

## **CEND3/12 Cruise Report**

### **RV Cefas Endeavour Cruise 3 2012**

#### **Staff**

##### Part A: 3<sup>rd</sup>-16<sup>th</sup> February 2012

Dr. Paul Whomersley (Cefas)	Simon Pearson (Cefas)
Dr. Sue Ware (Cefas)	Julia Rance (Cefas)
Dr. Alex Callaway (Cefas)	Koen Vanstaen (Cefas)
Freya Goodsir (Cefas)	Beth Stoker (JNCC)
Paul Bouch (Cefas)	Anita Carter (JNCC)
Filip Kral (Cefas)	Dr. Jenny Oates (JNCC)
Ken May (Cefas)	Amy Ridgeway (JNCC)
Bill Meadows (Cefas)	Karl Menear (Fisheries Liaison Officer)

##### Part B: 17<sup>th</sup>-29<sup>th</sup> February 2012

Dr. Sue Ware (Cefas)	Nigel Lyman (Cefas)
Claire Mason (Cefas)	Marc Whybrow (Cefas)
Briony Silburn (Cefas)	Simon Pearson (Cefas)
Paul McIlwaine (Cefas)	Hayley Miles (JNCC)
Brian Harley (Cefas)	Ana Jesus (JNCC)
Gary Burt (Cefas)	Dr Ulric Wilson (JNCC)
Linford Mann (Cefas)	Karl Menear (Fisheries Liaison Officer)

#### **Duration**

3<sup>rd</sup> February-29<sup>th</sup> February 2012

#### **Locality**

Irish Sea, Southwest Approaches, Western Channel

#### **Aims**

To collect additional data at a number of recommended Marine Conservation Zones (rMCZ) to increase confidence in the evidence for the presence and extent of the Broadscale Habitats (BSH) and Habitat Features of Conservation Importance (FOCI) included in the proposals for designation.

This will include the acquisition of multibeam bathymetry and backscatter data, grab sampling for sediment Particle Size Analysis (PSA) and infaunal analysis and video and still imagery techniques.

### **Survey Narrative: Part A**

Survey work commenced at the North St George's Channel rMCZ on 03/02/12 at 05:10. A CTD was deployed to obtain the sound velocity profile (SVP) for calibration of the multibeam. Hamon grab sampling then commenced within the predicted subtidal coarse BSH. Multibeam bathymetry and backscatter data were collected during transits between stations. Existing bathymetry data and the multibeam data collected opportunistically during transit across the predicted circalittoral rock were used to position five drop camera stations within this predicted BSH. Following completion of the drop camera stations sampling was resumed in the predicted BSHs using the HamCam. The drop camera was additionally deployed at every third grab station to ensure an adequate density and spatial coverage of video footage (and still images) across the rMCZ.

The HamCam and drop camera survey continued over the following four days with completion of the full sampling grid occurring at 20:38 on 06/02/12. During this time a total of 86 grab samples, across the three BSHs predicted to occur within the rMCZ, were acquired. Additionally, 34 camera stations were completed to assist in the assessment of presence and spatial extent (along with future characterisation) of the BSHs for which the rMCZ is proposed to be designated. Multibeam bathymetry and backscatter data were processed on board. During the course of the survey a total of 358.6 line-kilometres were acquired and processed.

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

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

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

The vessel then transited to the East of Haig Fras rMCZ where survey work commenced on 09/02/12 at 22:30. A CTD was deployed to obtain the sound velocity profile (SVP) for calibration of the multibeam. Multibeam bathymetry and backscatter data were collected during transits between stations. The survey began with collection of video and still images at station R1 within the predicted circalittoral rock habitat in the south-west portion of the rMCZ polygon. The camera sledge was deemed suitable for deployment within this area as the acoustic data collected on transit through the station indicated that any rock habitat consisted of low lying rock exposures with a thin veneer of overlying sediment.

Following completion of the camera work at station R1 sampling continued in the predicted BSHs using the HamCam. The camera sledge was deployed at every third station to ensure an adequate density and spatial coverage of video and still imagery across the rMCZ.

The HamCam and camera survey continued until 16:30 on 10/02/12 when the video camera on the grab stopped working due seawater ingress into the integrated winch cable. The remainder of the grab sampling was conducted without the camera attached. To mitigate the loss of the grab camera, deployments of the camera sledge were increased to one every other station. During the course of the survey at the East of Haig Fras rMCZ a total of 50 grab samples were acquired across the three predicted BSH. Additionally, 20 camera stations were completed to assist in the assessment of presence and spatial extent (along with future characterisation) of the BSHs for which the rMCZ is being proposed. A total of 167.9 line-kilometres of multibeam acoustic data were acquired and processed.

The vessel then transited to the East of Celtic Deep rMCZ where the survey commenced on 14<sup>th</sup> 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 16<sup>th</sup> 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 Narrative: Part B**

Survey at the East of Celtic Deep rMCZ resumed on 17<sup>th</sup> 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.

The vessel then transited to the Western Channel rMCZ where survey commenced at 23:45 on the 20<sup>th</sup> February 2012. Thirty two stations were sampled with the HamCam and 16 with the camera sledge before the increasing sea state caused survey at this site to be halted at 12:50 on 22<sup>nd</sup> February 2012.

The vessel then transited to the more sheltered South-East of Falmouth rMCZ to allow work to continue during the period of poor weather. The drop camera survey at the South-East Falmouth rMCZ began 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.

Survey at the Western Channel rMCZ recommenced on the 24<sup>th</sup> February 2012, when the weather had improved. Survey continued until 03:00 on 27<sup>th</sup> February 2012 during which time a further 35 stations were sampled with the Hamon grab and 24 with the camera. Further multibeam-infill survey was also completed.

The vessel then transited east to the Wight-Barlfeur Extension rMCZ where survey commenced at 13:30 on 27<sup>th</sup> February. Twenty one stations were sampled with the drop camera, initially along the existing multibeam bathymetry data after which an additional line of multibeam data was acquired to the south of the existing lines. A further eight stations were sampled by drop camera along the new acoustic line before the survey ended at 12:00 on 28<sup>th</sup> February 2012.

The vessel then travelled to the Offshore Brighton rMCZ where the remaining survey time was utilised to opportunistically acquire video and still images at three drop camera stations (location informed by existing multibeam bathymetry) after which the vessel transited back to Lowestoft for demobilisation.

The locations of the rMCZs surveyed during CEND 3/12 are shown below in Figure 1.

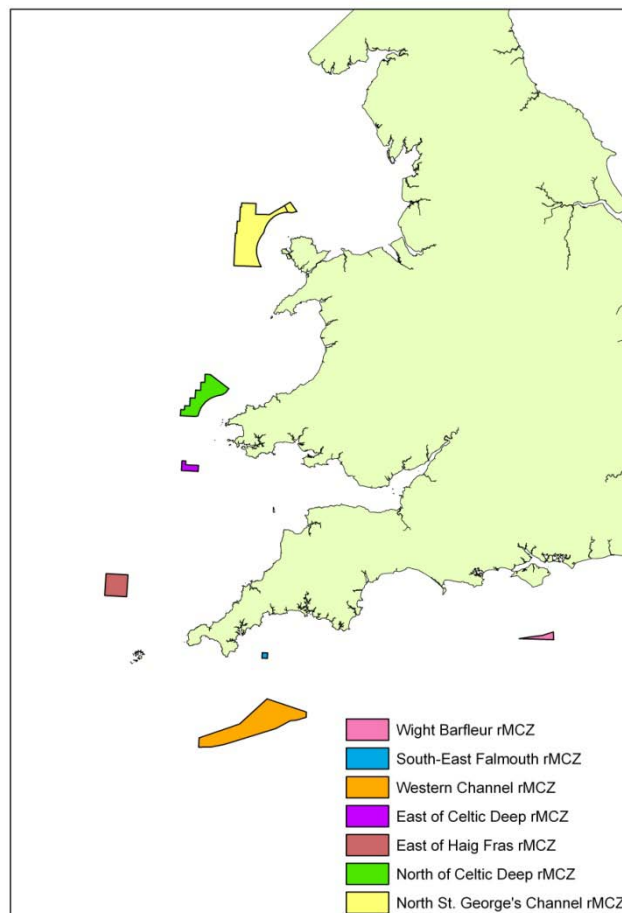


Figure 1. rMCZs surveyed during RV Cefas Endeavour cruise CEND 03/12.