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**Nunavummi Qaujisaqtulirijikkut / Nunavut Research Institute**

Box 1720, Iqaluit, NT X0A 0H0 phone:(867) 979-4108 fax: (867) 979-4681 e-mail: slcnri@nunanet.com

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**SCIENTIFIC RESEARCH LICENCE**

LICENCE # 0202103N-A

## ISSUED TO:

Kelly Falkner  
College of Oceanic & Atmospheric Science  
Oregon State University  
104 Ocean Administration Bldg.  
Corvallis,, Oregon  
97331-5503 USA  
541 737-3625

## TEAM MEMBERS:

K.Falkner

## AFFILIATION:

Oregon State University

TITLE: Variability &amp; Forcing of Fluxes through Nares &amp; Strait and Jones Sound.

## OBJECTIVES OF RESEARCH:

Our Science goal is to determine how much seawater and ice flow south through Nares Strait and how that flow varies over a three year period. We will use satellite information, models and ocean observations to do this. Ocean studies will begin from the USCG Icebreaker Healy in late July to mid August, 2003. We will examine water properties, take water samples and place instruments on the seafloor in Baffin Bay, Kane Basin and Kennedy Channel. The instruments will measure currents, sea level, temperature and salt content and are designed and placed to avoid damage from deep iceberg keels. We intend to retrieve and redeploy the equipment using helicopter and Twin Otter in April 2005. We would retrieve the equipment in April 2007. Aircraft based work would be conducted from camps lasting about 6 weeks and made of temporary structures. These camps will be located on the Greenland side of Kennedy Channel. We are also proposing to study past flow conditions in two ways. Clams lay down their shells in distinct annual layers and can live to be 40 years old. We will test the idea that the chemistry of clamshell layers can teach us about how the flow changed over past decades. For this purpose, divers will collect about 100 clams and water samples at about 8 locations distributed along the Canadian and Greenland sides of Nares Strait. To study past flow changes over hundreds and thousands of years, we will collect 4 sediment cores from the seafloor in Northern Baffin Bay. Provided the ship's unique mapping system is working well, we will collect detailed maps of the seafloor over the regions that we travel and make this data available.

TERMS & CONDITIONS: The holder of this licence will be bound by the terms and conditions from the Nunavut Impact Review B Screening Decision Report and per the Department of Culture, Language, Elders and Youth Archeological sites Terms and Conditions. These terms and conditions will form part of this licence.

## DATA COLLECTION IN NU:

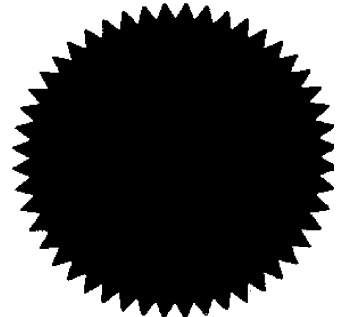
DATES: July 15, 2003-August 30, 2003

LOCATION: Nares Strait

Scientific Research Licence expires on December 31, 2003.

Issued at Iqaluit, NU on April 24, 2003.

  
per Bruce Rigby  
Science Advisor



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**DISTRIBUTION:** Environmental Assessment Screener, NIRB  
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Mayor Grise Fiord  
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Aera Manager DFO  
Chairperson HTO Grise Fiord  
Director NPC

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541 737-2064

**RE: 2003 Science Research License**

Please find enclosed your 2003 Research License No. **02 021 03 N-A** which was prepared under the *NUNAVUT SCIENTISTS ACT*. Should you require further support from the NRI Research Centre, please contact the Manager to discuss your research needs.

Consistent with the *Scientists' Act*, researchers issued licenses must submit to NRI an *Annual Summary Report* of their research. Upon completion of your fieldwork in the Nunavut, please ensure that you submit a 500-1000 word non-technical *Annual Summary* of your research activities and findings within one year from the date of license issue, or with any new project application, which ever is earlier. To ensure maximum accessibility of your research results to Nunavut residents, we require that you provide us with an Inuktitut or Innuinaqtun translation of your *Annual Summary Report*. A list of translators is available from the Nunavut Research Institute upon request. We also require a copy of your *Final Report* and an English and translated executive summary. Copies of papers that you publish are greatly appreciated. Computer disk copies of reports, in Word Perfect or Microsoft Word, would be most appreciated for posting on the NRI web site ([www.nunanet.com/~research](http://www.nunanet.com/~research)).

Thank-you in advance for assisting in the promotion and development of a scientific research community and database within Nunavut. The reports and information you provide are utilized to prepare an annual research compendium, which is distributed to communities and organizations in Nunavut as well as to researchers across Canada.

Please accept our best wishes for success in your research project.

Sincerely,



Mary Ellen Thomas  
Manager, Research Liaison

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NOTIFICATION OF RESEARCH

PLEASE BE ADVISED THAT SCIENCE RESEARCH LICENCE No. 0202103N-A HAS BEEN ISSUED TO:

Kelly Falkner  
College of Oceanic & Atmospheric Science  
Oregon State University  
104 Ocean Administration Bldg.  
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541 737-3625

**TO CONDUCT THE FOLLOWING STUDY:**

Variability & Forcing of Fluxes through Nares & Strait and Jones Sound.

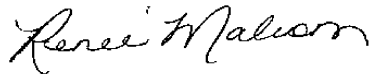
**SUMMARY OF RESEARCH:**

Our Science goal is to determine how much seawater and ice flow south through Nares Strait and how that flow varies over a three year period. We will use satellite information, models and ocean observations to do this. Ocean studies will begin from the USCG Icebreaker Healy in late July to mid August, 2003. We will examine water properties, take water samples and place instruments on the seafloor in Baffin Bay, Kane Basin and Kennedy Channel. The instruments will measure currents, sea level, temperature and salt content and are designed and placed to avoid damage from deep iceberg keels. We intend to retrieve and redeploy the equipment using helicopter and Twin Otter in April 2005. We would retrieve the equipment in April 2007. Aircraft based work would be conducted from camps lasting about 6 weeks and made of temporary structures. These camps will be located on the Greenland side of Kennedy Channel. We are also proposing to study past flow conditions in two ways. Clams lay down their shells in distinct annual layers and can live to be 40 years old. We will test the idea that the chemistry of clamshell layers can teach us about how the flow changed over past decades. For this purpose, divers will collect about 100 clams and water samples at about 8 locations distributed along the Canadian and Greenland sides of Nares Strait. To study past flow changes over hundreds and thousands of years, we will collect 4 sediment cores from the seafloor in Northern Baffin Bay. Provided the ship's unique mapping system is working well, we will collect detailed maps of the seafloor over the regions that we travel and make this data available.

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**THE STUDY WILL BE CONDUCTED AT:**

**BETWEEN:** July 15, 2003 - August 30, 2003.



*per* Mary Ellen Thomas  
Manager, Research Liaison