Managing our Planet: the State of the Arctic (and National Security)

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Climate Change. Challenges. Solutions

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Why Care About Climate Change?

- It’s About **People**
- It’s About **Water**
- It’s About **Change**
Four Climate Components to Security

- Arctic
- Infrastructure
- Security
- Energy
• It’s an Ocean
• It’s Changing
• It’s not a Vacuum
Arctic Surface Temperature Anomaly (1900 – 2013)

Annual Mean SAT Anomaly 60–90°N
Anomaly based on 1981-2010 data
Barrow AK snow melt dates

NOAA BRW melt date time series, 1941-2009

Overall change in 68 years ≈ 10 d (± 4.4 d at 95% CI)

R.S. Stone, NOAA/CiRES - Nov. 2009
Arctic Sea Ice (1994 – 2012)
Arctic Trade Routes: Today & Tomorrow

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

Courtesy: US Navy
Desired End-States:

- Secure and Stable Region
- Safeguard US National Interests
- Protect US Homeland
- Pursue responsible stewardship
- Work cooperatively
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 refined on an annual basis to ensure that progress continues to be made in
The Arctic is not a vacuum – the changes in the region will also impact Asia
Navy Arctic Strategic Objectives

Signed by CNO on 21 May 2010

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

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

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

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

V. Ensure Navy forces are capable and ready

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

Framework

- Readiness & Capability
  - Strategy, Policy, Plans
  - Investments
  - Operations & Training
  - Comms & Outreach

Assessment & Prediction

Execution

Phase 1 (FY10)
- Fleet readiness assessment, external studies, strategic implementation plan
- Advocate for UNCLOS
- Monitor Polar SATCOM Program
- Arctic TTX & LOE
- POM-12 Investments for air-ocean-ice numerical prediction
- Cooperative Navy-NOAA Bering Strait Hydrographic Survey

Phase 2 (FY11-12)
- POM-14 CBA, RSP, & SPPs address the Arctic
- Arctic SAREX, Arctic Edge, Northern Edge NANO OK
- Innovative Readiness Training (IRT)
- ICEX-11
- Support National Ocean Policy / Marine Spatial Planning Implementation For Arctic
- Environmental assessments
- Interagency partnership for air-ocean-ice numerical prediction

Phase 3 (FY13-14)
- Execute POM-14
- Implement expanded / new cooperative partnerships
- Arctic UUV operations
- Update roadmap ICW ODR

Composition

Navy recognized as a valued joint, interagency, & international partner in the Arctic

** indicates recurring action
### Arctic Roadmap 2014 Implementation Plan

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<td>Policy, Strategy, Missions, &amp; Plans</td>
<td>• Primarily undersea and air presence</td>
<td>• Be ready to respond to contingencies and emergencies</td>
<td>• Operate deliberately for sustained periods as needed</td>
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<td>Requirements</td>
<td>• Surface ship presence in open water</td>
<td>• Periodic presence</td>
<td>• Manned, trained equipped:</td>
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<tr>
<td>Operations &amp; Training</td>
<td>• Specify Requirements</td>
<td>• SAR, DSCA, FoN</td>
<td>• Sub, surface, air, space, cyberspace</td>
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<td>Science &amp; Technology</td>
<td>• Investment decisions</td>
<td>• Deliver capability</td>
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<td>• Targeted increases</td>
<td>• Gain additional experience and expertise</td>
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<tr>
<td>Environmental Observation &amp; Prediction</td>
<td>• Gain experience and expertise</td>
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<td>Safe Navigation</td>
<td>• S&amp;T</td>
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<td>Maritime Domain Awareness</td>
<td>• Exchanges</td>
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<td>Platforms, Weapons, &amp; Sensors</td>
<td>• Exercises</td>
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<td>Strategic Communications &amp; Outreach</td>
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<td></td>
<td>• Update Doctrine, CONOPS, TTPs</td>
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<td></td>
<td>• Strengthen Partnerships</td>
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The roadmap leads to a force that is capable and ready to operate in the Arctic as needed.
Naval Studies Board Recommendations


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
Improving Prediction Capability

Earth System Prediction Capability

Recapitalize aging suite of global atmospheric models

Interagency collaboration

Revolutionary advancement National predictive architecture

Initial Navy investments in today’s budget
Unexplored Contingencies
Leadership Counts
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 Trends Assessment

**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*