



Agri-Food and Biosciences Institute
 Agriculture, Food and Environmental Science Division
 Fisheries and Aquatic Ecosystems Branch

Cruise Report: CO 1409

Vessel: RV *Corystes*

Date: 29th March – 3rd April 2009

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

Survey Type: Biological Oceanography & Mooring Service

Personnel:

B Stewart	SSO	AFBI	29 March – 3 April
R Gilmore	SO	AFBI	29 March – 3 April
C Scherer	Student	AFBI	29 March – 3 April
P Lasmuigh		IWDG	29 March – 3 April

Objectives:

- i. To maintain an insitu monitoring programme at open Irish Sea station 38A.
- ii. To investigate the distribution of dissolved nutrients and phytoplankton at stations in the Irish Sea, Celtic Sea and Celtic shelf edge.
- iii. To investigate the distribution of dissolved nutrients and in the water column along a grid of stations at the Beaufort Dyke in the North Channel.

Circulation

DCSO & CSO

Ship Managers

Fisheries Division

ANIFPO

NIFPO

Comments

Signed Head of Branch

Methods:

- Stations were profiled using a Seabird SBE 32 water sampler and SBE 911 CTD.
- Vertical zooplankton net hauls were taken using a 200 micron mesh bongo net with a 500mm diameter inlet.

Cruise Narrative:

Sunday 29 March 2009

Problems were encountered in communicating with the SBE CTD. Sailing was deferred until the instrument and winch connections could be inspected by electrical engineers.

Monday 20 March 2009

Following repair of the CTD the vessel departed Belfast at 1245 hrs and sailed directly to the mooring site station 38A. The vessel arrived on station at 1830 hrs when the weather was dry and bright with a light westerly wind. On recovery of the instrument mooring data from thermistors, CTD and water sampler were down loaded. Samples were removed from the water sampler and following a detailed inspection of mooring components, instruments were reprogrammed and mooring components reassembled for redeployment next morning.

Tuesday 21 March 2009

After breakfast the instrument mooring was successfully redeployed at 0830 hrs in depth 93 metres on position $53^{\circ} 46^{\prime} .946\text{N}$ $005^{\circ} 38^{\prime} .078\text{W}$. During deployment of the water sampler/CTD, problems were again encountered in communicating with the instruments. The vessel returned to dock in Belfast at 2030 hrs when a replacement FSI CTD was installed.

Wednesday 22 March 2009

Following a retermination of the CTD hydrographic cable the vessel departed Belfast at 1215 hrs and sailed to sample at the four Beaufort Dyke stations in the North Channel. Overnight the ship sailed south towards the transect stations.

Thursday 23 March 2009

During the morning period stations 36, 37, and 47D were sampled. Following this sampling at stations along the Liverpool Bay transect was completed. Overnight the vessel sailed to the Morcambe Bay area.

Friday 24 March 2009

After breakfast sampling commenced along the 54 degree latitude grid of stations and finished at 1300 hrs close to the Calf of Man. Survey work completed the vessel sailed to dock in Belfast at 2000 hrs.

Work Completed:

Despite the early setback of the faulty CTD and water sampler the survey was successfully completed with all objectives achieved.

Results:

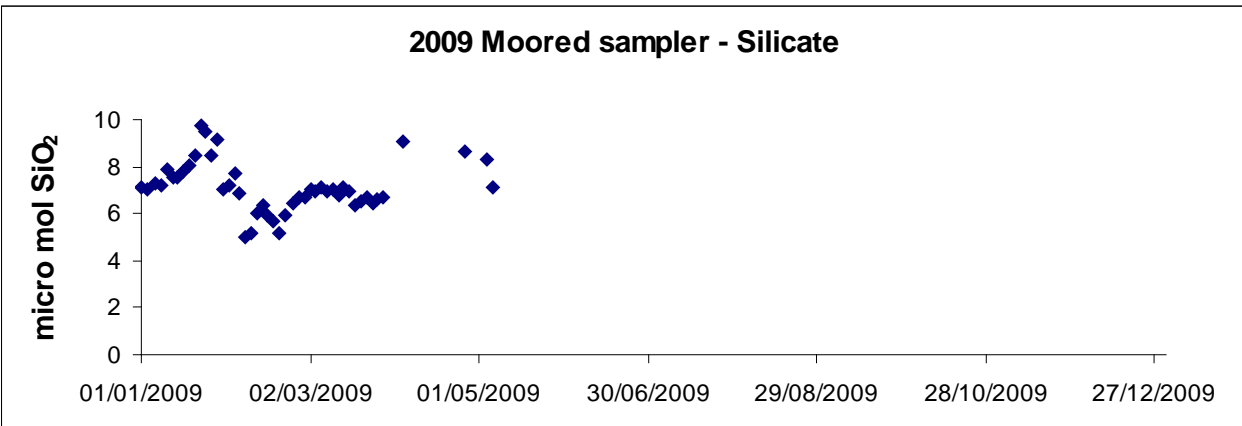
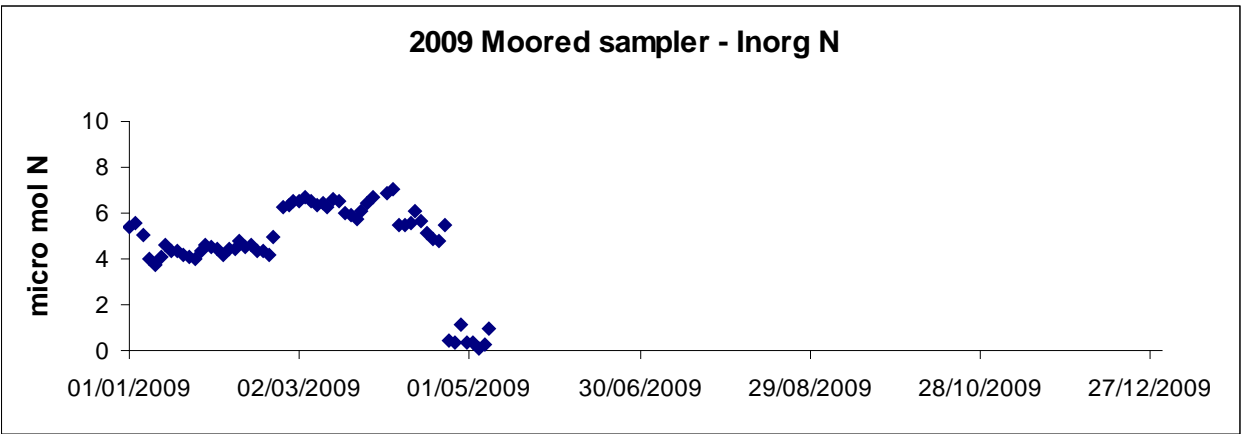
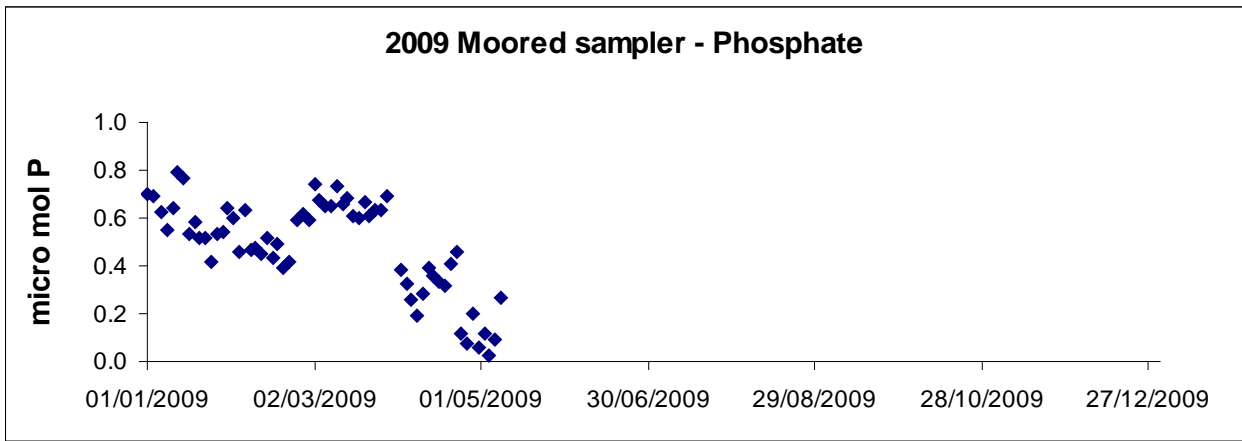


Fig. 1. Phosphate, Inorganic Nitrogen and Silicate concentration at mooring station 38A

The graphs illustrate nutrient data from samples taken by the moored water sampler during the survey periods. The “winter max” for nitrate, 7.04 micromoles NI⁻¹ is recorded in early April and thereafter as the spring bloom occurs, nitrate and phosphate concentrations are rapidly depleted.

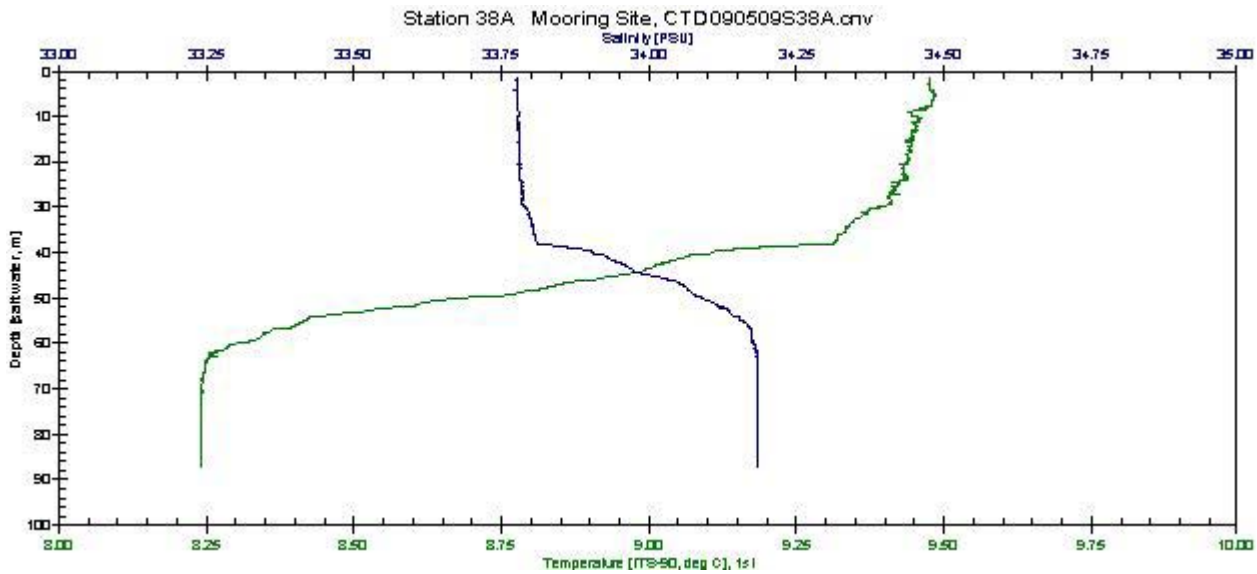


Fig. 2 Temperature and salinity profile at mooring station 38A on 9 May 2009

Figure 2 details temperature and salinity profile data at moored station 38A in early May and illustrates the early stages of development of the spring/summer thermocline when the temperature difference between the upper and lower layers is recorded at approximately 1.2 °C. Despite the off shore location the salinity profile shows evidence of freshwater influence with the presence of a lower saline, less dense, upper layer of the profile.

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 ship's equipment. The hotel and catering service was of an acceptable 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.

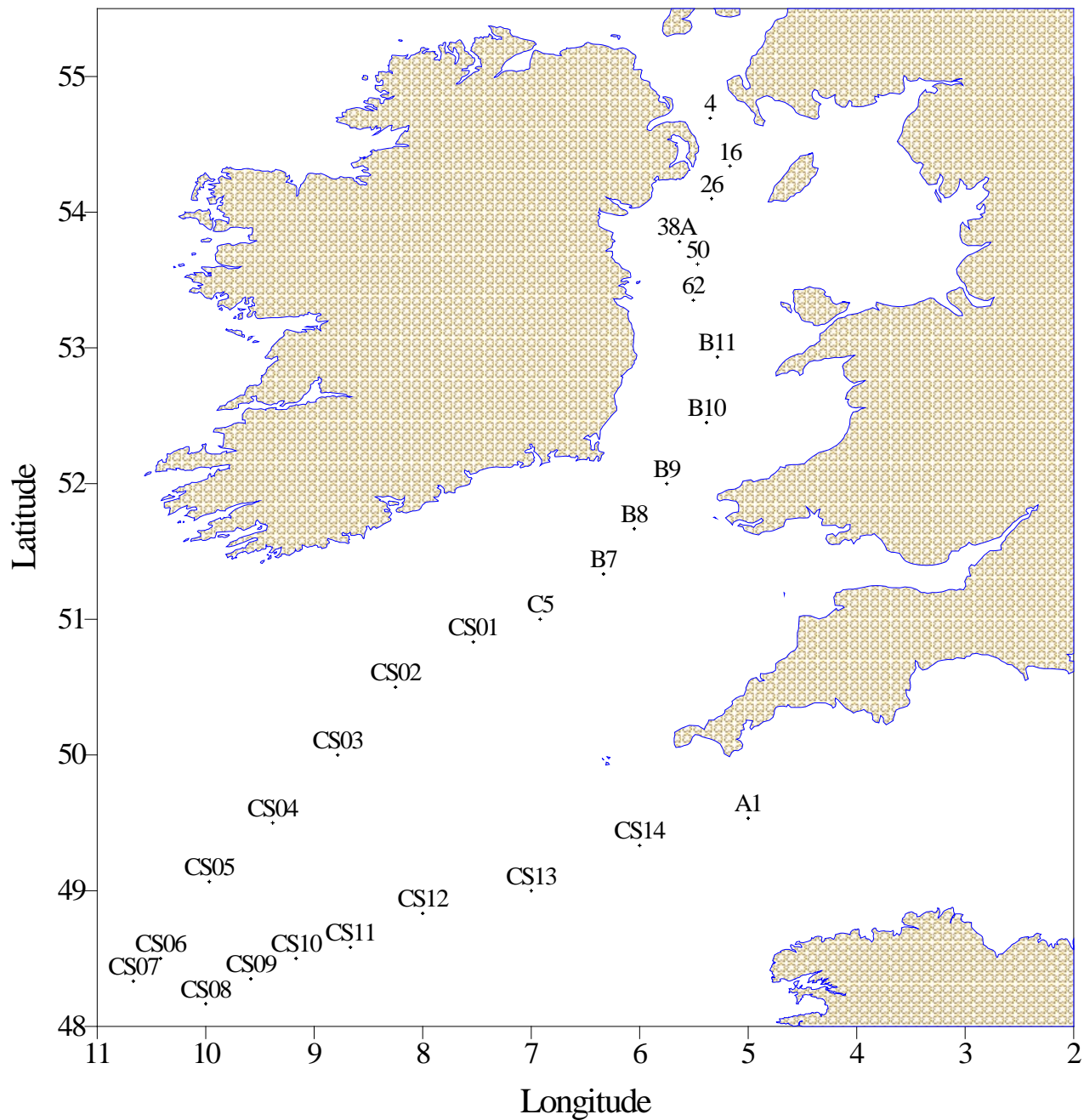
Acknowledgements:

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.

Scientist in Charge

Date: 24 June 2009

Not to be cited without prior reference to AFBI (Fisheries & Aquatic Ecosystems Branch)



Survey Transect CO 1409