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

Cruise Report: CO 4405
Vessel: RV *Corystes*
Date: 31st October – 2nd November 2005
Area: Irish Sea (north); ICES div. VIIa
Survey Type: Biological Oceanography & Mooring Service

Personnel:

B Stewart (SIC)	SSO	DARDNI
C Smyth	SO	DARDNI
P McShane	ASO	DARDNI
P Toland	SO	DARDNI
A Mellor	RA	QUB
D Mercer		SAMS

Objectives:

i. To maintain an *insitu* monitoring programme at Irish Sea stations38A and 47D.

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

ii. To assess the effectiveness of SAMS homing environmental recorder as a deep water observation system.

Cruise Narrative:

Monday 31 October 2005
Owing to gale force winds the vessel was unable to sail as scheduled on Sunday evening. As winds eased the cruise was rescheduled for Monday night and in preparation for the cruise, all DARDNI scientific crew and visitors were onboard by 2000 hrs when mooring components, the automated water sampler and the SAMS HOMER mooring were prepared in advance for deployment. Following a talk on ship's safety and a demonstration of personal life saving equipment, the RV Corystes departed Belfast at 2030 hrs and sailed overnight in a strong southerly wind to station 38A mooring site.

Tuesday 1 November 2005
The vessel arrived on the mooring site at 0600 hrs. The weather was dry with a fresh to strong southwesterly wind when work for the day started at 0645 hrs with the

deployment of the rosette water sampler and zooplankton net. An attempt was then made to recover the mooring but was quickly abandoned as increasing winds compromised the safety of the operation. The vessel then sailed to inshore mooring station 47D to arrive at 1100 hrs where the complete instrument mooring was recovered to ship deck at 1130 hrs. The mooring components were inspected for corrosion and parts replaced where necessary and then redeployed at 1300 hrs in depth 28 m on position 53^0 44^l .5133N 06^0 03^l .9721W. Following deployment of the rosette water sampler and zooplankton net the vessel sailed again for the off shore mooring site to arrive at 1550 hrs. Now with calmer sea conditions the mooring was successfully recovered at 1650 hrs. During the final stages of recovery a wire broke as the sub surface buoy and water sampler were fully hoisted on the ship's A-frame. Fortunately both components by-passed the deck and went directly into the sea from where they were eventually recovered by the ship's crew. Mooring recovery complete, components were inspected for corrosion and parts replaced where necessary. The thermistor chain was removed from the mooring wire, temperature data downloaded and individual units reprogrammed. The CTD and fluorometer were also removed, data downloaded and reprogrammed. The sub surface water sampler was removed and substituted with a similar pre-programmed unit. The mooring components were reassembled and readied for deployment. The CTD's, fluorometer and water sampler were attached inline and the SAMS data transmitter attached to the frame of the DARD torroid buoy. The mooring was then redeployed at 1720 hrs in depth 95m on position 53^0 46^l .976N 05^0 38^l .069W (buoy) and 53^0 47^l .026N 05^0 38^l .001W (instrument). Following this the SAMS HOMER mooring was successfully deployed in close proximity to the DARD torroid buoy. The vessel then sailed to dock in Belfast 0900 hrs Wednesday morning.

Wednesday 1 November 2005

Work for the day commenced at 0800 hrs when scientific crew began dismantling equipment in preparation for transportation to Newforge Lane. All scientific crew were disembarked by 1130 hrs.

Parameters Monitored:

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

Moored Instrumentation:

The automatic water sampler deployed at depth 20 metres failed to function; a programming error is suspected. Temperature data recorded at 3 hourly intervals was recovered from five thermistors moored at intervals throughout the water column.

Temperature, salinity and fluorescence data recorded at 15 minute intervals was recovered from CTD's positioned near surface at station 38A. Currently no instruments are deployed on the station 47D mooring.

Summary of Results:
Nutrient and chlorophyll results together with an updated annual temperature cycle for station 38A are attached.

Hotel Report & Operational Aspects of the Ship:
During the cruise the A-frame, main trawl winches, hydrographic winches and the ship's clean seawater supply were used. No problems were encountered with the ship's equipment nor 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 Corystes 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

23 November 2005