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Offshore Brighton rMCZ

2012 Survey Report

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1 Background and Introduction

1.1 Survey Project Team

The survey at Offshore Brighton rMCZ was carried out during 6th – 10th June 2012 on the RV Cefas Endeavour cruise CEND 08c/12. The survey team included Cefas marine ecologists, marine surveyors, habitat mappers and marine chemists along with a marine monitoring specialist from the JNCC (see below).

(Cefas-Marine Ecologist)	(Cefas-Marine Policy)
(Cefas-Marine Ecologist)	(Cefas-Marine Policy)
(Cefas-Habitat Mapper)	(JNCC-Marine Monitoring)
(Cefas-Habitat Mapper)	(Exeter University)
(Cefas-Marine Ecologist)	(Exeter University)
(Cefas-Marine Surveyor)	(EGS-Marine Surveyor
(Cefas-Marine Chemist)	

1.2 Site Description

The Offshore Brighton rMCZ site lies in the deeper waters of the mid English Channel (Figure 1), its south-eastern and south-western corners meeting the limit of the UK territorial waters (i.e. the UK- France 'median line') due south of Brighton. The Selection Assessment Document (SAD) produced by the Balanced Seas Project reports that, according to UKSeaMap (v7), the seabed habitats are high- and moderate- energy circalittoral rock (EUNIS codes A4.1 and A4.2 respectively) and subtidal mixed sediment (A5.4). It also notes that the "*MALSF English Channel Synthesis Regional Environmental Characterisation* [sic*] *data (REC, James et al. 2011*[sic*][1]*) confirms that the site contains high and moderate energy circalittoral rock habitats but shows that in places the rock is covered with a thin veneer of mixed sediment"*. Subtidal sands and gravels also occur, interspersed with Ross worm (*Sabellaria spinulosa)* reef. For a detailed site description see *Offshore Brighton rMCZ No 14 - Marine Conservation Zone: Selection Assessment Document.*

*NB. The SAD report confuses two works by James *et al.* (2010), namely the South Coast REC[1] and the English Channel Synthesis.

[1] James JWC, Pearce B, Coggan RA, Arnott SHL, Clark RWE, Plim JF, Pinnion J, Barrio-Frójan C, Gardiner JP, Morando A, Baggaley PA, Scott G. & Bigourdan N, 2010. The South Coast Regional Environmental Characterisation. British Geological Survey Open Report OR/09/51. 249pp.

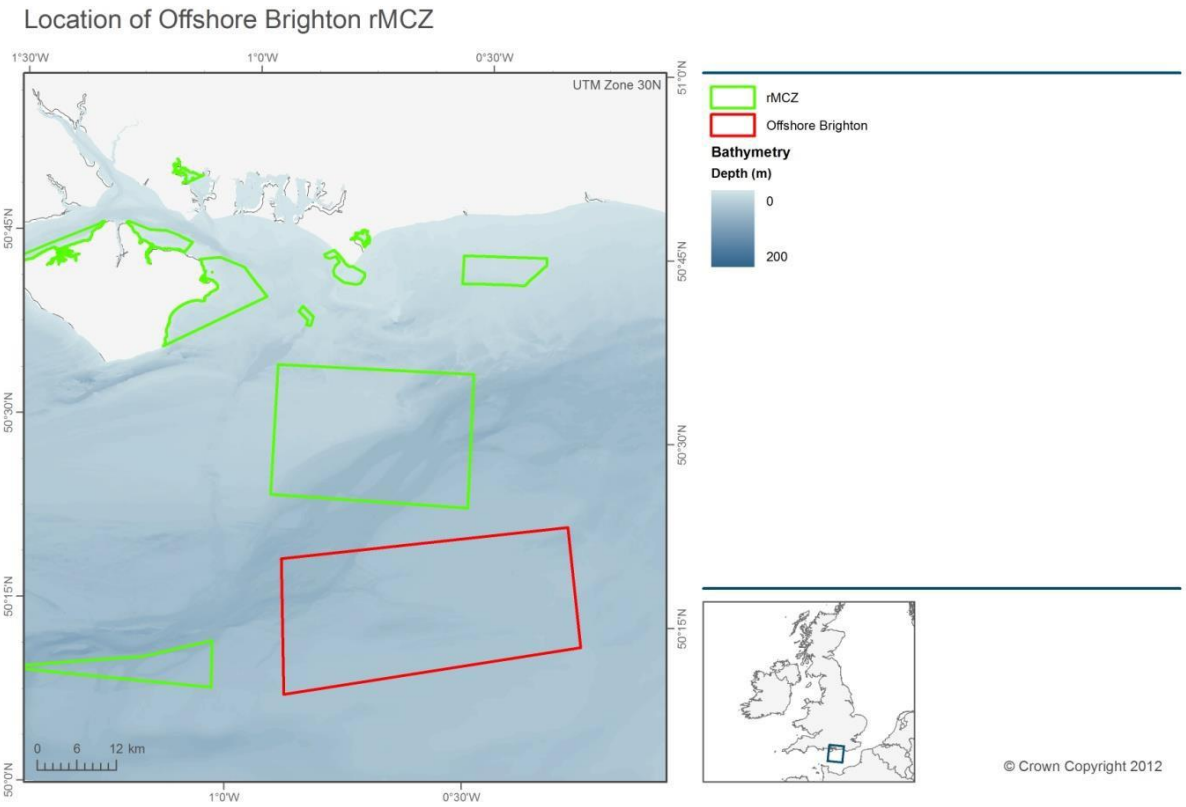


Figure 1. Location of Offshore Brighton rMCZ, in the context of other rMCZs in the area. [Bathymetry is from the Defra Digital Elevation Model (Astrium, 2011)]

1.3 Geological and Biological Context

The site overlaps part of the Northern Palaeovalley, a morphologically visible remnant of the ancient river system that underlies the English Channel that is thought to have been over deepened by a megaflood event several thousand years ago (Gupta *et al.* 2007[2]). The SAD also reports that the site overlaps an area of high benthic species richness, benthic biotope distinctness and 'Chao 2' richness (Jackson *et al.* 2010[3]).

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

[2] Gupta S, Collier JS, Palmer-Felgate A & Potter G, 2007. Catastrophic flooding origin of shelf valley systems in the English Channel. Nature 448: 342-345.

[3] Jackson EL, Langmead O, Hiscock K, Tyler-Walters H, Miller P, McQatters-Gollop A, Saunders J & Fox C, 2009. Accessing and Developing the Required Biophysical Dataset and Data Layers for Marine Protected Areas Network Planning and Wider Marine Spatial Planning Purposes. Task 2F: Development of Marine Diversity Data Layer: Review of Approaches and Proposed Method. DEFRA, London

Table 1. Features proposed for designation within Offshore Brighton rMCZ.

Feature Type	Feature Name
Broad Scale Habitat (BSH)	A4.1 High energy circalittoral rock
	A4.2 Moderate energy circalittoral rock A5.1
	Subtidal mixed sediments
Features of Conservation Interest (FOCI)	
Habitats	Ross Worm (*Sabellaria spinulosa*) reefs
	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

At this rMCZ there were no BSH or FOCI recorded that were not proposed for designation.

1.4 Existing data and information utilised to inform survey planning

Existing data from the Selection Assessment Document and the English Channel Synthesis project (James *et al.* 2011[4]) were considered during the survey planning phase.

[4] James JWC, Pearce B, Coggan RA, Leivers M, Clark RWE, Plim JF, Hill JM, Arnott SHL, Bateson L, De-Burgh Thomas A and Baggaley PA, 2011. The MALSF synthesis study in the central and eastern English Channel. British Geological Survey Open Report OR/11/01.158pp.

2 Survey Design and Methods

2.1 Survey planning and design

Selection and positioning of ground-truth stations was informed by consideration of the available existing data (as per section 1.4 above), particularly the predictive habitat map from the English Channel Synthesis project. Sampling stations were positioned within the predicted habitats using a triangular lattice grid. Stations within the predicted mixed sediments (A5.1) were spaced using 5 km grid and those on predicted high energy circalittoral rock (A4.1) and moderate energy circalittoral rock (A4.2) were spaced on 4 km and 1 km grids respectively. This resulted in an array of stations over the site, with station density varying according to the relative extent of the predicted habitat type (Figure 2). Stations were assigned 'intelligent' Station Codes each with 3 elements; OB indicating the Offshore Brighton site followed by one or two letters indicating the predicted substrate type for that location, then a sequential number (e.g. OB_Mx_23).

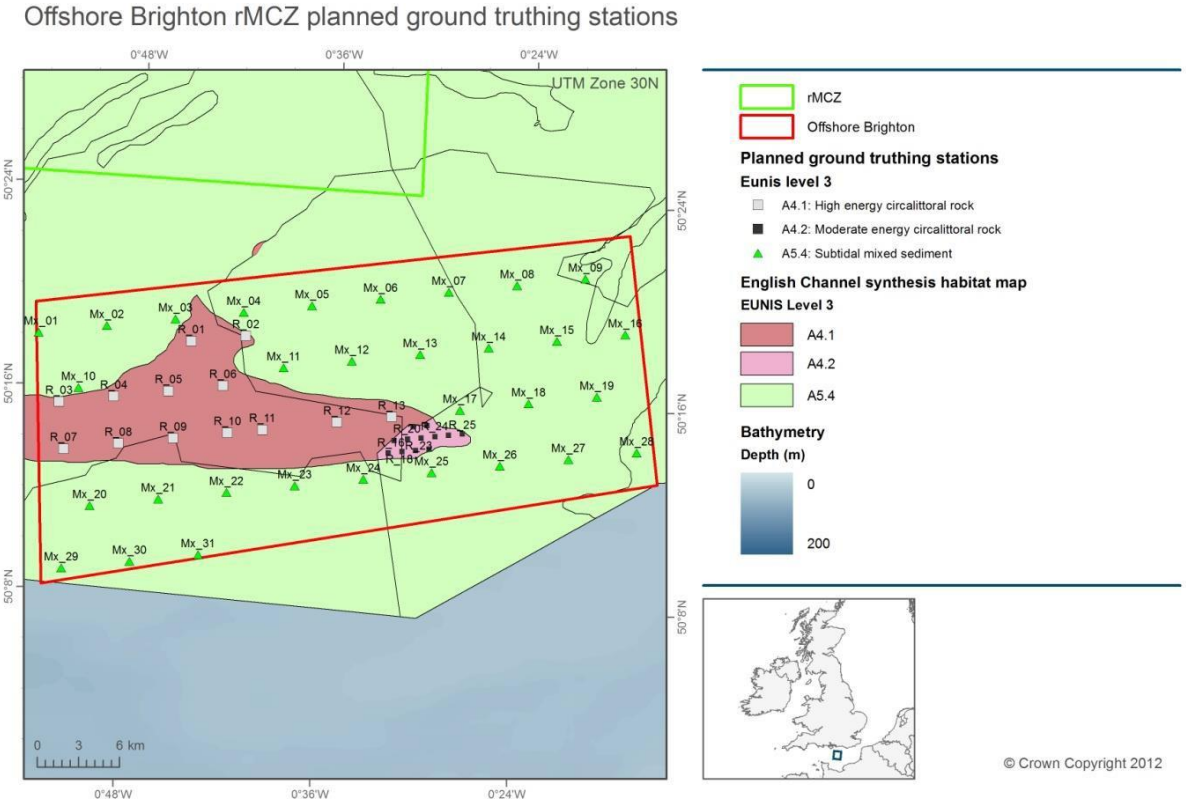


Figure 2. Ground truth survey design for Offshore Brighton rMCZ overlain on predicted substrate map from the English Channel Synthesis project. Station codes reflect predicted substrate type (Mx = mixed sediment, R = Rock). The prefix 'OB_' has been omitted from station codes in this figure to aid clarity.

The plan was for grab samples to be collected at every station within the areas predicted as sediment habitats and camera samples at every station in areas predicted as rock habitat. The camera would also be used at a selection of stations predicted as sediment habitat with the decision to deploy the camera being made during the survey, informed by the sediment type present in the grab sample. Where this confirmed the presence of the predicted BSH the camera was used at about every third station. If it showed a different substrate to that expected, the camera was used more frequently. The objective was to allow adequate characterisation of the surface sediment types and epifaunal communities within the site. The number of camera deployments per BSH varied depending on the uniformity of the

habitat and its spatial extent.

It was planned to collect acoustic data (bathymetry and backscatter) from a multibeam echosounder system on an opportunistic basis, during the transits between ground-truth sampling stations. In addition, two limited areas of full coverage survey were planned in the north-west and central eastern parts of the site to help characterise the mixed sediment habitat.

2.2 Sample collection and processing methods

Ground-truth samples were collected using a combination of grab and underwater camera techniques.

2.2.1 Grab Sampling

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

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

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

2.2.2 Video and Still Imagery

A camera sledge system was available for sampling stations where sediment substrates were predicted by the SAD map or observed in the acoustic survey. The 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 towed at ~ 0.5 knots (~0.25 ms^{-1}) across a 50 m 'bullring' centred on the sampling station. Still 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 on most deployments a note was 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.

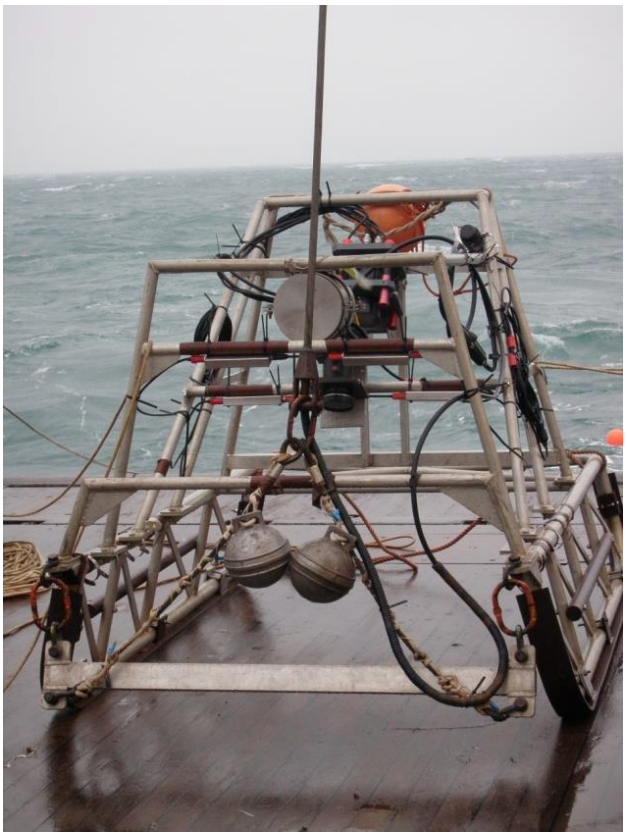


Figure 4. Camera sledge with video and still imaging system

A drop-camera system was also available for use in rocky areas not amenable to the use of the camera sledge. The system specification was similar to that used on the camera sledge, but mounted in a rectangular drop-frame (Figure 5) and deployed from the side gantry, amidships. Deployments lasted a minimum of 10 minutes, with the vessel executing a controlled drift at ~ 0.5 knots

(~0.25 ms^{-1}) across a 50 m 'bullring' centred on the sampling station. Still 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 at the Offshore Brighton rMCZ started at 03:18 hrs on 6 June 2012 following a passage from the Offshore Overfalls rMCZ site. A multibeam survey line was run from station R_03 in the west to Mx_28 in the east, over the main area of predicted rock habitats. Following this, work began on the ground-truth survey, starting at station Mx_28 and generally working towards the west. Multibeam data was collected opportunistically in transit between the fixed ground-truth stations. All work was suspended between 22:00 hrs on 7 June and 07:30 hrs on 9 June due to bad weather. The survey resumed with a drop camera deployment at station R_18 and continued thereafter until completion at 15:00 hrs 10/06/12.

A total of 56 stations were planned and of these 50 were occupied, being all 31 of the planned ‘Mx’ stations and 19 of the 25 planned ‘R’ stations. Grabs were successful at all except one of the Mx stations (Mx_02); 12 of the Mx stations were also sampled by video (including Mx_02). Video was collected at all except two of the 19 R stations occupied, namely OB_R_05 (due to technical problems) and OB_R_10, which was found to be sediment; grab samples were collected at six of the R stations. To overcome a late technical failure of the drop-camera system, video at nine of the R stations was collected using the video camera on the HamCam (i.e. it was used as a make-shift drop-camera, not a grab).

Two full-coverage, ‘nested’, acoustic surveys were completed around stations Mx_02 and Mx_14 each covering an area of approximately a 2 x 2 km.

4 Preliminary Results

4.1 Acoustic survey

Multibeam backscatter from the two full-coverage nested surveys, the two transect lines and the opportunistic line collected in transit between ground-truth stations is shown in Figure 6.

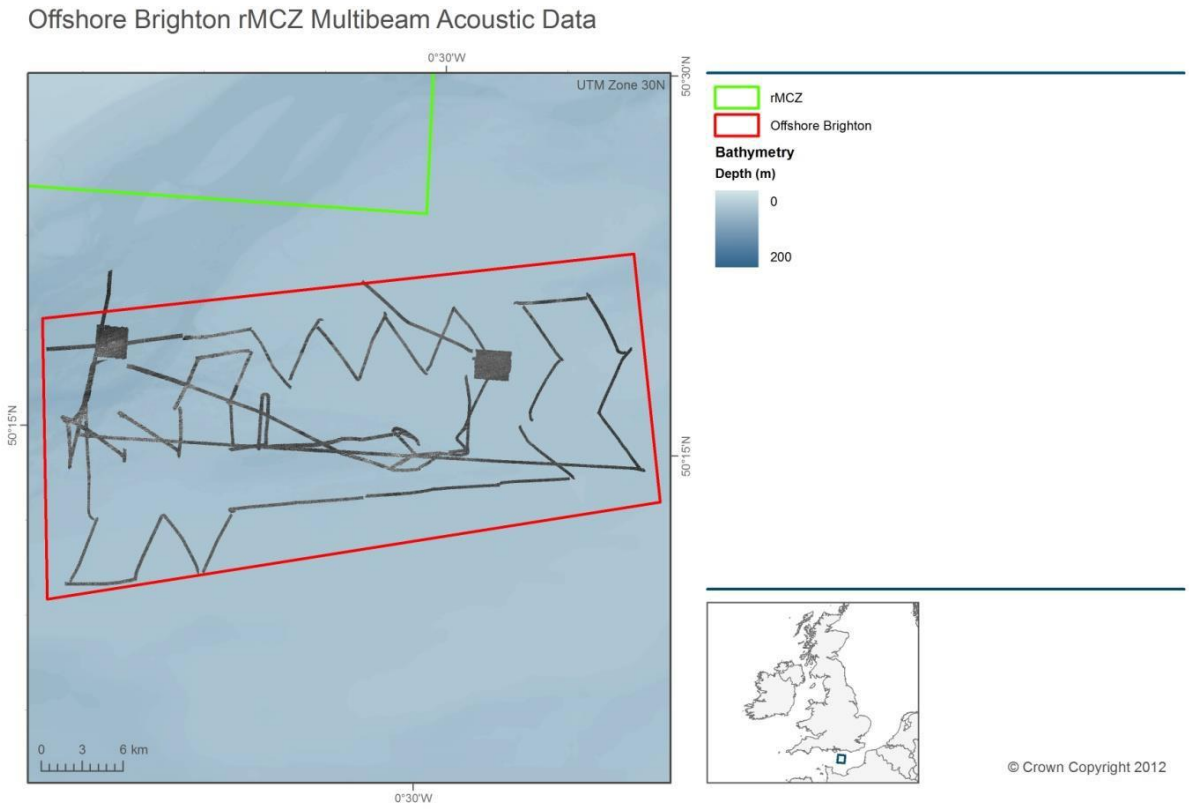
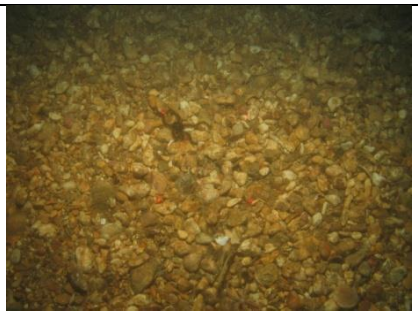


Figure 6. Multibeam backscatter at Offshore Brighton rMCZ collected on CEND 08c/12.

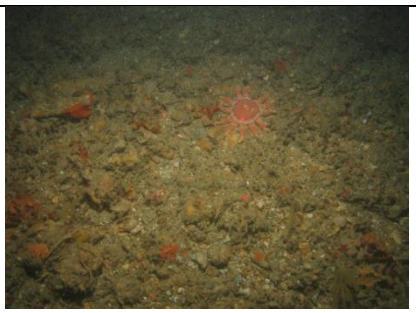
4.2 Seabed Imagery

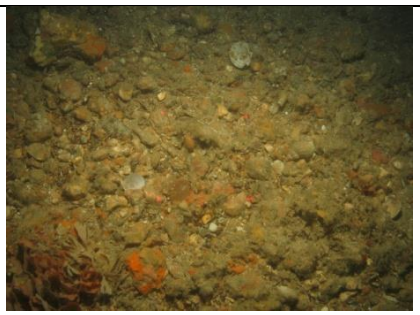
Table 2. Preliminary summary of seabed substrate and epifaunal communities observed in video and still images. Station codes reflect predicted substrate type, with Mx = mixed sediment and R = Rock

Stn Code	BSH Habitat/Faunal Summary	Still Image
OB_Mx_02	Rock with a covering of mixed sediment (cobbles, sand and broken shell) Encrusting orange sponge, *Flustra sp., Alcyonium digitatum, Pentapora foliacea, Urticina sp.*	

Stn Code	BSH Habitat/Faunal Summary	Still Image
OB_Mx_04	Coarse: sandy gravel with broken shell and occasional cobble *Flustra sp., Nemertesia ramosa, Pentapora fascialis, Anseropoda placenta, Polymastia sp., Alcyonium digitatum*	
OB_Mx_07	Coarse: sandy gravel with shell and cobble *Ophiothrix fragilis, Asterias rubens, Aequipecten opercularis, Urticina sp., Hydrallmania sp.*	
OB_Mx_09	Coarse: broken shell with occasional cobbles and boulders *Nemertesia ramosa, Urticina sp., Hydrallmania falcata, Asterias rubens, Pagurus sp., Aequipecten opercularis, Anseropoda placenta*	
OB_Mx_10	Coarse: sandy gravel with shell and cobble *Ophiothrix fragilis, Hydrallmania falcata, Urticina sp., Aequipecten opercularis*	
OB_Mx_12	Coarse: large amounts of shell debris with coarse gravel and occasional cobble *Hydrallmania falcata, Flustra sp., Ophiothrix fragilis, Aequipecten opercularis, Hyas sp., Urticina sp.,* red encrusting bryozoan	

Stn Code	BSH Habitat/Faunal Summary	Still Image
OB_Mx_17	Coarse, sandy gravel with shell and cobble *Asterias rubens, Ophiothrix fragilis, Nemertesia ramosa,*	
OB_Mx_19	Coarse: sandy gravel with broken shell *Asterias rubens, Aequipecten opercularis, Hydrallmania falcata, Anseropoda placenta, Ophiothrix fragilis*	
OB_Mx_21	Coarse: gravel and broken shell *Ophiothrix fragilis, Ophiocomina nigra, Aequipecten opercularis, Nemertesia ramosa, Flustra sp., Asterias rubens.*	
OB_Mx_23	Coarse: gravel with cobbles *Flustra sp., Nemertesia ramosa,* encrusting orange sponge, *Aequipecten opercularis, Asterias rubens.*	
OB_Mx_26	Mixed: broken shell with occasional cobbles overlaying muddy sand *Nemertesia ramosa, Urticina sp., Hydrallmania falcata, Asterias rubens, Alcyonidium diaphanum*	

Stn Code	BSH Habitat/Faunal Summary	Still Image
OB_Mx_29	Coarse: gravel with cobbles *Flustra sp., Nemertesia ramosa,* encrusting orange sponge, *Ophiothrix fragilis, Pagurus sp., Pentapora fascialis, Urticina sp.*	
OB_R_12	Coarse: sand with pebble and occasional cobbles *Flustra sp., Nemertesia ramosa, Crossaster papposus, Anseropoda placenta, Ebalia sp.*	
OB_R_13	Coarse: gravel with shell debris, pebbles and occasional cobble *Flustra sp., Pagurus sp., Urticina sp.*	
OB_R_14	Coarse: sandy gravel with broken shell *Flustra sp.,* Serpulids*, Aequipecten opercularis, Nemertesia ramosa, Pagurus sp.*	
OB_R_17	Coarse: sandy gravel, pebble and cobble *Flustra sp., Asterias rubens, Pentapora fascialis, Crossaster papposus,* encrusting sponge	

Stn Code	BSH Habitat/Faunal Summary	Still Image
OB_R_18	Coarse: gravel with broken shell *Flustra sp.*, Serpulids, *Aequipecten opercularis, Anseropoda placenta, Glycymeris glycymeris,* encrusting sponge	
OB_R_19	Coarse: sand with broken shell, pebble and occasional cobble *Alcyonidium diaphanum, Crossaster papposus, Nemertesia sp.*, Orange encrusting sponge	
OB_R_23	Coarse: sand with pebble and occasional cobbles *Pagurus sp., Flustra sp., Pentapora fascialis, Alcyonidium diaphanum, Urticina sp., Anseropoda placenta,* Encrusting sponge	
OB_R_25	Coarse: sandy gravel with pebble, cobble and broken shell *Ophiothrix fragilis (bed), Nemertesia ramosa, Pentapora fascialis, Pagurus sp., Crossaster papposus, Urticina sp.*, Orange and yellow encrusting sponges	

4.3 Grab samples and sediment descriptions

Preliminary 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.

These preliminary observations showed the site to consist of both coarse and mixed sediments. However, during both HamCam and underwater camera deployments it was obvious that underlying rock was present within the site especially in the North West extent of the modelled rock habitat.

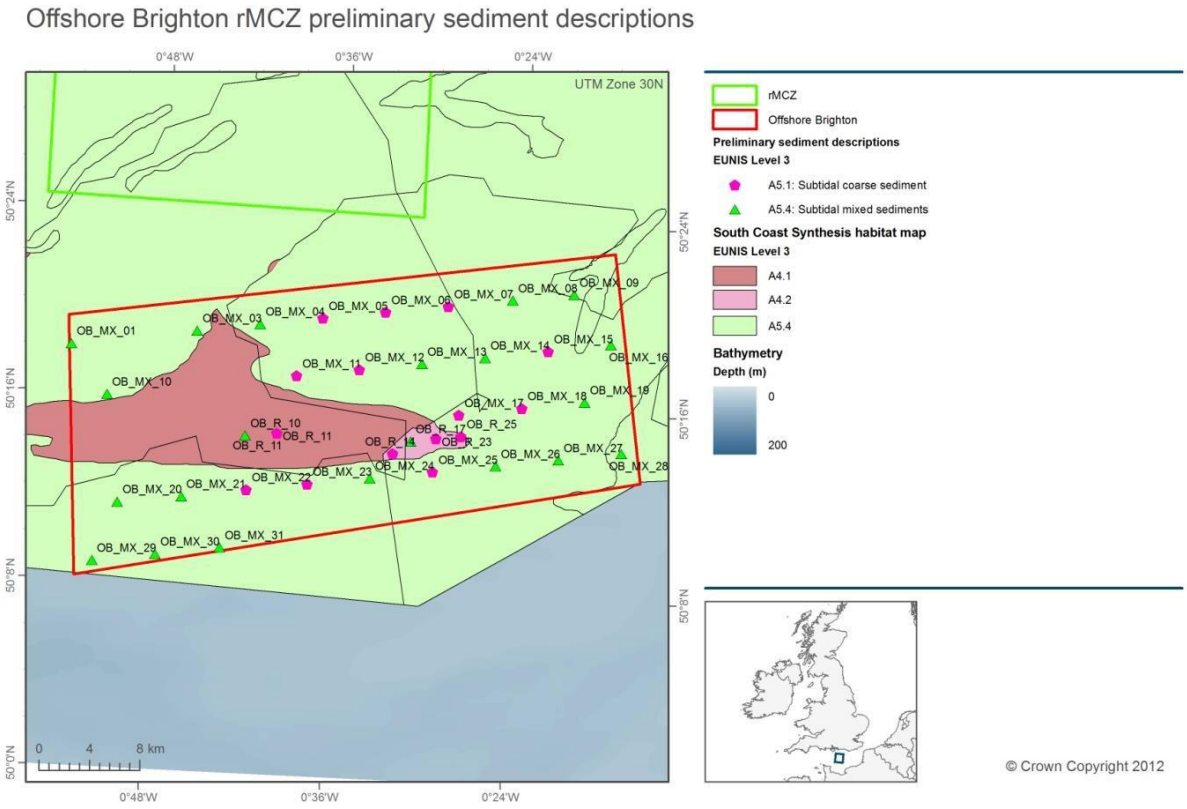


Figure 7. Preliminary observations of sediment type (EUNIS level 3) as determined by visual assessment of grab samples, overlain on the predicted habitat map produced by the MALSF English Channel Synthesis project.

4.4 Preliminary observations of Features of Conservation Interest (FOCI)

Sabellaria sp. was not observed in any of the samples taken at ground-truth station on this survey. A preliminary assessment of the backscatter data acquired from the intensive and opportunistic multibeam surveys did not find any of the characteristic signature associated with *Sabellaria* reef.

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

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 Offshore Brighton rMCZ survey on cruise CEND 08c/12 is provided below. 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 identifies the sampling stations. Sampling gears are coded as HC = HamCam, CS = Camera Sledge, DC = Drop Camera, HCD = HamCam used as a drop camera (not a grab), MB = Multibeam, CTD = conductivity, temperature and depth probe. Replicate code 'X' indicates an unsuccessful or abandoned sampling event; start and end of survey lines are indicated by SOL and EOL respectively. Positions in Lat/Long WGS84.

Date	Time	Station Code	Gear	Station Number	Replicate	Latitude	Longitude
06/06/2012	03:18	OO-OB_R_03	MB	217	SOL	50.35300	-0.83600
06/06/2012	04:25	OO-OB_R_03	MB	217	EOL	50.25500	-0.87500
06/06/2012	04:40	R_03	CTD	218	A	50.25550	-0.87415
06/06/2012	05:06	R_03-Mx_28	MB	219	SOL	50.24500	-0.86070
06/06/2012	08:46	R_03-Mx_28	MB	219	EOL	50.24006	-0.27725
06/06/2012	09:07	Mx_28	HC	220	A	50.24016	-0.28191
06/06/2012	09:15	Mx_28-Mx_19	MB	221	SOL	50.24112	-0.28206
06/06/2012	09:44	Mx_28-Mx_19	MB	221	EOL	50.27790	-0.32552
06/06/2012	10:06	Mx_19	HC	222	A	50.27559	-0.32519
06/06/2012	10:42	Mx_19	CS	223	SOL	50.27549	-0.32502
06/06/2012	10:52	Mx_19	CS	223	EOL	50.27523	-0.32615
06/06/2012	11:01	Mx_28-Mx_16	MB	224	SOL	50.27557	-0.32729
06/06/2012	11:30	Mx_28-Mx_16	MB	224	EOL	50.31960	-0.29550
06/06/2012	11:41	Mx_16	HC	225	A	50.31728	-0.29879

Date	Time	Station Code	Gear	Station Number	Replicate	Latitude	Longitude
06/06/2012	11:47	Mx_16-Mx_09	MB	226	SOL	50.31680	-0.30120
06/06/2012	12:19	Mx_16-Mx_09	MB	226	EOL	50.35460	-0.34200
06/06/2012	12:47	Mx_09	HC	227	A	50.35259	-0.34196
06/06/2012	13:10	Mx_09	CS	228	SOL	50.35338	-0.34464
06/06/2012	13:21	Mx_09	CS	228	EOL	50.35308	-0.34335
06/06/2012	13:29	Mx_09-Mx_08	MB	229	SOL	50.35156	-0.34467
06/06/2012	13:58	Mx_09-Mx_08	MB	229	EOL	50.34556	-0.41852
06/06/2012	14:17	Mx_08	HC	230	A	50.34607	-0.41191
06/06/2012	14:24	Mx_08-Mx_15	MB	231	SOL	50.34380	-0.40918
06/06/2012	14:49	Mx_08-Mx_15	MB	231	EOL	50.30924	-0.36716
06/06/2012	15:09	Mx_15	HC	232	A	50.31072	-0.36836
06/06/2012	15:14	Mx_15-Mx_18	MB	233	SOL	50.30965	-0.36947
06/06/2012	15:42	Mx_15-Mx_18	MB	233	EOL	50.26940	-0.39390
06/06/2012	15:52	Mx_18	HC	234	A	50.26942	-0.39459
06/06/2012	16:06	Mx_18-Mx_27	MB	235	SOL	50.26554	-0.40734
06/06/2012	16:38	Mx_18-Mx_27	MB	235	EOL	50.23290	-0.34900
06/06/2012	16:57	Mx_27	HC	236	A	50.23376	-0.35152
06/06/2012	17:04	Mx_27-Mx26	MB	237	SOL	50.23216	-0.35413
06/06/2012	17:32	Mx_27-Mx26	MB	237	EOL	50.22718	-0.42702
06/06/2012	17:42	Mx_26	HC	238	A	50.22747	-0.42080
06/06/2012	17:54	Mx_26	CS	239	SOL	50.22748	-0.42328
06/06/2012	18:06	Mx_26	CS	239	EOL	50.22760	-0.42184
06/06/2012	18:17	Mx_26-Mx_25	MB	240	SOL	50.22580	-0.42537
06/06/2012	18:43	Mx_26-Mx_25	MB	240	EOL	50.22034	-0.49333
06/06/2012	19:01	Mx_25	HC	241	A	50.22121	-0.49045
06/06/2012	19:05	Mx_25-Mx_24	MB	242	SOL	50.22132	-0.49133
06/06/2012	19:34	Mx_25-Mx_24	MB	242	EOL	50.21483	-0.56242
06/06/2012	19:47	Mx_24	HC	243	A	50.21477	-0.55982
06/06/2012	19:53	Mx_24-Mx_23	MB	244	SOL	50.21348	-0.56489
06/06/2012	20:20	Mx_24-Mx_23	MB	244	EOL	50.20754	-0.63153
06/06/2012	20:34	Mx_23	HC	245	A	50.20839	-0.62919
06/06/2012	20:46	Mx_23	CS	246	SOL	50.20836	-0.62852
06/06/2012	20:57	Mx_23	CS	246	EOL	50.20835	-0.62952
06/06/2012	21:07	Mx_23-Mx_22	MB	247	SOL	50.20800	-0.63210
06/06/2012	21:38	Mx_23-Mx_22	MB	247	EOL	50.20070	-0.69569
06/06/2012	22:11	Mx_22	HC	248	A	50.20234	-0.69663
06/06/2012	22:19	Mx_22-Mx_31	MB	249	SOL	50.19800	-0.69889
06/06/2012	22:45	Mx_22-Mx_31	MB	249	EOL	50.15877	-0.72510
06/06/2012	23:03	Mx_31	HC	250	A	50.16029	-0.72280
06/06/2012	23:14	Mx_31-Mx_21	MB	251	SOL	50.15920	-0.72950
06/06/2012	23:42	Mx_31-Mx_21	MB	251	EOL	50.19642	-0.76992
06/06/2012	23:54	Mx_21	HC	252	A	50.19530	-0.76813
07/06/2012	00:17	Mx_21	CS	253	SOL	50.19548	-0.76685

Date	Time	Station Code	Gear	Station Number	Replicate	Latitude	Longitude
07/06/2012	00:28	Mx_21	CS	253	EOL	50.19522	-0.76820
07/06/2012	00:35	Mx_21-Mx_30	MB	254	SOL	50.19400	-0.77060
07/06/2012	01:03	Mx_21-Mx_30	MB	254	EOL	50.15138	-0.79514
07/06/2012	01:14	Mx_30	HC	255	A	50.15348	-0.79383
07/06/2012	01:22	Mx_30-Mx_29	MB	256	SOL	50.15260	-0.79400
07/06/2012	01:49	Mx_30-Mx_29	MB	256	EOL	50.14721	-0.86647
07/06/2012	02:06	Mx_29	HC	257	A	50.14680	-0.86361
07/06/2012	02:22	Mx_29	CS	258	SOL	50.14699	-0.86454
07/06/2012	02:32	Mx_29	CS	258	EOL	50.14686	-0.86315
07/06/2012	02:44	Mx_29-Mx_20	MB	259	SOL	50.14830	-0.86673
07/06/2012	03:11	Mx_29-Mx_20	MB	259	EOL	50.19140	-0.83774
07/06/2012	03:25	Mx_20	HC	260	A	50.18935	-0.83882
07/06/2012	03:32	Mx_20-Mx_10	MB	261	SOL	50.18970	-0.83979
07/06/2012	04:21	Mx_20-Mx_10	MB	261	EOL	50.26698	-0.85470
07/06/2012	04:35	Mx_10	HC	262	A	50.26552	-0.85631
07/07/2012	05:07	Mx_10	CS	263	SOL	50.26443	-0.86063
07/07/2012	05:17	Mx_10	CS	263	EOL	50.26456	-0.85931
07/06/2012	05:25	Mx_10-Mx_01	MB	264	SOL	50.26511	-0.85870
07/06/2012	05:55	Mx_10-Mx_01	MB	264	EOL	50.30084	-0.90434
07/06/2012	06:04	Mx_01	HC	265	A	50.30037	-0.89879
07/06/2012	06:09	Mx_01-Mx_02	MB	266	SOL	50.30060	-0.89741
07/06/2012	06:37	Mx_01-Mx_02	MB	266	EOL	50.30700	-0.82730
07/07/2012	07:20	Mx_02	HC	267	X	50.30715	-0.82962
07/07/2012	07:46	Mx_02	CS	268	SOL	50.30719	-0.83046
07/07/2012	07:56	Mx_02	CS	268	EOL	50.30695	-0.83176
07/06/2012	08:03	Mx_02-Mx_03	MB	269	SOL	50.30500	-0.83300
07/06/2012	08:33	Mx_02-Mx_03	MB	269	EOL	50.31400	-0.75800
07/06/2012	08:47	Mx_03	HC	270	A	50.31384	-0.75965
07/06/2012	08:53	Mx_03	CTD	271	A	50.3137	-0.76005
07/06/2012	09:10	Mx_03-Mx_04	MB	272	SOL	50.31300	-0.07580
07/06/2012	09:37	Mx_03-Mx_04	MB	272	EOL	50.32000	-0.68700
07/06/2012	10:19	Mx_04	HC	273	A	50.32072	-0.68981
07/06/2012	10:33	Mx_04	CS	274	SOL	50.32098	-0.68858
07/06/2012	10:43	Mx_04	CS	274	EOL	50.32064	-0.68994
07/06/2012	10:53	Mx_04-Mx_11	MB	275	SOL	50.32000	-0.68723
07/06/2012	11:20	Mx_04-Mx_11	MB	275	EOL	50.28340	-0.64360
07/06/2012	11:37	Mx_11	HC	276	A	50.28522	-0.64673
07/06/2012	11:44	Mx_11-Mx_05	MB	277	SOL	50.28890	-0.64520
07/06/2012	12:13	Mx_11-Mx_05	MB	277	EOL	50.32830	-0.61540
07/06/2012	12:32	Mx_05	HC	278	A	50.32700	-0.62053
07/06/2012	12:38	Mx_05-Mx_12	MB	279	SOL	50.32410	-0.61990
07/06/2012	13:05	Mx_05-Mx_12	MB	279	EOL	50.29120	-0.57506
07/06/2012	13:14	Mx_12	HC	280	A	50.29161	-0.57736

Date	Time	Station Code	Gear	Station Number	Replicate	Latitude	Longitude
07/06/2012	13:29	Mx_12	CS	281	SOL	50.29235	-0.57853
07/06/2012	13:39	Mx_12	CS	281	EOL	50.29184	-0.57755
07/06/2012	13:48	Mx_12-Mx_06	MB	282	SOL	50.29142	-0.57492
07/06/2012	14:17	Mx_12-Mx_06	MB	282	EOL	50.33529	-0.55301
07/06/2012	14:30	Mx_06	HC	283	A	50.33340	-0.55114
07/06/2012	14:35	Mx_06-Mx_13	MB	284	SOL	50.33260	-0.55044
07/06/2012	15:05	Mx_06-Mx_13	MB	284	EOL	50.29730	-0.50571
07/06/2012	15:18	Mx_13	HC	285	A	50.29789	-0.50775
07/06/2012	15:23	Mx_13-Mx_07	MB	286	SOL	50.29990	-0.50573
07/06/2012	15:51	Mx_13-Mx_07	MB	286	EOL	50.34150	-0.48168
07/06/2012	16:01	Mx_07	HC	287	A	50.33958	-0.48143
07/06/2012	16:16	Mx_07	CS	288	SOL	50.33960	-0.48252
07/06/2012	16:26	Mx_07	CS	288	EOL	50.33978	-0.48123
07/06/2012	16:33	Mx_07-Mx_14	MB	289	SOL	50.33980	-0.47950
07/06/2012	17:02	Mx_07-Mx_14	MB	289	EOL	50.30210	-0.43720
07/06/2012	17:10	Mx_14	HC	290	A	50.30430	-0.43787
07/06/2012	17:16	Mx_14-Mx_17	MB	291	SOL	50.30183	-0.43853
07/06/2012	17:43	Mx_14-Mx_17	MB	291	EOL	50.26144	-0.46723
07/06/2012	17:53	Mx_17	HC	292	A	50.26256	-0.46436
07/06/2012	18:07	Mx_17	CS	293	SOL	50.26249	-0.46647
07/06/2012	18:18	Mx_17	CS	293	EOL	50.26265	-0.46505
07/06/2012	18:25	Mx_17-Mx_25	MB	294	SOL	50.26230	-0.46337
07/06/2012	18:42	Mx_17-Mx_25	MB	294	EOL	50.24607	-0.46353
07/06/2012	19:55	R_25	CS	295	SOL	50.24746	-0.46098
07/06/2012	20:06	R_25	CS	295	EOL	50.24672	-0.46154
07/06/2012	20:12	R_25-R_23	MB	296	SOL	50.24569	-0.46255
07/06/2012	20:25	R_25-R_23	MB	296	EOL	50.24529	-0.49191
07/06/2012	20:50	R_23	CS	297	SOL	50.24532	-0.48700
07/06/2012	21:02	R_23	CS	297	EOL	50.24502	-0.48831
07/06/2012	21:08	R_23-R_18	MB	298	SOL	50.24506	-0.48811
07/06/2012	21:31	R_23-R_18	MB	298	EOL	50.23540	-0.50930
07/06/2012	07:36	R_18	DC	299	SOL	50.23524	-0.50855
07/06/2012	07:51	R_18	DC	299	EOL	50.23545	-0.50671
09/06/2012	07:44	R_18	CTD	300	A	50.2355	-0.50642
09/06/2012	07:49	R_18-R_14	MB	301	SOL	50.23400	-0.50800
09/06/2012	08:11	R_18-R_14	MB	301	EOL	50.23200	-0.53800
09/06/2012	09:34	R_14	CS	302	SOL	50.23278	-0.53630
09/06/2012	09:44	R_14	CS	302	EOL	50.23244	-0.53756
09/06/2012	10:46	R_14-R_17	MB	303	SOL	50.23404	-0.53686
09/06/2012	11:17	R_14-R_17	MB	303	EOL	50.24342	-0.51410
09/06/2012	10:26	R_17	CS	304	SOL	50.24174	-0.51240
09/06/2012	10:36	R_17	CS	304	EOL	50.24104	-0.51316
09/06/2012	10:46	R_17-13-19	MB	305	SOL	50.24225	-0.51015

09/06/2012	11:17	R_17-13-19	MB	305	EOL	50.24909	-0.51176
09/06/2012	11:52	R_19	CS	306	SOL	50.25039	-0.51036
09/06/2012	12:04	R_19	CS	306	EOL	50.25019	-0.51191
09/06/2012	12:14	R_19-R_19	MB	307	SOL	50.25113	-0.51143
09/06/2012	12:36	R_19-R_19	MB	307	EOL	50.25694	-0.53157
09/06/2012	12:47	R_13	CS	308	SOL	50.25666	-0.53274
09/06/2012	12:58	R_13	CS	308	EOL	50.25638	-0.53417
09/06/2012	13:05	R_13-R_12	MB	309	SOL	50.25636	-0.05345
09/06/2012	13:39	R_13-R_12	MB	309	EOL	50.25205	-0.59152
09/06/2012	14:02	R_12	CS	310	SOL	50.25132	-0.58828
09/06/2012	14:13	R_12	CS	310	EOL	50.25101	-0.58966
09/06/2012	14:20	R_12-R_11	MB	311	SOL	50.25057	-0.59181
09/06/2012	14:54	R_12-R_11	MB	311	EOL	50.24333	-0.66926
09/06/2012	15:20	R_11	CS	312	SOL	50.24416	-0.66477
09/06/2012	15:23	R_11	CS	312	EOL	50.24411	-0.66489
09/06/2012	16:03	R_11-N	MB	313	SOL	50.24350	-0.66720
09/06/2012	16:49	R_11-N	MB	313	EOL	50.24290	-0.67446
09/06/2012	17:21	R_11	HC	314	A	50.24352	-0.66527

Date	Time	Station Code	Gear	Station Number	Replicate	Latitude	Longitude
09/06/2012	17:30	R_11-R_10	MB	315	SOL	50.24477	-0.66869
09/06/2012	17:44	R_11-R_10	MB	315	EOL	50.24040	-0.70476
09/06/2012	17:54	R_10	HC	316	A	50.24095	-0.70074
09/06/2012	18:00	R_10-R_06	MB	317	SOL	50.24292	-0.70083
09/06/2012	18:19	R_10-R_06	MB	317	EOL	50.27208	-0.71122
09/06/2012	18:31	R_06	HC	318	X	50.27160	-0.70759
09/06/2012	18:47	R_06-R_02	MB	319	SOL	50.27208	-0.70659
09/06/2012	19:09	R_06-R_02	MB	319	EOL	50.30606	-0.68621
09/06/2012	19:23	R_02	HCD	320	SOL	50.30513	-0.68657
09/06/2012	19:25	R_02	HCD	320	EOL	50.30511	-0.68658
09/06/2012	19:31	R_02-R_01	MB	321	SOL	50.30623	-0.68887
09/06/2012	19:53	R_02-R_01	MB	321	EOL	50.29957	-0.74407
09/06/2012	20:06	R_01	HCD	322	SOL	50.29990	-0.74227
09/06/2012	20:06	R_01	HCD	322	EOL	50.29992	-0.74228
09/06/2012	20:14	R_01-R_05	MB	323	SOL	50.29923	-0.74115
09/06/2012	20:37	R_01-R_05	MB	323	EOL	50.26519	-0.76446
09/06/2012	20:46	R_05	HCD	324	SOL	50.26651	-0.76307
09/06/2012	20:48	R_05	HCD	324	EOL	50.26652	-0.76305
09/06/2012	21:01	R_05	CS	325	X	50.26665	-0.76298
09/06/2012	21:16	R_05-R_09	MB	326	SOL	50.26621	-0.75783
09/06/2012	21:35	R_05-R_09	MB	326	EOL	50.23410	-0.75690
09/06/2012	21:43	R_09	HCD	327	A	50.23553	-0.75608
09/06/2012	22:20	R_09-R_04	MB	328	SOL	50.23733	-0.75507
09/06/2012	21:50	R_09-R_04	MB	328	EOL	50.26188	-0.82046
09/06/2012	22:33	R_04	HCD	329	A	50.26119	-0.81842

09/06/2012	22:40	R_04-R_08	MB	330	SOL	50.25933	-0.81695
09/06/2012	23:00	R_04-R_08	MB	330	EOL	50.22884	-0.81122
09/06/2012	22:23	R_08	HCD	331	SOL	50.23023	-0.81170
09/06/2012	22:25	R_08	HCD	331	EOL	50.23024	-0.81168
09/06/2012	23:33	R_08-R_03	MB	332	SOL	50.23160	-0.81150
09/06/2012	00:05	R_08-R_03	MB	332	EOL	50.25655	-0.87665
10/06/2012	00:20	R_03	HCD	333	SOL	50.25599	-0.87425
10/06/2012	00:22	R_03	HCD	333	EOL	50.25594	-0.87428
10/06/2012	00:29	R_03-R_07	MB	334	SOL	50.25300	-0.87200
10/06/2012	00:47	R_03-R_07	MB	334	EOL	50.22300	-0.86600
10/06/2012	01:00	R_07	HCD	335	SOL	50.22496	-0.86711
10/06/2012	01:02	R_07	HCD	335	EOL	50.22496	-0.86712
10/06/2012	01:09	R_07-Mx_02	MB	336	SOL	50.22618	-0.86697
10/06/2012	02:02	R_07-Mx_02	MB	336	EOL	50.29500	-0.83600
10/06/2012	01:56	Mx_02	CTD	337	A	50.2945	-0.84077
10/06/2012	02:15	MB_Mx_02	MB	338	SOL01	50.29600	-0.84500
10/06/2012	05:13	MB_Mx_02	MB	338	EOL10	50.29600	-0.81700
10/06/2012	05:16	Mx_02-R_14	MB	339	SOL	50.29200	-0.81300

Date	Time	Station Code	Gear	Station Number	Replicate	Latitude	Longitude
10/06/2012	07:12	Mx_02-R_14	MB	339	EOL	50.23200	-0.53300
10/06/2012	07:24	R_14	HC	340	A	50.23291	-0.53574
10/06/2012	07:32	R_14-R_17	MB	341	SOL	50.23600	-0.52880
10/06/2012	07:40	R_14-R_17	MB	341	EOL	50.24410	-0.51558
10/06/2012	07:57	R_17	HC	342	A	50.24236	-0.51663
10/06/2012	08:03	R_17-R_23	MB	343	SOL	50.24290	-0.51342
10/06/2012	08:14	R_17-R_23	MB	343	EOL	50.24560	-0.48619
10/06/2012	08:28	R_23	HC	344	A	50.24495	-0.48861
10/06/2012	08:37	R_23-R_25	MB	345	SOL	50.24594	-0.47880
10/06/2012	08:44	R_23-R_25	MB	345	EOL	50.24775	-0.45865
10/06/2012	09:06	R_25	HC	346	A	50.24745	-0.46086
10/06/2012	08:56	R_25-Mx_14	MB	347	SOL	50.24757	-0.46103
10/06/2012	09:47	R_25-Mx_14	MB	347	EOL	50.29600	-0.46200
10/06/2012	09:51	MB_Mx_14	MB	348	SOL01	50.29600	-0.46500
10/06/2012	15:08	MB_Mx_14	MB	348	EOL15	50.35567	-0.57524
09/06/2020	18:38	R_06	HCD	9318	SOL	50.27179	-0.70768
09/06/2020	18:41	R_06	HCD	9318	EOL	50.27186	-0.70721

5.6 Daily Progress Reports (as produced by JNCC staff)

DAILY LOG
STATUS REPORT

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob			
Offshore Calibrations		00:30	
Total Operation Survey (TOSu)	02:00	04:40	
Total Operation Sampling (TOSa)	15:55	15:55	
Equipment/Downtime			
Ship/Plant Downtime			
Waiting On Weather			
Transit	06:05	09:55	
Standby Port			
Others			
Total:	24:00	31:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM2040	10.6	27.1		

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon grab (0.1m^2)	9	9	
Camera sledge	0	0	
Drop camera	9	9	
Shipek	30	30	

Weather forecast for the next 24 hours

Light winds, good-fair seas

Planned operation for the next 24 hours (00:00 to 24:00 on 2nd June 2012)

Finish camera and HamCam at Folkstone Pomerania before transiting to Offshore Overfalls MCZ.

Agreed Changes to Scope/Survey operation priorities

Currently none

CEFAS/JNCC Comments

Work is slow on Folkestone Pomerania due to the coarse nature of the seabed returning a large number of no samples. Hope to complete over next 24hrs.

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

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DAILY LOG
STATUS REPORT
Name of Area Survey
RV Cefas Endeavour – JNCC – DPR No. 3 – 2nd Jun 2012

Vessel: RV Cefas Endeavour GSM : 07799 773456	Project: MCZ Site Verification CEND 8_12C Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 3	Location at 24:00: 51° 01.7' N 001° 16.8' E
Date: 02/06/12	

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

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	2	2 (Inductions and drill)
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	10:20	HC	Continued HamCam operations
10:20	10:50	CS	Camera Sledge
10:50	12:10	HC	Hamcam
12:10	13:00	CS	Camera sledge
13:00	14:40	HC	HamCam
14:40	15:50	CS/DC	Camera sledge video poor quality, switch to drop camera
15:50	18:10	HC	HamCam
18:10	18:50	CS	Camera sledge (switched lights and repositioned camera)
18:50	20:00	HC	HamCam
20:00	00:00	CS	Camera sledge

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	075, 18kts	080, 16kts	070, 19kts	070, 22kts	
Sea state	3	4	4	4	
Swell	1	1	1.5	2	
Vis	6	7	7	7	
Baro	1030	1027	1025	1021	

DAILY LOG
STATUS REPORT

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob			
Offshore Calibrations		00:30	
Total Operation Survey (TOSu)		04:40	
Total Operation Sampling (TOSa)	24:00	39:55	
Equipment/Downtime			
Ship/Plant Downtime			
Waiting On Weather			
Transit		09:55	
Standby Port			
Others			
Total:	24:00	55:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM2040	0	27.1		

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon grab (0.1m^2)	38	47	
Camera sledge	9	9	
Drop camera	1	10	
Shipek	0	30	

Weather forecast for the next 24 hours

Stronger winds, with moderate increase in swell and sea state.

Planned operation for the next 24 hours (00:00 to 24:00 on 2nd June 2012)

Finish camera at Folkstone Pomerania before transiting to Offshore Overfalls MCZ.

Agreed Changes to Scope/Survey operation priorities

Currently none

CEFAS/JNCC Comments

Hope to finish at Folkestone Pomerania in the early hours of tomorrow morning and then head for Offshore Overfalls. Current plan to start with side scan lines (2, across BSH's) before beginning grabs and camera work at the south east corner

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

DAILY LOG
STATUS REPORT
Name of Area Survey
RV Cefas Endeavour – JNCC – DPR No. 4 – 3rd Jun 2012

Vessel: RV Cefas Endeavour GSM : 07799 773456	Project: MCZ Site Verification CEND 8_12C Satellite Voice Bridge: 00 870 (or 00871) 763998027
Daily Progress Report No. 4	Location at 24:00: 50° 26.7' N 000° 32.9'W
Date: 03/06/12	

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

Safety

	Today	To Date
Accidents/Incidents	0	0
Near Misses	0	0
Safety Drills/Induction	2	2 (Inductions and drill)
Additional comments:		

Summary of operations 0000-2400

Time UTC (start)	Time UTC (end)	Type	Comments
00:00	04:10	CS	Camera Sledge at Folkestone Pomerania
04:10	13:30	Transit	Folkestone Pomerania to Offshore Overfalls
13:30	14:10	CTD	CTD dip
14:10	21:30	MB/ SSS	Multibeam and sidescan sonar
21:30	22:20	HC	HamCam
22:20	22:50	CS	Camera Sledge
22:50	23:40	MB	Multibeam
23:40	00:00	HC	HamCam

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	080, 24kts	270, 23kts	250, 26kts	250, 25kts	
Sea state	4	4	4	4	
Swell	2	2	2	2	
Vis	7	7	7	6	
Baro	1017	1018	1020	1019.5	

DAILY LOG
STATUS REPORT

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob			
Offshore Calibrations	00:40	01:10	
Total Operation Survey (TOSu)	08:10	12:50	
Total Operation Sampling (TOSa)	05:50	45:45	
Equipment/Downtime			
Ship/Plant Downtime			
Waiting On Weather			
Transit	09:20	19:15	
Standby Port			
Others			
Total:	24:00	79:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM2040	80.7	107.8		(SSS 70.3km)

Overall Progress Groundtruthing Samples

Action	*Today (Lkm/samples)*	*Accum. (Lkm/samples)*	Remarks
Hamon grab (0.1m^2)	2	49	
Camera sledge	7	16	
Drop camera	0	10	
Shipek	0	30	

Weather forecast for the next 24 hours

Decreasing wind and sea state.

Planned operation for the next 24 hours (00:00 to 24:00 on 2nd June 2012)

Continue hamcam, camera sledge and multibeam at Offshore Overfalls MCZ.

Agreed Changes to Scope/Survey operation priorities

Currently none

CEFAS/JNCC Comments

Current plan to complete grabs, cameras and transit multibeam before heading to Offshore Brighton where the priority will also be camera, grabs and opportunistic multibeam. On completion of this phase current recently collected data and previously provided evidence will be used to target patches of BSH for intensive MB and possible SSS (where looking for Sabellaria spinulosa).

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

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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