

DEPARTMENT OF AGRICULTURE FOR NORTHERN IRELAND

Agricultural and Environmental Sciences Division

CRUISE REPORT LF2497

JUVENILE GADOID STUDY 8-12 JUNE 1997

PERSONNEL

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OBJECTIVES

1. To investigate the abundance and geographic distribution of juvenile gadoids in the western Irish Sea.
2. To collect samples for the validation of whiting otolith primary increment deposition.
3. To investigate the factors determining the vertical distribution of zooplankton and ichthyoplankton in the western Irish Sea.

METHODS

This cruise is the second in a series of three cruises this summer. Two grids of stations were worked, one with the high speed plankton sampler and one with the MIK net. Samples were sorted onboard and preserved in buffered 4% formaldehyde. Fish larvae and juveniles were picked from the samples and fixed in 99% ethanol. The Pronet system failed, so mechanical flowmeters were used on the high speed plankton sampler.

On completion of the two grids, a 24 hour study took place at a fixed station. This was in the locale of the DANI mooring. Three sets of triplicate samples were taken using the high speed plankton sampler. Four sets of discrete plankton samples were taken from 80,

60, 40 and 20m depth using the multiplankton sampler. Discrete water samples were taken using the rosette. These were used to determine chlorophyll concentrations and were also filtered for small zooplankton through a fine (150µm) mesh.

A further short study at a site beyond the Isle of Man front (ie in very mixed waters) took place. The multiplankton sampler was deployed twice, the high speed plankton sampler once and discrete water samples were collected from 50, 30 and 10m depth.

## CRUISE NARRATIVE

### *Sunday 8 June 1997*

Scientific staff boarded the vessel and attended a pre-cruise briefing which included a safety demonstration and discussion. The RV *Lough Foyle* sailed at 21h.00 and proceeded south to station 25 (Figure 1).

### *Monday 9 June 1997*

Four MIK net stations were worked before daylight. The ship proceeded to station 6 to begin the plankton sampler grid. 13 plankton stations were sampled (Figure 1). At 21:00 sampling of the MIK net stations continued.

### *Tuesday 10 June 1997*

Overnight, eight MIK net stations were sampled (Figure 1). Then the remaining eleven plankton stations were sampled. The CTD was then deployed at stations 20, 21, 22, 23, 24, 18 and 17. MIK net sampling continued at 22:40.

### *Wednesday 11 June 1997*

The two grids were completed by 04:00. The CTD was deployed at stations 7 and 8. The ship headed for the DANI mooring site but work was delayed for ten hours by bad seas. Sampling commenced at 14:00 at the mooring.

### *Thursday 12 June 1997*

The study at the mooring site was complete by 03:00 and the vessel headed to the other fixed site beyond the front, deploying the CTD on the way at stations 10 and 11. Work began at 06:00 and was completed by 10:00. The ship then headed back to Belfast.

## RESULTS

62 deployments were made during the cruise. The distribution of the plankton conformed to the findings of previous cruises. Young fish were found in the surface waters with smaller copepods, ctenophores and jelly fish, whilst chaetognaths (arrow worms) were found just above the sea bed. This confirmed the findings of the previous cruise.

## ACKNOWLEDGMENTS

The Master, officers and crew of *MRV Lough Foyle* are thanked for their enthusiastic co-operation throughout this very successful cruise. The scientific staff are to be congratulated for their example of effective team work in completing all objectives effectively and efficiently.

Mark Collas

M Dickey-Collas

(Scientist in Charge)



A Niblock

(Master)

13 June 1997

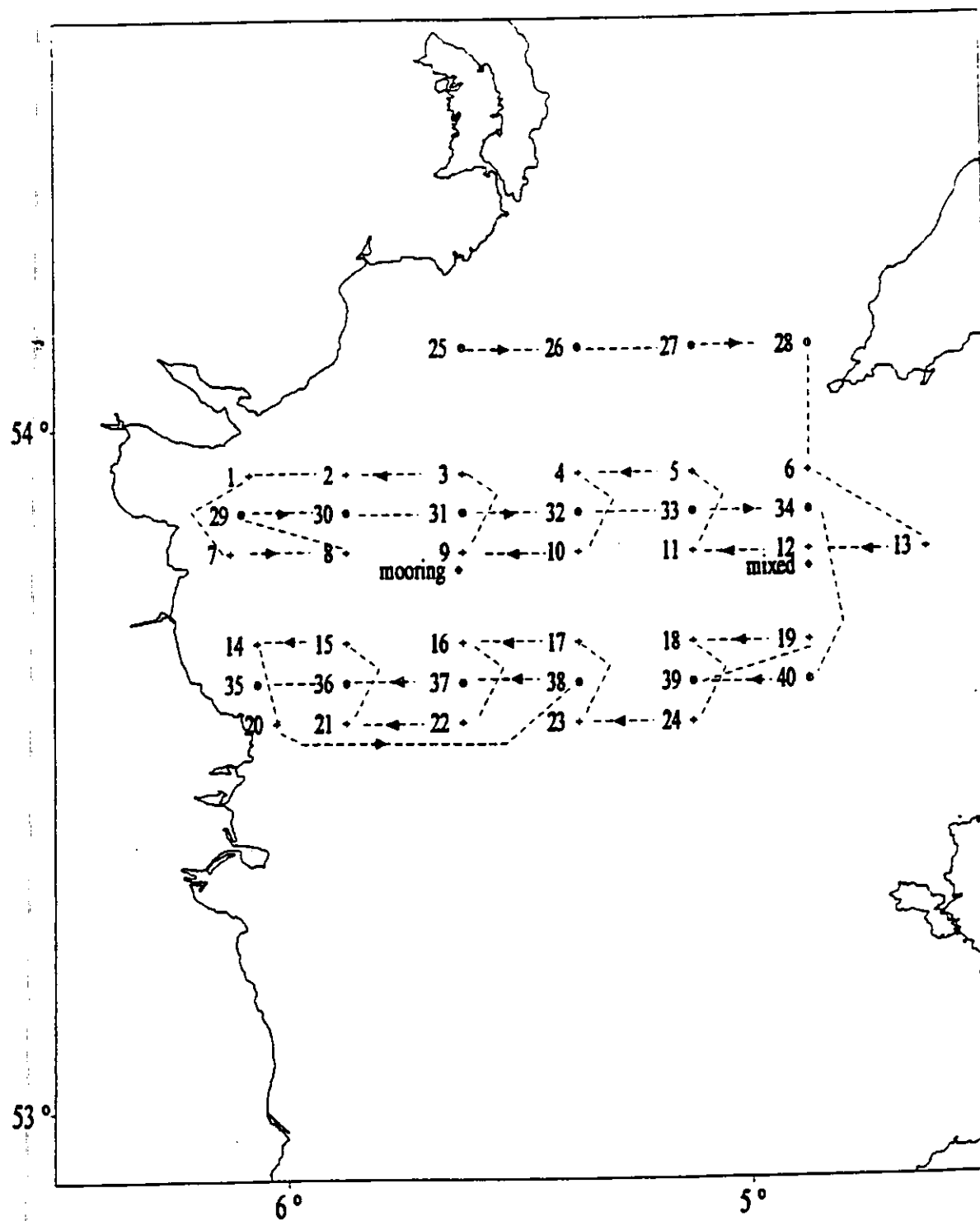


Figure 1. Schematic of cruise route on LF2497, 8-12 June 1997