

Final Report (Project Code): C5433

South-East of Falmouth rMCZ 2012 Survey Report

Authors: Sue Ware, Paul Whomersley and Bill Meadows

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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 South-East of Falmouth rMCZ survey was carried out during the 22nd-23rd 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 and sedimentologists along with MPA and marine assessment specialists from the JNCC (see below).

Cefas-Marine Ecologist	Cefas-Marine Surveyor
Cefas Sedimentologist	Cefas-Marine Surveyor
Cefas-Sedimentologist	Cefas-Marine Surveyor
Cefas-Marine Ecologist)	JNCC-Marine Assessment Scientist
Cefas-Fisheries Surveys Manager	JNCC-MPA Specialist
Cefas-Fisheries Scientist	JNCC-Survey Lead
Cefas-Plankton Ecologist	Fisheries Liaison Officer

1.2 Site Description

The South East Falmouth rMCZ is located approximately 22 km offshore from the Fal and Helford Special Area of Conservation (SAC) (Figure 1).

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

Location of the South East of Falmouth rMCZ

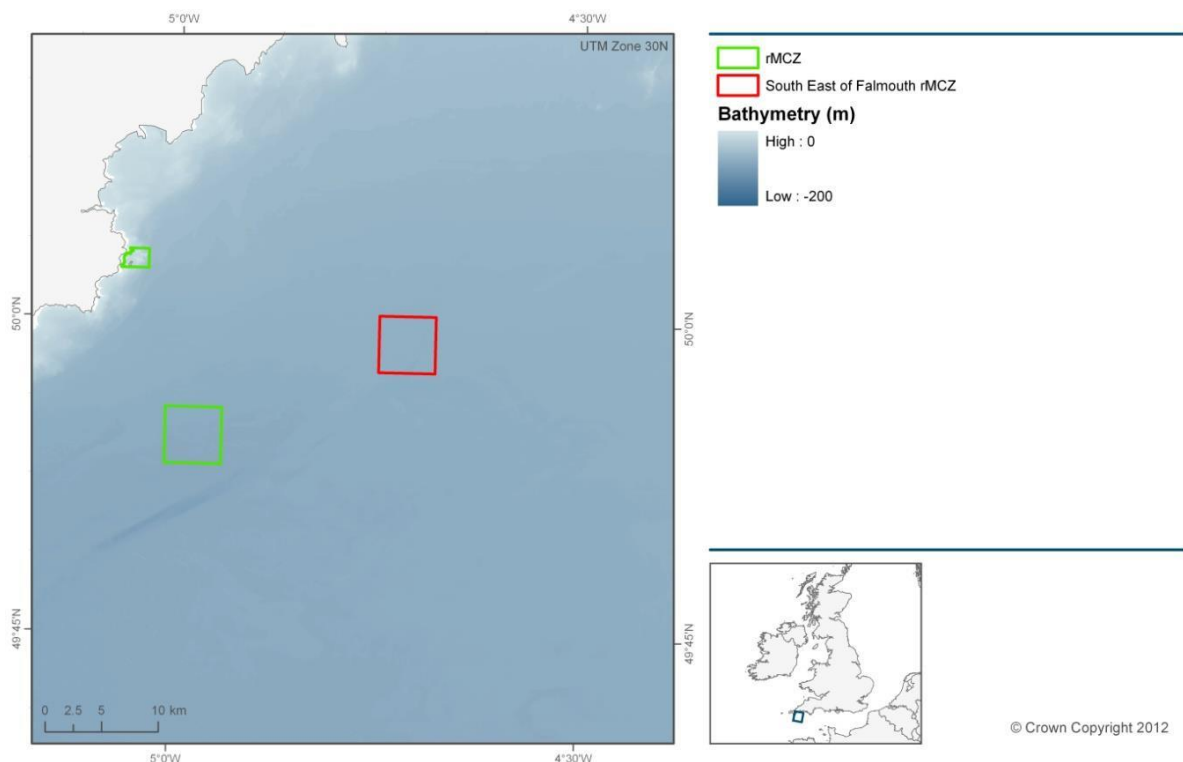


Figure 1. Location of South-East of Falmouth rMCZ [Bathymetry is from the Defra Digital Elevation Model (Astrium 2011)].

1.3 Geological and Biological Context

A number of Broad Scale Habitat (BSH) features have been proposed by the regional project for designation within the South-East of Falmouth rMCZ (Table 1).

Table 1. Features proposed for designation within the South-East of Falmouth rMCZ.

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

One habitat Feature Of Conservation Importance (FOCI), namely ‘Subtidal sands and gravels’ had been identified within this rMCZ. However, no conservations objectives had been set for this FOCI as it was considered that any conservation requirements will be addressed by those listed for the broadscale habitats.

1.4 Existing data and information utilised to inform survey planning

Existing multibeam bathymetry and backscatter data (provided by UKHO) were utilised in the planning of the ground-truthing survey carried out at this site (Figure 2; Figure 3).

2 Survey Design and Methods

2.1 Survey planning and design

Existing multibeam bathymetry and backscatter data (provided by the UKHO) were utilised to inform the survey design at the South-East of Falmouth rMCZ (Figure 2 and Figure 3). Groundtruthing stations were located to adequately characterise the facies identified in the acoustic data.

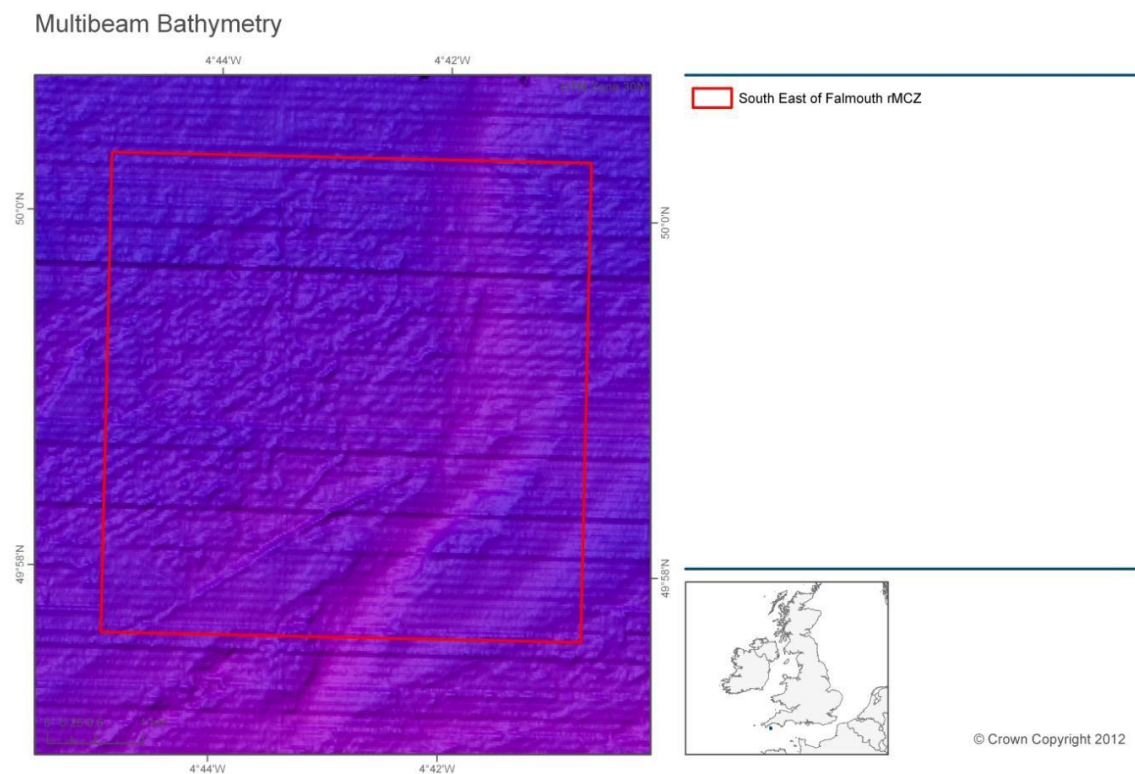


Figure 2. Multibeam bathymetry for the South-East of Falmouth rMCZ.

Multibeam Backscatter



Figure 3. Multibeam backscatter for the South-East of Falmouth rMCZ.

2.2 Sample collection and processing methods

2.2.1 Video and Still Imagery

A video and stills imaging system, mounted on a drop camera frame, was deployed at each of the survey stations prior to commencing with the grab sampling. This allowed the surficial sediments (and their epifaunal communities) to be characterised and also allowed those stations unsuitable for grab sampling (due to the coarse nature of the sediment) to be identified.

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

Drop-camera 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 camera was deployed from the side gantry, amidships, with the height of the camera off the seabed being controlled by a winch operator with sight of the video monitor.



Figure 4. Drop camera frame fitted with video and still imaging system.

2.2.2 Grab sampling

The grab system comprised a 0.1 m² mini Hamon grab fitted with a video camera (Figure 5), 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.

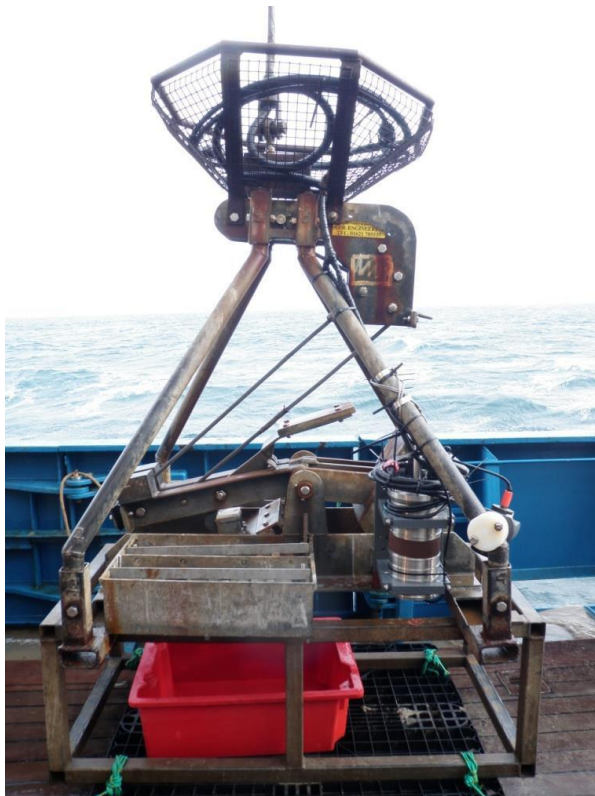


Figure 5. Mini Hamon grab with video camera (HamCam).





3 Survey Narrative






The drop camera survey at the South-East Falmouth rMCZ commenced at 19:00 on 22/02/12 and continued until 11:55 on 23/02/12 during which time 25 stations were completed. Grab sampling then began (12:45, 23/02/12) across the same station array. The survey was fully completed at 21:30 on 23/02/12.

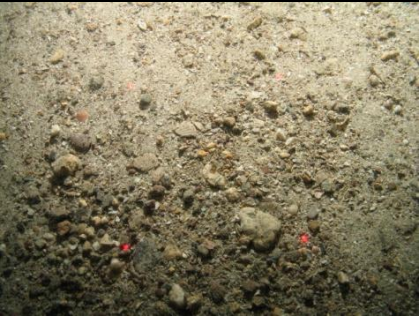

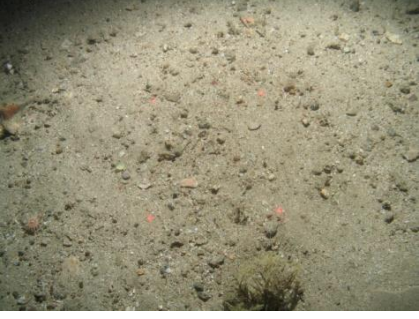


4 Preliminary Results


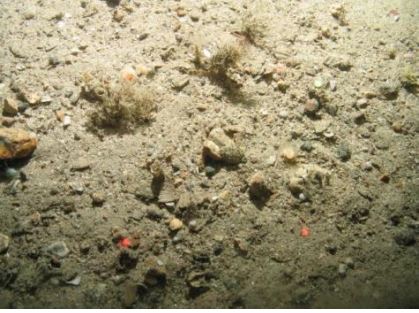
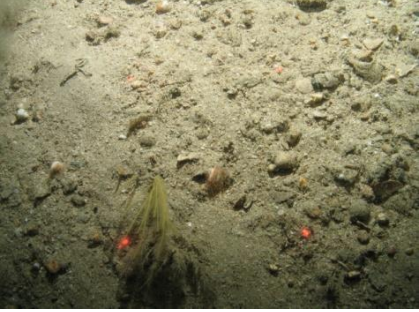

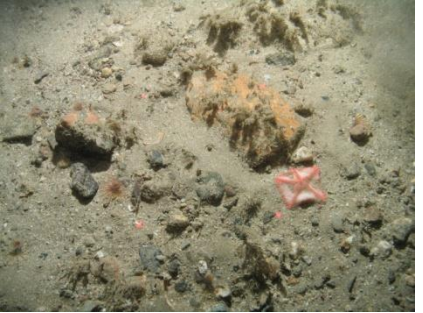
4.1 Seabed Imagery





Table 2. Preliminary summary of surface sediments and epifaunal communities derived from video and stills imagery.

Stn Code	BSH Habitat/Faunal Summary	Still Image
SEF 1	<p>Gravelly sand</p> <p><i>Caryophyllia smithii</i>, <i>Nemertesia antennina</i>, <i>Pagurus prideaux</i>)</p>	
SEF 2	<p>Gravelly shelly sand</p> <p><i>Callionymus lyra</i>, <i>Nemertesia</i> sp., Octopodidae</p>	
SEF 3	<p>Gravelly shelly sand with occasional cobble</p> <p><i>Pecten maximus</i>, <i>Asterias rubens</i>, <i>Echinus esculentus</i>, <i>Inachus</i> sp.</p>	
SEF 4	<p>Gravelly sand</p> <p><i>Caryophyllia smithii</i>, <i>Alcyonium digitatum</i>, <i>Pecten maximus</i>, <i>Callionymus</i> sp.)</p>	

Stn Code	BSH Habitat/Faunal Summary	Still Image
SEF 5	<p>Gravelly, shelly sand with occasional cobbles and boulders</p> <p><i>Caryophyllia smithii</i>, <i>Sabella</i> sp.</p>	
SEF 6	<p>Shelly gravelly sand</p> <p><i>Caryophyllia smithii</i></p>	
SEF 9	<p>Gravelly sand with cobbles and boulders</p> <p><i>Pecten maximus</i>, <i>Scyliorhinus canicula</i>, <i>Lanice conchilega</i>, <i>Ophiura albida</i>, <i>Echinus esculentus</i>, <i>Alcyonium digitatum</i>, <i>Luidia sarsi</i></p>	
SEF 10	<p>Gravelly, shelly sand</p> <p><i>Caryophyllia smithii</i>, <i>Astropecten irregularis</i>, <i>Pecten maximus</i></p>	
SEF 11	<p>Slightly shelly sand with cobbles and occasional boulders</p> <p><i>Abietinaria</i> sp., <i>Echinus esculentus</i>, <i>Trisopterus</i> sp.</p>	

Stn Code	BSH Habitat/Faunal Summary	Still Image
SEF 12	<p>Sandy gravel with cobbles and boulder <i>Alcyonium digitatum</i>, <i>Scyliorhinus canicula</i>, <i>Callionymus lyra</i></p>	
SEF 13	<p>Gravelly sand with occasional cobble <i>Echinus esculentus</i>, <i>Scyliorhinus canicula</i>, <i>Nemertesia ramosa</i></p>	
SEF 14	<p>Gravelly sand <i>Trachurus trachurus</i>, <i>Alcyonium digitatum</i>, <i>Asterias rubens</i>, <i>Cerianthus lloydii</i></p>	
SEF 15	<p>Slightly gravelly sand with occasional cobble <i>Pagurus prideauxi</i>, <i>Nemertesia antennina</i>, <i>Cerianthus lloydii</i>, <i>Alcyonium digitatum</i>, <i>Caryophyllia smithii</i></p>	
SEF 16	<p>Shelly sand <i>Chaetopterus variopedatus</i>, <i>Pecten maximus</i>, <i>Cerianthus lloydii</i>, <i>Scyliorhinus canicula</i>, <i>Pagurus prideauxi</i>, <i>Caryophyllia smithii</i>, <i>Aphrodite aculeate</i>, <i>Ophiura albida</i></p>	

Stn Code	BSH Habitat/Faunal Summary	Still Image
SEF 18	<p>Slightly gravelly sand with patches of cobble and small boulders</p> <p><i>Pagurus prideaxi</i>, <i>Nemertesia ramosa</i>, <i>Trisopterus</i> sp., <i>Alcyonium digitatum</i>, <i>Cerianthus lloydii</i>, <i>Munida rugosa</i>, <i>Caryophyllia smithii</i></p>	
SEF 19	<p>Gravelly sand</p> <p><i>Caryophyllia smithii</i>, <i>Cerianthus lloydii</i>, <i>Chaetopterus variopedatus</i>, <i>Echinus esculentus</i>)</p>	
SEF 20	<p>Shelly sand</p> <p><i>Caryophyllia smithii</i>, <i>Microchirus variegates</i>, <i>Scylliorhinus canicula</i>, <i>Nemertesia ramosa</i>, <i>Chaetopterus variopedatus</i>, <i>Cerianthus lloydii</i></p>	
SEF 21	<p>Gravelly sand with cobbles, pebbles and occasional boulders</p> <p><i>Echinus esculentus</i>, <i>Alcyonium digitatum</i>, <i>Lophius piscatorius</i>, <i>Anseropoda placenta</i>, <i>Trisopterus</i> sp., <i>Cerianthus lloydii</i></p>	
SEF 22	<p>Slightly gravelly sand with patches of cobble</p> <p><i>Lophius piscatorius</i>, <i>Trisopterus</i> sp., <i>Nemertesia ramosa</i>, <i>Anseropoda placenta</i>, <i>Cerianthus lloydii</i>, <i>Pagurus prideaxi</i></p>	

Stn Code	BSH Habitat/Faunal Summary	Still Image
SEF 23	<p>Shelly sand</p> <p><i>Pagurus prideauxi</i>, <i>Asterias rubens</i>, <i>Pagurus bernhardus</i>, <i>Caryophyllia smithii</i>, <i>Cellaria fistulosa</i>, <i>Trisopterus</i> sp., <i>Inachus</i> sp.</p>	
SEF 25	<p>Slightly gravelly sand with occasional boulders <i>Abietinaria</i> sp., <i>Nemertesia antennina</i>, <i>Pagurus prideauxi</i>, <i>Aspitrigla cuculus</i></p>	
SEF 26	<p>Slightly gravelly sand</p> <p><i>Nemertesia antennina</i>, <i>Pecten maximus</i>, <i>Caryophyllia smithii</i>, <i>Cerianthus lloydii</i>, <i>Zeus faber</i>, <i>Alcyonium digitatum</i>, <i>Pagurus prideauxi</i>, <i>Chelidonichthys lucerna</i>, <i>Chaetopterus variopedatus</i></p>	
SEF 28	<p>Shelly sand with occasional cobble</p> <p><i>Cerianthus lloydii</i>, <i>Ophiura albida</i>, <i>Pecten maximus</i>, <i>Scyliorhinus canicula</i>, <i>Pagurus prideauxi</i>, <i>Nemertesia antennina</i>, <i>Asterias rubens</i>, <i>Ebalia</i> sp., <i>Microchirus variegatus</i>, <i>Ophiocomina nigra</i></p>	

4.2 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 6. It should be emphasised that this assignment of EUNIS classification is purely subjective and could change as a result of subsequent laboratory analysis and interpretation.

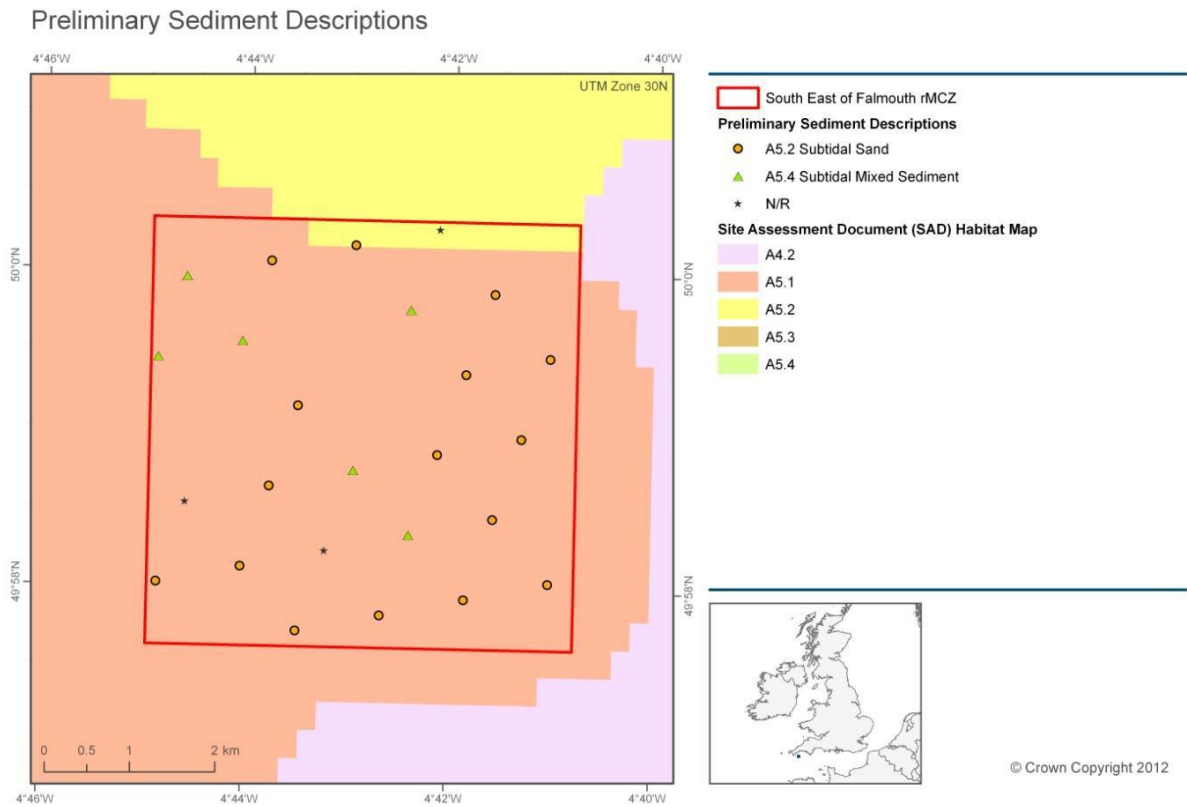


Figure 6. Predicted habitat map overlaid with preliminary observations of sediment type, as determined by visual assessment of grab samples (N/R = not recorded).

4.3 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 during the current survey (CEND 03/12), but they may subsequently be found as a result of sample processing.

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. Cell phone 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 *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.

Model: Simrad EM2040

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

5.5 Metadata

Station metadata for the South East of Falmouth rMCZ survey on CEND 03/12 are provided below (NB. Stn No is a sequential event number for the cruise, so changes each time a new gear is used or a new location sampled. Stn Code is used to identify the sampling location). DC=Drop camera, HC=HamCam.

Cruise	Date	Stn No	Stn Code	Gear name	Latitude	Longitude
CEND 03/12	22/02/2012	736	F28	DC	50.00493	-4.70180
CEND 03/12	22/02/2012	736	F28	DC	50.00415	-4.70406
CEND 03/12	22/02/2012	737	F23	DC	49.99798	-4.69225
CEND 03/12	22/02/2012	737	F23	DC	49.99773	-4.69442
CEND 03/12	22/02/2012	738	F20	DC	49.99124	-4.68330
CEND 03/12	22/02/2012	738	F20	DC	49.99077	-4.68535
CEND 03/12	22/02/2012	739	F16	DC	49.98285	-4.68796
CEND 03/12	22/02/2012	739	F16	DC	49.98241	-4.68989
CEND 03/12	22/02/2012	740	F18	DC	49.98969	-4.69743
CEND 03/12	22/02/2012	740	F18	DC	49.98882	-4.69906
CEND 03/12	22/02/2012	741	F22	DC	49.99636	-4.70680
CEND 03/12	22/02/2012	741	F22	DC	49.99548	-4.70832
CEND 03/12	22/02/2012	742	F26	DC	49.99544	-4.70839
CEND 03/12	22/02/2012	742	F26	DC	50.00251	-4.71812
CEND 03/12	23/02/2012	743	F25	DC	50.00101	-4.72943
CEND 03/12	23/02/2012	743	F25	DC	50.00058	-4.73152
CEND 03/12	23/02/2012	744	F24	DC	49.99886	-4.74348
CEND 03/12	23/02/2012	744	F24	DC	50.00024	-4.74447
CEND 03/12	23/02/2012	745	F19	DC	49.99092	-4.74733
CEND 03/12	23/02/2012	745	F19	DC	49.99078	-4.74961
CEND 03/12	23/02/2012	746	F21	DC	49.99276	-4.73409
CEND 03/12	23/02/2012	746	F21	DC	49.99208	-4.73692
CEND 03/12	23/02/2012	747	F17	DC	49.98610	-4.72469
CEND 03/12	23/02/2012	747	F17	DC	49.98560	-4.72690
CEND 03/12	23/02/2012	748	F14	DC	49.97938	-4.71525
CEND 03/12	23/02/2012	748	F14	DC	49.97887	-4.71743
CEND 03/12	23/02/2012	749	F15	DC	49.98117	-4.70154
CEND 03/12	23/02/2012	749	F15	DC	49.98070	-4.70307
CEND 03/12	23/02/2012	750	F11	DC	49.97431	-4.69239
CEND 03/12	23/02/2012	750	F11	DC	49.97390	-4.69373
CEND 03/12	23/02/2012	751	F01	DC	49.96768	-4.68294
CEND 03/12	23/02/2012	751	F01	DC	49.96729	-4.68416
CEND 03/12	23/02/2012	752	F05	DC	49.96587	-4.69675
CEND 03/12	23/02/2012	752	F05	DC	49.96552	-4.69798
CEND 03/12	23/02/2012	753	F10	DC	49.97256	-4.70606
CEND 03/12	23/02/2012	753	F10	DC	49.97224	-4.70712
CEND 03/12	23/02/2012	754	F4	DC	49.96401	-4.71042
CEND 03/12	23/02/2012	754	F4	DC	49.96379	-4.71169
CEND 03/12	23/02/2012	755	F9	DC	49.97057	-4.71994
CEND 03/12	23/02/2012	755	F9	DC	49.97041	-4.72121
CEND 03/12	23/02/2012	756	F2	DC	49.96207	-4.72439
CEND 03/12	23/02/2012	756	F2	DC	49.96175	-4.72563
CEND 03/12	23/02/2012	757	F03	DC	49.96901	-4.73315
CEND 03/12	23/02/2012	757	F03	DC	49.96883	-4.73437
CEND 03/12	23/02/2012	758	F06	DC	49.96882	-4.73441
CEND 03/12	23/02/2012	758	F06	DC	49.96714	-4.74814
CEND 03/12	23/02/2012	759	F12	DC	49.97543	-4.74327
CEND 03/12	23/02/2012	759	F12	DC	49.97527	-4.74464

Cruise	Date	Stn No	Stn Code	Gear name	Latitude	Longitude
CEND 03/12	23/02/2012	760	F13	DC	49.97757	-4.72906
CEND 03/12	23/02/2012	761	F13	HC	49.97678	-4.73040
CEND 03/12	23/02/2012	762	F6	HC	49.96689	-4.74811
CEND 03/12	23/02/2012	763	F3	HC	49.96875	-4.73398
CEND 03/12	23/02/2012	764	F2	HC	49.96188	-4.72487
CEND 03/12	23/02/2012	765	F4	HC	49.96385	-4.71121
CEND 03/12	23/02/2012	766	F5	HC	49.96560	-4.69754
CEND 03/12	23/02/2012	767	F1	HC	49.96739	-4.68343
CEND 03/12	23/02/2012	768	F11	HC	49.97420	-4.69311
CEND 03/12	23/02/2012	769	F10	HC	49.97242	-4.70646
CEND 03/12	23/02/2012	770	F15	HC	49.98097	-4.70239
CEND 03/12	23/02/2012	771	F14	HC	49.97913	-4.71588
CEND 03/12	23/02/2012	772	F17	HC	49.98596	-4.72522
CEND 03/12	23/02/2012	773	F21	HC	49.99259	-4.73430
CEND 03/12	23/02/2012	774	F19	HC	49.99090	-4.74795
CEND 03/12	23/02/2012	775	F24	HC	49.99934	-4.74352
CEND 03/12	23/02/2012	776	F25	HC	50.00116	-4.72982
CEND 03/12	23/02/2012	777	F26	HC	50.00296	-4.71615
CEND 03/12	23/02/2012	778	F22	HC	49.99620	-4.70682
CEND 03/12	23/02/2012	779	F18	HC	49.98957	-4.69784
CEND 03/12	23/02/2012	780	F16	HC	49.98284	-4.68852
CEND 03/12	23/02/2012	781	F20	HC	49.99115	-4.68389
CEND 03/12	23/02/2012	782	F23	HC	49.99780	-4.69299
CEND 03/12	23/02/2012	783	F28	HC	50.00472	-4.70254

5.6 Daily Progress Reports

**DAILY LOG
STATUS REPORT
Name of Area Survey
Rv Cefas Endeavour – JNCC – DPR No. 21 – Wednesday 22nd 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. 21 Date: 22nd Feb. 2012	Location at 24:00: 50° 00.1' N 004° 43'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	00:10	ToSa	From previous day
00:10	00:52	ToSa	Hamon Grab + camera WC4x (3 attempts, no sample, ground too hard/stony)
00:52	01:24	ToSa	Camera Sledge WC4
01:24	02:04	ToSu	Multibeam WC4-WC35
02:04	02:09	ToSa	Hamon Grab + camera WC35
02:09	02:39	ToSu	Multibeam WC35-WC3
02:39	03:13	ToSa	Hamon Grab + camera WC3
03:13	03:23	ToSa	Camera Sledge WC3
03:23	03:54	ToSu	Multibeam TO WC40
03:54	04:32	ToSa	Hamon Grab + camera WC40 (3 attempts)
04:32	04:58	ToSa	Camera Sledge WC40
04:58	05:30	ToSu	Multibeam TO WC40-WC36
05:30	05:46	ToSu	Multibeam WC36
05:46	06:04	ToSa	Hamon Grab + camera WC36x
06:04	06:10	ToSa	Hamon Grab + camera WC36x
06:10	06:51	ToSu	Multibeam
06:51	07:37	ToSa	Hamon Grab + camera WC30 (3 a goes to get sample)
07:37	08:05	ToSu	Multibeam WC30-WC32
08:05	08:26	ToSa	Hamon Grab + camera WC32
08:26	09:15	ToSu	Multibeam WC32-WC37
09:15	09:26	ToSa	Hamon Grab + camera WC37
09:26	10:04	ToSu	Multibeam WC37-WC5
10:04	10:25	ToSa	Hamon Grab + camera WC5
10:25	10:46	ToSa	Camera Sledge WC5
10:46	11:25	ToSu	Multibeam WC5-WC42
11:25	11:42	ToSa	Hamon Grab + camera WC42

DAILY LOG STATUS REPORT

11:42	12:06	ToSa	Camera Sledge WC42
12:06	12:50	ToSu	Multibeam WC42-WC1
12:50	13:30	ToSa	Hamon Grab + camera WC1
13:30	15:00	Weather	Waiting on weather
15:00	19:01	Transit	Transit to SE Falmouth to avoid weather
19:01	20:50	ToSa	Drop Camera F28
20:50	21:29	ToSa	Drop Camera F23
21:29	22:09	ToSa	Drop Camera F20
22:09	22:43	ToSa	Drop Camera F16
22:43	23:21	ToSa	Drop Camera F18
23:21	23:53	ToSa	Drop Camera F22
23:53	24:00	ToSa	Drop Camera F26

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	SW7	SW7	SW7	W5	
Sea state	Moderate	Rough	Rough	Moderate	
Swell	Moderate	Moderate	Moderate	Moderate	
Vis	Good	Good	Moderate	Moderate Fog	
Baro	1038	1038	1035	1035	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		35:37	
Offshore Calibrations		06:40	
Total Operation Survey (TOSu)	06:28	177:43	
Total Operation Sampling (TOSa)	12:01	187:08	
Equipment/Downtime		09:45	
Ship/Plant Downtime		02:11	
Waiting On Weather	01:30	13:03	
Transit	04:01	70:23	
Standby Port		00:00	
Others		01:30	
Total:	24:00	504:00	

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM3000D / EM2040	46.6	1470.8		

Overall Progress Groundtruthing Samples

Action	Today (Lkm/samples)	Accum. (Lkm/samples)	Remarks
Hamon grab (0.1m ²)	11	317	
Camera sledge	5	73	

**DAILY LOG
STATUS REPORT**

Drop camera	7	60	
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Weather forecast for the next 24 hours

West or southwest 5 or 6. Moderate or Rough. Rain at first, fog patches. Moderate or good, occasionally very poor.

Planned operation for the next 24 hours (00:00 to 24:00 on 23rd February 2012)

Drop camera followed by selected grabs at S E Falmouth rMCZ

Agreed Changes to Scope/Survey operation priorities

Worked stopped at Western Channel at 1330 due to weather. As conditions were not likely to improve quickly decision made 1500 to move north to SE Falmouth in hope of better conditions there. Arrived SE Falmouth 1830 where conditions were suitable for an immediate return to work with drop camera. Will return to Western Channel later in week when conditions are expected to have improved.

CEFAS/JNCC Comments

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

**DAILY LOG
STATUS REPORT**

Name of Area Survey

Rv Cefas Endeavour – JNCC – DPR No. 22 – Thursday 23rd 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. 22 Date: 23 rd Feb. 2012	Location at 24:00: 49° 44.9'N 004° 52.4' 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	00:33	ToSa	Continued from previous day – South East of Falmouth
00:33	01:20	ToSa	DROP CAMERA F25
01:20	01:52	ToSa	DROP CAMERA F24
01:52	02:27	ToSa	DROP CAMERA F19
02:27	03:07	ToSa	DROP CAMERA F21
03:07	03:50	ToSa	DROP CAMERA F17
03:50	04:49	ToSa	DROP CAMERA F14
04:49	05:27	ToSa	DROP CAMERA F15
05:27	06:00	ToSa	DROP CAMERA F11
06:00	06:34	ToSa	DROP CAMERA F1
06:34	07:07	ToSa	DROP CAMERA F5
07:07	08:11	ToSa	DROP CAMERA F10
08:11	08:43	ToSa	DROP CAMERA F4
08:43	09:15	ToSa	DROP CAMERA F9
09:15	09:53	ToSa	DROP CAMERA F2
09:53	10:27	ToSa	DROP CAMERA F3
10:27	11:07	ToSa	DROP CAMERA F6
11:07	11:45	ToSa	DROP CAMERA F12
11:45	12:46	ToSa	DROP CAMERA F13
12:46	13:12	ToSa	Hamon Grab and camera F13
13:12	13:37	ToSa	Hamon Grab and camera F6 (2 attempts)
13:37	13:54	ToSa	Hamon Grab and camera F3
13:54	14:09	ToSa	Hamon Grab and camera F2
14:09	14:25	ToSa	Hamon Grab and camera F4
14:25	14:43	ToSa	Hamon Grab and camera F5
14:43	15:00	ToSa	Hamon Grab and camera F1
15:00	15:25	ToSa	Hamon Grab and camera F11
15:25	15:50	ToSa	Hamon Grab and camera F10 (2 attempts)
15:50	16:15	ToSa	Hamon Grab and camera F15

DAILY LOG STATUS REPORT

16:15	16:45	ToSa	Hamon Grab and camera F14 (3 attempts)
16:45	17:48	ToSa	Hamon Grab and camera F17 (3 attempts)
17:48	18:05	ToSa	Hamon Grab and camera F21 (3 attempts)
18:05	18:32	ToSa	Hamon Grab and camera F19
18:32	18:54	ToSa	<i>Unsuccessful Hamon Grab and camera F24 (3 attempts)</i>
18:54	19:11	ToSa	Hamon Grab and camera F25 N2
19:11	19:31	ToSa	Hamon Grab and camera F26
19:31	20:01	ToSa	<i>Unsuccessful Hamon Grab and camera F22 (2 attempts – very stony on camera)</i>
20:01	20:19	ToSa	<i>Unsuccessful Hamon Grab and camera F18 (3 attempts)</i>
20:19	20:41	ToSa	Hamon Grab and camera F16
20:41	21:00	ToSa	Hamon Grab and camera F20
21:00	21:31	ToSa	Hamon Grab and camera F23
21:31	21:45	ToSa	<i>Unsuccessful Hamon Grab and camera F28 (3 attempts)</i>
21:45	24:00	Transit	South East of Falmouth completed. Transit to Western Channel.

Weather

Weather/sea state conditions	0000-0600	0600-1200	1200-1800	1800-2400	Remarks
Wind	W5	W4	W4	W5	
Sea state	Moderate	Slight	Slight	Slight	
Swell	Moderate	Slight	Slight	Slight	
Vis	Moderate	Moderate Fog	Moderate	Mist	
Baro	1036	1039	1038	1041	

Overall Progress

Type	Today (hh:mm)	Accum (hh:mm)	Remarks
Mob/Demob		35:37	
Offshore Calibrations		06:40	
Total Operation Survey (TOSu)		177:43	
Total Operation Sampling (TOSa)	21:45	208:53	
Equipment/Downtime		09:45	
Ship/Plant Downtime		02:11	
Waiting On Weather		13:03	
Transit	02:15	72:38	
Standby Port		00:00	
Others		01:30	
Total:	24:00	528:00	

DAILY LOG STATUS REPORT

Overall Progress Geophysical Data Acquisition MBES/Sidescan

Segment/Area/Line	Today (Lkm)	Accum. (Lkm)	Current estimated total (Lkm)	Remarks
Acoustic: Multibeam				
Multibeam EM3000D / EM2040	0	1470.8		

Overall Progress Groundtruthing Samples

Action	Today (Lkm/samples)	Accum. (Lkm/samples)	Remarks
Hamon grab (0.1m ²)	19	336	
Camera sledge	0	73	
Drop camera	18	78	

Weather forecast for the next 24 hours

West or southwest 4 or 5 becoming variable 3. Moderate, occasionally very poor.

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

Hamon Grab, camera sledge and multibeam between stations at Western Channel.
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Agreed Changes to Scope/Survey operation priorities

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CEFAS/JNCC Comments

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

5.7 Fisheries Liaison Officer (FLO) Report

No fishing activity was observed within the South East of Falmouth rMCZ during the CEND 03/12 survey.

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

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