Final Report (Project Code): C5433

North St George's Channel rMCZ 2012 & 2013 Survey Report (CEND0312 and CEND0513)

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Part 1: Survey CEND0312

1 Background and Introduction

1.1 Survey Project Team

The North St George's Channel survey was carried out during 3rd-7th February 2012 on the RV *CEFAS Endeavour* cruise CEND 03/12. The survey team for the duration of the fieldwork included Cefas marine ecologists, marine surveyors, marine habitat mappers and GIS specialists along with MPA specialists from the JNCC.

1.2 Site Description

The North St George's Channel rMCZ is located in the Irish Sea approximately 13 nm from the North coast of Anglesey, Wales (Figure 1). The depth across the site ranges from 40-170 m.

(For a detailed site description see Final recommendations for Marine Conservation Zones in the Irish Sea 2011)

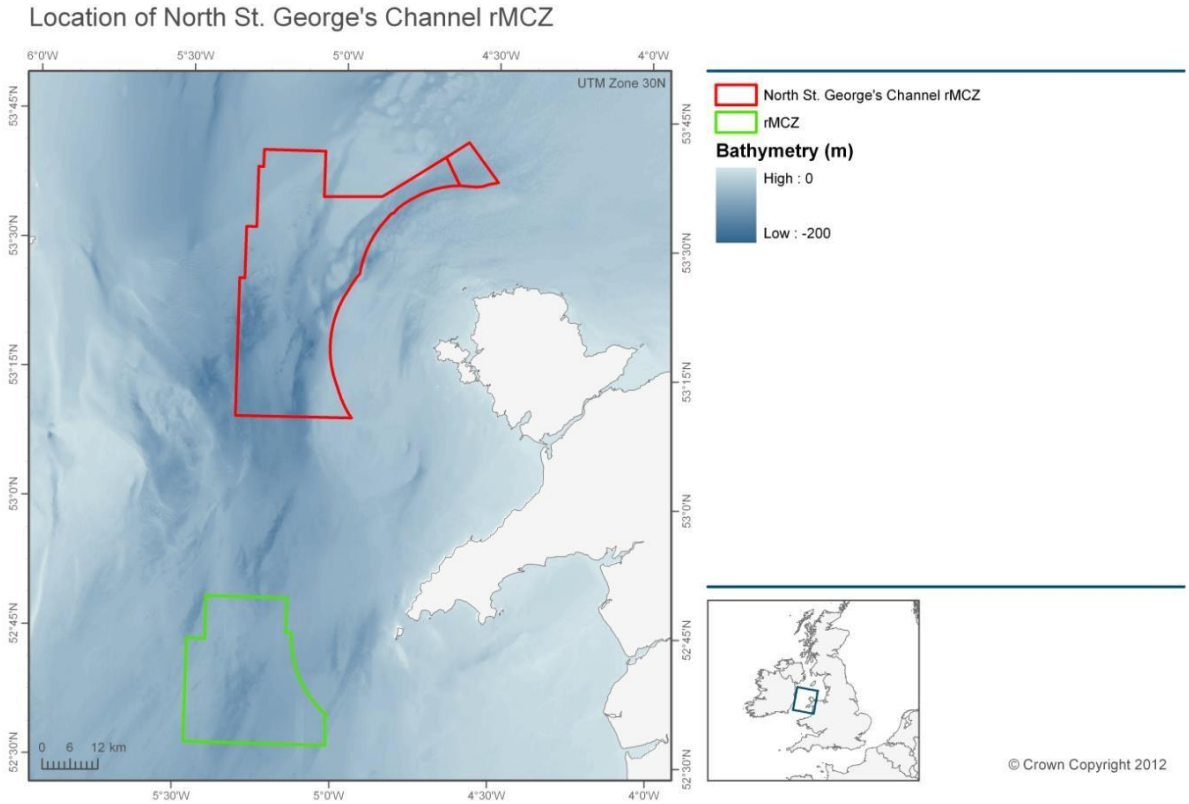


Figure 1. Location of North St George's Channel rMCZ. [Bathymetry is from the Defra Digital Elevation Model (Astrium, 2011)].

1.3 Geological and Biological Context

A number of Broad Scale Habitat (BSH) features and Features of Conservation Interest (FOCI) have been proposed by the regional project for designation within the rMCZ (Table 1).

Table 1. Features proposed for designation within North St George's Channel rMCZ.

Feature Type	Feature Name
Broad Scale Habitat (BSH)	A4.1 High energy circalittoral rock A4.2 Moderate energy circalittoral rock A5.1 Subtidal coarse sediment A5.2 Subtidal sand A5.4 Subtidal mixed sediments A5.6 Subtidal biogenic reef
Features of Conservation Interest (FOCI)	
Habitats	*Modiolus modiolus* beds
	Subtidal sands and gravels*
Geomorphological Feature	Drumlins

Subtidal sands and gravels are considered to be adequately protected by its component habitat features subtidal sand and/or subtidal coarse sediment, and is no longer included within MCZ designations

A number of additional features have also been identified within this rMCZ, however, these were not proposed for designation by the regional project (Table 2).

Table 2. Features present but not proposed for designation within North St George's Channel rMCZ.

Feature Type	Feature Name
Features of Conservation Interest (FOCI)	
Habitats	*Sabellaria spinulosa* reef
Species	*Arctica islandica*

1.4 Existing data and information utilised to inform survey planning

A number of existing data sets and information sources were identified and utilised to inform the planning of the 2012 survey in the North St George's Channel rMCZ (Figure 2).

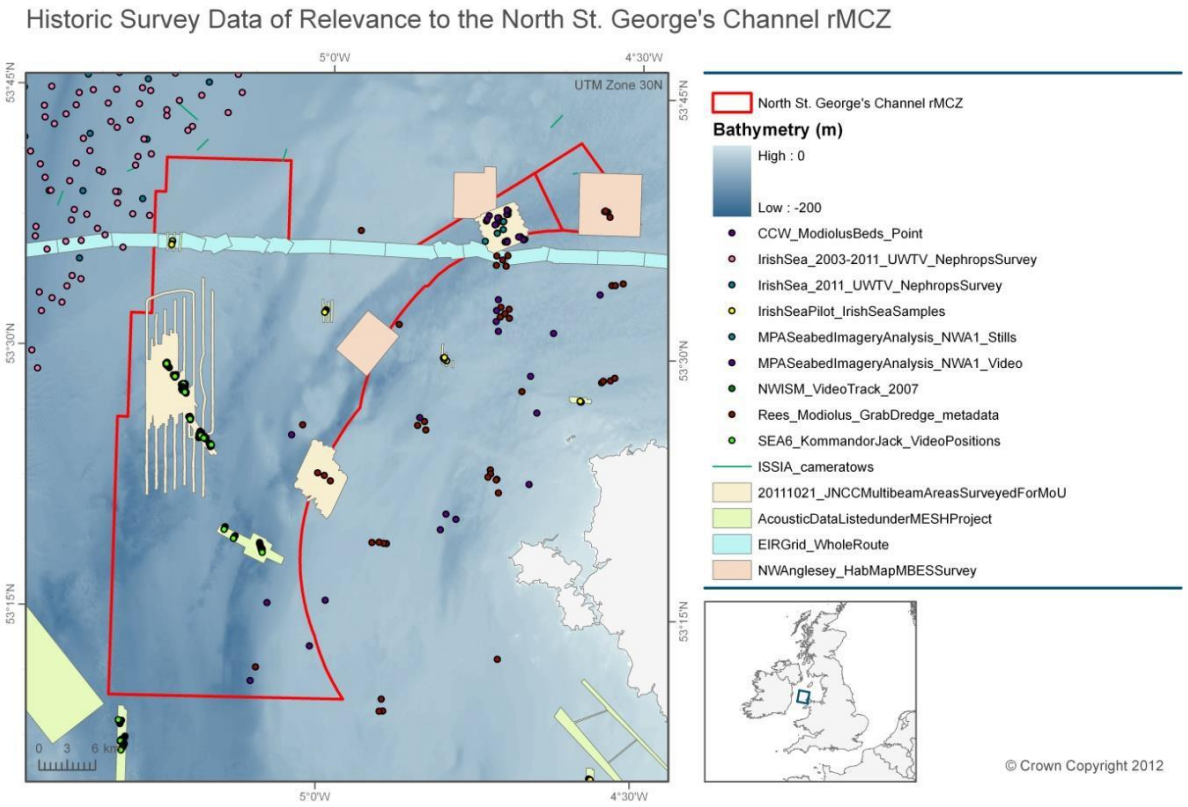


Figure 2. Existing data sources of relevance to informing the survey design at the North St George's Channel rMCZ as provided by the JNCC.

2 Survey Design and Methods

2.1 Survey planning and design

Selection and positioning of ground-truthing stations was informed by existing bathymetric data and the predicted Broad Scale Habitat derived from the Site Assessment Document (SAD) habitat map. Sampling stations were positioned within the sedimentary habitats using a triangular lattice grid overlaid on the predictive habitat map. Stations within the larger area predicted as subtidal coarse sediments were at a grid spacing of 5 km, those in the smaller area predicted as subtidal sands were at a grid spacing of 4 km and those within the limited area predicted as subtidal mixed sediments were at a grid spacing of 1.5 km.

Within the predicted sedimentary habitats, the selection of stations where the camera sledge would be used in addition to the grab was informed by the sediment type present in the grab sample (i.e., where the grab sample confirmed the presence of a given BSH the camera was deployed to allow characterisation of the surface sediment types and epifaunal communities). The number of camera deployments per BSH varied depending on the uniformity of the habitat and its spatial extent.

Predicted circalittoral rock BSH was similarly characterised using a drop camera video and stills system. Existing bathymetric data and 'prospecting' multibeam data (collected during transits between ground-truthing stations) were used to inform the positioning of drop camera stations within the predicted circalittoral rock.

'Intelligent' station codes were constructed, each with three elements; NSG indicating the North St George's Channel site followed by a letter indicating the predicted substrate type for that location according to the SAR (R for rock, C for coarse sediment, S for sand and Mx for

mixed sediment), then a sequential number (e.g. NSG_R_5, NSG_S_21

2.2 Sample collection and processing methods

2.2.1 Sedimentary Broad Scale Habitats

Sedimentary habitats were groundtruthed by grab and underwater camera. The grab system comprised a 0.1 m^2 mini Hamon grab fitted with a video camera (Figure 3), the combined gear being known as a HamCam. This allowed an image of the undisturbed seabed surface to be obtained for each grab sample. On recovery, the grab was emptied into a large plastic bin and a representative sub-sample of sediment (approx. 0.5 litres) taken for Particle Size Analysis (PSA). The sample was stored in a labelled plastic container and frozen ready for transfer to a laboratory ashore.

The remaining sample was photographed and the volume of sediment measured and recorded. Benthic fauna were collected by washing the sample with sea-water over a 1mm sieve. The retained >1mm fraction was transferred to a labelled container and preserved in 4% buffered formaldehyde for later analysis ashore.

Figure 3. Mini Hamon grab with video camera (HamCam).

The camera sledge system comprised a video camera with capability to also capture still images (Figure 4). Illumination was provided by two Cefas high intensity LED striplights and a flash unit. The camera was fitted with a four-spot laser-scaling device to provide a reference scale in the video image. Set-up and operation followed the MESH 'Recommended Operating Guidelines (ROG) for underwater video and photographic imaging techniques'. Video was recorded simultaneously to a Sony GV-HD700 DV tape recorded and a computer hard drive. A video overlay was used to provide station metadata, time and GPS position (of

the vessel) in the recorded video image.

Camera tows lasted a minimum of 10 minutes, with the sledge being towed at ~ 0.5 knots (~0.25 ms^{-1}) across a 50 m 'bullring' centred on the sampling station. Stills images were captured at regular one-minute intervals and opportunistically if specific features of interest were encountered. The sledge was controlled by a winch operator with sight of the video monitor and note made of the amount of tow cable deployed to allow a 'lay back' to be applied to estimate the distance of the sledge behind the vessel.

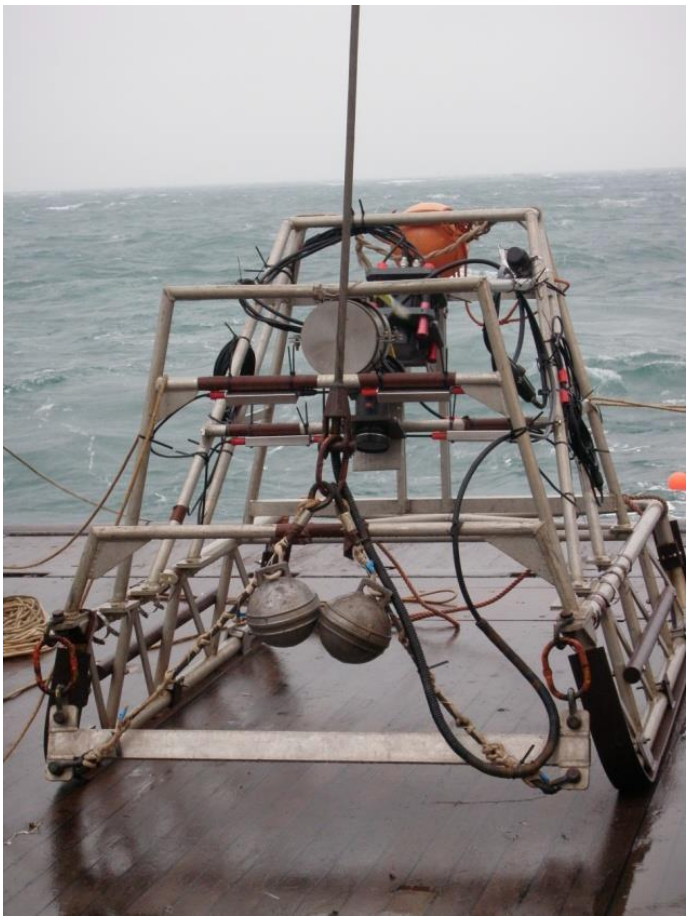


Figure 4. Camera sledge with video and still imaging system.

2.2.2 Circalittoral Rock Broad Scale Habitats

A drop-camera system was available for sampling stations where a hard substrate was predicted by the SAD or observed in the acoustic survey. The system specification was similar to that used on the camera sledge (as described above) but mounted in a rectangular drop-frame (Figure 5) and deployed from the side gantry, amidships. Deployments lasted a minimum of 10 minutes, with the vessel executing a controlled drift at ~ 0.5 knots (~0.25 ms^{-1}) across a 50 m 'bullring' centred on the sampling station. Stills images were captured at regular one-minute intervals and opportunistically if specific features of interest were encountered. The height of the camera off the seabed was controlled by a winch operator with sight of the video monitor.

Figure 5. Drop camera frame fitted with video and still imaging system

3 Survey Narrative

Survey work commenced at the North St George's Channel rMCZ on 03/02/12 at 05:10. A CTD was deployed to obtain the sound velocity profile (SVP) for calibration of the multibeam. Hamon grab sampling then commenced within the predicted subtidal coarse BSH. Multibeam bathymetry and backscatter data were collected during transits between stations. Existing bathymetry data and the multibeam data collected opportunistically during transit across the predicted circalittoral rock were used to position five drop camera stations within this predicted BSH. Following completion of the drop camera stations sampling was resumed in the predicted BSHs using the HamCam. The drop camera was additionally deployed at every third grab station to ensure an adequate density and spatial coverage of video footage (and still images) across the rMCZ.

The HamCam and drop camera survey continued over the following four days with completion of the full sampling grid occurring at 20:38 on 06/02/12. During this time a total of 86 grab samples, across the three BSHs predicted to occur within the rMCZ, were acquired. Additionally, 34 camera stations were completed to assist in the assessment of presence and spatial extent (along with future characterisation) of the BSHs for which the rMCZ is proposed to be designated.

Multibeam bathymetry and backscatter data were processed on board. During the course of the survey a total of 358.6 line-kilometres was collected.

4 Preliminary Results

4.1 Acoustic Maps

The acoustic data collected opportunistically during transit were processed for multibeam bathymetry and backscatter (Figure 6 and Figure 7). A 'gap filling' acoustic survey was carried out concurrently with the groundtruthing under sub-contract to provide 100% acoustic coverage of this rMCZ. These data were not available to inform the planning of the groundtruthing survey.

Multibeam bathymetry and backscatter data were collected during CEND 03/12 opportunistically during transits (Figure 6 and Figure 7).

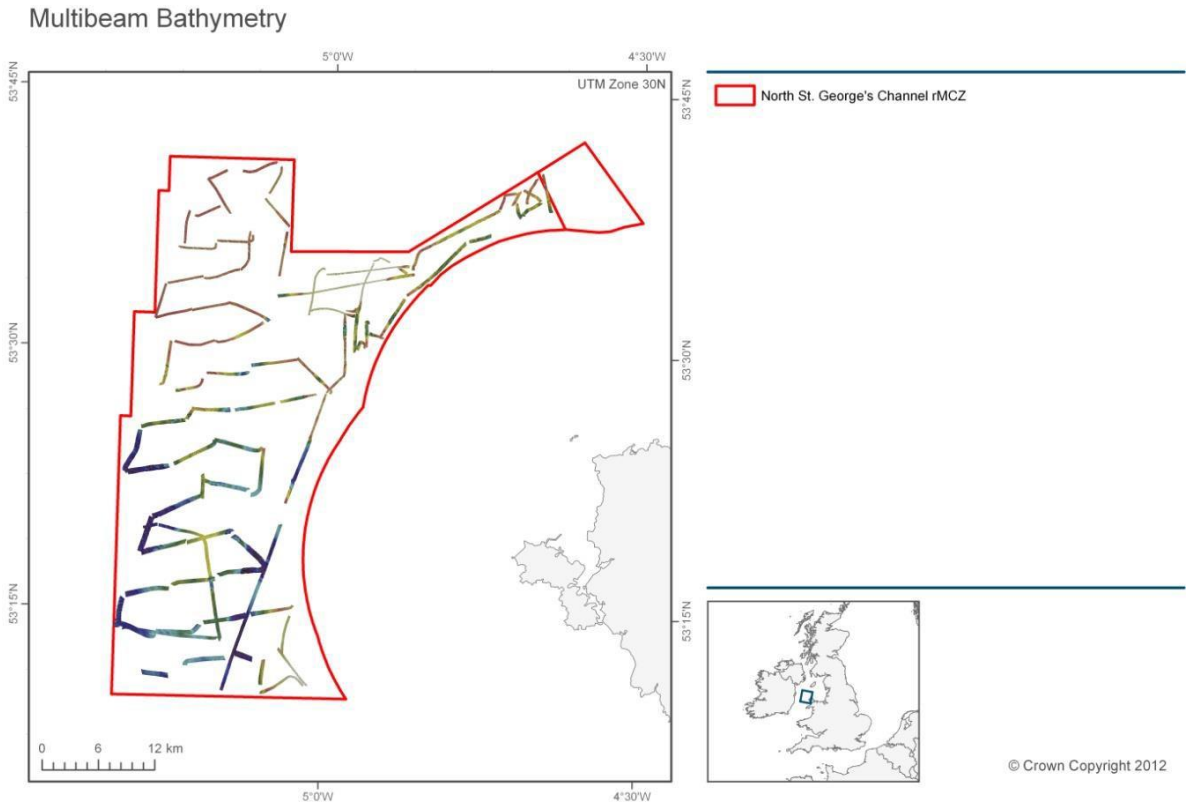


Figure 6. North St George's Channel rMCZ overlaid with multibeam bathymetry.

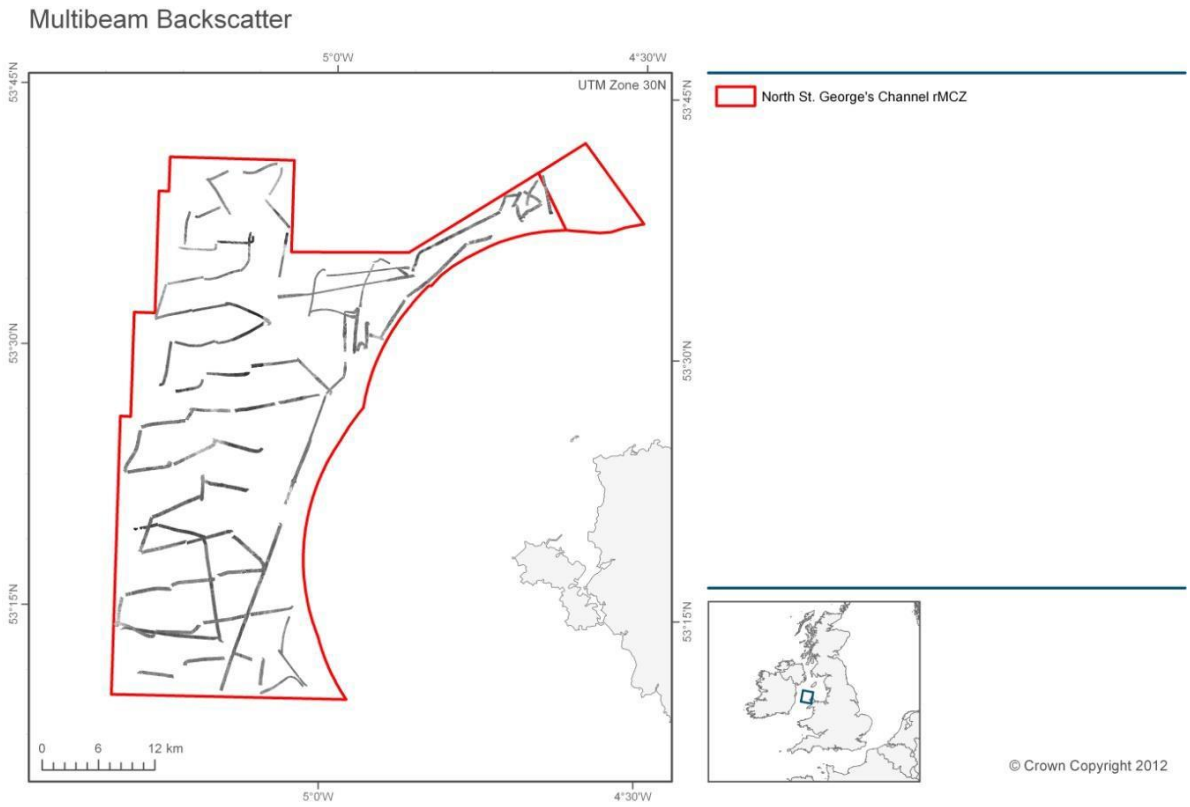
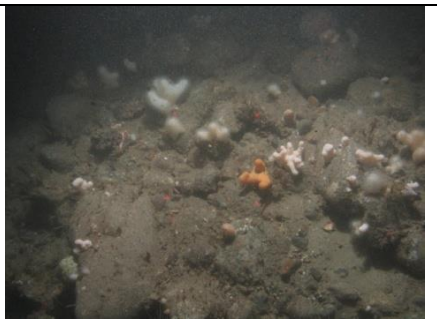
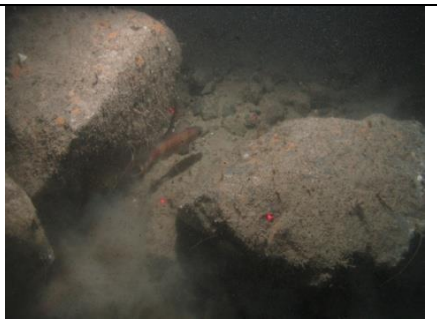
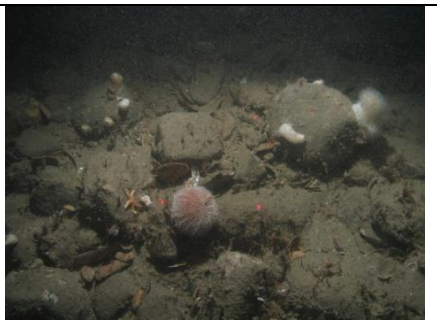
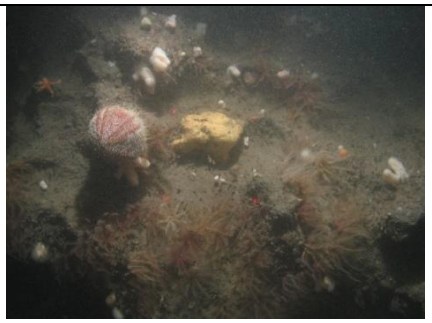
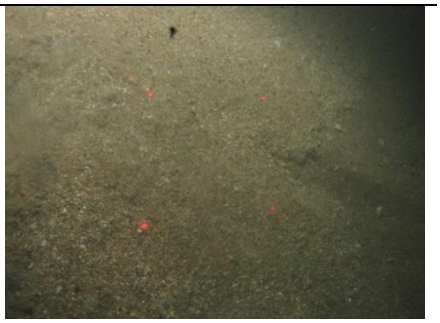
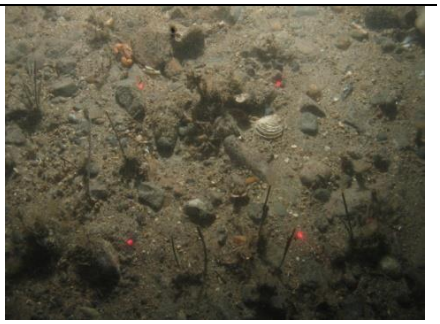
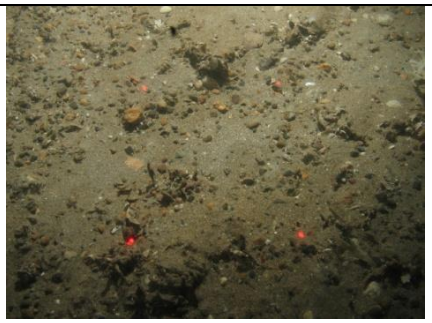


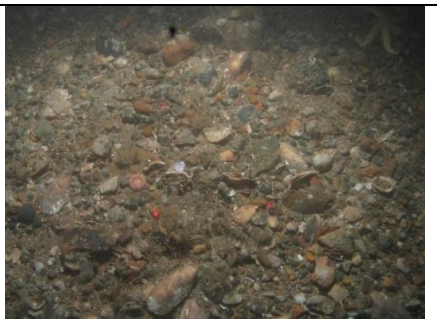
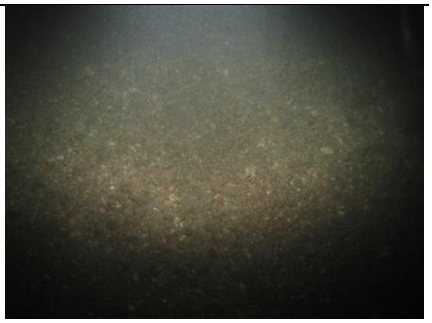
Figure 7. North St George's Channel rMCZ overlaid with multibeam backscatter.

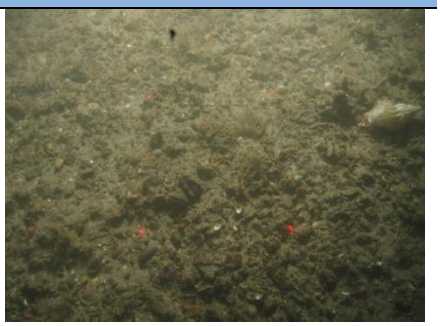
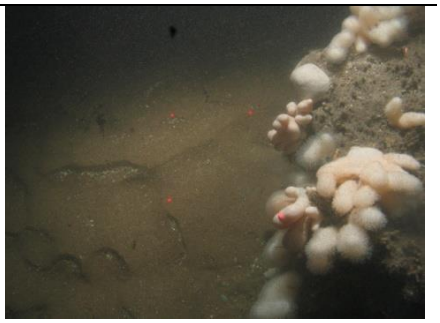
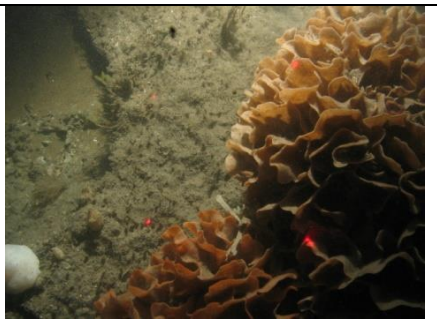
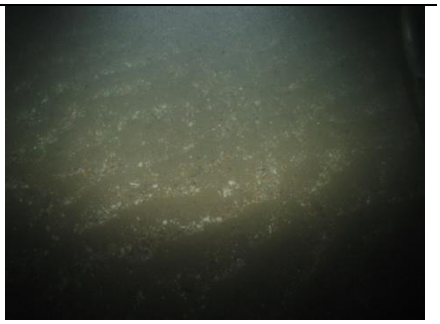
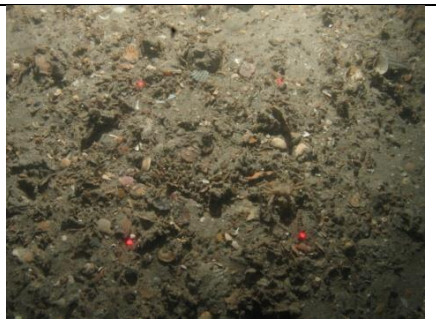
4.2 Seabed Imagery

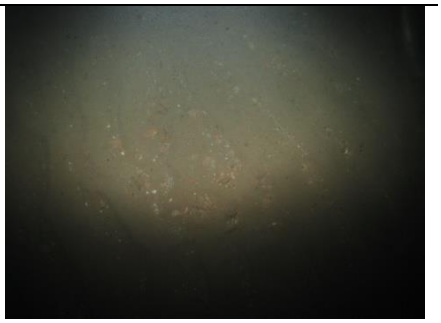
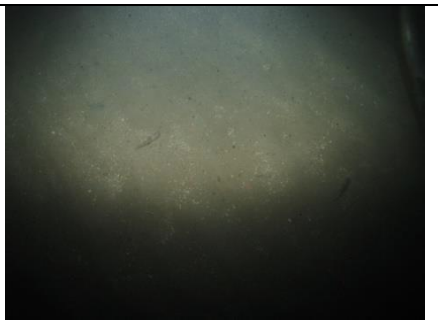
Table 3. Preliminary summary of surface sediments and epifaunal species derived from video and still imagery.

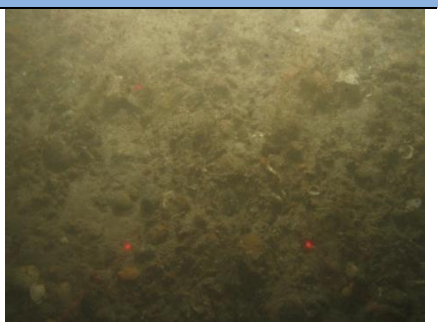
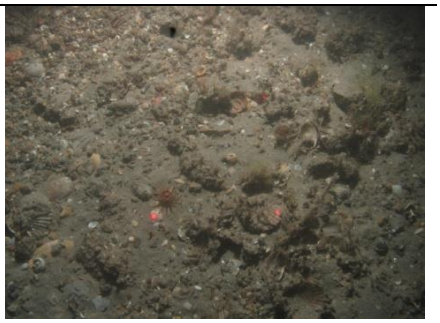
Stn Code	BSH Habitat/Faunal Summary	Still Image
CR1	**Bedrock and boulders interspersed by gravelly sand** *Flustra foliacea*, *Alcyonium digitatum*, *Asterias rubens*, *Echinus esculentus*, *Urticina felina*, *Scyliorhinus canicula*	
CR2	**Bedrock, boulder and cobble interspersed by gravelly sand** *Flustra foliacea*, *Alcyonium digitatum*, *Asterias rubens*, *Echinus esculentus*, *Urticina felina*, *Scyliorhinus canicula, Munida rugosa, Trisopterus luscus, Pagurus bernhardus*	
CR3	**Bedrock, boulders and cobble interspersed by gravelly sand** *Flustra foliacea*, *Alcyonium digitatum*, *Asterias rubens*, *Echinus esculentus*, *Urticina felina, Axinella sp., Polymastia sp., Trisopterus luscus*	
CR4	**Bedrock, boulders and cobble interspersed by gravelly sand** *Flustra foliacea*, *Alcyonium digitatum*, *Asterias rubens, Urticina felina, Axinella sp., Pagurus bernhardus*	
CR5	**Bedrock, boulders and cobble interspersed by gravelly sand** *Alcyonium digitatum, Axinella sp., Antedon bifida, Urticina felina, Echinus esculentus, Cliona celata*	

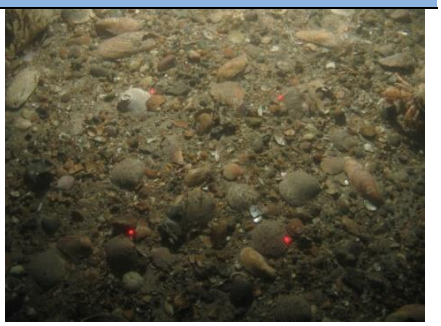
Stn Code	BSH Habitat/Faunal Summary	Still Image
C6	**Gravelly sand with pebble and shell** *Flustra foliacea, Asterias rubens, Nemertesia antennina*	
C11	**Shelly coarse sand**	
C12	**Shelly gravelly sand, dense areas of dead bivalve shell** *Alcyonium digitatum, Urticina felina, Echinus esculentus, Scyliorhinus canicula, Asterias rubens, Crossaster papposus*	
C16	**Gravelly sand with pebbles, cobbles and boulders, *Sabellaria* crust** *Munida rugosa, Luidia ciliaris, Urticina feline, Inachus sp., Cerianthus lloydii, Pandalus montagui, Galathea sp., Asterias rubens, Alcyonium digitatum, Xantho sp., Stichastrella rosea, Sabella sp.)*	
C18	**Shelly gravel with Sabellaria crust** *Flustra foliacea, Scyliorhinus canicula, Alcyonium digitatum, Sabella sp., Pecten maximus, Asterias rubens*	

Stn Code	BSH Habitat/Faunal Summary	Still Image
C22	**Shelly gravelly sand** *Flustra foliacea, Echinus esculentus, Alcyonium digitatum, Pagurus bernhardus*	
C23	**Shelly sandy gravel** *Flustra foliacea, Echinus esculentus, Alcyonium digitatum, Urticina felina, Crossaster papposus*	
C29	**Shelly rippled sand** *Pagurus bernhardus*	
C34	**Shelly gravelly sand with ripples, occasional boulders and clay outcrops** *Pagurus bernhardus, Flustra foliacea, Echinus esculentus, Alcyonium digitatum, Scyliorhinus canicula*	
C38	**Shelly gravelly sand with pebble** *Alcyonium digitatum, Echinus esculentus, Flustra foliacea, Chelidonicthys lucernus*	

Stn Code	BSH Habitat/Faunal Summary	Still Image
S2	**Gravelly sand with pebbles and Sabellaria crust** *Flustra foliacea, Pagurus bernhardus, Echinus esculentus*	
S6	**Shelly rippled sand with areas of MDAC and Sabellaria crust** *Flustra foliacea, Alcyonium digitatum, Urticina felina, Antedon bifida, Munida, rugosa, Homarus gammarus, Nemertesia antennina, Abeitinaria sp., Cellaria sp., Pachymatisma johnstonia, Sabella sp., Stichastrella rosea, Crossaster papposus, Cerianthus lloydii*	
S7	**Shelly rippled sand with areas of MDAC and Sabellaria crust** *Flustra foliacea, Pandalus montagui, Alcyonium digitatum, Munida rugosa, Cellaria sp., Stelligera stuposa, Urticina felina, Ophiura sp., Pentapora foliacea, Nemertesia antennina, Lophius piscatorius*	
S9	**Shelly rippled sand** *Pagurus bernhardus, Asterias rubens, Trisopterus luscus*	
S11	**Shelly gravelly sand with *Sabellaria* crust** *Flustra foliacea, Asterias rubens, Inachus sp., Echinus esculentus, Crossaster papposus, Urticina felina*	

Stn Code	BSH Habitat/Faunal Summary	Still Image
S15	**Shelly gravel with cobble** *Alcyonium digitatum, Echinus esculentus, Crossaster papposus, Urticina felina, Scyliorhinus canicula*	
S18	**Shelly rippled sand** *Asterias rubens, Pagurus bernhardus*	
S20	**Shelly rippled sand** *Trisopterus luscus, Pagurus bernhardus*	
S25	**Slightly shelly sand with ripples** *Raja clavata*, *Crossaster papposus*, *Trisopterus luscus*, *Flustra foliacea*	
Mx1	**Gravelly shelly sand** *Asterias rubens*	

Stn Code	BSH Habitat/Faunal Summary	Still Image
Mx2	**Shelly gravelly sand, occasional boulders and *Sabellaria* crust** *Flustra foliacea, Echinus esculentus, Nemertesia antennina, Alcyonium digitatum, Asterias rubens*	
Mx3	**Shelly gravelly sand with *Sabellaria* crust** *Flustra foliacea, Pagurus bernhardus, Urticina felina, Alcyonium digitatum, Asterias rubens, Buccinum undatum, Cerianthus lloydii*	
Mx8	**Gravelly shelly sand with cobble and boulder** *Asterias rubens, Urticina felina, Buccinum undatum, Echinus esculentus, Alcyonium digitatum, Scyliorhinus canicula*	
Mx10	**Cobbly gravelly sand with boulders** *Antedon bifida*, *Ophiothrix fragilis*, *Crossaster papposus*, *Asterias rubens*, *Echinus esculentus, Urticina felina, Scyliorhinus canicula*	
Mx12	**Gravelly shelly sand with boulder (*Modiolus* shell)** *Alcyonium digitatum*, *Inachus* sp., *Echinus esculentus*, *Pomatoceros* sp.	

Stn Code	BSH Habitat/Faunal Summary	Still Image
Mx16	**Gravelly shelly sand (*Modiolus* shell)** *Luidia* sp., *Echinus esculentus*, *Urticina felina*, *Flustra foliacea*, *Asterias rubens*	
SF02	**Trochoidal sand waves - Cobble at base of wave with loose shell on faces** (Alcyonium digitatum, Pagurus bernhardus, Urticina felina)	

4.3 Grab samples and sediment types

Preliminary observations of the spatial distribution of sediment types (EUNIS Level 3) for each grab sample are presented in Figure 8. It should be emphasised that this assignment of EUNIS classification is purely subjective and could change as a result of subsequent laboratory analysis and interpretation.

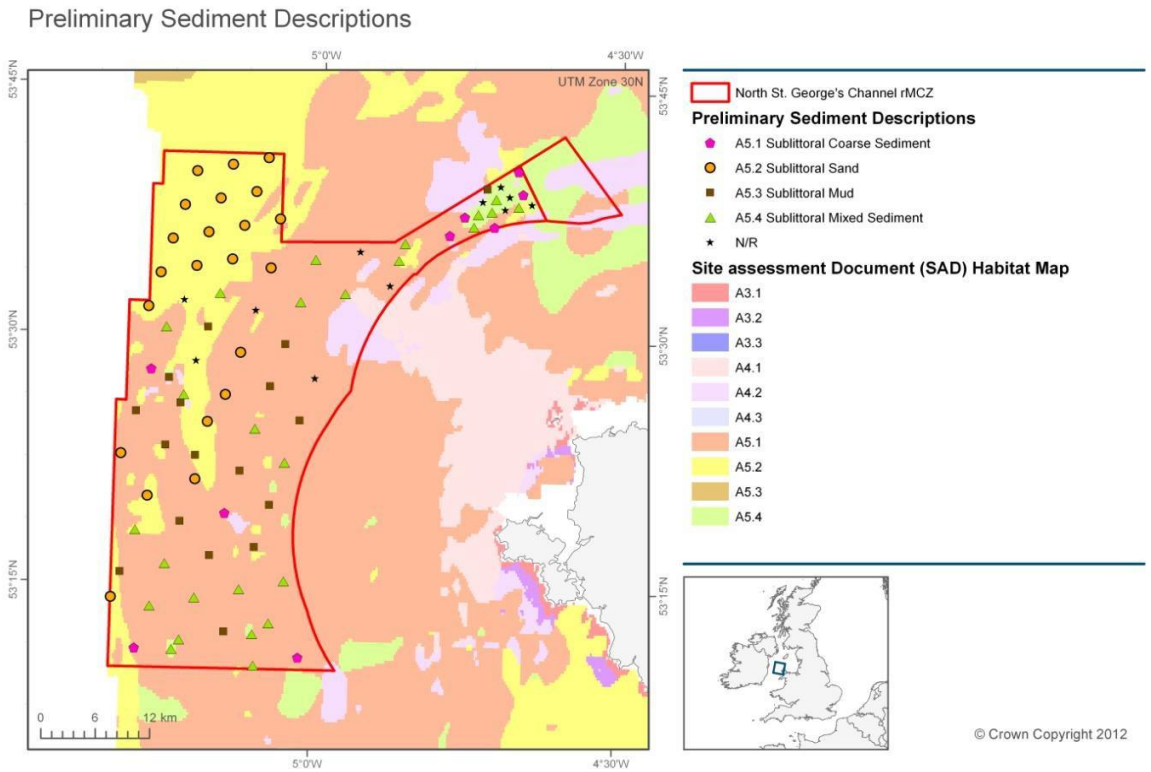


Figure 8. Predicted habitat map overlaid with preliminary observations of sediment type, as determined by visual assessment of grab samples (N/R = Not Recorded, this indicates that it was not possible for the field scientist to confidently assign a preliminary sediment description based only on observation of the grab sample).

4.4 *Features of Conservation Interest (FOCI): Records in the rMCZ from historic surveys and the current survey (CEND 03/12)*

Areas of *Sabellaria spinulosa* tubes/turf were identified at a number of stations within this site during the current survey. Other biogenic reef features included in the recommendations for designation (*Modiolus modiolus)* were not observed. Species FOCI previously identified as being present within the North St George's Channel rMCZ *(Arctica islandica)* but not included in recommendations for designation were also not observed during the current survey.

Part 2: Survey CEND0513

1 Background and Introduction

1.1 Survey Project Team

The North St George's Channel survey (CEND0513) was carried out between 24th April – 1st May 2013 on the RV *CEFAS Endeavour* cruise CEND0513. The survey team for the duration of the fieldwork included Cefas marine ecologists, marine surveyors, marine habitat mappers and GIS specialists along with MPA specialists from the JNCC.

2 Survey Design and Methods

2.1 Survey Planning and Design

Following the previous ground-truthing survey (CEND 0312), 100% multibeam coverage of the site was acquired under a separate Invitation To Tender (ITT) by Osiris Hydrographic and Geophysical Projects Ltd. The revised habitat map produced by Cefas resulted in changes in distribution of previously predicted broadscale habitat types within the site. As such, the distribution of sampling stations during CEND 0312 which were based on UKSeaMap was not optimal for defining features or habitats of limited extent. Furthermore, additional geological features were identified during the interpretation of the bathymetric and backscatter data. These features included subglacial bedforms, such as drumlins and mega flutes, and trochoidal dunes formed following deglaciation.

Due to these findings it was deemed necessary to collect additional ground-truthing data in relation to the extent and distribution of circalittoral rock within the site boundary, including subtypes such as Methane Derived Autogenic Carbonate (MDAC). The sampling design (Figure 9) was intended to validate modelled instances of circalittoral rock and better define the boundaries between habitats.

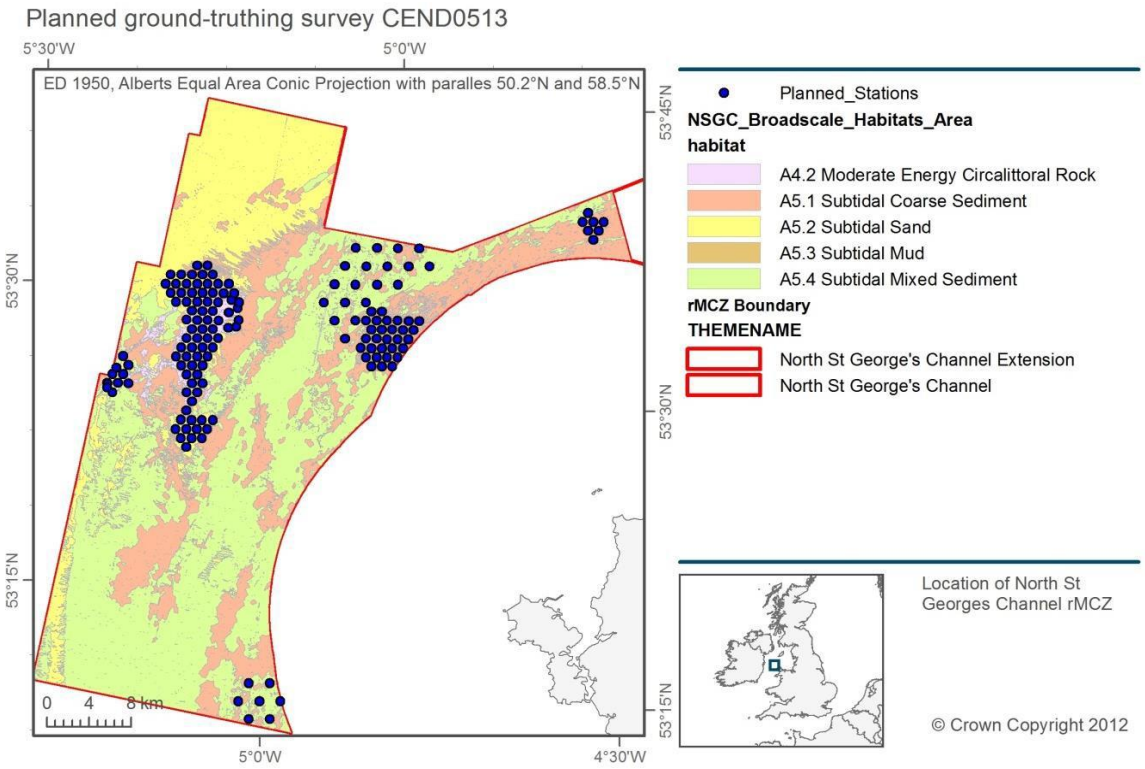


Figure 9. The planned ground-truthing survey at North St George's Channel rMCZ.

3 Survey Narrative

3.1 Survey Narrative

Cefas Endeavour arrived at North St George's Channel rMCZ at 15:50, 24/04/13. On arrival a SVP cast was carried out in order to calibrate the multibeam system. On completion of the SVP cast work commenced on the planned ground-truthing programme using the drop camera frame, the main aim of which was to identify the presence and extent of rock habitats including MDAC. Preliminary observations did document the occurrence of MDAC within the centre of the site. Consideration was also given to the possible occurrence of *Modiolus modiolus* reefs in the Northeast of the site. The mussel species was observed but not ion reef form. All works were completed at North St George's Channel rMCZ (03:30, 01/05/13). During this time a total of 159 drop camera deployments and 14 HamCam deployments were successfully carried out (Figure 10 and Figure 11).

4 Preliminary Results

4.1 Ground truthing survey

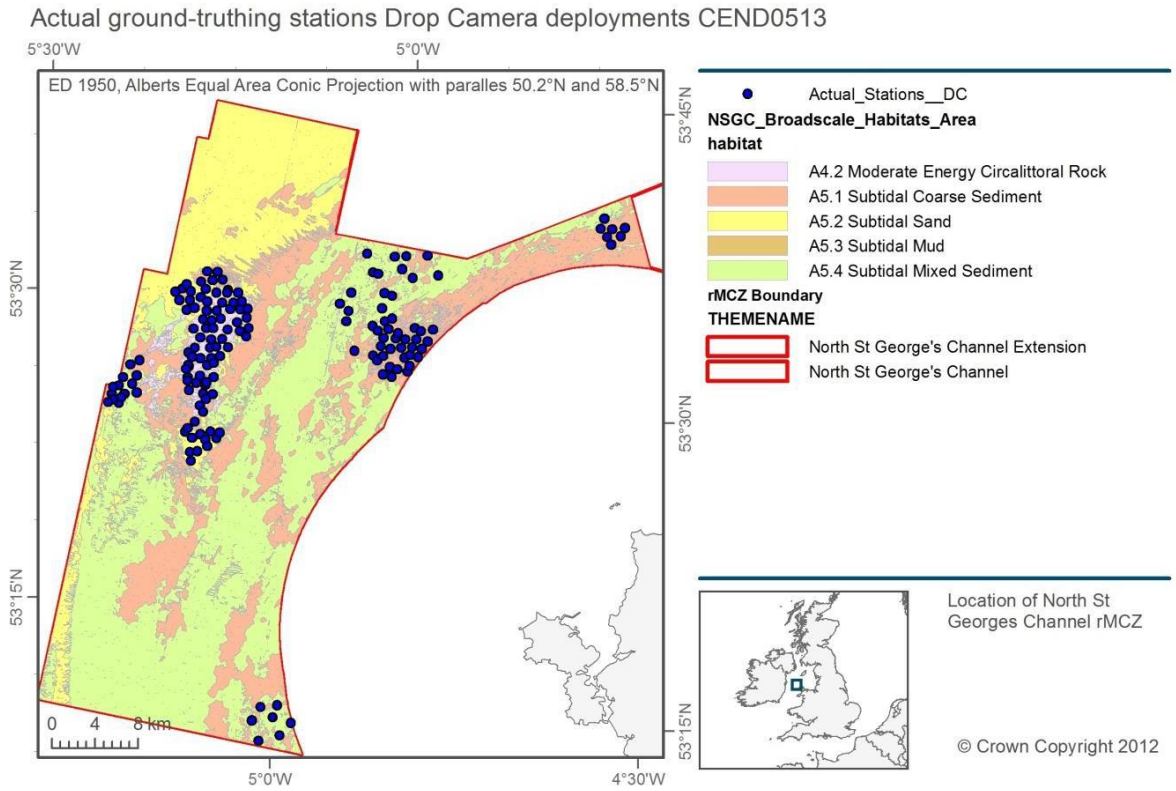


Figure 10 Actual stations surveyed using the Drop Camera during the North St George's Channel rMCZ survey

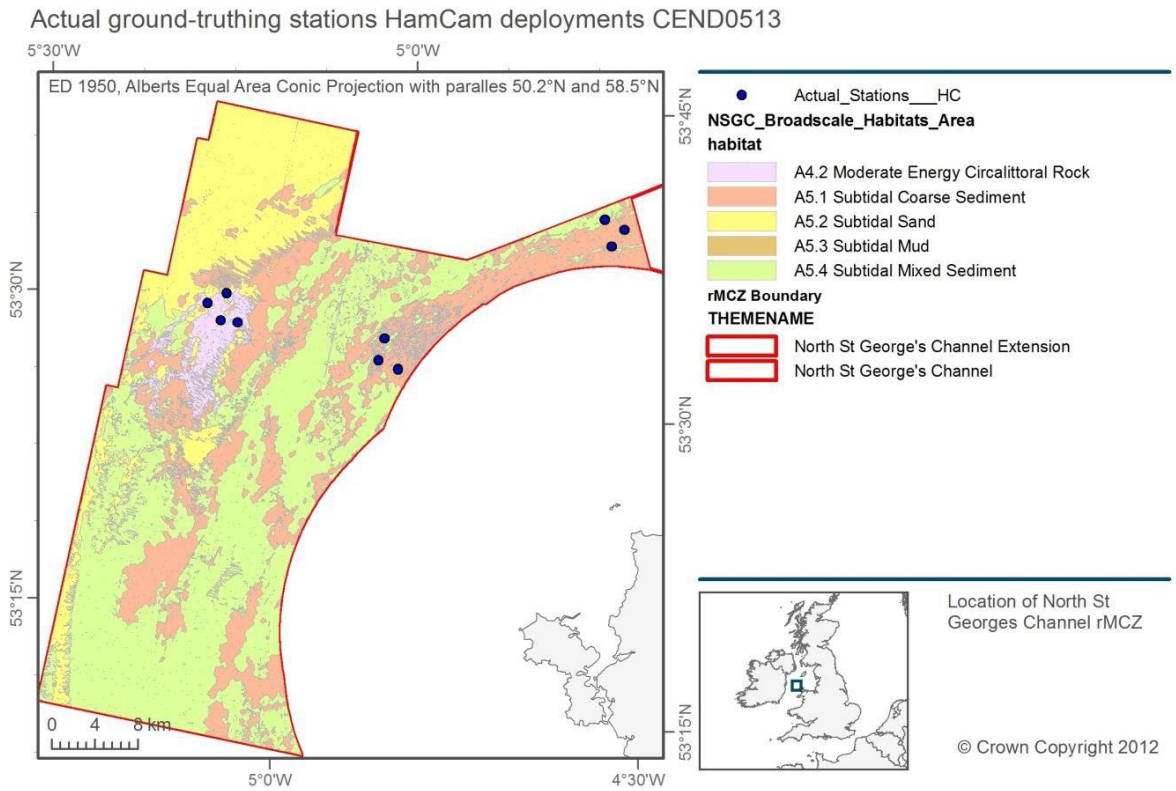


Figure 11. Actual stations surveyed using the HamCam during the North St George's Channel rMCZ survey

4.2 Seabed Imagery

Table 4. Representative still images of the seabed observed during each Drop Camera deployment at North St George's Channel rMCZ (CEND0513).

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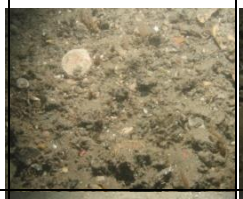
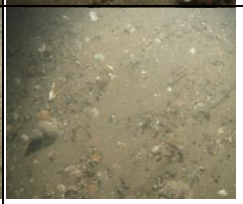
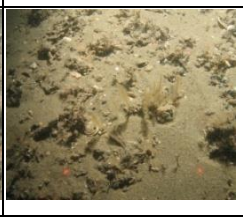
NSGC_CEND0513_NSGC001_STN_162			
NSGC_CEND0513_NSGC002_STN_160			
NSGC_CEND0513_NSGC003_STN_163			

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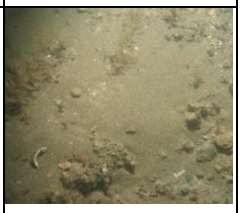
NSGC_CEND0513_NSGC005_STN_165			
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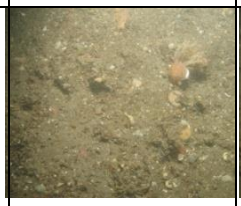
NSGC_CEND0513_NSGC007_STN_167			
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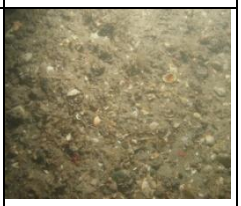
NSGC_CEND0513_NSGC009_STN_166			
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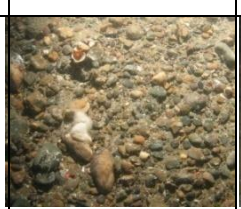
NSGC_CEND0513_NSGC011_STN_127			

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NSGC_CEND0513_NSGC015_STN_132			
NSGC_CEND0513_NSGC016_STN_131			
NSGC_CEND0513_NSGC017_STN_223			
NSGC_CEND0513_NSGC018_STN_225			
NSGC_CEND0513_NSGC019_STN_259			

Station code	Image 1	Image 2	Image 3
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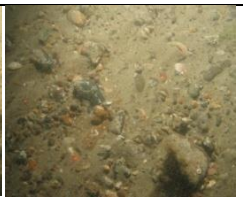
NSGC_CEND0513_NSGC022_STN_267			
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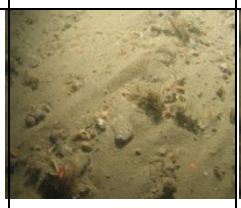
NSGC_CEND0513_NSGC025_STN_268			
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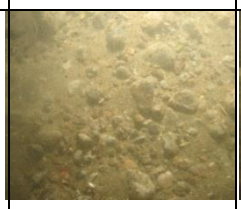
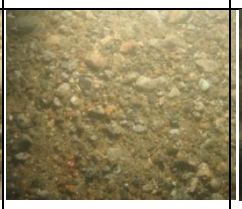
NSGC_CEND0513_NSGC029_STN_269			
NSGC_CEND0513_NSGC030_STN_265			
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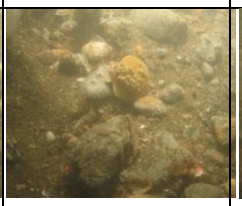
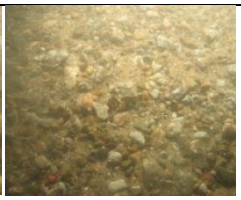
NSGC_CEND0513_NSGC032_STN_270			
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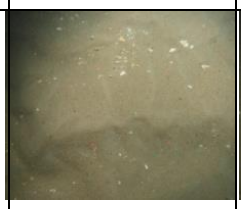
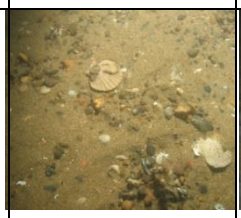
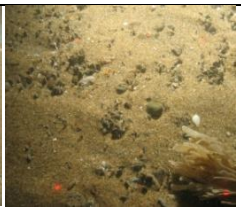
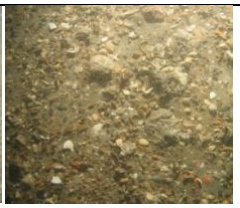
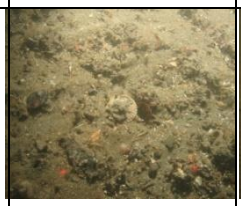
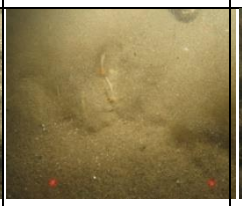
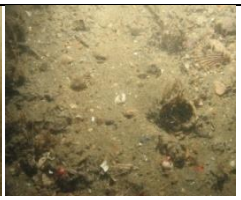
NSGC_CEND0513_NSGC038_STN_206			
NSGC_CEND0513_NSGC039_STN_138			
NSGC_CEND0513_NSGC040_STN_168			
NSGC_CEND0513_NSGC041_STN_201			
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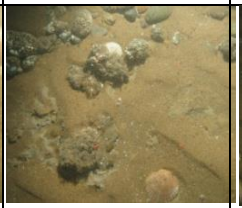
NSGC_CEND0513_NSGC043_STN_135			
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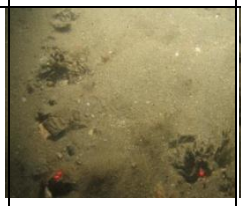
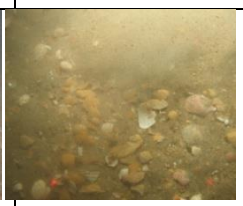
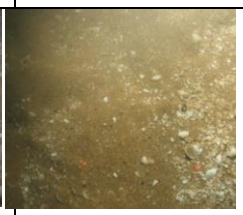
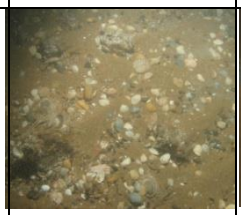
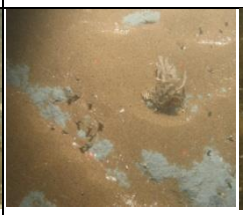
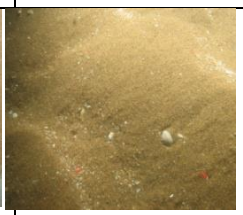
NSGC_CEND0513_NSGC047_STN_202			
NSGC_CEND0513_NSGC048_STN_207			
NSGC_CEND0513_NSGC049_STN_134			
NSGC_CEND0513_NSGC050_STN_139			
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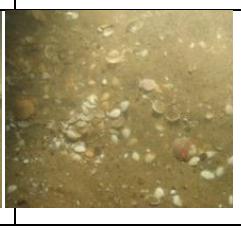
NSGC_CEND0513_NSGC052_STN_148			

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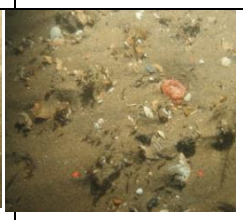
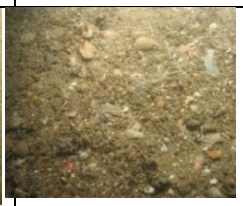
NSGC_CEND0513_NSGC054_STN_171			
NSGC_CEND0513_NSGC055_STN_176			
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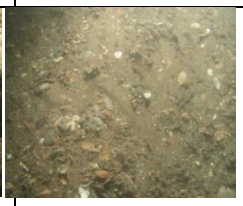
NSGC_CEND0513_NSGC057_STN_200			
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Station code	Image 1	Image 2	Image 3
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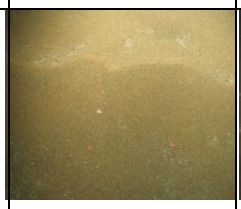
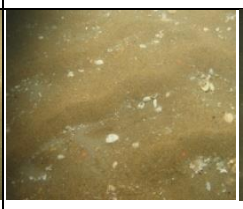
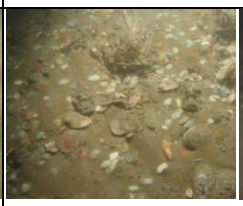
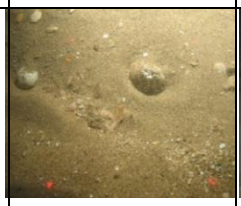
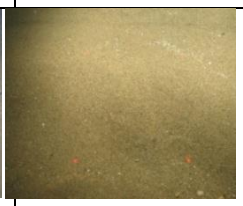
NSGC_CEND0513_NSGC063_STN_155			
NSGC_CEND0513_NSGC064_STN_173			
NSGC_CEND0513_NSGC065_STN_180			
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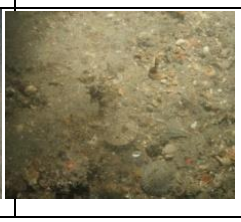
NSGC_CEND0513_NSGC068_STN_218			

Station code	Image 1	Image 2	Image 3
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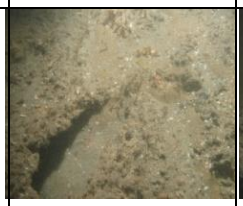
NSGC_CEND0513_NSGC072_STN_169			
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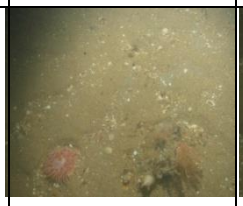
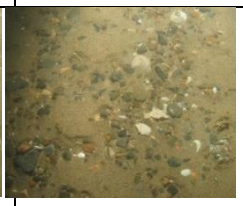
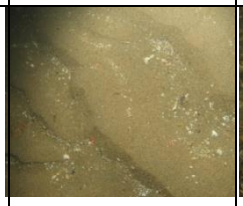
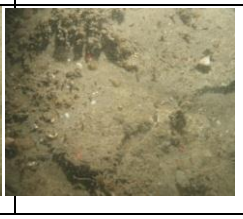
NSGC_CEND0513_NSGC074_STN_188			
NSGC_CEND0513_NSGC075_STN_199			
NSGC_CEND0513_NSGC076_STN_217			

Station code	Image 1	Image 2	Image 3
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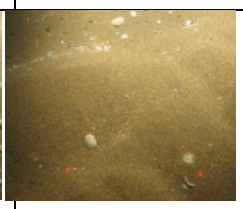
NSGC_CEND0513_NSGC078_STN_137			
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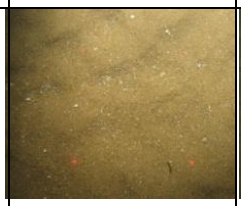
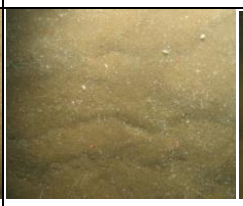
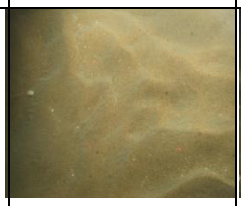
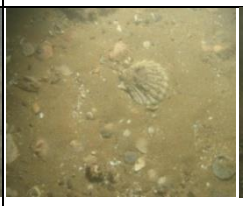
NSGC_CEND0513_NSGC080_STN_151			
NSGC_CEND0513_NSGC081_STN_154			
NSGC_CEND0513_NSGC082_STN_174			
NSGC_CEND0513_NSGC083_STN_181			
NSGC_CEND0513_NSGC084_STN_191			

Station code	Image 1	Image 2	Image 3
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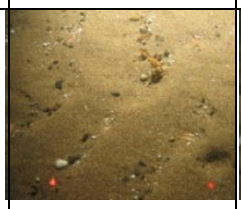
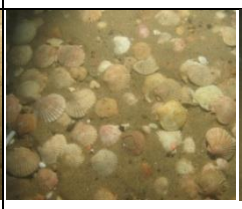
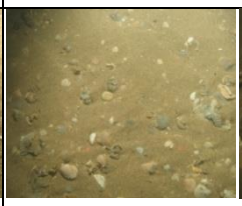
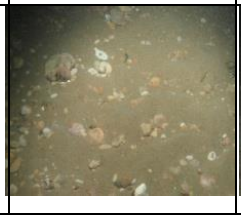
NSGC_CEND0513_NSGC086_STN_219			
NSGC_CEND0513_NSGC087_STN_141			
NSGC_CEND0513_NSGC088_STN_170			
NSGC_CEND0513_NSGC089_STN_178			
NSGC_CEND0513_NSGC090_STN_187			
NSGC_CEND0513_NSGC091_STN_198			
NSGC_CEND0513_NSGC092_STN_216			

Station code	Image 1	Image 2	Image 3
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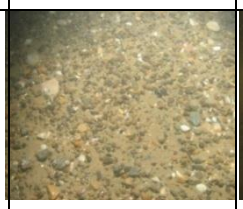
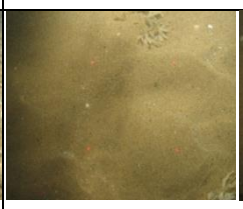
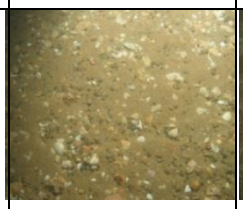
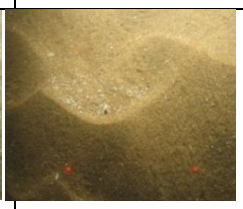
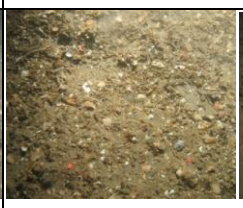
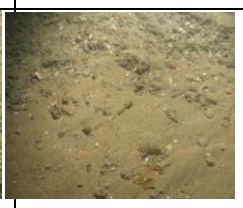
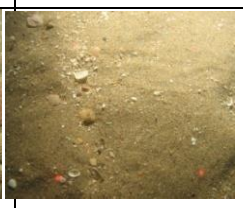
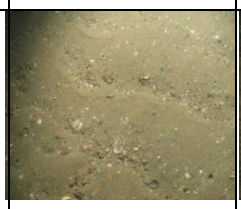
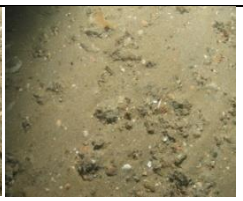
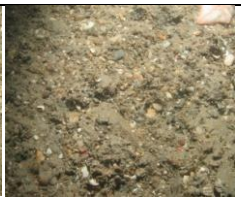
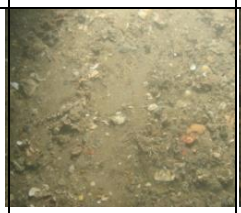
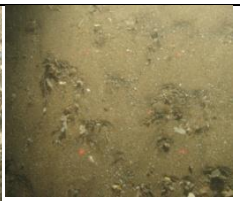
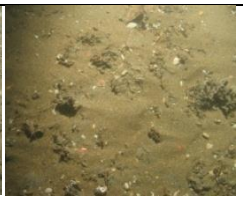
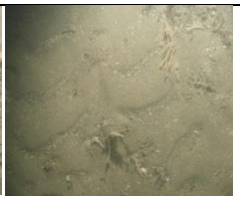
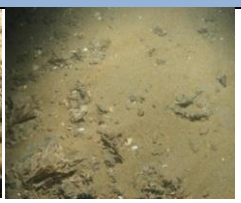
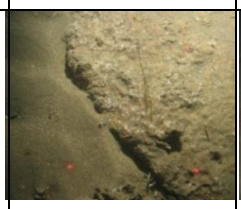
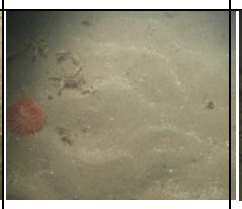
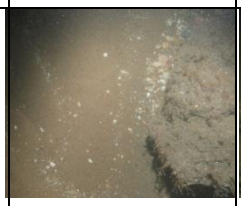
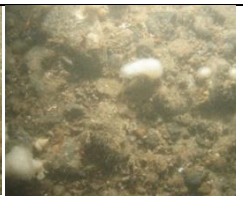
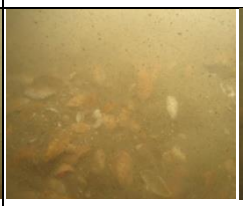
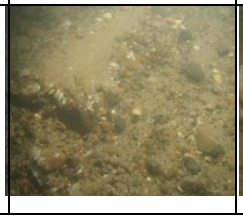
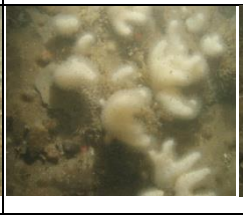
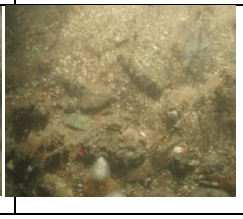
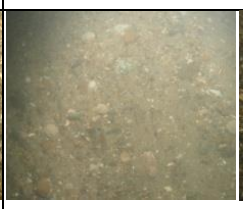
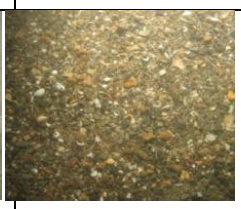
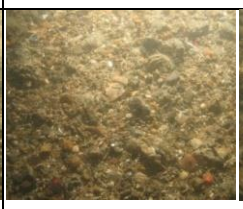
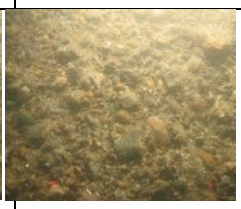
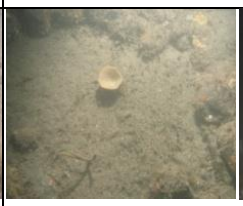
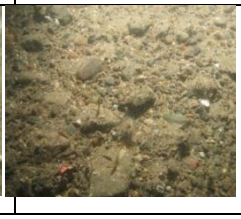
NSGC_CEND0513_NSGC094_STN_142			
NSGC_CEND0513_NSGC095_STN_175			
NSGC_CEND0513_NSGC096_STN_182			
NSGC_CEND0513_NSGC097_STN_192			
NSGC_CEND0513_NSGC098_STN_211			
NSGC_CEND0513_NSGC099_STN_220			
NSGC_CEND0513_NSGC100_STN_179			

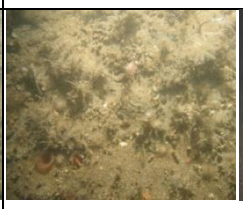
Station code	Image 1	Image 2	Image 3
NSGC_CEND0513_NSGC101_STN_186			
NSGC_CEND0513_NSGC102_STN_197			
NSGC_CEND0513_NSGC103_STN_215			
NSGC_CEND0513_NSGC104_STN_185			
NSGC_CEND0513_NSGC105_STN_193			
NSGC_CEND0513_NSGC106_STN_212			
NSGC_CEND0513_NSGC107_STN_184			
NSGC_CEND0513_NSGC108_STN_196			

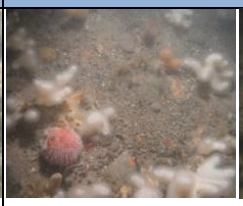
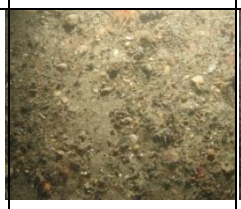
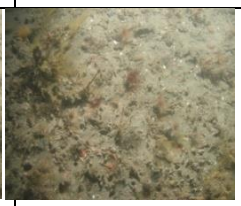
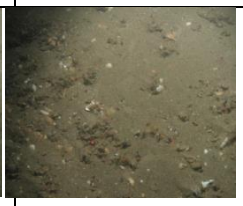
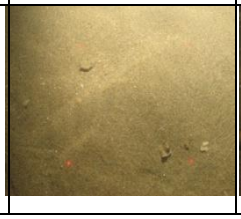
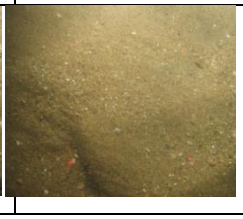
Station code	Image 1	Image 2	Image 3
NSGC_CEND0513_NSGC109_STN_214			
NSGC_CEND0513_NSGC110_STN_183			
NSGC_CEND0513_NSGC111_STN_194			
NSGC_CEND0513_NSGC112_STN_213			
NSGC_CEND0513_NSGC113_STN_195			
NSGC_CEND0513_NSGC114_STN_227			
NSGC_CEND0513_NSGC115_STN_228			
NSGC_CEND0513_NSGC116_STN_235			

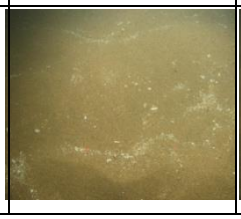
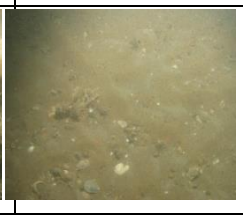
Station code	Image 1	Image 2	Image 3
NSGC_CEND0513_NSGC117_STN_244			
NSGC_CEND0513_NSGC118_STN_229			
NSGC_CEND0513_NSGC119_STN_234			
NSGC_CEND0513_NSGC120_STN_243			
NSGC_CEND0513_NSGC121_STN_246			
NSGC_CEND0513_NSGC122_STN_233			
NSGC_CEND0513_NSGC123_STN_236			
NSGC_CEND0513_NSGC124_STN_247			

Station code	Image 1	Image 2	Image 3
NSGC_CEND0513_NSGC125_STN_230			
NSGC_CEND0513_NSGC126_STN_237			
NSGC_CEND0513_NSGC127_STN_242			
NSGC_CEND0513_NSGC128_STN_257			
NSGC_CEND0513_NSGC129_STN_232			
NSGC_CEND0513_NSGC130_STN_241			
NSGC_CEND0513_NSGC131_STN_248			
NSGC_CEND0513_NSGC132_STN_231			

Station code	Image 1	Image 2	Image 3
NSGC_CEND0513_NSGC133_STN_240			
NSGC_CEND0513_NSGC134_STN_249			
NSGC_CEND0513_NSGC135_STN_238			
NSGC_CEND0513_NSGC136_STN_251			
NSGC_CEND0513_NSGC137_STN_256			
NSGC_CEND0513_NSGC138_STN_239			
NSGC_CEND0513_NSGC139_STN_250			
NSGC_CEND0513_NSGC140_STN_252			

Station code	Image 1	Image 2	Image 3
NSGC_CEND0513_NSGC141_STN_255			
NSGC_CEND0513_NSGC142_STN_253			
NSGC_CEND0513_NSGC143_STN_254			
NSGC_CEND0513_NSGC144_STN_274			
NSGC_CEND0513_NSGC145_STN_275			
NSGC_CEND0513_NSGC146_STN_271			
NSGC_CEND0513_NSGC147_STN_276			
NSGC_CEND0513_NSGC148_STN_273			

Station code	Image 1	Image 2	Image 3
NSGC_CEND0513_NSGC149_STN_277			
NSGC_CEND0513_NSGC150_STN_272			
NSGC_CEND0513_NSGC151_STN_159			
NSGC_CEND0513_NSGC152_STN_161			
NSGC_CEND0513_NSGC153_STN_299			
NSGC_CEND0513_NSGC154_STN_298			
NSGC_CEND0513_NSGC155_STN_297			
NSGC_CEND0513_NSGC156_STN_296			

Station code	Image 1	Image 2	Image 3
NSGC_CEND0513_NSGC157_STN_160			
NSGC_CEND0513_NSGC158_STN_294			
NSGC_CEND0513_NSGC159_STN_292			

A wide range of habitats were observed during the DC survey (Table 4, Table 5 and Table 6). These included high and moderate energy circalittoral rock and subtidal mixed, coarse and sand sedimentary habitats. The Annex 1 habitat Methane Derived Autogenic Carbonate rock (MDAC) was preliminarily observed at 30 stations (Figure 12). The mussel species *Modiolus modiolus* which when in reef form is also an Annex 1 feature was also observed though not in reefs form (Figure 13).

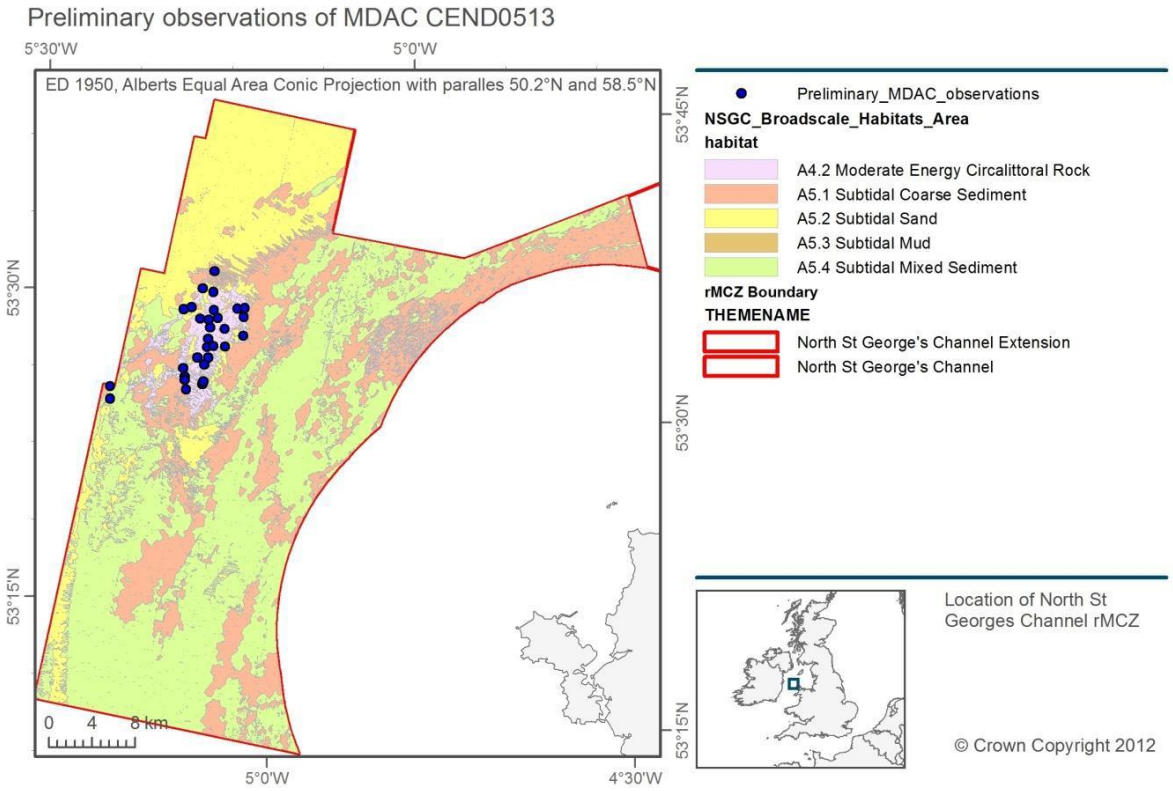


Figure 12. Preliminary observations of MDAC within the North St George's Channel rMCZ

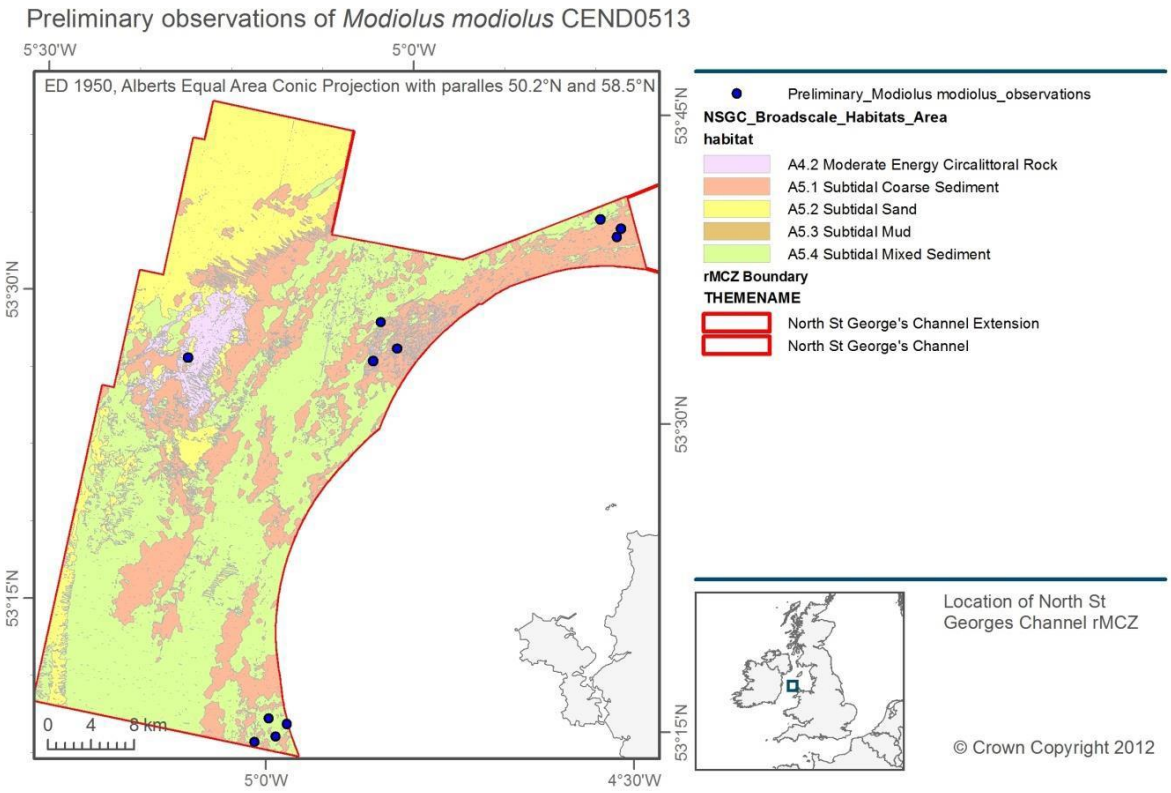


Figure 13. Preliminary observations of *Modiolus modiolus* within the North St George's Channel rMCZ

4.3 Grab Sample

4.3.1 Particle Size

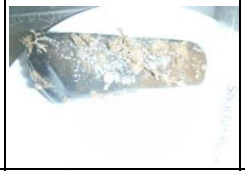
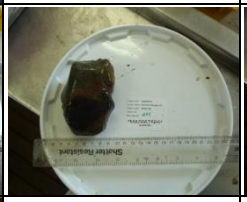
Table 5. Images of sediment composition of samples collected using a Hamon grab (whole sample, sediment retained on the 5mm mesh and sediment retained on the 1mm sieve).

Station code	Image 1 (PSA)	Image2 (5 mm)	Image3 (1 mm)
NSGC_CEND0513_NSGC085_STN_285_A1			
NSGC_CEND0513_NSGC097_STN_286_A1			
NSGC_CEND0513_NSGC103_STN_284_A1			
NSGC_CEND0513_NSGC105_STN_287_A1			
NSGC_CEND0513_NSGC115_STN_282_A2			
NSGC_CEND0513_NSGC120_STN_281_A2			
NSGC_CEND0513_NSGC129_STN_283_A1			
NSGC_CEND0513_NSGC146_STN_280_A1			

Station code	Image 1 (PSA)	Image2 (5 mm)	Image3 (1 mm)
NSGC_CEND0513_NSGC147_STN_278_A1			

4.3.2 Cobble Analysis

Table 6. Images of cobbles retained from Hamon grab samples for cobble analysis

Station code	Cobble 1	Cobble 2	Cobble 3	Cobble 4	Cobble 5	Cobble 6
NSGC_CEND0513_NSGC115_ STN_282_A2						
NSGC_CEND0513_NSGC120_ STN_281_A2						
NSGC_CEND0513_NSGC129_ STN_283_A1						
NSGC_CEND0513_NSGC129_ STN_283_A1_COBBLE *CONTINUED* No 7						
NSGC_CEND0513_NSGC147_ STN_278_A1						

Annexes

RV Cefas Endeavour

Port of registry	Lowestoft
Length OA	73.00 m (excluding stern roller)
Length extreme	73.916 m
Breadth (MLD)	15.80 m
Depth (MLD)	8.20 m
Design draft	5.00 m
Deep draught	5.50 m
LBP	66.50 m
Gross tonnage	2983 tonnes
Net register tonnage	894 tonnes
Net lightship	2436 tonnes
Deadweight @ 5.00 m	784 tonnes
Deadweight @ 5.50 m	1244 tonnes
Displacement @ 5.00 m	3210 tonnes
Displacement @ 5.50 m	3680 tonnes
Builder	Ferguson Shipbuilders Limited, Port Glasgow
Commissioned	2003
Communications	In port BT Tel. Cellphone Voice/Fax/Data Radio TELEX Inmarsat C Fleet 77 (Inmarsat F) and VSAT (eutelsat) internet access
Endurance	42 days
Complement	En-suite accommodation for 16 crew and 19 scientists with dedicated hospital facility
Propulsion System	AC/DC Diesel Electric 3 x diesel electric AC generators, individually raft mounted 2 x tandem electric DC motors Single screw
Power generation	3240 Kw
Power propulsion	2230 Kw
Thrusters	Bow thruster (flush mounted azimuthing) Stern thruster (tunnel)
Trial speed	14.4 knots
Bollard pull	29 tonnes
Call sign	VQHF3
Official number	906938
MMSI	235005270

Lloyds/IMO number	9251107
Side Gantry	7.5 tonne articulated side A-frame
Stern Gantry	25 tonne stern A-frame
Winches	3 x cranes 35 tM, heave compensated 2 x trawl winches 2 x drum winches, (1 double) Double barrel survey winch with motion compensation and slip rings Double barrel survey winch with slip rings Double barrel towing winch with slip rings Side-scan sonar winch with slip rings 3 x Gilson winches (one fitted to stern A-frame)
Transducers/Sea tube	Drop keel to deploy transducers outside the hull boundary layer in addition to hull mounted transducers 1.2 m diameter sea tube/moon-pool
Acoustic equipment	Kongsberg Simrad: HiPAP 500 positioning sonar EK60, 38/120 kHz scientific sounder EA 600, 50/200 kHz scientific sounder Scanmar net mensuration system SH80 high frequency omni- directional sonar EM3002 swathe bathymetry sounder Hull mounted Scanmar fishing computer transducers
Boats	2 x 8m rigid work and rescue boats with suite of navigational equipment deployed on heave-compensated davits
Laboratories	8 networked laboratories designed for optimum flexibility of purpose 4 serviced deck locations for containerised laboratories
Special features	Dynamic positioning system Intering anti-roll system Local Area Network with scientific data management system Ship-wide general information system CCTV
Class	LRS 100A1+LMC UMS SCM CCS ICC IP ES(2) DP(CM) ICE class 2

Camera sledge and Drop Camera

Flash model: Kongsberg 11-242
Underwater lights – Cefas high power LED strip lights
Video and stills camera settings variable depending on underwater visibility and ambient light levels.

Positioning Software-Tower

Vessel offsets are defined from the pitch roll centre of the vessel – the Common Reference Point (CRP) used by the Tower CEMAP software to calculate offsets.

Multibeam Bathymetry

Model: Kongsberg EM3002D
Frequency: 300kHz; swathe width variable running in hi res equidistant mode
Latency correction not determined – 1pps synchronised time system utilised on vessel.

Metadata

Station metadata for the North St George's Channel rMCZ survey on CEND 03/12 are provided below. Stn No is a sequential event number for the cruise, so changes each time a new gear is used or a new location sampled. Stn Code is used to identify the sampling location. CTD=Conductivity, Temperature, Depth micrologger, MB=Multibeam, HC=HamCam, CS=Camera Sledge, DC=Drop Camera.

Cruise	Date	Stn No	Stn Code	Gear	Latitude (degrees)	Longitude (degrees)
CEND 03/12	03/02/2012	1	MBCAL_CTD	CTD	52.11800	-5.69700
CEND 03/12	03/02/2012	2	NSGC	MB	53.33400	-5.07200
CEND 03/12	03/02/2012	2	NSGC	MB	53.17500	-5.15700
CEND 03/12	03/02/2012	3	CTD 2	CTD	53.33450	-5.07240
CEND 03/12	03/02/2012	4	NSGC_C17	HC	53.33243	-5.07455
CEND 03/12	03/02/2012	5	C17-C20	MB	53.37480	-5.05108
CEND 03/12	03/02/2012	5	C17-C20	MB	53.35410	-5.06450
CEND 03/12	03/02/2012	6	NSG_C20	HC	53.37479	-5.05123
CEND 03/12	03/02/2012	7	C20-C24	MB	53.41720	-5.02780
CEND 03/12	03/02/2012	7	C20-C24	MB	53.37430	-5.05130
CEND 03/12	03/02/2012	8	NSG_C24	HC	53.41724	-5.02772
CEND 03/12	03/02/2012	9	C24-C29	MB	53.45996	-5.00455
CEND 03/12	03/02/2012	9	C24-C29	MB	53.41753	-5.02767
CEND 03/12	03/02/2012	10	NSG_C29	HC	53.45989	-5.00436
CEND 03/12	03/02/2012	10	NSG_C29	HC	53.45989	-5.00433
CEND 03/12	03/02/2012	11	C29-MB line	MB	53.54010	-4.97650
CEND 03/12	03/02/2012	11	C29-MB line	MB	53.44611	-5.00324
CEND 03/12	03/02/2012	12	MB EOL-C36	MB	53.54400	-4.95690
CEND 03/12	03/02/2012	12	MB EOL-C36	MB	53.54410	-4.95600
CEND 03/12	03/02/2012	13	NSG-C36	HC	53.54494	-4.95774
CEND 03/12	03/02/2012	14	C36-D1	MB	53.50140	-4.96280
CEND 03/12	03/02/2012	14	C36-D1	MB	53.54310	-4.95660
CEND 03/12	03/02/2012	15	DC1	CS	53.49949	-4.96220
CEND 03/12	03/02/2012	15	DC1	CS	53.50013	-4.96907
CEND 03/12	03/02/2012	16	DC2	DC	53.50645	-4.94376
CEND 03/12	03/02/2012	16	DC2	DC	53.50349	-4.94383
CEND 03/12	03/02/2012	17	DC2-DC3	MB	53.52700	-4.94000
CEND 03/12	03/02/2012	17	DC-2DC3	MB	53.50610	-4.94170
CEND 03/12	03/02/2012	18	DC3	DC	53.51911	-4.93913
CEND 03/12	03/02/2012	18	DC3	DC	53.52187	-4.93959
CEND 03/12	03/02/2012	19	NSGDC3-DC4	MB	53.51400	-4.91551
CEND 03/12	03/02/2012	19	NSGDC3-DC4	MB	53.51830	-4.93500
CEND 03/12	03/02/2012	20	DC4	DC	53.51439	-4.91546
CEND 03/12	03/02/2012	20	DC4	DC	53.51189	-4.91408
CEND 03/12	03/02/2012	21	DC5	DC	53.51562	-4.92226
CEND 03/12	03/02/2012	21	DC5	DC	53.51382	-4.92304
CEND 03/12	03/02/2012	22	DC5-C37	MB	53.55300	-4.88150
CEND 03/12	03/02/2012	22	DC5-C37	MB	53.51710	-4.91802
CEND 03/12	03/02/2012	23	NSG-C37	HC	53.55428	-4.88362

Cruise	Date	Stn No	Stn Code	Gear	Latitude (degrees)	Longitude (degrees)
CEND 03/12	03/02/2012	23	NSG-C37	HC	53.55429	-4.88359
CEND 03/12	03/02/2012	24		MB	53.60600	-4.78590
CEND 03/12	03/02/2012	24		MB	53.55500	-4.88000
CEND 03/12	03/02/2012	25	NSG-C42	HC	53.60607	-4.78614
CEND 03/12	03/02/2012	26	C42-Mx4	MB	53.61550	-4.74310
CEND 03/12	03/02/2012	26	C42-Mx4	MB	53.60920	-4.77910
CEND 03/12	03/02/2012	27	NSG-Mx4	HC	53.61487	-4.74681
CEND 03/12	03/02/2012	28	NSG-Mx5	HC	53.62481	-4.76172
CEND 03/12	03/02/2012	29	NSG-Mx6	HC	53.62737	-4.73962
CEND 03/12	03/02/2012	30	NSG-Mx7	HC	53.63033	-4.71738
CEND 03/12	03/02/2012	31	NSG-C43	HC	53.61515	-4.71199
CEND 03/12	03/02/2012	32	NSG-Mx8	HC	53.63298	-4.69483
CEND 03/12	03/02/2012	32	NSG-Mx8	HC	53.63298	-4.69482
CEND 03/12	03/02/2012	32	NSG-Mx8	HC	53.63295	-4.69483
CEND 03/12	03/02/2012	33	NSG-S21	HC	53.63567	-4.67316
CEND 03/12	03/02/2012	35	NSG-Mx9	HC	53.63836	-4.65055
CEND 03/12	03/02/2012	35	NSG-Mx9	HC	53.63836	-4.65055
CEND 03/12	03/02/2012	36	Mx9-Mx16	MB	53.67500	-4.66500
CEND 03/12	03/02/2012	36	Mx9-Mx16	MB	53.63800	-4.64800
CEND 03/12	04/02/2012	37	Mx16	DC	53.67171	-4.67601
CEND 03/12	04/02/2012	37	Mx16	DC	53.67101	-4.67532
CEND 03/12	04/02/2012	38	NSG-Mx16	HC	53.67104	-4.67389
CEND 03/12	04/02/2012	39	Mx16-Mx12	MB	53.64650	-4.68780
CEND 03/12	04/02/2012	39	Mx16-Mx12	MB	53.67100	-4.67350
CEND 03/12	04/02/2012	40	Mx12	DC	53.64682	-4.68787
CEND 03/12	04/02/2012	40	Mx12	DC	53.64655	-4.68782
CEND 03/12	04/02/2012	41	Mx16-Mx13	MB	53.64900	-4.66500
CEND 03/12	04/02/2012	41	Mx16-Mx13	MB	53.65900	-4.69420
CEND 03/12	04/02/2012	42	NSG-Mx13	HC	53.64863	-4.66589
CEND 03/12	04/02/2012	42	NSG-Mx13	HC	53.64863	-4.66592
CEND 03/12	04/02/2012	43	Mx13-Mx8	MB	53.64800	-4.66592
CEND 03/12	04/02/2012	43	Mx13-Mx8	MB	53.63448	-4.69448
CEND 03/12	04/02/2012	44	Mx8	DC	53.63448	-4.69448
CEND 03/12	04/02/2012	44	Mx8	DC	53.63307	-4.69497
CEND 03/12	04/02/2012	45	Mx8-Mx11	MB	53.64630	-4.70670
CEND 03/12	04/02/2012	45	Mx8-Mx11	MB	53.63235	-4.69521
CEND 03/12	04/02/2012	46	Mx11	DC	53.64455	-4.70985
CEND 03/12	04/02/2012	46	Mx11	DC	53.64422	-4.71007
CEND 03/12	04/02/2012	47	NSG-Mx11	HC	53.64307	-4.71021
CEND 03/12	04/02/2012	47	NSG-Mx11	HC	53.64309	-4.71026
CEND 03/12	04/02/2012	48	Mx11-Mx15	MB	53.65580	-4.70290
CEND 03/12	04/02/2012	48	Mx11-Mx15	MB	53.64580	-4.71050
CEND 03/12	04/02/2012	49	NSG-Mx15	HC	53.65581	-4.70319
CEND 03/12	04/02/2012	50	Mx15-Mx14	MB	53.65300	-4.72400
CEND 03/12	04/02/2012	50	Mx15-Mx14	MB	53.65500	-4.70430
CEND 03/12	04/02/2012	51	NSG-Mx14	HC	53.65304	-4.72553
CEND 03/12	04/02/2012	52	Mx14-Mx10	MB	53.64046	-4.73203
CEND 03/12	04/02/2012	52	Mx14-Mx10	MB	53.65200	-4.72530

Cruise	Date	Stn No	Stn Code	Gear	Latitude (degrees)	Longitude (degrees)
CEND 03/12	04/02/2012	53	NSGMX10	HC	53.64035	-4.73237
CEND 03/12	04/02/2012	54	Mx10	DC	53.64153	-4.73077
CEND 03/12	04/02/2012	54	Mx10	DC	53.64059	-4.73124
CEND 03/12	04/02/2012	56	NSG-C41	HC	53.59685	-4.86033
CEND 03/12	04/02/2012	57	C14-S15	MB	53.58040	-4.86970
CEND 03/12	04/02/2012	57	C14-S15	MB	53.59700	-4.86080
CEND 03/12	04/02/2012	58	NSG-S15	HC	53.57985	-4.87008
CEND 03/12	04/02/2012	59	S 15	CS	53.57919	-4.86996
CEND 03/12	04/02/2012	59	S 15	CS	53.57833	-4.87005
CEND 03/12	04/02/2012	60	S15-C40	MB	53.58871	-4.93513
CEND 03/12	04/02/2012	60	S15-C40	MB	53.57690	-4.87930
CEND 03/12	04/02/2012	61	NSG-C40	HC	53.58743	-4.93462
CEND 03/12	04/02/2012	61	NSG-C40	HC	53.58741	-4.93467
CEND 03/12	04/02/2012	61	NSG-C40	HC	53.58734	-4.93463
CEND 03/12	04/02/2012	61	NSG-C40	HC	53.58738	-4.93463
CEND 03/12	03/02/2012	62	C40-SF01	MB	53.58600	-4.94000
CEND 03/12	03/02/2012	62	C40-SF01	MB	53.53700	-4.95700
CEND 03/12	03/02/2012	63	NSG-SF01	HC	53.53700	-4.95700
CEND 03/12	03/02/2012	64	SF01-C35	MB	53.53810	-4.99720
CEND 03/12	03/02/2012	64	SF01-C35	MB	53.53690	-4.96010
CEND 03/12	04/02/2012	65	NSG-C35	HC	53.53576	-5.03162
CEND 03/12	04/02/2012	66	C-35TOC-39	MB	53.57900	-5.01060
CEND 03/12	04/02/2012	66	C-35TOC-39	MB	53.53650	-5.03490
CEND 03/12	04/02/2012	67	NSG-C39	HC	53.57828	-5.00898
CEND 03/12	04/02/2012	67	NSG-C39	HC	53.57831	-5.00880
CEND 03/12	04/02/2012	68	C-39TOS-15	MB	53.58330	-4.87420
CEND 03/12	04/02/2012	68	C-39TOS-15	MB	53.57440	-5.00840
CEND 03/12	04/02/2012	69	NSG-SF02	CS	53.57977	-4.86216
CEND 03/12	04/02/2012	69	NSG-SF02	CS	53.57756	-4.86280
CEND 03/12	04/02/2012	70	S-15TOC-38	MB	53.56910	-5.08271
CEND 03/12	04/02/2012	70	S-15TOC-38	MB	53.57620	-4.56870
CEND 03/12	04/02/2012	71	NSG-C38	HC	53.56944	-5.08230
CEND 03/12	04/02/2012	72	NSG-C38	CS	53.56898	-5.08335
CEND 03/12	04/02/2012	72	NSG-C38	CS	53.56837	-5.08463
CEND 03/12	04/02/2012	73	C38TOS19	MB	53.61400	-5.07370
CEND 03/12	04/02/2012	73	C38TOS19	MB	53.57170	-5.08450
CEND 03/12	04/02/2012	74	NSG-S19	HC	53.61840	-5.06936
CEND 03/12	04/02/2012	75	S19TOS23	MB	53.64550	-5.11040
CEND 03/12	04/02/2012	75	S19TOS23	MB	53.61930	-5.07070
CEND 03/12	04/02/2012	76	NSG-S23	HC	53.64512	-5.10979
CEND 03/12	04/02/2012	77	S-23TOS-26	MB	53.67662	-5.08740
CEND 03/12	04/02/2012	77	S-23TOS-26	MB	53.56070	-5.10390
CEND 03/12	04/02/2012	78	NSG-S26	HC	53.67898	-5.09125
CEND 03/12	04/02/2012	79	S26-S25	MB	53.67110	-5.14887
CEND 03/12	04/02/2012	79	S26-S25	MB	53.68000	-5.09456
CEND 03/12	04/02/2012	80	NSG-S25	HC	53.67140	-5.15071
CEND 03/12	04/02/2012	81	NSG S25	CTD	53.67130	-5.50700
CEND 03/12	05/02/2012	82	NSG S25	CS	53.67119	-5.15051

Cruise	Date	Stn No	Stn Code	Gear	Latitude (degrees)	Longitude (degrees)
CEND 03/12	05/02/2012	82	NSG S25	CS	53.67232	-5.15242
CEND 03/12	04/02/2012	83	S25-S24	MB	53.66400	-5.20818
CEND 03/12	04/02/2012	83	S25-S24	MB	53.67140	-5.17320
CEND 03/12	04/02/2012	84	NSG S24	HC	53.66409	-5.20976
CEND 03/12	04/02/2012	85	S24-S22	MB	53.63100	-5.16504
CEND 03/12	04/02/2012	85	S24-S22	MB	53.66280	-5.20410
CEND 03/12	04/02/2012	86	NSG_S22	HC	53.63751	-5.16935
CEND 03/12	05/02/2012	87	S22-S20	MB	53.62760	-5.22346
CEND 03/12	05/02/2012	87	S22-S20	MB	53.63640	-5.18440
CEND 03/12	05/02/2012	88	NSG_S20	HC	53.62988	-5.22849
CEND 03/12	02/05/2012	89	NSG S20	CS	53.63024	-5.22886
CEND 03/12	02/05/2012	89	NSG S20	CS	53.63155	-5.22965
CEND 03/12	05/02/2012	90	S20-S16	MB	53.60000	-5.23900
CEND 03/12	05/02/2012	90	S20-S16	MB	53.63170	-5.23180
CEND 03/12	05/02/2012	91	NSG_S16	HC	53.59595	-5.24721
CEND 03/12	05/02/2012	92	S20-S16	MB	53.60130	-5.18840
CEND 03/12	05/02/2012	92	S20-S16	MB	53.59600	-5.24720
CEND 03/12	05/02/2012	93	NSGS17	HC	53.60341	-5.18801
CEND 03/12	05/02/2012	94	S17-S18	MB	53.61024	-5.12923
CEND 03/12	05/02/2012	94	S17-S18	MB	53.60380	-5.18640
CEND 03/12	05/02/2012	95	NSG_S18	CS	53.61085	-5.12845
CEND 03/12	05/02/2012	96	NSGS18	CS	53.61098	-5.12889
CEND 03/12	05/02/2012	96	NSGS18	CS	53.61188	-5.13065
CEND 03/12	05/02/2012	97	S18-S14	MB	53.57600	-5.14700
CEND 03/12	05/02/2012	97	S18-S14	MB	53.61252	-5.13190
CEND 03/12	05/02/2012	98	NSG S14	HC	53.57697	-5.14729
CEND 03/12	05/02/2012	99	S14-S13	MB	53.56800	-5.20500
CEND 03/12	05/02/2012	99	S14-S13	MB	53.57700	-5.14800
CEND 03/12	05/02/2012	100	NSG S13	HC	53.56950	-5.20620
CEND 03/12	05/02/2012	101	NSG S13-S12	MB	53.56100	-5.26400
CEND 03/12	05/02/2012	101	NSG S13-S12	MB	53.56900	-5.20600
CEND 03/12	05/02/2012	102	NSG S12	HC	53.56195	-5.26569
CEND 03/12	05/02/2012	103	NSG S12-S9	MB	53.52770	-5.28250
CEND 03/12	05/02/2012	103	NSG S12-S9	MB	53.56100	-5.26600
CEND 03/12	05/02/2012	104	NSG S9	HC	53.52801	-5.28423
CEND 03/12	05/02/2012	105	NSG S9	DC	53.52703	-5.28535
CEND 03/12	05/02/2012	105	NSG S9	DC	53.52563	-5.28816
CEND 03/12	05/02/2012	106	S9-S10	MB	53.53700	-5.22200
CEND 03/12	05/02/2012	106	S9-S10	MB	53.52800	-5.28100
CEND 03/12	05/02/2012	107	NSG S10	HC	53.53524	-5.22493
CEND 03/12	05/02/2012	108	NSG S10- S11	MB	53.54380	-5.16263
CEND 03/12	05/02/2012	108	NSG S10- S11	MB	53.53600	-5.22200
CEND 03/12	05/02/2012	109	NSG S11	HC	53.54288	-5.16579
CEND 03/12	05/02/2012	110	NSG S11	DC	53.54269	-5.16528
CEND 03/12	05/02/2012	110	NSG S11	DC	53.54288	-5.16724
CEND 03/12	05/02/2012	111	NSG S11-C34	MB	53.52660	-5.10157
CEND 03/12	05/02/2012	111	NSG S11-C34	MB	53.54300	-5.18840
CEND 03/12	05/02/2012	113	NSG C34	DC	53.52478	-5.10234

Cruise	Date	Stn No	Stn Code	Gear	Latitude (degrees)	Longitude (degrees)
CEND 03/12	05/02/2012	113	NSG C34	DC	53.52626	-5.10536
CEND 03/12	05/02/2012	114	NSG C34-S8	MB	53.50800	-5.18470
CEND 03/12	05/02/2012	114	NSG C34-S8	MB	53.52670	-5.10637
CEND 03/12	05/02/2012	115	NSG S8	HC	53.50854	-5.18447
CEND 03/12	04/02/2012	116	S8-C33	MB	53.50642	-5.25020
CEND 03/12	04/02/2012	116	S8-C33	MB	53.50829	-5.85490
CEND 03/12	05/02/2012	117	NSG C33	HC	53.50774	-5.25376
CEND 03/12	05/02/2012	118	NSG	MB	53.46400	-5.27300
CEND 03/12	05/02/2012	118	NSG	MB	53.50620	-5.25560
CEND 03/12	05/02/2012	119	NSG-C30	HC	53.46527	-5.27693
CEND 03/12	05/02/2012	120	NSG-Mx3	HC	53.45705	-5.24710
CEND 03/12	05/02/2012	121	NSG Mx3	DC	53.45676	-5.24676
CEND 03/12	05/02/2012	121	NSG Mx3	DC	53.45779	-5.24702
CEND 03/12	05/02/2012	122	Mx3-S7	MB	53.47127	-5.20321
CEND 03/12	05/02/2012	122	Mx3-S7	MB	53.45926	-5.24563
CEND 03/12	05/02/2012	123	NSG-S7	HC	53.47456	-5.20323
CEND 03/12	05/02/2012	123	NSG-S7	HC	53.47464	-5.20324
CEND 03/12	05/02/2012	124	NSG-S7	DC	53.47437	-5.20315
CEND 03/12	05/02/2012	124	NSG-S7	DC	53.47559	-5.20464
CEND 03/12	05/02/2012	125	S7-C31	MB	53.47964	-5.13028
CEND 03/12	05/02/2012	125	S7-C31	MB	53.47689	-5.19671
CEND 03/12	05/02/2012	126	NSG-C31	HC	53.48413	-5.12929
CEND 03/12	05/02/2012	127	C31-C32	MB	53.99390	-5.05264
CEND 03/12	05/02/2012	127	C31-C32	MB	53.48523	-5.12467
CEND 03/12	05/02/2012	128	NSG-C32	HC	53.49321	-5.05520
CEND 03/12	05/02/2012	129	C32-C29	MB	53.46032	-4.99900
CEND 03/12	05/02/2012	129	C32-C29	MB	53.49338	-5.05132
CEND 03/12	05/02/2012	130	NSG-C29	DC	53.46010	-5.00393
CEND 03/12	05/02/2012	130	NSG-C29	DC	53.45968	-5.00630
CEND 03/12	05/02/2012	131	C29-C28	MB	53.45000	-5.07800
CEND 03/12	05/02/2012	131	C29-C28	MB	53.49554	-5.01683
CEND 03/12	05/02/2012	132	NSG-C28	HC	53.45087	-5.07881
CEND 03/12	05/02/2012	133	NSG C28-C27	MB	53.44192	-5.14994
CEND 03/12	05/02/2012	133	NSG C28-C27	MB	53.44975	-5.08730
CEND 03/12	05/02/2012	134	NSG-C27	HC	53.44143	-5.15276
CEND 03/12	05/02/2012	135	NSG C27-C56	MB	53.44080	-5.22111
CEND 03/12	05/02/2012	135	NSG C27-C56	MB	53.44191	-5.15809
CEND 03/12	05/02/2012	136	NSG-S6	HC	53.44037	-5.22151
CEND 03/12	05/02/2012	137	NSG-S6	DC	53.44210	-5.22100
CEND 03/12	05/02/2012	137	NSG-S6	DC	53.44316	-5.21916
CEND 03/12	05/02/2012	138	NSG-C26	HC	53.43203	-5.22648
CEND 03/12	05/02/2012	139	NSG C26-C25	MB	53.42400	-5.29976
CEND 03/12	05/02/2012	139	NSG C26-C25	MB	53.43110	-5.22950
CEND 03/12	06/02/2012	140	NSG C25	HC	53.42258	-5.30018
CEND 03/12	05/02/2012	141	NSG C25-C21	MB	53.38010	-5.32352
CEND 03/12	05/02/2012	141	NSG C25-C21	MB	53.42402	-5.30098
CEND 03/12	06/02/2012	142	NSG C21	HC	53.38010	-5.32344
CEND 03/12	05/02/2012	143	nsg c21-c22	MB	53.38900	-5.24942

Cruise	Date	Stn No	Stn Code	Gear	Latitude (degrees)	Longitude (degrees)
CEND 03/12	05/02/2012	143	nsg c21-c22	MB	53.37970	-5.31837
CEND 03/12	06/02/2012	144	NSG C22	HC	53.38902	-5.24952
CEND 03/12	05/02/2012	145	NSG-C22	DC	53.38908	-5.24973
CEND 03/12	05/02/2012	145	NSG-C22	DC	53.38905	-5.24847
CEND 03/12	04/02/2012	146	NSG C22- S5	MB	53.41230	-5.18150
CEND 03/12	04/02/2012	146	NSG C22- S5	MB	53.38880	-5.24330
CEND 03/12	05/02/2012	147	NSG S5	HC	53.41375	-5.18146
CEND 03/12	06/02/2012	148	NSG S5- C23	MB	53.40190	-5.10350
CEND 03/12	06/02/2012	148	NSG S5- C23	MB	53.41360	-5.18282
CEND 03/12	06/02/2012	149	NSG C23	HC	53.40792	-5.10181
CEND 03/12	06/02/2012	150	NSG C23	DC	53.40767	-5.10211
CEND 03/12	06/02/2012	150	NSG C23	DC	53.40865	-5.10152
CEND 03/12	06/02/2012	152	NSG C23- C19	MB	53.36140	-5.12220
CEND 03/12	06/02/2012	152	NSG C23- C19	MB	53.40590	-5.10159
CEND 03/12	06/02/2012	153	NSG C19	HC	53.36530	-5.12485
CEND 03/12	06/02/2012	155	NSG S4	HC	53.37973	-5.19942
CEND 03/12	06/02/2012	156	S4-C18	MB	53.35790	-5.19910
CEND 03/12	06/02/2012	156	S4-C18	MB	53.37890	-5.19880
CEND 03/12	06/02/2012	157	NSG C18	HC	53.35610	-5.19881
CEND 03/12	06/02/2012	158	NSG-C18	DC	53.35578	-5.19858
CEND 03/12	06/02/2012	158	NSG-C18	DC	53.35720	-5.19889
CEND 03/12	06/02/2012	159	C18-S3	MB	53.33700	-5.27600
CEND 03/12	06/02/2012	159	C18-S3	MB	53.35850	-5.19962
CEND 03/12	06/02/2012	160	NSG S3	HC	53.33813	-5.27702
CEND 03/12	06/02/2012	161	S3-S2	MB	53.30400	-5.29500
CEND 03/12	06/02/2012	161	S3-S2	MB	53.33700	-5.27700
CEND 03/12	06/02/2012	162	NSG S2	HC	53.30416	-5.29545
CEND 03/12	06/02/2012	163	NSG-S2	DC	53.30416	-5.29531
CEND 03/12	06/02/2012	163	NSG-S2	DC	53.30337	-5.29581
CEND 03/12	06/02/2012	164	S2-C15	MB	53.31500	-5.22100
CEND 03/12	06/02/2012	164	S2-C15	MB	53.30300	-5.29200
CEND 03/12	06/02/2012	165	NSG C15	HC	53.31353	-5.22215
CEND 03/12	06/02/2012	166	C15-C16	MB	53.32500	-5.14800
CEND 03/12	06/02/2012	166	C15-C16	MB	53.31300	-5.22000
CEND 03/12	06/02/2012	167	NSG-C16	HC	53.32286	-5.14840
CEND 03/12	06/02/2012	168	NSG-C16	DC	53.32449	-5.14713
CEND 03/12	06/02/2012	168	NSG-C16	DC	53.32243	-5.14779
CEND 03/12	06/02/2012	169	C16-C 14	MB	53.29064	-5.09771
CEND 03/12	06/02/2012	169	C16- C14	MB	53.32100	-5.14600
CEND 03/12	06/02/2012	170	NSG-C14	HC	53.28975	-5.09775
CEND 03/12	06/02/2012	171	C-14TOC-13	MB	53.28300	-5.16800
CEND 03/12	06/02/2012	171	C-14TOC-13	MB	53.28919	-5.09733
CEND 03/12	06/02/2012	172	NSG-C13	HC	53.28039	-5.17164
CEND 03/12	06/02/2012	173	C-13TOC-12	MB	53.27234	-5.24265
CEND 03/12	06/02/2012	173	C-13TOC-12	MB	53.27985	-5.17571
CEND 03/12	06/02/2012	174	NSG-C12	HC	53.27092	-5.24486
CEND 03/12	06/02/2012	174	NSG-C12	HC	53.27086	-5.24487
CEND 03/12	06/02/2012	174	NSG-C12	HC	53.27091	-5.24485

Cruise	Date	Stn No	Stn Code	Gear	Latitude (degrees)	Longitude (degrees)
CEND 03/12	06/02/2012	175	NSG-C12	DC	53.27120	-5.24467
CEND 03/12	06/02/2012	175	NSG-C12	DC	53.27004	-5.24482
CEND 03/12	06/02/2012	176	C12-C11	MB	53.26222	-5.31627
CEND 03/12	06/02/2012	176	C12-C11	MB	53.26949	-5.24489
CEND 03/12	06/02/2012	177	NSG-C11	HC	53.26148	-5.31834
CEND 03/12	06/02/2012	178	NSG-C11	DC	53.26130	-5.31843
CEND 03/12	06/02/2012	178	NSG-C11	DC	53.26079	-5.31926
CEND 03/12	06/02/2012	179	C11-C1	MB	53.23400	-5.33100
CEND 03/12	06/02/2012	179	C11-C1	MB	53.25944	-5.32089
CEND 03/12	06/02/2012	180	NSG-S1	HC	53.23589	-5.33148
CEND 03/12	06/02/2012	181	S1-C7	MB	53.22517	-5.26864
CEND 03/12	06/02/2012	181	S1-C7	MB	53.22596	-5.33025
CEND 03/12	06/02/2012	182	NSG-C7	HC	53.22820	-5.26775
CEND 03/12	06/02/2012	183	C7-C8	MB	53.23555	-5.19629
CEND 03/12	06/02/2012	183	C7-C8	MB	53.22806	-5.26484
CEND 03/12	06/02/2012	184	NSG-C8	HC	53.23769	-5.19469
CEND 03/12	06/02/2012	185	NSG-C8	DC	53.23671	-5.19506
CEND 03/12	06/02/2012	185	NSG-C8	DC	53.23748	-5.19483
CEND 03/12	06/02/2012	186	C-8TOC9	MB	53.24710	-5.12120
CEND 03/12	06/02/2012	186	C-8TOC9	MB	53.23780	-5.18900
CEND 03/12	06/02/2012	187	NSG-C9	HC	53.24705	-5.12122
CEND 03/12	06/02/2012	188	C9-C10	MB	53.25600	-5.04800
CEND 03/12	06/02/2012	188	C9-C10	MB	53.25580	-5.04720
CEND 03/12	06/02/2012	189	NSG-C10	HC	53.25631	-5.04783
CEND 03/12	06/02/2012	190	C-10TOC6	MB	53.21000	-5.06408
CEND 03/12	06/02/2012	190	C-10TOC6	MB	53.24578	-5.05299
CEND 03/12	06/02/2012	191	NSG-C6	HC	53.21368	-5.07083
CEND 03/12	06/02/2012	192	NSG-C6	DC	53.21335	-5.07086
CEND 03/12	06/02/2012	192	NSG-C6	DC	53.21415	-5.07119
CEND 03/12	06/02/2012	193	C-6TOC2	MB	53.18080	-5.02110
CEND 03/12	06/02/2012	193	C-6TOC2	MB	53.21350	-5.06780
CEND 03/12	06/02/2012	194	NSG-C2	HC	53.18024	-5.02035
CEND 03/12	06/02/2012	194	NSG-C2	HC	53.18027	-5.02044
CEND 03/12	06/02/2012	194	NSG-C2	HC	53.18035	-5.02038
CEND 03/12	06/02/2012	195	C-2TOC-1	MB	53.17110	-5.09390
CEND 03/12	06/02/2012	195	C-2TOC-1	MB	53.17910	-5.02390
CEND 03/12	06/02/2012	196	NSG-C1	HC	53.17114	-5.09406
CEND 03/12	06/02/2012	197	C-1TOMx-2	MB	53.20470	-5.09440
CEND 03/12	06/02/2012	197	C-1TOMx-2	MB	53.18030	-5.09595
CEND 03/12	06/02/2012	198	NSG-Mx2	HC	53.20231	-5.09744
CEND 03/12	06/02/2012	199	NSG-Mx2	DC	53.20233	-5.09728
CEND 03/12	06/02/2012	199	NSG-Mx2	DC	53.20150	-5.09736
CEND 03/12	06/02/2012	200	Mx2-C5	MB	53.20830	-5.41950
CEND 03/12	06/02/2012	200	Mx2-C5	MB	53.20400	-5.11900
CEND 03/12	06/02/2012	201	NSG-C5	HC	53.20453	-5.14401
CEND 03/12	06/02/2012	202	C5-C4	MB	53.19600	-5.21740
CEND 03/12	06/02/2012	202	C5-C4	MB	53.20440	-5.15580
CEND 03/12	06/02/2012	203	NSG-C4	HC	53.19504	-5.21759

Cruise	Date	Stn No	Stn Code	Gear	Latitude (degrees)	Longitude (degrees)
CEND 03/12	06/02/2012	204	NSG-Mx1	HC	53.18575	-5.22949
CEND 03/12	06/02/2012	205	NSG-Mx1	DC	53.18653	-5.22920
CEND 03/12	06/02/2012	205	NSG-Mx1	DC	53.18573	-5.22931
CEND 03/12	06/02/2012	206	Mx1-C3	MB	53.18650	-5.29080
CEND 03/12	06/02/2012	206	Mx1-C3	MB	53.18550	-5.23560
CEND 03/12	06/02/2012	207	NSG-C3	HC	53.18570	-5.29103

CND0513

HamCam

Cruise	Date	Stn No	Stn Code	Gear	Latitude (degrees)	Longitude (degrees)
CEND0513	29/04/13	278	NSGC147	HC	53.63484	-4.68391
CEND0513	29/04/13	279	NSGC150	HC	53.65051	-4.6715
CEND0513	29/04/13	280	NSGC146	HC	53.65557	-4.70112
CEND0513	29/04/13	281	NSGC120	HC	53.52075	-4.96844
CEND0513	29/04/13	281	NSGC120	HC	53.52075	-4.96844
CEND0513	29/04/13	282	NSGC115	HC	53.50212	-4.97007
CEND0513	29/04/13	282	NSGC115	HC	53.50235	-4.97002
CEND0513	29/04/13	283	NSGC129	HC	53.49827	-4.941
CEND0513	29/04/13	283	NSGC129	HC	53.49826	-4.94107
CEND0513	29/04/13	283	NSGC129	HC	53.49825	-4.94105
CEND0513	29/04/13	284	NSGC103	HC	53.5301	-5.19732
CEND0513	29/04/13	285	NSGC085	HC	53.51859	-5.22108
CEND0513	29/04/13	286	NSGC097	HC	53.50666	-5.19743
CEND0513	29/04/13	287	NSGC105	HC	53.50793	-5.17375

Drop Camera

Cruise	Date	Stn No.	Stn Code	Gear	SOL Lat	SOL Long	EOL Lat	EOL Long
CEND0513	24/04/2013	127	NSGC011	DC	53.1714	-5.0218	53.1724	-5.0219
CEND0513	24/04/2013	128	NSGC014	DC	53.1794	-4.9948	53.1785	-4.9949
CEND0513	24/04/2013	129	NSGC010	DC	53.1868	-5.0371	53.1861	-5.0370
CEND0513	24/04/2013	130	NSGC013	DC	53.1931	-5.0094	53.1922	-5.0094
CEND0513	24/04/2013	131	NSGC016	DC	53.1917	-4.9830	53.1927	-4.9834
CEND0513	24/04/2013	132	NSGC015	DC	53.2036	-5.0070	53.2048	-5.0071
CEND0513	24/04/2013	133	NSGC012	DC	53.1994	-5.0288	53.2004	-5.0292
CEND0513	24/04/2013	134	NSGC049	DC	53.3869	-5.1960	53.3878	-5.1963
CEND0513	24/04/2013	135	NSGC043	DC	53.3935	-5.1997	53.3940	-5.2028
CEND0513	24/04/2013	136	NSGC059	DC	53.3956	-5.1904	53.3963	-5.1904
CEND0513	25/04/2013	137	NSGC078	DC	53.4015	-5.1787	53.4008	-5.1788
CEND0513	25/04/2013	138	NSGC039	DC	53.4095	-5.2126	53.4012	-5.2173
CEND0513	25/04/2013	139	NSGC050	DC	53.4055	-5.2017	53.4048	-5.2019
CEND0513	25/04/2013	140	NSGC069	DC	53.4067	-5.1833	53.4061	-5.1833
CEND0513	25/04/2013	141	NSGC087	DC	53.4096	-5.1683	53.4090	-5.1685
CEND0513	25/04/2013	142	NSGC094	DC	53.4147	-5.1657	53.4155	-5.1657
CEND0513	25/04/2013	143	NSGC079	DC	53.4140	-5.1784	53.4148	-5.1784

Cruise	Date	Stn No.	Stn Code	Gear	SOL Lat	SOL Long	EOL Lat	EOL Long
CEND0513	25/04/2013	144	NSGC060	DC	53.4103	-5.1915	53.4111	-5.1914
CEND0513	25/04/2013	145	NSGC044	DC	53.4128	-5.2108	53.4119	-5.2109
CEND0513	25/04/2013	146	NSGC051	DC	53.4192	-5.2023	53.4185	-5.2026
CEND0513	25/04/2013	147	NSGC061	DC	53.4284	-5.1942	53.4277	-5.1945
CEND0513	25/04/2013	148	NSGC052	DC	53.4329	-5.2005	53.4323	-5.2010
CEND0513	25/04/2013	149	NSGC070	DC	53.4397	-5.1947	53.4389	-5.1949
CEND0513	25/04/2013	150	NSGC062	DC	53.4436	-5.1995	53.4428	-5.2002
CEND0513	25/04/2013	151	NSGC080	DC	53.4443	-5.1866	53.4436	-5.1872
CEND0513	25/04/2013	152	NSGC071	DC	53.4511	-5.1993	53.4496	-5.2003
CEND0513	25/04/2013	153	NSGC053	DC	53.4512	-5.2118	53.4505	-5.2129
CEND0513	25/04/2013	154	NSGC081	DC	53.4586	-5.1905	53.4595	-5.1909
CEND0513	25/04/2013	155	NSGC063	DC	53.4572	-5.2095	53.4581	-5.2096
CEND0513	25/04/2013	156	NSGC045	DC	53.4540	-5.2255	53.4552	-5.2253
CEND0513	25/04/2013	157	NSGC008	DC	53.4326	-5.2905	53.4315	-5.2908
CEND0513	25/04/2013	158	NSGC004	DC	53.4293	-5.3068	53.4284	-5.3069
CEND0513	25/04/2013	159	NSGC151	DC	53.4260	-5.3100	53.4251	-5.3100
CEND0513	25/04/2013	160	NSGC002	DC	53.4208	-5.3114	53.4191	-5.3114
CEND0513	25/04/2013	161	NSGC152	DC	53.4227	-5.3204	53.4241	-5.3205
CEND0513	25/04/2013	162	NSGC001	DC	53.4268	-5.3241	53.4277	-5.3237
CEND0513	25/04/2013	163	NSGC003	DC	53.4351	-5.3172	53.4363	-5.3166
CEND0513	25/04/2013	164	NSGC006	DC	53.4391	-5.2994	53.4383	-5.2994
CEND0513	25/04/2013	165	NSGC005	DC	53.4425	-5.3138	53.4408	-5.3137
CEND0513	25/04/2013	166	NSGC009	DC	53.4466	-5.2956	53.4455	-5.2956
CEND0513	25/04/2013	167	NSGC007	DC	53.4540	-5.3074	53.4528	-5.3076
CEND0513	25/04/2013	168	NSGC040	DC	53.4635	-5.2268	53.4620	-5.2273
CEND0513	25/04/2013	169	NSGC072	DC	53.4673	-5.2029	53.4662	-5.2030
CEND0513	25/04/2013	170	NSGC088	DC	53.4702	-5.1945	53.4693	-5.1947
CEND0513	25/04/2013	171	NSGC054	DC	53.4713	-5.2255	53.4702	-5.2261
CEND0513	25/04/2013	172	NSGC046	DC	53.4744	-5.2317	53.4739	-5.2328
CEND0513	25/04/2013	173	NSGC064	DC	53.4715	-5.2139	53.4723	-5.2144
CEND0513	26/04/2013	174	NSGC082	DC	53.4736	-5.1991	53.4743	-5.1999
CEND0513	26/04/2013	175	NSGC095	DC	53.4767	-5.1877	53.4757	-5.1882
CEND0513	26/04/2013	176	NSGC055	DC	53.4789	-5.2243	53.4782	-5.2243
CEND0513	26/04/2013	177	NSGC073	DC	53.4818	-5.2035	53.4806	-5.2037
CEND0513	26/04/2013	178	NSGC089	DC	53.4836	-5.1952	53.4827	-5.1952
CEND0513	26/04/2013	179	NSGC100	DC	53.4853	-5.1790	53.4865	-5.1791
CEND0513	26/04/2013	180	NSGC065	DC	53.4885	-5.2199	53.4878	-5.2202
CEND0513	26/04/2013	181	NSGC083	DC	53.4889	-5.2046	53.4896	-5.2055
CEND0513	26/04/2013	182	NSGC096	DC	53.4911	-5.1896	53.4916	-5.1907
CEND0513	26/04/2013	183	NSGC110	DC	53.4974	-5.1576	53.4977	-5.1591
CEND0513	26/04/2013	184	NSGC107	DC	53.5044	-5.1569	53.5040	-5.1568
CEND0513	26/04/2013	185	NSGC104	DC	53.5005	-5.1675	53.4994	-5.1682
CEND0513	26/04/2013	186	NSGC101	DC	53.4997	-5.1852	53.4991	-5.1857
CEND0513	26/04/2013	187	NSGC090	DC	53.4981	-5.2056	53.4973	-5.2067
CEND0513	26/04/2013	188	NSGC074	DC	53.4968	-5.2150	53.4960	-5.2156
CEND0513	26/04/2013	189	NSGC056	DC	53.4941	-5.2321	53.4935	-5.2330
CEND0513	26/04/2013	190	NSGC066	DC	53.5036	-5.2215	53.5036	-5.2237
CEND0513	26/04/2013	191	NSGC084	DC	53.5042	-5.2096	53.5048	-5.2110

Cruise	Date	Stn No.	Stn Code	Gear	SOL Lat	SOL Long	EOL Lat	EOL Long
CEND0513	26/04/2013	192	NSGC097	DC	53.5076	-5.1976	53.5065	-5.1976
CEND0513	26/04/2013	193	NSGC105	DC	53.5070	-5.1742	53.5079	-5.1740
CEND0513	26/04/2013	194	NSGC111	DC	53.5128	-5.1625	53.5140	-5.1623
CEND0513	26/04/2013	195	NSGC113	DC	53.5200	-5.1639	53.5209	-5.1645
CEND0513	26/04/2013	196	NSGC108	DC	53.5184	-5.1740	53.5193	-5.1751
CEND0513	26/04/2013	197	NSGC102	DC	53.5170	-5.1882	53.5176	-5.1894
CEND0513	26/04/2013	198	NSGC091	DC	53.5130	-5.2051	53.5133	-5.2064
CEND0513	26/04/2013	199	NSGC075	DC	53.5115	-5.2193	53.5123	-5.2206
CEND0513	26/04/2013	200	NSGC057	DC	53.5114	-5.2368	53.5109	-5.2384
CEND0513	26/04/2013	201	NSGC041	DC	53.5086	-5.2471	53.5078	-5.2473
CEND0513	26/04/2013	202	NSGC047	DC	53.5171	-5.2455	53.5163	-5.2457
CEND0513	26/04/2013	203	NSGC037	DC	53.5151	-5.2598	53.5143	-5.2609
CEND0513	26/04/2013	204	NSGC036	DC	53.5212	-5.2681	53.5213	-5.2685
CEND0513	26/04/2013	205	NSGC042	DC	53.5249	-5.2588	53.5255	-5.2597
CEND0513	27/04/2013	206	NSGC038	DC	53.5319	-5.1965	53.5357	-5.1978
CEND0513	27/04/2013	207	NSGC048	DC	53.5292	-5.2545	53.5300	-5.2547
CEND0513	27/04/2013	208	NSGC058	DC	53.5245	-5.2467	53.5237	-5.2469
CEND0513	27/04/2013	209	NSGC067	DC	53.5208	-5.2314	53.5200	-5.2316
CEND0513	27/04/2013	210	NSGC085	DC	53.5190	-5.2213	53.5183	-5.2216
CEND0513	27/04/2013	211	NSGC098	DC	53.5203	-5.2007	53.5213	-5.2006
CEND0513	27/04/2013	212	NSGC106	DC	53.5223	-5.1847	53.5232	-5.1844
CEND0513	27/04/2013	213	NSGC112	DC	53.5251	-5.1741	53.5260	-5.1738
CEND0513	27/04/2013	214	NSGC109	DC	53.5315	-5.1823	53.5324	-5.1819
CEND0513	27/04/2013	215	NSGC103	DC	53.5298	-5.1971	53.5306	-5.1967
CEND0513	27/04/2013	216	NSGC092	DC	53.5279	-5.2118	53.5288	-5.2113
CEND0513	27/04/2013	217	NSGC076	DC	53.5287	-5.2274	53.5280	-5.2278
CEND0513	27/04/2013	218	NSGC068	DC	53.5338	-5.2357	53.5333	-5.2366
CEND0513	27/04/2013	219	NSGC086	DC	53.5369	-5.2208	53.5362	-5.2212
CEND0513	27/04/2013	220	NSGC099	DC	53.5390	-5.2067	53.5381	-5.2067
CEND0513	27/04/2013	221	NSGC077	DC	53.5432	-5.2305	53.5428	-5.2317
CEND0513	27/04/2013	222	NSGC093	DC	53.5446	-5.2166	53.5436	-5.2170
CEND0513	27/04/2013	223	NSGC017	DC	53.5405	-5.0394	53.5399	-5.0408
CEND0513	27/04/2013	224	NSGC021	DC	53.5359	-5.0249	53.5372	-5.0240
CEND0513	27/04/2013	225	NSGC018	DC	53.5272	-5.0258	53.5282	-5.0260
CEND0513	27/04/2013	226	NSGC020	DC	53.5049	-5.0055	53.5056	-5.0057
CEND0513	27/04/2013	227	NSGC114	DC	53.5039	-4.9783	53.5029	-4.9785
CEND0513	27/04/2013	228	NSGC115	DC	53.5012	-4.9716	53.5026	-4.9697
CEND0513	27/04/2013	229	NSGC118	DC	53.4905	-4.9598	53.4912	-4.9587
CEND0513	27/04/2013	230	NSGC125	DC	53.4901	-4.9466	53.4909	-4.9456
CEND0513	27/04/2013	231	NSGC132	DC	53.4967	-4.9272	53.4975	-4.9261
CEND0513	27/04/2013	232	NSGC129	DC	53.4972	-4.9419	53.4981	-4.9406
CEND0513	27/04/2013	233	NSGC122	DC	53.4978	-4.9524	53.4970	-4.9535
CEND0513	27/04/2013	234	NSGC119	DC	53.5055	-4.9651	53.5048	-4.9656
CEND0513	27/04/2013	235	NSGC116	DC	53.5129	-4.9708	53.5121	-4.9718
CEND0513	27/04/2013	236	NSGC123	DC	53.5126	-4.9574	53.5119	-4.9580
CEND0513	27/04/2013	237	NSGC126	DC	53.5080	-4.9355	53.5072	-4.9363
CEND0513	27/04/2013	238	NSGC135	DC	53.5019	-4.9263	53.5026	-4.9254
CEND0513	27/04/2013	239	NSGC138	DC	53.5107	-4.9166	53.5118	-4.9154

Cruise	Date	Stn No.	Stn Code	Gear	SOL Lat	SOL Long	EOL Lat	EOL Long
CEND0513	27/04/2013	240	NSGC133	DC	53.5107	-4.9286	53.5114	-4.9270
CEND0513	28/04/2013	241	NSGC130	DC	53.5151	-4.9426	53.5145	-4.9437
CEND0513	28/04/2013	242	NSGC127	DC	53.5219	-4.9531	53.5212	-4.9538
CEND0513	28/04/2013	243	NSGC120	DC	53.5202	-4.9695	53.5203	-4.9693
CEND0513	28/04/2013	244	NSGC117	DC	53.5253	-4.9797	53.5258	-4.9791
CEND0513	28/04/2013	245	NSGC023	DC	53.5281	-4.9882	53.5288	-4.9874
CEND0513	28/04/2013	246	NSGC121	DC	53.5341	-4.9727	53.5347	-4.9718
CEND0513	28/04/2013	247	NSGC124	DC	53.5280	-4.9654	53.5286	-4.9646
CEND0513	28/04/2013	248	NSGC131	DC	53.5268	-4.9514	53.5272	-4.9507
CEND0513	28/04/2013	249	NSGC134	DC	53.5227	-4.9394	53.5233	-4.9385
CEND0513	28/04/2013	250	NSGC139	DC	53.5246	-4.9247	53.5252	-4.9236
CEND0513	28/04/2013	251	NSGC136	DC	53.5177	-4.9273	53.5185	-4.9261
CEND0513	28/04/2013	252	NSGC140	DC	53.5182	-4.9141	53.5188	-4.9130
CEND0513	28/04/2013	253	NSGC142	DC	53.5252	-4.9087	53.5247	-4.9096
CEND0513	28/04/2013	254	NSGC143	DC	53.5354	-4.9044	53.5348	-4.9052
CEND0513	28/04/2013	255	NSGC141	DC	53.5321	-4.9205	53.5329	-4.9220
CEND0513	28/04/2013	256	NSGC137	DC	53.5334	-4.9298	53.5336	-4.9314
CEND0513	28/04/2013	257	NSGC128	DC	53.5378	-4.9633	53.5371	-4.9646
CEND0513	28/04/2013	258	NSGC026	DC	53.5442	-4.9805	53.5440	-4.9817
CEND0513	28/04/2013	259	NSGC019	DC	53.5515	-5.0272	53.5521	-5.0262
CEND0513	28/04/2013	260	NSGC024	DC	53.5567	-4.9815	53.5573	-4.9806
CEND0513	28/04/2013	261	NSGC028	DC	53.5560	-4.9698	53.5566	-4.9689
CEND0513	28/04/2013	262	NSGC031	DC	53.5946	-4.9337	53.5616	-4.9537
CEND0513	28/04/2013	263	NSGC035	DC	53.5807	-4.9129	53.5813	-4.9119
CEND0513	28/04/2013	264	NSGC033	DC	53.5742	-4.9469	53.5749	-4.9455
CEND0513	28/04/2013	265	NSGC030	DC	53.5794	-4.9646	53.5800	-4.9634
CEND0513	28/04/2013	266	NSGC027	DC	53.5711	-4.9958	53.5718	-4.9946
CEND0513	28/04/2013	267	NSGC022	DC	53.5715	-5.0032	53.5673	-5.0246
CEND0513	28/04/2013	268	NSGC025	DC	53.5855	-5.0166	53.5852	-5.0181
CEND0513	28/04/2013	269	NSGC029	DC	53.5880	-4.9785	53.5880	-4.9800
CEND0513	28/04/2013	270	NSGC032	DC	53.5904	-4.9623	53.5898	-4.9633
CEND0513	28/04/2013	271	NSGC146	DC	53.6554	-4.7017	53.6556	-4.7013
CEND0513	28/04/2013	272	NSGC150	DC	53.6514	-4.6713	53.6510	-4.6732
CEND0513	29/04/2013	273	NSGC148	DC	53.6477	-4.6883	53.6474	-4.6900
CEND0513	29/04/2013	274	NSGC144	DC	53.6465	-4.7034	53.6462	-4.7051
CEND0513	29/04/2013	275	NSGC145	DC	53.6406	-4.6923	53.6406	-4.6937
CEND0513	29/04/2013	276	NSGC147	DC	53.6354	-4.6850	53.6355	-4.6847
CEND0513	29/04/2013	277	NSGC149	DC	53.6436	-4.6742	53.6436	-4.6762
CEND0513	30/04/2013	292	NSGC159	DC	53.4532	-5.1987	53.4532	-5.2003
CEND0513	30/04/2013	293	NSGC160	DC	53.4440	-5.2196	53.4436	-5.2212
CEND0513	30/04/2013	294	NSGC158	DC	53.4511	-5.2246	53.4510	-5.2267
CEND0513	01/05/2013	295	NSGC157	DC	53.4605	-5.2304	53.4609	-5.2284
CEND0513	01/05/2013	296	NSGC156	DC	53.4639	-5.2289	53.4648	-5.2290
CEND0513	01/05/2013	297	NSGC155	DC	53.4594	-5.2965	53.4586	-5.2983
CEND0513	01/05/2013	298	NSGC154	DC	53.4327	-5.3242	53.4323	-5.3259
CEND0513	01/05/2013	299	NSGC153	DC	53.4196	-5.3263	53.4187	-5.3242

Daily Progress Reports

CEND0312

DAILY LOG
STATUS REPORT
Name of Area Survey
Rv Cefas Endeavour – JNCC – DPR No. 1 – Thursday 2nd February 2012

Vessel: RV Cefas Endeavour GSM : 07799 773456	Project: MCZ Site Verification CEND 3/12 Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 1 Date: 2nd Feb. 2012	Location at 24:00: 52°17.8 N, 005° 36.3W

To Company:	Person:	E-mail:
Cefas	[redacted]	
JNCC		
JNCC		
JNCC		
JNCC		
Cefas		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	1	1
Additional comments:	Abandon ship drill in the afternoon.	

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	10:12	Mob/ demob	Loading boat and waiting for tide to so we could leave through the lock
10:12	16:00	Transit	
16:00	16:30	Abandon ship drill	
16:30	19:20	Transit	
19:20	23:00	Offshore calibrations	Calibrating multibeam equipment
23:00	24:00	Transit	Continued transit to North St George's Channel rMCZ

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	E 3	E 3	ESE 4	E 3	
Sea state	Slight	Slight	Slight	Slight	
Swell	Slight	Slight	Slight	Slight	
Vis	Good	Good	Good	Good	
Baro	1046	1046	1046	1047	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob	10:12	10:12	
Offshore Calibrations	03:40	03:40	
Total Operation Survey (TOSu)		0	

DAILY LOG
STATUS REPORT

Total Operation Sampling (TOSa)		0	
Equipment/Downtime		0	
Ship/Plant Downtime		0	
Waiting On Weather		0	
Transit	09:38	0	
Standby Port		0	
Others	00:30	00:30	
Total:	24:00	24:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Gear type				
Acoustic: Sidescan Sonar				
Gear type				

Overall Progress Groundtruthing Samples

Action					Remarks

Weather forecast for the next 24 hours

Wind southerly or southwesterly 4 or 5, increasing to 6 or 7 at times. Sea state smooth or slight,becoming moderate. Visibility moderate or good.

Planned operation for the next 24 hours (00:00 to 24:00 on 3rd February 2012)

Aim to arrive at first grab station at 5:00am, where Hammon grab will be used. Continue to survey North St Georges Channel primarily using Hammon grab, collecting multibeam data between stations and occasional drop camera tows where existing maps show areas of exposed rock.

Agreed Changes to Scope/Survey operation priorities

CEFAS/JNCC Comments

CEFAS SIC… [redacted] …… JNCC Rep: …. [redacted] ……

DAILY LOG
STATUS REPORT
Name of Area Survey
Rv Cefas Endeavour – JNCC – DPR No. 2 – Friday 3rd February 2012

Vessel: RV Cefas Endeavour GSM : 07799 773456	Project: MCZ Site Verification CEND 3/12 Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 2 Date: 3rd Feb. 2012	Location at 24:00: 54° 40.5N 004° 40 W

To Company:	Person:	E-mail:
Cefas	[redacted]	
JNCC		
JNCC		
JNCC		
JNCC		
Cefas		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	1
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	05:10	Transit	In transit between multibeam calibration and first station (grab sample).
05:10	07:44	ToSa	Grab sampling at North St George's Channel. Hamon grab samples at C17, C20, C24 and C29. Lines of multibeam taken on transit between grab sample stations.
07:44	08:45	ToSu	Multibeam to gather additional information around the edge of existing multibeam at North St George's Channel Reference Area B (aka Area4_2m.tif).
08:45	09:14	ToSa	Sampling at North St George's Channel. Hamon grab sample at C36.
09:14	09:51	ToSu	Transit from C36 to DC1 picking up multibeam line enroute.
09:51	16:30	ToSa	Video sampling – Stations DC1, DC2, DC3, DC4 and DC5. Lines of multibeam gathered during transit between some sampling stations.
16:30	16:58	ToSu	Multibeaming on transit to C37 for next grab sampling station,
16:58	17:10	ToSa	Grab sampling at North St Georges Channel. Hamon grab sample at C37
17:10	18:00	ToSu	Multibeam collected on transit between C37 and C42
18:00	21:53	ToSa	Grab sampling at North St George's Channel – primarily mixed sediment. Hamon grab samples at C42, Mx4, Mx5, Mx6, Mx7, C43, and S21. NB Mx8 grab station failed 3 times because too rocky.
21:53	22:00	Offshore calibration	CTD taken
22:00	22:35	Transit	From CTD station to North St George's Channel station Mx9
22:35	23:20	Equipment downtime	At Mx9 winch for Hammon grab broke, with Hammon grab in water.
23:20	23:40	ToSa	Winch fixed, and resumed grab sampling with Hamon grab at station NSGC Mx9.

DAILY LOG
STATUS REPORT

23:40	24:00	ToSu	Transit between Mx9 and Mx16, collecting multibeam

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	E 3	E 2	SW 6	SW 6	
Sea state	Slight	Slight	Slight	Slight	
Swell	Slight	Slight	Slight	Slight	
Vis	Good	Good	Good	Good	
Baro	1048	1048	1048	1047	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		10:12	
Offshore Calibrations	00:07	03:47	
Total Operation Survey (TOSu)	03:16	03:16	
Total Operation Sampling (TOSa)	14:07	14:07	
Equipment/Downtime	00:45	00:45	
Ship/Plant Downtime			
Waiting On Weather			
Transit	05:45	15:23	
Standby Port			
Others		00:30	
Total:	24:00	48:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM3002	71Lkm			

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hammon grab (0.1m^2)	14 samples	14 samples	
Drop camera	5 tows	5 tows	

Weather forecast for the next 24 hours

Wind south 5 or 7, veering north west 5 or 6. Sea state moderate or rough, occasionally slight.

Planned operation for the next 24 hours (00:00 to 24:00 on 3rd February 2012)

Continue survey in North St George's Channel rMCZ with Hamon grab, drop camera and multibeam

Agreed Changes to Scope/Survey operation priorities

DAILY LOG
STATUS REPORT

CEFAS/JNCC Comments

CEFAS SIC.. [redacted] ..... JNCC Rep: .. [redacted] .....

DAILY LOG
STATUS REPORT
Name of Area Survey
Rv Cefas Endeavour – JNCC – DPR No. 3 – Saturday 4th February 2012

Vessel: RV Cefas Endeavour GSM : 07799 773456	Project: MCZ Site Verification CEND 3/12 Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 3 Date: 4th Feb. 2012	Location at 24:00: 53° 37.7 N, 005° 13.6W

To Company:	Person:	E-mail:
Cefas	[redacted]	
JNCC		
JNCC		
JNCC		
JNCC		
Cefas		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	1
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	00:52	ToSa	Video tow and Hamon Grab at Mx16 (NSGC)
00:52	01:17	ToSu	Multibeam picked up on transit from Mx16 to Mx12 (NSGC)
01:17	01:29	ToSa	Drop camera tow at Mx12 (NSGC). Line aborted 8 minutes into tow as engine problem (MCR).
01:29	02:30	Ship Downtime	Ship down with engine problem (MCR)
02:30	03:01	ToSu	Multibeam picked up on transit from Mx12 to Mx13 (NSGC)
03:01	03:15	ToSa	Hamon grab at Mx13 (NSGC)
03:15	03:39	ToSu	Multibeam picked up on transit from Mx13 to Mx8 (NSGC)
03:39	05:09	ToSa	Drop camera tow at Mx8 and Mx11 and Hamon grab at Mx11 (NSGC). Revisited Mx8 to do drop camera after previous failure to obtain a Hamon Grab sample at the site.
05:09	05:30	ToSu	Multibeam picked up on transit from Mx11 to Mx15 (NSGC).
05:30	06:48	ToSa	Hamon grabs at Mx15, Mx14 and Mx10 (NSGC). Drop camera in addition at Mx10. Picking up rocky habitats on drumlins and primarily coarse/mixed sediment in between them.
06:48	08:21	ToSu	Multibeam picked up on transit from Mx10 to C41 (NSGC).
08:21	11:50	ToSa	Hamon grab at C41, S15 and C40 (NSGC). Camera sledge in addition at S15. Multibeam picked up in between stations.
11:50	12:03	Equipment downtime	Camera sledge broken
12:03	12:20	ToSa	Drop camera and Hamon grab at NSGC SF01 (new station) (NSGC)
12:20	12:54	ToSu	Multibeam between SF01 and NSG C35 (NSGC)
12:54	13:11	ToSa	NSGC C35 Hamon grab
13:11	13:26	ToSu	Multibeam between C35 and C39 (NSGC)
13:26	14:05	ToSa	Hamon Grab on C39 (NSGC). NB Lights on HamCam on Hamon grab failed with grab in water, but grab successful.

DAILY LOG
STATUS REPORT

14:05	15:25	ToSu	Multibeam between C39 and new station 500m E of S15 (aka SF02) (NSGC)
15:25	16:19	ToSa	Camera sledge on new station SF02 (NSGC)
16:19	17:50	ToSu	Multibeam between SF02 and C38 (NSGC)
17:50	18:40	ToSa	Hamon grab and camera sledge at C38 (NSGC)
18:40	19:14	ToSu	Multibeam between C38 and S19 (NSGC)
19:14	19:20	ToSa	Hamon grab at S19 (NSGC)
19:20	19:53	ToSu	Multibeam between S19 and S23 (NSGC)
19:53	20:05	ToSa	Hamon grab at S23 (NSGC)
20:05	20:30	ToSu	Multibeam between S23 and S26 (NSGC)
20:30	20:40	ToSa	Hamon grab at S26 (NSGC)
20:40	21:05	ToSu	Multibeam between S26 and S25 (NSGC)
21:05	21:15	ToSa	Hamon grab at S25 (NSGC)
21:15	21:35	Offshore calibration	CTD taken
21:34	22:12	ToSa	Camera sledge at S25 (NSGC)
22:12	22:36	ToSu	Multibeam between S25 and S24 (NSGC)
22:36	22:59	ToSa	Hamon grab at S24 (NSGC)
22:59	23:30	ToSu	Multibeam between S24 and S22 (NSGC)
23:30	23:40	ToSa	Hamon grab at S22 (NSGC)
23:40	24:00	ToSu	Multibeam from S22 to S20

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	S 7	S 7	S 7	NW 6	
Sea state	Slight	Slight	Moderate	Slight	
Swell	Slight	Slight	Moderate	Slight	
Vis	Good	Good	Moderate	Good	
Baro	1046.5	1038.2	1031.0	1032.5	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		10:12	
Offshore Calibrations	00:20	04:07	
Total Operation Survey (TOSu)	10:06	13:22	
Total Operation Sampling (TOSa)	12:20	26:27	
Equipment/Downtime	00:13	00:58	
Ship/Plant Downtime	01:01	01:01	
Waiting On Weather			
Transit		15:23	
Standby Port			
Others		00:30	
Total:	24:00	72:00	

DAILY LOG
STATUS REPORT

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM3002	81.6	152.6		

Overall Progress Groundtruthing Samples

Action	***Today (Lkm/samples)***	***Accum. (Lkm/samples)***	Remarks
Hamon grab ($0.1m^2$)	19	33	
Drop camera	6	11	
Camera sledge	4	4	

Weather forecast for the next 24 hours

Wind west or northwest 4 or 5, becoming variable 4. Sea state slight or moderate, occasionally rough

Planned operation for the next 24 hours (00:00 to 24:00 on 5th February 2012)

Continue with survey plan for North West St. George's Channel, moving towards southern section of rMCZ.

Agreed Changes to Scope/Survey operation priorities

CEFAS/JNCC Comments

CEFAS SIC.. [redacted]..... JNCC Rep: ... [redacted].....

DAILY LOG
STATUS REPORT
Name of Area Survey
Rv Cefas Endeavour – JNCC – DPR No. 4 – Sunday 5th February 2012

Vessel: RV Cefas Endeavour GSM : 07799 773456	Project: MCZ Site Verification CEND 3/12 Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 4 Date: 5th Feb. 2012	Location at 24:00: 53° 24.8N 005° 10.9W

To Company:	Person:	E-mail:
Cefas	[redacted]	
JNCC		
JNCC		
JNCC		
JNCC		
Cefas		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	1
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments – all NSGC site
00:00	00:11	ToSu	Multibeam from S22 to S20
00:11	00:50	ToSa	Hamon Grab and Camera Sledge at S20. Sandy sediment as expected.
00:50	01:27	ToSu	Multibeam from S20 to S16
01:27	01:34	ToSa	Hamon Grab at S16 Sandy sediment as expected.
01:34	02:07	ToSu	Multibeam from S16 to S17
02:07	02:13	ToSa	Hamon Grab at S17 Sandy sediment as expected.
02:13	02:40	ToSu	Multibeam from S17 to S18
02:40	03:32	ToSa	Hamon Grab and Camera Sledge at S18 Sandy sediment as expected.
03:32	04:09	ToSu	Multibeam from S18 to S14
04:09	04:14	ToSa	Hamon Grab at S14 Sandy sediment as expected.
04:14	04:44	ToSu	Multibeam from S14 to S13
04:44	04:49	ToSa	Hamon Grab at S13 Sandy sediment as expected.
04:49	05:16	ToSu	Multibeam from S13 to S12
05:16	05:22	ToSa	Hamon Grab at S12 Sandy sediment as expected.
05:22	05:54	ToSu	Multibeam from S12 to S9
05:54	06:35	ToSa	Hamon Grab and Camera Sledge at S9 Sandy sediment as expected.
06:35	07:04	ToSu	Multibeam from S9 to S10
07:04	07:11	ToSa	Hamon Grab at S10. Sandy sediment as expected.
07:11	07:42	ToSu	Multibeam from S10 to S11
07:42	08:46	ToSa	Hamon Grab and Drop Camera at S11. Station right on edge of sand/coarse sediment divide. Picked up rocks with Sabellaria on in grab
08:46	09:24	ToSu	Multibeam from S11 to C34
09:24	10:11	ToSa	Hamon Grab and Drop Camera at C34. Thick clay with cobbles. Possible MDAC on video?
10:11	10:47	ToSu	Multibeam from C34 to S8

DAILY LOG
STATUS REPORT

10:47	10:55	ToSa	Hamon Grab at S8. Sabellaria present in grab sample. Clay and lumps of rock.
10:55	11:38	ToSu	Multibeam from S8 to C33
11:38	11:45	ToSa	Hamon Grab at C33
11:45	12:15	ToSu	Multibeam from C33 to C30
12:15	14:00	ToSa	Hamon grab at C30 and Mx3, drop camera Mx3 in addition.
14:00	14:20	ToSu	Multibeam from Mx3 to S7.
14:20	15:20	ToSa	Hamon grab and drop camera at S7. Almost certain MDAC on video and in grab.
15:20	15:45	ToSu	Multibeam from S7 to C31
15:45	15:59	ToSa	Hamon grab at C31. Coarse sediment as expected.
15:59	16:20	ToSu	Multibeam from C31 to C32.
16:20	16:35	ToSa	Hamon grab at C32
16:35	17:36	ToSu	Multibeam from C32 to C29
17:36	18:03	ToSa	Hamon grab C29
18:03	18:20	ToSu	Multibeam from C29 to C28
18:20	18:38	ToSa	Hamon grab C28
18:38	19:00	ToSu	Multibeam from C28 to C27
19:00	19:14	ToSa	Hamon grab C27
19:14	19:30	ToSu	Multibeam from C27 to C26
19:30	20:59	ToSa	Hamon grab and drop camera at S6 (almost certain MDAC on video), and Hamon grab at C26
20:59	21:21	ToSu	Multibeam from C26 to C25
21:21	21:41	ToSa	Hamon grab C25
21:41	22:05	ToSu	Multibeam from C25 to C21
22:05	22:24	ToSa	Hamon grab at C21
22:24	22:45	ToSu	Multibeam from C21 to C22
22:45	23:25	ToSa	Hamon grab and drop camera at C22
23:25	23:50	ToSu	Multibeam from C22 to S5
23:50	24:00	ToSa	Hamon grab at S5

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	WNW 5	NW 4	WNW 4	WNW 4	
Sea state	Slight	Slight	Slight	Slight	
Swell	Slight	Slight	Slight	Slight	
Vis	Good	Good	Good	Good	
Baro	1034.0	1036.8	1039.0	1040.0	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		10:12	
Offshore Calibrations		04:07	
Total Operation Survey (TOSu)	11:55	25:17	
Total Operation Sampling (TOSa)	12:05	38:32	
Equipment/Downtime		00:58	
Ship/Plant Downtime		01:01	
Waiting On Weather			
Transit		15:23	
Standby Port			

DAILY LOG
STATUS REPORT

Others		00:30	
Total:	24:00	96:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM3002	160	258.6		

Overall Progress Groundtruthing Samples

Action	***Today (Lkm/samples)***	***Accum. (Lkm/samples)***	Remarks
Hamon grab ($0.1m^2$)	27	60	
Camera sledge	3	7	
Drop camera	6	17	

Weather forecast for the next 24 hours

Wind variable becoming southeast 3 or 4, increasing to 5 later. Sea State slight or moderate.

Planned operation for the next 24 hours (00:00 to 24:00 on 6th February 2012)

Continue to survey North St. Georges Channel rMCZ, may be able to move to next site at end of day.

Agreed Changes to Scope/Survey operation priorities

CEFAS/JNCC Comments

CEFAS SIC.. [redacted]..... JNCC Rep: ... [redacted].....

DAILY LOG
STATUS REPORT
Name of Area Survey
Rv Cefas Endeavour – JNCC – DPR No. 5 – Monday 6th February 2012

Vessel: RV Cefas Endeavour GSM : 07799 773456	Project: MCZ Site Verification CEND 3/12 Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 5 Date: 6th Feb. 2012	Location at 24:00: 52° 39.0 005° 27.1

To Company:	Person:	E-mail:
Cefas	[redacted]	
JNCC		
JNCC		
JNCC		
JNCC		
Cefas		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	0	1
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	00:07	ToSa	Hamon Grab at S5
00:07	00:44	ToSu	Multibeam from S5 to C23
00:44	01:28	ToSa	Hamon Grab and Drop Camera at C23
01:28	01:38	Offshore calibrations	CTD reading taken at C23
01:38	02:13	ToSu	Multibeam from C23 to C19
02:13	02:20	ToSa	Hamon Grab at C19
02:20	02:53	ToSu	Multibeam from C19 to S4
02:53	02:58	ToSa	Hamon Grab at S4
02:58	03:20	ToSu	Multibeam from S4 to C18
03:20	03:50	ToSa	Hamon Grab and Drop Camera at C18
03:50	04:29	ToSu	Multibeam from C18 to S3
04:29	04:35	ToSa	Hamon Grab at S3
04:35	05:03	ToSu	Multibeam from S3 to S2
05:03	05:31	ToSa	Hamon Grab and Drop Camera at S2
05:31	06:01	ToSu	Multibeam from S2 to C15
06:01	06:07	ToSa	Hamon Grab at C15
06:07	06:40	ToSu	Multibeam from C15 to C16
06:40	07:31	ToSa	Hamon Grab and Drop Camera at C16
07:31	08:11	ToSu	Multibeam from C16 to C14
08:11	08:19	ToSa	Hamon Grab at C14
08:19	09:02	ToSu	Multibeam from C14 to C13
09:02	09:10	ToSa	Hamon Grab at C13
09:10	09:41	ToSu	Multibeam from C13 to C12
09:41	10:27	ToSa	Hamon Grab and Drop Camera at C12
10:27	11:02	ToSu	Multibeam from C12 to C11
11:02	11:32	ToSa	Hamon Grab and Drop Camera at C11. *Sabellaria* found in grab.
11:32	11:55	ToSu	Multibeam from C11 to S1

DAILY LOG
STATUS REPORT

11:55	12:10	ToSa	Hamon grab at S1
12:10	12:36	ToSu	Multibeam from S1 to C7
12:36	12:50	ToSu	Hamon grab at C7
12:50	13:20	ToSa	Multibeam from C7 to C8
13:20	14:03	ToSa	Hamon grab and drop camera at C8
14:03	14:33	ToSu	Multibeam from C8 to C9
14:33	14:42	ToSa	Hamon grab at C9
14:42	15:08	ToSu	Multibeam from C9 to C10
15:08	15:19	ToSa	Hamon grab at C10
15:19	15:51	ToSu	Multibeam from C10 to C6
15:51	16:20	ToSa	Hamon grab and drop camera at C6
16:20	16:48	ToSu	Multibeam from C6 to C2
16:48	17:07	ToSa	Hamon grab at C2
17:07	17:40	ToSu	Multibeam from C2 to C1
17:40	17:45	ToSa	Hamon grab at C1
17:45	18:13	ToSu	Multibeam from C1 to Mx2
18:13	18:50	ToSa	Hamon grab and drop camera at Mx2
18:50	19:12	ToSu	Multibeam from Mx2 to C5
19:12	19:30	ToSa	Hamon grab at C5
19:30	19:50	ToSu	Multibeam from C5 to C4
19:50	20:40	ToSa	Hamon grab at C4 and hamon grab and drop camera at Mx1
20:40	21:16	ToSu	Multibeam from Mx1 to C3
21:16	21:30	ToSa	Hamon grab at C3
21:30	24:00	Transit	Transit from NSGC to North of Celtic Deep rMCZ

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	W 2	NW 2	NE 3	SE 4	
Sea state	Slight	Slight	Slight	Slight	
Swell	Slight	Slight	Slight	Slight	
Vis	Good	Good	Good	Good	
Baro	1042	1043	1044	1045	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		10:12	
Offshore Calibrations	00:10	04:17	
Total Operation Survey (TOSu)	12:20	37:37	
Total Operation Sampling (TOSa)	09:00	47:32	
Equipment/Downtime		00:58	
Ship/Plant Downtime		01:01	
Waiting On Weather			
Transit	02:30	17:53	
Standby Port			
Others		00:30	
Total:	24:00	120:00	

DAILY LOG
STATUS REPORT

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM3002	100	358.6		

Overall Progress Groundtruthing Samples

Action	***Today (Lkm/samples)***	***Accum. (Lkm/samples)***	Remarks
Hamon grab (0.1m^2)	26	86	
Camera sledge	0	7	
Drop camera	10	27	

Weather forecast for the next 24 hours

Wind mainly east or south east 4 or 5, increasing 5 or 6. Sea state slight or moderate, becoming moderate or rough.

Planned operation for the next 24 hours (00:00 to 24:00 on 7th February 2012)

Transit to North of Celtic Deep rMCZ and commence survey of site.

Agreed Changes to Scope/Survey operation priorities

CEFAS/JNCC Comments

CEFAS SIC.. [redacted] ..... JNCC Rep: ... [redacted] .....

CEND0513

DAILY LOG
STATUS REPORT
CEND 05/13 rMCZ survey
Cefas Endeavour – JNCC – DPR No. 7 – 24th April 2013

Vessel: Cefas Endeavour GSM : 07799773456 07827237014	Project: CEND 05/13 South Dorset, East of Haig Fras, North of St George's Channel and Mid St George's Channel rMCZ survey Satellite Voice Bridge: int 871763998027 int 871600309716
Daily Progress Report No. 7	Location at 00.00: 50° 31.7' 006° 34.8'W
Date: 24th April 2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	
Cefas		
JNCC		
JNCC		
JNCC		
NE		
NE		
NE		

Safety

	Today	To Date
Accidents/Incidents		
Near Misses		
Safety Drills/Induction		2

Summary of operations 0000-2400

Time UTC	Type	Comments
00:00	TOSa	End of EOHF12 DCA1
00:05	Transit	Steam from East of Haig Fras to North St George's Channel
16:02	Offshore calibration	CTDA1
16:50	TOSa	NSGC11 DCA1
17:09	Transit	
17:31	TOSa	NSGC14 DCA1
17:44	Transit	
18:10	TOSa	NSGC10 DCA1
18:22	Transit	
18:43	TOSa	NSGC13 DCA1
18:54	Transit	
19:27	TOSa	NSGC16 DCA1
19:39	Transit	
20:07	TOSa	NSGC15 DCA1
20:19	Transit	
20:46	TOSa	NSGC12 DCA1
20:59	Transit	
22:49	TOSa	NSGC49 DCA1
23:01	Transit	
23:20	TOSa	NSGC43 DCA1
23:31	Transit	
23:50	TOSa	NSGC59 DCA1
24:00		

Weather

Weather/sea	0000-0600	0600-1200	1200-1800	1800-2400	Remarks

DAILY LOG
STATUS REPORT

state conditions	Light airs 2m swell 1035 vis. 2	230° 14kn 1m 1033 5	240° 15kn 1m 1034 2	70° 11kn 1m 1035 7	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)		Remarks
Mob/Demob	00:00	15:15		
Offshore Calibrations	00:48	01:05		
Total Operation Survey (TOSu)	00:00	01:48		
Total Operation Sampling (TOSa)	02:10	40:08		
Equipment/Downtime	00:00	00:00		
Ship/Plant Downtime	00:00	00:00		
Waiting On Weather	00:00	00:00		
Transit	21:02	109:44		
Standby Port	00:00	00:00		
Others	00:00	00:00		
Total:	**24:00**	**168:00**		

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Sidescan Sonar				
Gear type:		200	200	

Overall Progress Groundtruthing Samples

Action	Number of samples (today)	Lengths	Current total	Remarks
HamCam			42	
Camera sledge		10min	12	
Drop camera	10		93	

Weather forecast for the next 24 hours

Variable 4, becoming westerly or northwesterly 5 or 6.
Slight or moderate.
Rain, then wintry showers, fog patches for a time.
Moderate, occasionally very poor, becoming mainly good.

Planned operation for the next 24 hours (00:00 to 24:00)

Continue camera work at North St George's Channel

Agreed Changes to Scope/Survey operation priorities

No changes

Cefas/JNCC Comments

Cefas SIC: [redacted]
JNCC Rep:

DAILY LOG
STATUS REPORT
CEND 05/13 rMCZ survey
Cefas Endeavour – JNCC – DPR No. 8 – 25th April 2013

Vessel: Cefas Endeavour GSM : 07799773456 07827237014	Project: CEND 05/13 South Dorset, East of Haig Fras, North of St George's Channel and Mid St George's Channel rMCZ survey Satellite Voice Bridge: int 871763998027 int 871600309716
Daily Progress Report No. 8	Location at 00.00: 53° 23.8' N 005° 11.4' W
Date: 25th April 2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	
Cefas		
JNCC		
JNCC		
JNCC		
NE		
NE		
NE		

Safety

	Today	To Date
Accidents/Incidents		
Near Misses		
Safety Drills/Induction		2

Summary of operations 0000-2400

Time UTC	Type	Comments
00:00	Transit	
00:25	TOSa	NSGC078 DCA1
00:35	Transit	
01:02	TOSa	NSGC039 DCA1
01:14	Transit	
01:38	TOSa	NSGC050 DCA1
01:49	Transit	
02:13	TOSa	NSGC069 DCA1
02:23	Transit	
02:42	TOSa	NSGC087 DCA1
02:52	Transit	
03:39	TOSa	NSGC094 DCA1
03:48	Transit	
04:09	TOSa	NSGC079 DCA1
04:19	Transit	
04:34	TOSa	NSGC060 DCA1
04:44	Transit	
04:59	TOSa	NSGC044 DCA1
05:10	Transit	
05:30	TOSa	NSGC051 DCA1
05:40	Transit	
05:55	TOSa	NSGC061 DCA1
06:05	Transit	
06:17	TOSa	NSGC052 DCA1
06:27	Transit	
07:07	TOSa	NSGC070 DCA1
07:17	Transit	
07:45	TOSa	NSGC062 DCA1
07:57	Transit	
08:21	TOSa	NSGC080 DCA1

DAILY LOG
STATUS REPORT

08:32	Transit	
09:04	TOSa	NSGC071 DCA1
09:24	Transit	
10:03	TOSa	NSGC053 DCA1
10:14	Transit	
10:42	TOSa	NSGC081 DCA1
10:50	Transit	
11:15	TOSa	NSGC063 DCA1
11:27	Transit	
11:47	TOSa	NSGC045 DCA1
12:03	Transit	
12:49	TOSa	NSGC008 DCA1
13:03	Transit	
13:31	TOSa	NSGC004 DCA1
13:43	Transit	
14:27	TOSa	NSGC151 DCA1
14:38	Transit	
15:01	TOSa	NSGC002 DCA1
15:14	Transit	
15:30	TOSa	NSGC152 DCA1
15:47	Transit	
16:41	TOSa	NSGC001 DCA1
16:52	Transit	
17:07	TOSa	NSGC003 DCA1
17:17	Transit	
17:33	TOSa	NSGC006 DCA1
17:43	Transit	
18:04	TOSa	NSGC005 DCA1
18:27	Transit	
18:46	TOSa	NSGC009 DCA1
19:00	Transit	
19:21	TOSa	NSGC007 DCA1
19:38	Transit	
20:20	TOSa	NSGC040 DCA1
20:37	Transit	
21:06	TOSa	NSGC072 DCA1
21:21	Transit	
21:42	TOSa	NSGC088 DCA1
21:54	Transit	
22:24	TOSa	NSGC054 DCA1
22:37	Transit	
22:58	TOSa	NSGC046 DCA1
23:08	Transit	
23:29	TOSa	NSGC064 DCA1
23:39	Transit	
24:00		

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
	Light airs 1m swell 1031 Vis. 2	305° 15kn 1m 1032 8	Light airs 1m 1032 8	300° 15kn 1m 1031 8	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)		Remarks

DAILY LOG
STATUS REPORT

Mob/Demob	00:00	15:15		
Offshore Calibrations	00:00	01:05		
Total Operation Survey (TOSu)	00:00	01:48		
Total Operation Sampling (TOSa)	07:32	47:40		
Equipment/Downtime	00:00	00:00		
Ship/Plant Downtime	00:00	00:00		
Waiting On Weather	00:00	00:00		
Transit	16:28	126:12		
Standby Port	00:00	00:00		
Others	00:00	00:00		
Total:	**24:00**	**192:00**		

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Sidescan Sonar				
Gear type:		200	200	

Overall Progress Groundtruthing Samples

Action	Number of samples (today)	Lengths	Current total	Remarks
HamCam			42	
Camera sledge		10min	12	
Drop camera	37		130	

Weather forecast for the next 24 hours

Northwest veering north 5 to 7.
Moderate or rough.
Showers.
Visibility good.

Planned operation for the next 24 hours (00:00 to 24:00)

Continue camera work at North St George's Channel

Agreed Changes to Scope/Survey operation priorities

No changes

Cefas/JNCC Comments

Cefas SIC:
JNCC Rep: [redacted]

DAILY LOG
STATUS REPORT
CEND 05/13 rMCZ survey
Cefas Endeavour – JNCC – DPR No. 9 – 26th April 2013

Vessel: Cefas Endeavour GSM : 07799773456 07827237014	Project: CEND 05/13 South Dorset, East of Haig Fras, North of St George's Channel and Mid St George's Channel rMCZ survey Satellite Voice Bridge: int 871763998027 int 871600309716
Daily Progress Report No. 9	Location at 00.00: 53° 28.4' N 005° 11.9' W
Date: 26th April 2013	

To Company:	Person:	E-mail:	
Cefas	[redacted]		
Cefas			
JNCC			
JNCC			
JNCC			
NE			
NE			
NE			

Safety

	Today	To Date
Accidents/Incidents		
Near Misses		
Safety Drills/Induction		2

Summary of operations 0000-2400

Time UTC	Type	Comments
00:00	Transit	
00:45	TOSa	NSGC082 DCA1
00:59	Transit	
01:21	TOSa	NSGC095 DCA1
01:31	Transit	
02:00	TOSa	NSGC055 DCA1
02:10	Transit	
02:34	TOSa	NSGC073 DCA1
02:45	Transit	
03:25	TOSa	NSGC089 DCA1
03:37	Transit	
03:55	TOSa	NSGC100 DCA1
04:10	Transit	
04:42	TOSa	NSGC065 DCA1
04:52	Transit	
05:07	TOSa	NSGC083 DCA1
05:17	Transit	
05:31	TOSa	NSGC096 DCA1
05:41	Transit	
06:04	TOSa	NSGC110 DCA1
06:15	Transit	
07:25	TOSa	NSGC107 DCA1
07:35	Transit	
08:03	TOSa	NSGC104 DCA1
08:19	Transit	
08:58	TOSa	NSGC101 DCA1
09:08	Transit	
09:34	TOSa	NSGC090 DCA1
09:47	Transit	
10:05	TOSa	NSGC074 DCA1

DAILY LOG
STATUS REPORT

10:15	Transit	
10:39	TOSa	NSGC056 DCA1
10:49	Transit	
11:17	TOSa	NSGC066 DCA1
11:33	Transit	
11:55	TOSa	NSGC084 DCA1
12:07	Transit	
12:28	TOSa	NSGC097 DCA1 aborted
12:31	Transit	
15:09	TOSa	NSGC097 DCA1
15:22	Transit	
15:51	TOSa	NSGC105 DCA1
16:01	Transit	
16:45	TOSa	NSGC111 DCA1
16:58	Transit	
17:19	TOSa	NSGC113 DCA1
17:30	Transit	
17:46	TOSa	NSGC108 DCA1
17:59	Transit	
18:18	TOSa	NSGC102 DCA1
18:29	Transit	
18:44	TOSa	NSGC091 DCA1
18:55	Transit	
19:21	TOSa	NSGC075 DCA1
19:35	Transit	
20:05	TOSa	NSGC057 DCA1
20:18	Transit	
20:44	TOSa	NSGC041 DCA1
20:55	Transit	
21:33	TOSa	NSGC047 DCA1
21:44	Transit	
22:12	TOSa	NSGC037 DCA1
22:24	Transit	
23:00	TOSa	NSGC036 DCA1
23:10	Transit	
23:41	TOSa	NSGC042 DCA1
23:51	Transit	
24:00		

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
	Light airs 1m 1031 Vis. 2	305° 15kn 1m 1032 Vis. 7	Light airs 1m 1032 Vis. 8	300° 15kn 1m 1031 b/c 8	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)		Remarks
Mob/Demob	00:00	15:15		
Offshore Calibrations	00:00	01:05		
Total Operation Survey (TOSu)	00:00	01:48		
Total Operation Sampling (TOSa)	06:16	53:56		
Equipment/Downtime	00:00	00:00		

DAILY LOG
STATUS REPORT

Ship/Plant Downtime	00:00	00:00		
Waiting On Weather	00:00	00:00		
Transit	17:44	143:56		
Standby Port	00:00	00:00		
Others	00:00	00:00		
Total:	**24:00**	**216:00**		

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Sidescan Sonar				
Gear type:		200	200	

Overall Progress Groundtruthing Samples

Action	Number of samples (today)	Lengths	Current total	Remarks
HamCam			42	
Camera sledge		10min	12	
Drop camera	32		162	

Weather forecast for the next 24 hours

Southwest 4 or 5, veering west or northwest 5 or 6.
Slight or moderate.
Rain at first.
Visibility good, occasionally moderate.

Planned operation for the next 24 hours (00:00 to 24:00)

Continue camera work at North St George's Channel; Hamon grab drumlins in northeast corner

Agreed Changes to Scope/Survey operation priorities

No changes

Cefas/JNCC Comments

Cefas SIC:
JNCC Rep: [redacted]

DAILY LOG
STATUS REPORT
CEND 05/13 rMCZ survey
Cefas Endeavour – JNCC – DPR No. 10 – 27th April 2013

Vessel: Cefas Endeavour GSM : 07799773456 07827237014	Project: CEND 05/13 South Dorset, East of Haig Fras, North of St George's Channel and Mid St George's Channel rMCZ survey Satellite Voice Bridge: int 871763998027 int 871600309716
Daily Progress Report No. 10	Location at 00.00: 53° 30.7' N 004° 54.9' W
Date: 27th April 2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	
Cefas		
JNCC		
JNCC		
JNCC		
NE		
NE		
NE		

Safety

	Today	To Date
Accidents/Incidents		
Near Misses		
Safety Drills/Induction		2

Summary of operations 0000-2400

Time UTC	Type	Comments
00:00	Transit	
00:13	TOSa	NSGC038 DCA1
00:23	Transit	
00:45	TOSa	NSGC048 DCA1
00:55	Transit	
01:20	TOSa	NSGC058 DCA1
01:30	Transit	
01:54	TOSa	NSGC067 DCA1
02:04	Transit	
03:29	TOSa	NSGC085 DCA1
03:40	Transit	
04:06	TOSa	NSGC098 DCA1
04:16	Transit	
04:38	TOSa	NSGC106 DCA1
04:49	Transit	
05:02	TOSa	NSGC112 DCA1
05:14	Transit	
05:26	TOSa	NSGC109 DCA1
05:37	Transit	
05:58	TOSa	NSGC103 DCA1
06:08	Transit	
06:21	TOSa	NSGC092 DCA1
06:32	Transit	
07:07	TOSa	NSGC076 DCA1
07:17	Transit	
07:38	TOSa	NSGC068 DCA1
07:48	Transit	
08:24	TOSa	NSGC086 DCA1
08:34	Transit	
09:01	TOSa	NSGC099 DCA1

DAILY LOG
STATUS REPORT

09:12	Transit	
09:41	TOSa	NSGC077 DCA1
09:51	Transit	
10:18	TOSa	NSGC093 DCA1
10:30	Transit	
11:45	TOSa	NSGC017 DCA1
11:57	Transit	
12:18	TOSa	NSGC021 DCA1
12:32	Transit	
12:57	TOSa	NSGC018 DCA1
13:08	Transit	
13:53	TOSa	NSGC020 DCA1
14:04	Transit	
14:57	TOSa	NSGC114 DCA1
15:08	Transit	
15:26	TOSa	NSGC115 DCA1
15:39	Transit	
16:37	TOSa	NSGC118 DCA1
16:49	Transit	
17:07	TOSa	NSGC125 DCA1
17:18	Transit	
17:37	TOSa	NSGC132 DCA1
17:48	Transit	
18:06	TOSa	NSGC129 DCA1
18:20	Transit	
18:38	TOSa	NSGC122 DCA1
18:50	Transit	
19:09	TOSa	NSGC119 DCA1
19:21	Transit	
19:45	TOSa	NSGC116 DCA1
19:58	Transit	
20:27	TOSa	NSGC123 DCA1
20:39	Transit	
21:10	TOSa	NSGC126 DCA1
21:23	Transit	
21:55	TOSa	NSGC135 DCA1
22:07	Transit	
22:39	TOSa	NSGC138 DCA1
22:55	Transit	
23:20	TOSa	NSGC133 DCA1
23:35	Transit	
24:00		

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
	000° 25kn 3m 1029 Vis. 8	020° 22kn 2m 1032 8	020° 7kn 1m 1033 8	220° 12kn 1m 1030 8	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)		Remarks
Mob/Demob	00:00	15:15		
Offshore Calibrations	00:00	01:05		
Total Operation	00:00	01:48		

DAILY LOG
STATUS REPORT

Survey (TOSu)				
Total Operation Sampling (TOSa)	06:44	60:40		
Equipment/Downtime	00:00	00:00		
Ship/Plant Downtime	00:00	00:00		
Waiting On Weather	00:00	00:00		
Transit	17:16	161:12		
Standby Port	00:00	00:00		
Others	00:00	00:00		
Total:	**24:00**	**240:00**		

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Sidescan Sonar				
Gear type:		200	200	

Overall Progress Groundtruthing Samples

Action	Number of samples (today)	Lengths	Current total	Remarks
HamCam			42	
Camera sledge		10min	12	
Drop camera	35		197	

Weather forecast for the next 24 hours

Variable 4, becoming westerly or northwesterly 5 or 6.
Slight or moderate.
Rain, then wintry showers, fog patches for a time.
Moderate, occasionally very poor, becoming mainly good.

Planned operation for the next 24 hours (00:00 to 24:00)

Continue camera work at North St George's Channel; move to Hamon grab when camera work is completed en route back to sidescan block

Agreed Changes to Scope/Survey operation priorities

No changes

Cefas/JNCC Comments

Cefas SIC: [redacted]
JNCC Rep:

DAILY LOG
STATUS REPORT
CEND 05/13 rMCZ survey
Cefas Endeavour – JNCC – DPR No. 11 – 28th April 2013

Vessel: Cefas Endeavour GSM : 07799773456 07827237014	Project: CEND 05/13 South Dorset, East of Haig Fras, North of St George's Channel and Mid St George's Channel rMCZ survey Satellite Voice Bridge: int 871763998027 int 871600309716
Daily Progress Report No. 11	Location at 00.00: 53° 31.3'N 004° 57.1' W
Date: 28th April 2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	
Cefas		
JNCC		
JNCC		
JNCC		
NE		
NE		
NE		

Safety

	Today	To Date
Accidents/Incidents		
Near Misses		
Safety Drills/Induction	1	3

Summary of operations 0000-2400

Time UTC	Type	Comments
00:00	Transit	
00:05	TOSa	NSGC130 DCA1
00:15	Transit	
00:35	TOSa	NSGC127 DCA1
00:45	Transit	
01:05	TOSa	NSGC120 DCA1
01:07	Transit	
01:32	TOSa	NSGC117 DCA1
01:43	Transit	
02:11	TOSa	NSGC023 DCA1
02:23	Transit	
03:03	TOSa	NSGC121 DCA1
03:13	Transit	
03:52	TOSa	NSGC124 DCA1
04:03	Transit	
04:29	TOSa	NSGC131 DCA1
04:39	Transit	
04:57	TOSa	NSGC134 DCA1
05:06	Transit	
05:27	TOSa	NSGC139 DCA1
05:38	Transit	
05:56	TOSa	NSGC136 DCA1
06:09	Transit	
07:02	TOSa	NSGC140 DCA1
07:12	Transit	
07:37	TOSa	NSGC142 DCA1
07:47	Transit	
08:17	TOSa	NSGC143 DCA1
08:30	Transit	
09:02	TOSa	NSGC141 DCA1 abandoned

DAILY LOG
STATUS REPORT

09:05	Transit	
10:06	TOSa	NSGC141 DCA2 abandoned
10:07	Transit	
10:45	TOSa	NSGC141 DCA3
10:55	Transit	
11:21	TOSa	NSGC137 DCA1
11:33	Transit	
11:58	TOSa	NSGC128 DCA1
12:10	Transit	
13:00	TOSa	NSGC026 DCA1
13:11	Transit	
13:40	TOSa	NSGC019 DCA1
13:51	Transit	
14:21	TOSa	NSGC024 DCA1
14:32	Transit	
14:50	TOSa	NSGC028 DCA1
15:04	Transit	
15:25	TOSa	NSGC031 DCA1
15:36	Transit	
16:37	TOSa	NSGC035 DCA1
16:48	Transit	
17:13	TOSa	NSGC033 DCA1
17:25	Transit	
17:43	TOSa	NSGC030 DCA1
17:54	Transit	
18:18	TOSa	NSGC027 DCA1
18:30	Transit	
18:49	TOSa	NSGC022 DCA1
19:00	Transit	
19:34	TOSa	NSGC025 DCA1
19:46	Transit	
20:21	TOSa	NSGC029 DCA1
20:32	Transit	
21:06	TOSa	NSGC032 DCA1 aborted
21:07	Transit	
21:28	TOSa	NSGC032 DCA2
21:38	Transit	Transit to northeast region to sample drumlins
22:40	Weather	Tide (3.6kt) leading to poor quality images
23:11	TOSa	NSGC146 DCA1
23:21	Transit	
23:58	TOSa	NSGC150 DCA1
24:00	Transit	

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
	230° 19kn 2 1026 Vis. 8	220° 21kn 2 1023 6	230° 16kn 2 1022 7	270° 28kn 2 1022 7	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)		Remarks
Mob/Demob	00:00	15:15		
Offshore Calibrations	00:00	01:05		
Total Operation Survey (TOSu)	00:00	01:48		

DAILY LOG
STATUS REPORT

Total Operation Sampling (TOSa)	05:41	66:21		
Equipment/Downtime	00:00	00:00		
Ship/Plant Downtime	00:00	00:00		
Waiting On Weather	00:31	00:31		
Transit	17:48	179:00		
Standby Port	00:00	00:00		
Others	00:00	00:00		
Total:	**24:00**	**264:00**		

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Sidescan Sonar				
Gear type:		200	200	

Overall Progress Groundtruthing Samples

Action	Number of samples (today)	Lengths	Current total	Remarks
HamCam			42	
Camera sledge		10min	12	
Drop camera	32		229	

Weather forecast for the next 24 hours

West or northwest 5 or 6, becoming variable 4 later.
Slight or moderate.
Showers, squally at first.
Vis. Good.

Planned operation for the next 24 hours (00:00 to 24:00)

Finish camera work on NSGC; switch to Hamon grab en route back to sidescan blocks

Agreed Changes to Scope/Survey operation priorities

No changes

Cefas/JNCC Comments

Cefas SIC: [redacted]
JNCC Rep:

DAILY LOG
STATUS REPORT
CEND 05/13 rMCZ survey
Cefas Endeavour – JNCC – DPR No. 12 – 29th April 2013

Vessel: Cefas Endeavour GSM : 07799773456 07827237014	Project: CEND 05/13 South Dorset, East of Haig Fras, North of St George's Channel and Mid St George's Channel rMCZ survey Satellite Voice Bridge: int 871763998027 int 871600309716
Daily Progress Report No. 12	Location at 00.00: 53° 38.9' N 004° 40.9, W
Date: 29th April 2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	
Cefas		
JNCC		
JNCC		
JNCC		
NE		
NE		
NE		

Safety

	Today	To Date
Accidents/Incidents		
Near Misses		
Safety Drills/Induction		3

Summary of operations 0000-2400

Time UTC	Type	Comments
00:00	TOSa	NSGC150 DCA1
00:11	Transit	
00:33	TOSa	NSGC148 DCA1
00:43	Transit	
01:10	TOSa	NSGC144 DCA1
01:22	Transit	
01:46	TOSa	NSGC145 DCA1
01:56	Transit	
02:48	TOSa	NSGC147 DCA1
02:57	Weather	
07:16	TOSa	NSGC149 DCA1
07:30	Transit	
08:21	TOSa	NSGC147 HCA1
09:08	TOSa	NSGC150 HCA1
09:20	Transit	
09:57	TOSa	NSGC146 HCA1
10:15	Transit	
12:52	TOSa	NSGC120 HCA1
12:55	Transit	
13:02	TOSa	NSGC120 HCA2
13:15	Transit	
13:28	TOSa	NSGC115 HCA1
13:32	Transit	
13:37	TOSa	NSGC115 HCA2
13:43	Transit	
14:18	TOSa	NSGC129 HCA1
14:20	Transit	
14:25	TOSa	NSGC129 HCA2
14:27	Transit	
14:30	TOSa	NSGC129 HCA3

DAILY LOG
STATUS REPORT

14:40	Transit	
15:46	TOSa	NSGC103 HCA1
15:50	Transit	
16:40	TOSa	NSGC085 HCA1
16:50	Transit	
17:15	TOSa	NSGC097 HCA1
17:23	Transit	
17:40	TOSa	NSGC105 HCA1
17:50	Transit	
18:33	TOSu	Sidescan Box A
24:00		

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
	290° 35kn 3 1023 Vis 7	270° 25kn 3 1026 7	280° 12kn 1 1030 8	300° 18kn 1 1034 8o	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)		Remarks
Mob/Demob	00:00	15:15		
Offshore Calibrations	00:00	01:05		
Total Operation Survey (TOSu)	05:27	07:15		
Total Operation Sampling (TOSa)	03:35	69:56		
Equipment/Downtime	00:00	00:00		
Ship/Plant Downtime	00:00	00:00		
Waiting On Weather	04:19	04:50		
Transit	10:39	189:39		
Standby Port	00:00	00:00		
Others	00:00	00:00		
Total:	**24:00**	**288:00**		

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Sidescan Sonar				
Gear type:	50	250	600	

Overall Progress Groundtruthing Samples

Action	Number of samples (today)	Lengths	Current total	Remarks
HamCam	10		52	
Camera sledge		10min	12	
Drop camera	6		235	

Weather forecast for the next 24 hours

Planned operation for the next 24 hours (00:00 to 24:00)

Finish sidescan blocks on NSGC; extra camera tows based on preliminary backscatter; transit to

DAILY LOG
STATUS REPORT

MSGC

Agreed Changes to Scope/Survey operation priorities

No changes

Cefas/JNCC Comments

Cefas SIC: [redacted]
JNCC Rep:

DAILY LOG
STATUS REPORT
CEND 05/13 rMCZ survey
Cefas Endeavour – JNCC – DPR No. 13 – 30th April 2013

Vessel: Cefas Endeavour GSM : 07799773456 07827237014	Project: CEND 05/13 South Dorset, East of Haig Fras, North of St George's Channel and Mid St George's Channel rMCZ survey Satellite Voice Bridge: int 871763998027 int 871600309716
Daily Progress Report No. 13	Location at 00.00: 53° 28.1' N 005° 18.8' W
Date: 30th April 2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	
Cefas		
JNCC		
JNCC		
JNCC		
NE		
NE		
NE		

Safety

	Today	To Date
Accidents/Incidents		
Near Misses		
Safety Drills/Induction		3

Summary of operations 0000-2400

Time UTC	Type	Comments
00:00	TOSu	Sidescan of NSGCA
06:47	Transit	
07:29	Calibration	CTD
08:57	TOSu	Sidescan of NSGCB
20:54	Transit	
21:57	TOSa	NSGC159 DCA1
22:09	Transit	
22:41	TOSa	NSGC160 DCA1
22:54	Transit	
23:21	TOSa	NSGC158 DCA1
23:39	Transit	
24:00		

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
	300° 14kn 1m 1037 Vis 8	Light airs	Light airs	220° 10kn 1m 1038 8	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)		Remarks
Mob/Demob	00:00	15:15		
Offshore Calibrations	01:28	02:33		
Total Operation Survey (TOSu)	18:44	25:59		
Total Operation Sampling (TOSa)	00:43	70:39		

DAILY LOG
STATUS REPORT

Equipment/Downtime	00:00	00:00		
Ship/Plant Downtime	00:00	00:00		
Waiting On Weather	00:00	04:50		
Transit	03:05	192:44		
Standby Port	00:00	00:00		
Others	00:00	00:00		
Total:	**24:00**	**312:00**		

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Sidescan Sonar				
Gear type:	200	450	450	

Overall Progress Groundtruthing Samples

Action	Number of samples (today)	Lengths	Current total	Remarks
HamCam			52	
Camera sledge		10min	12	
Drop camera	3		238	

Weather forecast for the next 24 hours

Planned operation for the next 24 hours (00:00 to 24:00)

Finish last camera tows on NSGC; transit to MSGC and start sampling regime

Agreed Changes to Scope/Survey operation priorities

No changes

Cefas/JNCC Comments

Cefas SIC: [redacted]
JNCC Rep:

DAILY LOG
STATUS REPORT
CEND 05/13 rMCZ survey
Cefas Endeavour – JNCC – DPR No. 14 – 1st May 2013

Vessel: Cefas Endeavour GSM : 07799773456 07827237014	Project: CEND 05/13 South Dorset, East of Haig Fras, North of St George's Channel and Mid St George's Channel rMCZ survey Satellite Voice Bridge: int 871763998027 int 871600309716
Daily Progress Report No. 14	Location at 00.00: 53° 27.7'N 005° 13.7'W
Date: 1st May 2013	

To Company:	Person:	E-mail:
Cefas	[redacted]	
Cefas		
JNCC		
JNCC		
JNCC		
NE		
NE		
NE		

Safety

	Today	To Date
Accidents/Incidents		
Near Misses		
Safety Drills/Induction		3

Summary of operations 0000-2400

Time UTC	Type	Comments
00:00	Transit	
00:09	TOSa	NSGC157 DCA1
00:28	Transit	
00:52	TOSa	NSGC156 DCA1
01:02	Transit	
01:45	TOSa	NSGC155 DCA1
01:59	Transit	
02:33	TOSa	NSGC154 DCA1
02:46	Transit	
03:13	TOSa	NSGC153 DCA1
03:30	Transit	
07:09	TOSa	MSGC063 DCA1
07:19	Transit	
07:36	TOSa	MSGC063 HGA1
07:42	TOSa	MSGC063 HGA2
08:39	TOSa	MSGC063 HGA3
09:17	TOSa	MSGC056 DCA1
09:27	Transit	
09:39	TOSa	MSGC056 HGA1
10:18	TOSa	MSGC059 HGA1
10:24	TOSa	MSGC059 HGA2
11:02	TOSa	MSGC109 HGA1
11:12	TOSa	MSGC109 HGA2
11:24	TOSa	MSGC109 HGA3
12:00	TOSa	MSGC113 HGA1
12:18	TOSa	MSGC113 DCA1
12:29	Transit	
13:08	TOSa	MSGC115 HCA1
13:42	TOSa	MSGC090 HCA1
14:16	TOSa	MSGC095 HCA1

DAILY LOG
STATUS REPORT

14:28	Transit	
14:35	TOSa	MSGC095 HGA1
15:10	TOSa	MSGC094 HCA1
15:24	TOSa	MSGC094 HCA2
16:41	TOSa	MSGC086 DCA1
16:51	Transit	
17:03	TOSa	MSGC086 HGA1
17:32	TOSa	MSGC114 HGA1
17:41	TOSa	MSGC114 HGA2
17:50	TOSa	MSGC114 HGA3
18:05	TOSa	MSGC114 DCA1
18:18	Transit	
18:48	TOSa	MSGC111 HCA1
19:23	TOSa	MSGC106 DCA1
19:35	Transit	
19:46	TOSa	MSGC106 HGA1
20:21	TOSa	MSGC055 HGA1
20:34	TOSa	MSGC055 DCA1
20:46	Transit	
21:19	TOSa	MSGC052 DCA1
21:21	Transit	
21:32	TOSa	MSGC052 HGA1
22:11	TOSa	MSGC126 DCA1
22:26	Transit	
22:55	TOSa	MSGC124 DCA1
23:16	Transit	
23:34	TOSa	MSGC124 HGA1
23:40	TOSa	MSGC124 HGA2
24:00		

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
	300° 14kn 1m 1037 Vis 8	Light airs	Light airs	220° 10kn 1m 1038 8	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)		Remarks
Mob/Demob	00:00	15:15		
Offshore Calibrations	00:00	02:33		
Total Operation Survey (TOSu)	00:00	25:59		
Total Operation Sampling (TOSa)	14:25	85:04		
Equipment/Downtime	00:00	00:00		
Ship/Plant Downtime	00:00	00:00		
Waiting On Weather	00:00	04:50		
Transit	09:35	202:19		
Standby Port	00:00	00:00		
Others	00:00	00:00		
Total:	**24:00**	**336:00**		

Overall Progress Geophysical Data Acquisition MBES/Sidescan

DAILY LOG
STATUS REPORT

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Sidescan Sonar				
Gear type:	200	450	450	

Overall Progress Groundtruthing Samples

Action	Number of samples (today)	Lengths	Current total	Remarks
Hamon grab	16		68	
Camera sledge		10min	12	
Drop camera	15		253	

Weather forecast for the next 24 hours

Planned operation for the next 24 hours (00:00 to 24:00)

Continue groundtruthing at MSGC

Agreed Changes to Scope/Survey operation priorities

No changes

Cefas/JNCC Comments

Cefas SIC:
JNCC Rep: [redacted]

Fisheries Liaison Officer (FLO) Report

No fishing activity was observed during the survey of the North St George's Channel rMCZ during CEND 03/12.

About us

Cefas is a multi-disciplinary scientific research and consultancy centre providing a comprehensive range of services in fisheries management, environmental monitoring and assessment, and aquaculture to a large number of clients worldwide.

We have more than 500 staff based in 2 laboratories, our own ocean-going research vessel, and over 100 years of fisheries experience.

We have a long and successful track record in delivering high-quality services to clients in a confidential and impartial manner.
(www.cefas.defra.gov.uk)

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