

CRUISE PROSPECTUS FORM

SHIP NAME: USCCG Healy

OPERATING INSTITUTE OR AGENCY: United States Coast Guard

PROJECT TITLE: Variability and Forcing of Fluxes through Nares Stait and Jones Sound: A Freshwater Emphasis

CRUISE DATES (INCLUSIVE): July 21- August 15, 2003

ACTION REQUIRED:

Research Clearance

- Request State Dept. to Initiate
- Request State Dept. Advice
- Being Handled Privately – FYI
- None Required – FYI
- Other (Specify on Reverse)

Port Call Clearance

- Public Vessel – State Dept. Initiate
- Part of Research Clearance – State Dept. Initiate
- Being Handled by USCG – FYI
- Unusual Problem – State Dept. Assistance

CRUISE COORDINATOR (name, affiliation, address, phone, fax, e-mail):

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CHIEF SCIENTIST (name, affiliation, address, phone, fax, e-mail):

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NUMBER OF SCIENTISTS: 35 Corvallis, OR 97331-5503

SHIP DESCRIPTION:

LOA 420' Draft 30' Gross Tons 16,000
 Name of Master Captain Daniel Oliver
 Number of Crew 75
 Radio Call Sign NEPP
 Emergency Frequency Monitored CH 16

FUNDING AGENCY(S): National Science Foundation (NSF)

COOPERATING INSTITUTION(S): See attached sheets

THE OBJECTIVE OF THIS RESEARCH IS TO: See attached sheets

ITINERARY:

Indicate Transit/Port Call/Research & Locations Duration (Inclusive Dates) See attached sheets

ATTACHMENT (Cruise Chart) See attached sheets

USCGC HEALY July 21- August 15, 2003

Cooperating Institutions :

Oregon State University
 University of Delaware
 University of Rhode Island
 Institute of Ocean Sciences, Department of Fisheries & Oceans, Sidney BC
 Canada
 Bedford Institute of Oceanography, Department of Fisheries & Oceans,
 Dartmouth NS Canada
 Atmospheric Environment Service, Downsview, Ontario, Canada
 University of Victoria, Victoria BC Canada

The Objective of this Research is to: quantify the fluxes and variability of seawater and ice through Nares St. and Jones Sound. The specific objectives of this research cruise are to:

- Emplace 26 sub-surface moorings in Kane Basin and Kennedy Channel with instrumentation to examine currents, temperature, conductivity, pressure and ice fluxes; these will be retrieved and redeployed by aircraft from the ice in early spring 2005 and finally retrieved by aircraft in early spring 2007
 - Conduct hydrographic measurements in northern Baffin Bay, Nares Strait and the Lincoln Sea
 - Retrieve 4 long piston cores in about 700 m water depth adjacent to Baffin Island
 - Retrieve approximately 100 bi-valve shells to examine for their chemical records
- Collect single beam and multi-beam bottom mapping information where possible

Itinerary

| Location | LonDec | LatDec | Depth m | Activity | Estimated Start Date/Time (PDT) |
|-----------------|----------|---------|------------|------------------------------|---------------------------------------|
| St. John's | -52.7500 | 47.6250 | | Port Call | 19-Jul 12:00 |
| St. John's | -52.7500 | 47.6250 | | | 21-Jul 06:00 |
| Cape Dyer | -61.1667 | 66.6667 | 62 | Doppler | 25-Jul 17:44 |
| Baffin Bay | -67.2222 | 72.7333 | 2000 | Begin section | 26-Jul 21:13 |
| | -74.4444 | 72.3333 | 2000 | 12 stn Rosette/CTD & Doppler | 28-Jul 20:14 |
| TBD | -74.4444 | 72.3333 | 1500 | Piston cores | 30-Jul 20:14 |
| | -67.2222 | 72.7333 | 2000 | Doppler | 31-Jul 07:15 |
| | -67.2222 | 75.9333 | 2000 | 12 stn Rosette/CTD & Doppler | 02-Aug 11:15 |
| Baffin Bay | -74.0000 | 76.5000 | | Transit | 02-Aug 19:48 |
| Smith Sound | -72.8750 | 78.3333 | 100 | Rosette/CTD & Doppler | 03-Aug 19:00 |
| Kane Basin | -71.1333 | 78.6500 | 20 | Mooring (pressure)+clams | 04-Aug 17:55 |
| Kennedy Channel | -67.5917 | 80.3667 | 200 | Mooring (SBE37) | 07-Aug 02:59 |
| Lincoln Sea | -60.0000 | 84.0000 | 1000 | Rosette/CTD & Doppler | 12-Aug 04:27 |
| Kennedy Channel | -61.0000 | 82.0000 | | Transit | 13-Aug 04:29 |
| Smith Sd | -74.0000 | 78.0000 | | Transit | 15-Aug 02:11 |
| | -71.5000 | 76.6000 | | Transit | 15-Aug 13:27 |
| Thule | -68.7833 | 76.5667 | | Port Call | 15-Aug 17:14 |

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Figure Caption: *Map of proposed science cruise track for July-August 2003 USCGC Healy Nares St. Expedition.* The expedition will begin at St. John's, Newfoundland on 21 July and we expect to arrive at B1 on about 24 July. Lines B1-BW12 and B1-BN12 indicate sections consisting of approximately 12 hydrographic stations each in northern Baffin Bay. The red box encloses the region from which we expect to retrieve 4 long piston cores in Canadian waters. From BN12 to S1 is a transit. Stations S1 to S5 are hydrographic stations. Stations P1-P8 are target sites for shallow water (< 20 m) subsurface pressure moorings. These moorings will be put in place with the aid of a small boat and divers and/or helicopter depending upon the ice conditions. The K's indicate the array of instrumentation that is to be deployed on sub-surface moorings in Kennedy Channel. Exact placement will depend upon ice conditions. Time and conditions permitting, we will conduct hydrographic stations along a section in the Lincoln Sea. The plan is to then return directly to Thule arriving 15 August. We anticipate retrieving and redeploying the moorings from the ice via aircraft in early spring 2005 and conducting a final retrieval in early spring 2007. Important note: Ice and weather conditions in this region are difficult and variable. We expect to adjust the order of the proposed 2003 activities north of Baffin Bay as ice and weather permit. We will carry out ice reconnaissance missions by helicopter to assist us in the planning process.

