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

2016 RESEARCH VESSEL PROGRAMME

REPORT: RV Cefas Endeavour Survey: CEND0716

STAFF:

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DURATION: Seven days between the 22nd April and the 29th April 2016

LOCATION: Coquet to St Mary's MCZ, located in the northern North Sea on the Northumberland coast (Figure 1).

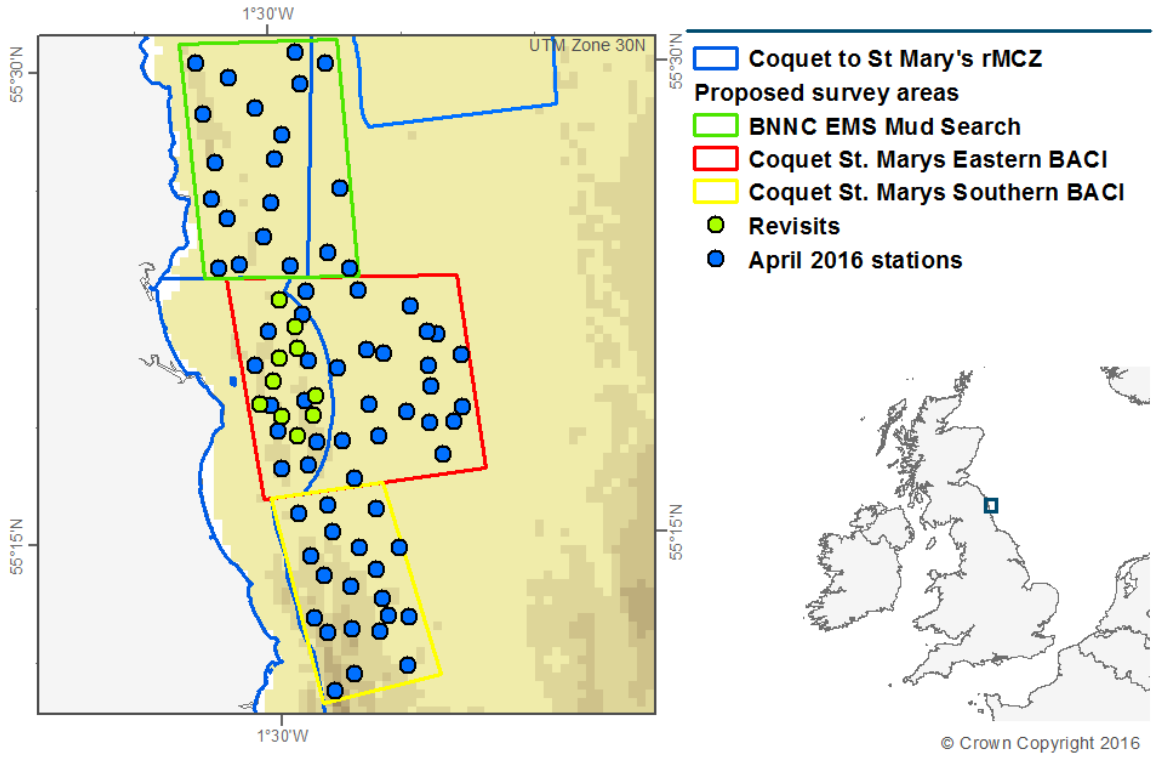

Figure 1. Location of all sampling stations (revisits (green dots) and new stations (blue dots) in Coquet to St Marys MCZ (blue), mud area (within the site) and Eastern BACI proposed area (red), Coquet to St Marys MCZ Southern BACI proposed area (yellow) and Berwickshire and North Northumberland mud search area (green).

AIMS:

Primary aims

- To gather additional biological data using methods appropriate to confirm (or otherwise) the presence of sea pens and burrowing megafauna in the core survey area of Coquet to St Mary's MCZ. This will use a combination of the Drop camera, the NIOZ box corer, Hamon grab and SPI camera.
- To map the extent of the mud habitat, running out towards Farnes East, to provide evidence for offsite feature that could for part of a potential future BACI study.

Secondary aims

- To collect a water sample at Dowsing Smart buoy (on the outbound and return transit) and daily between 12:00 and 13:00 to determine the concentrations of chlorophyll and phytoplankton pigment concentrations
- To conduct a multibeam calibration survey ahead of the May and June MPA surveys.
- To collect sidescan sonar data at the North Norfolk sandbanks ahead of the June sandbank survey.

NARRATIVE:

RV Cefas Endeavour departed Lowestoft at 22:00 on the 22nd April 2016 and transited north to the Dowsing Smart Buoy location where a water sample was collected under the EU FP7 project HIGHROC at 05:00 on the 23rd April 2016. RV Cefas Endeavour continued to transit north arriving at the Coquet to St Mary's MCZ core sampling location at 13:00 on the 23rd April. By midnight on the 23rd, we had visited 8 re-visit stations from the previous 2014 survey (which were classified as mud), collected 9 video samples (using the drop camera) and collected 9 Day grab samples. The area was scattered with fishing pots and Endeavour was contacted by two fishermen to alert us of the location of their gear. We assured the fishermen that we are not towing any gear along the seabed and were sampling while stationary or at very low speeds (0.3knots). During night hours we also took extra care when arriving at a station to search the proximity for any pots before beginning operations.

On the 24th April 2016 we completed Nioz core sampling within the core survey area (priority 1), and began Drop camera and Day grab deployments to the East of the site to assess how the mud feature extends out of the site boundary. The Eastern survey area was third priority, however due to presence of pots in the Southern survey areas (priority 2), the decision was made with the bridge crew to work south through Eastern stations in order to arrive in daylight at the Southern survey area. Operating in daylight allowed us to more easily spot any pots in the area, especially with the forecasted increasing winds and swell. On the 25th April 2016 we completed the collection of Day grab samples from all stations within the Eastern and Southern survey areas although poor weather conditions meant we have been unable to operate the Drop camera for 18 hours. We therefore began collecting two addition Day grab samples at the 10 revisit stations to add power to the gear comparison with NIOZ cores while we are restricted to using the Day grab.

On the 26th April 2016 we completed the collection of Day grab samples at four mud stations located within the Berwickshire MPA (positions provided by the EA) before heading south of the Coquet to St Marys MCZ to a Drop camera station. We had to cease Drop camera deployments during the night

due to poor visibility and the heave of the ship in swells which have built following the persistence of northerly winds. We were able to collect 4 contaminant samples within Coquet to St Marys before heading north to Berwickshire. During the evening of the 26th we spent 6 hours conducting a multibeam calibration survey at a wreck site located to the north of the Coquet to St Mary MCZ boundary, ahead of the upcoming May and June surveys which require acoustic data acquisition.

On the 27th April 2016 we conducted SPI transects at the re-visit stations within the Coquet to St Mary site boundary before trialling the new camera. We left site at 4pm and began our transit south to Haisborough, Hammon and Winterton cSAC/SCI. We collected a repeat water sample at the Dowsing Smart Buoy. We had a planned arrival at the SCI for 6am when we spent the remaining survey time running sidescan ahead of the June survey to trial the system. The weather conditions meant that data acquired was not of a high enough quality for analysis. RV Cefas Endeavour docked into Lowestoft at 14:00 on the29th April 2016.

RESULTS:

All planned survey objectives were achieved with the total number of successful samples obtained shown in Table 1.

Table 1. Total number of each type (grab, Nioz, video, Nioz, SPI, multibeam) of samples collected during CEND0716.

Sample type	*Total number (Lkm/samples)*
Day grab	105
Drop camera	54
Nioz Corer	48
SPI camera	10
Multibeam calibration	1.2 km

Joanna Murray
Scientist In Charge
18/05/2016

SEEN IN DRAFT

Master:
Senior Fishing Mate:

INITIALLED:

DISTRIBUTION: