

North American Ice Service (NAIS)

Update to Expert Team on Sea Ice

**ETSI IV
St. Petersburg**



**1-5 March
2010**

**Presented by Marie-France Gauthier
Chief of Forecast Operations
Canadian Ice Service**



Outline

- NAIS Mission, Vision and Goals
- NAIS accomplishments in last year
 - Joint NAIS
 - US Navy/National Ice Center
 - Canadian Ice Service
 - International Ice Patrol
- NAIS future plans





NAIS Mission

- Transform individual organizational strengths into a unified source of ice information
- Meet all marine ice information needs and obligations of the United States and Canadian governments





NAIS Goals

- High quality and consistency of products
- Provide a common:
 - suite of fully-harmonized NAIS products
 - point-of-access for users
 - data sources and data sharing
 - data model and analysis tools
 - communications & dissemination infrastructure
 - next generation production workstation
- Increase overall efficiency
 - streamlined business processes
 - reduce duplication of systems and databases
 - enhanced back-up capability
 - production not dependent on location
 - coordinated development, science and training



NAIS Joint Accomplishments

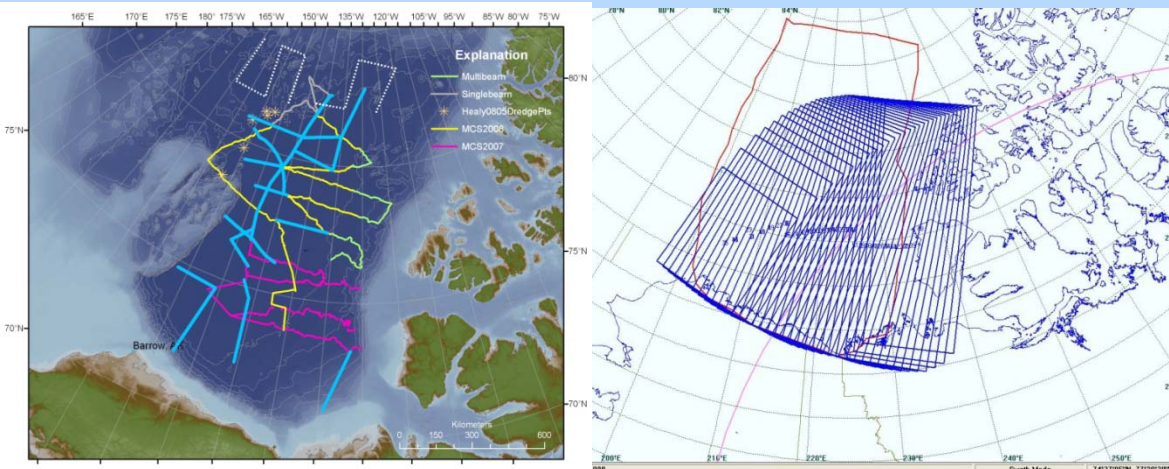
- Joint Canadian Coast Guard Ship Louis St. Laurent and United States Coast Guard Cutter Healy support
 - Ice service specialists
 - Weather and ice products
 - Satellite data ordering strategy
 - Excellent coverage of AOI



CCGS St. LAURENT and USCGC HEALY operating in the Arctic



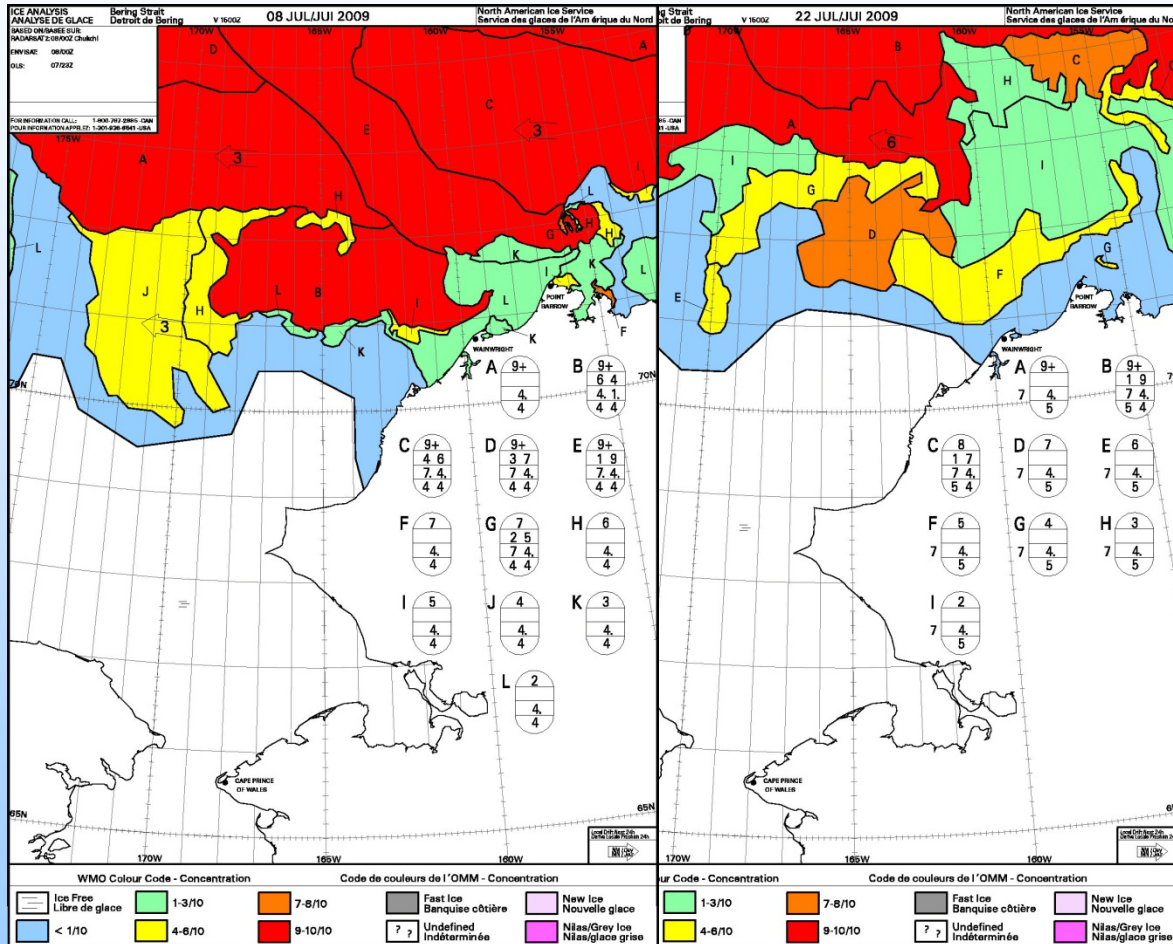
Photo courtesy of USGS





NAIS Joint Accomplishments

- Tailored Joint Support to Canadian Coast Guard Ships Sir Wilfrid Laurier & Amundsen
- 8-23 July, 2009



NAIS ISIS System

North American Ice Service
 Prepared by the North American Ice Service
 A collaboration of the Canadian Ice Service and the National/Naval Ice Center
 03 June 2009

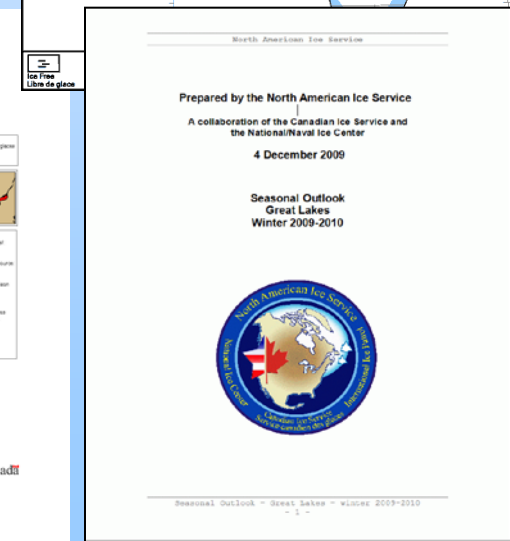
Seasonal Outlook
 For North American Arctic Waters
 Summer 2009

Seasonal Outlook - North American Arctic Waters - Summer 2009



Great Lakes Season 2008-2009

- **Weekly regional chart Dec 1, 2008 to May 11, 2009**
 - **Valid Mondays but now issued on Wednesdays**
- **The daily chart issued December 11th to May 12th**
 - **Charts done daily March 9 to April 16**
- **2nd most severe TAC since the 95/96 ice season coming in just under 02/03 record values**
- **Max ice coverage occurred around March 3, 2009 covering ~ 98% of Lake Superior**





NAIS Accomplishments

National/Navy Ice Center (NIC)

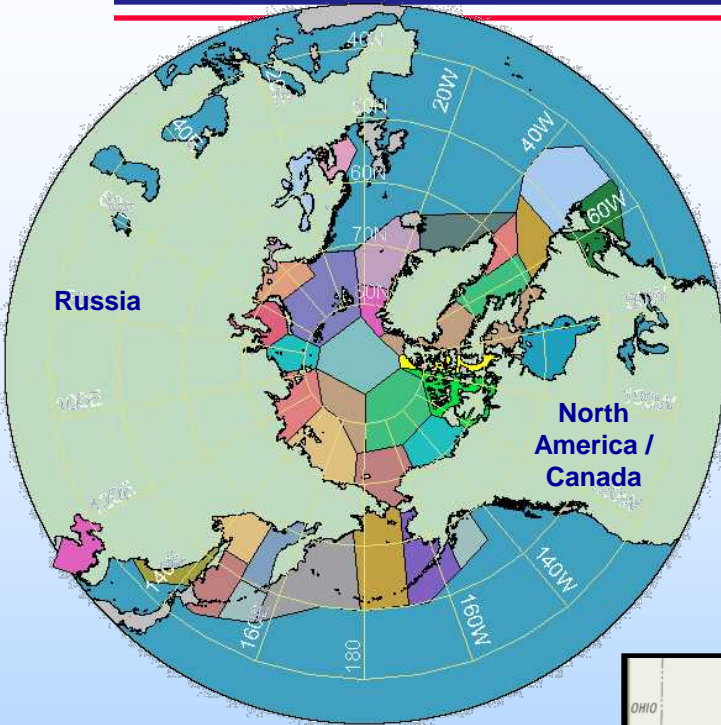


- Change of Command
- NIC Arctic Symposium
- Over 6,000 products delivered
- Special Support Missions support
 - 25% increase over 2008
- SIPAS upgrades (Image Browser)
- Website Product upgrades
- International Cooperation Efforts
- Interactive Multisensor Snow and Ice Mapping System (IMS) fully operational
- Responded to high interest in the Arctic
 - Many requests from media, politicians, public
- Product archiving



NIC Area of Responsibility - 20.6M sq.n

Arctic, Antarctic, Great Lakes, Chesapeake/Delaware Bays



**Arctic (including
Sea Of Japan, Sea
of Okhotsk, and
Yellow Sea)**



Great Lakes



Chesapeake / Delaware Bays



Antarctic



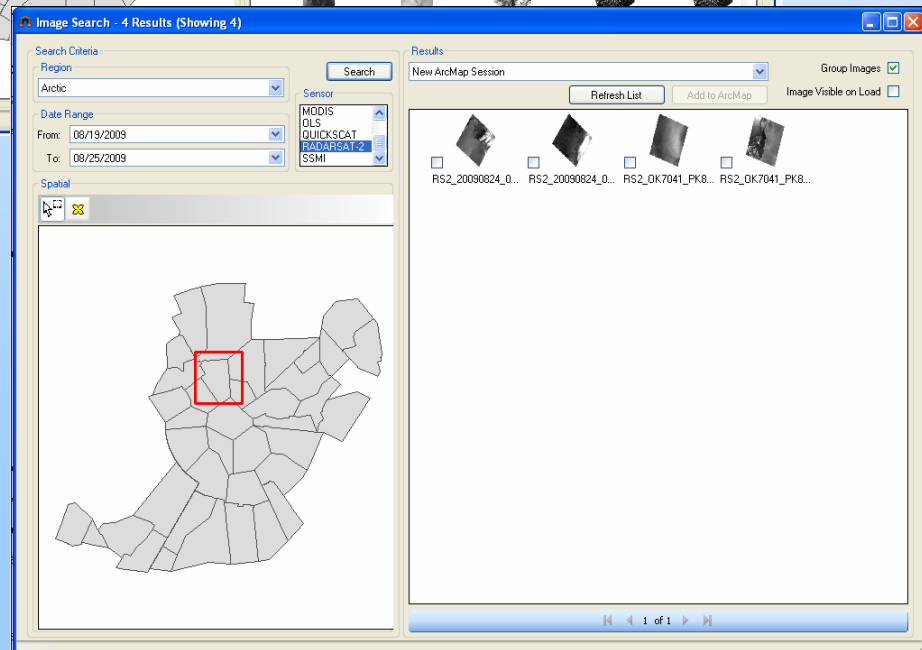
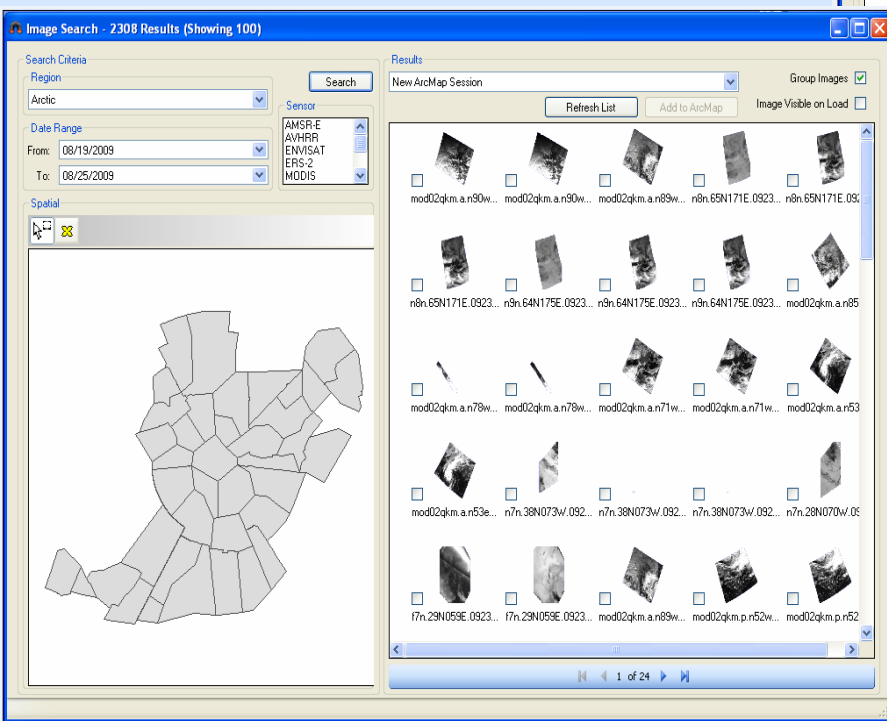
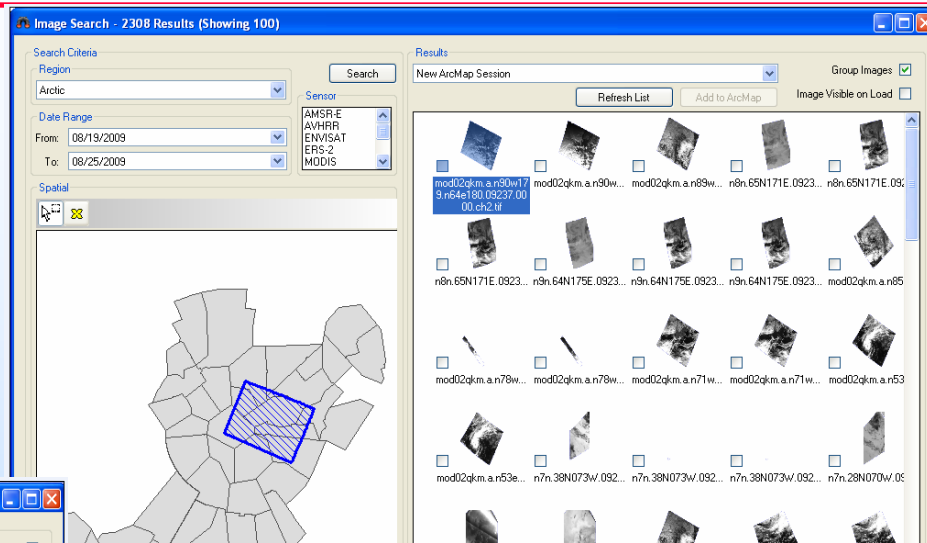
NAIS Accomplishments

National/Navy Ice Center (NIC)



Interactive Image Browser

- 1- Select global/region
- 2- Highlights select image area
- 3- Easy to identify image location





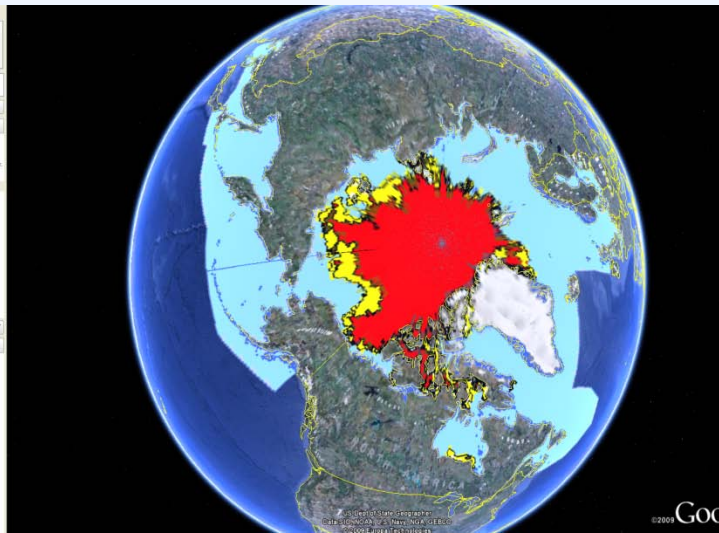
NAIS Accomplishments

National/Navy Ice Center (NIC)

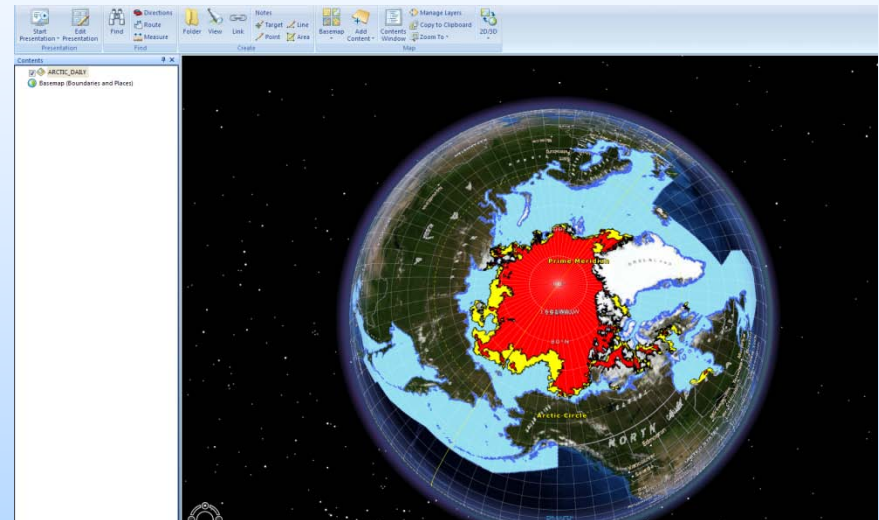


Interactive Product Dissemination

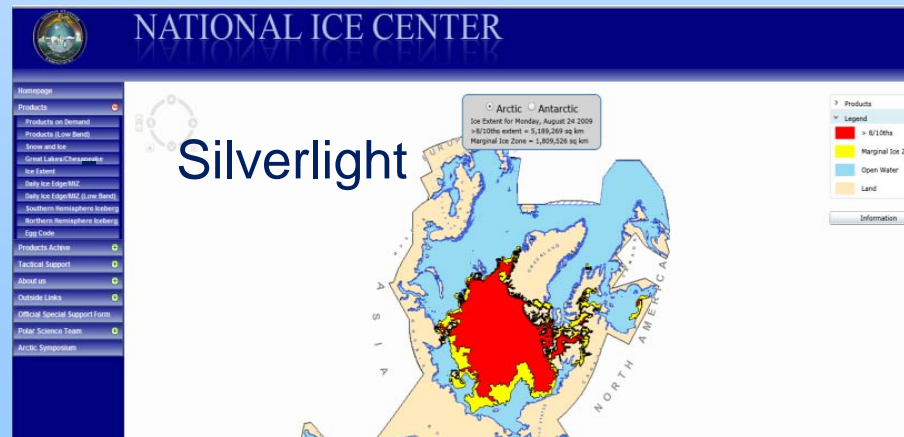
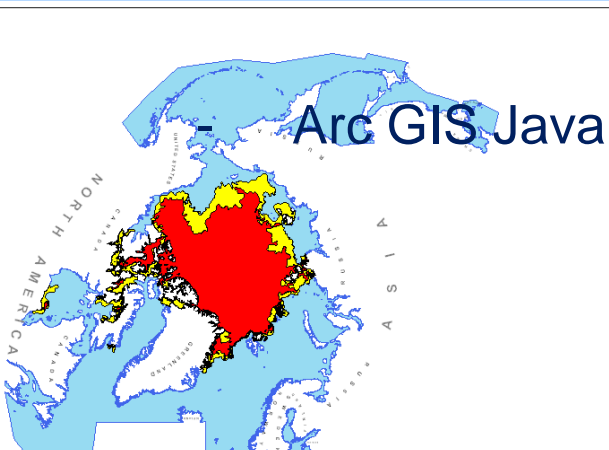
- Google Earth



- Arc Explorer



- Arc GIS Java Script





NIC Focus for 2010



- Product and Staffing optimization
- Leverage technology
- Dissemination improvements
- International cooperation
- SIPAS/Polaris upgrades
- Operational Sea Ice Index (OSII) with NSIDC
- Product archiving
- Data source/utilization expansion
- Forecast improvements

CHALLENGES

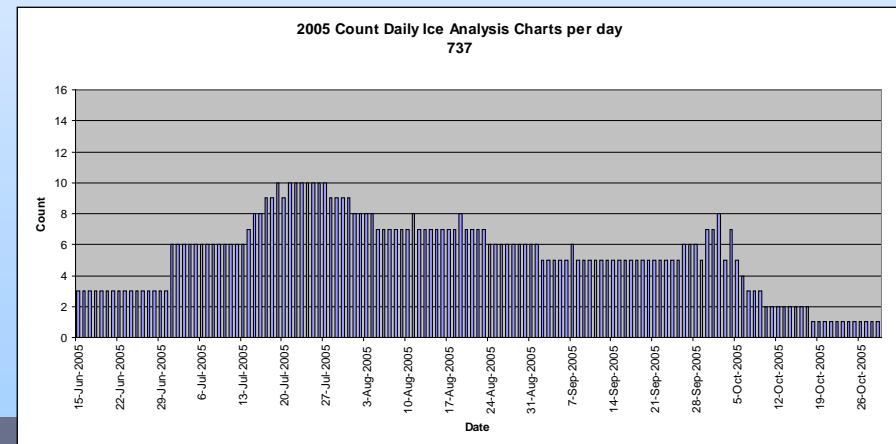
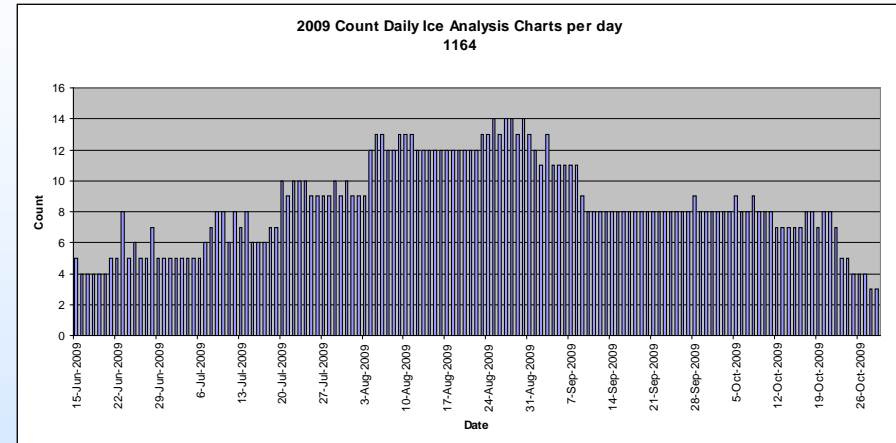
- Changes in customers
 - More frequent requests
 - Some non-ice hardened
 - Broader interest
- Changes in requirements
 - More forecasting
 - More detail
 - Longer range
- More complex/changing Arctic
- Align with Parent Organization focus changes



NAIS Accomplishments Canadian Ice Service (CIS)



- Busiest year in history
 - Client satisfaction very high
- Canadian access to ALOS PALSAR
 - via NIC
- Alaska Satellite Facility SAR training
 - Week-long training
 - Ottawa May 2009
- Upgraded DASH-7
 - MSS 6000
 - SLAR, UV, FLIR, low light
 - Inmarsat, single operator





NAIS Accomplishments Canadian Ice Service (CIS)



- Addition of RADARSAT-2 legacy mode to operations
- Final IPY support to scientists
- Developing information products for new METAREAS
- ISO 9001-2000 certification
- Electronic Nautical Chart ice overlay test-bed conducted during winter 2009
- Google earth
- Coupled modeling – major breakthroughs
- Daily Northern Hemisphere 3D-Var Ice Analysis implemented
- Very high political & media interest



CIS Plans & Key Issues



- Operational support to new MET/NAV Areas
- UNCLOS
- Succession of key staff
- Electronic navigation charts
- Ice data assimilation and coupled operational models
 - Tactical – 0 to 7 days to support marine operations
 - Operational – inter-seasonal for planning
 - Strategic – 30 year ensembles for infrastructure design
 - Ice pressure in partnership with CHC/CCG
 - Ice thickness in partnership with FMIR
- Cooperation with IIP to implement new iceberg model



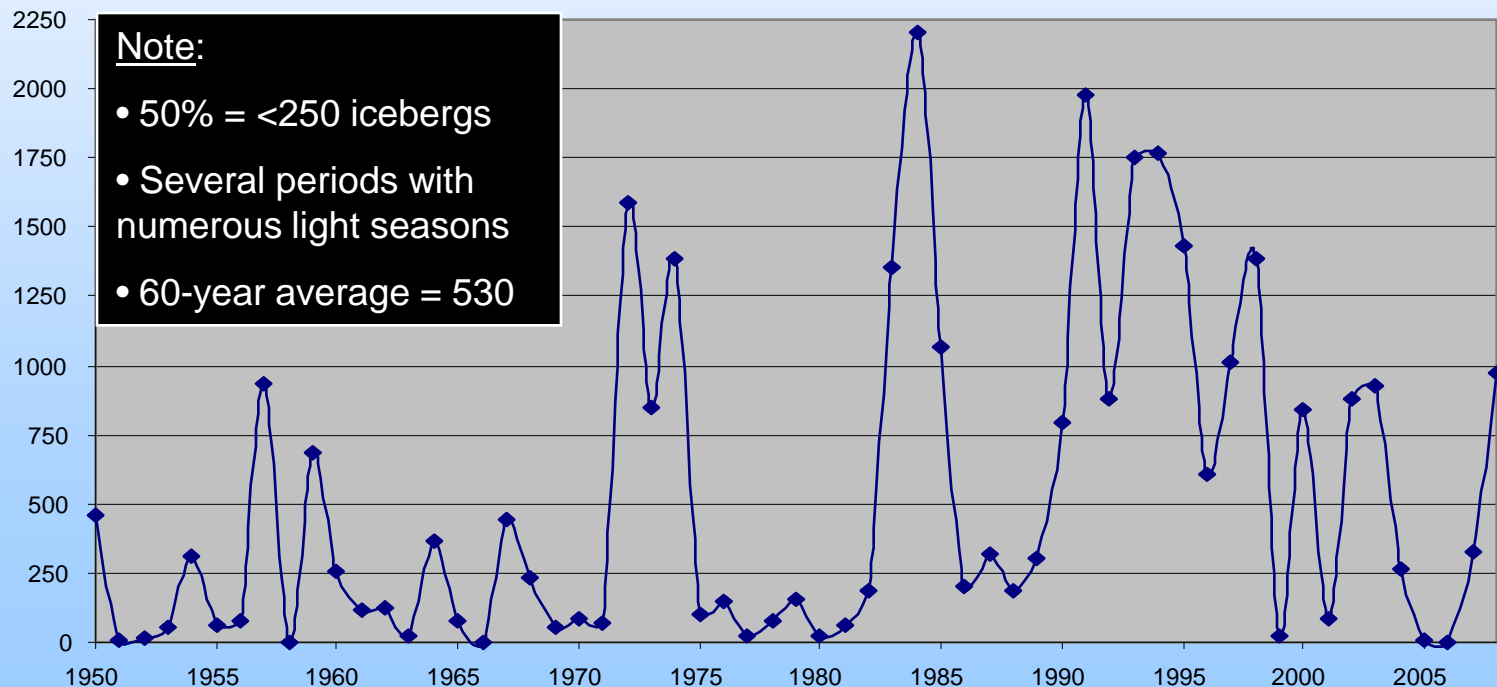
NAIS Accomplishments

International Ice Patrol (IIP)



Photo by Dennis Flynn
(2008)

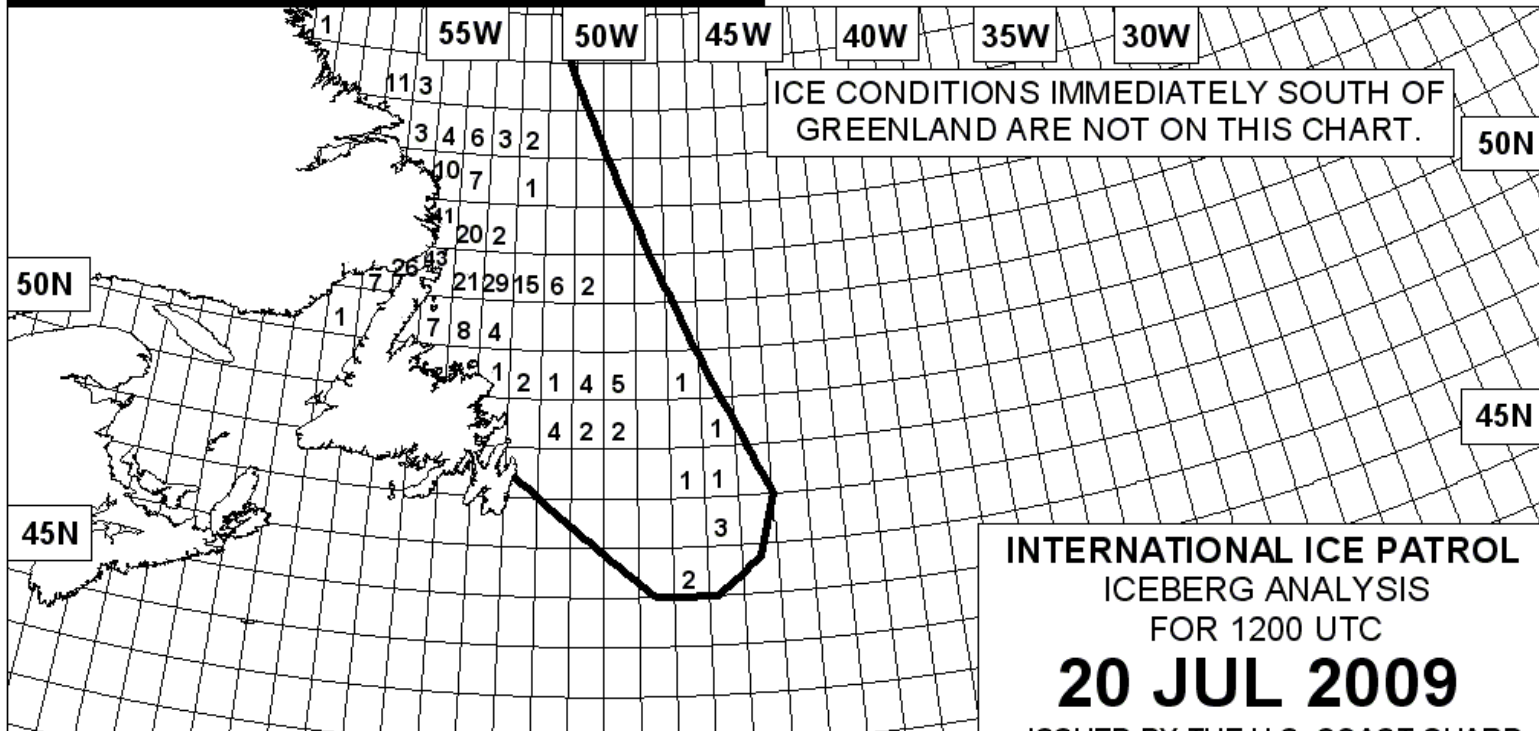
Icebergs South of 48N (1950-2009)





Summary of 2009 Iceberg Season

CQ CQ DE NIK NIK



INTERNATIONAL ICE PATROL
ICEBERG ANALYSIS
FOR 1200 UTC
20 JUL 2009
ISSUED BY THE U.S. COAST GUARD
INTERNATIONAL ICE PATROL

— LIMIT OF ALL KNOWN ICE

- - - SEA ICE LIMIT

#

ICEBERGS (INCLUDING
GROWLERS AND BERGY BITS)
AND RADAR TARGETS
PER DEGREE SQUARE

⊗

RADAR TARGET OUTSIDE LAKE

SM

Also in 2009...

- New Location (New London, CT)
- New Aircraft (HC-130Js)



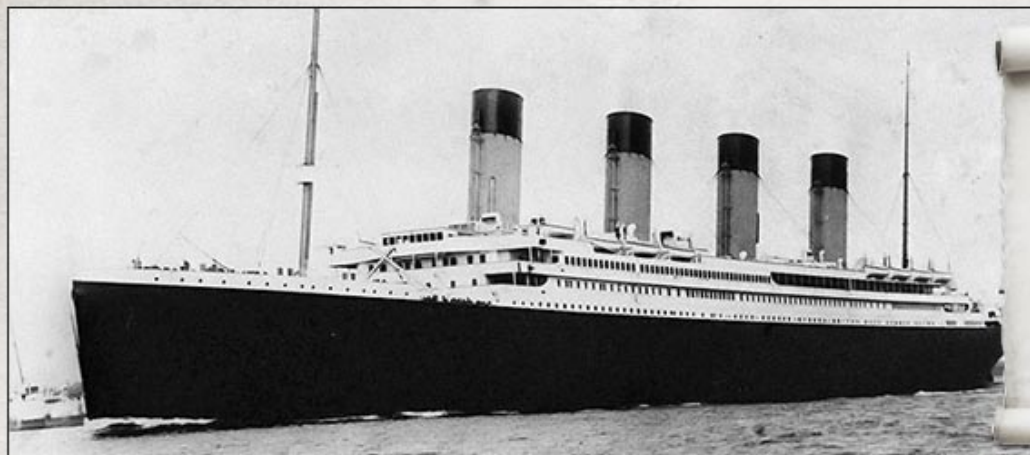
Key Strategic Challenges

- Changing Customer Needs
- Future Aerial Reconnaissance
- Space-Borne Remote Sensing Systems
- Mission Review:
 - Expansion? (NAVAREA IV)
 - Status Quo? (Grand Banks)
 - Elimination? (USCG Resource Constraints)
- BAPS Replacement
- Public Affairs – especially in 2012



Titanic Memorial Cruise

100th Anniversary Voyage to Set Sail 2012



This unique cruise
is being operated by
Miles Morgan
Travel in
association with
Fred. Olsen Cruise
Lines, one of
Britain's leading
cruise companies.

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Reserve your place in history Bookings now being accepted

British travel firm Miles Morgan Travel are now accepting bookings for a unique cruise that will commemorate the Titanic's tragic voyage in April 1912.

Our voyage of a lifetime will sail from Southampton on 8th April 2012 the twelve night cruise on board the MS Balmoral and will follow the RMS Titanic's original itinerary, passing by Cherbourg on the French coast before calling into the Irish port of Cobh.



From here the ship will sail across the Atlantic, arriving at the Titanic site on April 14th/15th exactly 100 years on from this tragic voyage, where a memorial service will be held to pay tribute to the brave passengers and crew who perished on that fateful night.



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Common Production System POLARIS

- Initiation & Approval (September-December 2007)
- Requirements Gathering (January – April 2008)
- Planning (May-August 2008)
- Formally named
- Staff hired, team in place, work has commenced, 25% complete



POLARIS

Why:

- Enables NAIS to share future development costs
- More robust business continuity plan
- More easily upgraded

**Initiation &
Approval**

3 months

**Requirement
Gathering**

4 months

Planning

4 months

Development

1 year

Testing

1 year



**Implementation
December
2010**



NAIS Future Plans

- Common production system: POLARIS
- Iceberg chart harmonization
- Products in ENC/DNC formats
- Data assimilation and model validation and operations
- Arctic METAREA
- NAIS Website improvements
- Coordinated training opportunities
 - See agenda item 2.10.2
- Arctic iceberg database



Implementation Techniques

- Co-Directors have monthly telecom
- Committees co-chairs hold face to face meeting twice per year
 - Operations
 - Science
 - IT
- Seek opportunity for joint project and/or support
- Represent NAIS at various forum



Thank you for your attention.

