

BIOLOGICAL OCEANOGRAPHY CRUISE REPORT**LF 49 2001****5 - 6 December 2001****PERSONNEL**

| | |
|-----------|--------------------|
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| C Smyth | TSO, DARDNI |
| J O'Meara | TASO, DARDNI |

OBJECTIVES

- i. To maintain a nutrient and remote monitoring programme at station 38A.
- ii. To assess temperature, salinity and nutrient distributions over depth at stations 38A and 47.

CRUISE NARRATIVEWednesday 5 December 2001

Gale force winds in the early part of the week prevented the vessel from sailing, however a short respite from the strong winds was forecast for early Thursday. In preparation for the cruise, all DANI scientific crew were onboard by 1930 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 2000 hrs and sailed overnight in a light southerly breeze towards the mooring site at station 38A.

Thursday 6 December 2001

The vessel arrived at the mooring site at 0400 hrs. The weather was dry with a light southeasterly breeze when work for the day started at 0545 hrs. The instrument mooring was recovered to ship deck at 0600 hrs. The mooring components were inspected for corrosion and replaced where necessary. The thermistor chain was removed from the mooring wire and temperature data downloaded. The CTD and fluorometer were also removed, data downloaded and reprogrammed. The automated water sampler was removed and replaced with a similar pre programmed unit. The mooring components, thermistors, CTD and fluorometer were then reassembled, the satellite tracking system was confirmed working and the mooring was successfully redeployed at 0800 hrs on position $53^{\circ} 46'.93N$ $5^{\circ} 38'.06W$. The rosette water

sampler and zooplankton net were deployed and the survey continued to station 47 off the Drogheda fore shore, where the sampling operations were repeated.

With increasing winds, work on the station was completed at 1100 hrs and the vessel sailed to dock in Belfast at 2100 hrs. The scientific crew disembarked at 2130 hrs

Friday 7 December 2001

The scientific crew returned to the vessel at 0900 hrs when equipment was removed from the vessel for return transportation to Newforge Lane.

PARAMETERS MONITORED

The CTD/rosette water sampler was deployed at stations 38A and 47 to acquire nutrient, chlorophyll *a*, temperature, light and salinity data from the depth profile. Three zooplankton net hauls were taken at both stations 38A & 47.

McLane moored water sampler

The McLane water sampler functioned as programmed. Duplicate samples were taken every second day during the period 2 November to 4 December 2001.

SUMMARY OF RESULTS

Both stations surveyed were thermally mixed with CTD data showing a constant salinity pattern across the entire profile. (Figs.1&2). In general nutrient concentrations were fairly constant throughout the profile at both stations, although values at coastal station 47 were enriched through the influence of the River Boyne (Table 1). Figure 3 shows data from the *insitu* sampler for this year for the major nutrients inorganic nitrogen, phosphate and silicate. Currently, values are similar to those from other years as they slowly progress towards the "winter max" which normally occurs in March/April. Examples of the classic annual nutrient cycle are demonstrated with regard to previous year's data from the *insitu* sampler (Fig. 4).

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.

A handwritten signature in black ink, appearing to read 'B M Stewart', written in a cursive style.

B M STEWART

13 December 2001

Station 38A

6/12/01

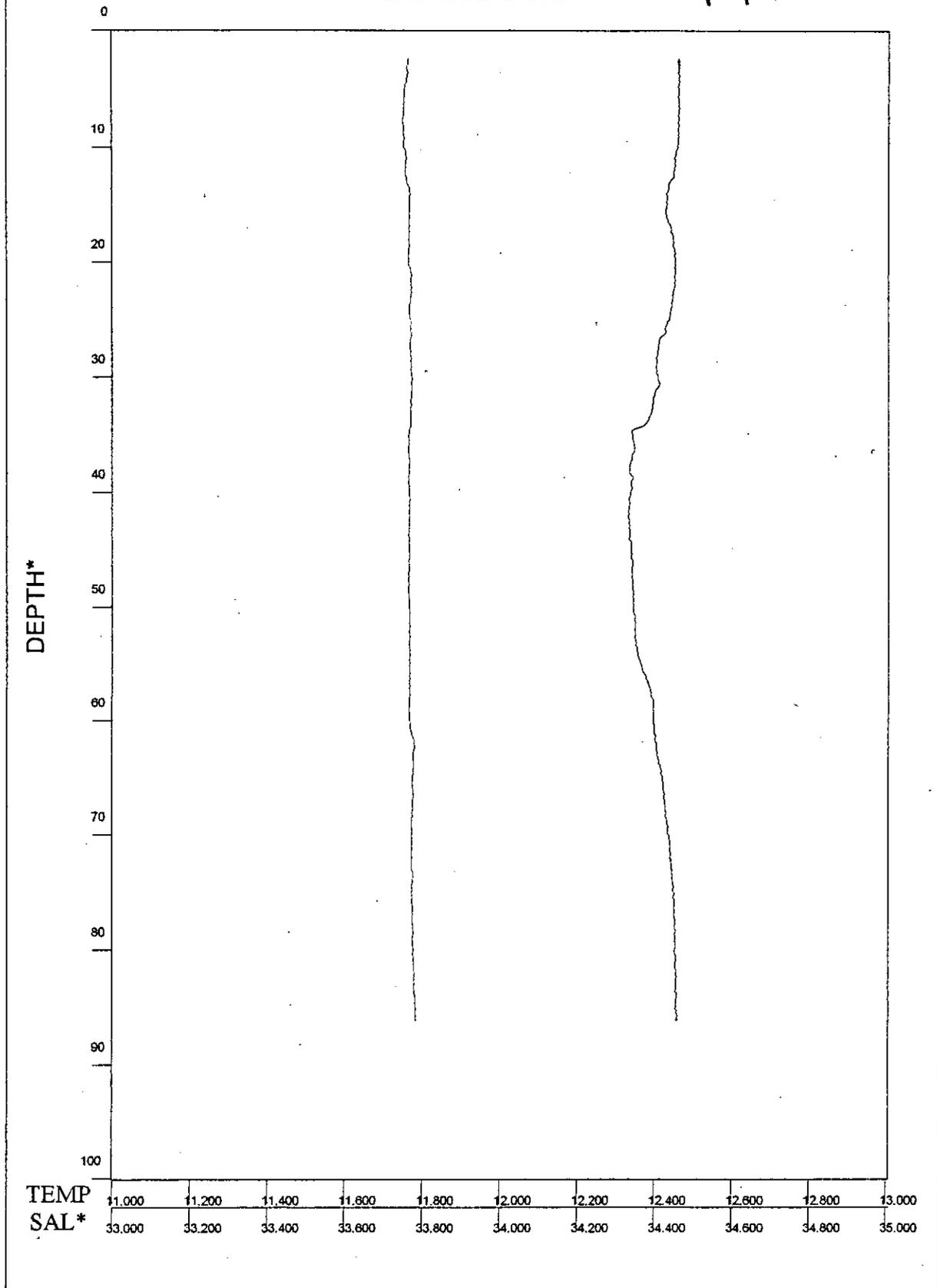
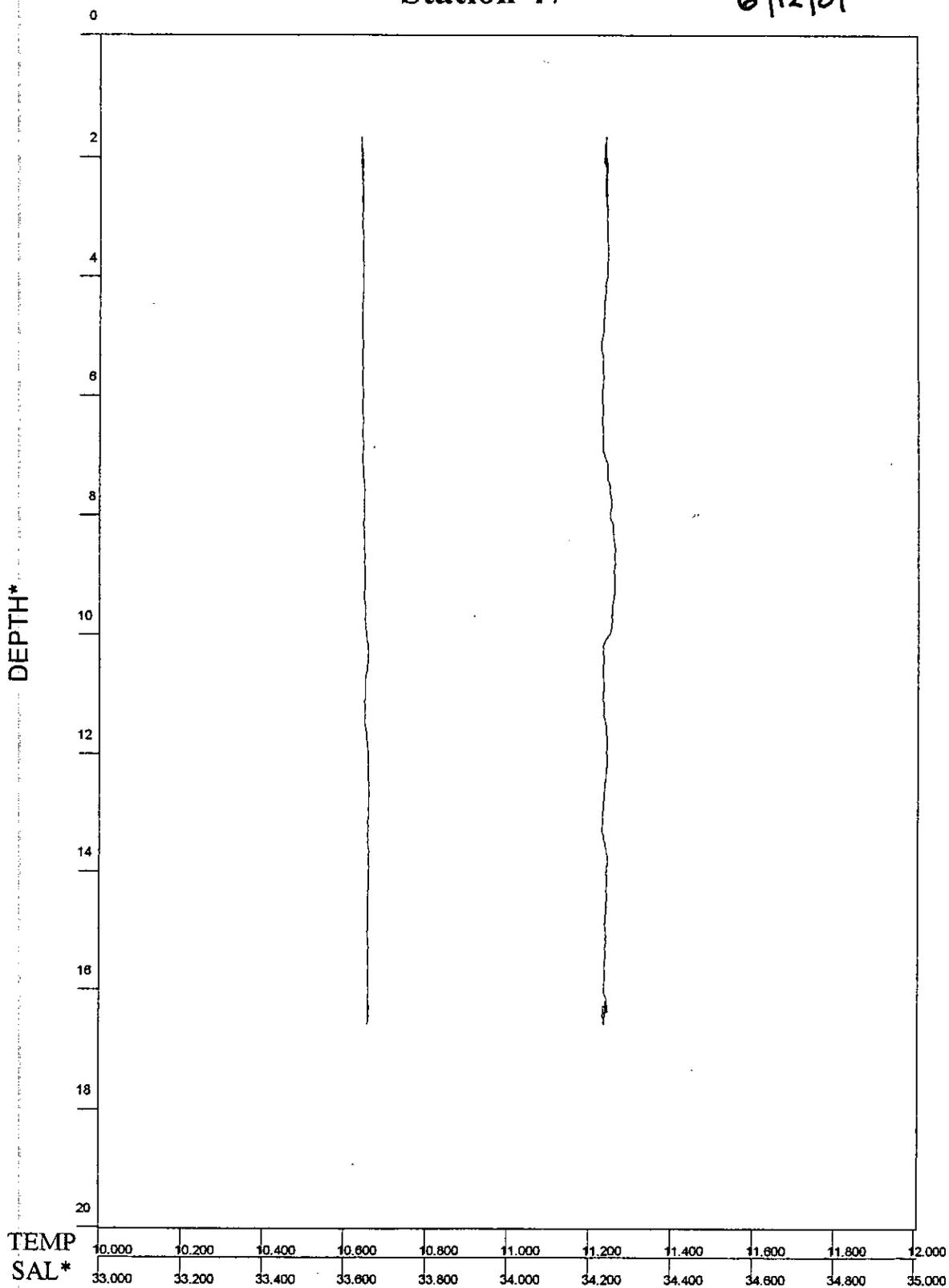
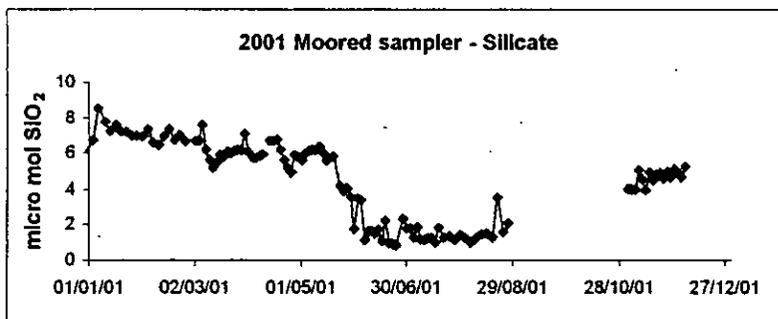
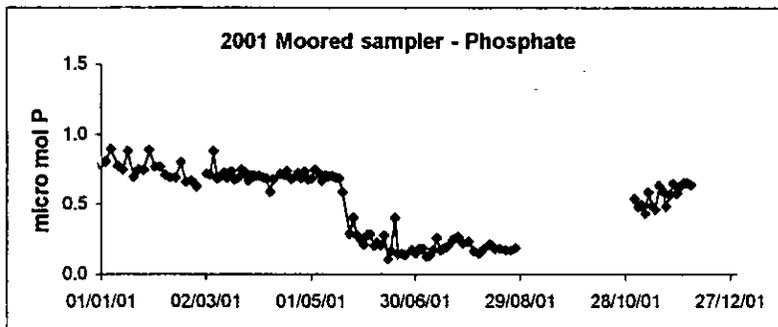
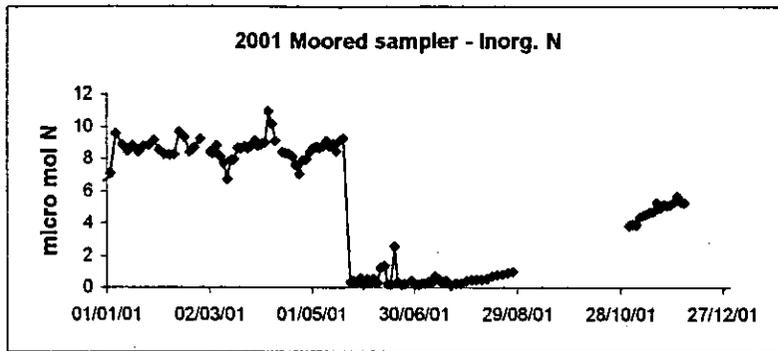


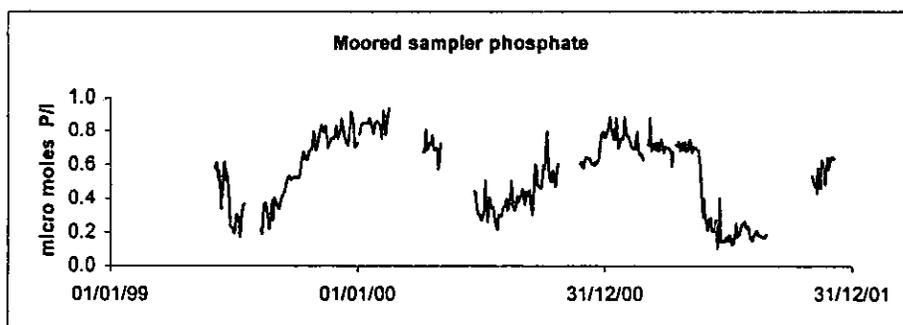
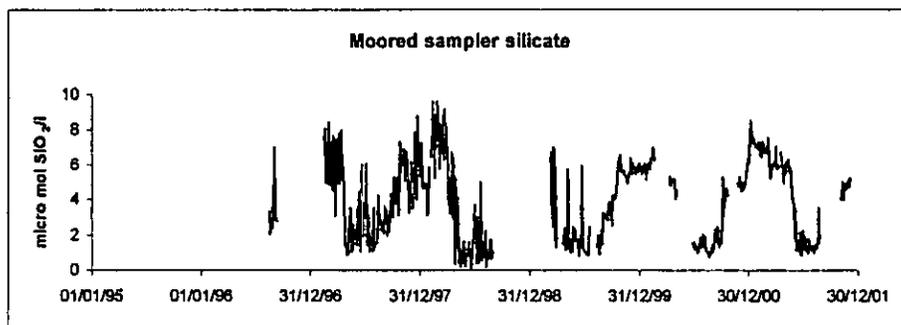
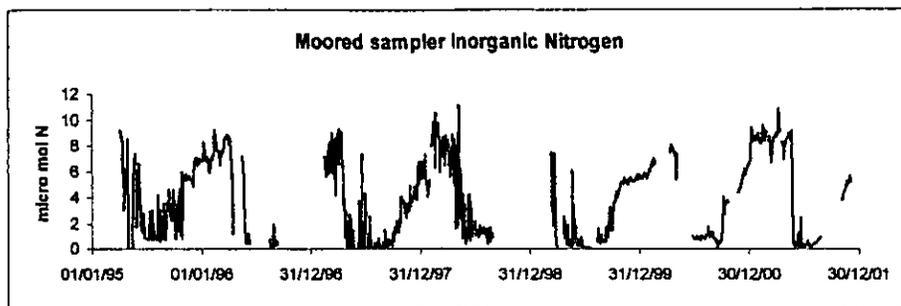
Fig 1.

Station 47

6/12/01







IRISH SEA OCEANOGRAPHY 2001

Depth profile samples (6 December 2001)

| STATION | DATE | DEPTH M | AMMONIA $\mu\text{m N l}^{-1}$ | PHOSPHATE $\mu\text{m P l}^{-1}$ | INORG N $\mu\text{m N l}^{-1}$ | SILICA $\mu\text{m SiO}_2 \text{l}^{-1}$ | UREA $\mu\text{m N l}^{-1}$ | NITRITE $\mu\text{m N l}^{-1}$ |
|---------|----------|------------|-----------------------------------|-------------------------------------|-----------------------------------|---|--------------------------------|-----------------------------------|
| 38A | 06/12/01 | 2.9 | 0.80 | 0.55 | 6.94 | 4.43 | | 0.04 |
| 38A | 06/12/01 | 11.4 | 0.50 | 0.57 | 7.82 | 4.51 | | 0.02 |
| 38A | 06/12/01 | 24.9 | 0.68 | 0.56 | 8.85 | 4.45 | | 0.03 |
| 38A | 06/12/01 | 50.4 | 0.76 | 0.56 | 9.38 | 4.42 | | 0.04 |
| 38A | 06/12/01 | 86.3 | 1.57 | 0.56 | 5.49 | 4.43 | | 0.06 |
| 47 | 06/12/01 | 2.8 | 1.91 | 0.81 | 7.19 | 6.23 | | 0.25 |
| 47 | 06/12/01 | 5.2 | 1.57 | 0.84 | 7.49 | 6.56 | | 0.24 |
| 47 | 06/12/01 | 9.9 | 1.53 | 0.77 | 6.95 | 6.26 | | 0.21 |
| 47 | 06/12/01 | 16.9 | 1.61 | 0.76 | 6.88 | 6.16 | | 0.23 |