

## NOTIFICATION OF PROPOSED RESEARCH CRUISE

### PART A: GENERAL

1. NAME OF RESEARCH SHIP CRUISE NO.

"Nordsysssel" 2012 810

2. DATES OF CRUISE From:14/03/2012 To:10/04/ 2012

3. OPERATING AUTHORITY:

Institute of Marine Research, POBox 6404, N-9294 Tromsø, Norway

TELEPHONE: +47 776 09704

TELEFAX :

TELEX:

4. OWNER  
(if different from no. 3)

Nordsysssel AS, PO Box 244, N-8601 Mo I Rana, Norway

5. PARTICULARS OF SHIP:Name:"Nordsysssel"

Nationality: Norwegian

Overalllength:71.6m

Maximum draught:4.50m

Net tonnage: 1753 BRT

Propulsion: Diesel, 2x1560 hp

Call sign: LMBI

Registration portand number  
(if registeredfishingvessel)

6. CREW Name of master: Kjetil Bogstrand or Harald Ballovarre

Number of crew: 7

7. SCIENTIFIC PERSONNEL Name and adress of  
scientist in charge:

Head of Research Group, dr. philos. Tore Haug,  
Institute of Marine Research, POBox 6404, N-9294 Tromsø, Norway  
Tel/telex/fax no.:  
phone +47 776 09722

No. of scientists: 8

8. GEOGRAPHICAL AREA IN WHICH SHIP WILL OPERATE (with reference to latitude and longitude)

Pack ice areas along the eastern coast of Greenland (between 68° and 75°N), and in the northern parts of the Greenland Sea. Depending on the ice configuration in March/April 2012, the operational area along the east coast of Greenland may be situated partly or entirely in the Greenland economic zone. The longitudinal localisation of the pack ice in this area in the mentioned period is impossible to foresee at the present moment.

9. BRIEF DESCRIPTION OF PURPOSE OF CRUISE

The main purpose of the cruise is to obtain data necessary for estimation of the abundance of harp seals, if possible also of hooded seals, of the Greenland Sea stocks. The methodological approach will be to conduct aerial surveys of hooded seal pups in the Greenland Sea pack-ice during the whelping period in 2012. Two fixed-wing twin-engined aircrafts (one stationed in Scoresbysound, Greenland, the second one in Akureyri, Iceland) will be used for reconnaissance flights and photographic surveys along transects over the whelping patches once they have been located and identified. A helicopter, stationed on and operated from the research vessel, will assist in the reconnaissance flights, and subsequently fly visual transect surveys over the whelping patches. The helicopter will also be used for other purposes (staging of pups, monitoring of ice drift). In addition to serve as base for the helicopter surveys, the research vessel will also be used to transport personell into the whelping patches where some ground-truthing of the aerial surveys will be performed.

10. DATES AND NAMES OF INTENDED PORTS OF CALL

The expedition will start and terminate in Tromsø, Norway. No ports will be called during the cruise, but some aircraft fuel will be flown in by helicopter to the island Jan Mayen.. The airport at this island will serve as secondary base for the aircraft.

11. ANY SPECIAL REQUIREMENTS AT PORTS OF CALL

None.

**PART B: DETAIL**

1. NAME OF RESEARCH SHIP "Nordsyssel" CRUISE NO.

2. DATES OF CRUISE From: 14/03/2012; To 10/04 /2012

3. a) PURPOSE OF RESEARCH

The main purpose of the cruise is to obtain data necessary for estimation of the abundance of harp seals, if possible also of hooded seals, of the Greenland Sea stocks. The approach will be to conduct aerial transect surveys (using aircraft and helicopter) of harp and hooded seal pups in the Greenland Sea pack-ice during the whelping period in 2012.

b) GENERAL OPERATIONAL METHODS (including full description of any fish gear, trawl type, mesh size, etc.)

The methodological approach will be to conduct aerial surveys of harp seal pups in the Greenland Sea pack-ice during the whelping period in 2012. Two fixed-wing twin-engined aircraft (one stationed in Scoresbysound, Greenland, the other stationed in Akureyri, Iceland) will be used for reconnaissance flights and photographic surveys along transects over the whelping patches once they have been located and identified. A helicopter, stationed on and operated from the research vessel, will assist in the reconnaissance flights, and subsequently fly visual transect surveys over the whelping patches. The helicopter will also be used for other purposes, such as stageing and tagging of pups and monitoring of ice drift. Ground-truthing of the aerial surveys will be performed by personell from the vessel. The results from the transect surveys will be used to estimate the 2012 pup production for Greenland Sea hooded seals, if possible also of harp seals. The status of the stock will susequently be assessed ny fitting population models to the pup production estimates.

4. ATTACH CHART showing (on an appropriate scale) the geographical area of intended work, positions of intended stations, tracks of survey lines, positions of moored/seabed equipment, areas to be fished

A map is attached. The assumed operational areas is indicated with hatching. Exact positions can not be inserted since they will have to be decided during the cruise, dependining on the actual configuration of the ice.

5. a) TYPES OF SAMPLES REQUIRED (e.g., geological/water/plankton/fish/radionuclide.

Pup densities and area of whelping patch, obtained by flying either photographic or visual transect surveys over the identified patches.

b) METHODS OF OBTAINING SAMPLES (e.g., dredging/coring/drilling/fishing, etc. When using fishing gear, indicate fish stocks being worked, quantity of each species required, and quantity of fish to be retained on board).

Data for stock assessments are collected using photographic equipment (black-and-white camera and digital camera which takes photographs at fixed intervals) in the aircraft and equipment for visual registration and recording (tape recorders and laptops) in the helicopter. GPS navigating devices will be used to ascertain position, and color markers and radio and satellite beacons will be used to identify observed whelping patches.

6. DETAILS OF MOORED EQUIPMENT

Not relevant.

| <u>Dates</u>  |                 |                    |              |                 |                  |
|---------------|-----------------|--------------------|--------------|-----------------|------------------|
| <u>Laying</u> | <u>Recovery</u> | <u>Description</u> | <u>Depth</u> | <u>Latitude</u> | <u>Longitude</u> |

7. ANY HAZARDOUS MATERIALS (chemicals/explosives/gases/radioactives, etc.  
(Use separate sheet if necessary)

- a) Type and trade name Not relevant
- b) Chemical content (and formula) Not relevant
- c) IMO IMDG code (reference and UN no.) Not relevant
- d) Quantity and method of storage on board Not relevant
- e) If explosives give date(s) of detonation Not relevant
- Method of detonation
  - Position of detonation
  - Frequency of detonation
  - Depth of detonation
  - Size of explosive charge in kg.

8. DETAIL AND REFERENCE OF

a) Any relevant previous/future cruises

Similar seal investigations have been performed in the Greenland Sea in 1989-1991, 2002 and 2007 (to survey harp seal pups) and in 1994, 1997, 2005 and 2007 to survey hooded seal pups.

b) Any previously published research data relating to the proposed cruise

- Coltman, D. W. Stenson, G., Hammill, M. O., Haug, T., Davis, C. S., and Fulton, T. L. 2006. Panmictic population structure in the hooded seal (*Cystophora cristata*). *Molecular Ecology* 16: 1639-1648
- Haug, T., Stenson, G.B., Corkeron, P.J. & Nilssen, K.T. 2006. Estimation of harp seal (*Pagophilus groenlandicus*) pup production in the North Atlantic completed: Results from surveys in the Greenland Sea in 2002. *ICES Journal of Marine Science* 63: 95-104.
- ICES 1992. Report of the Joint ICES/NAFO Working Group on Harp and Hooded Seals, Copenhagen, Denmark, 14-18 October 1991. ICES CM 1992 / Assess: 5: 31 pp.
- ICES 1998. Report of the Joint ICES/NAFO Working Group on Harp and Hooded Seals, ICES Headquarters, 28 August-3 September 1997. ICES CM 1998 / Assess: 3: 35 pp.
- ICES 1999. Report of the Joint ICES/NAFO Working Group on Harp and Hooded Seals, Tromsø, Norway, 29 September-2 October 1998. ICES CM 1999 / ACFM: 7: 33 pp.
- ICES 2004. Report of the ICES/NAFO Working Group on Harp and Hooded Seals, Arkhangelsk, Russia, 2-6 September 2003. ICES CM 2004, ACFM: 6. 53 pp.
- ICES 2006. Report of the ICES/NAFO Working Group on Harp and Hooded Seals, St. John's, Newfoundland, Canada, 30 August-3 September 2005. ICES CM 2006, ACFM: 6. 50 pp.
- ICES 2006. Report of the ICES/NAFO Working Group on Harp and Hooded Seals, ICES Headquarters, Copenhagen, Denmark, 12-16 June 2006. ICES CM 2006, ACOM: 32. 28 pp.

- ICES 2008. Report of the ICES/NAFO Working Group on Harp and Hooded Seals, Tromsø, Norway, 27-30 August 2008. ICES CM 2008, ACOM:17. 57 pp.
- ICES 2009. Report of the ICES/NAFO Working Group on Harp and Hooded Seals, ICES Headquarters, Copenhagen, Denmark, 24-27 August 2009. ICES CM 2009, ACOM: 17.47 pp.
- ICES 2011. Report of the ICES/NAFO Working Group on Harp and Hooded Seals, St.Andrews, Scotland, UK, 15-19 August 2011. ICES CM 2011, ACOM: 22. 74 pp.
- Øigård, T.A., Haug, T., Nilssen, K.T. and Salberg, A.B. 2010. Estimation of pup production of harp and hooded seals in the Greenland Sea in 2007: Reducing uncertainty using generalized additive models. J. Northw. Atl. Fish. Sci. 42: 103-123.
- Øritsland, T. and Øien, N. 1995. Aerial surveys of harp and hooded seal pups in the Greenland Sea pack ice. Pp 77-87 in Blix, A.S., Walløe, L. and Ulltang, Ø. (eds). Whales, seals, fish and man. Elsevier Science B.V.
- Salberg, A.-B., Haug, T. & Nilssen, K.T. 2008. Estimation of hooded seal (*Cystophora cristata*) pup production in the Greenland Sea pack ice during the 2005 whelping season. Polar Biol. 31: 867-878.
- Salberg, A.-B., Øigård, T.A., Stenson, G.B., Haug, T. & Nilssen, K.T. 2009. Estimation of seal pup production from aerial surveys using Generalized Additive Models. Can. J. Fish. Aquatic Sci. 66: 847-858.

9. NAMED AND ADDRESSES OF SCIENTISTS OF THE COASTAL STATE(S) IN WHOSE WATERS THE PROPOSED CRUISE TAKES PLACE WITH WHOM PREVIOUS CONTACT HAS BEEN MADE

Gisli Vikingsson, Marine research Institute, PO Box 1390, IS 121 Reykjavik, Iceland.

10. STATE

a) Whether visits to the ship in port by scientists of the coastal state concerned will be acceptable (Yes/No)

Yes, but calls in port are not intended during the survey period.

b) Participation of an observer from the coastal state for any part of the cruise together with the dates and the ports for embarkation and disembarkation

The contact scientist from Greenland (Aqqalu Rosing-Asvid) may participate, no other participation planned.

c) When research data from the intended cruise is likely to be made available to the coastal state and by what means

All results are intended for scientific publication and will be made generally available in relevant fora (ICES, NAMMCO) within approximately 3 years. Preliminary results may be made available upon request.

**PART C. SCIENTIFIC EQUIPMENT**

Complete the following table using a separate page for

Coastal state Iceland

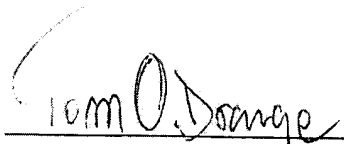
each coastal state

Port call None.

Dates

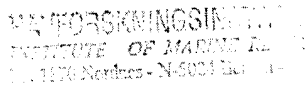
Indicate "YES or "NO"

| List scientific<br>Work by function                                                                                                                                              | Water<br>column<br>including<br>sediment<br>sampling<br>of the<br>seabed | Fisheries<br>research<br>within<br>fishing<br>limits | Research<br>concerning<br>the natural<br>resources<br>of the<br>continental<br>shelf or its<br>physical<br>characteris-<br>tics | DISTANCE FROM COAST |                    |                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|----------------------|
|                                                                                                                                                                                  |                                                                          |                                                      |                                                                                                                                 | Within<br>4 nm      | Between<br>4-12 nm | Between<br>12-200 nm |
| e.g.<br>Magnetometry<br>Gravity<br>Diving<br>Seismics<br>Seabed sampling<br>Bathymetry<br>Trawling<br>Echo sounding<br>Water sampling<br>U/W TV<br>Moored instr.<br>Towed instr. |                                                                          |                                                      |                                                                                                                                 |                     |                    |                      |
| Sealing                                                                                                                                                                          | No                                                                       | No                                                   | No                                                                                                                              | No                  | No                 | Yes                  |
| Aerial surveys                                                                                                                                                                   | No                                                                       | No                                                   | No                                                                                                                              | No                  | No                 | Yes                  |
|                                                                                                                                                                                  |                                                                          |                                                      |                                                                                                                                 |                     |                    |                      |



Operasjonsoffiser- Tom Ole Drange

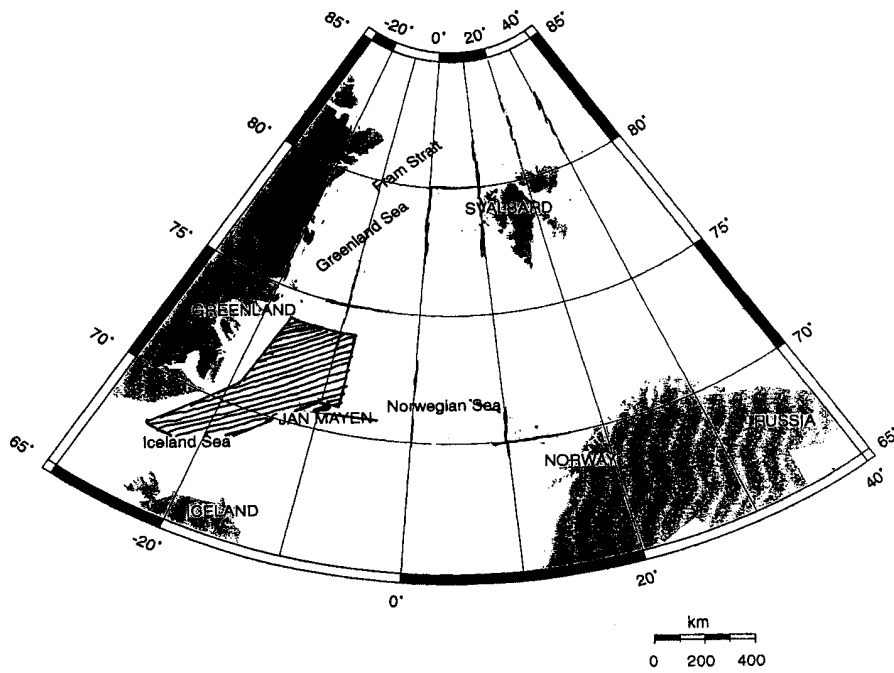
(On behalf of Principal Scientist)


  
 NORSK FORSKUNGSINSTITUTT  
 INSTITUTE OF MARINE RESEARCH  
 11170 Nordnes - N-5024 Oslo - 11

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(On behalf of the Principal Scientist)

Dated 20 December 2011 .

NB. IF ANY DETAILS ARE MATERIALLY CHANGED REGARDING DATES/AREA OF OPERATION AFTER THIS FORM HAS BEEN SUBMITTED, THE COASTAL STATE AUTHORITIES MUST BE NOTIFIED IMMEDIATELY.



The assumed operational area (hatched) for the "Nordsysse!" research cruise in the Greenland Seas during the period 14 March – 10 April 2012. Since all activities will be allocated to the seal whelping patches in the pack ice, a more precise cruise track cannot be given in advance. It will be decided by the actual ice configuration in the period of investigation.