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Not to be cited without prior reference to the Marine Laboratory, Aberdeen

FRV *Clupea*

Cruise 0395C

REPORT

20-27 February 1995

Ports

Loading: Fraserburgh
Unloading: Tarbert, Loch Fyne

Personnel

P A Gillibrand HSO (in charge)
R D Adams SO
A Fry (Miss) Clyde River Purification Board (CRPB), 22-24 February
K Marshall (Miss) Clyde River Purification Board (CRPB), 22-24 February

Objectives

1. To recover three instrumental buoy moorings, supporting current meters, ADCP, meteorological sensors and SEACAT dissolved oxygen sensor from Loch Fyne.
2. To conduct a hydrographic and chemical survey of the loch.

Out-turn days per project

Eight days BGC1

Narrative

The Marine Laboratory and CRPB staff travelled to Tarbert to join *Clupea* on 22 February 1995. The hydrographic and chemical survey of the loch commenced the following morning using a CTD and rosette sampler and was completed on 24 February. *Clupea* returned to Tarbert and the two CRPB staff left the vessel. On 25-26 February the three instrumented moorings were recovered with the heavy gear being deposited on the pier at Tarbert each evening. The *Clupea* unloaded at Tarbert on 27 February and remained in Tarbert from where the following cruise would commence. Scientific staff left the vessel on the afternoon of 27 February.

Objectives

1. The three buoy moorings were successfully recovered. The southern mooring at the mouth of the loch was recovered three miles from the position where it had been laid.

A fishing vessel is assumed to have hit the mooring and dragged it. However, the surface buoy remained attached and recovery was therefore possible.

2. A total of 22 temperature and salinity profiles were obtained with the CTD. Nine ROSIE stations were worked with samples being obtained for oxygen, phosphate, ammonia, nitrate and nitrite. Oxygen samples were analysed on board, the remaining samples being filtered and frozen for analysis by CRPB. Salinity samples were taken regularly to allow calibration of the CTD.

Results

The current meter, water level recorder and ADCP data will be processed in the Laboratory at a later date. However, during the cruise the CTD data have been processed and the SEACAT data have also undergone preliminary analysis.

Conditions in the upper basin of the loch show relatively little change from those observed during the previous cruise in November 1994. Surface temperatures in the upper basin are colder than in November whereas bottom temperatures are warmer. This could be the result of either vertical mixing or inflow over the sill. However, bottom water salinity has decreased by only about 0.15 psu, indicating that the bottom water has remained isolated since November.

This is also suggested by the SEACAT data which shows a very gradual decrease in bottom water salinity over the three months. Despite this isolation, oxygen levels in the bottom water have remained very steady over the period at about 4.0 ml/l (60% saturation).

P A Gillibrand
28 March 1995

See in draft: A Simpson, OIC, FRV *Clupea*