

NATURAL ENVIRONMENT RESEARCH COUNCIL

APPLICATION FOR CONSENT TO CONDUCT MARINE SCIENTIFIC
RESEARCH IN AREAS UNDER NATIONAL JURISDICTION OF ICELAND

Date: 01 March 2006

1. General information

1.1 Cruise name and/or number: RRS DISCOVERY D311

1.2 Sponsoring institution:

Name: Institut für Meereskunde,
Zentrum für Meeres- und Klimaforschung
University of Hamburg
Address: Bundesstr. 53,
D-20146 Hamburg
Germany
Name of director: Prof. Dr. Detlef Stammer

1.3 Scientist in charge of the project:

Name: Prof. Dr. Detlef Quadfasel
Address: Bundesstr. 53
D-20146 Hamburg
Germany
Telephone: 0049 40 42838 5756
Telefax: 0049 40 42838 7477
e-mail: quadfasel@ifm.zmaw.de

1.4 Scientist from Iceland informed of the planning of the project

Name: Dr. Hédinn Valdimarsson
Marine Research Institute
Address: Skulagata 4
121 Reykjavik
Iceland
Telephone: 00354 552 0240
Telefax: 00354 562 3790
e-mail: hv@havro.is

1.5 Submitting officer:

Name: AR Louch, NERC Research Ship Unit, Southampton
Oceanography Centre, European Way, Empress Dock,
Southampton, SO14 3ZH
Telephone: 02380 596800
Telex: 47121 Telefax: 02380 635130

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2. Description of project

2.1 Nature of objectives of the project:

The work carried out during the cruise includes mooring recoveries and deployments on the east Greenland Shelf, over the continental slope of the Irminger Basin and in Denmark Strait. Hydrographic data will be collected in the Irminger Basin and on the Iceland Plateau (Iceland Sea). Cold water corals will be collected using a Remotely Operated Vehicle (ROV) on the Iceland Plateau and in Denmark Strait. The study is part of the international Arctic-Subarctic Ocean Flux Programme (ASOF) which is sponsored by the respective German, British and Belgium national funding agencies.

2.2 Relevant previous or future research cruises:

RRS Charles Darwin cruise 163/164 September 2004
RV Árni Friðriksson August 2005

2.3 Previously published research data relating to the project:

Hansen, B., S. Østerhus, D. Quadfasel, W. Turrell (2004) Already the Day After Tomorrow? SCIENCE, 305, 953-954.
Høyer, J.L., and D. Quadfasel (2001) Detection of cold overflows from altimeter satellites. Geophys. Res. Let., 28, 1611-1614.
Käse, R.H., J. B. Girton and T. B. Sanford, 2003: Structure and variability of the Denmark Strait Overflow: Model and observations J. GEOPHYS. RES., 108, 3181, doi:10.1029/2002JC001548, 2003
Rudels, B., D. Quadfasel, and H.J. Friedrich (1999) The Arctic circumpolar boundary current. Deep-Sea Res. II, 46, 1023-1062.

3. Methods and means to be used

3.1 Particulars of vessel

| | | | |
|---|-----------------|----------------|------|
| Name: | RRS Discovery | | |
| Nationality: | British | | |
| Owner: | NERC | | |
| Operator: | RSU | | |
| Overall Length: | 90.25 metres | | |
| Maximum draught: | 5.3 metres | | |
| Net tonnage: | 902 | Gross tonnage: | 3008 |
| Propulsion: | Diesel Electric | | |
| Cruising Speed: | 11 knots | Maximum speed: | N/A |
| Call sign: | GLNE | | |
| Method of capability of communication (including telex, frequencies): | | | |
| Inmarsat Voice: 323388210 Fax: 23388212 Telex: 323388314 | | | |

Name of Master: TBA
Number of Crew: 22
Number of Scientists on board: 28

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3.2 Aircraft or other craft to be used in the project:

Remotely Operated Vehicle (ROV) for collection of water samples, deep sea corals and mooring recovery. The ROV is attached to the vessel by a support cable.

3.3 Particulars of methods and scientific instruments

| Types of samples and data | Methods to be used | Instruments to be used |
|----------------------------------|---------------------------|-------------------------------|
| Hydrographic profiles | CTD probe | CTD |
| Current profiles | Doppler current profiling | ADCP |
| Water samples | Bottle sampling | Rosette sampler & ROV |
| Turbulence profiles | CTD-V probe | CTD-V |
| Current time series | Moorings | Current meters |
| Hydrographic time series | Moorings | T/S Recorders |
| Coral samples | Rock collection | ROV |

3.4 Indicate whether harmful substances will be used:

none

3.5 Indicate whether drilling will be carried out:

none

3.6 Indicate whether explosives will be used:

none

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4. Installations and equipment

Mooring recoveries:

| Name | Lat N | Lon W | Water depth |
|----------------|----------|----------|-------------|
| G2-05 | 63 07.19 | 35 32.50 | 2545 |
| UK2-05 | 63 16.94 | 35 52.24 | 2320 |
| G1-05 | 63 21.99 | 36 04.20 | 2165 |
| UK1-05 | 63 29.07 | 36 18.10 | 1954 |
| F12-05 | 63 35.48 | 36 38.90 | 1687 |
| Aqualab-05 | 63 26.99 | 36 21.54 | 2025 |
| TUBE-21 | 63 00.25 | 40 32.75 | 295 |
| TUBE-24** | 63 04.00 | 40 45.00 | 295 |
| TUBE-25** | 63 08.00 | 40 57.00 | 295 |
| ADCP 21 | 63 01.12 | 40 31.49 | 219 |
| Hornbanki ADCP | 67 10.09 | 21 35.55 | ~200 |
| V423-03 ADCP | 66 11.42 | 27 35.19 | 497 |
| V421-02 PIES | 66 13.95 | 27 46.29 | 477 |
| V425-04 ADCP | 66 07.25 | 27 16.20 | 580 |

** will be deployed in June 2006 by RV MERIAN

Mooring deployments:

| Name | Lat N | Lon W | Water depth |
|--------------|----------|----------|-------------|
| TUBE-28 | 63 00.00 | 40 33.00 | 300 |
| TUBE-29 | 63 04.00 | 40 45.00 | 300 |
| ADCP 28 | 63 02.00 | 40 39.00 | 220 |
| G2-05 | 63 07.20 | 35 32.60 | 2545 |
| UK2-05 | 63 16.90 | 35 52.00 | 2360 |
| G1-05 | 63 22.10 | 36 04.30 | 2200 |
| UK1-05 | 63 29.00 | 36 18.00 | 2000 |
| F12-05 | 63 35.50 | 36 39.00 | 1687 |
| V425-04 ADCP | 66 07.25 | 27 16.20 | 580 |

All moorings will be recovered in Summer/Fall 2005.

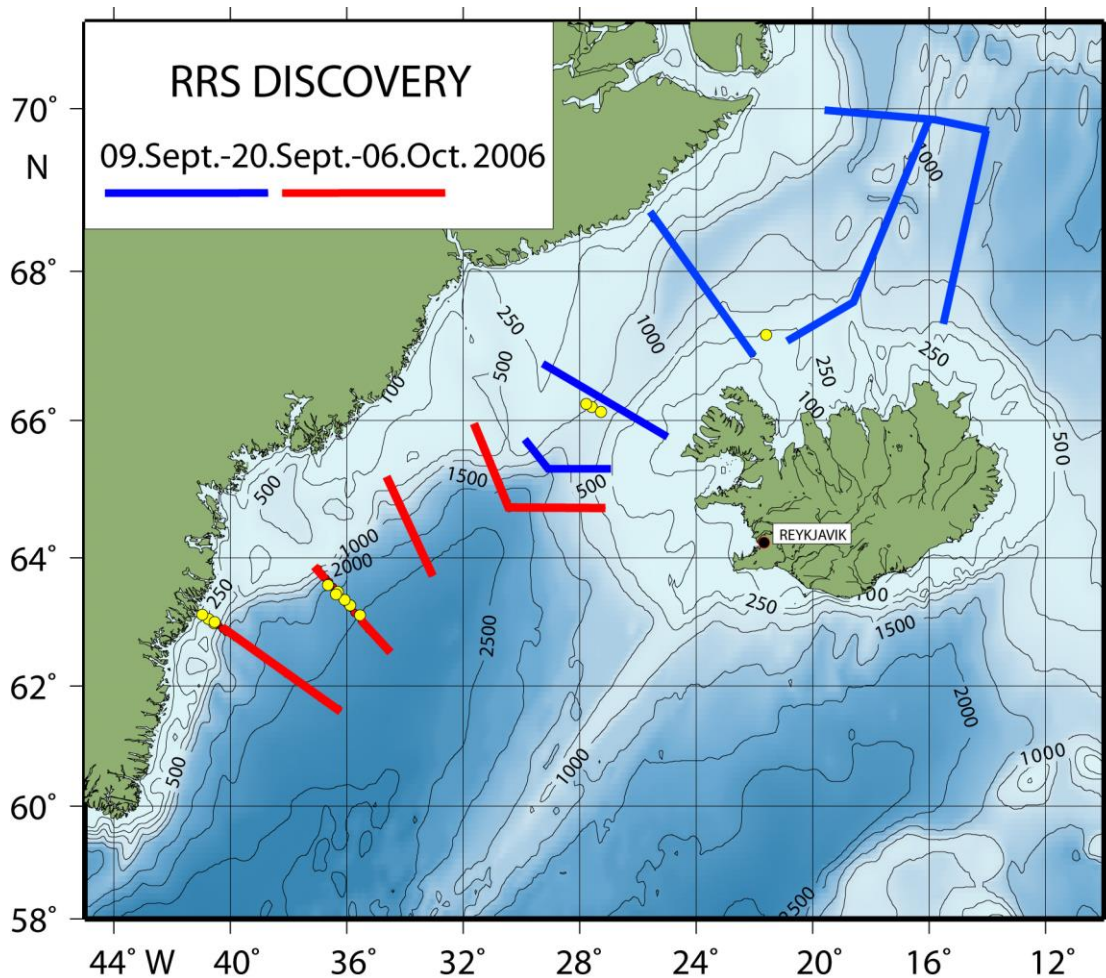
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5. Geographical areas

5.1 Indicate geographical areas in which the project is to be conducted (with reference in latitude and longitude):

60° N – 71° N. 12° W – 44° W

5.2 Chart showing the geographical areas of the intended work, the tracks of survey lines (red and blue), and the locations of moorings (yellow dots).



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6. Dates

6.1 Expected dates of first entry into and final departure from research area of the research vessel:

Expected first entry: 05 September 2006
Expected final departure 07 October 2006

6.2 Indicate if multiple entry is expected: Yes

The vessel will operate in Icelandic, Greenland, Norwegian and international waters and multiple entries in the respective regions are to be expected.

7. Port calls

7.1 Dates and names of intended ports of call

- Reykjavik, Iceland 05 - 08 September 2006
- Reykjavik, Iceland 06 - 11 October 2006

7.2 Any special logistical requirements at ports of call:

None

7.2 Name/Address/Telephone of shipping agent

Nesskip H.F
Nesskip's House
Austurstrond 1
172 Seltjarnarnes
REYKJAVIK PC101, Iceland
Tel: (00 354) 5639900
Fax: (00 354) 5639919
Email:operations@nesskip.is

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8. Participation

8.1 Extent to which Iceland will be enabled to participate or to be represented in the research project:

One berth for an observer from each coastal state is offered in accordance with UNCLOS Art 249 (1a).

8.2 Proposed dates and ports for embarkation/disembarkation:

| | | |
|-------------------------------------|---|-------------------|
| Embarkation: | Reykjavik, Iceland | 07 September 2006 |
| Disembarkation: | Reykjavik, Iceland | 06 October 2006 |
| Additional port call/boat transfer: | 24 hours between 19 - 22 September 2006 in Reykjavik, Iceland | |

9. Access to data, samples and research results

9.1 Expected dates of submission to Iceland of preliminary reports which should include the expected dates of submission of the final results:

Six months after completion of Cruise

9.2 Proposed means for access by Iceland to data and samples:

Through the ICES headquarters in Copenhagen or through direct contact with the chief scientist.

9.3 Proposed means to provide Iceland with assessment of data, samples and research results or provide assistance in their assessment or interpretation:

Through direct contact with the chief scientist.

9.4 Proposed means of making research results internationally available:

Through publication in international peer reviewed journals.

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10. COMPLETE THE FOLLOWING TABLE - SEPARATE PAGE FOR EACH COASTAL STATE:

COASTAL STATE: Iceland

PORT CALL: Reykjavik (three port calls)

DATES: 05 – 08 September 2006
 06 - 11 October 2006
 24 hours between 19 - 22 September 2006 in Reykjavik, Iceland

SCIENTIFIC EQUIPMENT

INDICATE "YES" OR "NO"

| List Scientific Work by Function e.g.: Magnetometry Gravity, Diving, Seismic, Bathymetry, Seabed Sampling, Trawling, Echo Sounding, Water Sampling U/W T.V.: Moored and Towed instrument | Water Column Incl. Sediment Sampling on the Seabed | Fisheries Research within Fishing Limits | Research Concerning the Natural Resources of the Continental Shelf or its Physical Characteristics | Distance from Coast | |
|---|--|--|--|----------------------|-------------|
| | | | | Between Within 12 NM | 12 - 200 NM |
| Echo sounding | | No | Yes | Yes | Yes |
| Hydrography | Water column | No | Yes | Yes | Yes |
| Current profiling | Water column | No | Yes | Yes | Yes |
| Water sampling | Water column | No | Yes | Yes | Yes |
| Moorings | Water column | No | Yes | Yes | Yes |
| Sampling ROV | Water column | No | Yes | Yes | Yes |
| Sampling ROV | Coral sampling | No | Yes | Yes | Yes |

.....(On behalf of the Principal Scientist)