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Cruise Report

Biological Oceanography October 4th - 7th 1993

Personnel:

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R Hensley
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S Thompson

Cruise Narrative

Lough Foyle departed Belfast at 0700 on Monday October 4th and worked a series of stations down the east coast of Ireland (Figure 1). Scientific work was completed by 2130 h and the ship steamed slowly to station 60 overnight. On Tuesday October 5th stations 60, 61, 62, 57, 50 and 45 were successfully completed. At station 38 two water bottles were damaged when attempting to deploy the rosette. Work at station 38 was abandoned because sea conditions (easterly force 6) were considered to rough to safely deploy scientific equipment. Since the weather forecast gave no indication of any improvement during the next 24 hours the cruise was abandoned and the Lough Foyle returned to Belfast and docked at 2200. In total 15 out of 25 stations were completed.

Objectives

1) to collect biological (phytoplankton and zooplankton), chemical (dissolved inorganic nutrients and particulate carbon and nitrogen) and physical (sea temperature, conductivity and surface and sub-surface irradiance) data from selected stations in the Irish Sea for the purpose of continuing the observational study of the biological oceanography of the NW Irish Sea.

2) to undertake experiments to estimate the rate of carbon fixation by phytoplankton at selected stations using a simulated *in situ* incubation technique.

3) to collect sediment cores from selected stations for the purpose of estimating the amounts of phytoplankton pigments in the sediment and the organic carbon and nitrogen content of the sediment.

4) to collects samples of benthic macrofauna using the day grab.

Preliminary Results

The water column in the coastal region and the southern offshore stations appeared to be mixed with little indication of any thermal or salinity stratification. Low salinity water was encountered at

all of the coastal stations and was in contrast to the higher salinity of water at the offshore stations. For example, at station 62 the bottom water (90 m) had an uncorrected salinity of 34.34 ppt. Based on chlorophyll fluorescence detected by the Chelsea Instruments fluorometer, the biomass of phytoplankton was highest in the coastal region. Within the coastal region, concentrations of dissolved inorganic nitrogen were highest at stations off the County Down coast and supports the data collected in 1992.

Acknowledgements

I would like to thank the captain, A. Niblock, his officers and crew for their support during the cruise. The assistance of Dr. Hensley during the cruise is gratefully acknowledged. The scientific support given by Mr. Elliott and Mr. Bloomfield was of the usual high standard. Mr. Thompson, for whom it was his first scientific cruise worked well and continued to carry out his scientific duties even when feeling the effects FO the weather, well done.

R J Gowen (SIC)

October 7th 1993