

5748
BIOLOGICAL OCEANOGRAPHY CRUISE REPORT

LF 18 2000

03 April - 2 May 2000

- 1. Prof Pearce
- 2. CSO

*All mooring components
to service equipment
9 repair done... All
in new working well
Hedley*

PERSONNEL

- B Stewart (SIC), SSO, DARDNI.
- R Gowen SSO, DARDNI.
- P Elliott SO, DARDNI
- J McNally SO, DARDNI
- C Cochran Temp. ASO, DARDNI

OBJECTIVES

- i. To maintain a nutrient monitoring programme at station 38A.
- ii. To assess the basic nutritional quality of phytoplankton during the period of the Spring bloom.
- iii. To assess temperature, salinity and nutrient distributions over depth at stations 38A and 47.

CRUISE NARRATIVE

Sunday 30 April 2000

In preparation for the cruise, all DANI scientific crew were onboard by 2000 hrs when mooring components and the automated sampler were prepared for deployment. Following a talk on ship's safety and a demonstration of personal life saving equipment, the RV Lough Foyle departed Belfast at 2100 hrs and sailed overnight in a light easterly wind to the mooring site.

Monday 1 May 2000

The vessel arrived on the mooring site at 0600 hrs. The weather was dry and bright with a light easterly breeze. Work for the day commenced at 0700 hrs with the deployment of the rosette water sampler and 3 zooplankton net hauls. After breakfast, the instrument mooring was successfully recovered to ship deck at 0900 hrs. The mooring components were inspected for corrosion and replaced where

necessary. Both the nutrient water sampler and biological water sampler were removed to the ship's laboratory and samples were removed. The thermistor chain was removed from the mooring wire and temperature data downloaded. Both samplers were then programmed and attached to the mooring configuration. The thermistors were reattached at regular intervals on the instrument wire of the mooring. The mooring was then successfully redeployed at 1520 hrs on position $53^{\circ} 46' .82N$ $5^{\circ} 38' .07W$.

The ship then sailed to coastal station 47 in Dundalk Bay where water samples and zooplankton net hauls were taken. Work on the station was completed at 1130 hrs and the vessel sailed to dock in Belfast at 2200 hrs.

Tuesday 2 May 2000

Work commenced at 0800 hrs with scientific crew removing samples, scientific instruments and mooring equipment from the vessel to AESD.

McLane moored water sampler

Both McLane water samplers recovered from the Irish Sea had operated as programmed.

The nutrient sampler was removed and replaced by another that had been previously programmed to sample every third day during the next period of deployment. Samples from the biological sampler were removed and stored for an assessment of the phytoplankton's nutritional quality. The sampler was then reprogrammed and prepared for deployment.

PARAMETERS MONITORED

The CTD/rosette water sampler was deployed at stations 38A and 47 to acquire nutrient, chlorophyll *a*, temperature and salinity data from the depth profile. The Bowers & Connelly mini-corer was deployed at station 38A, where sediment was subsampled for chlorophyll, total carbon and total nitrogen analysis. Three zooplankton net hauls were taken at both stations 38A & 47.

SUMMARY OF RESULTS

CTD data from station 38A displays early signs of thermal stratification with a temperature difference of about 1 °C between surface water and depth 30m (Fig.1). Although nutrient data is not yet available, it is evident from both the low fluorescence signal and the low chlorophyll values throughout the profile (typically 0.17 - 0.50 µg chlorophyll l⁻¹) that the spring bloom in the open sea has not yet commenced. However at station 47 in Dundalk Bay, the spring bloom is well under way. This is demonstrated by a high fluorescence signal below depth 7m, coupled with increased

chlorophyll levels ranging 3 - 7 μg chlorophyll l^{-1} . Salinity values are reasonably constant from depth 3m to the seabed and typically 33.80 psu. Surface waters are approximately 1 psu below this value, highlighting the freshwater influence of the river Boyne in this area (Fig. 2).

HOTEL REPORT & OPERATIONAL ASPECTS OF THE SHIP

During the cruise the A-frame, main trawl winches, both hydrographic winches and the ship's clean seawater supply were used. No problems were encountered with any of the ship's equipment nor indeed with any of the scientific equipment. The hotel and catering service was of the usual high standard and there was a good working relationship between the scientists and the ship's crew. Prior to the ship departing Belfast a comprehensive and detailed safety briefing was delivered to the scientific crew.

ACKNOWLEDGEMENTS

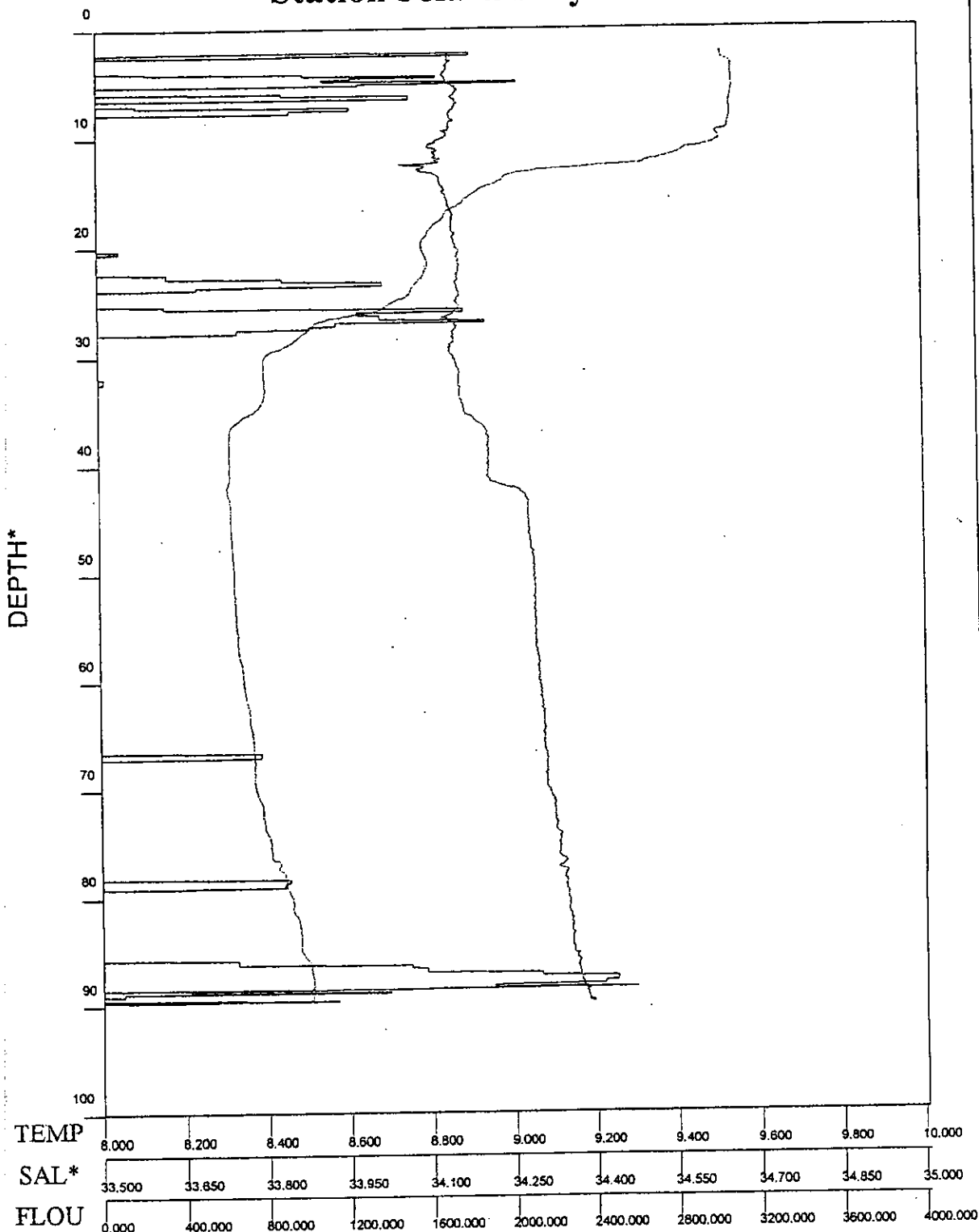
I am indebted the deck crew of the RV Lough Foyle for their co-operation and assistance during the mooring recovery and deployment operation. The ship's master, officers, engineers and catering staff are also thanked for their co-operation during this cruise.



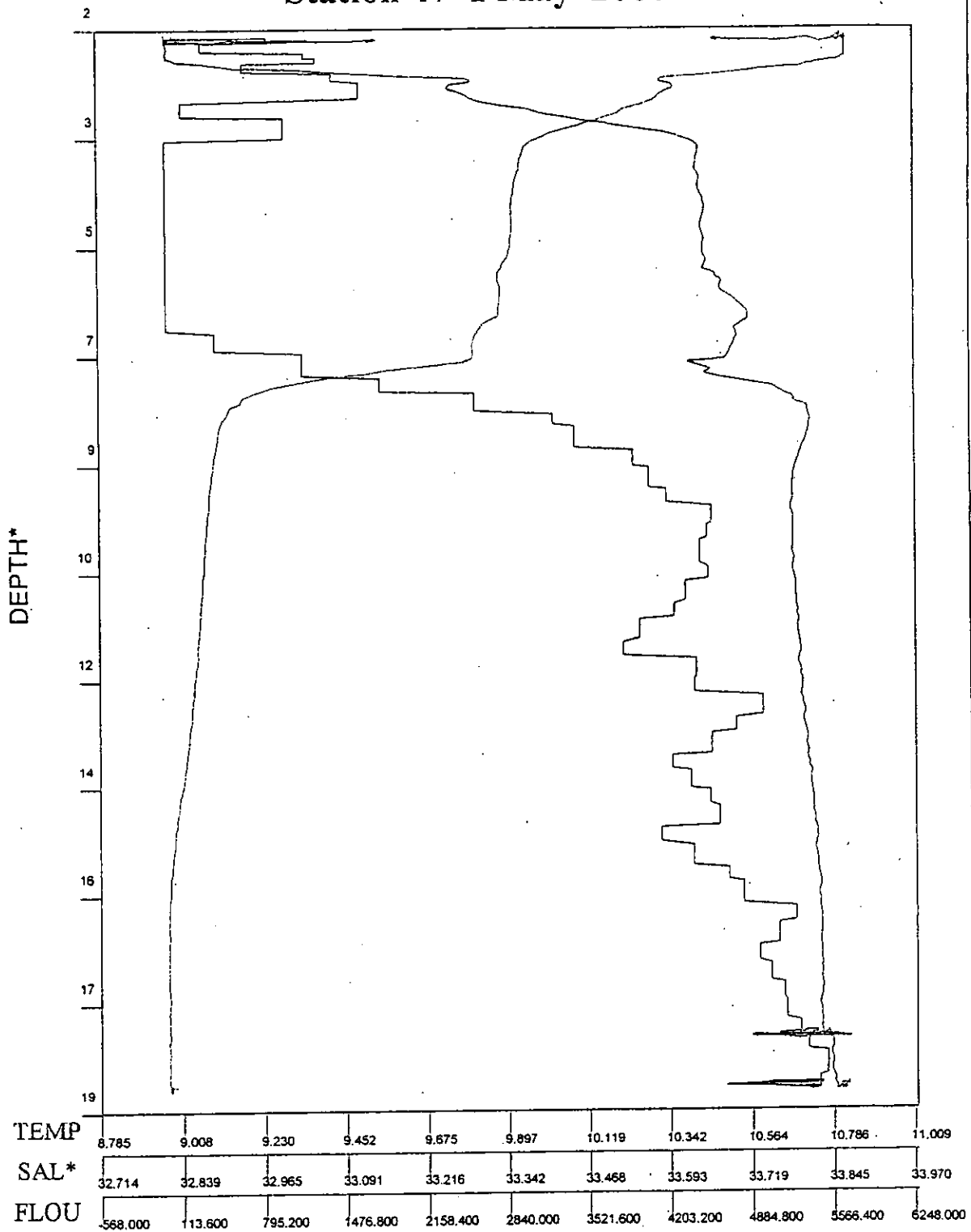
B M STEWART

17 May 2000

Station 38A 1 May 2000



Station 47 1 May 2000



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Fig. 2.