

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

Cruise Report: LF 0202, LF 1002, LF 1402

Vessel: *RV Lough Foyle*

Dates: 7th – 9th January 2002, 4th – 5th March 2002, 2nd – 4th April 2002

Area: Irish Sea (north); ICES div. VIIa

Survey Type: Biological Oceanography & mooring service

Personnel: B Stewart (SIC) SSO DARDNI
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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

All objectives associated with survey cruises LF02 2002 and LF10 2002, in January and March respectively, were achieved without incident during weather conditions suited to the mooring recovery-deployment process. Data from both these surveys have been combined with data from the April cruise and are presented at the end of this report.

Tuesday 2 April 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 fresh westerly wind towards the mooring site at station 38A.

Wednesday 3 April 2002

Overnight the wind decreased and 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 0820 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. An additional "large volume" water sampler programmed for daily sampling of the plankton population was also attached. The mooring components, thermistors, CTD and fluorometer were then reassembled, the satellite tracking system was confirmed working and the mooring was successfully redeployed at 1140 hrs on position $53^{\circ} 46' .938N$ $5^{\circ} 38' .117W$. 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 1500 hrs and the vessel sailed to dock in Belfast at 2230 hrs.

Thursday 4 April 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 1100 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 8 March to 2 April 2002. Temperature data recorded at 3 hourly intervals was recovered from a string of 7 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

Now in the spring season, both stations surveyed exhibited traces of surface warming, while salinity remained more or less constant throughout the water column. Despite this slight elevation in temperature there is as yet no evidence of the annual spring bloom as nutrient values remain undepleted and chlorophyll concentrations remain at base winter levels. In general nutrient concentrations were fairly constant throughout the profile at station 38A, while at coastal station 47 there was nitrate enrichment of the surface waters, possibly through the influence of the River Boyne.

Currently values for the major nutrients inorganic nitrogen, phosphate and silicate are similar to those from other years as they slowly progress towards the “winter max” which normally occurs in April/May.

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

2 May 2002