

# *A Warming Arctic and National Security*



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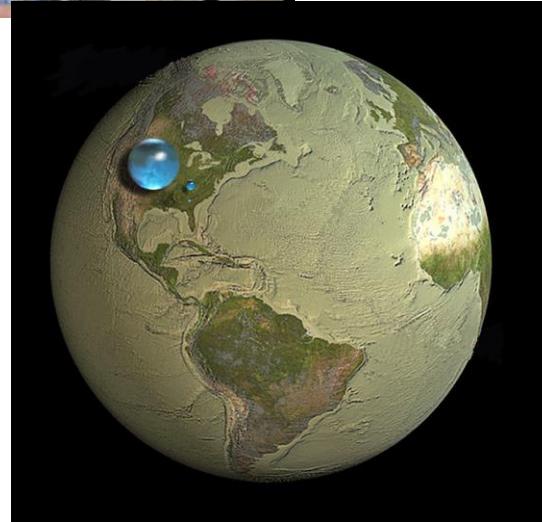
Climate Change. Challenges. Solutions

15 February 2014

# Why Care About Climate Change?



- It's About *People*



- It's About *Water*



- It's About *Change*

## World Population (est.) 10,000 BC - 2,000 AD

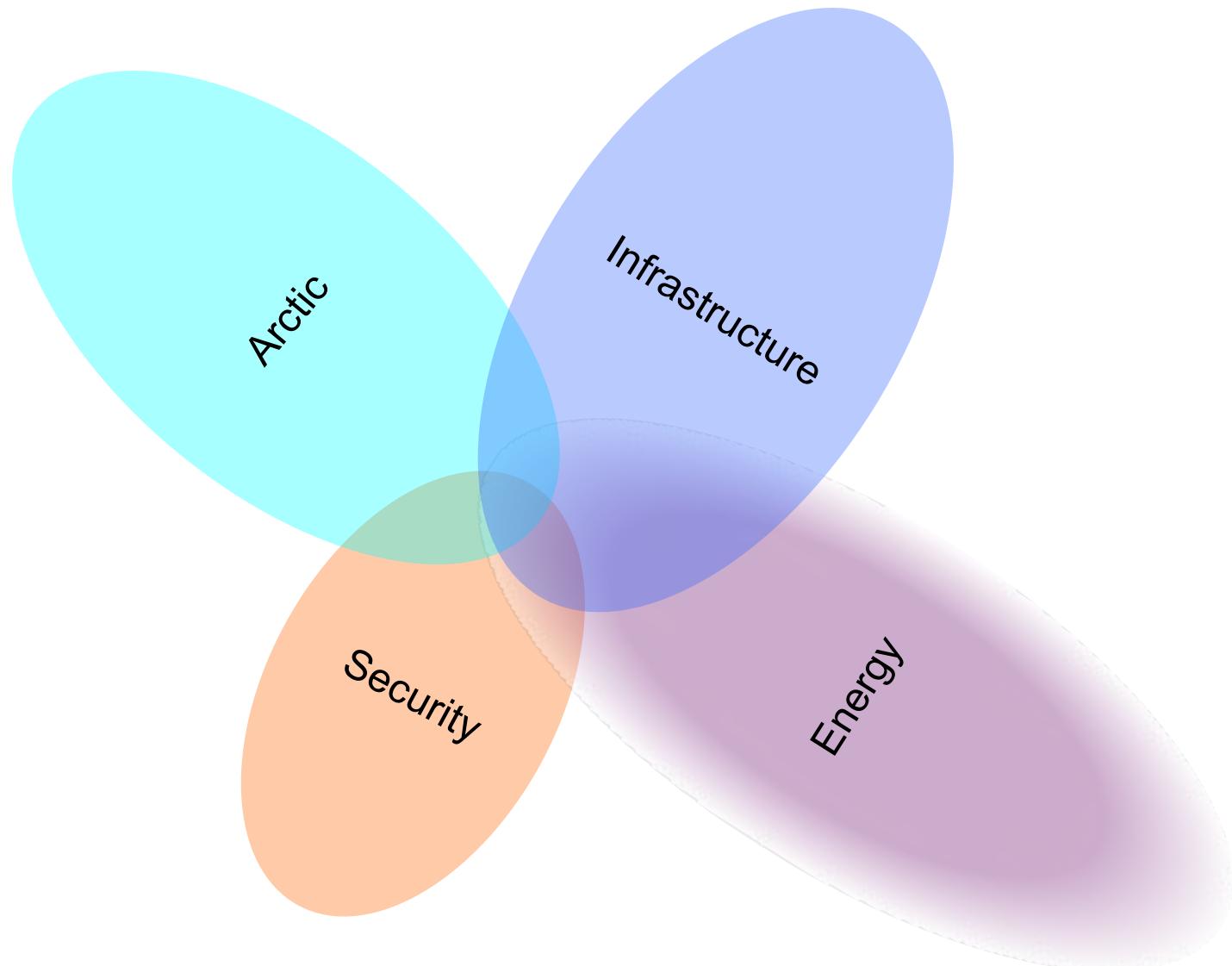


Petascale and Beyond



Intel Developer  
FORUM  
Invent the new reality  
Bar, Germany

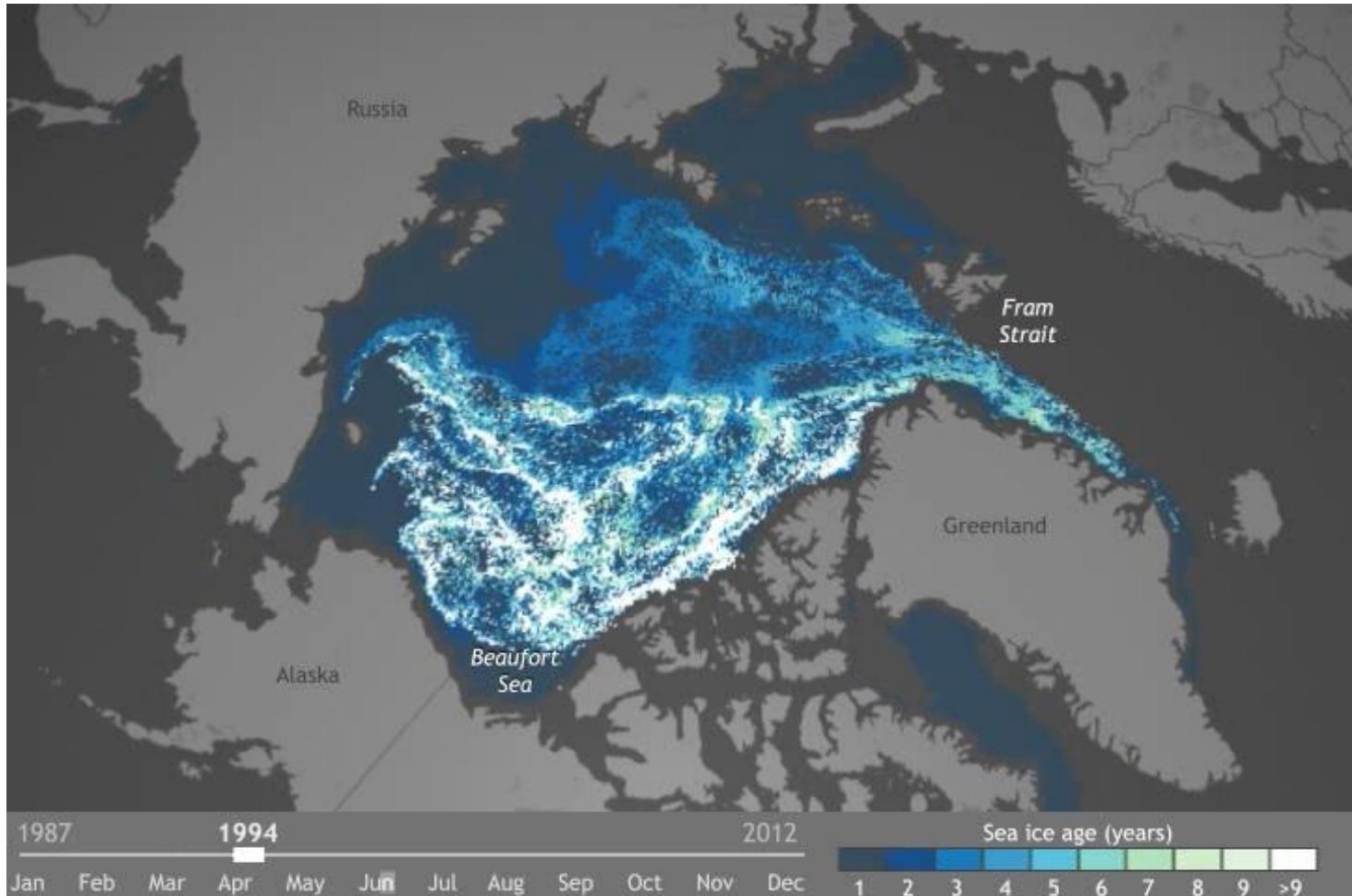
# Four Climate Components to Security





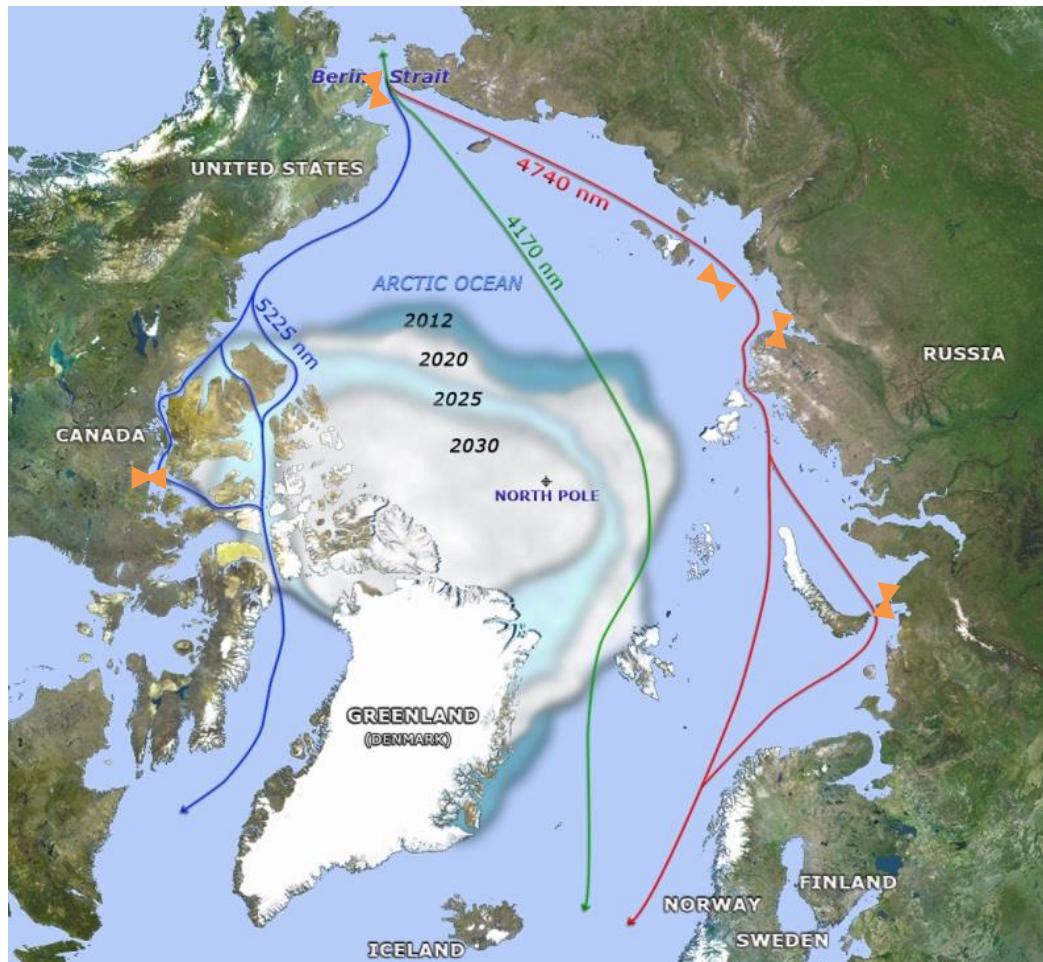
- It's an Ocean
- It's Changing
- It's not a Vacuum

# Arctic Sea Ice (1994 – 2012)





# Arctic Trade Routes: Today & Tomorrow



Courtesy: US Navy



## Northern Sea Route

2025: 6 weeks open  
41' controlling draft



## Transpolar Route

2025: 2 weeks open  
Deep ocean transit



## Northwest Passage

2025: intermittently open  
33' controlling draft

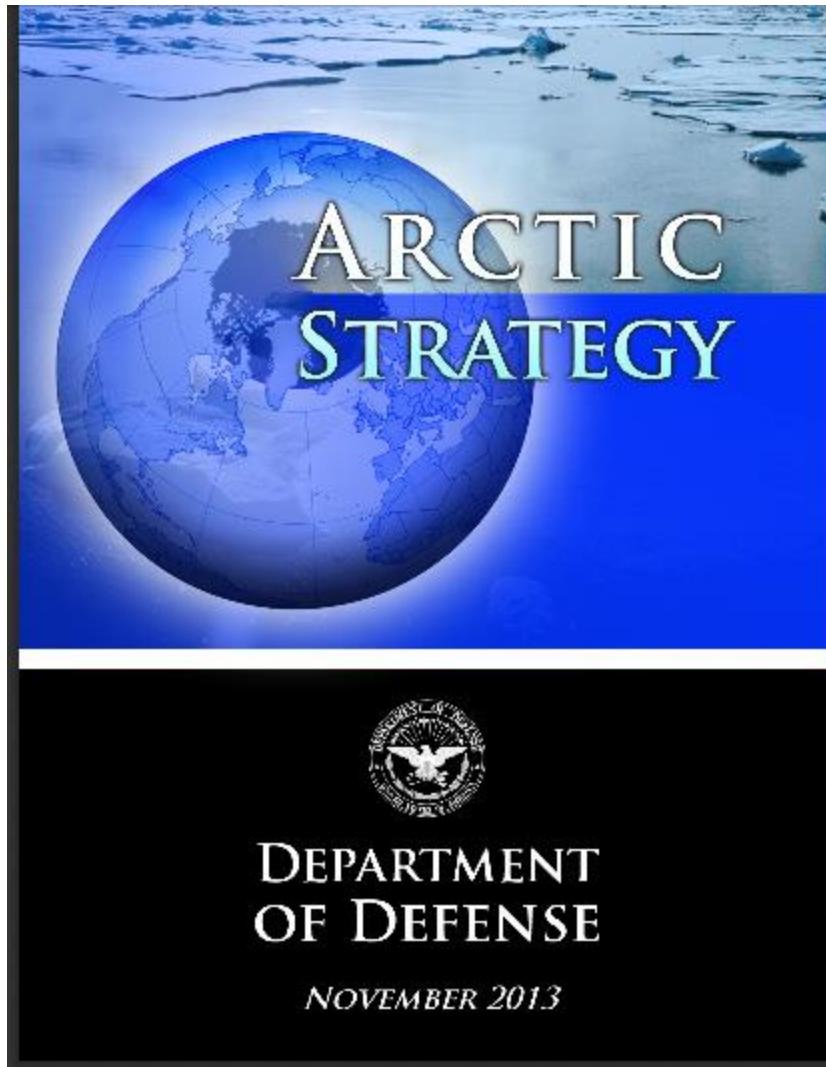
► Crossroads

Sea route distances:  
Distance from the  
Bering Strait to  
Rotterdam

# M/V NORDIC ORION Summer Cruise 2013



# DoD Arctic Strategy



## Desired End-States:

- Secure and Stable Region
- Safeguard US National Interests
- Protect US Homeland
- Pursue responsible stewardship
- Work cooperatively



the WHITE HOUSE PRESIDENT BARACK OBAMA ★★★★★  
the WHITE HOUSE WASHINGTON

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## White House Releases Implementation Plan for the National Strategy for the Arctic Region

Posted by Patrick Ventrell on January 30, 2014 at 01:09 PM EST



Today the White House released the Implementation Plan for the National Strategy for the Arctic Region. The Administration solicited input from Alaska Natives, the State of Alaska, Congress, academia, industry and others to develop an Implementation Plan that sets forth the guidelines for Federal Departments and Agencies to execute the National Strategy for the Arctic Region. The Implementation Plan complements and builds upon existing initiatives by Federal, State, local, and tribal authorities, the private sector, and international partners, and also focuses efforts where opportunities exist and action is most needed. It is designed to meet the reality of a changing Arctic environment and uphold our interests in safety and security, protect the environment, and work with international partners to pursue our global objective of combating the effects of climate change as described in the President's Climate Action Plan.

While the Implementation Plan is designed to guide the activities of Federal Departments and Agencies, successful implementation will depend upon active engagement and coordination with Alaska Natives and the State of Alaska. The Implementation Plan will be reviewed on an annual basis to ensure that progress continues to be made in

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### WHITE HOUSE BLOGS

# Navy's Arctic Experience

**1926**

Admiral Byrd's first  
Over-flight of North Pole



**1946**

USS Midway  
tests carrier  
capabilities



**1955-57**

Sealift support  
to construct Distant  
Early Warning (DEW) line  
stations



**1970's**

Cold weather Underway  
Replenishment  
experiments



**1990's**

Submarines continue  
transits and research



**1942-45**

World War II:  
Dutch Harbor,  
Attu & Kiska



**1951-52**

Sealift support to enlarge  
Thule Air Force Base



**1958**

Nautilus first  
under-ice transit



**1984-85**

Arctic  
undersea exercises



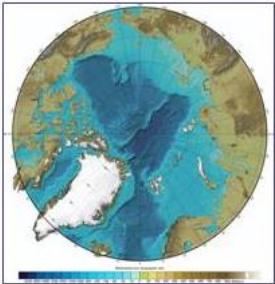
**2000's**

Continuing Naval  
exercises

# Arctic Considerations

## Today

### Poorly Charted



### Limited Infrastructure



### Harsh Operating Environment



### Security Concerns



### Opportunities



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### Transportation Access

#### Shipping industry requirements

- 8+ weeks of ice-free conditions
- Not anticipated for at least 40 years



#### Concerns

- Insurance
- Charts
- SAR
- Governance
- Reliable sea-ice forecasts
- Ice-strengthened hulls
- Environmental compliance

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## One Scenario



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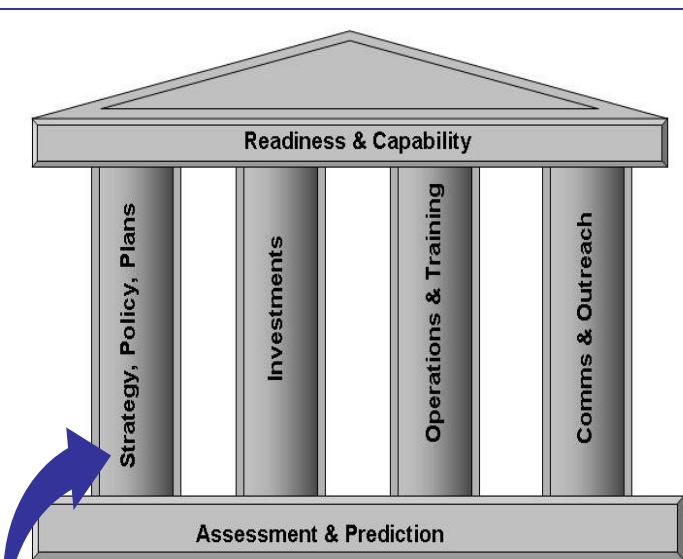


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*The Arctic is not a vacuum – the changes in the region will also impact Asia*

# Framework



# **Composition**



# *Execution*



# Navy Arctic Strategic Objectives

Signed by CNO on 21 May 2010



I. Contribute to safety, stability, & security in the region



IV. Strengthen existing & foster new cooperative relationships in the region



II. Safeguard U.S. maritime interests in the region



V. Ensure Navy forces are capable and ready



III. Protect the American people, our critical infrastructure, & key resources

*Towards the desired end state: a safe, stable, and secure Arctic*

## ***Commercial activity remains limited through 2030***

- Shipping, oil, & gas extraction to grow after 2030
- Fishing to grow but only gradually
- Tourism & maritime research will increase the most



***Harsh operating environment will remain the greatest limiting factor***



*Support ratification  
of United Nations Convention  
On the Law of the Sea*



*Address naval coastal  
installation vulnerabilities*



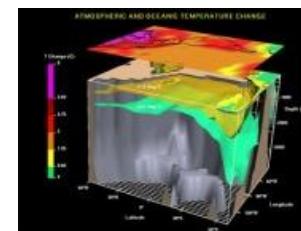
*Prepare for increase  
in Humanitarian  
Assistance, Arctic missions*



*Address emerging technical  
requirements (e.g. polar ops)*



*Address partnership  
demands*



*Support research &  
development*

*Navy action is already underway*

UNCLASSIFIED



# Arctic Roadmap Implementation Plan

Working Groups		Near-term (present-2020)	Mid-term (2020-2030)	Far-term (FY30 and beyond)
Policy, Strategy, Missions, & Plans	→	<ul style="list-style-type: none"><li>Primarily undersea and air presence</li><li>Surface ship presence in open water</li><li>Specify Requirements</li><li>Investment decisions<ul style="list-style-type: none"><li>Targeted increases</li></ul></li><li>Gain experience and expertise<ul style="list-style-type: none"><li>S&amp;T</li><li>Exchanges</li><li>Exercises</li></ul></li><li>Update Doctrine, CONOPS, TTPs</li><li>Strengthen Partnerships</li></ul>	<ul style="list-style-type: none"><li>Be ready to respond to contingencies and emergencies</li><li>Periodic presence<ul style="list-style-type: none"><li>SAR, DSCA, FoN</li></ul></li><li>Deliver capability</li><li>Gain additional experience and expertise</li></ul>	<ul style="list-style-type: none"><li>Operate deliberately for sustained periods as needed</li><li>Manned, trained equipped:<ul style="list-style-type: none"><li>Sub, surface, air, space, cyberspace</li></ul></li></ul>
Requirements	→			
Operations & Training	→			
Science & Technology	→			
Environmental Observation & Prediction	→			
Safe Navigation	→			
Maritime Domain Awareness	→			
Platforms, Weapons, & Sensors	→			
C4ISR	→			
Installations & Facilities	→			
Strategic Communications & Outreach	→			

*The roadmap leads to a force that is capable and ready to operate in the Arctic as needed*

# Required Capacity...

- Ice breakers
- Ice hardened USN vessels
- Observations
- Navigation surveys and infrastructure
- Arctic domain awareness
- Bases for support
- Port(s)
- Energy infrastructure
- Communications

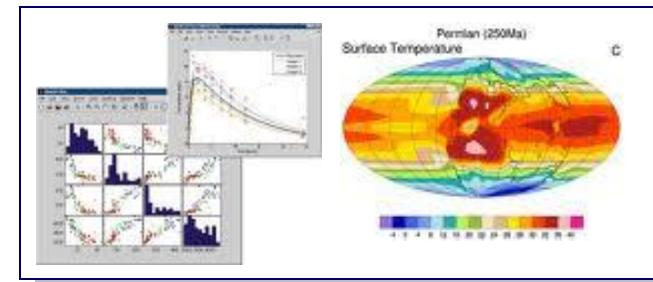


**Awareness & Infrastructure**

# Improving Prediction Capability

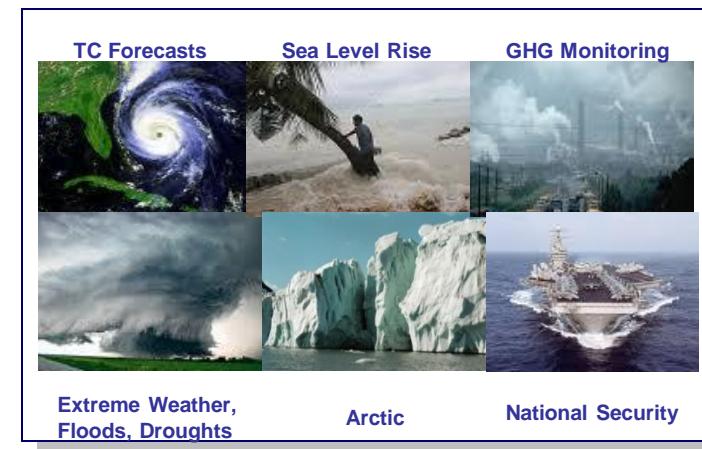
## Earth System Prediction Capability

Recapitalize aging suite of global atmospheric models



Revolutionary advancement National predictive architecture

Interagency collaboration



*Initial Navy investments in today's budget*

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# Unexplored Contingencies



# Leadership Counts



# *Discussion*

