

Department of Agriculture for Northern Ireland
Agriculture and Environmental Science Division

Cruise Report: LF1195, part B Juvenile gadoid investigations
Vessel: RV *Lough Foyle*
Dates & area: 17-21 June 1995 in the Irish Sea; ICES div. VIIa

Personnel:	Mark Dickey-Collas	DANI	SIC/HSO
	John Peel	DANI	ASO
	Chris Burns	DANI	ASO
	Michael McAliskey	DANI	SO
	Gloria McLaughlin	DANI	SB2
	Daniel Cushnan	U. Ulster	student

Objectives:

1. To survey the distribution and abundance of pelagic juvenile gadoids in the western Irish Sea.
2. To investigate the abundance of fish and *Nephrops* larvae in the Irish Sea.
3. To collect juvenile fish for growth and stomach content analysis.
4. To screen *Nephrops* larvae for *Hematodinium*.
5. To investigate the abundance of euphausiids and other macro zooplankton in the Irish Sea.
6. To collect samples for the University of Liverpool.

Cruise narrative

Saturday 17 June 1995

All scientific crew were onboard by 13:00, and the ship sailed for the first station at 18:00 (Figure 1). A full safety and man overboard drill before sailing. The ADCP was activated upon leaving Belfast Lough.

Sunday 18 June 1995

The first haul with the MIK net was carried at 00:00. 5 MIK net hauls were completed before daylight (hauls 1 to 5). The Gulf III was rigged and tested on deck. However once the sampler entered the water the electronic's failed. Despite tracing the error to the sensor unit of the Pronet system, the problem could not be rectified. The Gulf was

rigged with mechanical flowmeters deployed from the oceanographic winch using 2 X the depth of cable for each haul. So no physical data were collected. 14 Gulf samples were collected by dusk. The MIK net was rigged at 22:30, and sampling continued (hauls 20 to 27). The ADCP appeared to collecting data erratically. For periods up to 5 hours the data were too "bad" for collection. Bleeding the section of hull around the mounting made no difference to the quality of data and the data collection seemed dependent on the state of the sea.

Monday 19 June 1995

The GULF III was deployed for haul 28 at 05:00. The ship then headed north, east and then returned south to enable a further 17 stations to be sampled. The MIK net was deployed at 22:30 (haul 45). However due to an oversight by the officer on the bridge, the MIK net was dragged along the sea bed and bent beyond repair. This also resulted in the loss of one flowmeter. So the Gulf III was rigged again and plankton sampling continued (hauls 46, 47).

Tuesday 20 June 1995

The final plankton hauls were made (hauls 48 to 51). The EK500 was then lowered and the acoustic transect began at 06:30. Due to the lack of a net no truing of the acoustic marks could take place. The ship completed the transect at 22:00 and returned to Belfast.

Wednesday 21 June 1995

The vessel docked at 03:00 in Belfast.

Methods

Juvenile fish were sampled in darkness with the MIK net, plankton samples with the Gulf III were taken during the daylight hours. The ADCP was left to collect current data during the first two and a half days of the cruise. Plankton samples were sorted and the fish and *Nephrops* larvae removed and fixed in either 4% buffered formaldehyde or 99% ethanol. 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.

The stomachs of 10 juvenile whiting from each MIK net haul were dissected out and preserved in 4% buffered formaldehyde, the remaining portion of the fish were frozen for dry weight determination.

The acoustic transect was carried out using the EK500 and the data collecting software package EP500.

Results

Unfortunately whilst the plankton sampling grid was completed, the MIK net grid was not. The failure of the Pronet system prevented any physical data being collected. The ADCP data were patchy and the acoustic data were not truthed due to lack of net samples.

However the samples collected further support last year's results. Juvenile fish were found offshore (a significant positive correlation with depth, figure 2). The euphausiids were in the expected area (figure 3), and smaller fish larvae exhibited a homogenous distribution throughout the region.

Nephrops larvae were found over the southern deeper region and in the frontal area to the south west of the Isle of Man (figure 4). This distribution suggests that entrapment in the gyre was not occurring. 72 *Nephrops* larvae impression smears were taken and fixed. Compared to last year the concentrations and spread of ctenophores were much higher, especially to the south of the Isle of Man (figure 5).

94 whiting juveniles were dissected for stomach and growth analysis.

The acoustic transect showed the paucity of back scatter in the Irish coastal region, and the higher biomass of organisms below the thermocline in the stratified region. These data will be further worked up in the laboratory.

Acknowledgements

The officers and crew of the RV *Lough Foyle* must be thanked for their ardour and help. All the scientists worked very hard, despite the technical troubles. Their team work, dedication and ingenuity ensured that most of the cruise objectives were completed.

Signed

SIC: M. Callan

Date: 18/7/95.

Master: See fax

Date:

Section Head: A. J. Heaney

Date: 23/8/95

was carried out using the EK500 and the data collecting
1300

When the plankton sampling grid was completed, the MKK net grid was
The Pricel system prevented any physical data being collected. The
The and the acoustic data were not trusted due to lack of net

collected further support last year's results. Juvenile fish were
Front positive correlation with depth, figure 2). The
the expected area (figure 3), and smaller fish larvae exhibited a
tion throughout the region

are found over the southern deeper region and in the frontal area to
the Isle of Man (figure 4). This distribution suggests that entrapment
is occurring. 72 *Nephrops* larvae impression smears were taken and
last year the concentrations and spread of ctenophores were much
the south of the Isle of Man (figure 5).

were dissected for stomach and growth analysis.

showed the paucity of back scatter in the Irish coastal region.
of organisms below the thermocline in the stratified region.
further worked up in the laboratory.

Comments

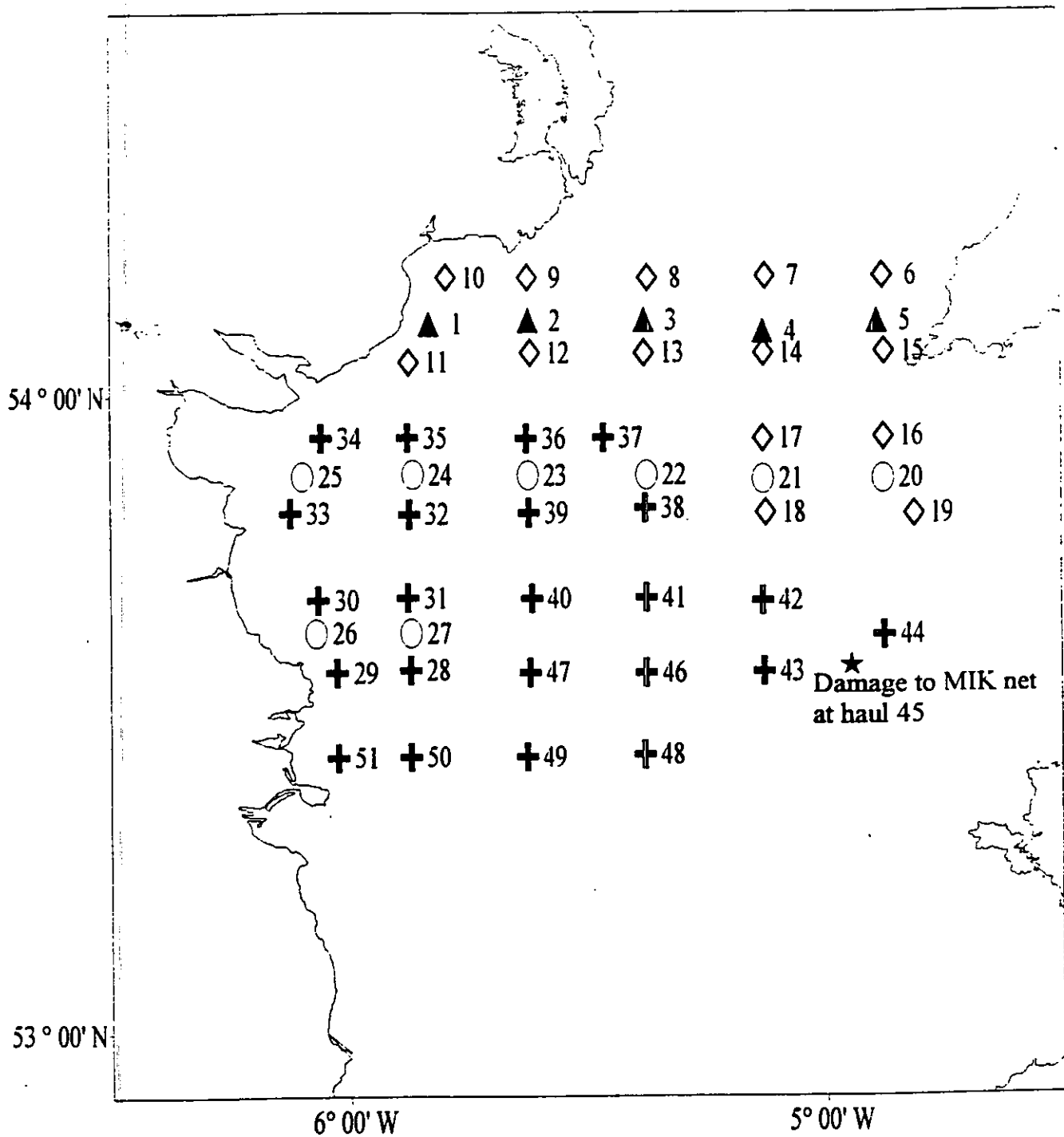
of the R/V *Lough Foyle* must be thanked for their ardour and
worked very hard, despite the technical troubles. Their team
and ingenuity ensured that most of the cruise objectives were

Chris
A. M. Stodart

Date: 18/7/95

Date: 23 Aug 1995

Date: _____



Gulf III and MIK net samples taken on LF1195

MIK net hauls 1 to 5 and 20 to 27

Figure 1

Number of juvenile fish per m² over depth (m) on LF1195, 17-21 June 1995

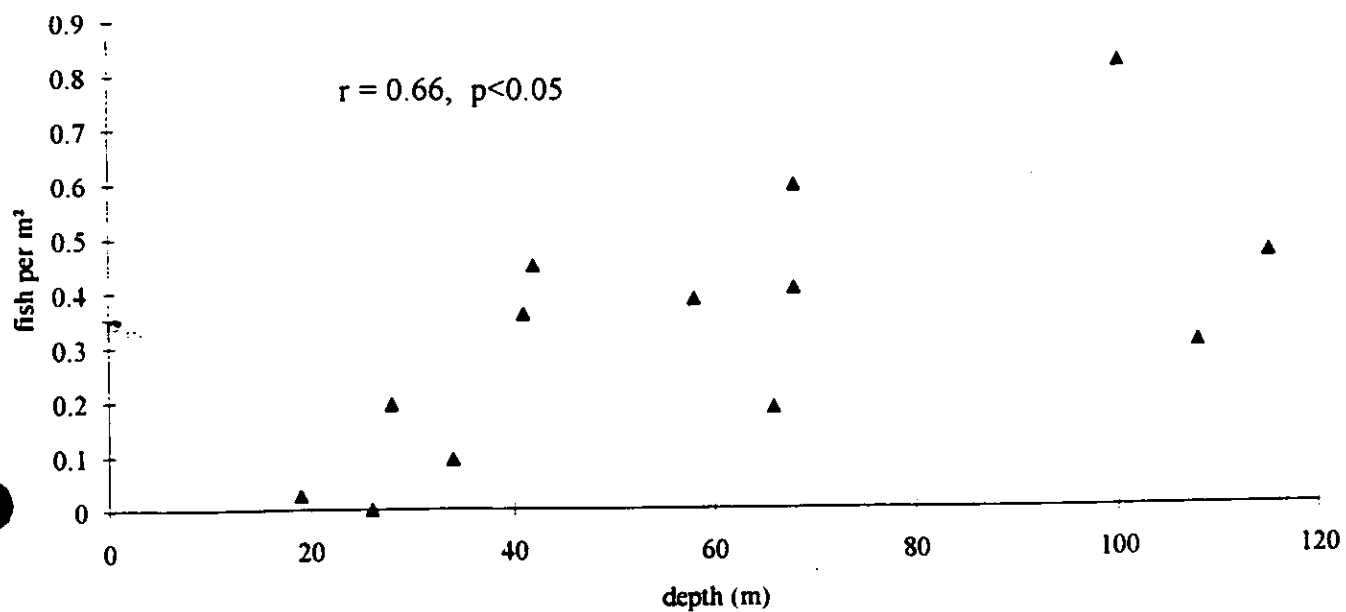


Figure 2

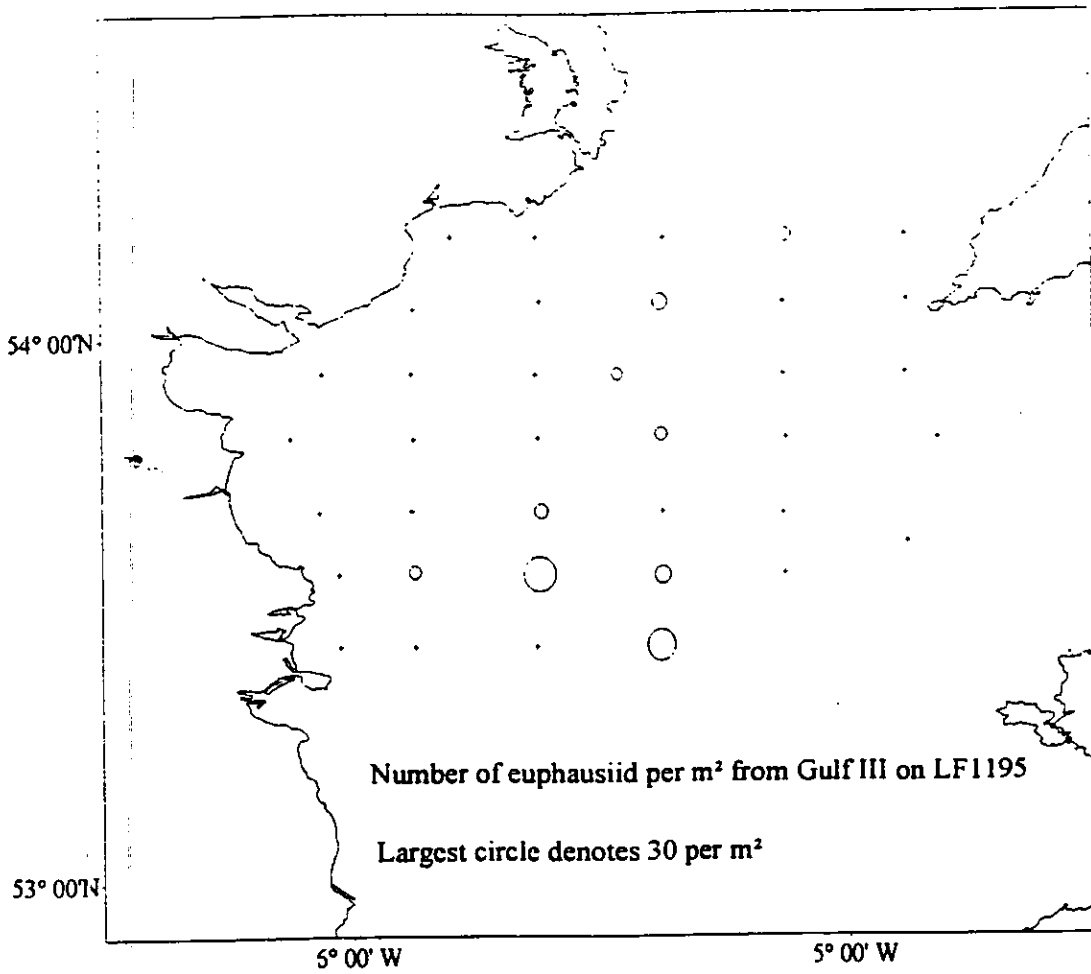


Figure 3

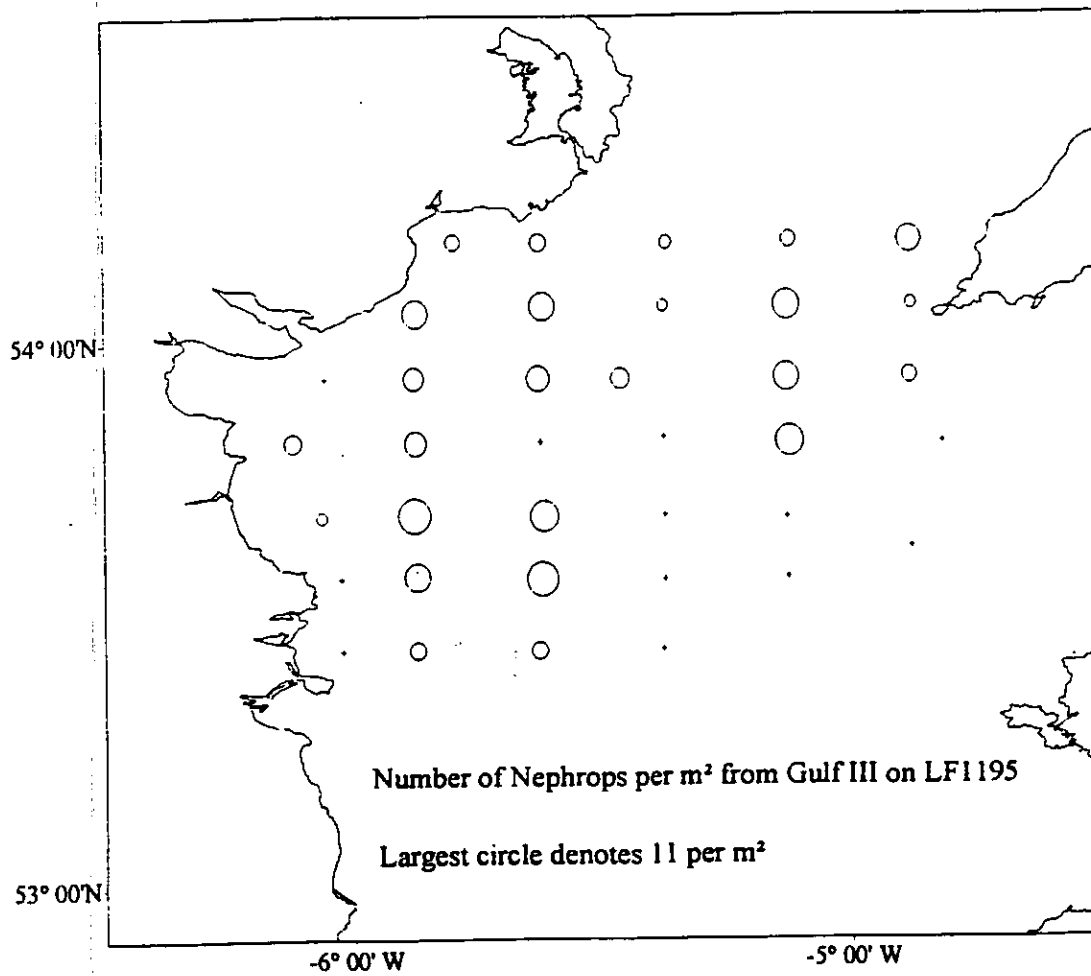


Figure 4

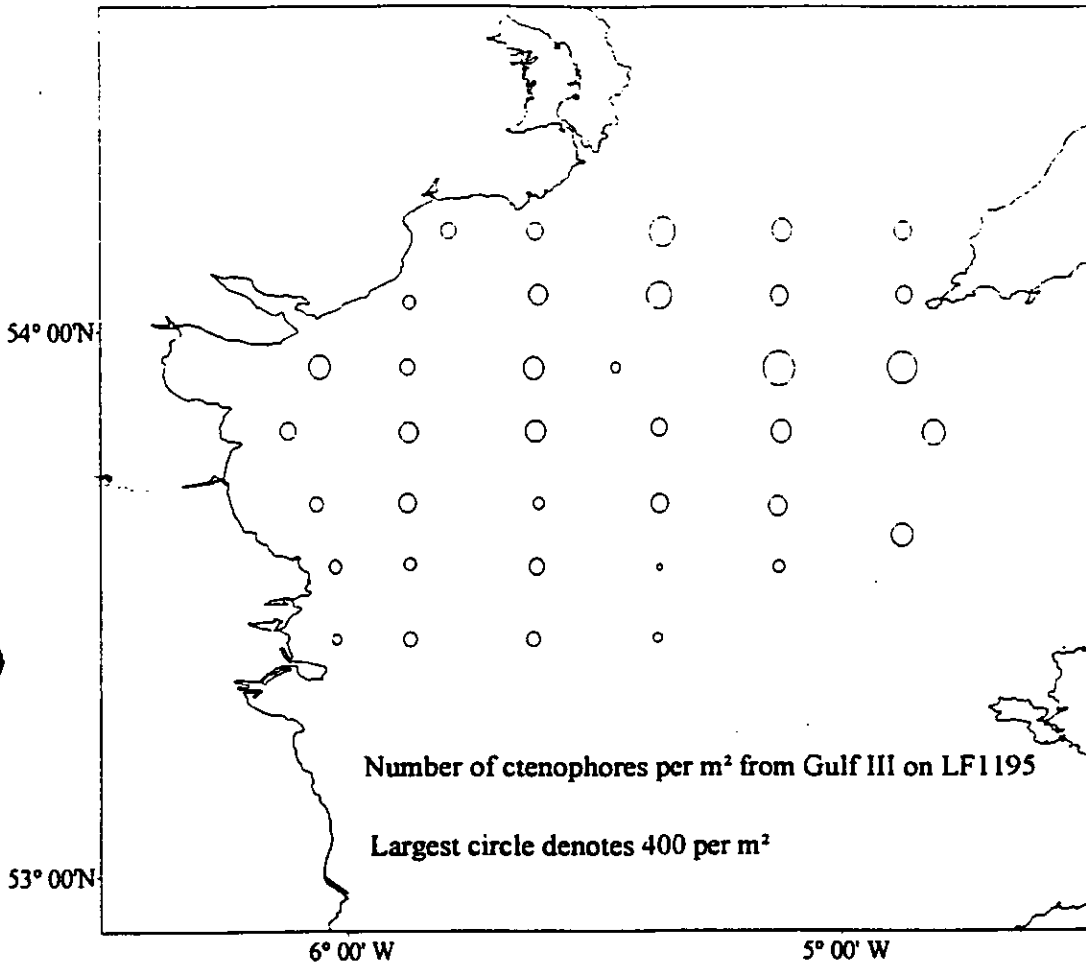


Figure 5