

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

**2016 RESEARCH – SURVEY REPORT**

**RV Cefas Endeavour: Survey C END 10 - 2016**

**STAFF:**

SIC	Paul Whomersley
DM	Briony Silburn
DM trainee	Gemma Kiff
Shift lead	Rebecca Faulkner
Shift lead	Dan Wood
MIST	Bill Meadows
MIST	Ken May
JNCC	Ana Jesus
Cefas	James Pettigrew
Cefas	Clement Garcia
Cefas	Chris Martin
Cefas	Matt Loar
Cefas	Anna Huk
Cefas	Pete Mitchell

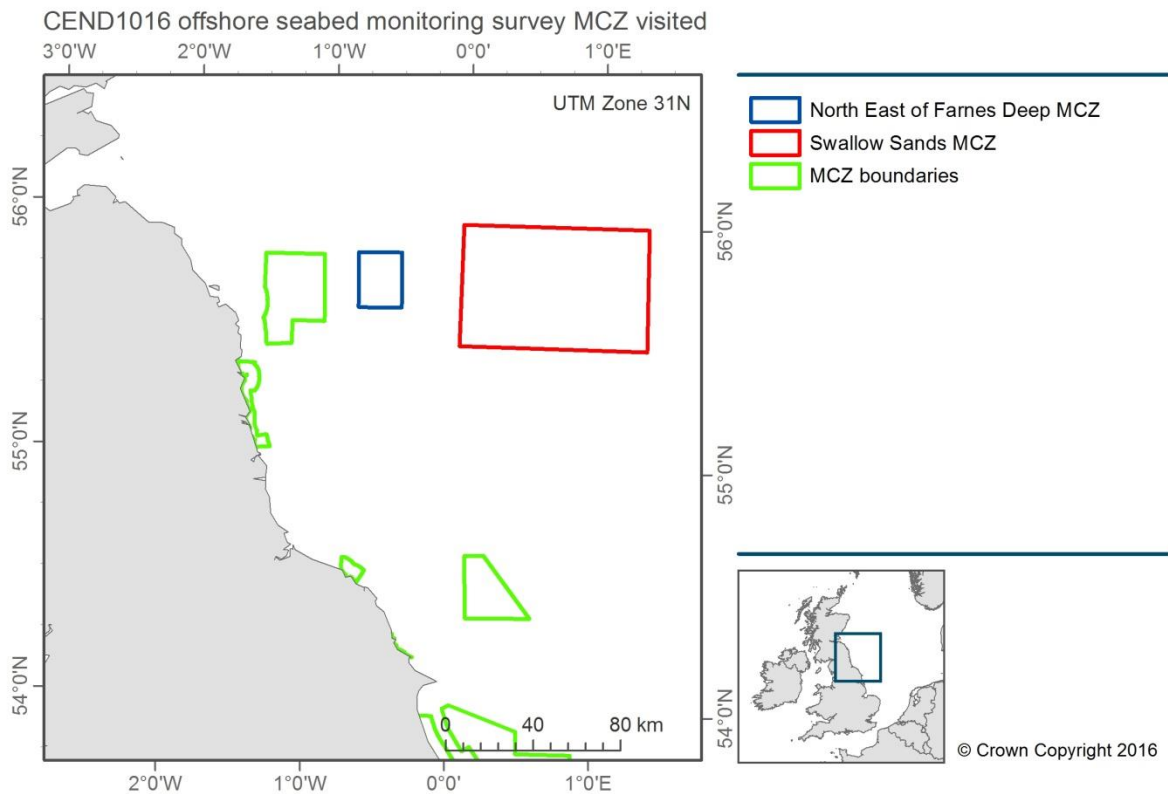
**DURATION:** 13 days (17<sup>th</sup> - 29<sup>th</sup> May 2016).

**Area**

The surveys at Swallow Sand and North East Farnes Deep Marine Conservation Zones (MCZ) were carried out between 17<sup>th</sup> – 29<sup>th</sup> May 2016 on the RV Cefas Endeavour cruise CEND1016. The survey team for the duration of the fieldwork included Cefas marine ecologists, marine surveyors, habitat mappers and marine chemists along with a marine monitoring specialist from the Joint Nature Conservation Committee (JNCC).

Swallow Sand MCZ is located approximately 100km offshore from the Northumberland coast, in the Mid North Sea (Figure 1). The site comprises a sandy plane ranging in depth below chart datum from 50m at its shallowest, down to 150m in the north-west corner of the site, marking the glacial tunnel valley geological feature. The site covers 4,746 km<sup>2</sup>.

North East of Farnes Deep MCZ protects 492km<sup>2</sup> of seabed and is located approximately 55km offshore from the north Northumberland coast, in the northern North Sea (Figure 1).



**Figure 1 Site locations, Swallow Sand and North East Farnes Deep MCZ**

## Method

The objectives of the monitoring survey were as follows (listed in order of priority):

1. Collect data (Infauna, Particle size and underwater video and still images) to form the first dataset of a time-series against which to monitor change in condition of the designated broadscale habitat features of Swallow Sands for Subtidal sand and Subtidal coarse sediment. While doing so incorporate revisits to previously sampled stations to allow an assessment of temporal variability to be carried out.
2. Collect data (Infauna, Particle size and underwater video and still images) to form the first dataset of a time-series against which to monitor change in condition of the designated broadscale habitat features of North East Farnes Deep. While doing so incorporate revisits to previously sampled stations to allow an assessment of temporal variability to be carried out.
3. Collect water samples for determination of chlorophyll and suspended particulate materials that will be used for calibrating SmartBuoy, Ferrybox and ocean colour space-borne data (for the EU FP7 project HIGHROC, C5878).
4. Process invalid grabs for future genetic analysis of infaunal species

## Contingency

1. MBES bathymetry and backscatter data collection will be carried out as a contingency at Swallow Sands MCZ (Priority boxes) to begin delineating the extent of the broadscale habitats present.

## Results

The acoustic data and benthic samples collected fully met the requirement of the programme of work planned for Cend1016. All objectives and aims were met.

## Issues/Other

Unable to use the preferred piece of equipment (camera sledge) due to the failure of the bow thruster. The drop camera was used instead and has provided us with the data we required.

## KPI Comments

Staff skills fully met the requirement of the trip both on the bridge and on the deck. Bridge staff demonstrated excellent seamanship and adaptability when the bow thruster became un-operational resulting in no aims or objectives of the cruise being dropped

An excellent approach to safety was observed throughout the cruise. Staff were encouraged to fill in observation cards (good and bad). The safety drills were informative as was the ships induction at the start of the trip. Tool box talks were performed by the crew and scientists before the use of equipment for the first time.

Paul Whomersley  
Scientist In Charge  
Date

INITIALLED:

DISTRIBUTION: