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Department of Agriculture for Northern Ireland
Agriculture and Environmental Science Division

Cruise Report: LF2196, Juvenile gadoid investigations
Vessel: RV *Lough Foyle*
Dates & area: 19-23 May 1996 in the Irish Sea; ICES div. VIIa

Personnel:			
	Mark Dickey-Collas	DANI	SIC/HSO
	Willie McCurdy	DANI	SSO
	John Peel	DANI	ASO
	Chris Burns	DANI	ASO
	Michael McAliskey	DANI	SO
	Gloria McLaughlin	DANI	SB2

Objectives:

1. To investigate the summer transport of pelagic juvenile gadoids from the coast to the stratified waters of the western Irish Sea.
2. To assess fish growth rates in May and June.
3. To collect juvenile fish for histological examination of growth and condition.
4. To collect otoliths for body to otolith size extrapolations.
5. To investigate the abundance of euphausiids and other macro zooplankton in the Irish Sea.
6. To collect samples for *Sagitta elegans* study.

Cruise narrative

Sunday 19 May 1996

All scientific crew were onboard by 20:20 and the ship sailed for the first station at 21:15 (Figure 1). A full safety and man overboard drill was carried out before sailing.

Monday 20 May 1996

The first haul with the MIK net was carried out at 02:45. One other MIK net haul was completed before daylight. The Gulf III was rigged and tested on deck. 13 Gulf III deployments were made. The weather deteriorated. The MIK net was deployed again at dusk, however the frame buckled as a result of a weak joint. The weather was

considered too bad to continue sampling with the other MIK net, so the Gulf III was deployed (Haul 17)

Tuesday 21 May 1996
The GULF III was deployed for hauls 18 to 30 (Figure 1). At 23:00, the ship headed to anchor at The Skerries to avoid the forecast gales.

Wednesday 22 May 1996
The ship remained in shelter till 21:45. During this period another MIK net was rigged and tested. Three MIK net hauls were made.

Thursday 23 May 1996
Four further MIK net deployments and three Gulf III deployments were made, and the ship headed for Belfast at 10:00. The ship docked at

Methods
Juvenile fish were sampled in darkness with the MIK net, plankton samples with the Gulf III were taken during the daylight hours. Plankton samples were sorted and the fish and *Nephrops* larvae removed and fixed in either 4% buffered formaldehyde. Fish were measured to the nearest 0.1mm. Large Crustacea were also removed from the sample and weighed to the nearest 0.1g. The remaining plankton sample was fixed in 4% buffered formaldehyde and stored.

20 whiting juveniles were frozen in liquid N for histological processing.

Results
The bad weather resulted in the MIK net sampling grid not being completed, however the most important stations to the west of the grid were sampled, all of the Gulf III stations were sampled. In total 44.8 million litres of seawater were sampled for plankton.

Whilst fish larvae caught by the Gulf III were still more concentrated on the coasts (Figure 2a), the larvae were larger offshore (Figure 2b). More pelagic juvenile whiting and witch were caught offshore by the MIK, in the area with greatest thermal stratification (Figure 3). This area also had the highest levels of fluorescence (Figure 4).

Nephrops larvae and euphausiids were typically found in the deeper waters, whilst the ctenophores dominated the shallow areas.

Acknowledgments

The captain, officers and crew of the RV *Lough Foyle* must be thanked for their help, ingenuity and hard work. The scientists functioned as a well oiled team and completed the cruise objectives successfully. Their team work, dedication and ardor must be commended. Good luck to Michael McAliskey, who sat his MSc exam during the cruise.

Signed

SIC: Mark Callow Date: 23/5/96

Master: [signature] Date: 23.V.1996.

Section Head: Date:

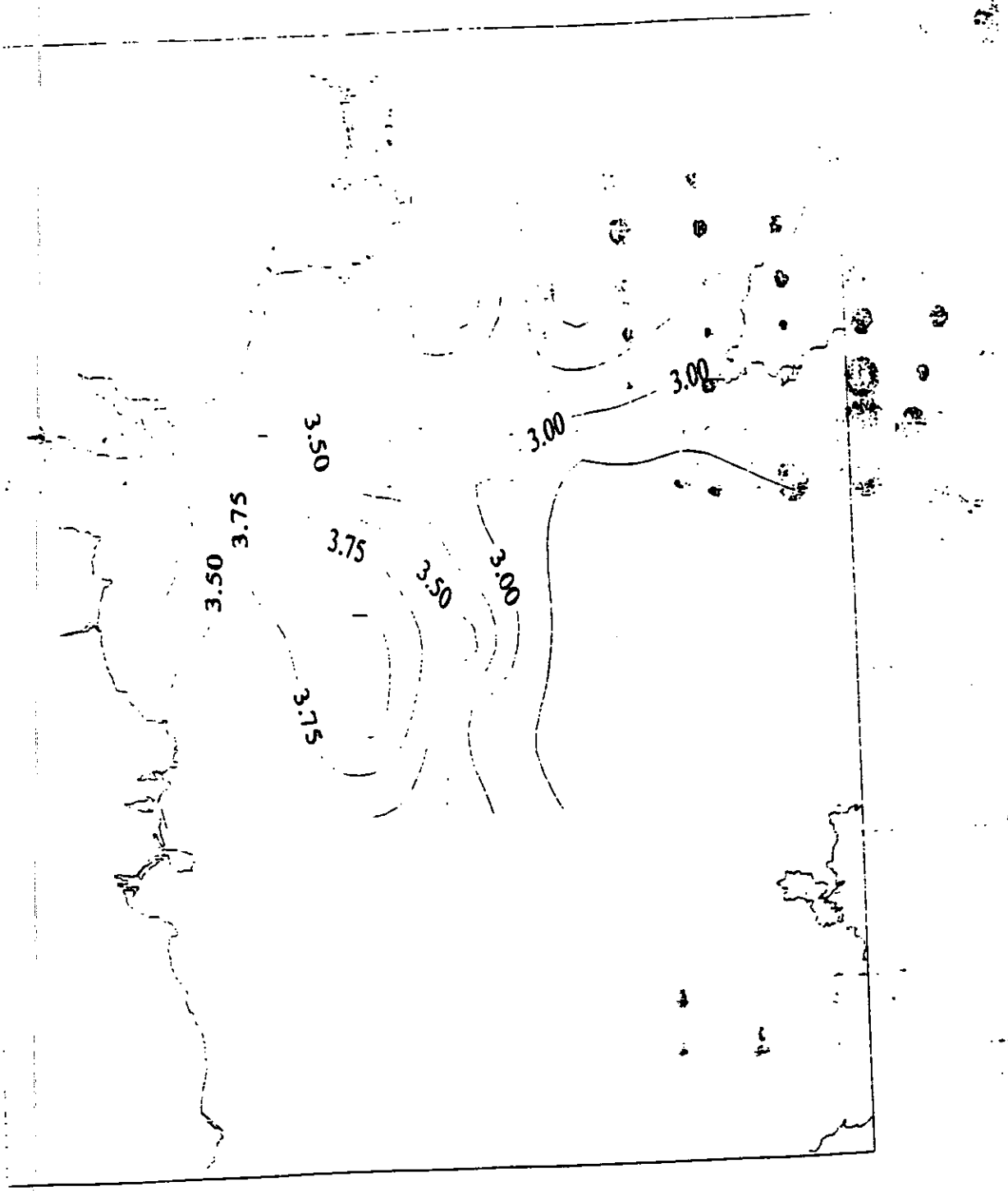

Figure 4 Mean relative fluorescense of surface mixed layer on LF2196.

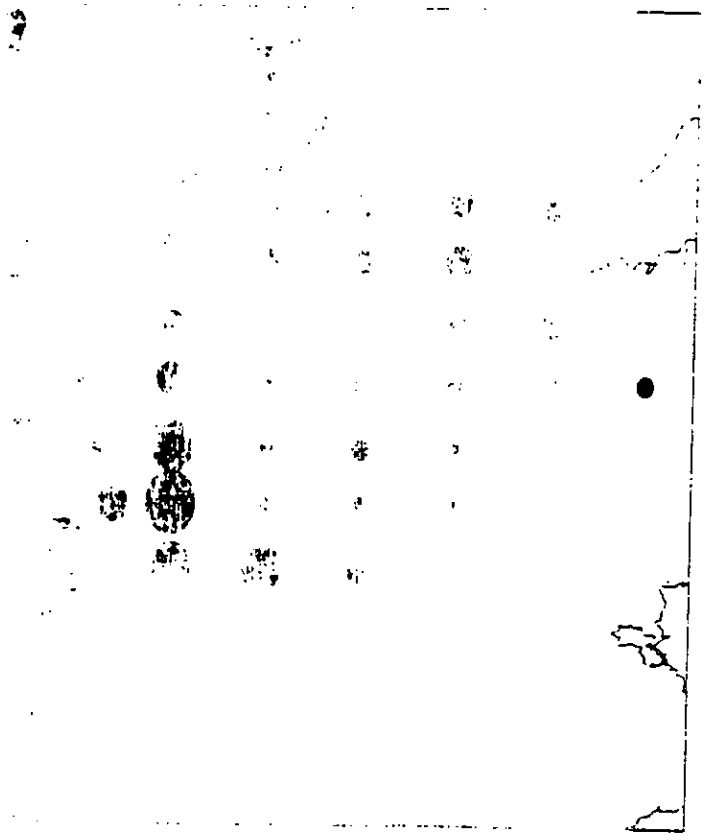

Figure 2a Distribution of Fish larvae caught with Gulf III

Largest circle= 100 per m²

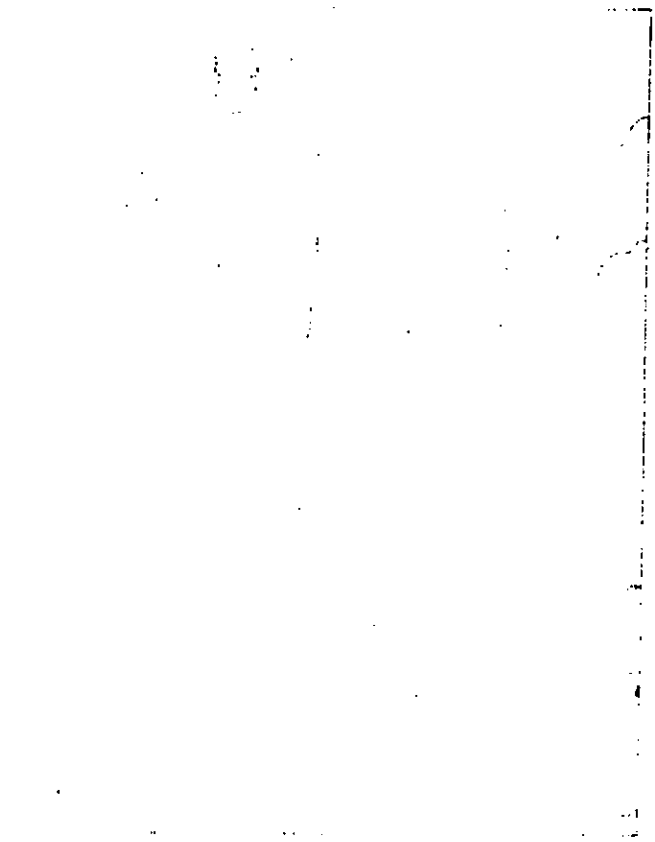

Figure 2b Mean Length of whiting larvae (mm) caught with Gulf III

Mean lengths range from 6.7 to 14mm

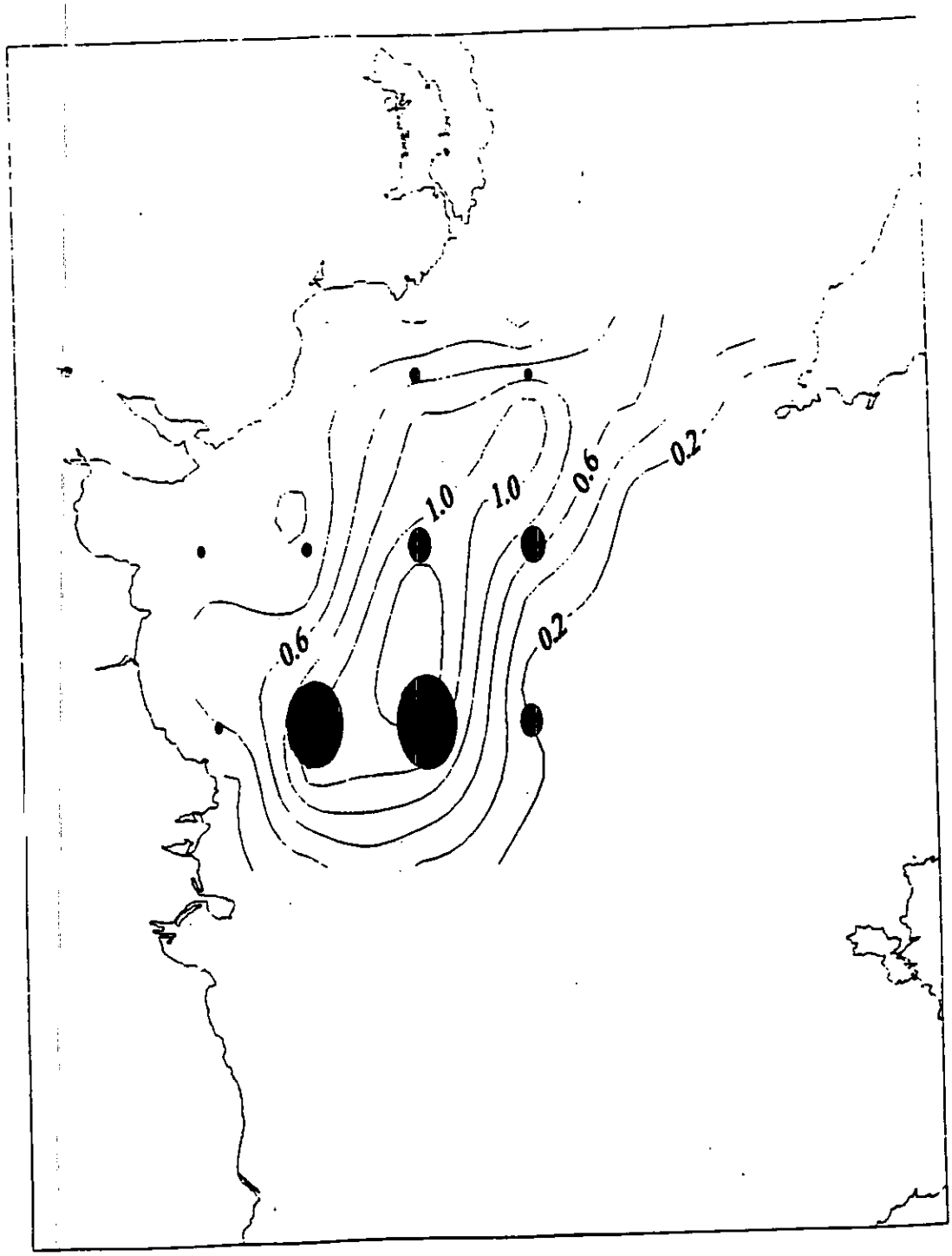

Figure 3 Distribution of fish caught in MIK net on LF2196.

Contours denote Delta T°C
Circles denote number of fish per m²
Largest circle = 1.85 per m²

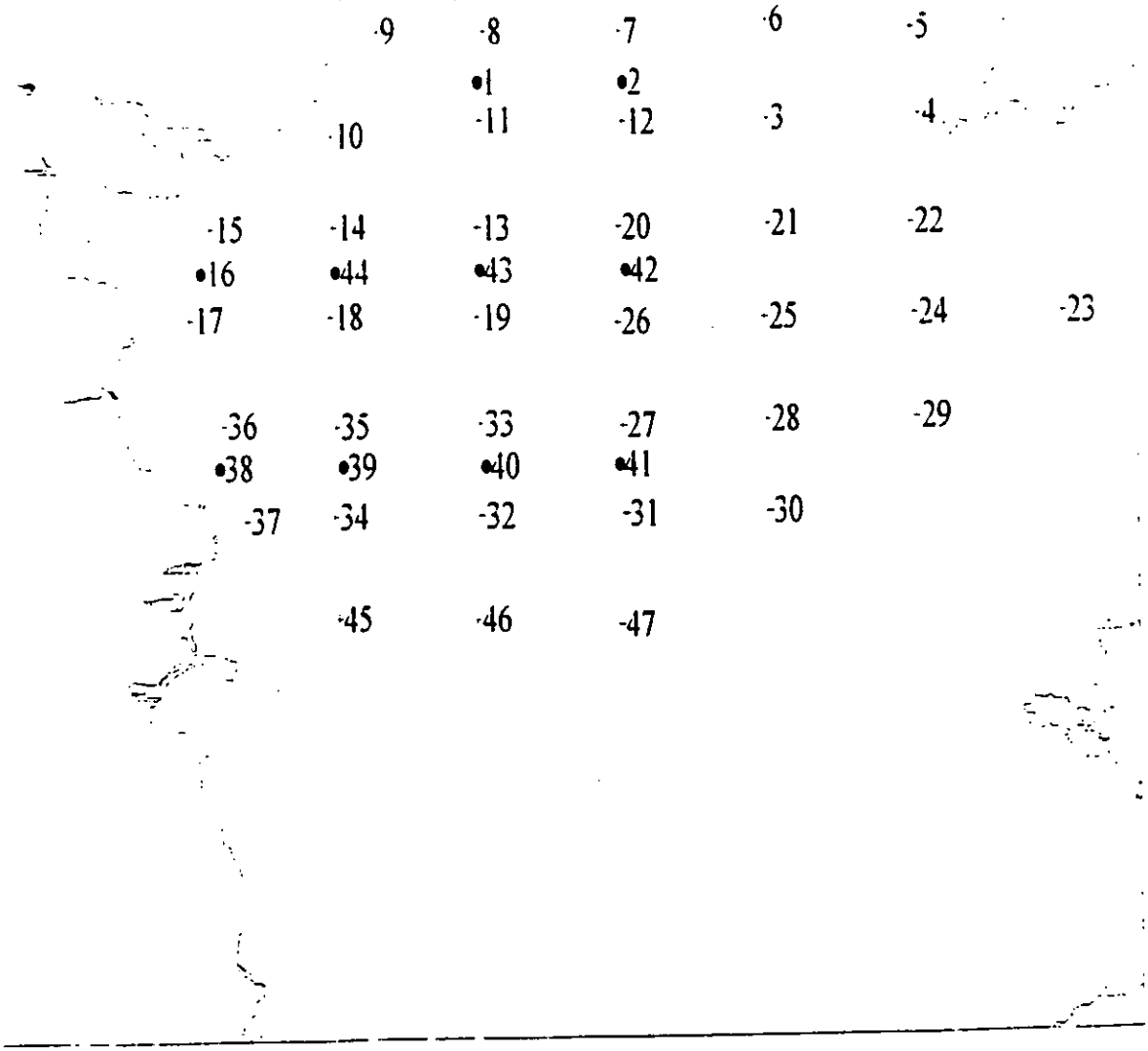

Figure 1 Samples taken on LF2196

- MIK net hauls

- Gulf III hauls