

Final Report (Project Code): C5650

Rock Unique rMCZ 2012 Survey Report

**Authors: Paul Whomersley, Sue Ware, Marc Whybrow
and Ken May**

**Issue date: January 2016
Published date: January 2023**

Rock Unique rMCZ 2012 Survey Report

Authors: Paul Whomersley, Sue Ware, Marc Whybrow and Ken May

Issue date: January 2016
Published date: January 2023

This report should be cited:

Whomersley, P. Ware, S., Whybrow, M. & May, K. 2023. Rock Unique rMCZ 2012 Survey Report. [Contracted] Report by Cefas for Defra and JNCC (Project Code: C5650).



Head office

Centre for Environment, Fisheries & Aquaculture

Science Pakefield Road, Lowestoft, Suffolk

NR33 0HT, UK

Tel +44 (0) 1502 56 2244 Fax +44 (0) 1502 51 3865

www.cefas.defra.gov.uk

Cefas is an executive agency of Defra

Table of contents

1	Background and Introduction	1
1.1	Survey Project Team	1
1.2	Site Description	1
1.3	Geological and Biological Context	2
1.4	Existing data and information utilised to inform survey planning	2
2	Survey Design and Methods	3
2.1	Survey planning and design	3
2.2	Sample collection and processing methods	4
3	Survey Narrative	6
4	Preliminary Results	7
4.1	Acoustic Survey	7
4.2	Seabed Imagery	7
4.3	Ham Cam and Grab Samples	11
4.4	Features of Conservation Importance (FOCI)	11
5	Annexes	12
5.1	RV Cefas Endeavour	12
5.2	Camera sledge and Drop Camera	13
5.3	Positioning Software-Tower	13
5.4	Multibeam Bathymetry	13
5.5	Metadata	14
5.6	Daily Progress Report	17
5.7	Fisheries Liaison Officer (FLO) Report	29

1 Background and Introduction

1.1 Survey Project Team

The Rock Unique survey was carried out during 7th – 9th March 2012 on the RV *CEFAS Endeavour* cruise CEND 04/12. The survey team for the duration of the fieldwork included Cefas marine ecologists, marine surveyors, marine modellers and GIS specialists along with MPA specialists from the JNCC (see below).

Cefas-Marine Ecologist	Cefas-Marine Surveyor
Cefas-Marine Surveyor	Cefas-Ecosystem Modeller
Cefas Marine Ecologist	Cefas-Plankton Taxonomist
Cefas-Marine Ecologist	Cefas-Fisheries Biologist
Cefas-Marine Data Biologist	Cefas-GIS Specialist
Cefas-Marine Ecologist	JNCC-MPA Specialist

1.2 Site Description

The Rock Unique rMCZ is located in the North Sea approximately 60 km off the Northumberland Coast (Figure 1).

(For a detailed site description see *Final recommendations for Marine Conservation Net Gain 2011*)

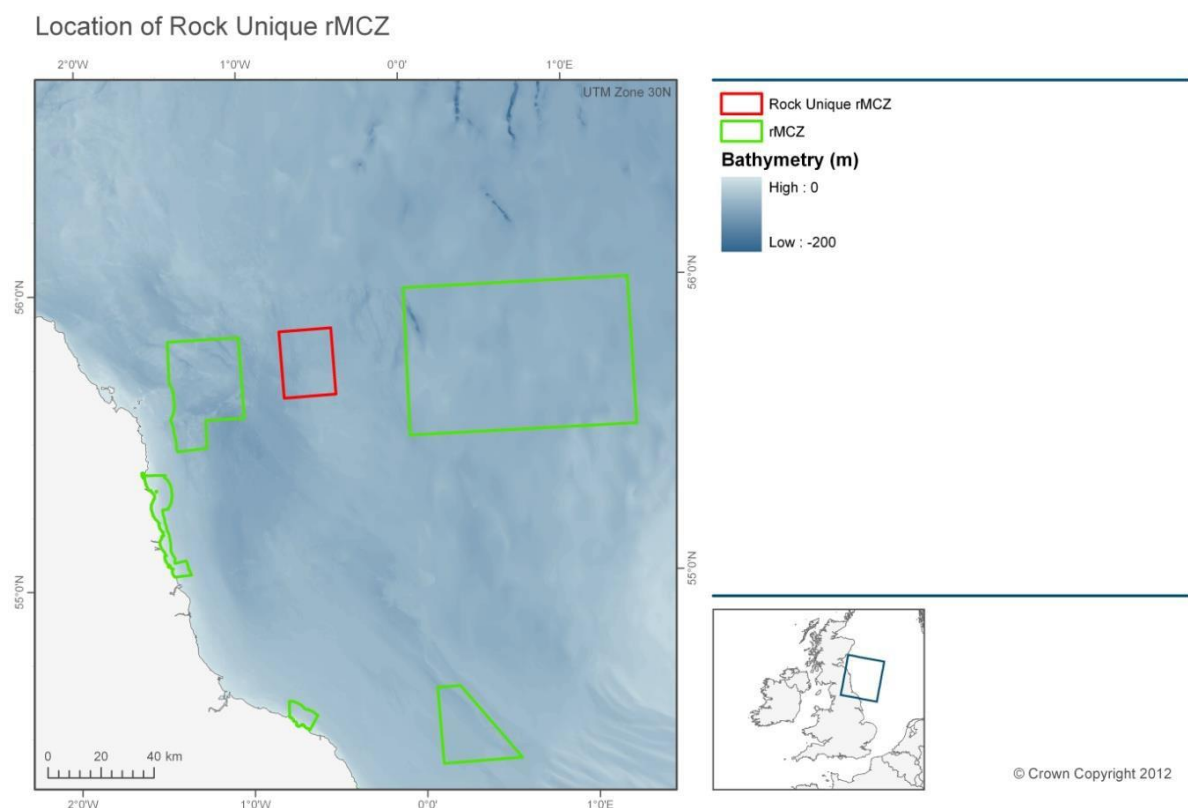


Figure 1. Location of Rock Unique rMCZ [Bathymetry is from the Defra Digital Elevation Model (Astrium 2011)].

1.3 **Geological and Biological Context**

A number of broadscale habitat features and habitat Features of Conservation Interest (FOCI) have been proposed by the regional project as part of the recommendations for designation of the Rock Unique rMCZ (Table 1).

Table 1. Features proposed for designation within the Rock Unique rMCZ.

Feature Type	Feature Name
Broad Scale Habitat (BSH)	A4.3 Low energy circalittoral rock
	A5.1 Subtidal coarse sediment A5.2 Subtidal sand
Features of Conservation Interest (FOCI)	
Habitats	Subtidal sands and gravels* (modelled)
Species	N/A
Geomorphological Feature	N/A

****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.***

No additional habitat or species FOCI have been identified but not included in the recommendations for designation of Rock Unique rMCZ.

1.4 **Existing data and information utilised to inform survey planning**

Recently collected and interpreted acoustic data (provided by the UKHO) were utilised in the planning of this survey.

2 Survey Design and Methods

2.1 Survey planning and design

Selection and positioning of groundtruthing stations was informed by the interpreted habitat map derived from UKHO acoustic data. Sampling stations were positioned within the sedimentary habitats using a triangular lattice grid overlaid on the predictive habitat map. Stations within the predicted coarse sediments (A5.1) were at a grid spacing of 2.5 km. Stations within the more extensive, predicted sand sediment (A5.2) were placed at a spacing of 4 km. A number of additional groundtruthing stations were manually positioned using the interpreted habitat map to target certain features within the rMCZ.

Groundtruthing Station Locations

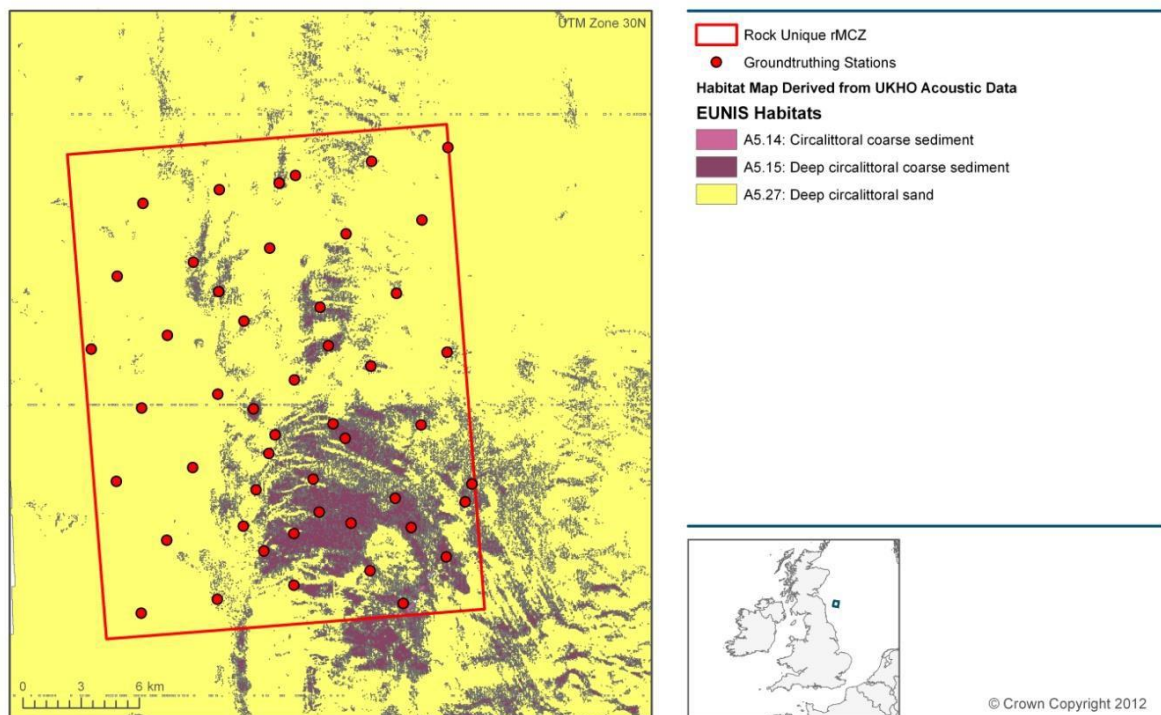


Figure 2. Groundtruthing station positions overlaid on habitat map derived using UKHO acoustic data.

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 broadscale habitat the camera was deployed to allow characterisation of the surface sediment types and epifaunal communities). The number of camera deployments per broadscale habitat varied depending on the uniformity of the habitat and its spatial extent.

'Intelligent' station codes were constructed, each with 3 elements; RU indicating the Rock Unique site followed by a letter indicating the predicted substrate type for that location according to the SAR (C for coarse sediment, S for sand), then a sequential number (e.g. RU_C_5, RU_S_5).

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 m² 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 1 mm sieve. The retained >1 mm 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 three 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 recorder 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' centered 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 and Mixed sediments

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' centered 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 Rock Unique rMCZ on 07/03/12 at 21:00. Grab sampling commenced in the south-east of the site within the area predicted to be sublittoral coarse sediment. Images of the seabed observed during the deployment of the HamCam guided the positioning of subsequent camera sledge deployments. If the area was homogenous then camera deployments were carried out every third station to ensure an adequate density and spatial coverage of video and still images across the rMCZ. If the seabed was of a heterogeneous nature or different to the predicted habitat type, additional camera sledge deployments were carried out.

Samples were not collected at four of the planned survey stations (RU_S_1, RU_S_10, RU_C_7 and RU_C_20) due to the coarseness of the substrates present. It is interesting to note that this occurred in both BSH types. Boulders and cobbles were also observed during camera sledge deployments within in both predicted broadscale habitats. Although the sample collected at RU_S_1 was deemed too small to accept it did contain the species FOCI *Arctica Islandica* (Ocean Quahog) (not listed as a species FOCI as part of the recommendations for the Rock Unique rMCZ).

Sediments across the north and south of the site were found to be broadly consistent with the predicted EUNIS sediment types, however a large section of the predicted subtidal sand BSH was found (during preliminary assessments) to be subtidal mixed sediments.

The survey of Rock Unique rMCZ was completed 17:00 09/03/12.




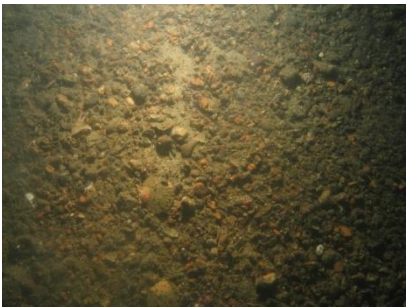
4 Preliminary Results






4.1 Acoustic Survey



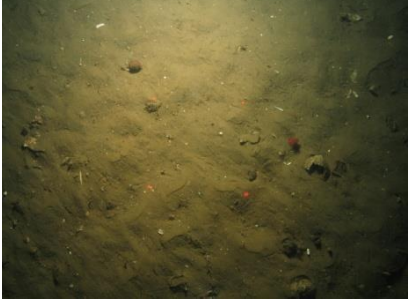

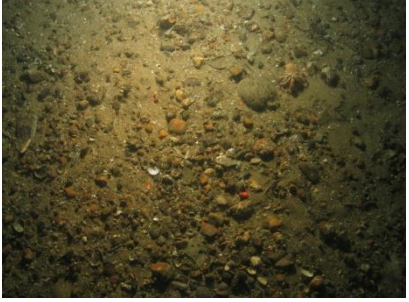
A full coverage multibeam survey had previously been carried out at Rock Unique rMCZ by the UKHO. Therefore, no additional multibeam data were collected during this survey.






4.2 Seabed Imagery

Table 2. Preliminary summary of surface sediments and epifaunal species derived from video and still imagery.

Stn Code	BSH Habitat/Faunal Summary	Still Image
RU_C_08	Coarse mixed sediment with frequent cobbles <i>Pecten maximus</i> , <i>Flustra foliacea</i> , <i>Aequipecten opercularis</i> , <i>Echinus</i> , <i>Nemertesia</i> .	
RU_C_01	Shelly sand with occasional cobble <i>Flustra foliacea</i> , <i>Ophiura ophiura</i> , <i>Asterias rubens</i> , <i>Crangon crangon</i> .	
RU_S_13	Fine muddy sand <i>Asterias rubens</i> , <i>Hippasteria phrygiana</i> , <i>Flustra foliacea</i> , <i>Pennatula phosphorea</i> , <i>Nemertesia sp</i>	
RU_C_20	Sandy gravel <i>Pennatula phosphorea</i> , <i>Porania pulvillus</i> , <i>Pagurus sp</i> , <i>Flustra foliacea</i>	

Stn Code	BSH Habitat/Faunal Summary	Still Image
RU_S_08	Slightly sandy gravel <i>Porania pulvillus</i> , <i>Flustra foliacea</i> , <i>Ammodytes sp</i>	
RU_S_09	Slightly shelly rippled sand <i>Aequipecten opercularis</i> , <i>Pagurus sp</i> , <i>Flustra foliacea</i>	
RU_S_10	Gravelly sand <i>Aequipecten opercularis</i> , <i>Flustra foliacea</i> , <i>Munida rugosa</i>	
RU_C_19	Sandy gravel with occasional cobble <i>Ebalia sp</i> , <i>Flustra foliacea</i> , <i>Pagurus sp</i> , <i>Echinus</i>	
RU_S_11	Sandy gravel <i>Porania pulvillas</i> , <i>Aequipecten opercularis</i> , <i>Echinus esculentus</i> , <i>Pagurus sp</i> , <i>Asterias rubens</i>	

Stn Code	BSH Habitat/Faunal Summary	Still Image
RU_C_03	<p>Sandy gravel with occasional cobble</p> <p><i>Pecten maximus</i>, <i>Gonoplax rhomboides</i>, <i>Echinus sp</i>, <i>Aequipecten opercularis</i>, <i>Flustra foliacea</i></p>	
RU_C_08	<p>Sandy gravel with frequent cobbles</p> <p><i>Nemertesia sp</i>, <i>Pagurus sp</i>, <i>Aequipecten opercularis</i>, <i>Pecten maximus</i>.</p>	
RU_S_16	<p>Shelly fine sand with occasional cobble</p> <p><i>Flustra foliacea</i>, <i>Pagurus sp</i>, <i>Astropecten irregularis</i>, <i>Pennatula phosphorea</i></p>	
RU_C_18	<p>Sandy gravel with cobbles</p> <p><i>Flustra foliacea</i>, <i>Munida rugosa</i>, <i>Aequipecten opercularis</i>, <i>Pagurus sp</i>, <i>Porania pulvillas</i></p>	
RU_S_05	<p>Sandy gravel with cobble</p> <p><i>Flustra foliacea</i>, <i>Munida rugosa</i>, <i>Aequipecten opercularis</i>, <i>Pagurus sp</i>, <i>Porania pulvillas</i>, <i>Macropodia sp</i></p>	

Stn Code	BSH Habitat/Faunal Summary	Still Image
RU_C_08	<p data-bbox="427 241 815 275"><i>Sandy shelly gravel with cobbles</i></p> <p data-bbox="427 293 954 367"><i>Flustra foliacea, Munida rugosa, Pagurus sp, Porania pulvillas,</i></p>	
RU_C_15	<p data-bbox="427 564 963 598"><i>Rippled fine muddy sand with shell fragments</i></p> <p data-bbox="427 607 959 680"><i>Pennatula phosphorea (tow terminated early due to poor visibility)</i></p>	
RU_C_21	<p data-bbox="427 887 906 960"><i>Sandy gravel with occasional cobble and boulder</i></p> <p data-bbox="427 969 975 1043"><i>Callionymus lyra, Pagurus sp, Flustra foliacea, Stichastrella rosea</i></p>	
RU_S_24	<p data-bbox="427 1209 632 1243"><i>Fine muddy sand</i></p> <p data-bbox="427 1252 850 1326"><i>Pennatula phosphorea, Pagurus sp, Echinocardium cordatum</i></p>	
RU_S_18	<p data-bbox="427 1532 946 1565"><i>Gravelly shelly sand with occasional cobble,</i></p> <p data-bbox="427 1574 970 1648"><i>Ophiura ophiura, Pennatula phosphorea, Pagurus sp, Nemertesia sp, Crangon crangon</i></p>	

4.3 Ham Cam and Grab Samples

Preliminary observations of the spatial distribution of sediment types (EUNIS Level 3) for each grab sample were also summarised (Figure 6). 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.

Preliminary Sediment Descriptions

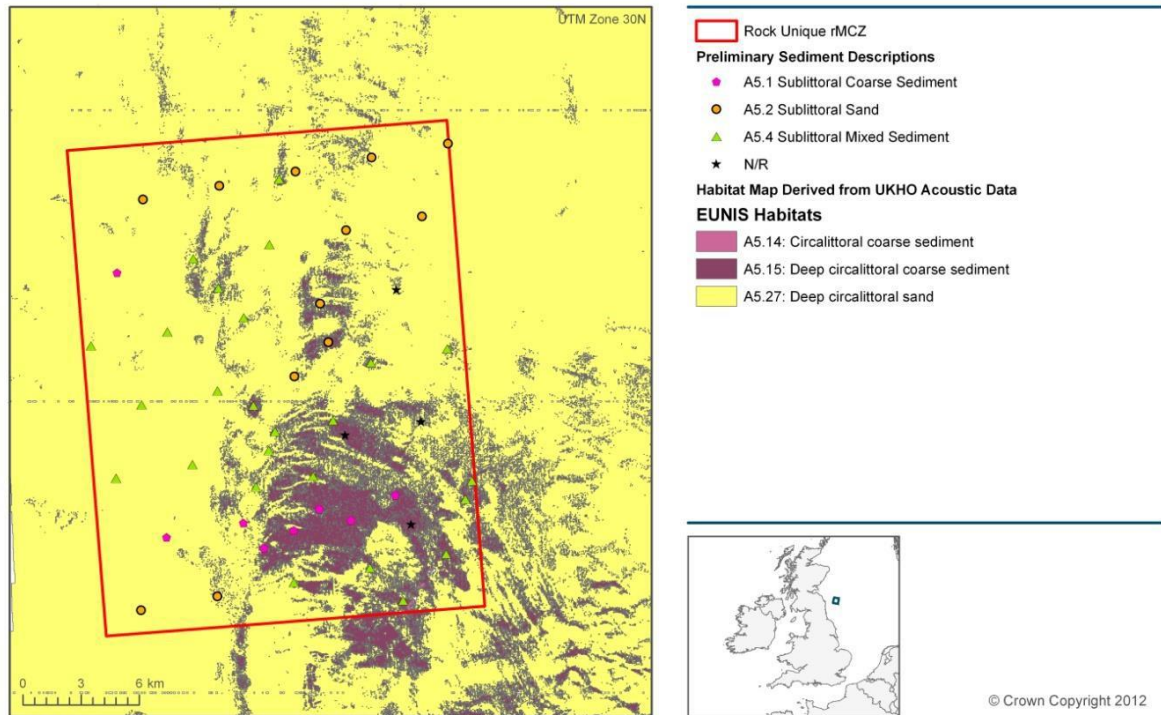


Figure 6. SAD habitat map overlaid with preliminary observations of sediment type, as determined by visual assessment of grab samples (N/R = not recorded).

4.4 Features of Conservation Importance (FOCI)

Specimens of the species FOCI *Arctica Islandica* (Ocean Quahog) were observed in samples collected within the Rock Unique rMCZ during this survey. However, *Arctica islandica* are not listed as a species FOCI within the recommendations for the proposed designation of this site.

5 Annexes

5.1 *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 tandom 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 Interling 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

5.2 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.

5.3 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.

5.4 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.

5.5 Metadata

Station metadata for the Rock Unique rMCZ survey on CEND 04/12 are provided below. (NB. 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). HC=HamCam, CS=Camera Sledge.

Cruise	Date	Stn No.	Stn Code	Gear	Latitude	Longitude
CEND 04/12	07/03/2012	166	RU_C_20	HC	55.65216	-0.51568
CEND 04/12	07/03/2012	167	RU_C_20	CS	55.65207	-0.51340
CEND 04/12	07/03/2012	167	RU_C_20	CS	55.65210	-0.51517
CEND 04/12	07/03/2012	168	RU_C_2	HC	55.67303	-0.47903
CEND 04/12	07/03/2012	169	RU_C_6	HC	55.66789	-0.54189
CEND 04/12	08/03/2012	170	RU_S_8	HC	55.66241	-0.60462
CEND 04/12	08/03/2012	171	RU_S_8	CS	55.66226	-0.60309
CEND 04/12	08/03/2012	171	RU_S_8	CS	55.66232	-0.60451
CEND 04/12	08/03/2012	172	RU_C_5	HC	55.65711	-0.66777
CEND 04/12	08/03/2012	173	RU_S_7	HC	55.65187	-0.73064
CEND 04/12	08/03/2012	174	RU_S_9	HC	55.68522	-0.70767
CEND 04/12	08/03/2012	175	RU_S_09	CS	55.68480	-0.70681
CEND 04/12	08/03/2012	175	RU_S_09	CS	55.68496	-0.70842
CEND 04/12	08/03/2012	176	RU_S_10	HC	55.69059	-0.64440
CEND 04/12	08/03/2012	176	RU_S_10	HC	55.69056	-0.64436
CEND 04/12	08/03/2012	177	RU_S_10	CS	55.69043	-0.64317
CEND 04/12	08/03/2012	177	RU_S_10	CS	55.69045	-0.64470
CEND 04/12	08/03/2012	178	RU_C_19	CS	55.67881	-0.62597
CEND 04/12	08/03/2012	178	RU_C_19	CS	55.67867	-0.62758
CEND 04/12	08/03/2012	179	RU_C_19	HC	55.67872	-0.62831
CEND 04/12	08/03/2012	180	RU_S_02	HC	55.68638	-0.60325
CEND 04/12	08/03/2012	181	RU_S_11	HC	55.69591	-0.58175
CEND 04/12	08/03/2012	182	RU_S_11	CS	55.69622	-0.58049
CEND 04/12	08/03/2012	182	RU_S_11	CS	55.69580	-0.58189
CEND 04/12	08/03/2012	183	RU_S_03	HC	55.69024	-0.55601
CEND 04/12	07/03/2012	184	RU_C_7	HC	55.68725	-0.50693
CEND 04/12	08/03/2012	185	RU_C_3	HC	55.69815	-0.46166
CEND 04/12	08/03/2012	185	RU_C_3	HC	55.69819	-0.46153
CEND 04/12	08/03/2012	186	RU_C_3	CS	55.69848	-0.46035
CEND 04/12	08/03/2012	186	RU_C_3	CS	55.69779	-0.46265
CEND 04/12	08/03/2012	187	RU_C_09	HC	55.70640	-0.45575
CEND 04/12	08/03/2012	188	RU_C_8	HC	55.70108	-0.51910
CEND 04/12	08/03/2012	189	RU_C_08	CS	55.70189	-0.51720
CEND 04/12	08/03/2012	189	RU_C_08	CS	55.70081	-0.51945
CEND 04/12	08/03/2012	190	RU_S_04	HC	55.71115	-0.58582
CEND 04/12	08/03/2012	191	RU_C_1	HC	55.70716	-0.63302
CEND 04/12	08/03/2012	192	RU_C_1	CS	55.70688	-0.63359

Cruise	Date	Stn No.	Stn Code	Gear	Latitude	Longitude
CEND 04/12	08/03/2012	193	RU_S_1	HC	55.72378	-0.62150
CEND 04/12	08/03/2012	194	RU_S_13	HC	55.71848	-0.68440
CEND 04/12	08/03/2012	195	RU_S_13	CS	55.71866	-0.68294
CEND 04/12	08/03/2012	195	RU_S_13	CS	55.71838	-0.68464
CEND 04/12	08/03/2012	196	RU_S_12	HC	55.71328	-0.74745
CEND 04/12	08/03/2012	197	RU_S_15	HC	55.74688	-0.72461
CEND 04/12	08/03/2012	198	RU_S_16	HC	55.75211	-0.66180
CEND 04/12	08/03/2012	199	RU_S_16	CS	55.75274	-0.65987
CEND 04/12	08/03/2012	199	RU_S_16	CS	55.75216	-0.66117
CEND 04/12	08/03/2012	200	RU_C_18	HC	55.74473	-0.63283
CEND 04/12	08/03/2012	201	RU_C_18	CS	55.74584	-0.63137
CEND 04/12	08/03/2012	201	RU_C_18	CS	55.74516	-0.63240
CEND 04/12	08/03/2012	202	RU_S_05	HC	55.73238	-0.61579
CEND 04/12	08/03/2012	202	RU_S_05	HC	55.73248	-0.61575
CEND 04/12	08/03/2012	203	RU_S_05	CS	55.73312	-0.61479
CEND 04/12	08/03/2012	203	RU_S_05	CS	55.73238	-0.61552
CEND 04/12	08/03/2012	204	RU_S_6	HC	55.73657	-0.56799
CEND 04/12	08/03/2012	205	RU_S_14	HC	55.72958	-0.55839
CEND 04/12	08/03/2012	206	RU_C_10	HC	55.73454	-0.49568
CEND 04/12	08/03/2012	208	RU_S_17	HC	55.76778	-0.47215
CEND 04/12	09/03/2012	209	RU_C_12	HC	55.76262	-0.53514
CEND 04/12	09/03/2012	209	RU_C_12	HC	55.76254	-0.53536
CEND 04/12	09/03/2012	210	RU_C_11	HC	55.75746	-0.59843
CEND 04/12	09/03/2012	211	RU_C_17	HC	55.77281	-0.56950
CEND 04/12	09/03/2012	212	RU_S_20	HC	55.79589	-0.51205
CEND 04/12	09/03/2012	213	RU_C_14	HC	55.79076	-0.57517
CEND 04/12	09/03/2012	214	RU_C_13	HC	55.78554	-0.63827
CEND 04/12	09/03/2012	215	RU_C_04	HC	55.79959	-0.65828
CEND 04/12	09/03/2012	216	RU_S_19	HC	55.78016	-0.70151
CEND 04/12	09/03/2012	217	RU_S_18	HC	55.77483	-0.76450
CEND 04/12	09/03/2012	218	RU_S_21	HC	55.80825	-0.74123
CEND 04/12	09/03/2012	219	RU_S_22	HC	55.81361	-0.67820
CEND 04/12	09/03/2012	220	RU_C_15	HC	55.81889	-0.61504
CEND 04/12	09/03/2012	221	RU_C_15	CS	55.81962	-0.61366
CEND 04/12	09/03/2012	221	RU_C_15	CS	55.81944	-0.61398
CEND 04/12	09/03/2012	222	RU_C_16	HC	55.82426	-0.55171
CEND 04/12	09/03/2012	223	RU_S_23	HC	55.82944	-0.48881
CEND 04/12	09/03/2012	224	RU_S_28	HC	55.86263	-0.46529
CEND 04/12	09/03/2012	225	RU_S_27	HC	55.85749	-0.52854
CEND 04/12	09/03/2012	226	RU_S_26	HC	55.85221	-0.59177
CEND 04/12	09/03/2012	227	RU_C_21	HC	55.84893	-0.60524
CEND 04/12	09/03/2012	228	RU_C_21	CS	55.84942	-0.60410
CEND 04/12	09/03/2012	228	RU_C_21	CS	55.84916	-0.60485

Cruise	Date	Stn No.	Stn Code	Gear	Latitude	Longitude
CEND 04/12	09/03/2012	229	RU_S_25	HC	55.84678	-0.65484
CEND 04/12	09/03/2012	230	RU_S_24	HC	55.84165	-0.71803
CEND 04/12	09/03/2012	231	RU_S_24	CS	55.84181	-0.71656
CEND 04/12	09/03/2012	231	RU_S_24	CS	55.84150	-0.71806
CEND 04/12	09/03/2012	232	RU_S_18	CS	55.77517	-0.76305
CEND 04/12	09/03/2012	232	RU_S_18	CS	55.77454	-0.76409
CEND 04/12	09/03/2012	233	RU_C_17	CS	55.77433	-0.56920
CEND 04/12	09/03/2012	233	RU_C_17	CS	55.77362	-0.56994

5.6 **Daily Progress Report**

**DAILY LOG
STATUS REPORT
Name of Area Survey
Rv Cefas Endeavour – JNCC – DPR No. 34 – Wednesday 7th March 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. 34 Date: 8 th Mar. 2012	Location at 24:00: 55° 39.8 N, 000° 34.3E

To Company:	Person:	E-mail:
Cefas		
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	03:01	Transit	Chalk Reef to Rock Unique
03:01	03:14	ToSa	Camera sledge CH_15
03:14	04:08	ToSa	Camera sledge CH_01
04:08	05:05	ToSa	Camera sledge CH_02
05:05	05:51	ToSa	Camera sledge CH_03
05:51	06:42	ToSa	Camera sledge CH_06
06:42	07:32	ToSa	Camera sledge CH_04
07:32	09:20	ToSa	Camera sledge CH_05
09:20	10:06	ToSa	Camera sledge CH_07
10:06	11:23	ToSa	Camera sledge CH_08
11:23	12:40	ToSa	Camera sledge CH_09
12:40	13:31	ToSa	Camera sledge CH_14
13:31	14:19	ToSa	Camera sledge CH_16
14:19	16:06	ToSa	Camera sledge CH_10
16:06	17:05	ToSa	Camera sledge CH_11
17:05	17:58	ToSa	Camera sledge CH_12
17:58	21:25	ToSa	Camera sledge CH_13
21:25	21:35	Transit	Chalk Reef to Rock Unique
21:35	22:16	Offshore Calibrations	CTD
22:16	22:26	ToSa	Hamon grab (0.1m2) RU_C_20 (Three attempts)
22:26	23:02	ToSa	Camera sledge RU_C_20
23:02	23:40	ToSa	Hamon grab (0.1m2) RU_C_02
23:40	23:59	ToSa	Hamon grab (0.1m2) RU_C_06
23:59	00:00	Transit	To next station

DAILY LOG STATUS REPORT

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	S 7	SW 6	W-N 7	N 7	
Sea state	Moderate	Moderate	Moderate	Moderate	
Swell	Rather Rough	Moderate	Moderate	Moderate	
Vis	Moderate	Good	Good	Good	
Baro	1020	1016	1019	1023	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		08:26	
Offshore calibrations	00:10	00:42	
Total Operation Survey (TOSu)		33:43	
Total Operation Sampling (TOSa)	17:22	62:28	
Equipment/Downtime			
Ship/Plant Downtime			
Waiting On Weather		07:41	
Transit	06:28	20:35	
Standby Port			
Others		00:24	
Total:	24:00:00	135:59	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM3000D / EM2040	0	516		Working in existing multibeamed area.

Overall Progress Groundtruthing Samples

Action	Today (Lkm/samples)	Accum. (Lkm/samples)	Remarks
Hamon grab (0.1m ²)	3	56	
Drop camera	0	1	
Camera sledge	17	35	

Weather forecast for the next 24 hours

West 5 or 6 backing southwest 4. Slight or moderate. Mainly fair. Good.

Planned operation for the next 24 hours (00:00 to 24:00 on 8th March 2012)

Continue to sample at Rock Unique.

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. 35 – Thursday 8th March 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. 35 Date: 8 th Mar. 2012	Location at 24:00: 55° 45.7 N, 000° 32.1 E

To Company:	Person:	E-mail:
Cefas		
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	00:22	ToSa	Hamon grab (0.1m2) RU_S_08
00:22	00:53	ToSa	Camera sledge RU_S_08
00:53	01:39	ToSa	Hamon grab (0.1m2) RU_C_05
01:39	02:23	ToSa	Hamon grab (0.1m2) RU_S_07
02:23	03:08	ToSa	Hamon grab (0.1m2) RU_S_09
03:08	03:39	ToSa	Camera sledge RU_S_09
03:39	04:32	ToSa	Hamon grab (0.1m2) RU_S_09 Two attempts
04:32	05:01	ToSa	Camera sledge RU_S_10
05:01	05:44	ToSa	Camera sledge RU_C_19
05:44	05:54	ToSa	Hamon grab (0.1m2) RU_C_19
05:54	06:17	ToSa	Hamon grab (0.1m2) RU_S_02
06:17	06:40	ToSa	Hamon grab (0.1m2) RU_S_11
06:40	07:14	ToSa	Camera sledge RU_S_11
07:14	08:25	ToSa	Hamon grab (0.1m2) RU_S_03 Three attempts, 2nd used
08:25	08:57	ToSa	Hamon grab (0.1m2) RU_C_07
08:57	09:33	ToSa	Hamon grab (0.1m2) RU_C_03 Two attempts
09:33	10:04	ToSa	Camera sledge RU_C_03
10:04	10:27	ToSa	Hamon grab (0.1m2) RU_C_09
10:27	11:15	ToSa	Hamon grab (0.1m2) RU_C_08 Three attempts
11:15	11:47	ToSa	Camera sledge RU_C_08
11:47	12:35	ToSa	Hamon grab (0.1m2) RU_S_04
12:35	13:08	ToSa	Hamon grab (0.1m2) RU_C_01 Two attempts
13:08	13:38	ToSa	Camera sledge RU_C_01
13:38	14:20	ToSa	Hamon grab (0.1m2) RU_S_01 Three attempts
14:20	14:53	ToSa	Hamon grab (0.1m2) RU_S_13
14:53	15:24	ToSa	Camera sledge RU_S_13
15:24	15:56	ToSa	Hamon grab (0.1m2) RU_S_12
15:56	16:28	ToSa	Hamon grab (0.1m2) RU_S_15

DAILY LOG STATUS REPORT

Time UTC (start)	Time UTC (end)	Type	Comments
16:28	16:54	ToSa	Hamon grab (0.1m ²) RU_S_16
16:54	17:30	Ship/Plant Downtime	Crew stopped for dinner
17:30	17:51	ToSa	Camera sledge RU_S_16

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	W7	W6	SW 5	SW 5	
Sea state	Moderate	Moderate	Slight	Smooth	
Swell	Moderate	Moderate	Slight	Smooth	
Vis	Good	Good	Good	Good	
Baro	1028	1034	1036	1036	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		08:26	
Offshorecalibrations		00:42	
Total Operation Survey (TOSu)		09:43	
Total Operation Sampling (TOSa)	23:24	13:52	
Equipment/Downtime		02:00	
Ship/Plant Downtime	00:36	00:36	
Waiting On Weather		07:41	
Transit		20:35	
Standby Port			
Others		00:24	
Total:	24:00:00	159:59:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM3000D / EM2040	0	516		Working in existing multibeamed area.

Overall Progress Groundtruthing Samples

Action	Today (Lkm/samples)	Accum. (Lkm/samples)	Remarks
Hamon grab (0.1m ²)	24	104	
Drop camera	0	1	
Camera sledge	13	61	

Weather forecast for the next 24 hours

West backing southwest 4 or 5. Slight or Moderate. Mainly Fair. Moderate or Good.

DAILY LOG STATUS REPORT

Planned operation for the next 24 hours (00:00 to 24:00 on 9th March 2012)

Complete Rock Unique and start transit to Farnes East.

Agreed changes to Scope/Survey operation priorities

CEFAS/JNCC comments

A couple of live Quahog (*Arctica islandica*) were found in one sample in the Rock Unique site.

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

**DAILY LOG
STATUS REPORT
Name of Area Survey
Rv Cefas Endeavour – JNCC – DPR No. 36 – Friday 9th March 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. 36 Date: 9 th Mar. 2012	Location at 24:00: 55° 50.0 N, 001° 04.8 W

To Company:	Person:	E-mail:
Cefas		
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	00:11	ToSa	Hamon grab (0.1m2) RU_C_12
00:00	00:19	ToSa	Hamon grab (0.1m2) RU_C_12
00:00	00:26	ToSa	Hamon grab (0.1m2) RU_C_12
00:11	01:00	ToSa	Hamon grab (0.1m2) RU_C_11
01:00	01:27	ToSa	Hamon grab (0.1m2) RU_C_17
01:27	01:33	ToSa	Hamon grab (0.1m2) RU_C_17
01:33	03:20	Equipment/Downtime	Camera sledge RU_C_17 CS abandoned due to water ingress
03:20	03:21	ToSa	Hamon grab (0.1m2) RU_S_20
03:21	03:31	ToSa	Hamon grab (0.1m2) RU_S_20 took second attempt
03:31	04:08	ToSa	Hamon grab (0.1m2) RU_C_14
04:08	04:13	ToSa	Hamon grab (0.1m2) RU_C_14
04:13	04:24	ToSa	Hamon grab (0.1m2) RU_C_14 HC used as video
04:24	04:59	ToSa	Hamon grab (0.1m2) RU_C_13
04:59	05:21	ToSa	Hamon grab (0.1m2) RU_C_4
05:21	05:26	ToSa	Hamon grab (0.1m2) RU_C_4
05:26	05:34	ToSa	Hamon grab (0.1m2) RU_C_4 HC used as video
05:34	06:06	ToSa	Hamon grab (0.1m2) RU_S_19
06:06	06:39	ToSa	Hamon grab (0.1m2) RU_S_18
06:39	07:12	ToSa	Hamon grab (0.1m2) RU_S_21
07:12	08:13	ToSa	Hamon grab (0.1m2) RU_S_22
08:13	08:18	ToSa	Hamon grab (0.1m2) RU_S_22
08:18	08:52	ToSa	Hamon grab (0.1m2) RU_C_15
08:52	08:58	ToSa	Hamon grab (0.1m2) RU_C_15
08:58	10:50	Equipment/Downtime	Camera sledge Issues with camera coms
10:50	11:05	ToSa	Camera sledge RU_C_15 Too much tide washed suspended sediment to see, tow stopped early
11:05	11:42	ToSa	Hamon grab (0.1m2) RU_C_16

DAILY LOG STATUS REPORT

Time UTC (start)	Time UTC (end)	Type	Comments
11:42	12:37	ToSa	Hamon grab (0.1m2) RU_S_23
12:37	13:00	Ship/Plant Downtime	Crew stopped for lunch
13:00	13:10	ToSa	Hamon grab (0.1m2) RU_S_28
13:10	13:43	ToSa	Hamon grab (0.1m2) RU_S_27
13:43	14:14	ToSa	Hamon grab (0.1m2) RU_S_26
14:14	14:45	ToSa	Hamon grab (0.1m2) RU_C_21 Three Samples (First used)
14:45	15:13	ToSa	Camera sledge RU_C_21 Tow cut short due to boulders
15:13	15:46	ToSa	Hamon grab (0.1m2) RU_S_25
15:46	16:17	ToSa	Hamon grab (0.1m2) RU_S_24
16:17	17:20	Equipment/Downtime	Issues with camera coms
17:20	17:58	ToSa	Camera sledge RU_S_24
17:58	19:24	ToSa	Camera sledge RU_S_18
19:24	20:26	ToSa	Camera sledge RU_C_17 Long steam to station, camera deployed - video feed issues developed
20:26	21:10	Equipment/Downtime	Camera sledge Investigating video sled issues.
21:10	21:30	ToSa	Camera sledge RU_C_17 Video redeployed, snapshot camera stopped working after a couple of shots (possible controller software issue). Continued for 5mins with video only.
21:30	23:25	Transit	Transit to Farnes East Site. Last sled station abandoned (RU_S_28) due to technical uncertainties and to keep on schedule.
23:25	23:30	Offshore Calibrations	CTD
23:30	23:37	ToSa	Hamon grab (0.1m2) FE_S_22 No sled - diagnostics being carried out
23:37	24:00	ToSa	Hamon grab (0.1m2) FE_S_21 Sample taken after 24:00

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	S 7	SW 6	SW 7	W 5	
Sea state	Moderate	Moderate	Moderate	Moderate	
Swell	Moderate	Moderate	Moderate	Moderate	
Vis	Good	Good	Good	Good	
Baro	1035	1034	1034	1036	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		09:43	
Offshore calibrations	00:05	00:47	
Total Operation Survey (TOSu)		09:43	
Total Operation Sampling (TOSa)		06:03	
Equipment/Downtime	16:11	06:03	Camera Sled Issues
Ship/Plant Downtime	05:26	07:26	

DAILY LOG STATUS REPORT

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Waiting On Weather	00:23	00:59	
Transit		07:41	
Standby Port	01:55	22:30	
Others			
Total:		00:24	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM3000D / EM2040	0	516		Working in existing multibeamed area.

Overall Progress Groundtruthing Samples

Action	Today (Lkm/samples)	Accum. (Lkm/samples)	Remarks
Hamon grab (0.1m ²)	23	1	
Drop camera	0	1	
Camera sledge	4	56	

Weather forecast for the next 24 hours

West or southwest, veering northwest later, 3 or 4. Smooth or slight. Occasional rain later in south. Moderate or good.

Planned operation for the next 24 hours (00:00 to 24:00 on 10th March 2012)

Continue with Farne East sampling.

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. 37 – Saturday 10th March 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. 37 Date: 10 th Mar. 2012	Location at 24:00: 55° 43.1 N, 001° 25.7 W

To Company:	Person:	E-mail:
Cefas		
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	00:08	ToSa	Hamon grab (0.1m2) FE_S_21
00:08	00:43	ToSa	Hamon grab (0.1m2) FE_S_20
00:43	01:10	ToSa	Hamon grab (0.1m2) FE_C_23
01:10	01:44	ToSa	Hamon grab (0.1m2) FE_C_22
01:44	02:11	Equipment/Downtime	Camera sledge FE_C_22 Camera Fault
02:11	02:40	ToSa	Hamon grab (0.1m2) FE_C_27
02:40	03:10	ToSa	Camera sledge FE_C_27
03:10	03:49	ToSa	Hamon grab (0.1m2) FE_C_21
03:49	04:41	ToSa	Hamon grab (0.1m2) FE_C_26
04:41	05:06	ToSa	Hamon grab (0.1m2) FE_C_20
05:06	05:33	ToSa	Camera sledge FE_C_20
05:33	06:01	ToSa	Hamon grab (0.1m2) FE_C_25
06:01	06:28	ToSa	Hamon grab (0.1m2) FE_C_18
06:28	06:50	ToSa	Hamon grab (0.1m2) FE_C_24
06:50	07:12	ToSa	Hamon grab (0.1m2) FE_R_39
07:12	08:26	ToSa	Camera sledge FE_R_39
08:26	09:14	ToSa	Camera sledge FE_C_16
09:14	09:51	ToSa	Hamon grab (0.1m2) FE_C_16 first try no sample
09:51	10:25	ToSa	Hamon grab (0.1m2) FE_C_10
10:25	10:54	ToSa	Hamon grab (0.1m2) FE_C_8
10:54	11:21	ToSa	Hamon grab (0.1m2) FE_R_38
11:21	11:52	ToSa	Camera sledge FE_R_38
11:52	12:39	ToSa	Hamon grab (0.1m2) FE_C_11
12:39	13:08	ToSa	Hamon grab (0.1m2) FE_C_09
13:08	13:38	ToSa	Hamon grab (0.1m2) FE_C_13
13:38	14:05	ToSa	Hamon grab (0.1m2) FE_R_37
14:05	14:35	ToSa	Camera sledge FE_R_37
14:35	15:10	ToSa	Hamon grab (0.1m2) FE_C_14

DAILY LOG STATUS REPORT

Time UTC (start)	Time UTC (end)	Type	Comments
15:10	15:40	ToSa	Hamon grab (0.1m2) FE_C_15 One Artica islandican - damaged in grab
15:40	16:05	Equipment/Downtime	Sled camera software issues
16:05	16:11	ToSa	Hamon grab (0.1m2) FE_C_17
16:11	17:00	Equipment/Downtime	Camera sledge Sled camera software issues
17:00	17:32	ToSa	Hamon grab (0.1m2) FE_C_19
17:32	18:30	ToSa	Camera sledge FE_S_19 No Video recorded - system working okay though
18:30	18:44	ToSa	Hamon grab (0.1m2) FE_S_19
18:44	19:14	ToSa	Hamon grab (0.1m2) FE_C_12
19:14	19:46	ToSa	Hamon grab (0.1m2) FE_S_18 Two attempts
19:46	20:12	ToSa	Hamon grab (0.1m2) FE_S_17
20:12	20:42	ToSa	Camera sledge FE_S_17
20:42	21:39	ToSa	Hamon grab (0.1m2) FE_R_36 Three attempts. Jaws kept open my rocks each time.
21:39	22:11	ToSa	Hamon grab (0.1m2) FE_R_35
22:11	22:43	ToSa	Camera sledge FE_R_35
22:43	23:19	ToSa	Hamon grab (0.1m2) FE_C_07
23:19	23:46	ToSa	Hamon grab (0.1m2) FE_C_06
23:46	23:59	ToSa	Hamon grab (0.1m2) FE_C_04 Grab taken after 24:00

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	W 6	W 7	W 5	W 5	
Sea state	Slight	Moderate	Slight	Smooth	
Swell	Slight	Moderate	Slight	Smooth	
Vis	Good	Good	Good	Good	
Baro	1038	1040	1040	1044	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		08:26	
Offshore calibrations		00:47	
Total Operation Survey (TOSu)		09:43	
Total Operation Sampling (TOSa)	22:19	17:37	
Equipment/Downtime	01:41	04:04	
Ship/Plant Downtime		00:36	
Waiting On Weather		09:36	
Transit		20:35	
Standby Port			
Others		00:24	
Total:	24:00:00	183:59:00	

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 EM3000D / EM2040	0	516		Working in existing multibeamed area.

Overall Progress Groundtruthing Samples

Action	Today (Lkm/samples)	Accum. (Lkm/samples)	Remarks
Hamon grab (0.1m ²)	31	165	
Drop camera	0	1	
Camera sledge	9	70	

Weather forecast for the next 24 hours

West or northwest 3 or 4. Smooth or slight. Fair. Moderate or Good.

Planned operation for the next 24 hours (00:00 to 24:00 on 11th March 2012)

Continue to sample at Farne East.

Agreed changes to Scope/Survey operation priorities

CEFAS/JNCC comments

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

5.7 Fisheries Liaison Officer (FLO) Report

No Fisheries Liaison Officer was on board, but no fishing activity was observed during the survey within the Rock Unique rMCZ during CEND 04/12.

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)

Cefas Technology Limited (CTL) is a wholly owned subsidiary of Cefas specialising in the application of Cefas technology to specific customer needs in a cost-effective and focussed manner.

CTL systems and services are developed by teams that are experienced in fisheries, environmental management and aquaculture, and in working closely with clients to ensure that their needs are fully met.

(www.cefastechnology.co.uk)

- international and UK government departments
 - the European Commission
 - the World Bank
 - Food and Agriculture Organisation of the United Nations (FAO)
 - oil, water, chemical, pharmaceutical, agro-chemical, aggregate and marine industries
 - non-governmental and environmental organisations
 - regulators and enforcement agencies
 - local authorities and other public bodies
- We also work successfully in partnership with other organisations, operate in international consortia and have several joint ventures commercialising our intellectual property

Head office

Centre for Environment, Fisheries & Aquaculture Science
Pakefield Road, Lowestoft,
Suffolk NR33 0HT UK

Tel +44 (0) 1502 56 2244

Fax +44 (0) 1502 51 3865

Web www.cefas.defra.gov.uk

Centre for Environment, Fisheries & Aquaculture Science
Barrack Road, The Nothe
Weymouth, DT4 8UB

Tel +44 (0) 1305 206600

Fax +44 (0) 1305 206601

