# NATURAL ENVIRONMENT RESEARCH COUNCIL

## APPLICATION FOR CONSENT TO CONDUCT MARINE SCIENTIFIC RESEARCH

**Date**: 19th November 2008

| SHIP NAME | CRUISE NUMBER | DATES OF CRUISE | Country applied for | PORT CALLS | DATES |
|---|---|---|---|---|---|
| RRS Discovery | D340 | 11 June to 3 July 2009 | Iceland | Reykjavik | 7>11th June 2009 |

**COASTAL STATE**: ICELAND **PORT CALL**: Reykjavik **DATES**: 7>11th June 2009

| 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 ** UP TO COAST ** | 12 - 200 NM |
|---|---|---|---|---|---|
| Bathymetry, & Acoustics, Echo sounding, CTD & water sampling for bio-geochemistry and biological samples, underway water sampling & profiling. Microstructure measurements. Vertical plankton nets. Atmospheric measurements | Yes | No | Yes | Yes | Yes |

### 1. *General information*

**1.1 Cruise name and/or number:** RRS DISCOVERY/D340

**1.2 Sponsoring institution:**

Name: Scottish Association for Marine Science
Address: Dunstaffnage, Oban, Argyll, PA37 1QA
Name of director: Professor Laurence Mee

**1.3 Scientist in charge of the project:**

Name: Dr Toby Sherwin
Address: SAMS, Dunstaffnage, Oban, Argyll, PA37 1QA
Telephone: 01631 559000
Telefax: 01631 559002
email: toby.sherwin@sams.ac.uk

**1.4 Scientist(s) from** Iceland **informed of the planning of the project.**

**1.5 Submitting officer:**

Name: R. Plumley, NERC NMF SS, National 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* (Attach additional pages as necessary)

### 2.1 Nature of objectives of the project:

On behalf of UK NERC we will undertake routine sampling of the physical properties (temperature, salinity, current velocity) of the waters of the northern North Atlantic as part of a sustained monitoring programme (the Ellett Line) designed to determine long term changes in the state of the ocean. These observations will be made from the sea surface to the seabed. They have been used in the past by scientists from a number of different countries to determine and explain changes in the North Atlantic Thermohaline Circulation. In addition we will undertake biogeochemical analyses of these waters as part of particular research programmes designed to understand the processes that determine levels of biological productivity in the region. We will also provide training for student scientists.

This section will run from the Icelandic coast at 63.292° N, 20° W (depth 125 m) south through the Icelandic Basin to 60° N, 20° W and then south-east towards 57° 40' N, 13° 54' W on Rockall.

More information about the Ellett Line can be found at:
http://www.sams.ac.uk/research/strategic-core-programmes/oceans-2025/themes#Theme_10

### 2.2 Relevant previous or future research cruises:

RRS Charles Darwin CD176 Oct 2005
RRS Discovery D312 Sep/Oct 2006
RRS Discovery D321b Aug/Sep 2007

### 2.3 Previously published research data relating to the project:

All cruise data is routinely banked with the British Oceanographic Data Centre, Liverpool, UK (www.bodc.ac.uk).

## 3. *Methods and means to be used*

### 3.1 Particulars of vessel

**Name:** RRS Discovery
**Nationality:** British
**Owner:** NERC
**Operator:** NMF SS
**Overall Length:** 90.25 metres
**Maximum draught:** 5.446 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:** 323388214
**Name of Master:** TBA
**Number of Crew:** 22
**Number of Scientists on board:** 28

### 3.2 Aircraft or other craft to be used in the project: None

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**3.3 Particulars of methods and scientific instruments**

| Types of samples and data | Methods to be used | Instruments to be used |
|---|---|---|
| Water Properties including temperature, salinity, velocity, oxygen & fluorescence | CTD profiling package | SeaBird CTD and water rosette system, RDI LADCP system |
| Underway sampling | Acoustic, Atmospheric & sea surface water sampling | ADCP, echo sounders, thermosalinograph |
| Biological Sampling | Shallow vertical netting | Fine plankton net |
| Microstructure measurements | Underway profiling | MSS90 Microstructure Probe |

**3.4 Indicate whether harmful substances will be used:**

Small quantities of laboratory agents will be used within the laboratories aboard the ship. All waste products will be disposed of on return to the UK.

**3.5 Indicate whether drilling will be carried out:** **None**

**3.6 Indicate whether explosives will be used:** **None**

## *4. Installations and equipment*

**Details of installations and equipment (dates of laying, servicing, recovery; exact locations and depth):**

None

## *5. Geographical areas*

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

NE Atlantic - 64° N, 21° W to 56° N, 5° W

**5.2 Attach chart (s) at an appropriate scale showing the geographical areas of the intended work and, as far as practicable, the positions of intended stations, the tracks of survey lines, and the locations of installations and equipment**

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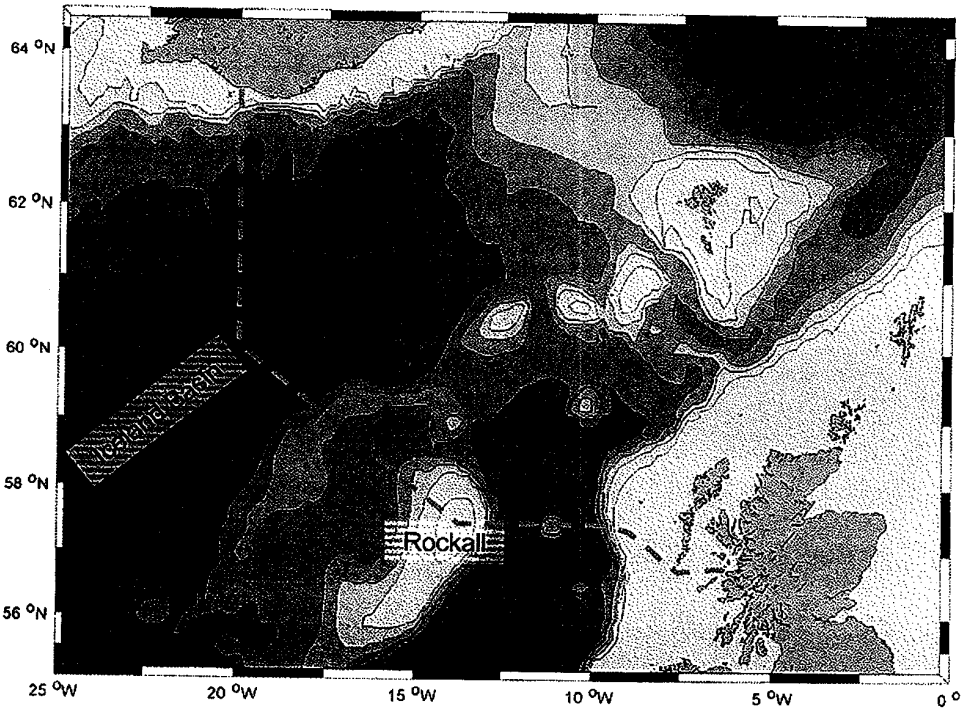


Area of the northern North Atlantic showing the line of the CTD section.

### 6. *Dates*

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

Expected first entry 11th June 2009
Expected final departure 3rd July 2009

**6.2 Indicate if multiple entry is expected:** Yes

### 7. *Port calls*

**7.1 Dates and names of intended ports of call in** Iceland

7th>11th June 2009, Reykjavik.

**7.2 Any special logistical requirements at ports of call:** None

**7.3 Name/Address/Telephone of shipping agent (if available):**

### 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:**

Embark: 11th June 2009 Reykjavik, Iceland.
Disembark: 3rd July 2009 Clyde, UK.

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## 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:**

Online Database c/o BODC & CD's

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

Reports/CDs/meetings

**9.4 Proposed means of making research results internationally available:**

International Peer reviewed journals

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

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