DEPARTMENT OF AGRICULTURE FOR NORTHERN IRELAND

Agricultural and Environmental Sciences Division

CRUISE REPORT LF2297

JUVENILE GADOID STUDY 25-29 MAY 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 test the newly-serviced multiplankton sampler.
3. To collect samples for the validation of whiting otolith primary increment deposition.
4. To investigate the factors determining the vertical distribution of zooplankton and ichthyoplankton in the western Irish Sea.

METHODS

This cruise is the first 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.

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 55, 40, 20 and 3m depth.

CRUISE NARRATIVE

Sunday 25 May 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 26 May 1997

Two MIK net stations were worked before daylight. The ship proceeded to station - to begin the plankton sampler grid. 15 plankton stations were sampled (Figure 1). At 21:00 sampling of the MIK net stations continued.

Tuesday 27 May 1997

Overnight, eight MIK net stations were sampled (Figure 1). Then the remaining nin plankton stations were sampled. The ship steamed to the Isle of Man to compl th MIK net grid.

Wednesday 28 May 1997

The two grids were completed by 04:00. The ship headed for the DANI mooring sit and work began at 06:00.

Thursday 29 May 1997

The study at the mooring site was complete by 04:00 and the vessel headed to the other fixed site beyond the front. Work began at 06:00 and was completed by 14:30. The ship then headed back to Belfast.

RESULTS

61 deployments were made during the cruise. The distribution of the plankton conformed to the findings of previous cruises. The size of certain species of fish was larger than last year (eg sprat larvae and juveniles). 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 with larger copepods. This suggests that there are distinct niches for different types of predator and the gelatinous predators are likely to be in direct competition with the developing fish unlike the chaetognaths.

COMMENTS

The present level of notices and warnings in the wet laboratory (19) was thought to be excessive and counter productive as it resulted in staff reading none of them. Notices should be succinct, clear and not repeated. A few well thought out notices would have more of an impact and hence improve ship safety.

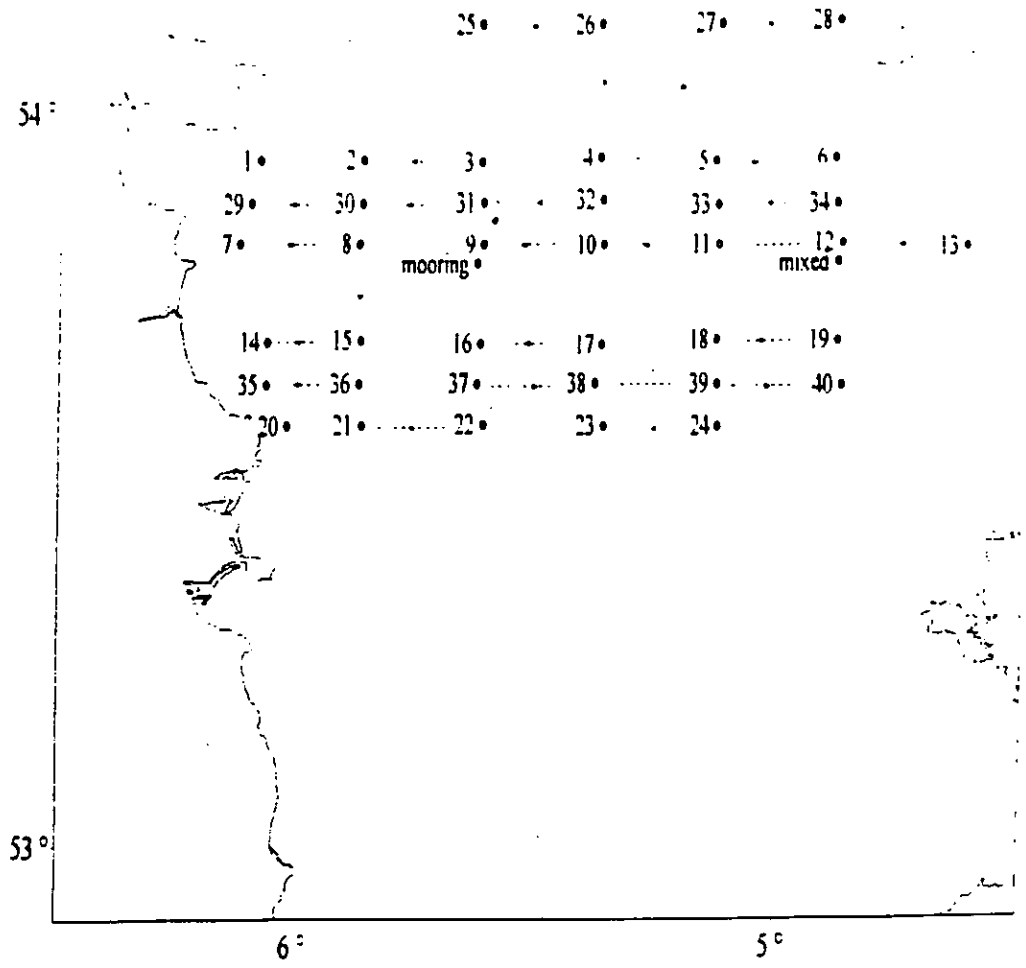
ACKNOWLEDGMENTS

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. They displayed a keen interest in new methods and equipment and quickly developed an understanding of novel techniques.

M Dickey-Collas
(Scientist in Charge)

A Niblock
(Master)

29 May 1997



Positions of sampling stations on LF2297.

Station 28 was sampled after station 20.