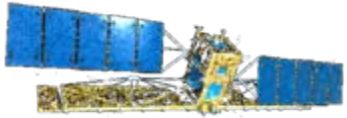




U.S. National / Naval Ice Center (NIC)



CDR John W. Simms
Director, National Ice Center
Commanding Officer, Naval Ice Center
22 March 2012
Arctic Icebreaker Coordinating Committee



USCG



USN



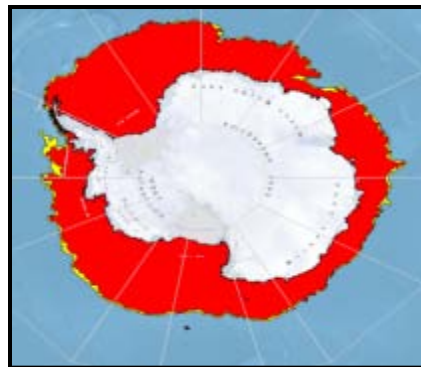
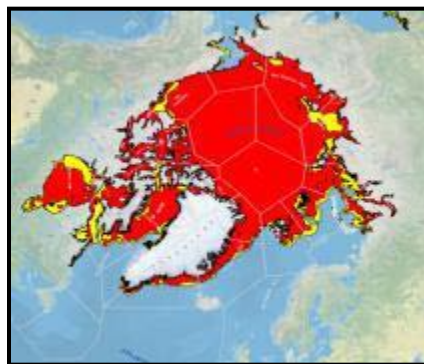
NOAA



NIC Mission



- A multi-agency operational center operated by the United States Navy, National Oceanic and Atmospheric Administration, and United States Coast Guard.
- Located in Suitland, Maryland and employs over 50 military and civilian personnel.
- Over 140 International Customers, including SUBFOR, ONI, NOAA, NWS, NSF, USCG, MSC, and NASA.
- GLOBAL sea ice analysis and forecasting.



Coverage 20.6 Million Square Miles – Arctic, Antarctic, and Great Lakes

Mission: Provide the highest quality, timely, accurate, and relevant snow and ice products and services to meet the strategic, operational, and tactical requirements of U.S. national interests across a global area of responsibility.



International Partnerships



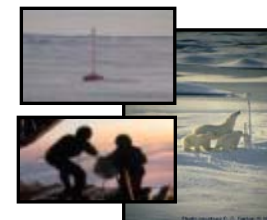
- **North American Ice Service (NAIS)**

- Multi-agency partnership between U. S. National Ice Center, Canadian Ice Service and International Ice Patrol.
- Mission: Transform individual organizational strengths into a unified source of ice information and meet all marine ice information needs and obligations of the United States and Canadian governments.



- **International Arctic Buoy Program (IABP)**

- Global participants working together to maintain a network of drifting buoys in the Arctic Ocean to provide real-time operational requirements and research purposes including support to the World Climate Research Program and World Weather Watch.



- **International Ice Charting Working Group**

- Formed in October 1999 to promote cooperation between the world's ice centers on all matters concerning sea ice and icebergs.

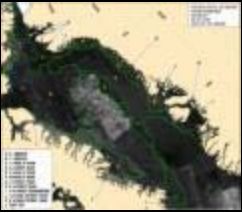


Operations and Product Generation

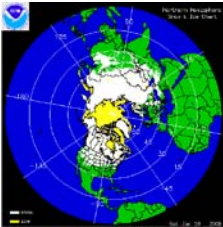
Value Added, Derived, Automated, and Reconfigured




Products (Routine/Special Support)



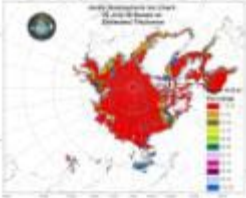
Annotated Images



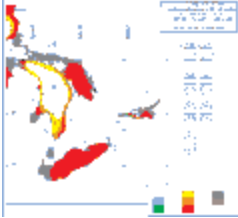
IMS snow and ice maps



Fractures, Leads and Polynas (FLAP)




Ice Thickness Estimations


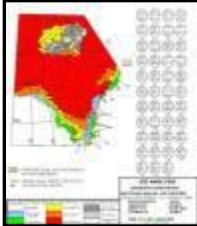


Ice Forecast Outlooks


Expert Ice Analyses, Forecasting, and Quality Control



Ingest 100GB Daily



- Data Fusion
- Derived Data Automation
- Direct Data Dissemination



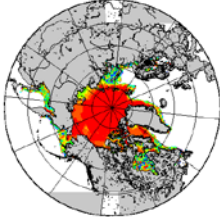
Satellite




Air Recon



Surface Observations



Modeling



Bouys



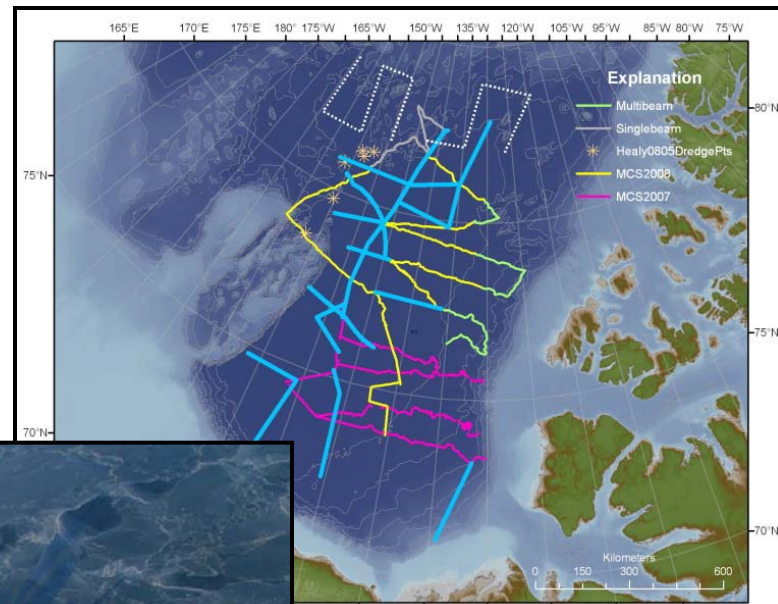
NAIS Support to ECS

USCGC Healy Support



Four Years of Joint ECS Mapping Support

- NIC has collaborated through NAIS for the last 4 years during U.S.-Canadian joint expeditions to map portions of the Arctic sea floor.
- Explorations potential extension of continental shelf under the **United Nations Convention on Law of the Sea (UNCLOS)**
- NAIS collaboration help agencies share Earth Observation data and operational collaborations on production of tailored ice imagery for support to USCGC HEALY and Canadian Coast Guard Cutter Louis S. St-Laurent throughout entire cruise



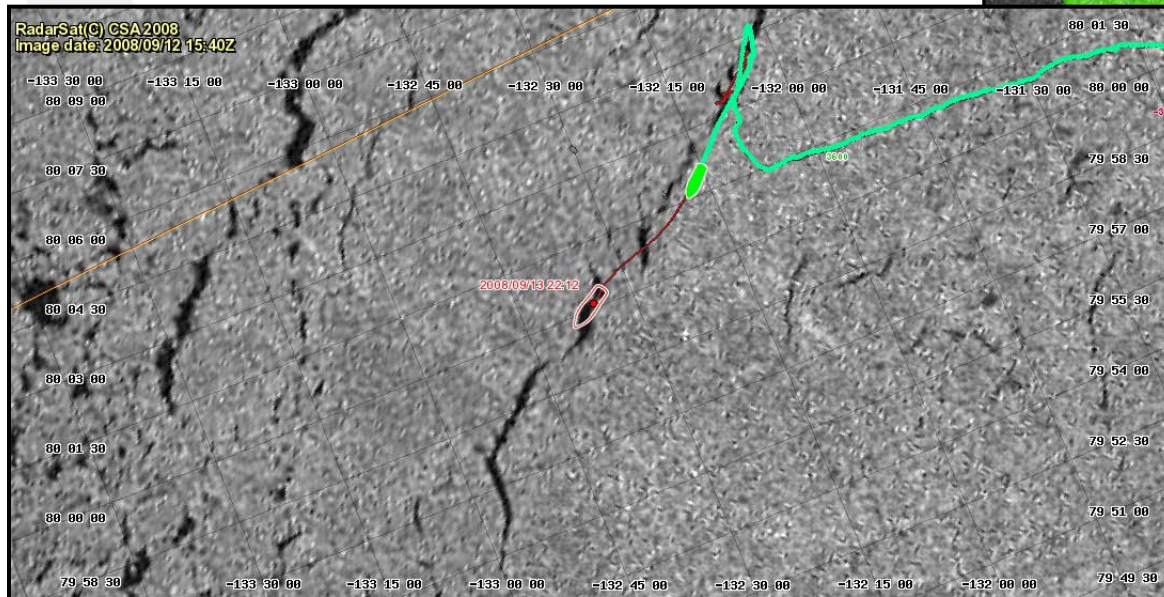
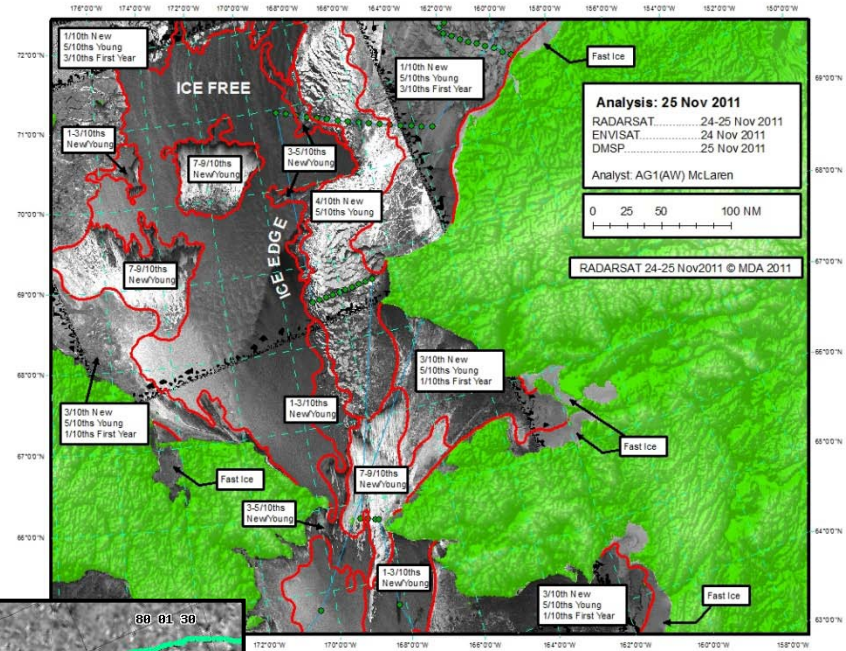


NIC Support to ECS

On Board Ice Analysis



- NIC has provided *onboard* Ice Analyst Support for Joint ECS Mission (and others).
- Coordinate delivery of imagery through MDA directly to Healy (began last year)



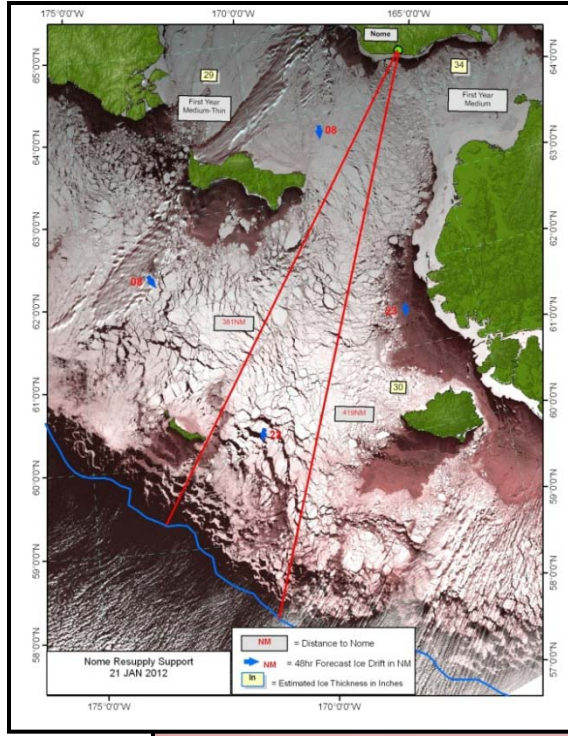
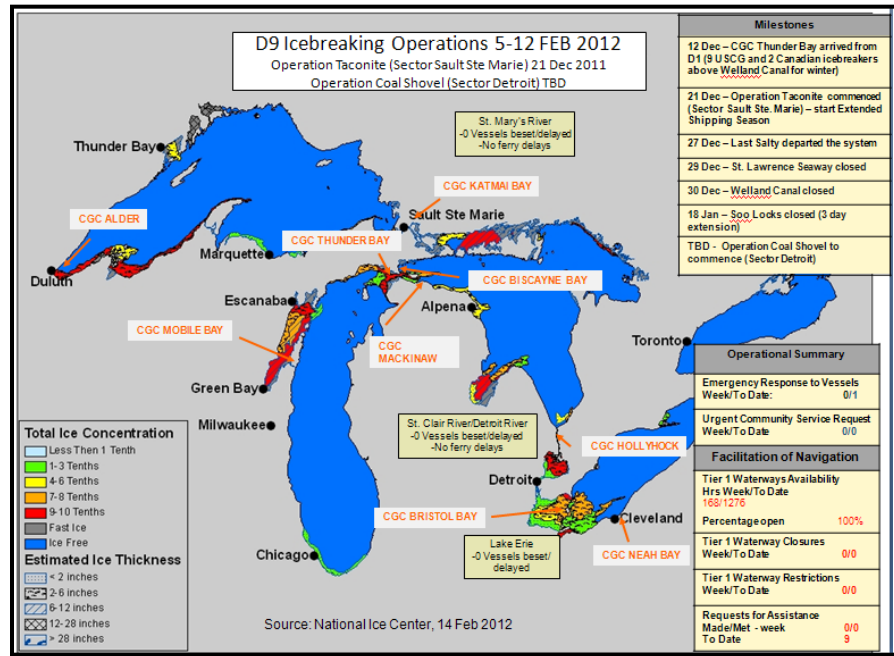


NIC 2012

USCG Arctic Support



- Provided daily sea ice situational awareness imagery to D17, Healy and NWS Anchorage.
- Ice edge/marginal ice zone
- Recent addition of USCG Pacific Area for planning and asset monitoring in Alaska waters (similar to below-D9).



USCG Photo 2012

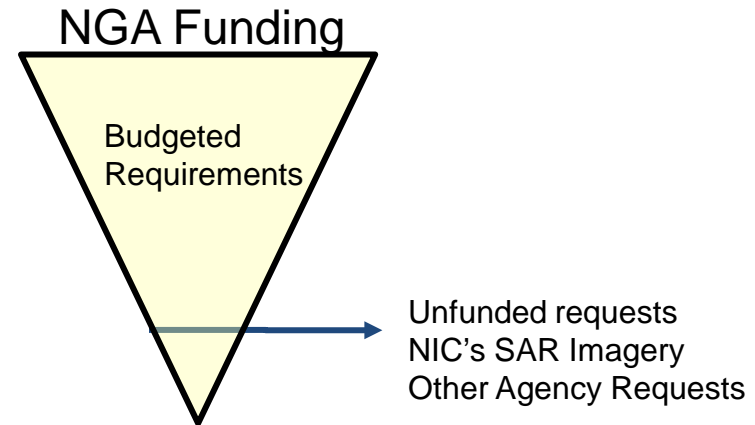
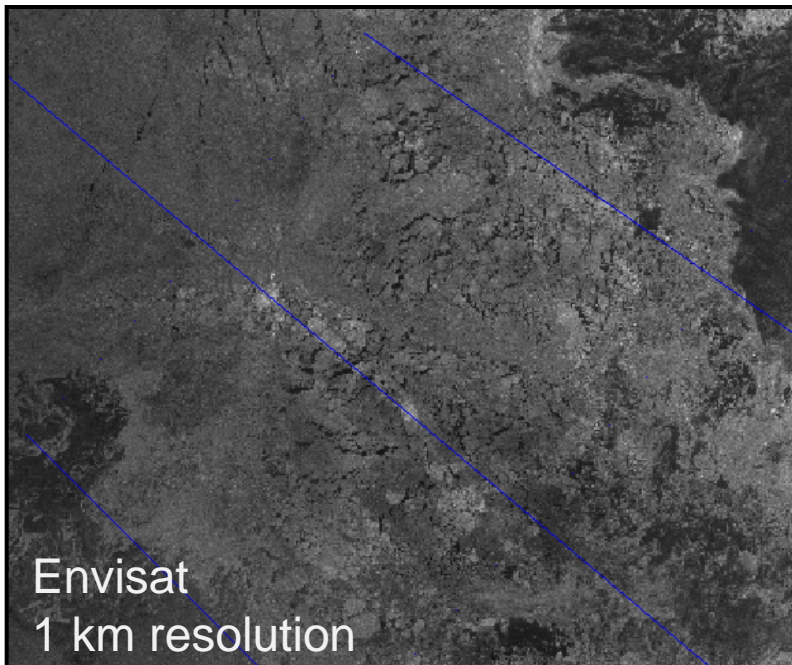


Plans for 2012 Support



As always, depends on any funding the NIC may receive for Radarsat imagery.

Currently, funds end August 2012.



Other Options:

Envisat 1km

MODIS VIS 250 m

IR 1 km

OLS .55 km



Plans for 2012 Support



- One NIC Ice Analyst onboard Healy for ECS Project
 - daily analysis, ice outlook
 - validate ACFNS and Univ Delaware products for accuracy in defining and forecasting areas of openings, convergence (i.e., thicker ice), ice movement



- USCG Pacific Area Support
 - as drilling begins in Alaskan waters
- Ad Hoc Support

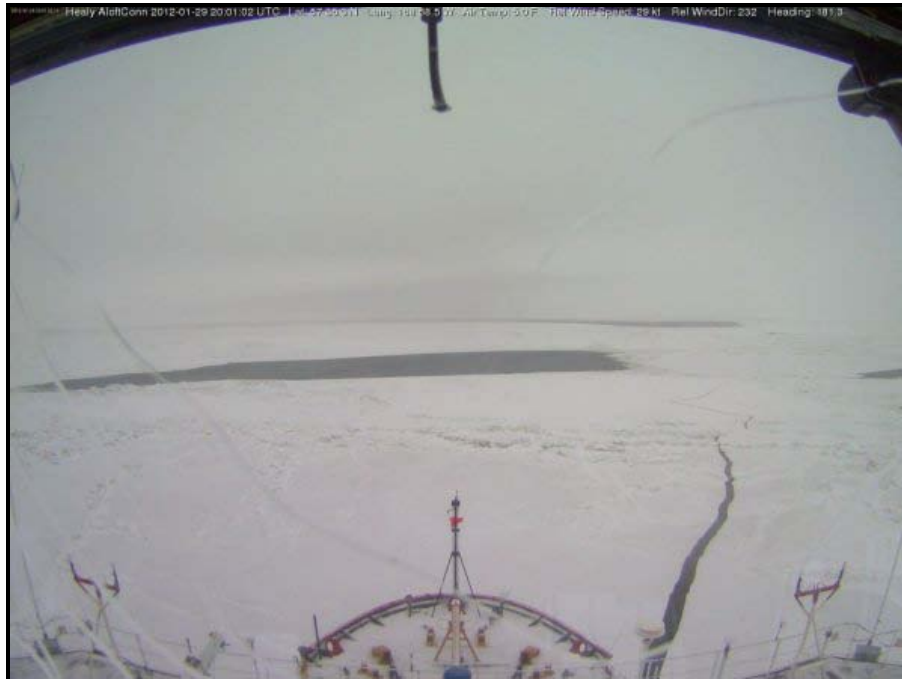


NIC Science News




Healy Cam

- Funding for the cameras is available now from our ACE (Arctic Collaborative Environment) project support.
- Additional cameras for 'better look'



APAN HA/DR EXERCISES **COMMUNITIES** SUPPORT

 **Arctic Collaborative Environment (ACE) JCTD**
The JCTD demonstrates and transitions a military & civilian, whole of government, cross border, web-based, open-source detection, monitoring, analysis, visualization and predicting decision support system for the Arctic Region.

Home Blog Forum Files Wiki

ARCTIC COLLABORATIVE ENVIRONMENT (ACE) PEOPLE JCTD - WIKI

Article History

Arctic Websites RATE THIS
☆☆☆☆☆

ARCTIC COLLABORATIVE ENVIRONMENT (ACE) PEOPLE JCTD - WIKI

Following are some websites that offer Arctic environmental awareness information, along with a short description of what they offer.

Arctic Websites		
Website	Description	Interactive
Canadian Ice Service (CIS)	The Canadian Ice Service (CIS), a division of the Meteorological Service of Canada (MSC), is the leading authority for information about ice in Canada's navigable waters.	No
European Environment Information and Observation Network (EIONET)	The European environment information and observation network (Eionet) aims to provide timely and quality-assured data, information and expertise for assessing the state of the environment in Europe and the pressures acting upon it. This enables policy-makers to decide on appropriate measures for protecting the environment at national and European level and to monitor the effectiveness of policies and measures implemented.	No
National Ice Center (NIC)	The National Ice Center (NIC) is a multi-agency operational center operated by the United States Navy, the National Oceanic and Atmospheric Administration, and the United States Coast Guard. Our mission is to provide the highest quality, timely, accurate, and relevant snow and ice products and services to meet the strategic, operations, and tactical requirements of the United States interests across the global area of responsibility.	No



NIC Science News



Ice Goat 1

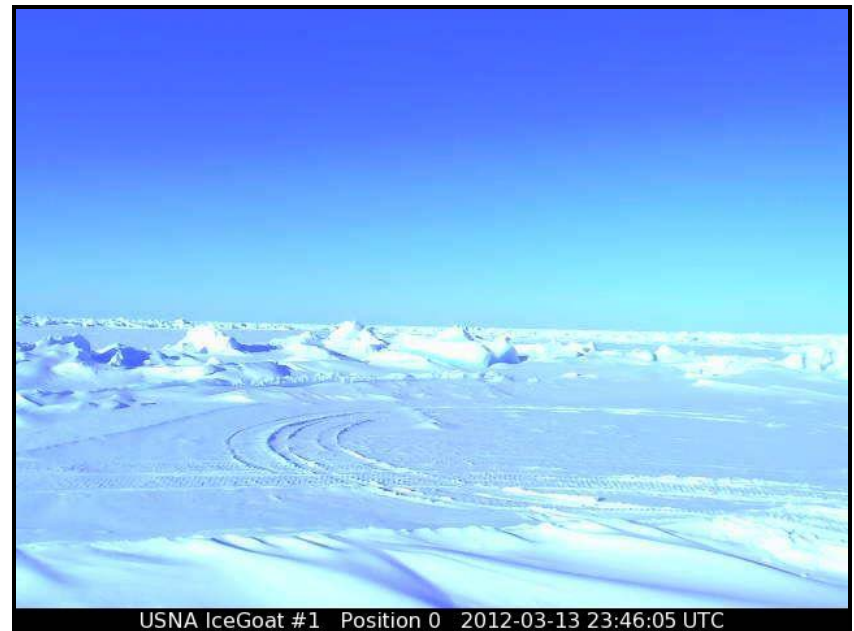
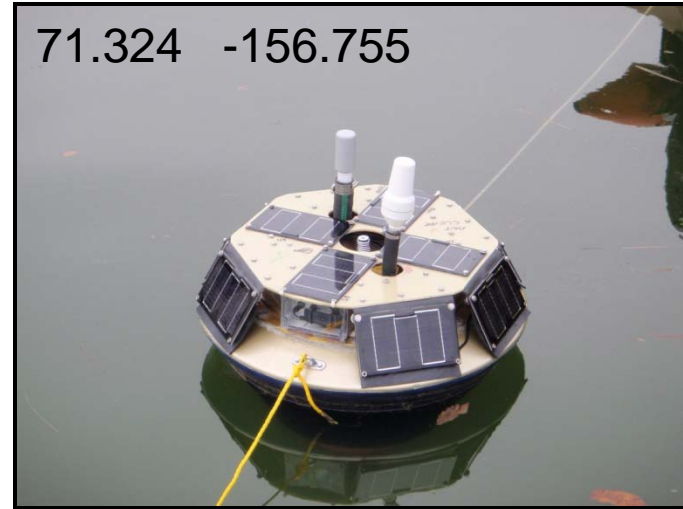


Naval Academy

- global-position system that can indicate ice movement and melting
- cameras and sensors to monitor air pressure and water temperature

<http://obuoy.datatransport.org/data/icegoat/archive/icegoat-1/>

<http://usnapsp.blogspot.com/2012/03/greetings-this-is-my-first-post-of.html>



USNA IceGoat #1 Position 0 2012-03-13 23:46:05 UTC

"It's important for weather models because there's a data gap," LCDR Woods, USNA



NIC CHALLENGES

- Minimally manned and resourced to meet current mission requirements.
- As a result, must continuously reprioritize support to meet expanding missions in the Arctic by USCG, Navy, and NOAA.
 - Change in type and number of missions to support (non-ice hardened ships and ice breakers).
 - Expanded forecast needs (7 days, 1-3 months, 1 year, 5-10 years).
 - More complex and detailed ice information: Location, thickness, age, movement.

In order for NIC to plan, resource and provide operational support to its customers, those customers must clearly articulate their ice product requirements for current and future missions.



QUESTIONS?

