

**CENTRE FOR ENVIRONMENT, FISHERIES AND AQUACULTURE SCIENCE
LOWESTOFT LABORATORY, SUFFOLK, NR33 0HT**

2014 RESEARCH VESSEL PROGRAMME

PROGRAMME: Cefas Endeavour Survey: C End 6-2014

DURATION: 28 Days total

AIMS:

Natural England in partnership with Cefas, wish to undertake ecological survey work during April and May 2014 to contribute to the evidence base in support of Marine Conservation Zone (MCZ) designation.

The work will focus on the Offshore Foreland rMCZ, Goodwin Sands rMCZ and South of Portland rMCZ. Contingency work will be considered for the Kingmere MCZ.

PLAN:

The vessel will sail from Lowestoft on April 11th at 18:30 BST and aim to be on site at Offshore Foreland by 0600 on the 12th.

GEAR: Part1: Gear to be used – primarily EM2040 multibeam echosounder (MBES) with Edgetech 4200 Side Scan Sonar (SSS) for detailed mapping. CTD for SVP dips
Part2: Hamon grab, drop camera, camera sledge.

Priority Site: Offshore Foreland rMCZ

1.1.1 Location

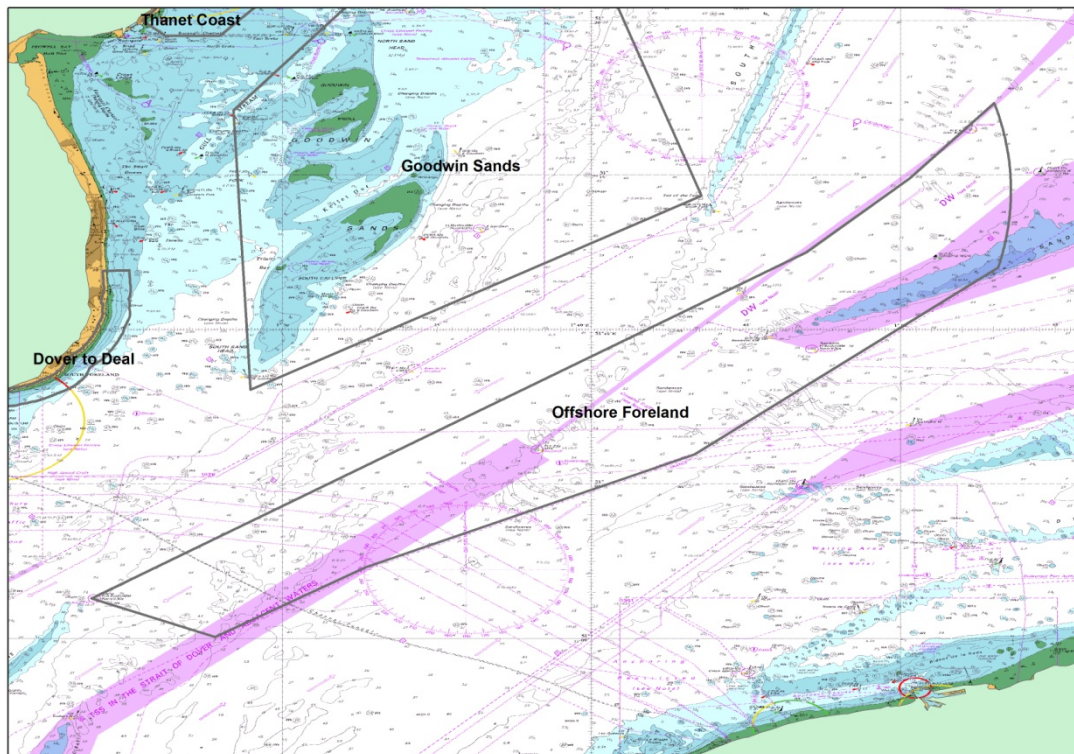


Figure 1. Location of Offshore Foreland rMCZ.

1.1.2 Features proposed for designation as described in the SAD

Subtidal Broadscale Habitats (BSH) proposed for designation

Broadscale Habitat	Spatial Extent According to SAD
A4.1 high energy circalittoral rock	72.86 km ²
A4.2 moderate energy circalittoral rock	12.68 km ²
A5.1 subtidal coarse sediment	93.65 km ²
A5.2 subtidal sand	68.61 km ²

1.1.3 Survey Design

Acoustic

Civil Hydrography Programme (CHP) data exists for most of this site but the quality of the backscatter data is variable with approximately 50% of the site covered with backscatter data that is useable for mapping purposes. These data have been previously worked up and reported in Cefas report C5434 'Processing and interpretation of multibeam backscatter data for Marine Conservation Zones' (Figure 2). Therefore, the intention of this survey is to collect 100% coverage MBES data for the remainder of the site, approximately 128 km². These data will be processed onboard *RV Cefas Endeavour* and, with the existing CHP data, used to plan the ground-truthing survey.

Ground-truthing

Ground-truth sampling stations will be manually placed with their location informed by the underlying acoustic data. Ground-truthing stations will be spatially distributed

across the survey area, using an appropriately spaced triangular lattice grid, to ensure all acoustic facies are adequately sampled and can thus be confidently classified during the subsequent interpretations carried out to produce an updated habitat map for the site.

Ground-truth sampling will comprise acquisition of video footage using the HamCam (approx. 2 minutes) at all stations ahead of grab sampling, with extended video transects (and still acquisition) using a camera sledge/drop system at every third station and over areas where particular features of interest are present or grab sampling is not successful.

Hamon Grab samples of seabed sediments (for PSA and Infaunal analyses) will be acquired at all stations (Cefas SOP 1380 'Collection of Macrofaunal samples using a Hamon grab') where the seabed substrata are suitable (as informed by the video data acquired prior to deploying the Hamon grab).

This survey design will be also implemented at Goodwin Sands rMCZ. However, less of the area is covered by CHP data and therefore a greater percentage of the site will be surveyed by *RV Cefas Endeavour* compared to Offshore Foreland rMCZ.

South of Portland rMCZ has almost complete coverage of CHP data. This component of the survey will be ground-truthing only carried out as detailed by the methods above.

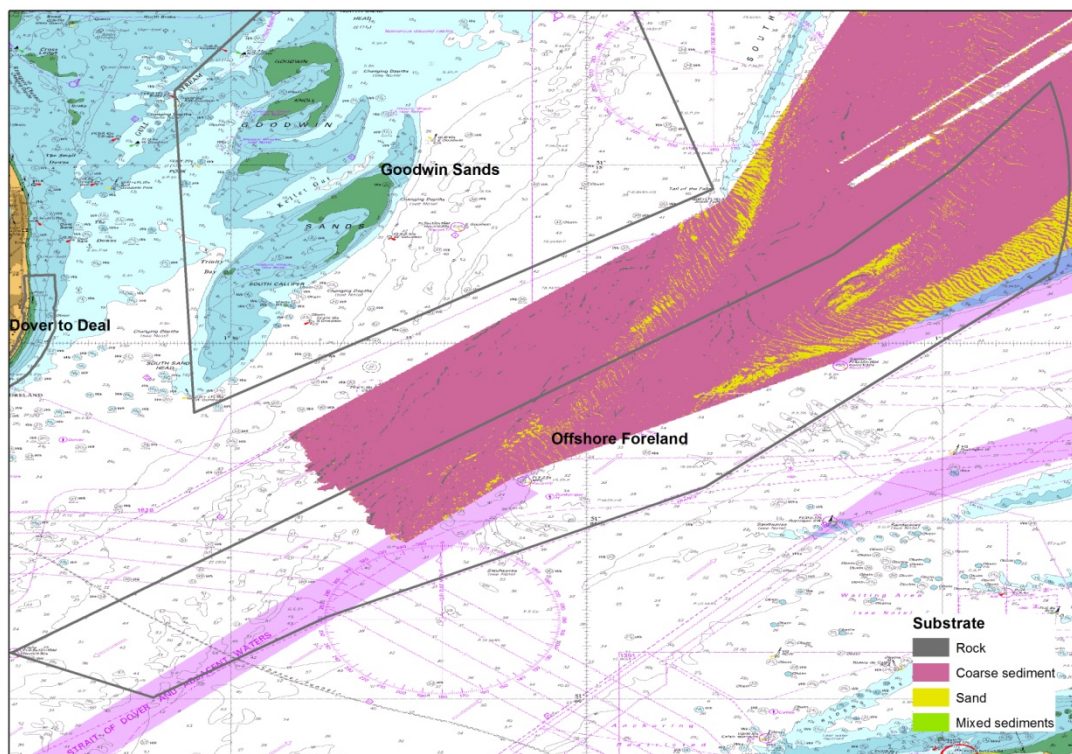


Figure 2. Interpreted CHP data at Offshore Foreland rMCZ

1.2 Priority Site: Goodwin Sands rMCZ

1.2.1 Location

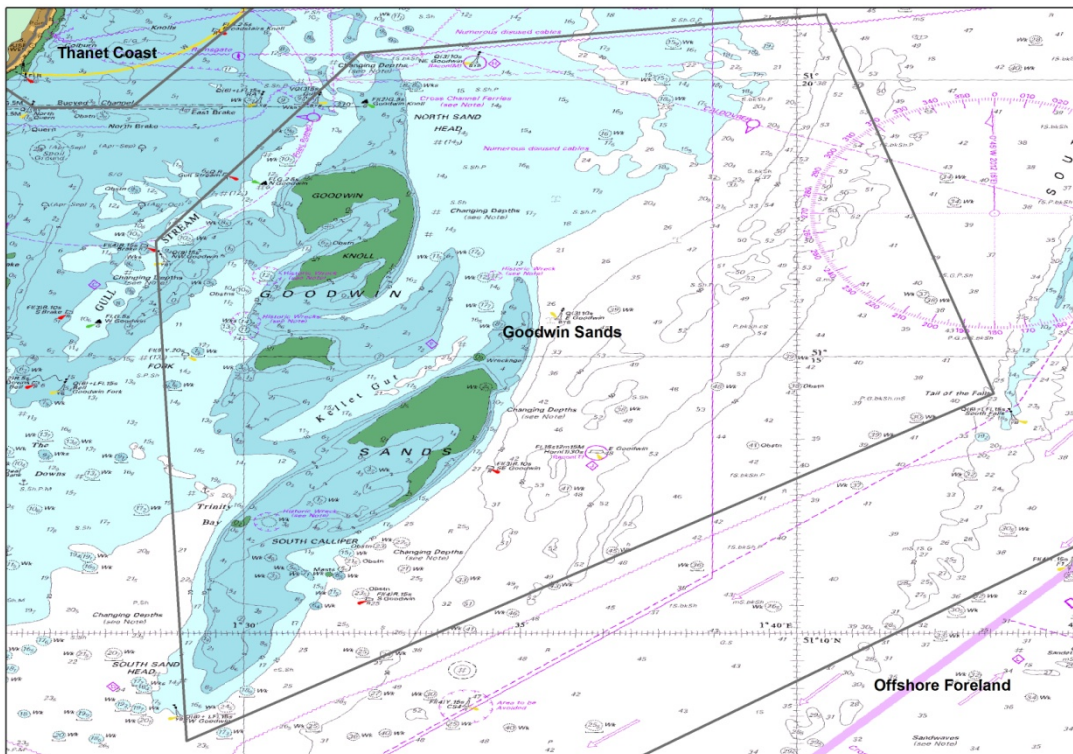


Figure 3. Location of Goodwin Sands rMCZ.

1.2.2 Features proposed for designation as described in the SAD

Subtidal Broadscale Habitats (BSH) proposed for designation

Broadscale Habitat	Spatial Extent According to SAD
A5.1 Subtidal Coarse Sediment	116km ²
A5.2 Subtidal Sand	160km ²
A4.2 Moderate energy circalittoral rock	1km ²
A3.2 Moderate energy infralittoral rock	1km ²

Subtidal Habitat FOCI proposed for designation

Habitat FOCI	Spatial Extent/Records According to SAD
Blue Mussel Beds	0.0003km ²
Ross Worm Reefs (<i>Sabellaria spinulosa</i>)	0.0006km ²

1.3 Priority Site: South of Portland rMCZ

1.3.1 Location

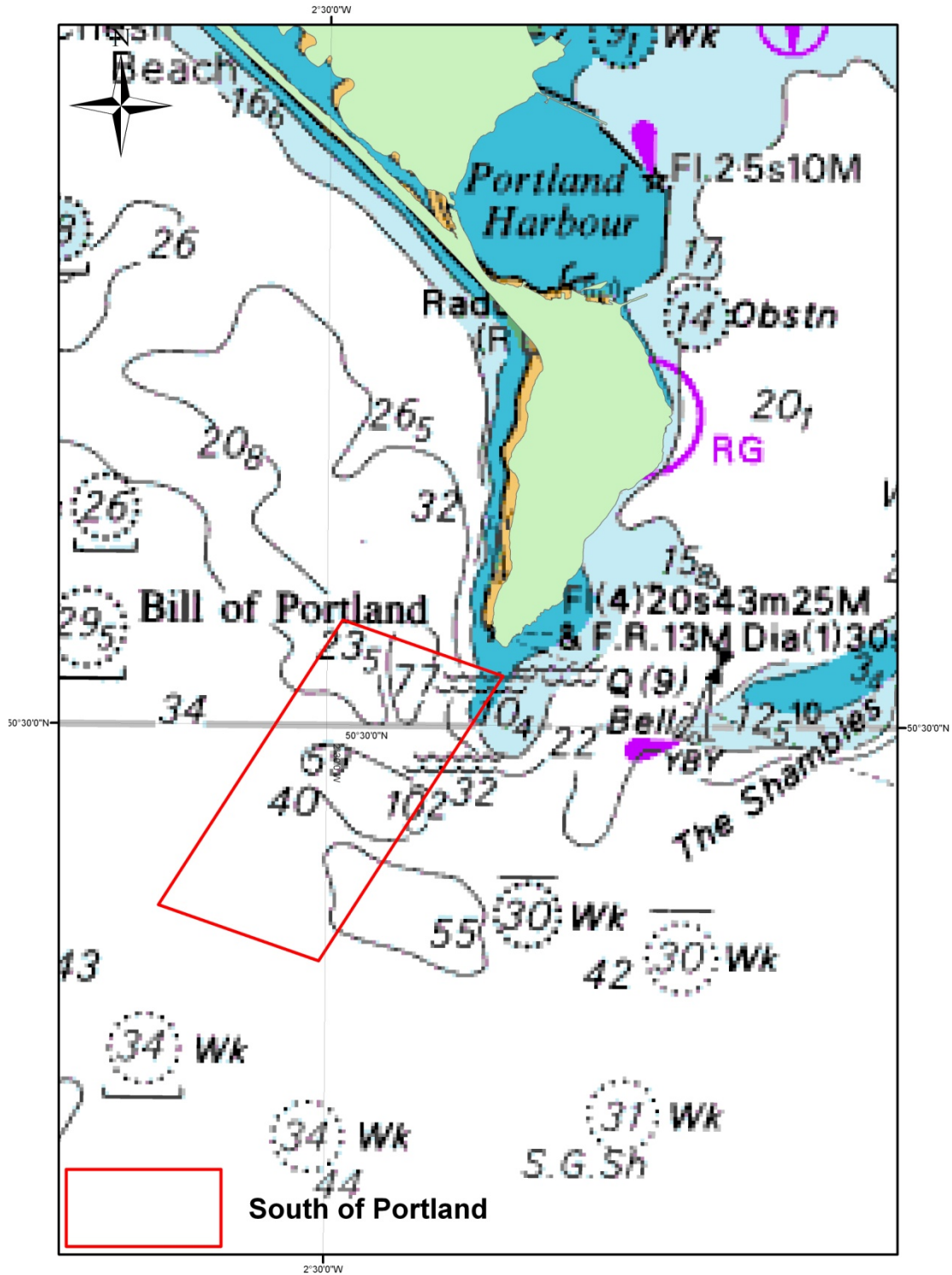


Figure 10. Location of South of Portland rMCZ.

1.3.2 Features proposed for designation as described in the SAD

Subtidal Broadscale Habitats (BSH) proposed for designation

Broadscale Habitat	Spatial Extent According to SAD
A5.1 Subtidal Coarse Sediment	2.5km ²
A5.2 Subtidal Sand	0.85km ²
A5.4 Subtidal Mixed Sediments	3.0km ²
A4.2 Moderate energy circalittoral rock	7.63km ²
A4.1 High energy circalittoral rock	1.54km ²

1.4 Contingency Site: Kingmere MCZ

1.4.1 Location

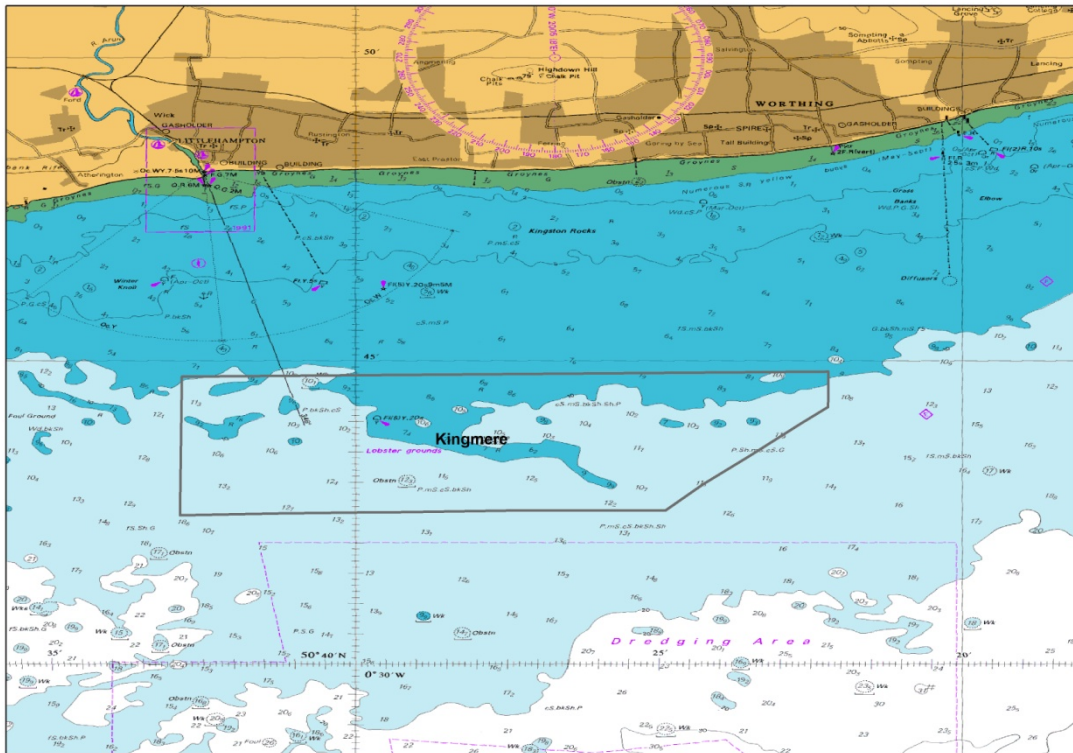


Figure 4. Location of Kingmere MCZ.

1.4.2 Features proposed for designation as described in the SAD

Subtidal Broadscale Habitats (BSH) proposed for designation

Broadscale Habitat	Spatial Extent According to SAD
A5.4 Subtidal Mixed Sediments	26.44 km ²

Subtidal Habitat FOCI proposed for designation

Habitat FOCI	Spatial Extent/Records According to SAD
Subtidal chalk	0.02 km ²

Species FOCI proposed for designation

Species FOCI	Spatial Extent/Records According to SAD
Native Oyster (<i>Ostrea edulis</i>)	2 records
Black Bream (<i>Spondyliosoma cantharus</i>)	4 records

Nigel Lyman / Alex Callaway

Scientist In Charge

8th April 2014

INITIALLED: NSL

DISTRIBUTION:

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P&O