

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

**Cruise Report:** LF 1403

**Vessel:** RV *Lough Foyle*

**Date:** 30<sup>th</sup> – 31<sup>st</sup> March 2003

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

**Survey Type:** Biological Oceanography & Mooring Service

**Personnel:**

B Stewart(SIC)	SSO	DARDNI
C Smyth	SO	DARDNI
A Downie	ASO	DARDNI

**Objectives:**

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

**Cruise Narrative:**

During mid March the open sea mooring at station 38A suffered collision damage from a passing vessel. The water sampler and sub surface buoy were retrieved undamaged by a fishing boat and returned to Howth harbour. The mooring components were collected 27 March and returned to Newforge Lane.

Sunday 30 March 2003

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 2225 hrs and sailed overnight in a light south westerly breeze towards the mooring site at station 38A.

Monday 31 March 2003

The vessel arrived on the mooring site at 0600 hrs. The weather was dry with a light south-westerly breeze when work for the day started at 0745 hrs with the residual components of the damaged instrument mooring eventually recovered to ship deck at 0810 hrs. The instrument wire had been severed 5 metres above the anchor resulting in the loss of a CTD and six thermistors.

The damaged wires were renewed and missing thermistors replaced. The remaining mooring components were inspected for corrosion and parts replaced where necessary.

The mooring components were reassembled and readied for deployment. A sub surface CTD, fluorometer, water sampler and an additional “large volume” water sampler were attached and the mooring redeployed at 0945 hrs on position  $53^{\circ} 46^1 .926\text{N}$   $05^{\circ} 38^1 .003\text{W}$ . Following the deployment of the zooplankton net the vessel sailed to coastal mooring site 47D off the Drogheda foreshore. The instrument mooring was recovered to ship deck at 1215 hrs, serviced and redeployed at 1340 hrs on position  $53^{\circ} 44^1 .431\text{N}$   $06^{\circ} 03^1 .998\text{W}$ .

Following deployment of the zooplankton net the vessel sailed to dock in Belfast at 2120 hrs.

#### Tuesday 21 January 2003

Work for the day commenced at 0745 hrs when samples and a selection of equipment were removed from the vessel for return transportation to Newforge Lane.

#### **Parameters Monitored:**

As the CTD was unavailable, sub surface samples were taken at stations 38A and 47D, via the ship’s clean seawater supply, for nutrient and chlorophyll determination. Sub surface temperature and salinity data was acquired from the flow through salinometer. Three zooplankton net hauls were taken at stations 38A & 47D.

#### **Moored Instrumentation:**

Prior to the mooring being damaged the McLane water sampler, positioned at depth 10 metres, functioned as programmed. Duplicate samples, for nutrient analysis, were taken every second day during the period 8 - 14 March. Temperature data recorded at 3 hourly intervals was recovered from the 2 remaining thermistors.

Temperature, salinity and fluorescence data recorded at 15 minute intervals was recovered from CTD’s positioned near surface at stations 38A and 47D.

#### **Summary of Results:**

With the absence of the CTD/water sampler and the premature removal of moored instrumentation there is little information available to describe the current state of the depth profile at station 38A. However an abundance of zooplankton in the net hauls, increased chlorophyll levels and a significant reduction in subsurface nutrient values indicates the onset of the seasonal spring bloom. The timing of the current bloom is early in comparison with previous years, end of April in 2002 and mid May in 2001. Further evidence of the bloom at station 47D can be seen from the increase in signal from the moored fluorometer towards the end of March.

Again an abundance of zooplankton significantly reduced nutrient levels and high chlorophyll concentration show a marked increase in biological activity.

**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**

30 April 2003