

NATURAL ENVIRONMENTAL RESEARCH COUNCIL

Application for Consent to conduct Marine Scientific Research **NORWAY**

Date: 1st July 2011

1. General Information

1.1 Cruise name and/or number:
RSVP1

1.2 Sponsoring Institution(s):	
Name:	National Oceanography Centre
Address:	European Way, Southampton, S014 3ZH
Name of Director:	Prof E.Hill

1.3 Scientist in charge of the Project:	
Name:	Dr Stephanie Henson
Country:	UK
Affiliation:	National Oceanography Centre
Address:	European Way, Southampton, S014 3ZH
Telephone:	023 80596643
Fax:	023 80596247
Email:	shen@noc.ac.uk
Website (for CV and photo):	http://www.noc.soton.ac.uk/obe/henson

1.4 Entity(ies)/Participant(s) from coastal State involved in the planning of the project:	
Name:	Prof Richard Bellerby
Affiliation:	Bjerknes Center for Climate Research
Address:	Allegaten 55 5007, Bergen, Norway
Telephone:	+47 55582565
Fax:	+47 55584330
Email:	richard.bellerby@uni.no
Website (for CV and photo):	http://www.bjerknes.uib.no/pages.asp?pid=21&kat=5&lang=1

2. Description of Project

2.1 Nature and objectives of the project:
<p>The glider will travel from Shetland, UK to 64N 0W in the Norwegian Sea. At this location it will perform regular 'bow-tie' paths, centred on this location and of 30km diameter, collecting data over the upper 1000m of the water as it does so. At the end of the mission the glider will make its way back to Shetland, UK. The mission will last 6 months.</p> <p>The purpose of the mission is to collect data on the physical and biological structure of surface waters during the winter-spring period. More specifically, the glider will collect vertical profiles of light (Photosynthetically Active Radiation), phytoplankton abundance (using fluorescence as a proxy) and hydrographic variables (conductivity, temperature, oxygen) to allow us to investigate what triggers the spring bloom; an annual population explosion of these microscopic marine plants of great importance to the marine ecosystem.</p>

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2.2 If designated as part of a larger scale project, then provide the name of the project and the Organisation responsible for coordinating the project:

The glider will be deployed as part of the RSVP project which will be co-ordinated from NOC

2.3 Relevant previous or future research projects:

For part of the time that the glider will be mapping the Norwegian Sea study site, the German Vessel FS Meteor will also be in the vicinity as part of the EU-funded EuroBASIN programme (<http://www.euro-basin.eu/>).

2.4 Previous publications relating to the project:

None

3. Geographical Areas

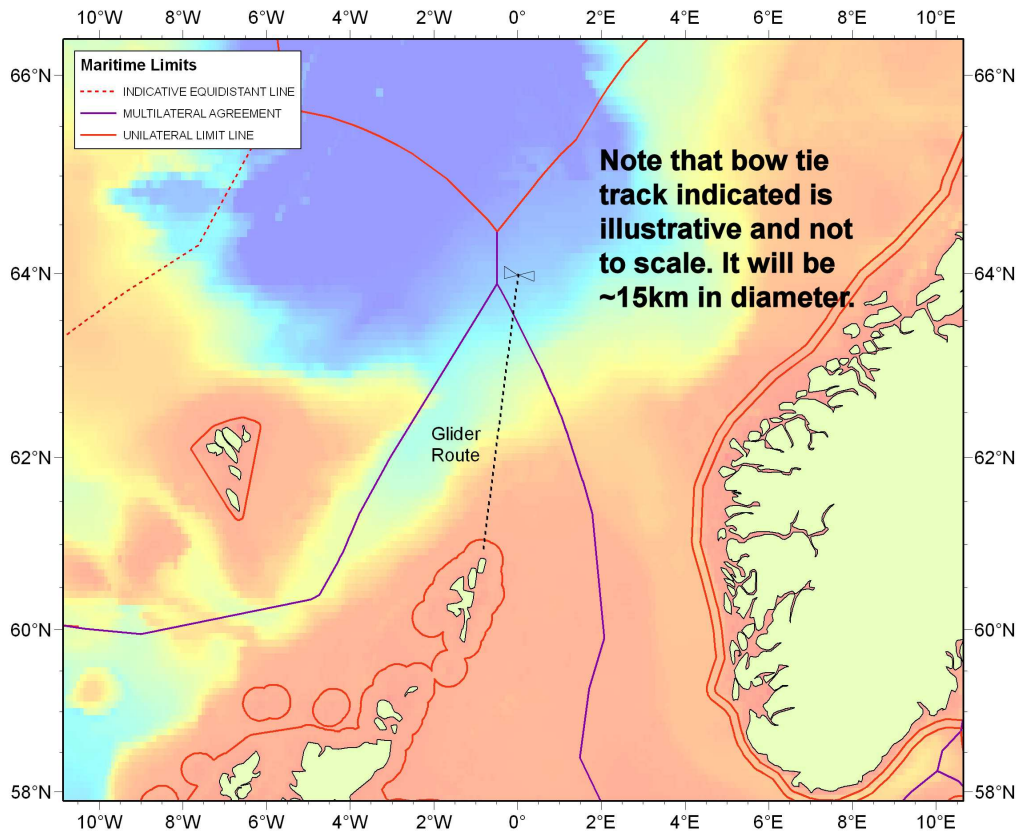
3.1 Indicate geographical areas in which the project is to be conducted (with reference in Latitude and longitude, including coordinates of cruise/track/way points)

The planned route for the glider will be to head north from Shetland, across the UK shelf, over the shelf break and into deep waters of the Norwegian Sea. It will continue north to the study site (64N 0W) which is in Norwegian waters. The journey to the site will take roughly 2 weeks. Once at the site the glider will continuously profile up and down over the top 1000m, collecting data on hydrographic structure and biogeochemistry. To also provide horizontal spatial information, the glider will conduct a horizontal bow-tie pattern track while at the site (see attached chart). After 5 months at the site, the glider will return to Shetland along the same track it used on the outward leg. Because the continuous up-down profiling of the glider is an intrinsic part of how it moves horizontally (it is buoyancy driven), it will be profiling the water column and collecting the above-stated data even while in transit. It will do so to whichever is deeper out of 1000m or the water depth.

3.2 Attach chart(s) at an appropriate scale (1 page, high-resolution) showing the geographical Areas of the intended work and, as far as practicable, the location and depth of sampling Stations, the tracks of survey lines, and the locations of installations and equipment.

Please see attached

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4. Methods and means to be used

4.1 Particulars of vessel:	
Name:	
Type/Class:	
Nationality (Flag State):	
Identification Number (IMO/Lloyds No.):	
Website for diagram & Specifications:	
Owner:	
Operator:	
Overall length (meters):	
Displacement/Gross Tonnage:	
Propulsion:	
Cruising & maximum speed:	
Call sign:	
INMARSAT number and method and capability of communication (including emergency frequencies):	
Name of Master:	
Number of Crew:	
Number of Scientists on board:	
Relevant documents required by international Conventions and regulations:	
Other relevant information:	

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4.2 Particulars of Aircraft:	
Name:	
Make/Model:	
Nationality (flag State):	
Website for diagram & Specifications:	
Owner:	
Operator:	
Overall Length (meters):	
Propulsion:	
Cruising & Maximum speed:	
Registration No.:	
Call Sign:	
Method and capability of communication (including emergency frequencies):	
Name of Pilot:	
Number of crew:	
Number of scientists on board:	
Details of sensor packages:	
Other relevant information:	

4.3 Particulars of Autonomous Underwater Vehicle (AUV):	
Name:	Bellatrix
Manufacturer and make/model:	iRobot Seaglider
Nationality (Flag State):	UK
Website for diagram & Specifications:	http://www.irobot.com/gi/maritime/1KA_Seaglider/
Owner:	National Oceanography Centre
Operator:	Dr Stuart Painter
Overall length (meters):	1.8
Displacement/Gross tonnage:	80kg when deployed
Cruising & Maximum speed:	0.5kt, 1kt
Range/Endurance:	6000km/6months
Method and capability of communication (including emergency frequencies):	Digital Iridium
Details of sensor packages:	Conductivity, temperature, pressure sensor package; photosynthetically active radiation (PAR) sensor; oxygen sensor; chlorophyll fluorescence, CDOM fluorescence and optical backscatter sensor package
Other relevant information:	

4.4 other craft in the project, including its use:
None

4.5 Particulars of methods and scientific instruments:		
Types of samples and Measurements:	Methods to be used:	Instruments to be used:
No samples are collected		

4.6 Indicate nature and quantity of substances to be released into the marine environment
None

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4.7 Indicate whether drilling will be carried out. If yes, please specify:

None

4.8 Indicate whether explosives will be used. If yes, please specify type and trade name, Chemical content, depth of trade class and stowage, size, depth of detonation, frequency Detonation, and position in latitude and longitude:

None

5. Installations and Equipment

Details of installations and equipment (including dates of laying, servicing, method and Anticipated timeframe for recover, as far as possible exact locations and depth, and Measurements):

None

6. Dates

6.1 Expected dates of first entry into and final departure from the research area by the research vessel and/or other platforms:

Entry: 14th February 2012
Exit: 13th May 2012

6.2 Indicate if multiple entries are expected:

No

7. Port Calls

7.1 Dates and Names of intended ports of call:

None in Norwegian waters

7.2 Any special logistical requirements at ports of call:

N/A

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

N/A

8. Participation of the representative of the coastal State

8.1 Modalities of the participation of the representative of the coastal State in the research Project:

All data will be made available to Prof Bellerby as required, and in real time if requested.

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8.2 Proposed dates and ports for embarkation/disembarkation:

Embarkation: 1st February 2012, Shetland, UK
Disembarkation: 27th May 2012, Shetland, UK

9. Access to Data, Samples and Research Results

9.1 Expected dates of submission to coastal State of preliminary report, which should include The expected dates of submission of the data and research results:

Six months after completion of Mission

9.2 Anticipated dates of submission to the coastal State of the final report:

Twelve months after completion of Mission

9.3 Proposed means for access by coastal State to data (including format) and samples:

Via FTP to the British Oceanographic Data Centre.
Data will also be sent by ftp to Prof Bellerby on request.

9.4 Proposed means to provide coastal State with assessment of data, samples and Research results:

Preliminary and final reports

9.5 Proposed means to provide assistance in assessment or interpretation of data, samples and research results:

Email correspondence, phone call or video-conferencing as appropriate.

9.6 Proposed means of making results internationally available:

The data will be used in future scientific papers in international journals. Papers are also available as open-access at the University of Southampton website (<http://eprints.soton.ac.uk/>).

10. Other permits Submitted

10.1 Indicate other types of coastal state permits anticipated for this research (received or Pending):

The glider is a relatively slow vehicle (1/2kt) and so can be displaced from its planned course by strong currents. The glider pilot can take this into account and compensate for it but there is still a possibility that the glider may be briefly displaced into Faeroese and/or Icelandic waters during the mission. Hence, we have also sought permission for the glider to enter the waters of Iceland and the Faeroes.

11. List of Supporting Documentation

11.1 List of attachments, such as additional forms required by the coastal State, etc.:

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Signature:

Contact information of the focal point:

Name:

Country:

Affiliation:

Address:

Telephone:

Fax:

Email: