

Final Report (Project Code): C5433

East of Celtic Deep rMCZ 2012 Survey Report

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1 Background and Introduction

1.1 Survey Project Team

The East Celtic Deep rMCZ survey was carried out during the 14th-16th February 2012 (Part A) and the 17th-19th February 2012 (Part B) 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 East Celtic Deep rMCZ is located approximately 30 NM off the coast of South Wales (Figure 1)

(For a detailed site description see Finding Sanctuary Final Report and Recommendations for Marine Conservation Zones 2011)

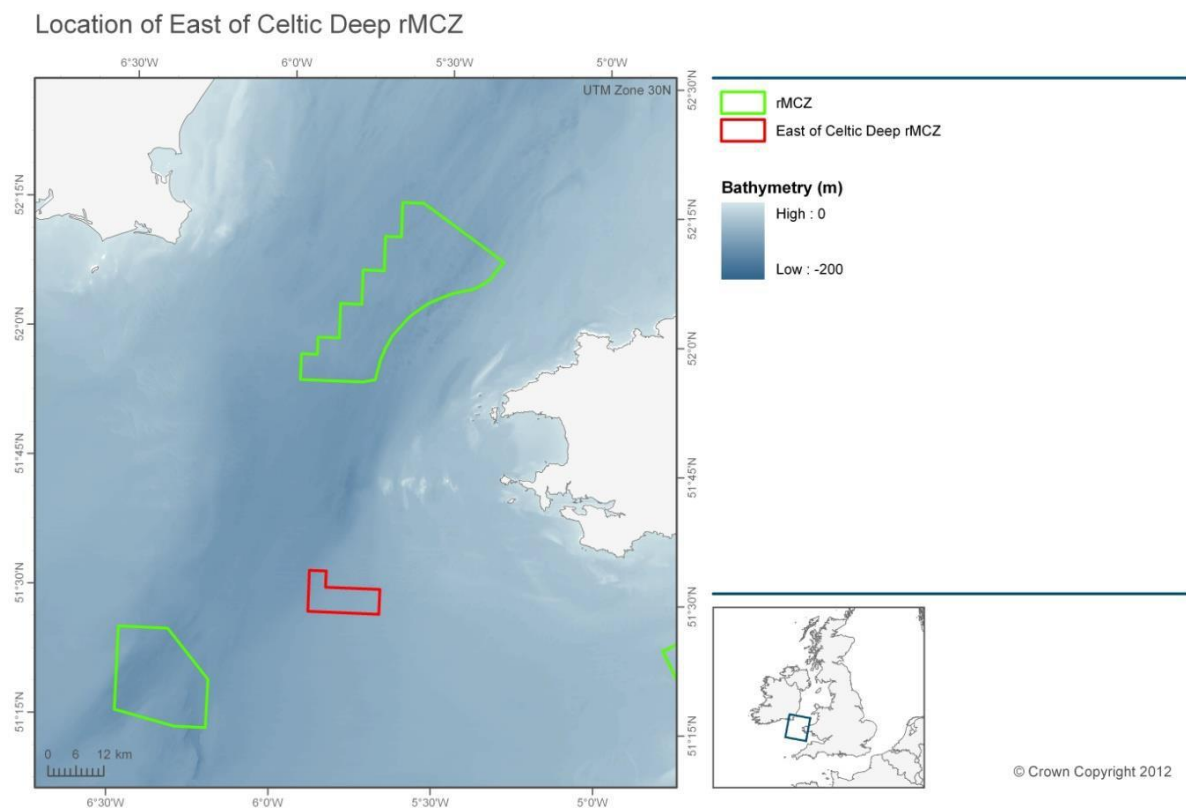


Figure 1. Location of East Celtic Deep rMCZ. [Bathymetry is from the Defra Digital Elevation Model (Astrium, 2011)].

1.3 Geological and Biological Context

A number of Broad Scale Habitat (BSH) features and one FOCI have been proposed for designation by the regional project within the East Celtic Deep rMCZ (Table 1).

Table 1. Features proposed for designation within the East Celtic Deep rMCZ.

Feature Type	Feature Name
Broad Scale Habitat (BSH)	A5.1 Subtidal coarse sediment A5.2 Subtidal sand A5.3 Subtidal mud

FOCI**Habitats**

Subtidal sands and gravels*

***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.**

1.4 Existing data and information utilised to inform survey planning

A number of existing data sets and information sources were identified by the JNCC and utilised to inform the planning of the 2012 surveys including the East of Celtic Deep rMCZ (Figure 2). The Marine Institute's Celtic Sea Nephrops survey data was relevant.

Historic Survey Data of Relevance to the East of Celtic Deep rMCZ

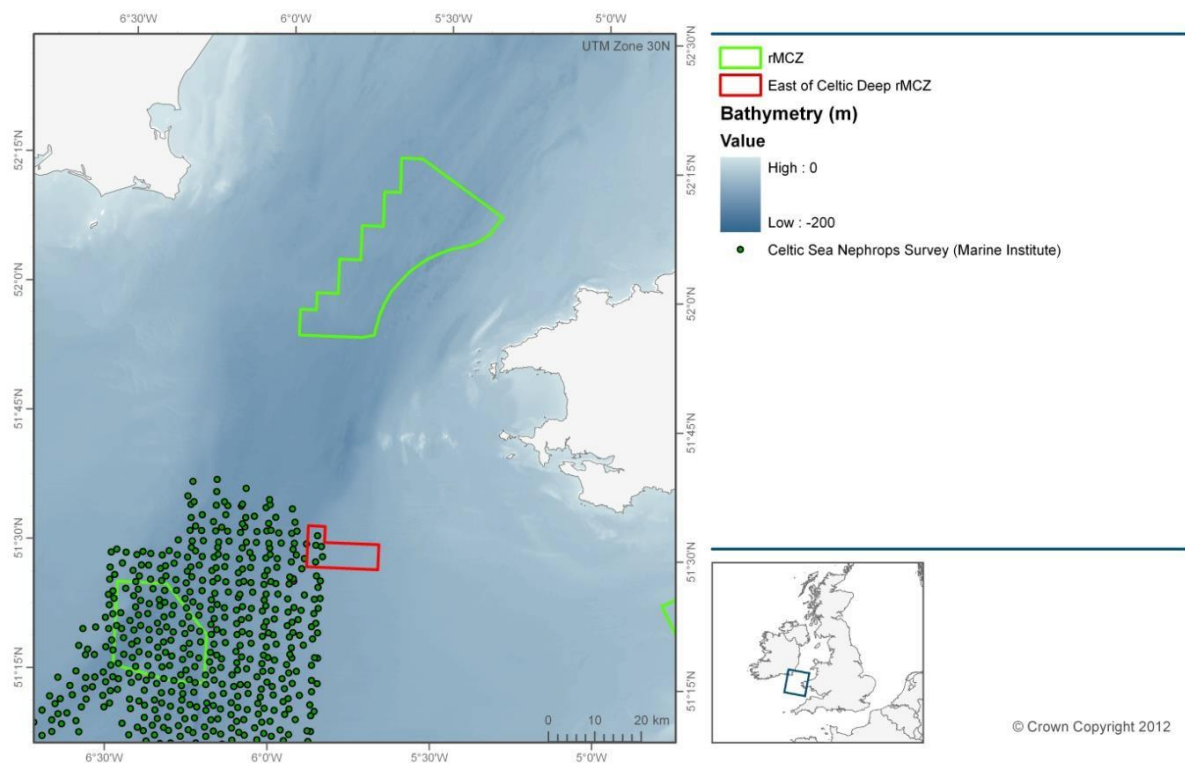


Figure 2. Existing data sources of relevance to informing the survey design at the East of Celtic Deep rMCZ as provided by the JNCC.

2 Survey Design and Methods

2.1 Survey planning and design

Prior to selecting the groundtruthing stations a full coverage multibeam acoustic survey was conducted at the site. The processed bathymetry and backscatter were used to inform the placement of grab and camera stations across the acoustic facies identified. Examination of the acoustic data indicated that sediments were relatively uniform across the site. Therefore, a triangular lattice grid with 2km spacing was employed for the predicted subtidal sand and mud BSH with an additional station positioned within the small patch of predicted coarse substrates in the east of the site (visible in Figure 7)

2.2 **Sample collection and processing methods**

2.2.1 *Multibeam bathymetry and backscatter*

Full coverage multibeam bathymetry and backscatter data were acquired for the rMCZ using a Kongsberg EM2040 multibeam system deployed on the drop keel of RV Cefas Endeavour, which was lowered to its full extent to minimise the effect of bad weather on the acoustic signal. Variations of sound velocity with water depth were recorded using a CTD (conductivity temperature depth) probe and applied during multibeam data acquisition. Details of the multibeam equipment are provided in Annex 5.4.

2.2.2 *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 1mm sieve. The retained >1mm fraction was transferred to a labelled container and preserved in 4% buffered formaldehyde for later analysis ashore.

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.



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 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.

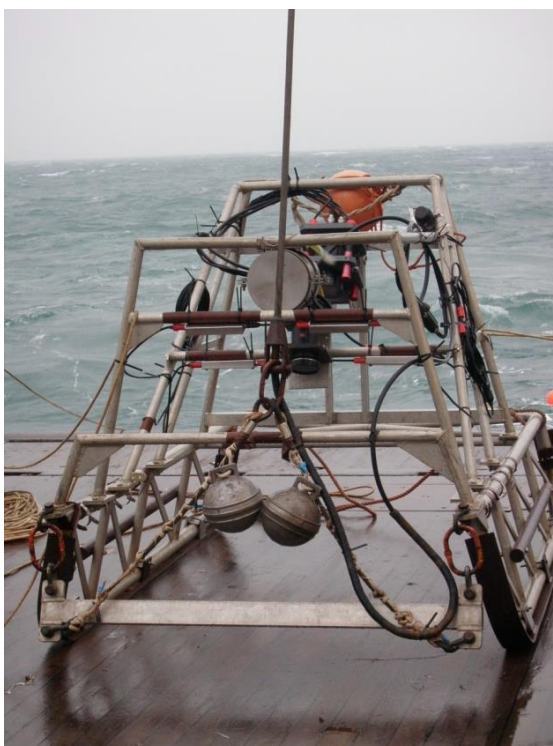


Figure 4. Camera sledge with video and still imaging system.

The single coarse sediment station was sampled using a drop-camera with the same configuration as used in the sledge.

3 Survey Narrative

The survey at the East Celtic Deep rMCZ commenced on 14th February 2012 at 06:30. A CTD was deployed to collect the sound velocity profile (SVP) required for calibration of the multibeam. The acoustic survey began at 07:00 and continued until 03:20 on the 16th February 2012. During this time, 435.9 km of acoustic lines were completed. The vessel then transited back to Swansea for a changeover of scientific staff and crew.

Survey at the East Celtic Deep rMCZ resumed on 17th February 2012 at 20:10. Additional multibeam bathymetry and backscatter data were acquired to infill areas remaining from Part A of the survey. Following completion of the acoustic survey, sampling began at the ground-truthing stations using a combination of HamCam and underwater camera techniques. Ground-truth sampling was carried out between 01:20 (18/02/12) and 14:30 (19/02/12) during which time 29 HamCam samples were obtained, and 10 camera stations completed.

4 Preliminary Results

4.1 Acoustic Maps

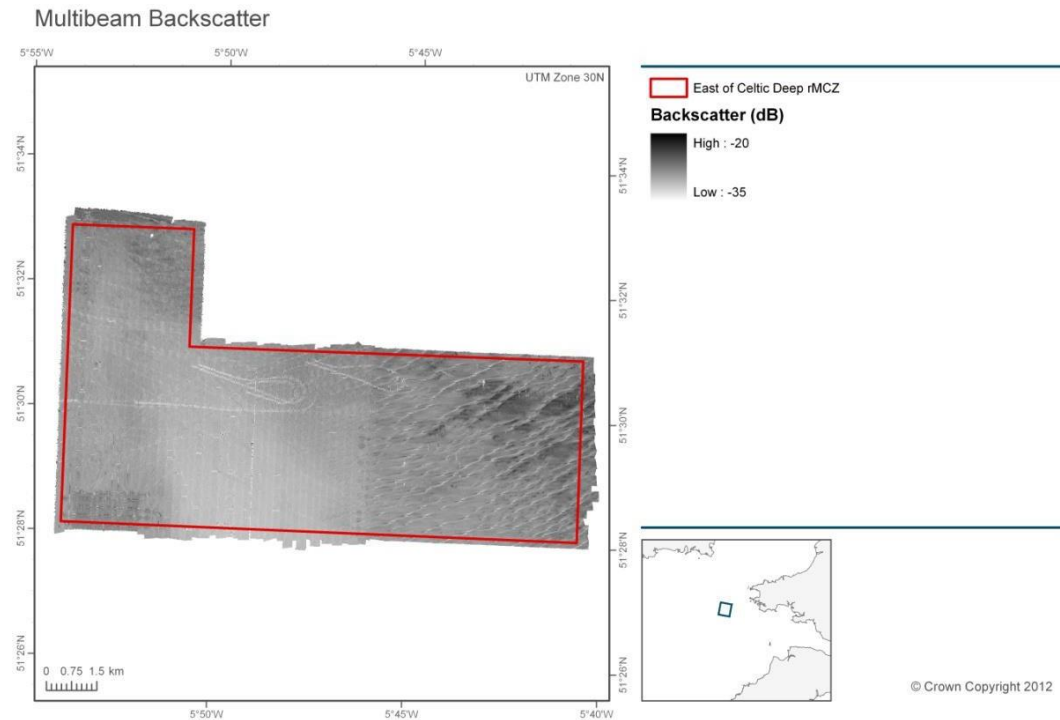


Figure 5. East of Celtic Deep rMCZ with multibeam backscatter overlaid.

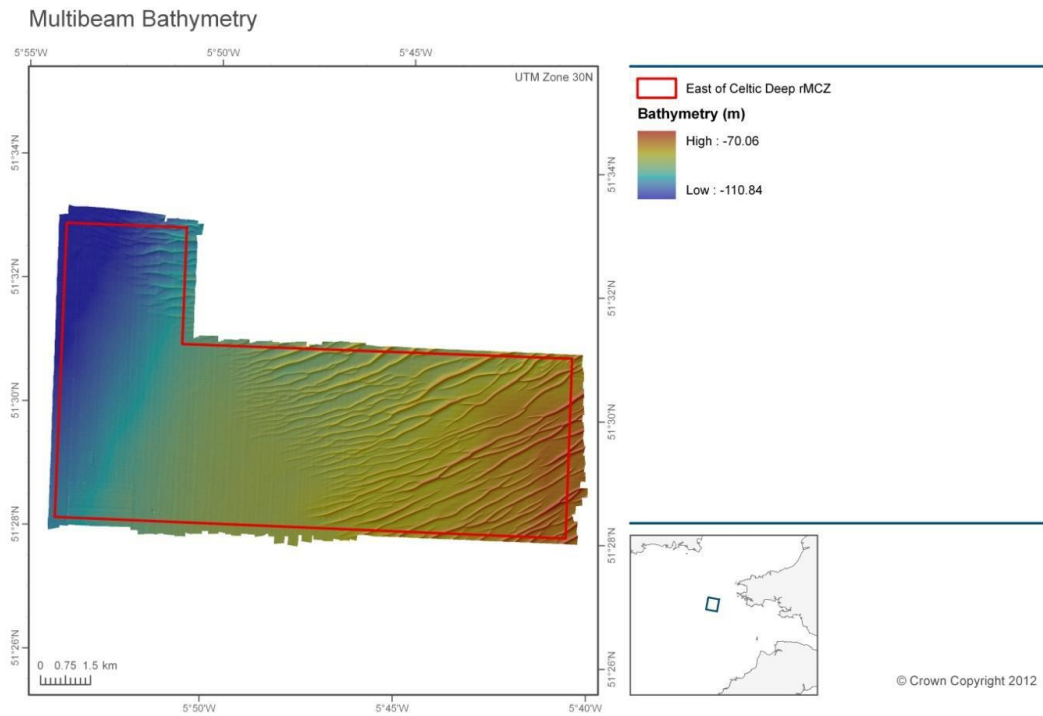

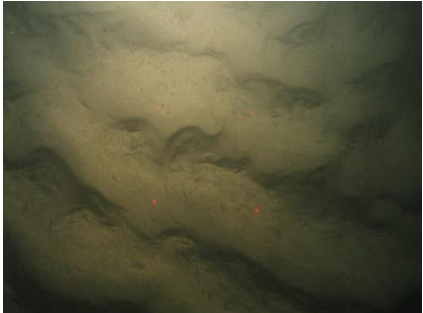

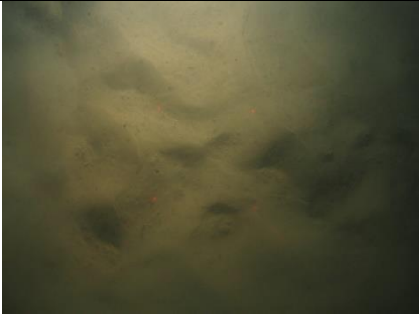


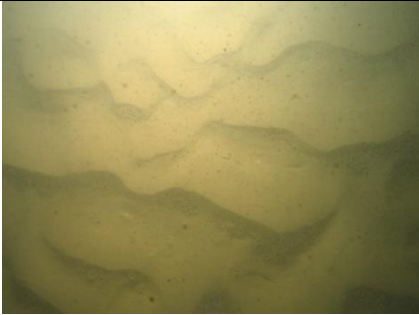


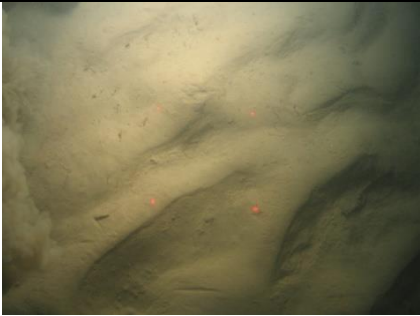
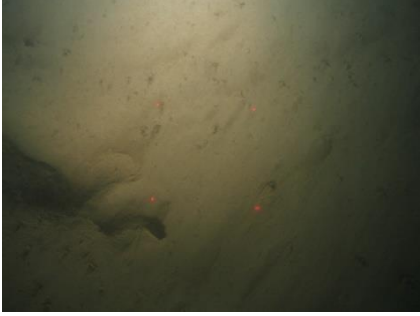

Figure 6. East of Celtic deep rMCZ with multibeam bathymetry overlaid.

4.2 Seabed Imagery

Table 2. Preliminary summary of the seabed substrate and epifaunal communities observed in video and stills images.

Stn Code	BSH Habitat/Faunal Summary	Still Image
ECD_4	Rippled sand (<i>Sabella</i> sp. tubes, <i>Spondyliosoma cantharus</i>)	
ECD_6	Rippled sand (<i>Sabella</i> sp. tubes)	

Stn Code	BSH Habitat/Faunal Summary	Still Image
ECD_7	Rippled sand	
ECD_8	Rippled sand with burrows	
ECD_15	Rippled sand	
ECD_18	Rippled sand with occasional cobble (<i>Astropecten irregularis</i>)	
ECD_21	Rippled sand	

Stn Code	BSH Habitat/Faunal Summary	Still Image
ECD_22	Rippled sand	
ECD_28	Sand with burrows	
ECD_C1	Rippled sand	

4.3 *Grab samples and sediment types*

Preliminary, onboard visual observations of the spatial distribution of sediment types (EUNIS Level 3) for each grab sample were also summarised (Figure 7). It should be emphasised that the EUNIS classifications presented in Figure 7 may change as a result of the outcomes of laboratory processing and interpretation.

Preliminary Sediment Descriptions

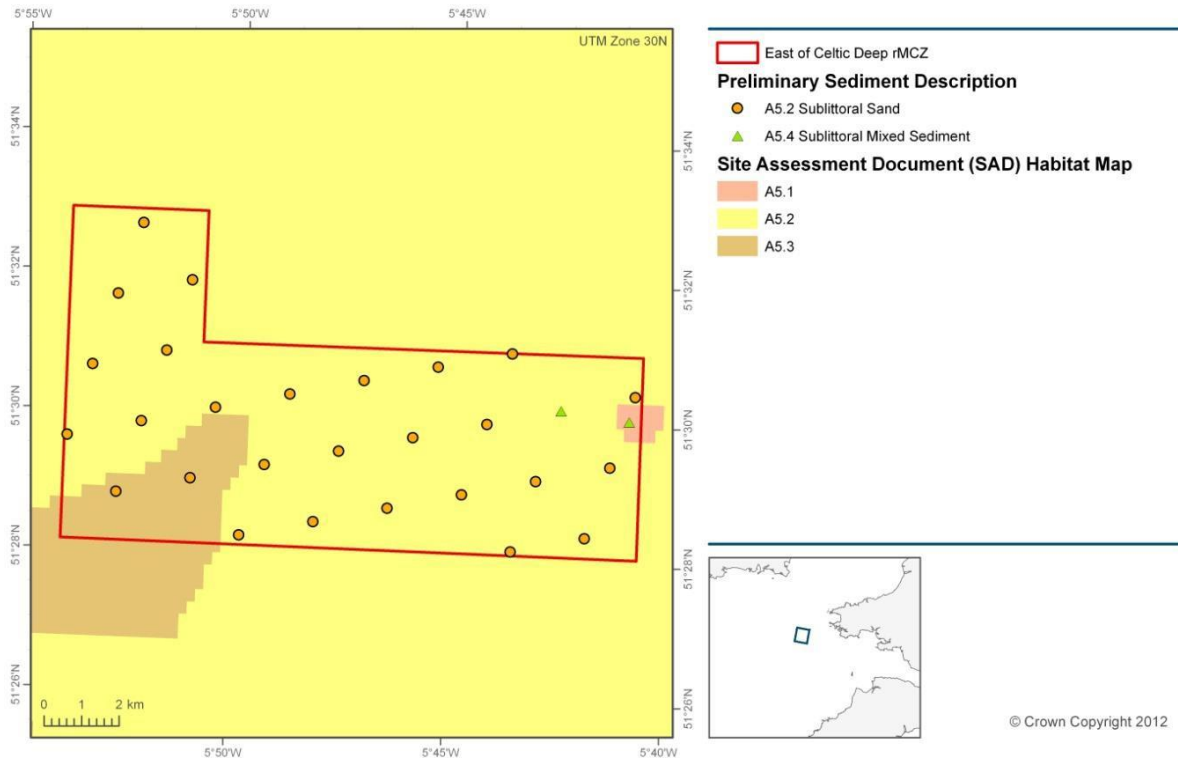


Figure 7. SAD habitat map overlaid with preliminary observations of sediment type, as determined by visual assessment of grab samples.

4.4 Features of Conservation Interest (FOCI): Records in the rMCZ from historic surveys and the current survey (CEND3/12)

No records of species FOCI were identified from historic surveys or observed during the current survey (CEND3/12) but may be subsequently found when the samples are processed.

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 ACgenerators, 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 trawlwinches 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 hullboundary 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 datamanagement 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

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

Model: Simrad EM2040

Frequency: 200/300/400 kHz, swathe width variable dependant on water depth.

5.5 Metadata

Station metadata for the East Celtic Deep rMCZ survey on cruise CEND 03/12 is provided below. Station No 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.

MB=Multibeam, HC=HamCam, CS=Camera Sledge, DC=Drop Camera.

Cruise	Date	Station Code	Station No	Gear	Latitude	Longitude
CEND 03/12	14/02/2012	ECD_NS_2750	580	MB	51.55087	-5.85242
CEND 03/12	14/02/2012	ECD_NS_2750	580	MB	51.46546	-5.85304
CEND 03/12	14/02/2012	ECD_NS_6950	580	MB	51.51724	-5.79066
CEND 03/12	14/02/2012	ECD_NS_6950	580	MB	51.46646	-5.79233
CEND 03/12	14/02/2012	ECD_NS_7150	580	MB	51.46479	-5.78934
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CEND 03/12	19/02/2012	ECD_7	611	HC	51.48270	-5.74541
CEND 03/12	19/02/2012	ECD_01	612	HC	51.46935	-5.72588
CEND 03/12	19/02/2012	ECD_09	613	HC	51.48665	-5.71701
CEND 03/12	19/02/2012	ECD_18	614	HC	51.50367	-5.70821
CEND 03/12	19/02/2012	ECD_20	615	HC	51.50744	-5.67991
CEND 03/12	19/02/2012	ECD_11	616	HC	51.49029	-5.68884
CEND 03/12	19/02/2012	ECD_3	617	HC	51.47319	-5.69772
CEND 03/12	19/02/2012	ECD_C1	618	HC	51.50141	-5.68217
CEND 03/12	19/02/2012	ECD_C1 SOL	619	DC	51.50191	-5.68270
CEND 03/12	19/02/2012	ECD_C1 EOL	619	DC	51.50141	-5.68219
CEND 03/12	19/02/2012	ECD_18 SOL	620	CS	51.50327	-5.70864
CEND 03/12	19/02/2012	ECD_18 EOL	620	CS	51.50433	-5.70962

Cruise	Date	Station Code	Station No	Gear	Latitude	Longitude
CEND 03/12	19/02/2012	ECD_7 SOL	621	CS	51.48221	-5.74540
CEND 03/12	19/02/2012	ECD_7 EOL	621	CS	51.48344	-5.74633
CEND 03/12	19/02/2012	ECD_21 SOL	622	CS	51.50914	-5.78433
CEND 03/12	19/02/2012	ECD_21 EOL	622	CS	51.50980	-5.78472
CEND 03/12	19/02/2012	ECD_4 SOL	623	CS	51.47627	-5.80335
CEND 03/12	19/02/2012	ECD_4 EOL	623	CS	51.47474	-5.80195
CEND 03/12	19/02/2012	ECD_6 SOL	624	CS	51.48032	-5.87793
CEND 03/12	19/02/2012	ECD_6 EOL	624	CS	51.48163	-5.87946

5.6 *Daily Progress Reports*

**DAILY LOG
STATUS REPORT**
Name of Area Survey
Rv Cefas Endeavour – JNCC – DPR No. 16 – Friday 17th 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. 16 Date: 17 th Feb. 2012	Location at 24:00: 51° 28.4' N, 5° 54.5' 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	1	3
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	12:55	Mob/Demob	Continuation of multibeam lines in East of Celtic Deep rMCZ.
12:55	16:00	Transit	Transit from Kings Dock Swansea to East of Celtic Deep.
16:00	16:30	Safety drill	Muster drill and smoke hood training
16:30	20:07	transit	Transit from Kings Dock Swansea to East of Celtic Deep.
20:07	00:00	ToSu	Multibeam – in filling gaps to complete 100% coverage

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	In port	In port	SW6	W8	
Sea state			Moderate	Rough	
Swell			W 3m	W 3m	
Vis			Good	Good	
Baro			1033	1029	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob	12:55	35:37	
Offshore Calibrations		06:02	
Total Operation Survey (TOSu)	03:53	156:32	
Total Operation		122:29	

DAILY LOG STATUS REPORT

Sampling (TOSa)			
Equipment/Downtime		06:43	
Ship/Plant Downtime		02:11	
Waiting On Weather		00:00	
Transit	06:42	52:56	
Standby Port		00:00	
Others	00:30	01:30	
Total:	24:00	384:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM3002	39.7	1323.2		

Overall Progress Groundtruthing Samples

Action	Today (Lkm/samples)	Accum. (Lkm/samples)	Remarks
Hamon grab (0.1m ²)	0	238	
Camera sledge	0	51	
Drop camera	0	37	

Weather forecast for the next 24 hours

Wind NW 6 backing SW 6

Planned operation for the next 24 hours (00:00 to 24:00 on 18th February 2012)

Complete ground truthing at East of Celtic Deep 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. 17 – Saturday 18th 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. 17 Date: 18 th Feb. 2012	Location at 24:00: 51° 28.6' N, 5° 39.7' W

To Company:	Person:	E-mail:
Cefas		
JNCC		
JNCC		
JNCC		
JNCC		
Cefas		

Safety		
	Today	To Date
Accidents/Incidents	0	0
Near Misses	1	1
Safety Drills/Induction	0	3
Additional comments:	Problems with winch remote control caused sledge to approach block on rear gantry. Winch stopped from bridge. Remote control repair underway during weather downtime.	

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	00:49	ToSu (multibeam)	Completion of multibeam lines in East of Celtic Deep rMCZ. In-fill lines and gap filling for areas missed and dolphin interference
00:49	01:22	ToSa	First grab and staff training/familiarisation with sampling techniques
01:22	01:30	ToSa	Hamon Grab EC_6
01:30	04:32	Equipment downtime	Issues with camera on sledge
04:32	04:55	ToSa	Hamon Grab EC13 (grabs while camera repaired)
04:55	05:15	ToSa	Hamon Grab EC15
05:15	06:10	ToSa	Camera Sledge EC_15
06:10	06:21	ToSa	Hamon Grab EC_22
06:21	06:36	ToSa	Camera Sledge EC_22
06:36	07:10	ToSa	Hamon Grab EC_26
07:10	12:52	Weather	Sampling halted on safety grounds due to weather and sea state
12:52	13:09	ToSa	Hamon Grab EC_28
13:09	13:54	ToSa	Camera Sledge EC_28
13:54	14:25	ToSa	Hamon Grab EC_27
14:25	14:52	ToSa	Hamon Grab EC_24
14:52	15:20	ToSa	Hamon Grab EC_17
15:20	16:24	ToSa	Hamon Grab EC_8
16:24	17:43	ToSa	Camera Sledge EC_8
17:43	18:13	ToSa	Hamon Grab EC_2
18:13	18:35	ToSa	Hamon Grab EC_10
18:35	19:00	ToSa	Hamon Grab EC_19
19:00	19:29	ToSa	Hamon Grab EC_21

DAILY LOG STATUS REPORT

19:29	19:45	ToSa	Hamon Grab EC_12
19:45	00:00	Weather	Sampling halted on safety grounds

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	SW7	NW6	SW6	NW6	
Sea state	Rough	Rough	Rough	Rough	
Swell	Moderate	Moderate	Slightly rough	Slightly rough	
Vis	Good	Good	Good	Good	
Baro	1023	1022	1026	1031	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		35:37	
Offshore Calibrations		06:02	
Total Operation Survey (TOSu)	00:49	157:21	
Total Operation Sampling (TOSa)	10:12	132:41	
Equipment/Downtime	03:02	09:45	
Ship/Plant Downtime		02:11	
Waiting On Weather	09:57	09:57	
Transit		52:56	
Standby Port		00:00	
Others		01:30	
Total:	24:00	408:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM3000D / EM2040	7.11	1330.3		

Overall Progress Groundtruthing Samples

Action	Today (Lkm/samples)	Accum. (Lkm/samples)	Remarks
Hamon grab (0.1m ²)	15	253	
Camera sledge	4	55	
Drop camera	0	37	

Weather forecast for the next 24 hours

Winds force 6 NW / SW

Planned operation for the next 24 hours (00:00 to 24:00 on 19th February 2012)

Complete ground truthing at East of Celtic Deep rMCZ followed by same at South of Celtic Deep

Agreed Changes to Scope/Survey operation priorities

CEFAS/JNCC Comments

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CEFAS SIC... [REDACTED]

JNCC Rep: [REDACTED]

**DAILY LOG
STATUS REPORT
Name of Area Survey
Rv Cefas Endeavour – JNCC – DPR No. 18 – Saturday 19th 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. 18 Date: 19 th Feb. 2012	Location at 24:00: 50° 52.9' N 06° 34.6' W

To Company:	Person:	E-mail:
Cefas		
JNCC		
JNCC		
JNCC		
JNCC		
Cefas		

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	1
Safety Drills/Induction	0	3
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	01:36	Weather	Waiting on weather
01:36	02:11	ToSa	Hamon Grab East of Celtic Deep EC_4
02:11	02:44	ToSa	Hamon Grab EC 5
02:44	03:06	ToSa	Hamon Grab EC 14
03:06	03:31	ToSa	Hamon Grab EC 23
03:31	03:56	ToSa	Hamon Grab EC 25
03:56	04:19	ToSa	Hamon Grab EC 16
04:19	04:39	ToSa	Hamon Grab EC 7
04:39	05:01	ToSa	Hamon Grab EC 1
05:01	05:30	ToSa	Hamon Grab EC 9
05:30	05:54	ToSa	Hamon Grab EC 18
05:54	06:57	ToSa	Hamon Grab EC 20
06:57	07:17	ToSa	Hamon Grab EC 11
07:17	08:23	ToSa	Hamon Grab EC 3
08:23	09:09	ToSa	Hamon Grab EC C1
09:09	10:01	ToSa	Drop Camera EC C1
10:01	10:51	ToSa	Camera Sledge EC 18
10:51	11:51	ToSa	Camera Sledge EC 7
11:51	12:50	ToSa	Camera Sledge EC 21
12:50	13:55	ToSa	Camera Sledge EC 4
13:55	14:30	ToSa	Camera Sledge EC 6 Finished at East Celtic Deep
14:30	16:25	Transit	Transit from East Celtic Deep to Mud collection stn
16:25	16:40	ToSa	Hamon Grab MUD 1
16:40	18:41	Transit	Transit to South Celtic Deep
18:41	19:29	ToSa	Drop Camera SC_S8 START work South Celtic Deep
19:29	19:59	ToSa	Drop Camera SC Mx15
19:59	20:34	ToSa	Hamon Grab SC Mx15
20:34	21:16	ToSa	Drop Camera SC Mx13
21:16	21:53	ToSa	Hamon Grab unsuccessful at SC_MX13

DAILY LOG STATUS REPORT

21:53	22:53	ToSa	Drop Camera SC_C3
22:53	23:42	ToSa	Drop Camera SC_C2
23:42	24:00	ToSa	Drop Camera SC_S5

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	NW6	NW5	NW3	SW2	
Sea state	Moderate	Moderate	Slight	Slight	
Swell	Moderate	Moderate	Moderate	Slight	
Vis	Good	Good	Good	Good	
Baro	1035	1039	1041	1043	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		35:37:00	
Offshore Calibrations		06:02:00	
Total Operation Survey (TOSu)		157:21:00	
Total Operation Sampling (TOSa)	18:28:00	151:09:00	
Equipment/Downtime		09:45:00	
Ship/Plant Downtime		02:11:00	
Waiting On Weather	01:36:00	11:33:00	
Transit	03:56:00	56:52:00	
Standby Port		0	
Others		01:30:00	
Total:	24:00:00	432:00:00	

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	1330.3		

Overall Progress Groundtruthing Samples

Action	Today (Lkm/samples)	Accum. (Lkm/samples)	Remarks
Hamon grab (0.1m ²)	17	270	
Camera sledge	5	60	
Drop camera	7	44	

Weather forecast for the next 24 hours

Lundy, Fastnet, Irish Sea
Southwesterly 4, increasing 5 to 7. Moderate, occasionally rough, but slight at first in Irish Sea. Showers, then occasional rain. Moderate or good

DAILY LOG STATUS REPORT

Planned operation for the next 24 hours (00:00 to 24:00 on 20th February 2012)

Complete ground truthing at South of Celtic Deep rMCZ, followed my passage to Western Channel and further ground truthing

Agreed Changes to Scope/Survey operation priorities

CEFAS/JNCC Comments

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

5.7 Fisheries Liaison Officer (FLO) Report

The following vessels were observed operating in the rMCZ during the survey.

Mobile Fishing Gear

Vessel	Home Port	Gear Type	Target Species
FV Mianda.	Drogheda.	Stern Trawl.	Mixed
FV Ocean Harvester-2.	Galway.	Stern Trawl.	Mixed
FV Patrick-C.	Clogherhead.	Stern Trawl.	Mixed
FV Celtic Warrior-2.	Drogheda.	Stern Trawl.	Mixed
FV Courageous.	Drogheda.	Stern Trawl.	Mixed
FV Ambitious.	Drogheda.	Stern Trawl.	Mixed
FV Virtuous.	Drogheda.	Stern Trawl.	Mixed
FV John-B.	Drogheda.	Stern Trawl.	Mixed
FV Chephren.	Guilvinec.	Stern Trawl.	Mixed
FV Jasmine.	Zeebrugge.	Sumwing	Mixed

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)

Customer focus

With our unique facilities and our breadth of expertise in environmental and fisheries management, we can rapidly put together a multi-disciplinary team of experienced specialists, fully supported by our comprehensive in-house resources.

Our existing customers are drawn from a broad spectrum with wide ranging interests. Clients include:

- 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

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