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MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1988 RESEARCH VESSEL PROGRAMME

REPORT RV CORYSTES.4

STAFF S M Rowlatt (SIC)
N D Pearson
J M Rees
R J Chapman
A Young
I N McCave (U. Cambridge)
J Atherton (U. Cambridge)

DURATION Left Lowestoft 1430h 7 July
Arrived Lowestoft 0130h 20 July
All times are Greenwich Mean Time

LOCALITY N E Coast

AIMS

1. To collect water and sediment samples for a study of scavenging using U/Th disequilibrium data.
2. To work a series of 25 h anchor stations (CTD and DRCM) at four locations along the coast, with the NBVR deployed. Suspended load and particle size measurements will be made over the tidal cycle at 10m intervals above the bed.
3. To investigate settling velocity near the seabed using QUISSET (U. Cambridge).
4. To use the diving team at the final anchor station to measure bed roughness using an acoustic backscatter probe.
5. To deploy the NBVR for recovery in September.
6. To work a grid of CTD stations around the moorings E-M launched by RV Cirolana as part of the Flamborough Front Experiment.
7. To collect samples of plankton for a study of Nephrops larvae (for J Nichols).

NARRATIVE

Corystes sailed at 1430h on 7 July and proceeded to the Tyne area. On inspection of the first proposed anchor station site it was clear that the substrate (sand) was unsuitable for the purposes of the Cambridge/SEA/MAFF cohesive sediment dynamics study. A reconnaissance survey was undertaken and a suitable muddy sand patch located (in relatively shallow water). The NBVR tetropod was deployed and a 25h anchor station started at 1330h.

On completion of this station an investigation was carried out to locate a drifting or misplaced MAFF current meter mooring. Corystes' navigator identified the problem: the reporting ship had a DECCA error. The reporting ship was advised of their error.

In the evening of 9 July a reconnaissance survey was undertaken of bed sediments in the Wearmouth area.

On 10 July samples of sediment were collected from the Nephrops ground for J Wickens (Conwy) and a transect of five stations worked for U/Th scavenging studies.

On 11 July a reconnaissance survey off Whitburn Bay revealed a muddy sand patch where the NBVR was deployed and an anchor station worked. This was completed during the evening of 12 July.

On 13 July a muddy sand patch was located in Druridge Bay. The NBVR was deployed and an anchor station worked. This was completed on 14 July.

A further U/Th transect was worked on 15 July in poor weather conditions.

On 16 and 17 July the NBVR was deployed in Marsden Bay. Despite poor visibility the MAFF diving team measured the bed roughness at the site using an acoustic backscatter probe.

A series of 12 plankton tows were made on 18 July as part of a study of Nephrops larvae (for J Nichols).

On 19 July a transect of 10 CTD stations were worked offshore from N Yorkshire as part of the Flamborough Front Experiment.

During 18 and 19 July sea surface drifters were released at 9 stations between Coquet Island and Whitby (for J Riley).

Corystes docked in Lowestoft at 0130h on 20 July.

RESULTS

1. Two transects of five stations each were sampled for water, suspended sediment and where possible bed sediment. These form part of a study of U/Th scavenging.
2. Four CTD anchor stations were worked with the NBVR deployed on muddy sand.
3. Eleven trials were made of a new Quasi-in situ Settling Tube (QUISSET) designed to determine the settling velocity of suspended particles. Several conditions were sampled including fair weather tidal flow (nos. 1-5), wave (swell)-dominated flows (6-8) and the decreasing suspension under residual swell (9), the Tyne plume (10) and a final fair weather tidal flow off the Yorkshire Coast (11). The operation of the tube was satisfactory both when hand-fired and when fired by messenger. In future a bottom-contact trigger will be employed to ensure consistent height of sampling. Most runs were processed using millipore filters but the low-concentration tidal conditions would probably be better done with Nucleopore filters and they were tried on runs 10 and 11. We suspect some flushing problems with the bottle and will have to await detailed examination of the filters and weighing before final judgement can be passed. However as a set of trials and reconnaissance of near-bed conditions the deployments of QUISSET, when integrated with results from the near bed instrumented tetrapod, CTD hydrocasts, and bottom sediment grab samples, will prove invaluable for the next stages of the project.

4. The MAFV diving team succeeded in measuring two profiles of bed roughness using an acoustic backscatter probe. This exercise was performed successfully under bad diving conditions. It will form an important component of future studies of cohesive sediment dynamics in the area.

5. The NBVR was not deployed for a long period due to difficulties in locating a suitable substrate.

6. A series of 10 CTD stations were worked off N Yorkshire as part of the Flamborough Front Experiment.

7. 12 samples of plankton were collected for a study of Nephrops larvae.

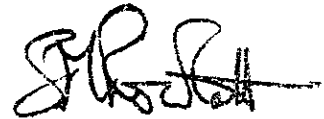
Additional aims

8. Sea surface drifters were released at nine stations between Coquet Island and Whitby (for J Riley).

9. Samples of sediment were collected from the Nephrops ground (for J Wickens).

NOTE

Corystes performed well in all the tasks on this cruise.



S M ROWLATT
22 July 1988

SEEN IN DRAFT JRF (master)

PM (senior fishing mate)

INITIALLED

DISTRIBUTION

Basic List+

N D Pearson

J M Rees

R J Chapman

A Young

I N McCave

J Atherton

