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

2009 RESEARCH VESSEL PROGRAMME

REPORT: RV CEFAS ENDEAVOUR: SURVEY 8/09

STAFF:

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DURATION: 6 May 2009 - 15 May 2009

LOCATION: Western English Channel and Celtic Sea

AIMS:

The objectives of the cruise are (1) to describe the size and species structure of epifaunal communities in the Celtic Sea to provide production and diversity estimates and (2) to sample chlorophyll in the sediments and water column to assess the relationship between surface and sediment chlorophyll concentrations. Both activities will support the validation of models of benthic production and diversity in the Celtic Sea (Defra MF1001).

NARRATIVE:

The scientific staff joined CEFAS ENDEAVOUR at Lowestoft, early morning (approx. 06:00 BST) on Wednesday 6 May. Once all staff was on board, CEFAS ENDEAVOUR steamed south westwards throughout that day and overnight to reach the first grid station. Sampling started at 05:30 on Thursday 7 May at station C1 and continued throughout day light hours. Five stations were successfully achieved (C1, C3, C7, C8, E3) on the first day. At each station, the Nioz corer was deployed and sub samples of the sediment were collected for chlorophyll ‘a’, porosity, sediment granulometry and meiofauna. Two 2m beam trawls were also deployed, working within a 100m bullring which was drawn up around each Nioz station point. The 2 beam trawl catches were sorted into broad species groups and after weighing individual animals, aggregated weights and

numbers by species were recorded. At the last station of the day (E3) the water profiler was deployed to collect data on a range of environmental parameters throughout the water column, including temperature, salinity and oxygen content. CEFAS ENDEAVOUR then steamed west overnight to station C28. Weather deteriorated over night and remained poor for the remainder of the day. Four stations were successfully completed (C28, C11, C12, C14), along with the additional profiler deployment (at station C14). Due to the difficult weather conditions the fifth station (C22) was omitted earlier in the day. On arrival at station C14, the power to the winches failed, which stalled operations temporarily, however, this was fixed within hour and a half and the last station of the day was completed successfully. CEFAS ENDEAVOUR then steamed west overnight to station C47 beginning work at 06.00hrs on 9 May. Over the next four days (Sunday 9 to Wednesday 13 May), a further 22 stations were completed – see fig 1 - with successful deployments of the Nioz corer and the 2m-beam trawl at each station and the water profiler at the last station of each day (C42, C82, C69 and C45)

With the majority of the primary aims of the cruise achieved, CEFAS ENDEAVOUR set sail for Lowestoft at 19:15 on Wednesday 13 May. During the journey back to Lowestoft water samples were collected for later phytoplankton analysis (via the ferry box outflow pipe) at 2 hourly intervals from 00:00 until 22:00 on 14 May (though the English Channel and southern North Sea). CEFAS ENDEAVOUR docked at Lowestoft at approximately 13:30 on Friday 15 May.

RESULTS:

PRIMARY AIM 1: Description of the size and species structure of epifaunal communities in the Celtic Sea

72 successful 2m-beam trawl deployments were completed during the 10 day survey. All fauna from the cruise was sampled (epifauna and fish), and body size and species data was recorded. The information will be used to provide production and diversity estimates for Celtic Sea fauna.

PRIMARY AIM 2: Assessment of sediment chlorophyll ‘a’ and sediment-biota coupling

36 Nioz core samples were collected for analyses of meiofauna, sediment particle size and chlorophyll a / porosity.

ADDITIONAL AIMS:

- The water profiler was deployed at 7 stations throughout the survey, collecting information on a range of environmental variables.

- Water samples were collected at 2 hourly intervals during the journey back to Lowestoft (starting at 49°58'88 05°17'05). These water samples will be analysed by flow cytometry at the Lowestoft laboratory and the different functional groups (picoplankton, nanoplankton, phytoplankton) will be determined after size fractionation. Additionally, new strains will be isolated to implement the culture collection at Lowestoft and to increase the library of fingerprinting by flow cytometry.

I would like to thank the officers, scientists and crew for their hard work during the course of the survey.

T Maxwell
15 May 2009

SEEN IN DRAFT:

R McCurry (Master)
A Simpson (Senior Fishing Mate)
S Jennings (contract leader)

DISTRIBUTION:

Basic list:
Staff on Cruise
Fishing Skipper: Endeavour
Newlyn, SH H (MFA)
Plymouth, SH H (MFA)
MilfordHaven, SH (MFA)
Devon SFC
Cornwall SFC
Isles of Scilly SFC
Republic of Ireland

Figure 1: Figure 1: Survey area indicating study sites successfully sampled with the Nioz corer, 2m beam trawl.