

Final Report (Project Code): C5433

North of Celtic Deep rMCZ 2012 Survey Report

Authors: Paul Whomersley, Sue Ware & Koen Vanstaen

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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

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1 Background and Introduction

1.1 Survey Project Team

The North of Celtic Deep rMCZ survey was carried out during 7th – 9th 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 of Celtic Deep rMCZ is located between Welsh territorial waters and Republic of Ireland offshore waters, 12 nm from the Welsh coast (Figure 1). It is the most southerly MCZ in the Irish Sea Conservation Zone

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

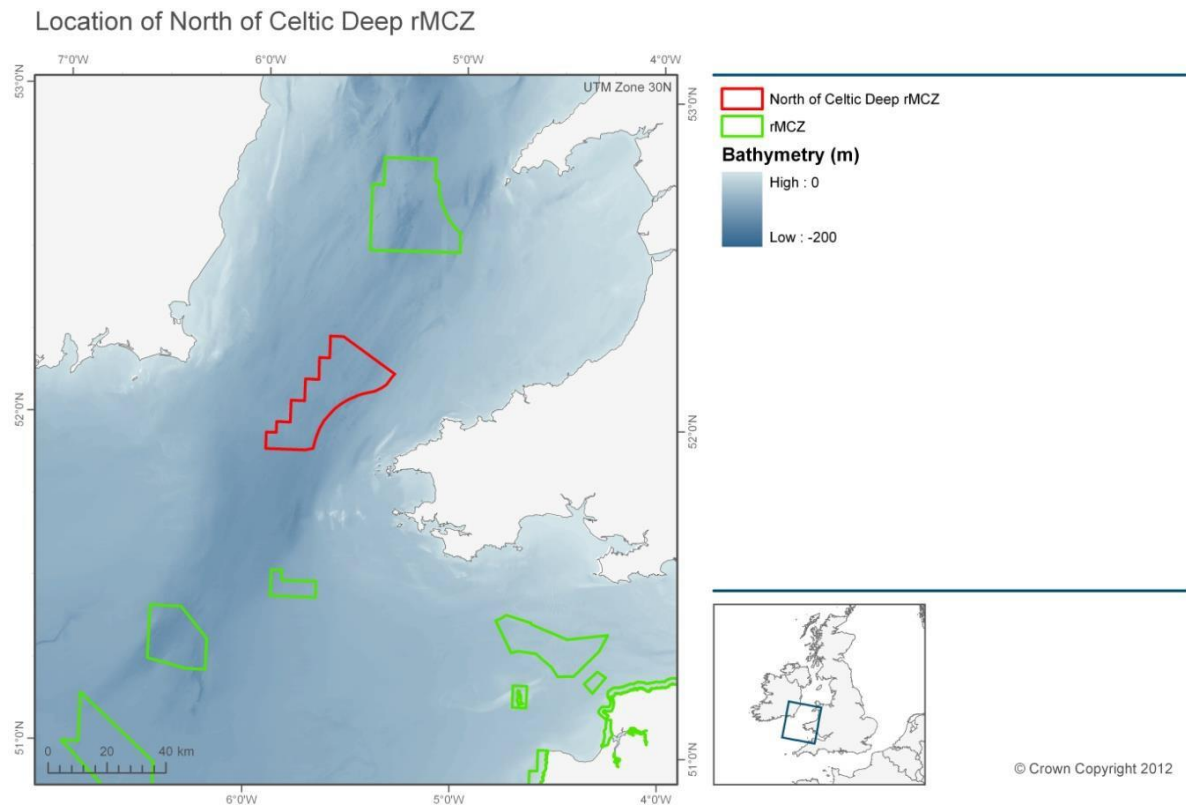


Figure 1. Location of North of Celtic Deep rMCZ [Bathymetry is from the Defra Digital Elevation Model (Astrium 2011)].

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 of Celtic Deep rMCZ.

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

****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 FOCI had been noted as being recorded within the rMCZ, but there was insufficient confidence in the records to warrant including them as features proposed for designation (Table 2).

Table 2. FOCI present but not proposed for designation within North of Celtic Deep rMCZ.

Feature Type	Feature Name
Features of Conservation Interest (FOCI)	
Habitats	<i>Modiolus modiolus</i> beds
Species	<i>Arctica islandica</i>

1.4 Existing data and information utilised to inform survey planning

The habitat map presented in the Site Assessment Document was used in the planning of the groundtruthing survey carried out at this site.

2 Survey Design and Methods

2.1 *Survey planning and design*

Selection and positioning of groundtruthing stations was informed by existing bathymetric data and the predicted broadscale habitats derived from 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 expansive area predicted as subtidal coarse sediment were at a grid spacing of 4 km and those within the much smaller area predicted as subtidal sands were at a grid spacing of 1.5km.

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.

'Intelligent' station codes were constructed, each with 3 elements; NCD indicating the North Celtic Deep site followed by a letter indicating the predicted substrate type for that location according to the SAR (C for coarse sediment, S for sand, M for mud and Mx for mixed sediment), then a sequential number (e.g. NCD_C_5, NCD_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 m² mini Hamon grab fitted with a video camera (Figure 2), 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 2. Mini hamon grab with video camera (HamCam).

The camera sledge system comprised a video camera with capability to also capture still images (Figure 3). 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 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 ($\sim 0.25 \text{ ms}^{-1}$) 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

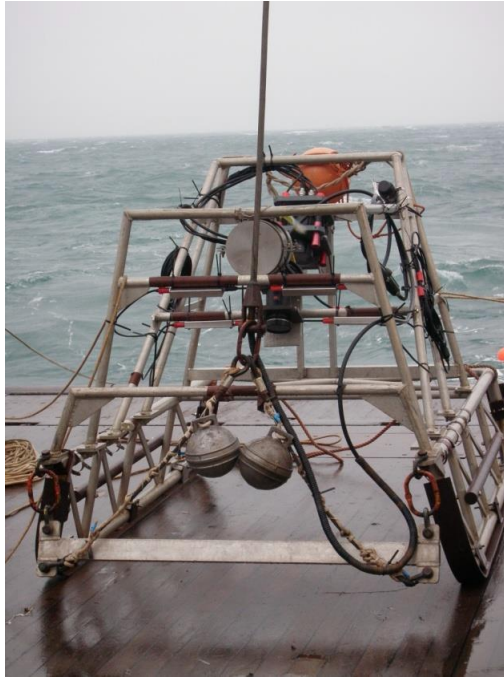


Figure 3. Camera sledge with video and still imaging system.

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 4) 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 ($\sim 0.25 \text{ ms}^{-1}$) 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 4. Drop camera frame fitted with video and still imaging system

3 Survey Narrative

Survey work commenced at North Celtic Deep rMCZ on 07/02/12 at 03:50. A CTD was deployed to obtain the sound velocity profile (SVP) for calibration of the multibeam. Hamon grab sampling then commenced in the north-west of the site within the predicted subtidal course BSH. Multibeam bathymetry and backscatter data were collected during transits between stations. Images of the seabed observed during the deployment of the HamCam guided the utilisation of the camera gears. If the area was homogeneous then camera deployments were carried out every third station to ensure an adequate density and spatial coverage of video footage (and still images) across the rMCZ.

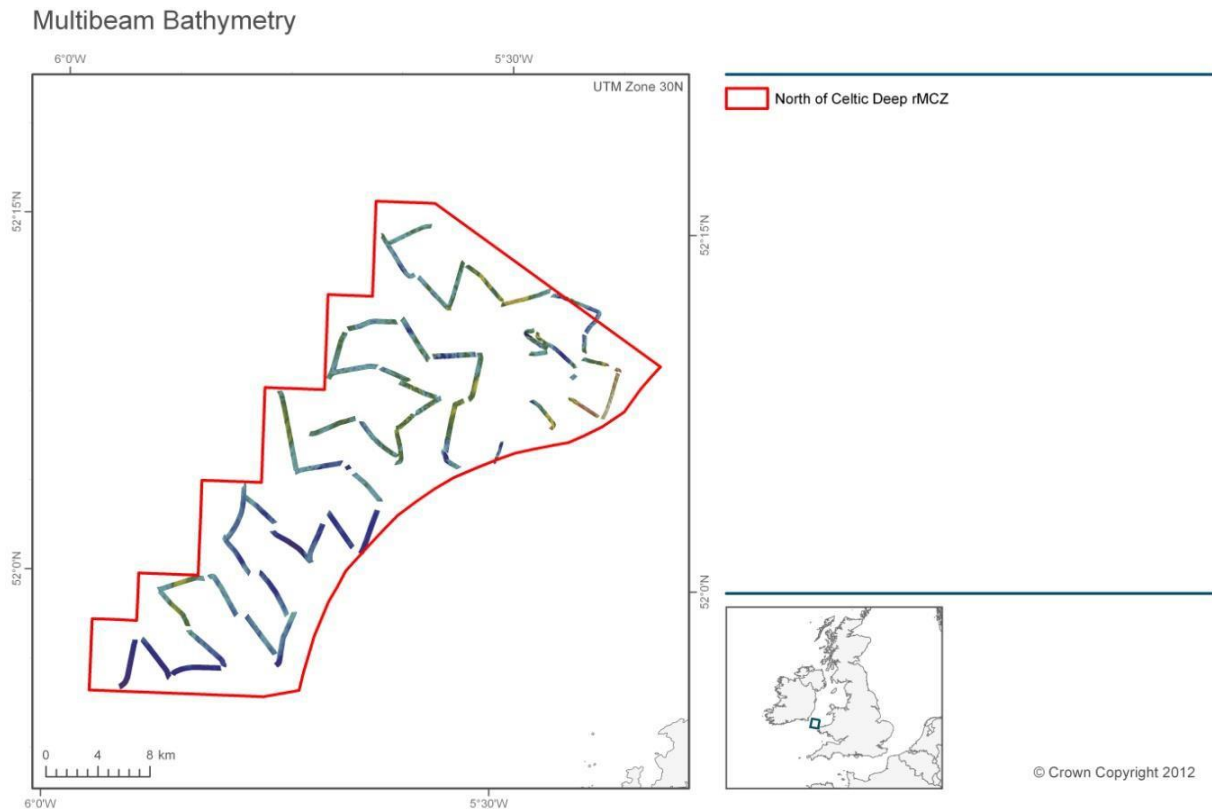
The SAD habitat map indicated a small patch of subtidal mixed sediments to be present in the north-west of the site. This area was targeted with the HamCam (stations C44 in Figure 7) but this failed to collect a sample due to the coarseness of the sediment. To further verify the extent of this habitat the Drop Camera was deployed and revealed the substrate to be sufficiently flat and unobstructed to allow the camera sledge to be used. During the transition between gears several changes to the setup (positions of lights, camera and flash) had to be made to ensure quality video footage and still images were acquired. The survey continued until 13:06, 09/02/12.

During the survey, a total of 63 HamCam samples were collected (44 from the subtidal coarse sediment broadscale habitat and 19 from the subtidal sand broadscale habitat) and a total of 20 camera deployments made (14 within the predicted subtidal coarse sediments and 6 within the predicted subtidal sand sediments). In addition, 162.1 line-kilometres of multibeam data were acquired and processed (Figure 5).

4 Preliminary Results

4.1 Acoustic Maps

The acoustic data collected opportunistically during transit between stations were processed for bathymetry and backscatter (Figure 5 and Figure 6). A full coverage acoustic survey was carried out under sub-contract concurrently with the groundtruthing survey. These acoustic data were not available to inform the planning of the groundtruthing survey.



Multibeam Backscatter

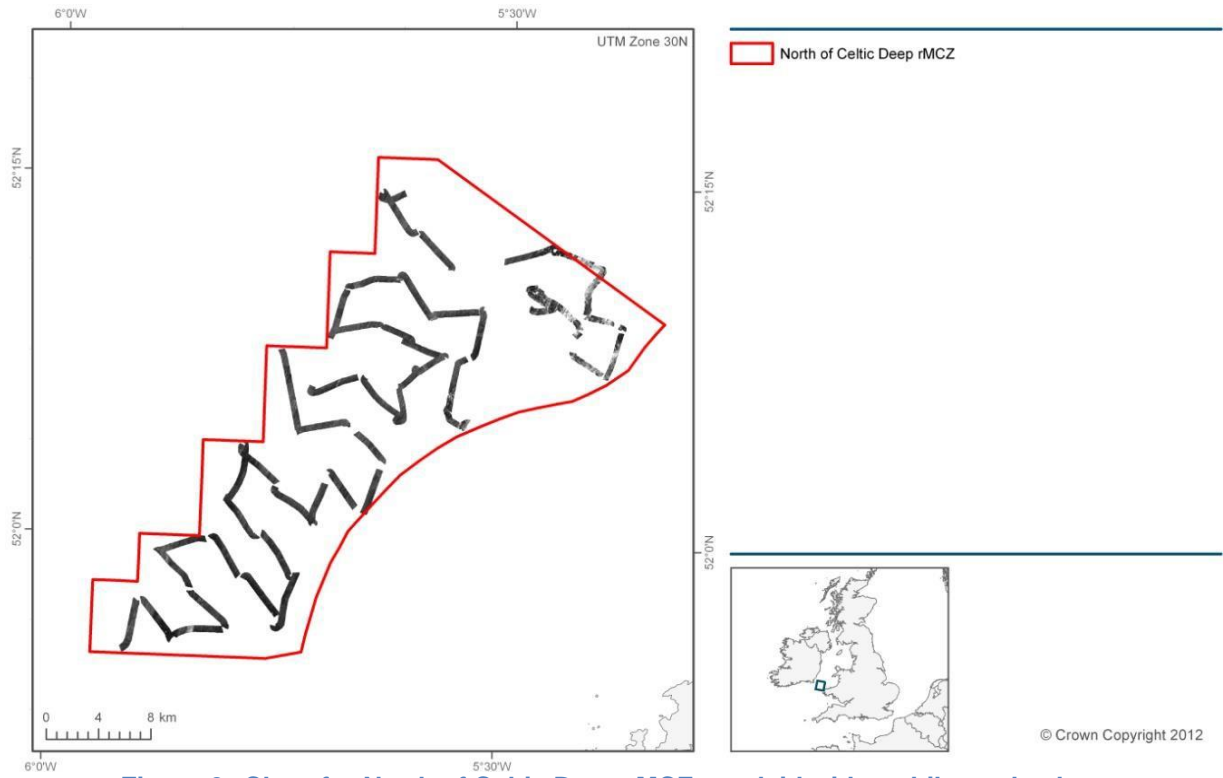
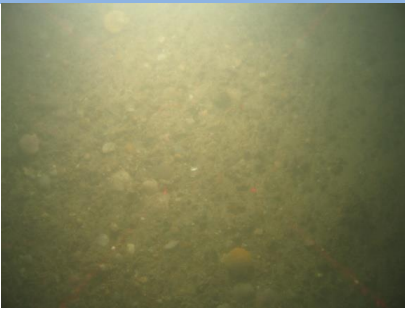
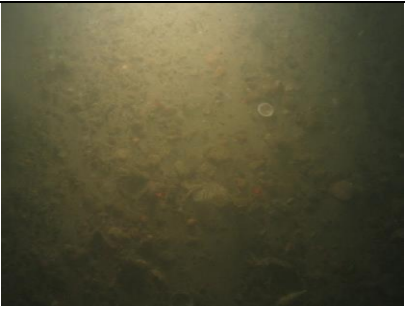


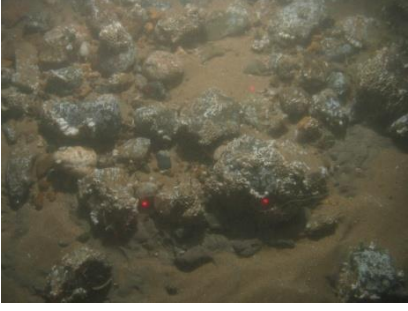








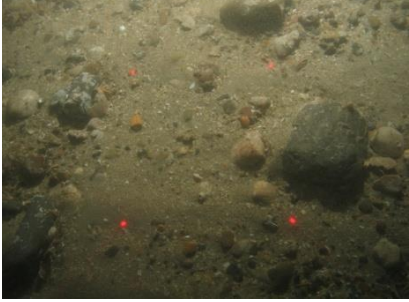

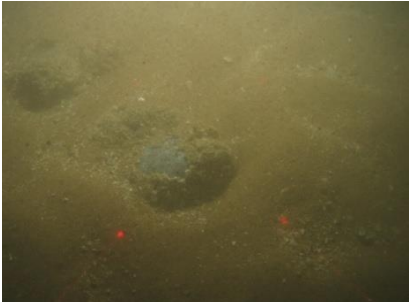
Figure 6. Chart for North of Celtic Deep rMCZ overlaid with multibeam backscatter.

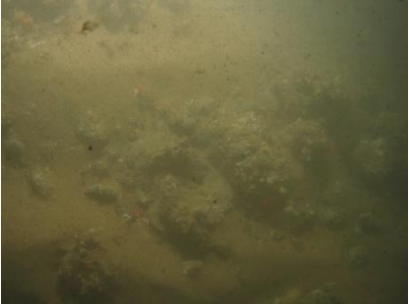
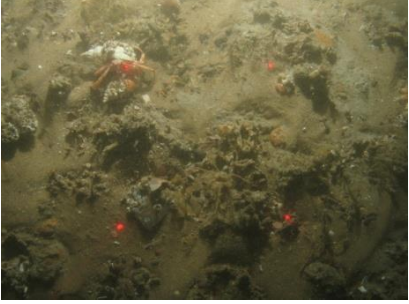

4.2 Seabed Imagery

Preliminary summary of the seabed substrate and epifaunal communities observed in video and stills images.

Stn Code	BSH Habitat/Faunal Summary	Still Image
C1	Gravelly muddy sand with dead shell. (Hydroids, <i>Pomatoceros</i> sp)	
C4	Sand with shell and pebble (<i>Macropodia/Inachus</i> sp, <i>Asterias rubens</i> , <i>Sabella pavanina</i>)	
C9	Shelly sandy gravel <i>Asterias rubens</i> , Paguridae sp, <i>Sabella pavanina</i> , <i>Scyliorhinus canicula</i> , <i>Henricia oculata</i>	
C12	Tow aborted due to poor visibility	
C17	Shelly gravelly sand Hydroids, yellow sponge sp, <i>Asterias rubens</i> , <i>Pentapora foliacea</i> , <i>Alcyonium digitatum</i> , <i>Crossaster papposus</i>	
C23	Shelly sand and pebbles <i>Alcyonium digitatum</i> , <i>Asterias rubens</i>	Photo not available

Stn Code	BSH Habitat/Faunal Summary	Still Image
C25	<p>Sandy with occasional pebbles and boulders.</p> <p>Sand ripples in places with some clay outcrops</p> <p>Serpulid tubes, <i>Sabellaria</i> tubes, orange sponge, <i>Urticina</i> sp</p>	
C26	<p>Shell bed</p> <p><i>Asterias rubens</i>, <i>Echinus esculentus</i>, Serpulids, Yellow sponge, <i>Macropodia</i> sp</p>	
C27	<p>Shelly pebbly sand, cobbles over sand and sand ripples</p> <p>Hydrozoa turf, barnacles encrusted cobbles, <i>Sabellaria</i> tubes, <i>Asterias rubens</i>, <i>Urticina</i> sp, <i>Sabella pavanina</i>, Orange encrusting bryozoan/sponge)</p>	
C29	<p>Shelly sand, cobbles and boulders</p> <p>(<i>Asterias rubens</i>, <i>Crossaster papposus</i>, <i>Echinus esculentus</i>, <i>Alcyonium digitatum</i>, <i>Sabella pavanina</i>)</p>	
C30	<p>Shelly gravelly sand</p> <p>Paguridae sp, <i>Asterias rubens</i>, <i>Echinus esculentus</i>, blue sponge sp.</p>	

Stn Code	BSH Habitat/Faunal Summary	Still Image
C38	<p>Shelly pebbles and cobbles</p> <p><i>Asterias rubens</i>, <i>Alcyonium digitatum</i>, <i>Flustra foliacea</i>, <i>Polymastia boletiformis</i>, <i>Munida rugosa</i>, Paguridae</p>	
C43	<p>Shelly pebbly sand rippled sandy gravel</p> <p><i>Asterias rubens</i>, <i>Alcyonium digitatum</i>, <i>Pecten maximus</i>, <i>Crossaster papposus</i>, <i>Sabella pavonina</i></p>	
C44	<p>Shelly gravelly sand, large cobbles, cobbles and sand</p> <p><i>Echinus esculentus</i>, <i>Asterias rubens</i>, <i>Urticina</i> sp, <i>Flustra foliacea</i></p>	
S7	<p>Gravelly sand with cobbles and small boulders</p> <p><i>Alcyonium digitatum</i>, <i>Pentapora fascialis</i></p>	
S9	<p>Tow aborted, poor visibility</p>	
S12	<p>Sand with small amount of shell with some encrusted cobbles/boulders</p> <p>Barnacles, serpulid encrusted cobbles/boulders</p>	

Stn Code	BSH Habitat/Faunal Summary	Still Image
S13	Sand with low lying rock outcrops and small boulders Sabellid tubes, Paguridae sp, <i>Asterias rubens</i>	
S15	Sandy gravelly consolidated sediment Paguridae sp, <i>Sabella pavonina</i> , <i>Crossaster papposus</i> , <i>Macropodia</i> sp, <i>Sabellaria tubes</i>	
S17	Rippled sand with shell ripples to large boulders and cobbles Paguridae sp, dense serpulid tubes, <i>Alcyonium digitatum</i>	

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 7. 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.

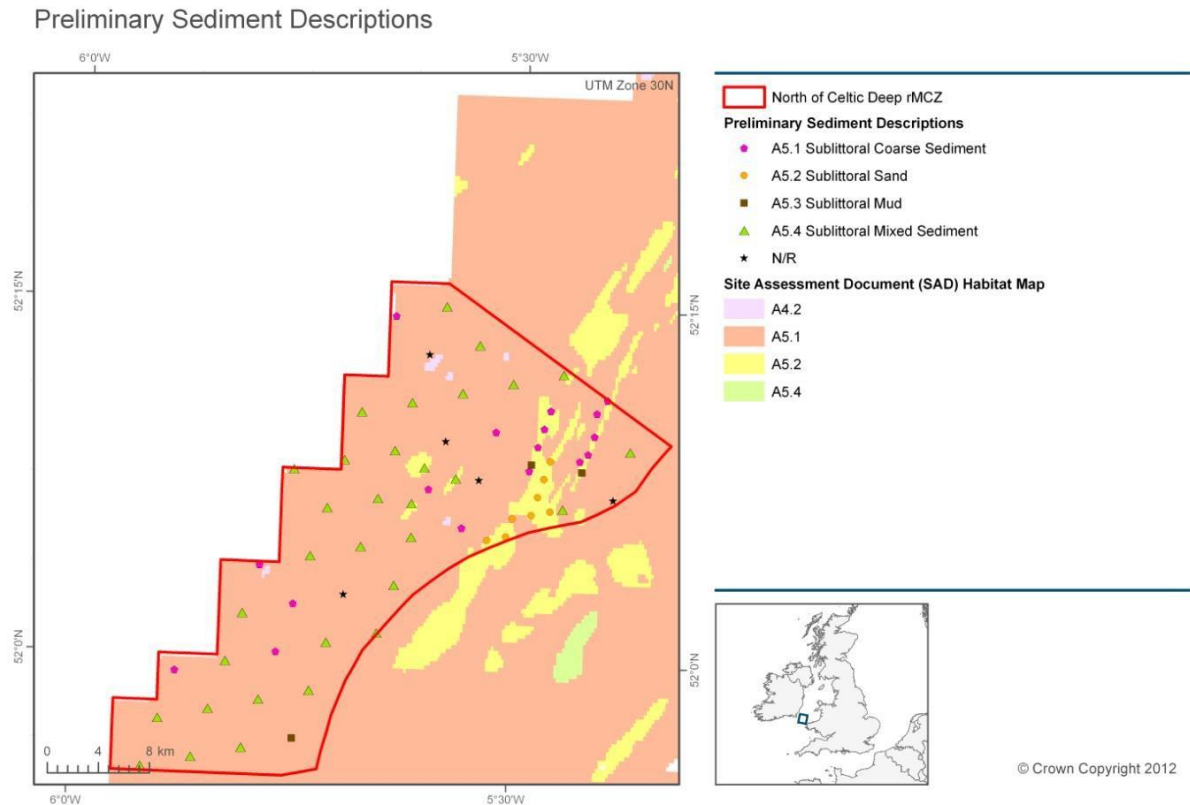


Figure 7. SAD habitat map overlaid with preliminary observations of sediment type, as determined by visual assessment of grab samples (N/R = Not Recorded, due to the field surveyor not being able to confidently assign a sediment classification based on observation alone).

4.4 Preliminary observations of Features of Conservation Interest (FOCI)

Areas of *Sabellaria spinulosa* tubes/turf were identified at six stations in the north-east region of the site. This feature was not included in the FOCI recommendations for this rMCZ.

Other biogenic reef features (*Modiolus modiolus*) and species FOCI (*Arctica islandica*) had previously been identified within the North of Celtic Deep rMCZ but were not included in recommendations for designation. Neither of these species were identified from samples collected during the current survey (CEND 03/12).

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 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

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 North of Celtic Deep rMCZ survey on CEND 03/12 are provided below. (NB. Station Number is a sequential event number for the cruise, so changes each time a new gear is used or a new location is sampled. Station Code is used to identify the location of the sampling station). HC=HamCam, DC=Drop Camera, MB=Multibeam, CS=Camera Sledge.

Cruise	Date	Stn No.	Station code	Gear	Latitude	Longitude
CEND 03/12	07/02/2012	209	NCD-C47	HC	52.25043	5.58527
CEND 03/12	07/02/2012	210	C47-C46 SOL	MB	52.24173	-5.64312
CEND 03/12	07/02/2012	210	C47-C46 EOL	MB	52.25030	-5.58922
CEND 03/12	07/02/2012	211	NCD-C46	HC	52.24266	-5.64265
CEND 03/12	07/02/2012	212	C46-C44 SOL	MB	52.21618	-5.60332
CEND 03/12	07/02/2012	212	C46-C44 EOL	MB	52.24280	-5.64182
CEND 03/12	07/02/2012	213	NCD-C44	HC	52.21624	-5.60288
CEND 03/12	07/02/2012	214	NCD-C44 SOL	DC	52.21615	-5.60340
CEND 03/12	07/02/2012	214	NCD-C44 EOL	DC	52.21461	-5.60091
CEND 03/12	07/02/2012	215	C44-C41 SOL	MB	52.18986	-5.54090
CEND 03/12	07/02/2012	215	C44-C41 EOL	MB	52.21450	-5.60004
CEND 03/12	07/02/2012	216	NCD-C41	HC	52.18987	-5.56387
CEND 03/12	07/02/2012	217	C41-C45 SOL	MB	52.27404	-5.54578
CEND 03/12	07/02/2012	217	C41-C45 EOL	MB	52.18967	-5.56433
CEND 03/12	07/02/2012	218	NCD-C45	HC	52.22406	-5.54596
CEND 03/12	07/02/2012	219	C45-C42 SOL	MB	52.19794	-5.50595
CEND 03/12	07/02/2012	219	C45-C42 EOL	MB	52.22376	-5.54545
CEND 03/12	07/02/2012	220	NCD-C42	HC	52.19749	-5.50664
CEND 03/12	07/02/2012	221	C42-C43 SOL	MB	52.20720	-5.44815
CEND 03/12	07/02/2012	221	C42-C43 EOL	MB	52.19719	-5.50578
CEND 03/12	07/02/2012	222	NCD-C43	HC	52.20506	-5.44896
CEND 03/12	07/02/2012	223	NCD-C43 SOL	DC	52.20620	-5.44753
CEND 03/12	07/02/2012	223	NCD-C43 EOL	DC	52.20522	-5.44868
CEND 03/12	07/02/2012	224	C43-S18 SOL	MB	52.18840	-5.39750
CEND 03/12	07/02/2012	224	C43-S18 EOL	MB	52.20484	-5.44910
CEND 03/12	07/02/2012	225	NCD-S18	HC	52.18813	-5.39804
CEND 03/12	07/02/2012	226	S18-C39 SOL	MB	52.17910	-5.40950
CEND 03/12	07/02/2012	226	S18-C39 EOL	MB	52.18842	-5.39757
CEND 03/12	07/02/2012	227	NCD-C39	HC	52.17871	-5.40963
CEND 03/12	07/02/2012	228	C39-S15 SOL	DC	52.16245	-5.41143
CEND 03/12	07/02/2012	228	C39-S15 EOL	DC	52.17794	-5.41000
CEND 03/12	07/02/2012	229	NCD-S15	HC	52.16248	-5.41156
CEND 03/12	07/02/2012	230	NCD-S15 SOL	DC	52.16311	-5.41117
CEND 03/12	07/02/2012	230	NCD-S15 EOL	DC	52.16220	-5.41155
CEND 03/12	07/02/2012	231	S15-C35 SOL	MB	52.15621	-5.38405
CEND 03/12	07/02/2012	231	S15-C35 EOL	MB	52.16102	-5.41105
CEND 03/12	07/02/2012	233	C35-C27 SOL	MB	52.11928	-5.38671
CEND 03/12	07/02/2012	233	C35-C27 EOL	MB	52.15170	-5.37090
CEND 03/12	07/02/2012	234	NCD-C27	HC	52.11766	-5.38815
CEND 03/12	07/02/2012	235	NCD-C27 SOL	DC	52.11706	-5.38831
CEND 03/12	07/02/2012	235	NCD-C27 EOL	DC	52.11762	-5.38714
CEND 03/12	07/02/2012	236	C27-S10 SOL	MB	52.13500	-5.42500
CEND 03/12	07/02/2012	236	C27-S10 EOL	MB	52.12000	-5.38100

Cruise	Date	Stn No.	Station code	Gear	Latitude	Longitude
CEND 03/12	07/02/2012	237	NCD-S10	HC	52.13669	-5.42485
CEND 03/12	07/02/2012	238	NCD-C33	HC	52.14425	-5.42793
CEND 03/12	07/02/2012	239	NCD-S13	HC	52.14955	-5.41823
CEND 03/12	07/02/2012	240	S13 SOL	DC	52.14903	-5.21490
CEND 03/12	07/02/2012	240	S13 EOL	DC	52.14983	-5.41815
CEND 03/12	08/02/2012	241	S13-S17 SOL	MB	52.17870	-5.46230
CEND 03/12	08/02/2012	241	S13-S17 EOL	MB	52.15460	-5.41970
CEND 03/12	07/02/2012	242	NCD-S17	HC	52.17957	-5.46199
CEND 03/12	07/02/2012	243	NCD-S17 SOL	DC	52.17897	-5.46298
CEND 03/12	07/02/2012	243	NCD-S17 EOL	DC	52.17975	-5.46198
CEND 03/12	07/02/2012	245	NCD-S16	HC	52.16648	-5.46898
CEND 03/12	07/02/2012	246	NCD-S14	HC	52.15391	-5.47564
CEND 03/12	07/02/2012	247	NCD-S12	HC	52.14394	-5.46162
CEND 03/12	07/02/2012	248	NCD-S12 SOL	DC	52.14433	-5.46065
CEND 03/12	07/02/2012	248	NCD-S12 EOL	DC	52.14360	-5.46123
CEND 03/12	07/02/2012	249	NCD-S11	HC	52.14122	-5.48308
CEND 03/12	07/02/2012	250	NCD-C31	HC	52.13705	-5.48497
CEND 03/12	07/02/2012	251	NCD-S8	HC	52.13115	-5.46795
CEND 03/12	07/02/2012	252	S8-C25 SOL	MB	52.11090	-5.44000
CEND 03/12	07/02/2012	252	S8-C25 EOL	MB	52.12700	-5.45900
CEND 03/12	07/02/2012	253	NCD-C25	HC	52.11000	-5.44531
CEND 03/12	07/02/2012	254	NCD-C25 SOL	DC	52.10943	-5.44530
CEND 03/12	07/02/2012	254	NCD-C25 EOL	DC	52.11052	-5.44499
CEND 03/12	07/02/2012	255	NCD-S4	HC	52.10840	-5.46004
CEND 03/12	07/02/2012	256	NCD-S6	HC	52.11843	-5.47447
CEND 03/12	08/02/2012	259	NCD-C23 SOL	DC	52.10240	-5.50314
CEND 03/12	08/02/2012	259	NCD-C23 EOL	DC	52.10270	-5.50190
CEND 03/12	08/02/2012	260	S8-C25 SOL	MB	52.08636	-5.51103
CEND 03/12	08/02/2012	260	S8-C25 EOL	MB	52.10299	-5.50104
CEND 03/12	08/02/2012	263	S1-C22 SOL	MB	52.09490	-5.55877
CEND 03/12	08/02/2012	263	S1-C22 EOL	MB	52.08482	-5.53909
CEND 03/12	08/02/2012	265	C22-C29 SOL	MB	52.12948	-5.54106
CEND 03/12	08/02/2012	265	C22-C29 EOL	MB	52.09302	-5.56131
CEND 03/12	08/02/2012	268	C22-C29 SOL	MB	52.16361	-5.52694
CEND 03/12	08/02/2012	268	C22-C29 EOL	MB	52.12993	-5.53749
CEND 03/12	08/02/2012	271	NCD C37-C36 SOL	MB	52.15560	-5.58132
CEND 03/12	08/02/2012	271	NCD C37-C36 EOL	MB	52.16170	-5.53180
CEND 03/12	08/02/2012	273	NCD C36-C40 SOL	MB	52.18200	-5.62197
CEND 03/12	08/02/2012	273	NCD C36-C40 EOL	MB	52.15590	-5.58420
CEND 03/12	08/02/2012	274	NCD-C40	HC	52.18222	-5.62131
CEND 03/12	08/02/2012	275	NCD C40-C38 SOL	MB	52.17472	-5.67819
CEND 03/12	08/02/2012	275	NCD C40-C38 EOL	MB	52.18240	-5.62166
CEND 03/12	08/02/2012	276	NCD-C38	HC	52.17453	-5.67849
CEND 03/12	08/02/2012	277	NCD-C38 SOL	DC	52.17548	-5.67921
CEND 03/12	08/02/2012	277	NCD-C38 EOL	DC	52.17471	-5.67889
CEND 03/12	08/02/2012	278	C38-C32 SOL	MB	52.14029	-5.69634
CEND 03/12	08/02/2012	278	C38-C32 EOL	MB	52.17383	-5.67925
CEND 03/12	08/02/2012	279	NCD C32	HC	52.14159	-5.69596
CEND 03/12	08/02/2012	280	C32-C34 SOL	MB	52.14940	-5.63981
CEND 03/12	08/02/2012	280	C32-C34 EOL	MB	52.14390	-5.69280
CEND 03/12	08/02/2012	281	NCD-C34	HC	52.14816	-5.63950

Cruise	Date	Stn No.	Station code	Gear	Latitude	Longitude
CEND 03/12	08/02/2012	282	C34-S9 SOL	MB	52.13669	-5.60440
CEND 03/12	08/02/2012	282	C34-S9 EOL	MB	52.14992	-5.63754
CEND 03/12	08/02/2012	283	NCD-59	HC	52.13724	-5.60450
CEND 03/12	08/02/2012	284	NCD59 SOL	CS	52.13703	-5.60431
CEND 03/12	08/02/2012	284	NCD59 EOL	CS	52.13565	-5.60460
CEND 03/12	08/02/2012	285	S9-S7 SOL	MB	52.12955	-5.56867
CEND 03/12	08/02/2012	285	S9-S7 EOL	MB	52.14023	-5.61583
CEND 03/12	08/02/2012	286	NCD-S7	HC	52.12947	-5.56881
CEND 03/12	08/02/2012	288	S7-S5 SOL	MB	52.10774	-5.61849
CEND 03/12	08/02/2012	288	S7-S5 EOL	MB	52.12995	-5.56701
CEND 03/12	08/02/2012	289	NCD-C28	HC	52.12140	-5.59934
CEND 03/12	08/02/2012	290	NCD-S5	HC	52.11077	-5.61836
CEND 03/12	08/02/2012	291	S5-C21 SOL	MB	52.08631	-5.61884
CEND 03/12	08/02/2012	291	S5-C21 EOL	MB	52.10728	-5.61727
CEND 03/12	08/02/2012	292	NCD-C21	HC	52.08671	-5.61805
CEND 03/12	08/02/2012	294	C26	HC	52.11376	-5.65668
CEND 03/12	08/02/2012	295	NCD-C26 SOL	CS	52.11336	-5.65739
CEND 03/12	08/02/2012	295	NCD-C26 EOL	CS	52.11415	-5.65661
CEND 03/12	08/02/2012	296	C26-C24 SOL	MB	52.10618	-5.71420
CEND 03/12	08/02/2012	296	C26-C24 EOL	MB	52.11380	-5.66460
CEND 03/12	08/01/2012	297	NCD-C24	HC	52.10614	-5.71411
CEND 03/12	08/02/2012	298	NCD-C30	HC	52.13260	-5.75359
CEND 03/12	08/02/2012	299	NCD-C30 SOL	CS	52.13275	-5.75366
CEND 03/12	08/02/2012	299	NCD-C30 EOL	CS	52.13163	-5.75401
CEND 03/12	08/02/2012	300	C30-C19 SOL	MB	52.07451	-5.72839
CEND 03/12	08/02/2012	300	C30-C19 EOL	MB	52.13109	-5.74981
CEND 03/12	08/02/2012	301	NCD-C19	HC	52.07223	-5.73177
CEND 03/12	08/02/2012	302	C19-C20 SOL	MB	52.08100	-5.67400
CEND 03/12	08/02/2012	302	C19-C20 EOL	MB	52.07415	-5.72945
CEND 03/12	08/02/2012	303	NCD C20	HC	52.07965	-5.67455
CEND 03/12	08/02/2012	304	C20-C17 SOL	MB	52.05556	-5.63367
CEND 03/12	08/02/2012	304	C20-C17 EOL	MB	52.07431	-5.66151
CEND 03/12	08/02/2012	305	NCD-C17	HC	52.05352	-5.63511
CEND 03/12	08/02/2012	306	NCD C17 SOL	CS	52.05420	-5.63450
CEND 03/12	08/02/2012	306	NCD C17 EOL	CS	52.05323	-5.63516
CEND 03/12	08/02/2012	307	C17-C13 SOL	MB	52.01942	-5.65252
CEND 03/12	08/02/2012	307	C17-C13 EOL	MB	52.04977	-5.63585
CEND 03/12	08/02/2012	308	NCD C13	HC	52.01887	-5.65301
CEND 03/12	08/02/2012	309	NCD C13-C16 SOL	MB	52.04736	-5.69173
CEND 03/12	08/02/2012	309	NCD C13-C16 EOL	MB	52.02361	-5.66202
CEND 03/12	08/02/2012	310	NCD C13	HC	52.04549	-5.69221
CEND 03/12	08/02/2012	311	NCD C16-12 SOL	MB	52.01160	-5.70910
CEND 03/12	08/02/2012	311	NCD C16-12 EOL	MB	52.03830	-5.69660
CEND 03/12	09/02/2012	312	NCD C12	HC	52.01160	-5.70985
CEND 03/12	09/02/2012	313	NCD C12 SOL	CS	52.01158	-5.71026
CEND 03/12	09/02/2012	313	NCD C12 EOL	CS	52.01146	-5.70887
CEND 03/12	09/02/2012	314	NCD C12-C15 SOL	MB	52.03590	-5.75093
CEND 03/12	09/02/2012	314	NCD C12-C15 EOL	MB	52.01128	-5.70671
CEND 03/12	09/02/2012	315	NCD C15	HC	52.03776	-5.74931
CEND 03/12	09/02/2012	316	NCD C15-C18 SOL	MB	52.06394	-5.78902
CEND 03/12	09/02/2012	316	NCD C15-C18 EOL	MB	52.03840	-5.74982

Cruise	Date	Stn No.	Station code	Gear	Latitude	Longitude
CEND 03/12	09/02/2012	317	NCD C18	HC	52.06418	-5.78860
CEND 03/12	09/02/2012	319	NCD C18-C14 SOL	MB	52.02630	-5.80640
CEND 03/12	09/02/2012	319	NCD C18-C14 EOL	MB	52.84880	-5.78694
CEND 03/12	09/02/2012	320	NCD C14	HC	52.03010	-5.80654
CEND 03/12	09/02/2012	321	NCD C14-C11 SOL	MB	52.00150	-5.76910
CEND 03/12	09/02/2012	321	NCD C14-C11 EOL	MB	52.02760	-5.80671
CEND 03/12	09/02/2012	322	NCD C11	HC	52.00388	-5.76703
CEND 03/12	09/02/2012	323	C11-C8 SOL	MB	51.97380	-5.73030
CEND 03/12	09/02/2012	323	C11-C8 EOL	MB	52.00320	-5.76430
CEND 03/12	09/02/2012	324	NCD C8	HC	51.97740	-5.72757
CEND 03/12	09/02/2012	325	C8-C4 SOL	MB	51.93947	-5.74696
CEND 03/12	09/02/2012	325	C8-C4 EOL	MB	51.96650	-5.72420
CEND 03/12	09/02/2012	326	NCD-C4	HC	51.94346	-5.74517
CEND 03/12	09/02/2012	327	NCD-C4 SOL	CS	51.94254	-5.74592
CEND 03/12	09/02/2012	327	NCD-C4 EOL	CS	51.94410	-5.74509
CEND 03/12	09/02/2012	328	C4-C7 SOL	MB	51.97130	-5.83180
CEND 03/12	09/02/2012	328	C4-C7 EOL	MB	51.94660	-5.74400
CEND 03/12	09/02/2012	329	NCD-C7	HC	51.96959	-5.78497
CEND 03/12	09/02/2012	330	C7-C10 SOL	MB	51.99840	-5.82140
CEND 03/12	09/02/2012	330	C7-C10 EOL	MB	51.97320	-5.78910
CEND 03/12	09/02/2012	331	NCS-C10	HC	51.99595	-5.82420
CEND 03/12	09/02/2012	332	C10-C9 SOL	MB	51.98810	-5.88122
CEND 03/12	09/02/2012	332	C10-C9 EOL	MB	51.99780	-5.82690
CEND 03/12	09/02/2012	333	NCD-C9	HC	51.98822	-5.88119
CEND 03/12	09/02/2012	334	NCD-C9 SOL	CS	51.98987	-5.87963
CEND 03/12	09/02/2012	334	NCD-C9 EOL	CS	51.98798	-5.88123
CEND 03/12	09/02/2012	335	C9-C6 SOL	MB	51.96390	-5.84220
CEND 03/12	09/02/2012	335	C9-C6 EOL	MB	51.98730	-5.87450
CEND 03/12	09/02/2012	336	NCD-C6	HC	51.96214	-5.84138
CEND 03/12	09/02/2012	338	NCD-C3	HC	51.93536	-5.80237
CEND 03/12	09/02/2012	343	C5-C1 SOL	MB	51.91970	-5.91630
CEND 03/12	09/02/2012	343	C5-C1 EOL	MB	51.95366	-5.90109

5.6 Daily Progress Reports

**DAILY LOG
STATUS REPORT
Name of Area Survey
Rv Cefas Endeavour – JNCC – DPR No. 6 – Tuesday 7th 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. 6 Date: 7 th Feb. 2012	Location at 24:00: 52° 06.1N 005° 30.2W

To Company:	Person:	E-mail:
Cefas	Dave Limpenny	David.Limpenny@cefaz.co.uk
JNCC	Neil Golding	Neil.Golding@jncc.gov.uk
JNCC	Cristina Herbon	Cristina.Herbon@jncc.gov.uk
JNCC	Jon Davies	Jon.Davies@jncc.gov.uk
JNCC	Jane Hawkridge	Jane.Hawkridge@jncc.gov.uk
Cefas	Paul Whomersley	paul.whomersley@cefaz.co.uk

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	02:06	Transit	Transit from North St George's Channel to North of Celtic Deep
02:06	02:23	Offshore Calibrations	CTD deployed at NCD C47 (from here on sites at NCD just given C/S code without NCD in front)
02:23	02:36	ToSa	Hamon Grab at C47
02:36	03:07	ToSu	Multibeam picked up on transit from C47 to C46
03:07	03:12	ToSa	Hamon Grab at C46
03:12	03:41	ToSu	Multibeam picked up on transit from C46 to C44
03:41	04:18	ToSa	Failed Hamon Grab at C44 so deployed Drop Camera instead. Noticed that the station is just above some small patches of Moderate Energy Circalittoral Rock which has been recommended as a feature for designation by ISCZ but has no stations planned to sample it. Decide to go from C44 to C41 so that we can run multibeam over the two suspected rock patches to see whether or not they are there.
04:18	04:46	ToSu	Multibeam picked up on transit from C44 to C41
04:46	04:51	ToSa	Hamon Grab at C41
04:51	05:22	ToSu	Multibeam picked up on transit from C41 to C45
05:22	05:28	ToSa	Hamon Grab at C45
05:28	05:55	ToSu	Multibeam picked up on transit from C45 to C42
05:55	06:01	ToSa	Hamon Grab at C42
06:01	06:33	ToSu	Multibeam picked up on transit from C42 to C43
06:33	07:07	ToSa	Hamon Grab and Drop Camera at C43
07:07	07:48	ToSu	Multibeam picked up on transit from C43 to S18
07:48	07:53	ToSa	Hamon grab at S18
07:53	08:14	ToSu	Multibeam picked up on transit from S18 to C39
08:14	08:20	ToSa	Hamon grab at C39
08:20	08:43	ToSu	Multibeam picked up on transit from C39 to S15
08:43	09:18	ToSa	Hamon grab and drop camera at S15

DAILY LOG STATUS REPORT

09:18	09:59	ToSu	Multibeam picked up on transit from S15 to C35
09:59	10:04	ToSa	Hamon grab at C35
10:04	10:39	ToSu	Multibeam picked up on transit from C35 to C27
10:39	11:44	ToSa	Hamon grab and drop camera at C27
11:44	12:30	ToSu	Multibeam picked up on transit from C27 to S10
12:30	14:32	ToSa	Hamon grab at S10, C33 and S13. Drop camera in addition at S13. Very strong tide running, so grab failed to collect a good sample on several occasions.
14:32	15:03	ToSu	Multibeam picked up on transit from S13 to S17
15:03	15:45	ToSa	Hamon grab at S17
15:45	16:33	ToSu	Multibeam picked up on transit from S17 to S16
16:33	18:45	ToSa	Hamon grab at S16, S14, S12. Drop camera in addition at S12. Very strong tide running, so grab failed to collect a good sample on several occasions.
18:45	19:04	Equipment downtime	DP stopped working
19:04	21:06	Sa	Hamon grab at S11, C31 and S8. Very strong tide running, so grab failed to collect a good sample on several occasions.
21:06	21:27	Su	Multibeam from S8 to C25
21:27	24:00	Sa	Hamon grab and drop camera at C25, hamon grab at S4 and S6. Very strong tide running, so grab failed to collect a good sample on several occasions.

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	4	4	4	4	
Sea state	Slight	Slight	Slight	Moderate	
Swell	Slight	Slight	Slight	Moderate	
Vis	Good	Good	Good	Good	
Baro	1046.8	1048.2	1049.6	1049.5	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		10:12	
Offshore Calibrations	00:17	04:34	
Total Operation Survey (TOSu)	08:05	45:42	
Total Operation Sampling (TOSa)	13:13	60:45	
Equipment/Downtime	00:19	01:17	
Ship/Plant Downtime		01:01	
Waiting On Weather			
Transit	02:06	19:59	
Standby Port			
Others		00:30	
Total:	24:00	144:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

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

DAILY LOG STATUS REPORT

Multibeam EM3002	43	401.6	
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Overall Progress Groundtruthing Samples

Action	Today (Lkm/sam ples)	Accum. (Lkm/sam ples)	Remarks
Hamon grab (0.1m ²)	24	110	
Camera sledge	0	7	
Drop camera	7	34	

Weather forecast for the next 24 hours

Wind south or southeast at 5 or 6, occasionally 7. Sea state moderate or rough.

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

Continue to survey North of Celtic Deep rMCZ with Hamon grab and drop camera.

Agreed Changes to Scope/Survey operation priorities

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CEFAS/JNCC Comments

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CEFAS SIC... Paul Whomersley

JNCC Rep:Bethany Stoker.....

**DAILY LOG
STATUS REPORT
Name of Area Survey
Rv Cefas Endeavour – JNCC – DPR No. 7 – Wednesday 8th 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. 7 Date: 8 th Feb. 2012	Location at 24:00: 52° 00.7N 0.05° 42.5W

To Company:	Person:	E-mail:
Cefas	Dave Limpenny	David.Limpenny@cefas.co.uk
JNCC	Neil Golding	Neil.Golding@jncc.gov.uk
JNCC	Cristina Herbon	Cristina.Herbon@jncc.gov.uk
JNCC	Jon Davies	Jon.Davies@jncc.gov.uk
JNCC	Jane Hawkridge	Jane.Hawkridge@jncc.gov.uk
Cefas	Paul Whomersley	paul.whomersley@cefas.co.uk

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	Transit	Transitting from NCD-S3 to C23
00:11	00:38	ToSa	Hamon Grab and Drop Camera at C23
00:38	01:13	ToSu	Multibeam from C23 to S2
01:13	01:57	ToSa	Hamon Grabs at S2 and S1 (close together so no multibeam between)
01:57	02:07	Ship Downtime	Fire alarm sounded. Turned out to be a faulty sensor so false alarm
02:07	02:39	ToSu	Multibeam between S1 and C22
02:39	02:46	ToSa	Hamon Grab at C22
02:46	03:23	ToSu	Multibeam between C22 and C29
03:23	03:55	ToSa	Hamon Grab at C29 failed so deployed Drop Camera instead
03:55	04:26	ToSu	Multibeam between C29 and C37
04:26	04:50	Offshore Calibrations/ ToSa	CTD at C37 at same time as Hamon Grab
04:50	05:16	ToSu	Multibeam between C37 and C36
05:16	05:32	ToSa	Failed Hamon Grab at C36 – too rocky
05:32	06:04	ToSu	Multibeam between C36 and C40
06:04	06:11	ToSa	Hamon Grab at C40
06:11	06:47	ToSu	Multibeam between C40 and C38
06:47	07:30	ToSa	Hamon Grab and Drop Camera at C38
07:30	08:10	ToSu	Multibeam between C38 and C32
08:10	08:18	ToSa	Hamon Grab at C32
08:18	08:49	ToSu	Multibeam between C32 and C34
08:49	08:56	ToSa	Hamon Grab at C34
08:56	09:24	ToSu	Multibeam between C34 and S9
09:24	10:10	ToSa	Hamon Grab and Camera Sledge at S9. Camera not recorded (a few stills taken) as image blurry. Camera Sledge aborted

DAILY LOG STATUS REPORT

10:10	11:10	Ship Downtime	Engine required maintenance.
11:10	11:36	ToSu	Multibeam from S9 to S7
11:36	12:12	ToSa	Hamon Grab and Camera Sledge at S7
12:12	12:52	ToSu	Multibeam from S7 to S5
12:52	13:47	ToSa	Hamon grab at C28 and S5
13:47	14:18	ToSu	Multibeam from S5 to C21
14:18	15:07	ToSa	Hamon grab at C21 (tried camera sledge, but tide too strong and wouldn't land on seabed)
15:07	15:37	ToSu	Multibeam from C21 to C26
15:37	16:33	ToSa	Hamon grab and camera sledge at C26. Flash on camera not sledge not working correctly.
16:33	16:57	ToSu	Multibeam between C26 and C24
16:57	19:10	ToSa	Hamon grab at C24 and C30. Camera sledge at C30
19:10	19:38	ToSu	Multibeam from C30 to C19
19:38	19:57	ToSa	Hamon grab at C19
19:57	20:30	ToSu	Multibeam from C19 to C20
20:30	21:03	ToSa	Hamon grab at C20
21:03	21:25	ToSu	Multibeam from C20 to C17
21:25	22:13	ToSa	Hamon grab and camera sledge at C17
22:13	22:42	ToSu	Multibeam from C17 to C13
22:42	22:53	ToSa	Hamon grab at C13
22:53	23:17	ToSu	Multibeam from C13 to C16
23:17	23:43	ToSa	Hamon grab at C16
23:43	24:00	ToSu	Multibeam from C16 to C12

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	SE 7	SE 5	SSE 5	SSE &	
Sea state	Slight	Slight	Slight	Slight	
Swell	Slight	Slight	Slight	Slight	
Vis	Good	Good	Good	Good	
Baro	1054	1050	1049.5	1049.2	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		10:12	
Offshore Calibrations		04:34	
Total Operation Survey (TOSu)	10:32	56:14	
Total Operation Sampling (TOSa)	12:07	72:52	
Equipment/Downtime		01:17	
Ship/Plant Downtime	01:10	02:11	
Waiting On Weather			
Transit	00:11	20:10	
Standby Port			
Others		00:30	
Total:	24:00	168:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today	Accum.	Current	Remarks
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**DAILY LOG
STATUS REPORT**

	(Lkm)	(Lkm)	estimated total (Lkm)	
Acoustic: Multibeam				
Multibeam EM3002	69	470.6		

Overall Progress Groundtruthing Samples

Action	Today (Lkm/samples)	Accum. (Lkm/samples)	Remarks
Hamon grab (0.1m ²)	22	132	
Camera sledge	4	11	
Drop camera	3	37	

Weather forecast for the next 24 hours

Wind southerly bearing southeasterly 5 or 6, becoming variable 4 in west. Sea state slight or moderate.

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

Complete remaining sample stations in North of Celtic Deep rMCZ, and then transit to East of Haig Fras rMCZ. On arrival will begin surveying sample stations in East of Haig Fras.

Agreed Changes to Scope/Survey operation priorities

Given the anticipated good weather window over the next few days the SCI recommended we focused our survey efforts on one of the following rMCZs: East of Jones Bank, East of Haig Fras and South of Celtic Deep. For all three sites the evidence used to recommend the features is UKSeaMap 2010. As such, the likely confidence in these sites following the formal evidence assessment by JNCC will be low confidence in feature presence and extent. However, both the East of Haig Fras and South of Celtic Deep rMCZs are being put forward under the Cefas ITT and we expect 100% multibeam to be collected for these sites. Following discussion between the SCI and the JNCC lead the decision was taken to visit East of Haig Fras rMCZ to collect ground-truthing information. If time and weather allow South of Celtic Deeps rMCZ will also be visited before this leg of the survey returns to port.

Both East of Haig Fras and South of Celtic Deep rMCZs are for sediment broad-scale habitats, and they offer an opportunity to represent these habitat types in offshore waters in the south-west.

CEFAS/JNCC Comments

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CEFAS SIC... Paul Whomersley

JNCC Rep:Bethany Stoker.....

**DAILY LOG
STATUS REPORT
Name of Area Survey
Rv Cefas Endeavour – JNCC – DPR No. 8 – Thursday 9th 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. 8 Date: 9 th Feb. 2012	Location at 24:00: 50° 25.4N 006° 45.5W

To Company:	Person:	E-mail:
Cefas	Dave Limpenny	David.Limpenny@cefas.co.uk
JNCC	Neil Golding	Neil.Golding@jncc.gov.uk
JNCC	Cristina Herbon	Cristina.Herbon@jncc.gov.uk
JNCC	Jon Davies	Jon.Davies@jncc.gov.uk
JNCC	Jane Hawkrige	Jane.Hawkrige@jncc.gov.uk
Cefas	Paul Whomersley	paul.whomersley@cefas.co.uk

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	00:49	ToSa	Hamon Grab and Camera Sledge at C12. Too murky on the video to see anything so aborted after 5 minutes
00:49	01:23	ToSu	Multibeam on transit from C12 to C15
01:23	01:30	ToSa	Hamon Grab at C15
01:30	02:16	ToSu	Multibeam on transit from C15 to C18
02:16	02:18	ToSa	Hamon Grab at C18
02:18	02:22	Offshore Calibrations	CTD at C18
02:22	03:00	ToSu	Multibeam on transit from C18 to C14
03:00	03:20	ToSa	Hamon Grab at C14
03:20	03:53	ToSu	Multibeam on transit from C14 to C11
03:53	04:00	ToSa	Hamon Grab at C11
04:00	04:30	ToSu	Multibeam on transit from C11 to C8
04:30	04:39	ToSa	Hamon Grab at C8
04:39	05:12	ToSu	Multibeam on transit from C8 to C4
05:12	06:00	ToSa	Hamon Grab and Camera Sledge at C4
06:00	06:32	ToSu	Multibeam on transit from C4 to C7
06:32	06:43	ToSa	Hamon Grab at C7
06:43	07:13	ToSu	Multibeam on transit from C7 to C10
07:13	07:30	ToSa	Hamon Grab at C10
07:30	08:01	ToSu	Multibeam on transit from C10 to C9
08:01	09:05	ToSa	Hamon Grab and Camera Sledge at C9
09:05	09:41	ToSu	Multibeam on transit from C9 to C6
09:41	09:49	ToSa	Hamon Grab at C6
09:49	10:21	ToSu	Multibeam on transit from C6 to C3
10:21	10:27	ToSa	Hamon Grab at C3
10:27	10:57	ToSu	Multibeam on transit from C3 to C2
10:57	11:04	ToSa	Hamon Grab at C2
11:04	11:33	ToSu	Multibeam on transit from C2 to C5

DAILY LOG STATUS REPORT

11:33	11:39	ToSa	Hamon Grab at C5
11:39	12:06	ToSu	Multibeam on transit from C5 to C1
12:06	13:15	ToSa	Hamon Grab and Camera Sledge at C1
13:15	22:00	Transit	Transit to East Haig Fras rMCZ
22:00	22:44	Offshore calibrations	CTD
22:44	24:00	ToSu	Multibeaming from north-east corner to south-east corner of East of Haig Fras rMCZ – to cover moderate energy circalittoral rock.

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	S 4	W 6	WSW 5	WSW 5	
Sea state	Slight	Slight	Slight	Slight	
Swell	Slight	Slight	Slight	Slight	
Vis	Good	Good	Good	Good	
Baro	1049	1048	1046	1045.6	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		10:12	
Offshore Calibrations	00:48	05:22	
Total Operation Survey (TOSu)	08:57	65:11	
Total Operation Sampling (TOSa)	05:30	78:22	
Equipment/Downtime		01:17	
Ship/Plant Downtime		02:11	
Waiting On Weather			
Transit	08:45	28:55	
Standby Port			
Others		00:30	
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: Multibeam				
Multibeam EM3002	68.9	539.5		

Overall Progress Groundtruthing Samples

Action	Today (Lkm/samples)	Accum. (Lkm/samples)	Remarks
Hamon grab (0.1m ²)	15	147	
Camera sledge	3	14	
Drop camera	0	37	

DAILY LOG STATUS REPORT

Weather forecast for the next 24 hours

Wind southeast 5 or 6, decreasing 4 at times. Sea state slight or moderate.

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

Continue to survey East of Haig Fras rMCZ.

Agreed Changes to Scope/Survey operation priorities

CEFAS/JNCC Comments

CEFAS SIC... Paul Whomersley JNCC Rep:Bethany Stoker.....

5.7 Fishery Liaison Officer (FLO) Report

No fishing activity was observed during the survey within the North of Celtic Deep 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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- non-governmental and environmental organisations

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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



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