

State and Outlook of U.S. Icebreaker Fleet



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Ice-Diminishing Arctic on Naval and
Maritime Operations
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Overview

- History
- Current Missions
- Emerging Missions
- Polar Icebreaker Fleet & Status



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History



Present Focus

Future Trend

Multimission:
Enforcement,
Security, and
Discovery

Discovery

Security

Enforcement

Discovery

1900

2000

1885
Cutter BEAR explores Alaskan waters for 40 years

1936-1941
USCG initiated intensive study of heavy icebreaker design

1946
Operation High Jump – Admiral Byrd's Antarctic expedition

1955-56
First Operation Deep Freeze - permanent U.S. presence on Antarctica

1960s
Alaskan north slope oil discovered – polar icebreakers receive national interest

1999/2000
USCGC HEALY: Planned in 80's, funded 90's, operational in 2000 to support Arctic Research

2006-2009
PSTAR in caretaker status

2010-2013
PSTAR reactivation

2001-6
Severe Antarctic ice conditions

WWII
USCG/USN Wind class & MACKINAW

1950's
DEW stations built - required icebreakers for re-supply

1965-66
USN transfers all icebreakers to USCG – 8 icebreakers

Late 1970's
POLAR STAR & POLAR SEA built

1980's
Older icebreakers decommissioned - by 1989 only POLAR STAR & POLAR SEA remain

2006-2011
NSF has budget authority for CG polar icebreakers



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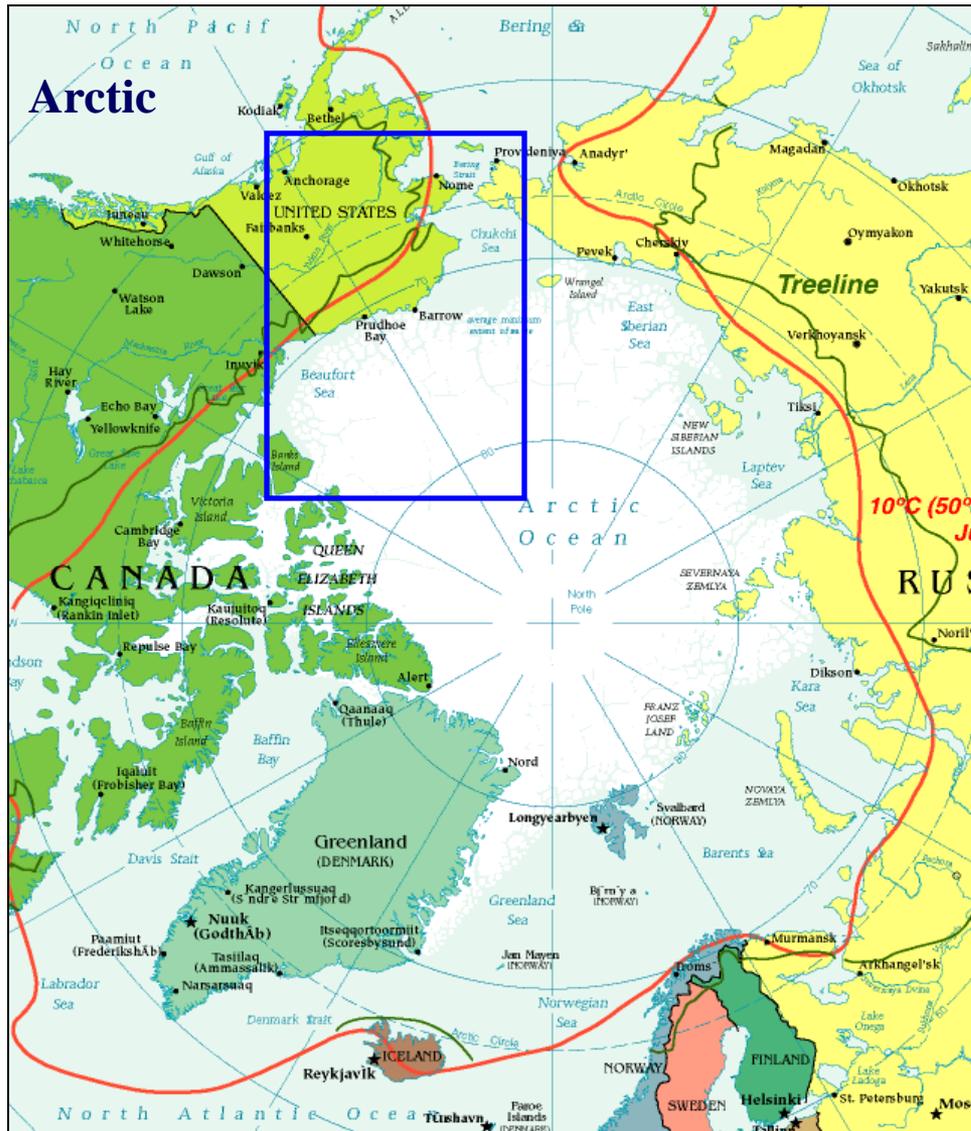
Current Mission: Budget Authority

- Budget authority for CG Polar Icebreakers rests with NSF; based on 2006 OMB decision to align funding agency with primary mission (science).
- High level discussion between NSF and CG to return the icebreaker budget authority to CG; MOA already signed.
- Icebreaker budget authority included with Coast Guard FY12 request.



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Current Mission: Operating Areas



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Current Mission - Arctic Science Research

Primarily multi-year, multi-investigator studies:

Bering Ecosystem Study (NSF)

Biogeochemical study (NASA)

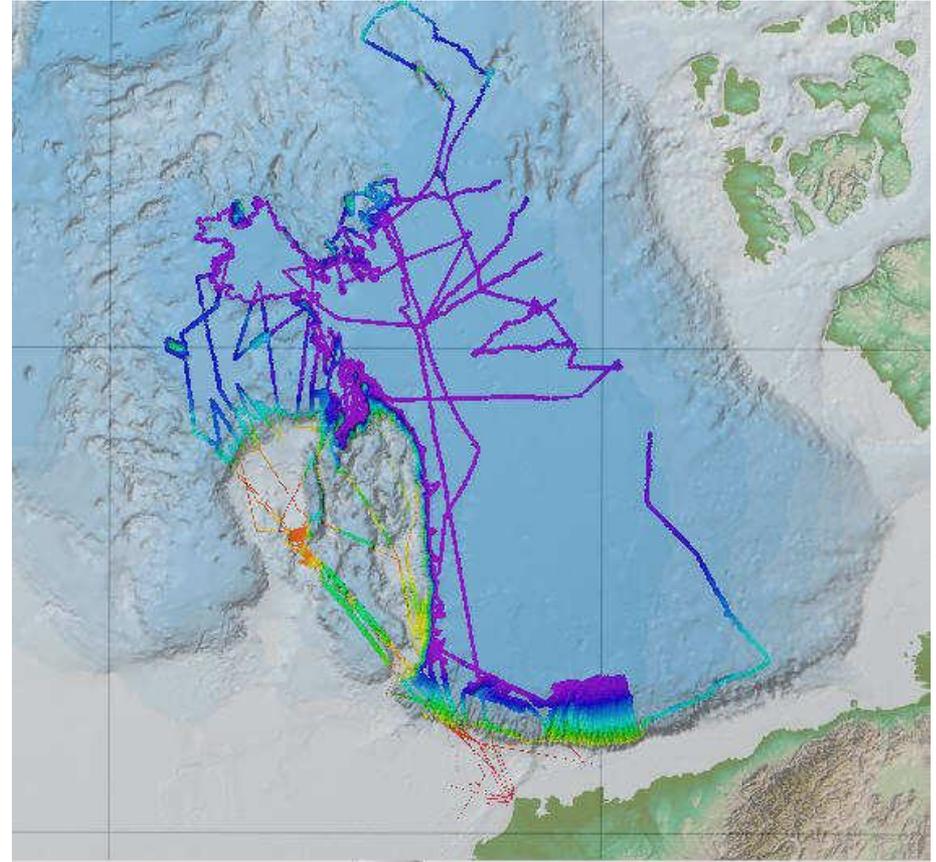
Hydrographic and acoustic moorings (ONR)



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Current Mission: Extended Arctic Continental Shelf Mapping

- Bathymetry
 - 2003-2004
 - 2007-2011
- Seismic
 - Joint Canadian Coast Guard mission
 - Operations with Canadian icebreaker *Louis S. St-Laurent* 2008, 2009, 2010
 - Dual ship ops again 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 for Swedish icebreaker ODEN in 2006
- USCGC POLAR SEA provided back-up icebreaker (on standby in Seattle) for Deep Freeze 2008 through 2010.
- No backup for Deep Freeze likely until USCGC POLAR STAR returns to service



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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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Polar Icebreaker Fleet

POLAR STAR 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;
to be decommissioned 2011



HEALY commissioned 1999

HEALY

- Only operational Arctic icebreaker in U.S. inventory
- Underway on 7-month Arctic summer & autumn science deployment
- Increased demand for use of HEALY forecasted



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POLAR SEA and POLAR STAR

POLAR STAR

- **Expected to return to service in late 2013 for another 7 – 10 years.**
- 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.

POLAR SEA

- **Scheduled for decommissioning in 2011**, with disposal to follow. Crew and funding to be applied to POLAR STAR.
- Remained on standby in Seattle from 2007-10 (Dec-Jan) for McMurdo 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



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Questions?



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