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FRV *Scotia*

Cruise 1111S

PROGRAMME

17 September– 02 October 2011

Ports

Loading: Aberdeen, 14 September 2011

Unloading: Aberdeen, 02 October 2011

In setting the cruise programme and specific objectives, etc the Scientist-in-Charge needs to be aware of the restrictions on working hours and the need to build in adequate rest days and rest breaks as set out in Marine Scotland's Working Time Policy (Lab Notice 34/03). In addition, the Scientist-in-Charge must formally review the risk assessments for the cruise with staff on-board before work is commenced.

In the interest of efficient data management it is now mandatory to return the Cruise Report, to I Gibb and the Cruise Summary Report (old ROSCOP form) to M Geldart, within four weeks of a cruise ending. In the case of the Cruise Summary Report a nil return is required, if appropriate.

Personnel

M. Robertson	(SIC)
P. Copland	
G. Jones	
C. Hepple	
M. Linwood	(Visitor - JNCC)
N. Golding	(Visitor - JNCC)
N. Church	(Visitor – JNCC)
H. Ellwood	(Visitor – JNCC)

Estimated days by project: 16 days – SP02Q0 (10797)

Gear

TV Drop frame and VMUX controller, TV sledge, 600m cable, Day grabs, swath bathymetry system, Mini-Hamon Grab (supplied by CEFAS – to be delivered on Wed 14 Sept).

Objectives

This work will be delivering evidence to underpin the process for identifying Scottish MPA search features, as part of the wider Scottish MPA project for Marine Scotland. The areas have

been selected based on the distribution of seabed sediments described in UKSeaMap, which in part is derived from British Geological Survey seabed sediment data.

The survey will be gathering high quality acoustic data (bathymetry and backscatter) from two areas (See Figure 1) using the Reson 7125 swathe system along with Acoustic Ground Discrimination System (AGDS) data from the installed RoxAnn system.

Preliminary review of this acoustic data will drive the distribution of seabed sample locations from the two areas (Figure 1); sampling will be carried out both through direct grab sampling (mini Hamon & Day grab) and using seabed imagery techniques including camera sledge (in preference) and drop-down camera.

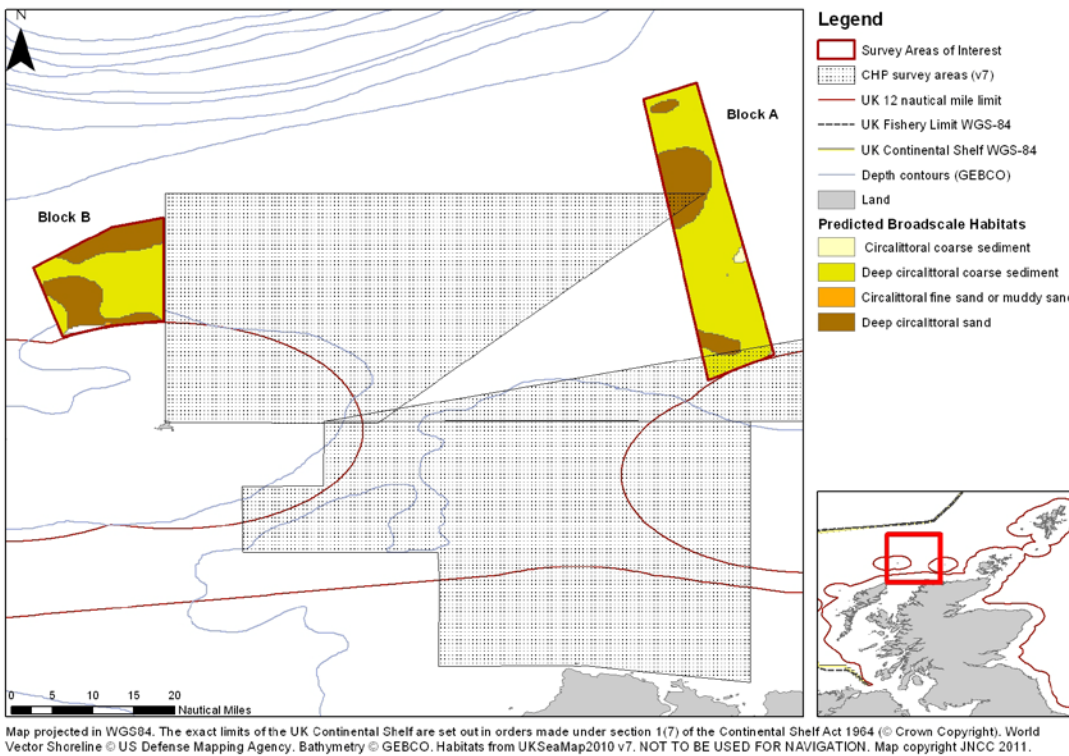


Figure 1: Overview of survey area, showing underlying seabed sediment types as described by UKSeaMap

Table 1: Lat and Long (WGS84) coordinates for the planned survey areas in Figure 1 above.

Box	Latitude	Longitude
B	59.30683	-6.03736
B	59.44783	-6.09724
B	59.53033	-5.93718
B	59.54963	-5.83151
B	59.33813	-5.82985
B	59.32846	-5.94170
A	59.27035	-4.58260
A	59.21761	-4.71774

A	59.79209	-4.84999
A	59.82544	-4.74058

The number of sampling stations where camera tows and benthic samples will be gathered has been estimated at around 35, with four grab replicates and one camera sledge tow at each. This estimates the total number of benthic samples at around 140, although note that this is an estimate and more samples may be gathered.

Procedures

The procedures for acquiring and storing the multibeam data (bathymetric and backscatter) will be discussed and agreed between the MSS acoustic survey lead and the JNCC lead prior to any data being acquired.

Acoustic data (multibeam and AGDS) will be gathered initially in blocks. Once each block of acoustic data has been acquired, locations for benthic sampling within that block (grab sampling and camera tows) will be determined once a preliminary examination of acoustic data has been carried out. It will be necessary to identify areas of sediment with similar acoustic signatures, and then randomly stratify ground truthing samples within these areas.

Four replicate grab samples and one camera sledge tow will be completed at each sample station. For each grab, a PSA sample will be taken using a sediment scoop. A photograph of the grab sample will be taken, along with an ID label. Prior to sieving, the volume of sample will be measured and recorded. Sieving will be undertaken using a 1mm sieve and the sieve surface will be picked clean of all fauna using forceps. The samples will then be preserved by MSS staff authorised in use of Formalin.

A quantitative infaunal benthic survey utilising grabs and TV sledge/drop frame (sledge will be used on areas of relatively flat sediment in preference to the drop frame) will be completed over the survey areas after initial acoustic work has been completed using the Reson swath system. Positions of samples will be confirmed by SIC and JNCC lead once initial acoustic work has been completed.

General

Loading of all sampling gear will take place on the 14 September. Scotia will then sail on the morning of 17 September and make passage to a site offshore from Stonehaven where, once safety drills have been completed, calibration of the Reson 7125 system will be carried out. On completion of this task, Scotia will sail for the work areas off the Outer Hebrides and on Solan

Bank. A daily operational sampling plan will be agreed between the SIC, the Captain and the JNCC Team Leader.

Normal contacts will be maintained with the Laboratory.

Submitted:

M. R. Robertson
9 September 2011

Approved:

I Gibb
11 September 2011