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CRUISE REPORT

FRV "CLUPEA"

16 - 27 MAY 1977

Objectives

- Part I
- (1) Measurement of currents in Firth of Forth area using moored recording current meters.
 - (2) Environmental station work in Firth of Forth.
 - (3) Sampling of water, particulate and plankton in inner and outer Forth estuary for trace metal and pesticide analysis.
- Part II
- (1) Benthic surveys of the St Abbs Head and Bell Rock sewage sludge dumping grounds using underwater television with additional grab, core and Agassiz trawl sampling.
 - (2) Benthic survey offshore of the Edinburgh sewage effluent pipe position $55^{\circ}59.8' N$ $03^{\circ}07.3' W$.

Narrative

"Clupea" left Aberdeen at 12.30 hours on the 16 May and proceeded to the Firth of Forth area. The current meter programme was commenced on arrival that evening and completed by mid-day of the 17 May. The environmental survey was then started and completed by mid-day on the 19 May. On the afternoon of the 19 May samples of plankton and water were collected for pesticide analysis. The ship docked in Leith at 2030 hrs on the evening of the 19 May. The hydrographic and current meter mooring gear was unloaded at Leith on the 20 May. Scientific staff changes and installation of TV equipment were carried out over the weekend. Clupea left Leith at 0700 hrs on 23 May and proceeded to the St Abbs Head area to commence the underwater TV and benthos survey. This survey was completed on 24 May. A similar survey of the Bell Rock area was commenced on 25 May but due to rough weather conditions this was abandoned. Deteriorating weather conditions precluded further survey work and the ship proceeded to Buckie, docking at 0500 hours on 26 May.

ResultsCurrent meter moorings

The mooring deployed west of the Isle of May in February had been towed almost one mile off position. As a result the mooring, including the current meters, had been badly damaged and proved difficult to recover. In view of the damage sustained to this mooring, it was not replaced. The mooring west of Fidra had also suffered some damage, presumably caused by a ship's propellor striking the subsurface float. This mooring was replaced with the subsurface float being deployed at greater depth.

Preliminary analysis of data demonstrates that the Isle of May mooring was partially disabled 100 hours after deployment and totally disabled 1500 hours of data, indicating that it had been interfered with on at least two occasions. The Fidra mooring was totally disabled 36 hours after deployment.

Environmental Station Work

All but two stations on the survey were worked. The samples collected during this period are currently being analysed.

Pesticide Sampling

Several cores, particulate, and water samples were obtained at St Abbs Head, Bell Rock and in the inner estuary for pesticide analysis. Results are not yet available.

TV Survey

The visibility near bottom at the St Abbs Head ground varied considerably due to high turbidity. It was thought that commercial fishing activity in the area had caused this turbid layer. When conditions were suitable recordings of 5-15 minutes duration were made.

The bottom was flat and the sediment appeared to consist of homogeneous silty sand with a few muddier patches. The dominant benthic epifauna consisted of Pennatulids and Anemones with Asterias sp appearing at several stations. On the south end of the grounds a mixed bottom of rocks and stones in a soft sediment was inhabited with Alcionium sp and Asterias sp. Some small nephrops were also observed in muddy parts of the area.

Benthos Sampling

Thirteen stations were sampled with a Craib corer. Samples await analysis.

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D Basford
13 June 1977

Seen in draft G Geddes