

**BIOLOGICAL OCEANOGRAPHY CRUISE REPORT****LF 26 2001****25 -29 June 2001****PERSONNEL**

B Stewart	(SIC), SSO, DARDNI.
C Smyth	Temp. SO, DARDNI
G Tilstone	Plymouth Marine Lab.
L Tudor	Plymouth Marine Lab.

**OBJECTIVES**

- i. To maintain a nutrient monitoring programme at station 38A.
- ii. To assess temperature, salinity and nutrient distributions over depth at stations 38A and 47.
- iii. To assess levels of primary production at both inshore and offshore stations in the Irish Sea.
- iv. To assess the extent of the frontal region in the north western Irish Sea.

**CRUISE NARRATIVE**Sunday 24 June 2001

In preparation for the cruise, all DANI scientific crew were onboard by 1800 hrs when mooring components and the automated sampler were prepared for deployment. Problems with the flow through salinometer delayed the scheduled departure time until the unit was repaired. Following a talk on ship's safety and a demonstration of personal life saving equipment, the RV Lough Foyle departed Belfast at 2300 hrs and sailed overnight in a light breeze to the mooring site at station 38A.

Monday 25 June 2001

The vessel arrived on the mooring site at 0600 hrs. The weather was dry with only a light breeze. Work for the day commenced at 0630hrs when the rosette water sampler was deployed to acquire water samples for primary production experiments. The water sampler was again deployed at 0700 hrs to obtain samples from the depth profile for nutrient, chlorophyll and organic content. After breakfast work continued with the recovery of the instrument mooring. 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 automated water sampler was removed and replaced with a similar pre programmed unit. Samples were removed from the biological water sampler, clean sample bags refitted and reprogrammed for daily sampling. Data from the moored CTD and fluorometer was down loaded and reprogrammed for redeployment. The mooring components and thermistors were then reassembled and the unit was successfully redeployed at 1000 hrs on position  $53^{\circ} 46'.77N$   $5^{\circ} 38'.09W$ . Following a further deployment of the rosette water sampler, the vessel sailed overnight to primary production station LAMB close to Lambay Island. Work for the day finished at 1900 hrs.

#### Tuesday 26 June 2001

Work for the day commenced on station LAM at 0345 hrs with the deployment of the water sampler to obtain samples for primary production studies. After breakfast, further deployments were made for standard samples and to obtain calibration data for the fluorometer. Following this the vessel surveyed the southern grid for surface mapping. The vessel then continued in a westerly direction to station 47 on the Drogheda fore shore where it anchored overnight. Work for the day finished at 2000 hrs.

#### Wednesday 27 June 2001

Work for the day commenced on station 47 at 0345 hrs with a repeat of the sampling procedures for the primary production experiments. Following this the vessel cruised a grid, back and forth across the northern area of the "front", during which time regular samples were taken from the ship's clean seawater supply. Work for the day finished at 2330 hrs and the vessel sailed slowly overnight to station F3.

#### Thursday 28 June 2001

Work for the day commenced on station F3 at 0345 hrs with a repeat of the sampling procedures for the primary production experiments. Following this the vessel cruised a grid between F3 and Dundrum Bay, during which time regular samples were taken from the ship's clean seawater supply. Work for the day finished at 2000 hrs. Overnight the vessel sailed slowly towards Belfast.

#### Friday 25 May 2001

The vessel sailed to dock in Belfast at 0800 hrs. Work commenced at 0830 hrs with scientific crew removing samples, scientific instruments and mooring equipment from the vessel to AESD

#### **McLane moored water sampler**

The two McLane automated water samplers recovered from the Irish Sea had operated as programmed. The "nutrient" sampler was removed and replaced by an identical unit, programmed to take duplicate samples every third day during the period of deployment.

The "biological" sampler was serviced during the survey cruise and reprogrammed for daily sampling during the next deployment period.

#### PARAMETERS MONITORED

The CTD/rosette water sampler was deployed at stations 38A, 47, F1, F2, F3, F4, F5 and LAMB to acquire temperature, light and salinity data from the depth profile. Samples taken were processed and stored for nutrient, chlorophyll, suspended solids, algal organic carbon and total nitrogen. Three zooplankton net hauls were taken at stations 38A, 47, F1, F2, F3, F4 and F5. Primary production assessments were carried out at coastal stations LAMB and 47 and also at thermally mixed station F3. Three zooplankton net hauls were taken at stations 38A, 47, F1, F2, F3, F4 and F5. Samples were taken from the clean seawater supply for chlorophyll and nutrient determination during surface mapping of the northern and southern grids of the frontal regions.

#### SUMMARY OF RESULTS FOR SUMMER CRUISES LF 26 2001 & LF 35 2001

*Trends in data from both cruises are similar and have been summarised together as typical "summer" values and is included in the LF 35 2001(27-29Aug) cruise report.*

#### 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**

11 October 2001