

# USCGC Polar Icebreaker Operations



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# Overview

- History
- Current Missions
- Emerging Missions
- Polar Icebreaker Fleet & Status
- Other Arctic Activities



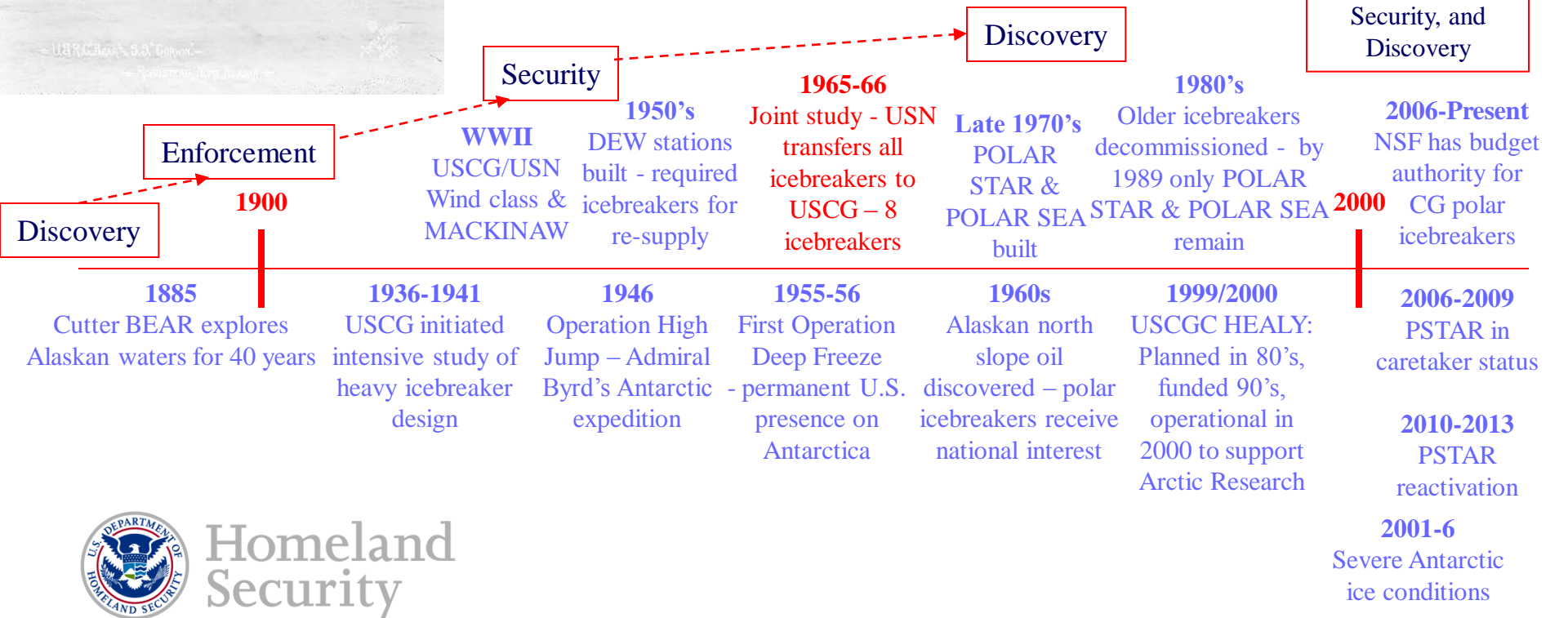
# History



Present Focus

Future Trend

**Multimission:**  
Enforcement,  
Security, and  
Discovery



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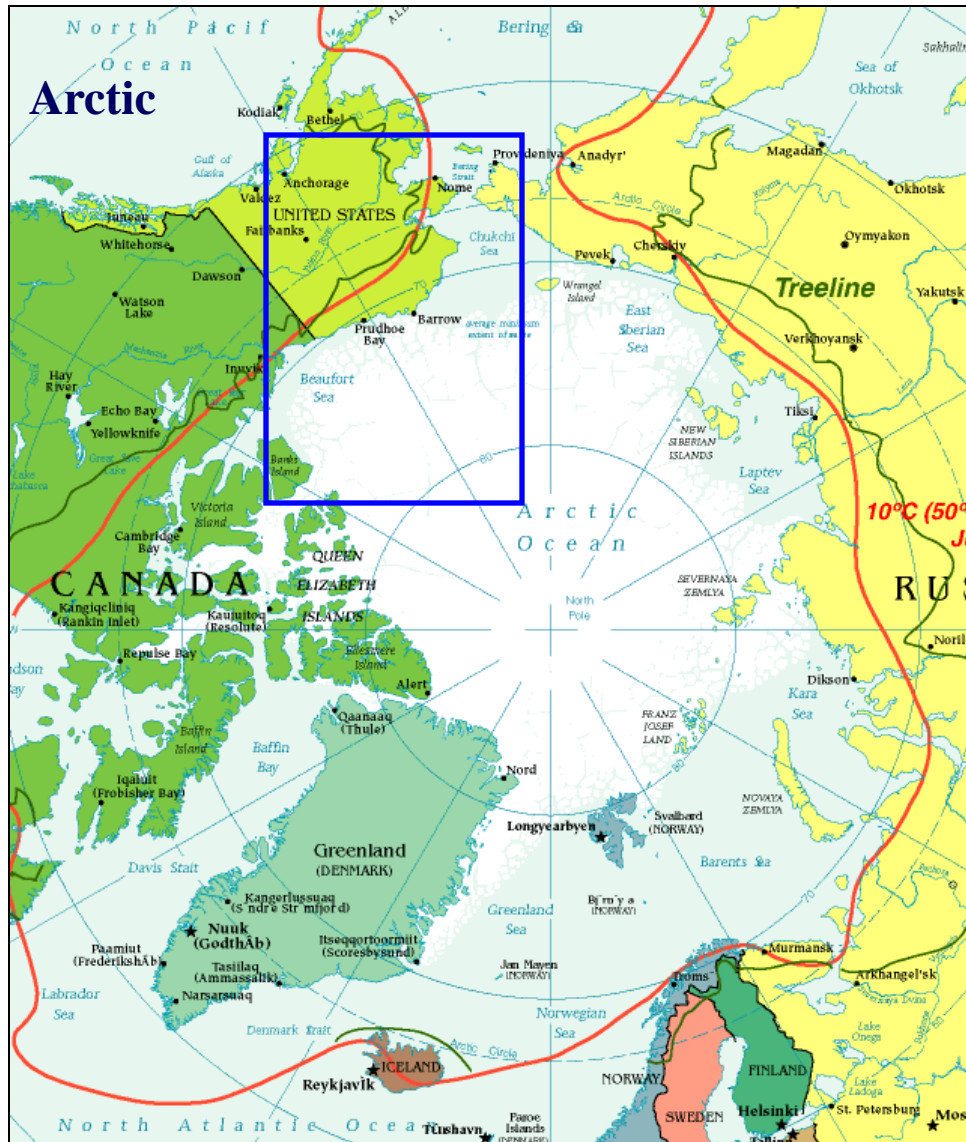
# Current Mission: Budget Authority

- Budget authority for CG Polar Icebreakers rests with NSF; based on 2006 OMB decision to align funding agency with primary mission (science).
- With emerging multimission demand, science less likely to remain as primary icebreaker mission.
- High level discussion between NSF and CG to return the icebreaker budget authority to CG; MOA already signed.



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# Current Mission: Operating Areas



Antarctica



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# Current Mission - Arctic Science Research

## Primarily multi-year, multi-investigator studies:

Bering Ecosystem Study (NSF)

Biogeochemical study (NASA)

Hydrographic and acoustic moorings (ONR)



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# Current Mission: Extended Arctic Continental Shelf Mapping

## Bathymetry

-2003-2004

-2007-2010

## Seismic

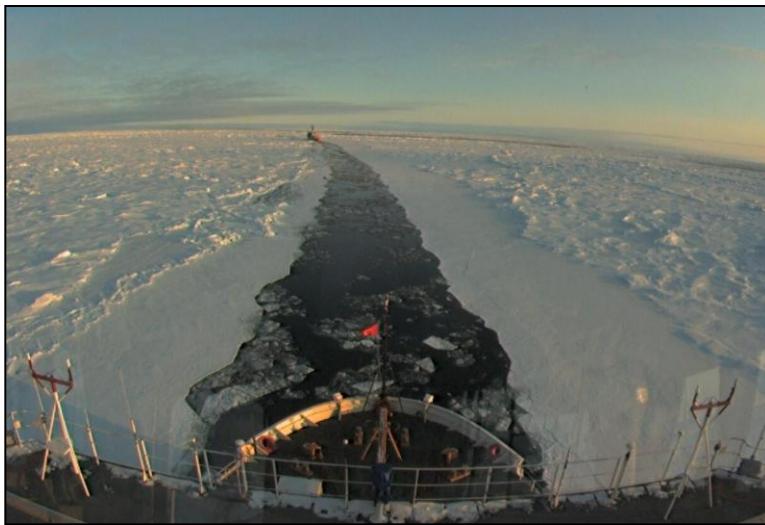
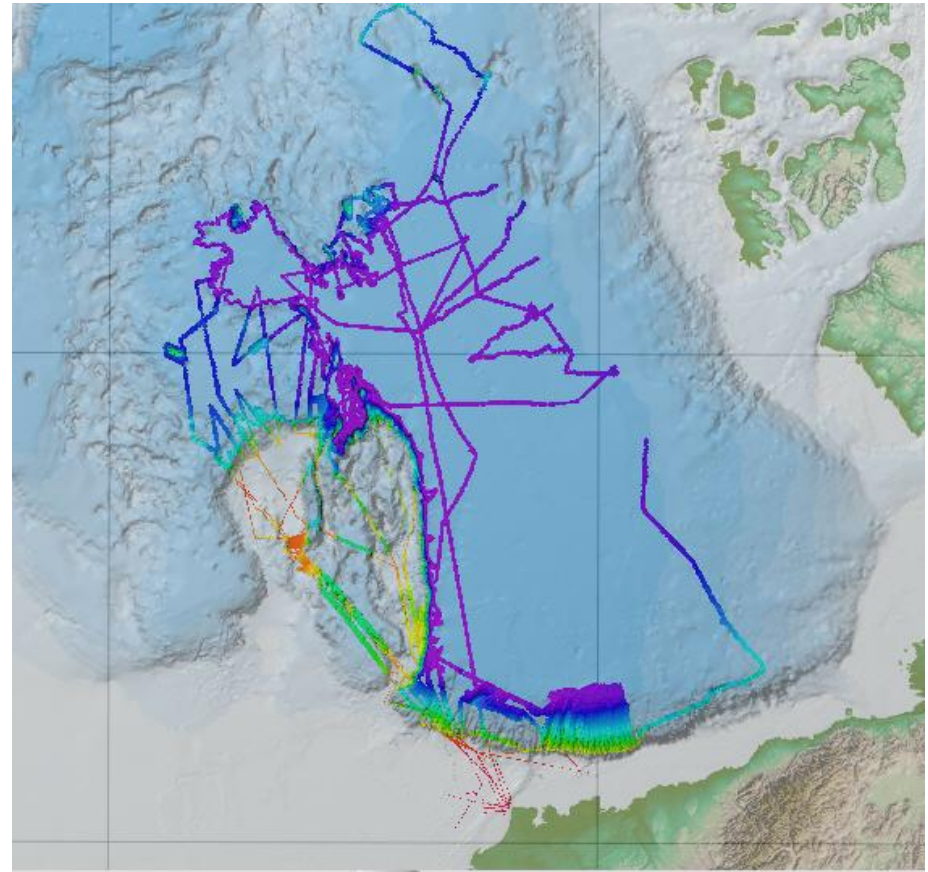
-Joint Canadian Coast Guard mission

-Operations with Canadian

icebreaker *Louis S. St-Laurent*

2008, 2009, 2010

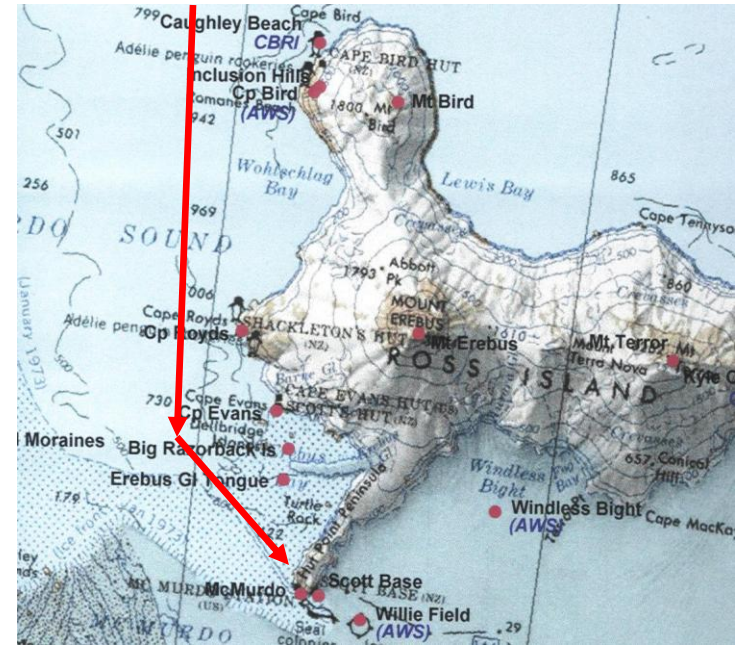
- Single ship ops planned for 2011



# Current Mission - Antarctic Re-supply

## Operation DEEP FREEZE McMurdo Station, Antarctica

- Primary infrastructure and supply point for U.S. Antarctic Program; requires annual sealift re-supply (cargo, fuel)
- Break-in and sealift escort mission conducted by CG from 1955 until 2007
- NSF, concerned with rising CG icebreaker costs and reliability as the assets aged, signed five-year contract with Swedish icebreaker ODEN in 2006
- USCGC POLAR SEA provided back-up icebreaker (on standby in Seattle) for past three years.



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# Current Mission - Arctic Re-supply

## Operation PACER GOOSE Thule Air Base, Greenland

- Part of distant early warning (DEW) network , requires annual sealift re-supply
- 1992 Canada/U.S. reciprocity agreement for icebreaking:
  - Since 1993, Canada provides icebreaker support on behalf of USCG for Thule resupply.
  - Reciprocity possible with CG icebreakers ready to support Canadian interests in the western Arctic.



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# Emerging Missions

- Energy Security: Arctic contains ~25% of energy reserves - U.S. will need a multi-mission surface presence to support oil/gas infrastructure
- U.S. Sovereignty: As polar regions become contested, U.S. needs a national maritime presence to assert polar jurisdictional claims and support the Antarctic Treaty.
- Security:
  - Other countries are increasing polar capabilities
  - Arctic domain awareness
  - Diminishing ice and changing shipping patterns resulting in increased shipping in Arctic
- Traditional CG missions:
  - Enforcement of U.S. laws and treaties
  - Search and rescue
  - Marine pollution response
- Continued Scientific Support

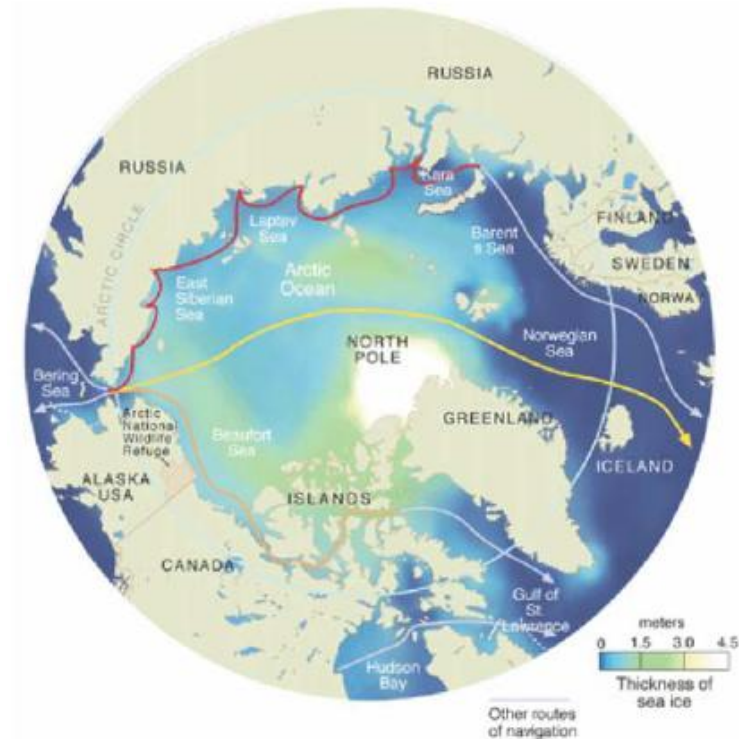


Figure 15: NSR, Northwest Passage, and Hybrid Routes<sup>55</sup>



# Polar Icebreaker Fleet

POLAR STAR, POLAR SEA and HEALY are the only U. S. surface assets capable of supporting U.S. national mission needs and operating in the polar regions year-round.

## POLAR Characteristics:

Heavy Icebreaker

Length: 399' Width: 83.5'

Draft: 28' Displacement: 13.1k LT

Propulsion: Diesel-Electric/Turbine

SHP: 18,000 HP (Diesel)

60,000 HP (Turbine) / 75K (Burst)

Fuel: 1.3M gals

Continuous icebreaking: 6' @ 3kts

Backing & ramming: 21'

Science: up to 35 scientists

## HEALY Characteristics:

Arctic Research Vessel/Medium Icebreaker

Length: 420' Width: 82'

Draft: 29.3' Displacement: 16k LT

Propulsion: Diesel-Electric AC/AC

SHP: 30,000 HP

Fuel: 1.22M gals

Continuous icebreaking: 4.5' @ 3kts

Backing & ramming: 8'

Science: up to 50 scientists



POLAR STAR commissioned 1976  
POLAR SEA commissioned 1978



HEALY commissioned 1999

# HEALY Status

- Underway on Arctic West Summer 2010 deployment (three phases)
- Just completed joint extended continental shelf operations.
- Increased demand for use of HEALY
- NOAA Corps Officer assigned as Marine Science Officer



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# POLAR SEA and STAR Status

## POLAR SEA

- Additional work completed in 2007
- **Projected end-of-service life 2014**
- Remained on standby in Seattle during 2007-09 (Dec-Jan) for Mc Murdo resupply mission
- Conducted 2008 / 2009 deployments to Arctic in support of USCG District 17 missions (including fisheries law enforcement) and training
- Completed spring 2010 Bering Ecosystem Study (BEST) deployment
- Currently in-port undergoing engine repairs

## POLAR STAR

- Caretaker status since 2006 (crew reduced to 34 from 134)
- 2009-2010 appropriation provided \$62.8M to reactivate and extend service life 7-10 years.
- **Expected to return to service in late 2013 for another 7 – 10 years.**



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# Other Arctic Activities

- Forward Operating Locations in Barrow and Kotzebue, AK
- Arctic Crossroads – community outreach and delivery of basic medical and veterinary care to native villages
- Arctic Domain Awareness overflights



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# Questions



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