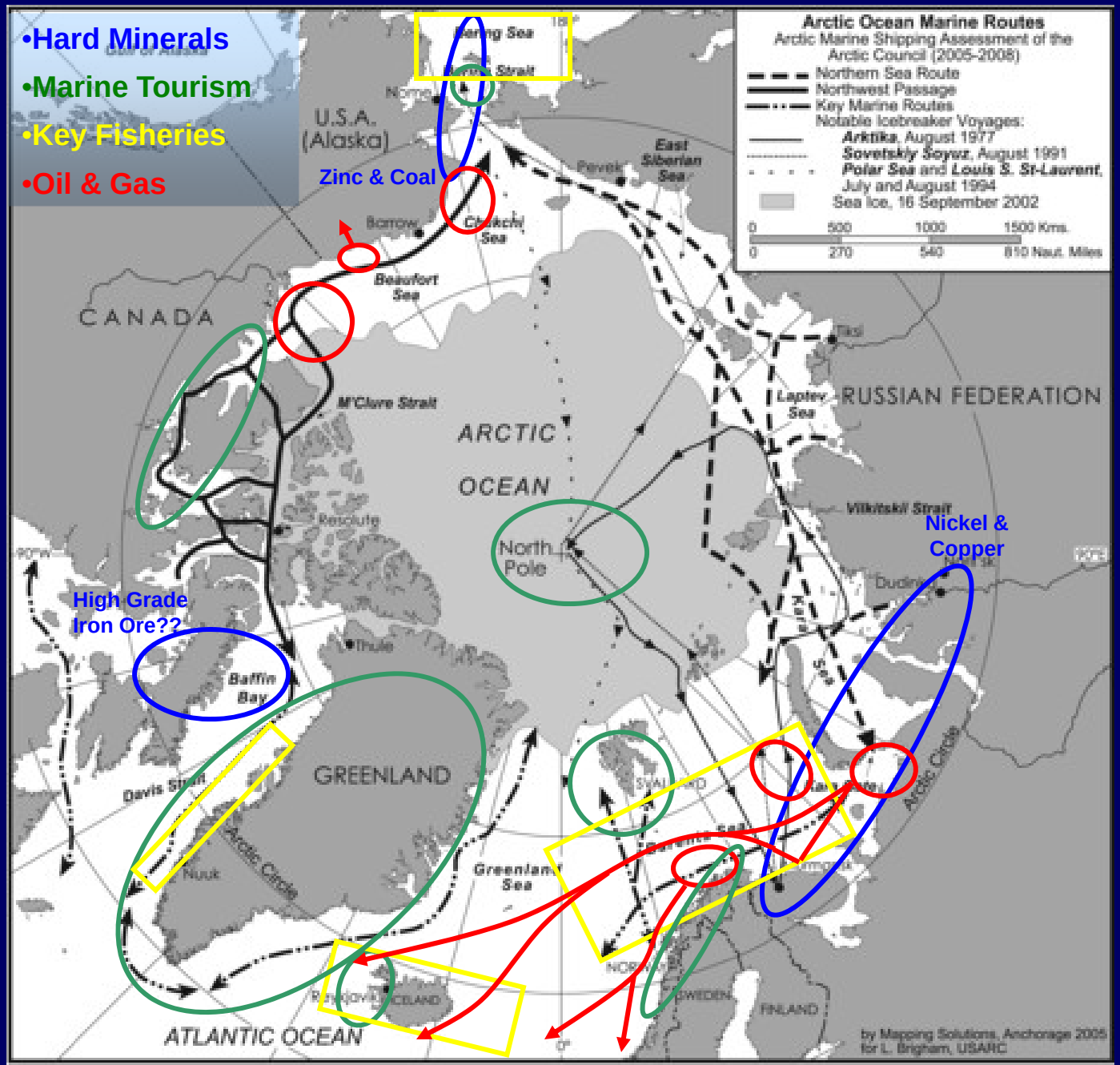

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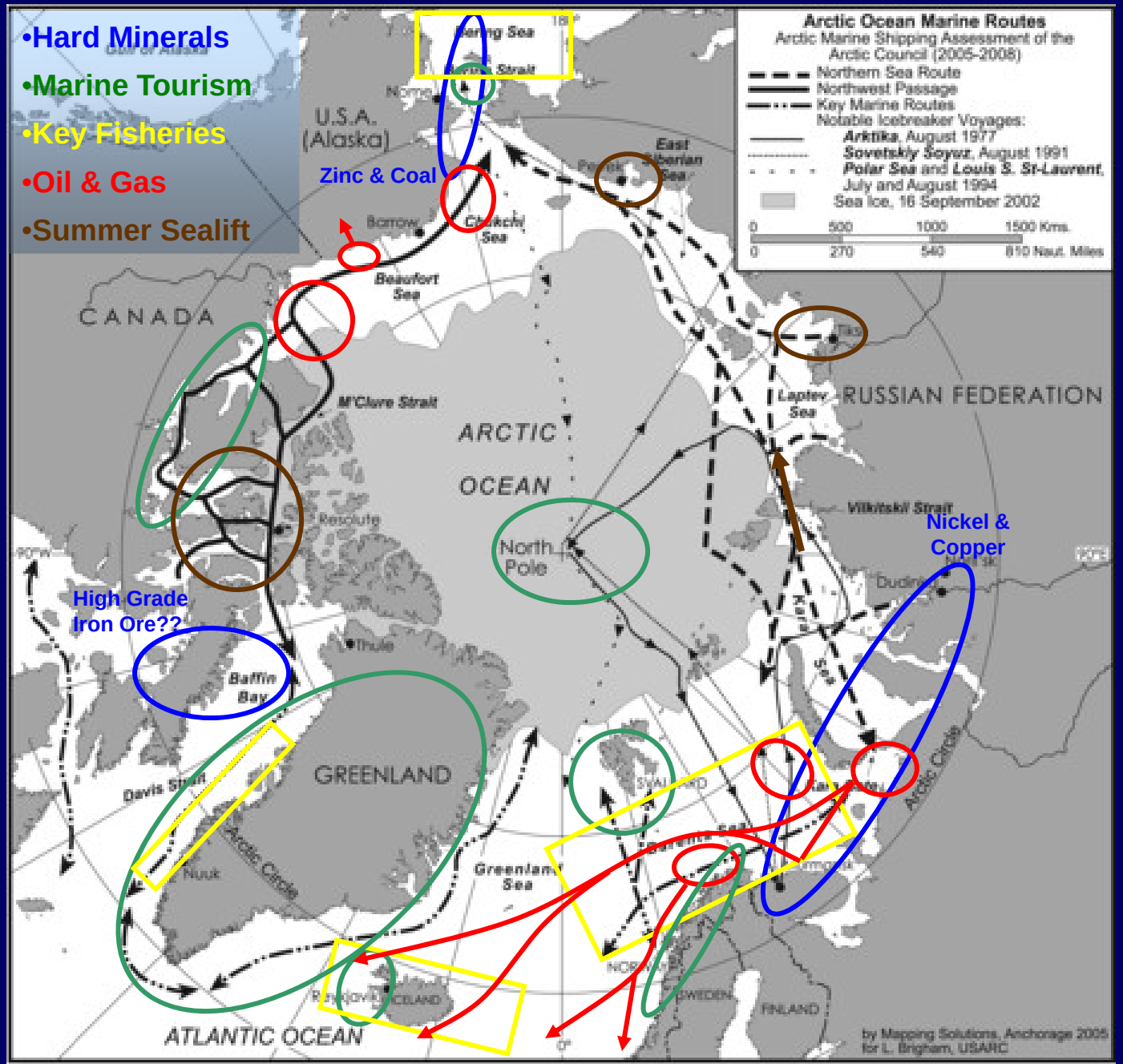

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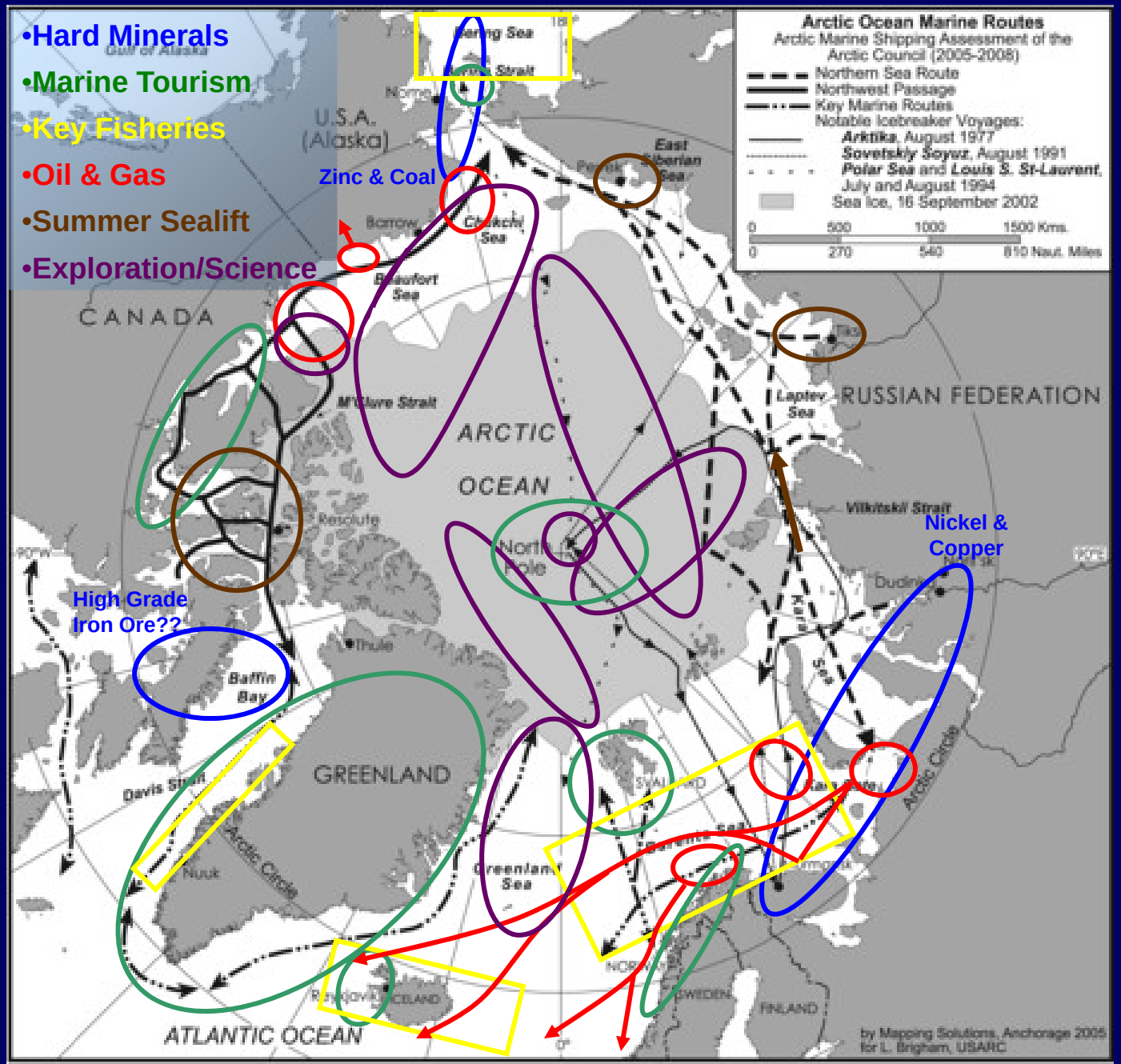

ARCTIC MARINE SHIPPING ASSESSMENT

**2004 – 2009**

**Arctic Council ~ Intergovernmental Forum**

**AMSA Lead Countries for PAME ~ Canada, Finland & USA**

**AMSA Focus ~ Marine Safety & Marine Environmental Protection**

***Key Challenge ~ Many Non-Arctic Stakeholders***

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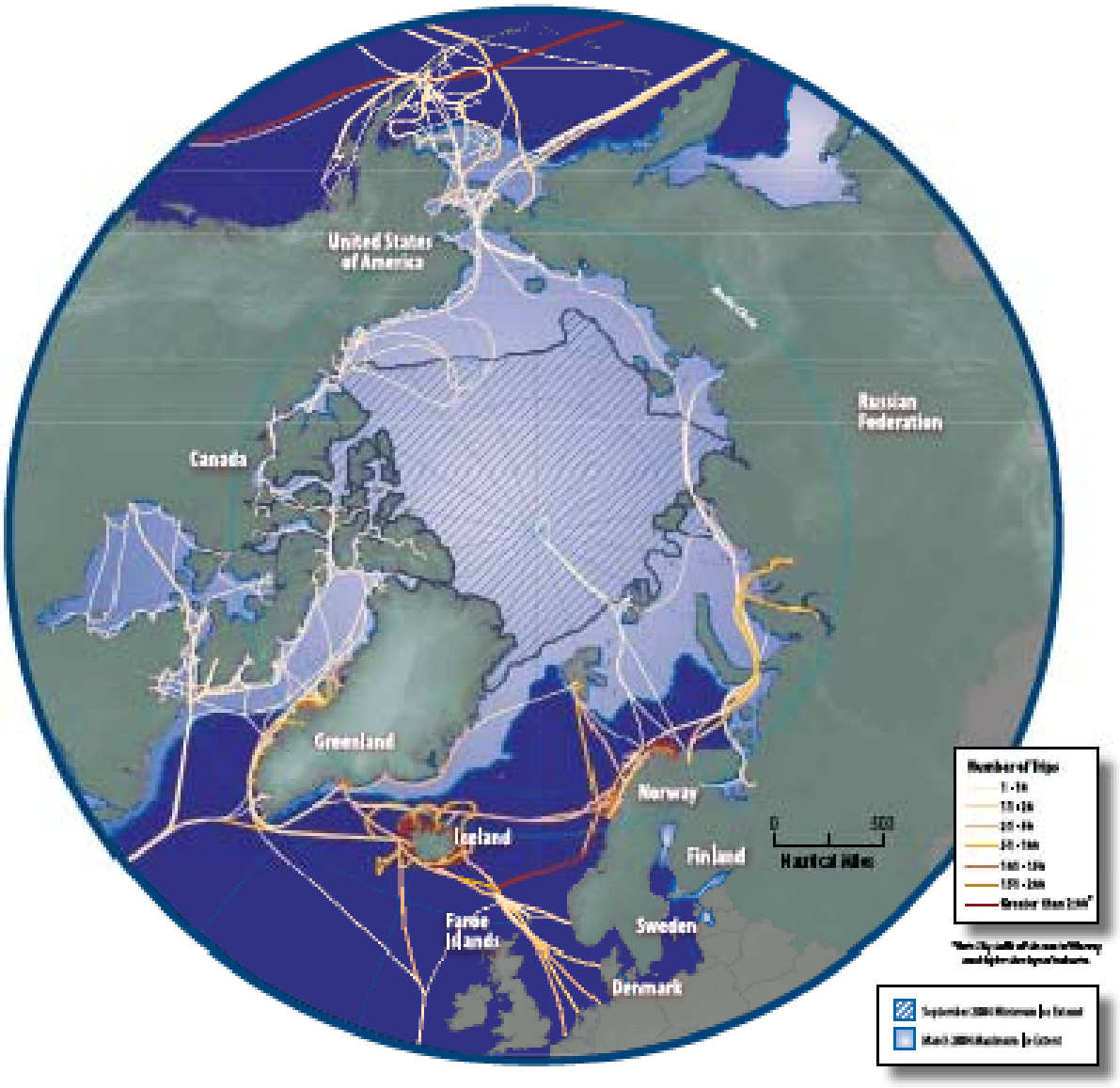
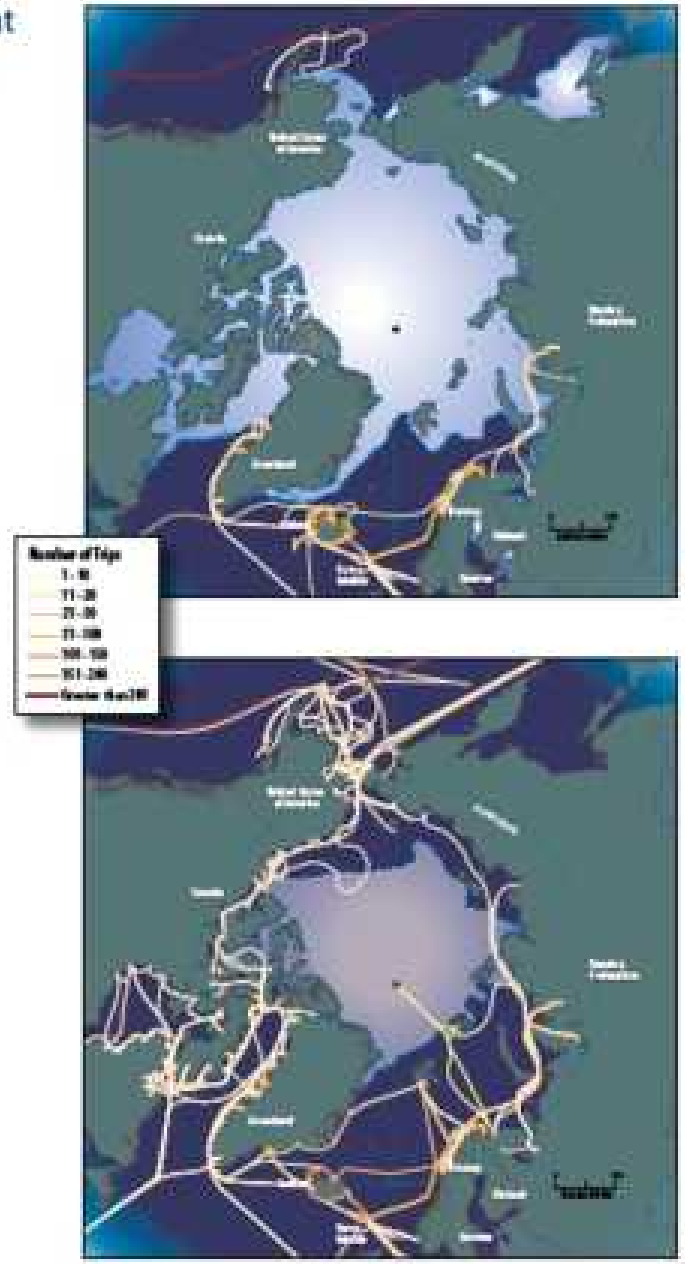



**Shipping traffic in the Arctic for the AMSA Survey year 2004.**

Sea Ice Extent
Differences



January 2004 Traffic

July 2004 Traffic

# Russian Arctic Shipping 2004

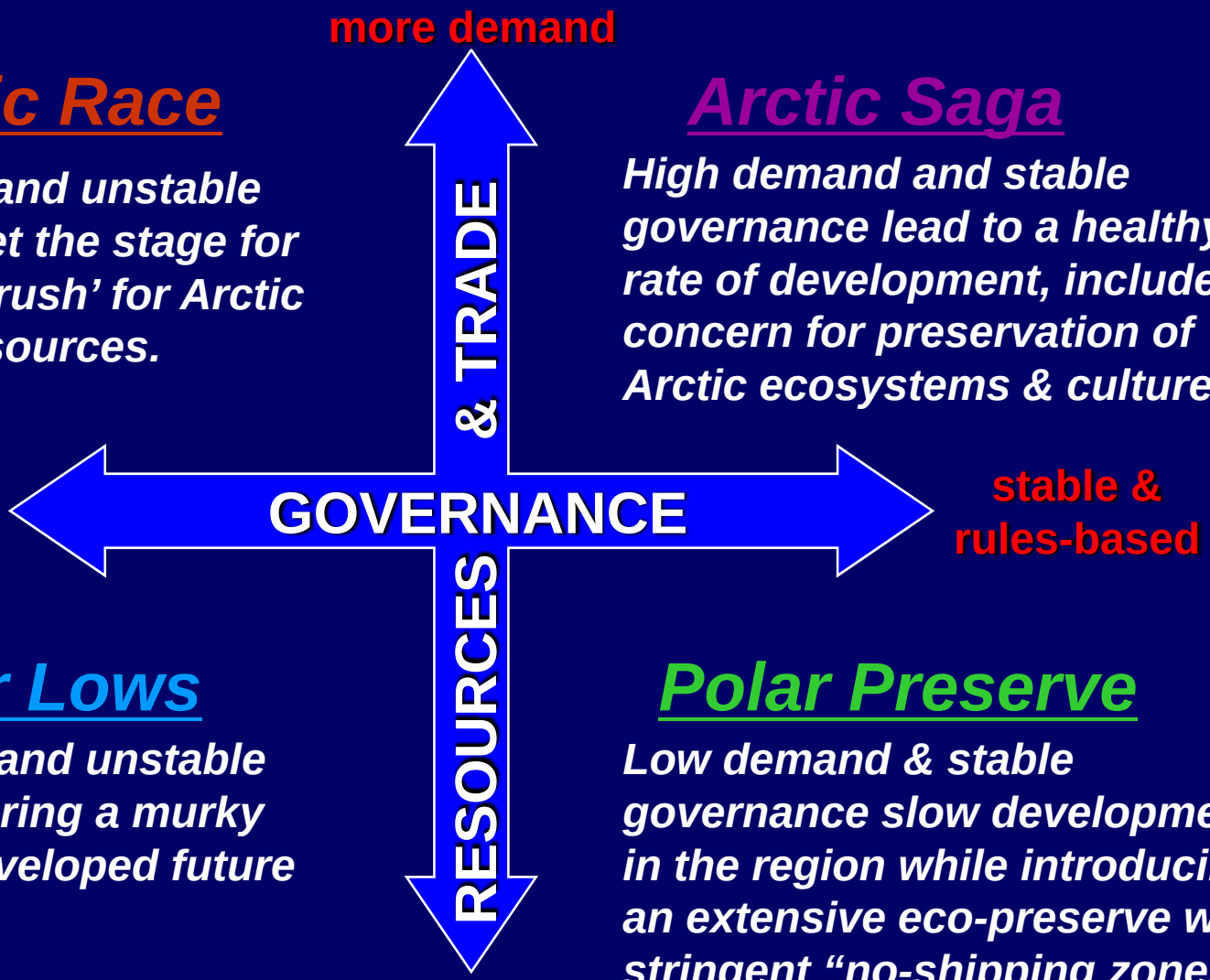
# AMSA Scenarios: Plausible Futures for Arctic Navigation to 2050

## ~ Complexity ~

# AMSA Key Uncertainties for Future Arctic Marine Transportation

- Stable legal climate
- Radical change in global trade dynamics
- Climate change is more disruptive sooner
- Safety of other routes
- Socio-economic impact of global weather changes
- Oil prices (55-60 to 100-150 USD?)
- Major Arctic shipping disasters***
- Limited windows of operation (economics)
- Rapid climate change
- Maritime insurance industry
- China, Japan & Korea become Arctic maritime nations
- Transit fees
- Conflict between indigenous & commercial use
- Arctic maritime enforcement
- Escalation of Arctic maritime disputes
- Shift to nuclear energy
- New resource discovery
- World trade patterns
- Catastrophic loss of Suez or Panama Canals
- Global agreements on construction rules and standards

# Scenarios on the Future of Arctic Marine Navigation in 2050




## Arctic Race

*High demand and unstable governance set the stage for an economic 'rush' for Arctic wealth and resources.*

## Arctic Saga

*High demand and stable governance lead to a healthy rate of development, includes concern for preservation of Arctic ecosystems & cultures.*

## Polar Lows

*Low demand and unstable governance bring a murky and under-developed future for the Arctic.*

## Polar Preserve

*Low demand & stable governance slow development in the region while introducing an extensive eco-preserve with stringent "no-shipping zones".*

# U.S. Geological Survey Report ~ July 2008


USGS

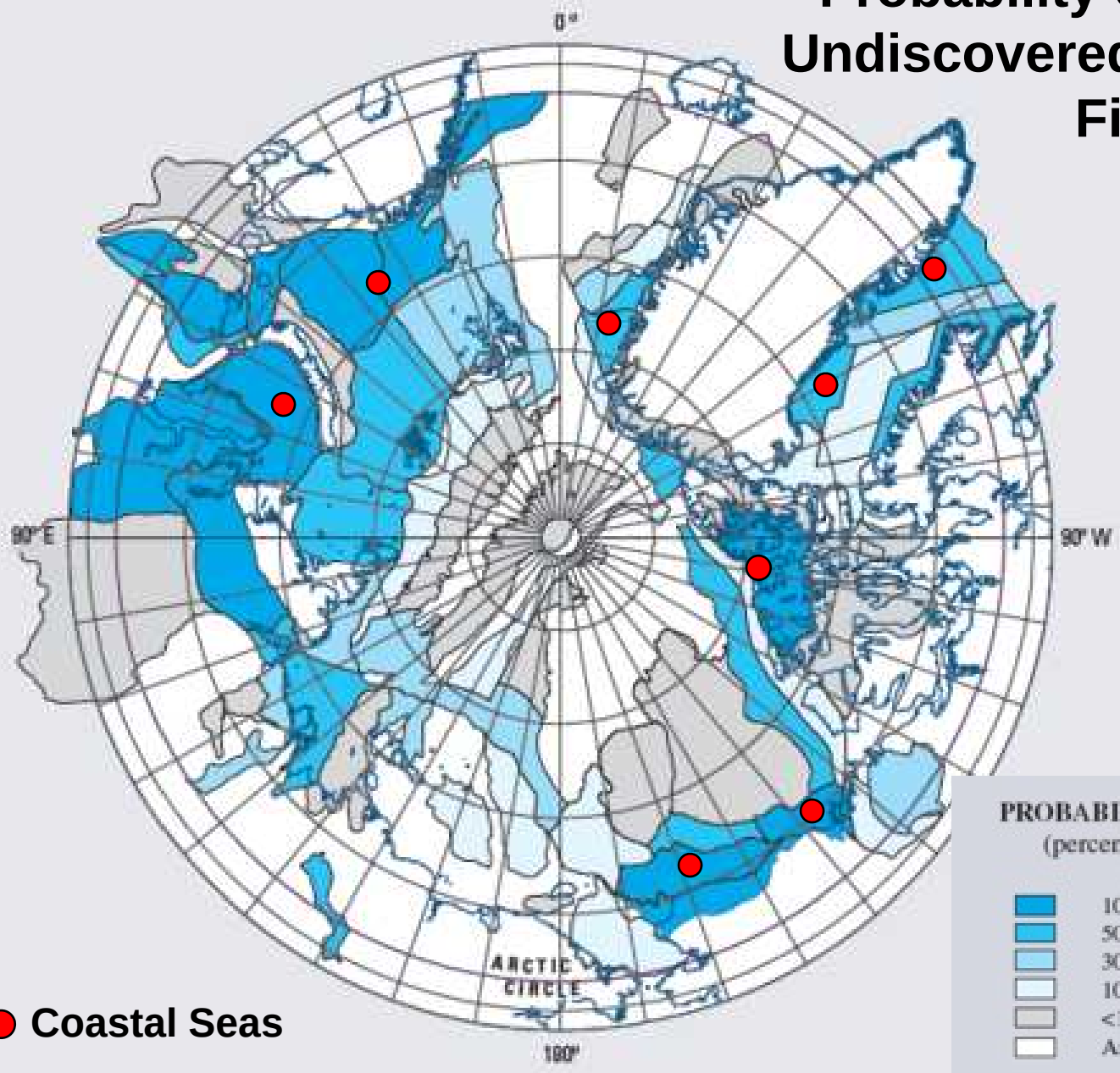
Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle

***"Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle"***

- **13% Undiscovered Oil**
- **30% Undiscovered Natural Gas**
- **20% Undiscovered Natural Gas Liquids**

**http://pubs.usgs.gov/fs/2008/3049/**

# Probability of Presence of Undiscovered Oil and/or Gas Fields




● Coastal Seas

PROBABILITY
(percent)

- 100
- 50–100
- 30–50
- 10–30
- <10
- Area of low petroleum potential

USGS (2008)

Long known as a storehouse of untapped natural resources, high commodity prices and a growing worldwide demand in recent years have the Arctic poised as a significant contributor to the global economy.

# Selected AMSA Findings

(A)--UNCLOS ~ Fundamental framework & IMO ~ Competent UN agency

(B)--Winter Arctic sea ice cover remains & near or complete disappearance of multi-year ice

(C)--No specially-tailored, mandatory IMO environmental standards for vessels operating in the Arctic

(D)--AMSA data survey ~ nearly all destinational traffic

(E)--Key drivers ~ Natural resource development & regional trade

# Selected AMSA Findings

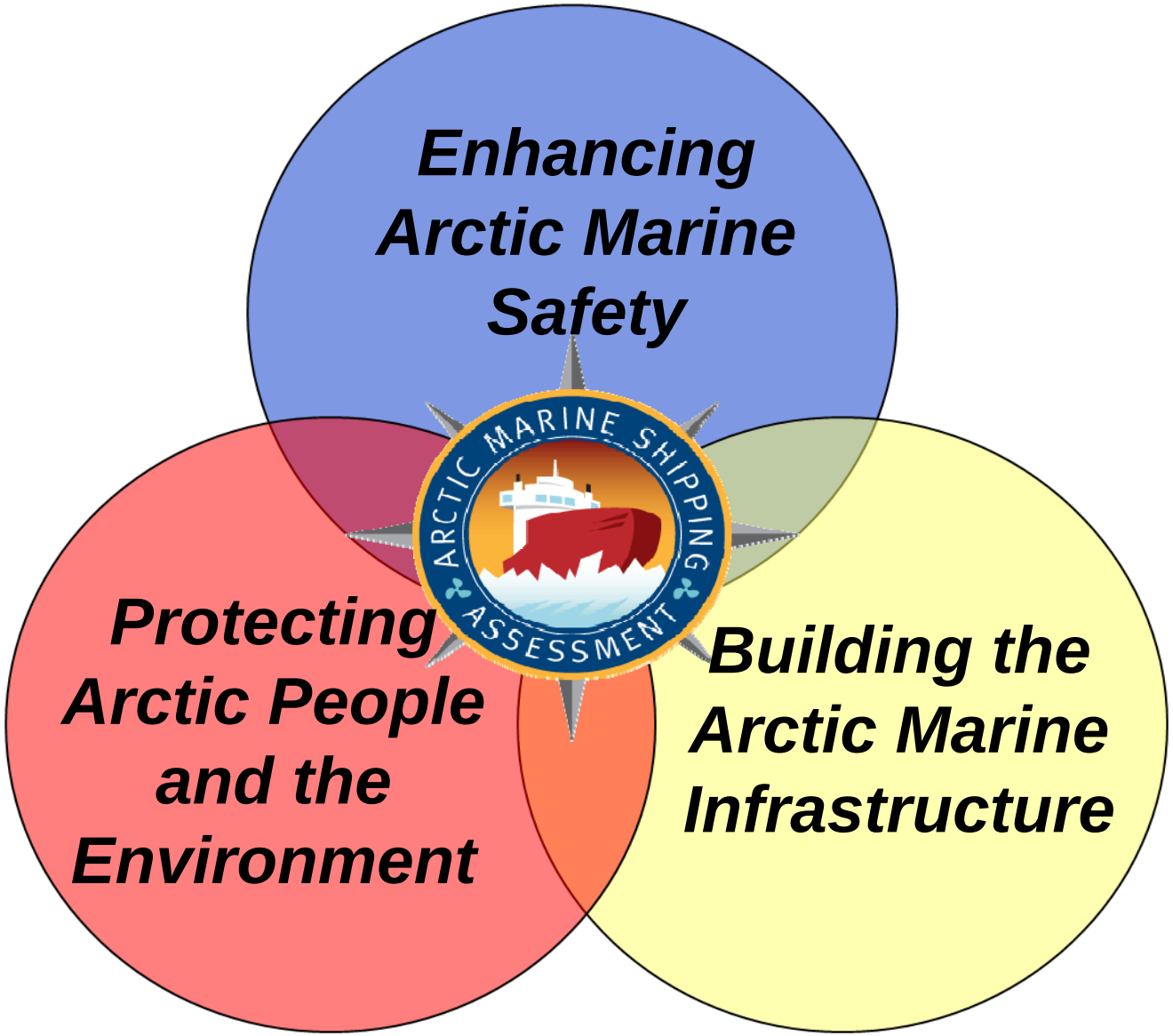
(F)--Many factors of uncertainty influencing future Arctic marine activity

(G)--Arctic residents ~ concerns & recognition of benefits

(H)--Most significant threat ~ release of oil through accidental or illegal discharge

(I)--General lack of marine infrastructure (exceptions: Norwegian coast & northwest Russia)

# AMSA Recommendations: Three Broad, Interrelated Themes



# Recommendation Highlights

- ***Arctic States Decide*** **~ Cooperatively support IMO efforts to strengthen, harmonize & regularly update international standards for vessels operating in the Arctic.**
- ***Arctic States Decide*** **~ Support mandatory application of relevant parts of the IMO *Guidelines.***
- ***Arctic States Decide*** **~ Development & implementation of a comprehensive, multi-national SAR instrument.**
- ***Arctic States Recognize*** **~ Explore the need for internationally designated areas for environmental protection (one tool: PSSA).**
- ***Arctic States Should Consider*** **~ Ratification of the IMO 'Ballast Water Convention'.**

# Recommendation Highlights

- ***Arctic States Decide*** **~**
  - **Enhance Cooperation in oil spill prevention**
  - **Engage organizations addressing the effects of ship noise, disturbance and ship strikes**
  - **Improved practices & technologies to reduce current/future air emissions**
- ***Arctic States Recognize*** **~ Improvements to Arctic marine infrastructure to enhance safety & environment protection (Arctic marine traffic awareness system)**
- ***Arctic States Decide*** **~ Develop circumpolar environmental response capabilities (circumpolar & regional agreements)**

# AMSA 2009:


- **Baseline Assessment**
- **Arctic Council Policy Document**
- **Strategic Guide**

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