CENTRE FOR ENVIRONMENT, FISHERIES AND AQUACULTURE SCIENCE, LOWESTOFT, SUFFOLK, ENGLAND

DRAFT 2004 RESEARCH VESSEL PROGRAMME

PROGRAMME: RV CEFAS Endeavour: CRUISE 14

STAFF:

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DURATION: Friday 22nd October – Monday 1st Nov
Approx Sailing Time 0300 BST (HW 0311 GMT)
Approx Docking Time 1130 GMT on 1st (HW 1139 GMT)
LOCALITY: Central North Sea, Dogger Bank region and Oyster Grounds

AIMS:

The project is generally aimed at achieving a better understanding of the dynamics of the circulation processes of the seas around the UK. In order to characterise the extent and nature of density driven and seasonal jet-like circulation which acts as a direct and rapid pathway for transport of material.

This cruise and the previous cruises Corystes 13/04 and C. Endeavour 12/04 are targeted to describe the gradual (September – November) alteration of pathways as frontal regions move and revert to the fully mixed and largely wind driven winter regime. The chosen area of interest is the northern flank of the Dogger Bank along a line that was previously visited in June and August 1999, 2000 and 2001.
Thermistor chain and ADCP moorings will be deployed for the period of the 3 cruises enabling the exact timing and nature of breakdown to be identified. These measurements will allow us to I) investigate the structure of the mixing throughout the water column, II) make comparisons with high-resolution hydrodynamic models and III) observe the changing current profile simultaneously with the density field.

As well as the thermohaline structure the phytoplankton structure and nutrient uptake will be investigated with regular samples taken for isotope analysis.
Oxygen measurements will also be undertaken in the Oyster Grounds region where a cruise in September 2003 showed historically low oxygen levels in the bottom water.
The main sampling aims of the cruise are:

1. To characterise the hydrographic structure associated with the frontal regions by use of towed undulating CTDs.
2. Recover ARGOS drifting buoys used to quantify Lagrangian circulation.
3. Recover moorings (ADCP and thermistor chain) used to study the mixing processes in the transitional region.

4. Conduct experiments for phytoplankton production both by Nitrogen uptake method and by Carbon14 labelling.
5. Take samples for Isotope analysis.

PLAN (all times GMT):

RV CORYSTES will sail at approximately 0200 GMT 22nd August and proceed to work in the Oyster ground region, commencing a scanfish section to the south west of the region from 53° 20.0′ N 3° 55.0 W to 54° 14.21′ N 3° 22.0 W, thence sampling for phytoplankton, and oxygen measurements before further scanfish lines to the north of the Dogger Bank. Recovery of moorings and drifting buoys and further sampling in the region will be undertaken as appropriate.
Corystes will return to Lowestoft for the morning tide on Monday 1st November.

NB: British Summer Time ends during this cruise on the morning of Sunday 31st October.

Stephen Dye
(Scientist-in-Charge)
3rd August 2004

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