Department of Agriculture and Rural Development (Northern Ireland)
Agriculture and Environmental Science Division

Cruise Report: LF 1902
Vessel: RV *Lough Foyle*
Dates: 6th – 8th May 2002
Area: Irish Sea (north); ICES div. VIIa
Survey Type: Biological Oceanography & mooring service

Personnel:

B Stewart(SIC)	SSO	DARDNI
C Smyth	TSO	DARDNI
A M Coyle	Res. Tech	QUB
A Downie	ASO	DARDNI

Objectives:

i. To maintain a nutrient and remote monitoring programme at mooring station 38A.

ii. To assess temperature, salinity and nutrient distributions over depth at stations 38A and 47.

Cruise Narrative

Monday 6 May 2002

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 2030 hrs and sailed overnight in a light breeze towards the mooring site at station 38A.

Tuesday 7 May 2002

The vessel arrived at the mooring site at 0600 hrs. The weather was dry with a light westerly breeze when work for the day started at 0745 hrs. The instrument mooring was recovered to ship deck at 0830 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 fluorormeter were also removed, data downloaded and reprogrammed. The automated water sampler was removed and replaced with a similar pre programmed unit. Following sample removal from the "large volume" water sampler, the instrument was fitted with new sample bags, reprogrammed for daily sampling and attached to the mooring assembly. The mooring components, thermistors, CTD and fluorometer were then reassembled. The

satellite tracking system was confirmed working and the mooring was successfully redeployed at1314 hrs on position 53^0 46^l .865N 5^0 38^l .114W. The rosette water sampler and zooplankton net were deployed and the survey continued to station 47 off the Drogheda fore shore, where the water and zooplankton sampling operations were repeated.
Work on the station was completed at 1600 hrs and the vessel sailed to dock in Belfast at 0030 hrs Wednesday.

Wednesday 8 May 2002

Work for the day commenced at 0800 hrs when equipment was dismantled and removed from the vessel for return transportation to Newforge Lane.
The scientific crew disembarked at 1040 hrs.

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.

Moored Instrumentation
The McLane water sampler functioned as programmed. Duplicate samples, for nutrient analysis, were taken every second day during the period 5 April to 6 May 2002. The "large volume" water sampler also functioned as programmed, sampling the plankton population daily from 5 April to 6 May 2002. Temperature data recorded at 3 hourly intervals was recovered from seven thermistors positioned at intervals throughout the water column.
Temperature, salinity and fluorescence data recorded at 10 minute intervals was recovered from CTD's positioned at near surface and near bottom on the mooring wire.

Summary of Results
Almost four weeks earlier than last year, the spring bloom for 2002 has commenced. The CTD profile at station 38A shows enhanced surface warming associated with a region of high fluorescence, nutrient depletion and increase in chlorophyll content. Simultaneous draw down of silicate together with nitrate and phosphate indicate diatoms are already contributing to this early bloom. Small scale surface warming in late April is associated with an increase in biological activity before the upper profile becomes mixed by rough weather. During calmer conditions, surface warming recommences 1 May and is rapidly followed by a sharp increase in the fluorescence signal.

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

21 May 2002