

Not to be cited without prior reference to the Laboratory

Charter vessel "Lough Foyle"

## REPORT

6-23 June 1989

### Personnel

M Walsh	SSO (in charge)
D Beveridge	SO
I Gibb	ASO
Miss J McWilliam	ASO

### Objectives

1. To carry out a survey for mackerel eggs on the spawning grounds of the "western" mackerel stock.
2. To sample mackerel concentrations in the spawning area.
3. To obtain mackerel ovaries for estimation of atresia.
4. To monitor temperature, salinity and chlorophyll in the sampling area.

### Narrative

Scientific staff joined the "Lough Foyle" in Troon at 1730 on 5 June. Scientific equipment was installed and tested that evening and the following morning with the assistance of E Armstrong. The computer logging system for the Scanmar depth/height and temperature monitors on the plankton sampler, however, was faulty and did not operate during the cruise. "Lough Foyle" sailed at 1500 on 6 June.

The survey area was reached and plankton sampling began at 0500 on 7 June. Some minor difficulties were experienced with the deployment of the plankton sampler and towed Scanmar transducers during the first 3 days of the survey but these were overcome by 9 June.

Apart from a break of half a day on 11 June, as a result of gale force winds, the work programme continued uninterrupted until the "Lough Foyle" docked in Cork at 1400 on 14 June for the half landing. During the first half of the cruise radio contact was made with the French, Dutch and English vessels also participating in the survey and a strategy planned to ensure optimum coverage of the sampling area during the remainder of the cruise.

"Lough Foyle" sailed from Cork at 1400 on 15 June to recommence the survey. No interruptions to the work programme were experienced during the second half of the cruise and a good coverage of the survey area was achieved. Several changes of plankton net were required during the cruise as a result of minor damage. Prior to 10 June 250  $\mu$  mesh nets were used, from 10-18 June 500  $\mu$  mesh nets, and from 18-22 June a 400  $\mu$  mesh net. "Lough Foyle" docked in Troon at 0400 on 23 June.

All equipment was off loaded there and the scientific staff departed at 0930 that morning.

Cruise tracks and stations worked are shown on the attached charts.

## Results

During the cruise 100 plankton stations were worked with replicate sampling at 28 of them. Fish eggs were picked out and counted from all samples, while identification and staging of eggs was carried out on several samples in areas of high egg abundance. A preliminary analysis of results indicates a more westerly distribution of eggs north of 49° 30'N than in previous years with the highest concentrations to the west of the 200 m contour. Horse mackerel eggs were more abundant than mackerel eggs in most of the samples analysed.

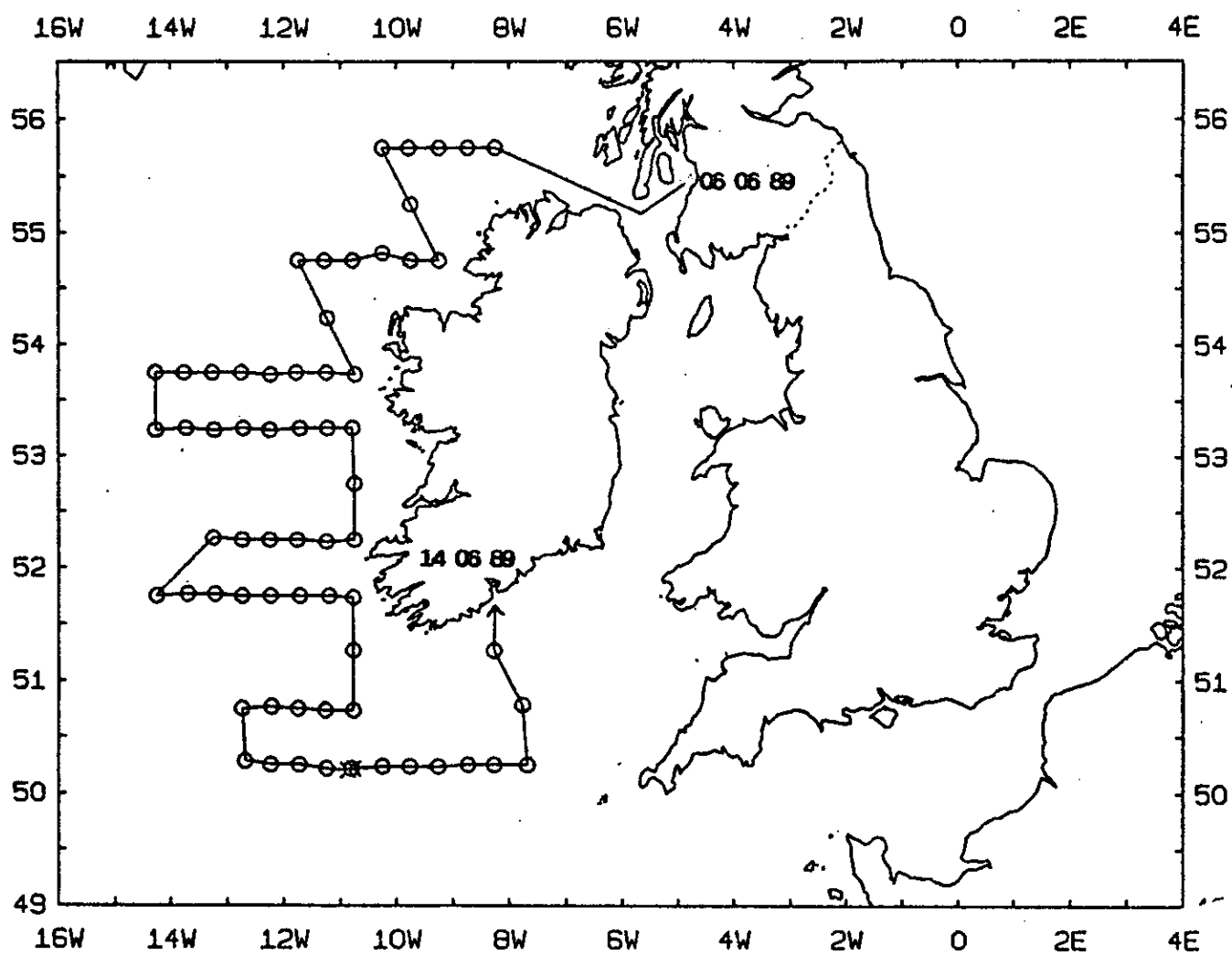
Handline fishing was carried out on 16 occasions yielding small catches of mackerel on 9 of these. The size range of sampled catches was 22-44 cm with several modes between 28 and 38 cm. All samples were aged at sea, the most abundant year classes were those of 1985, 1984, 1980 and 1986. Among the females examined 57% had ovaries containing externally visible ripe eggs, the majority of ovaries being more than half full. No fully spent females were caught but a minority of males had reached this stage. Ovaries for atresia investigations were collected from 36 fish.

Data on sea surface temperature and salinity were monitored continuously and chlorophyll samples collected at each plankton station.

M Walsh

11 July 1989

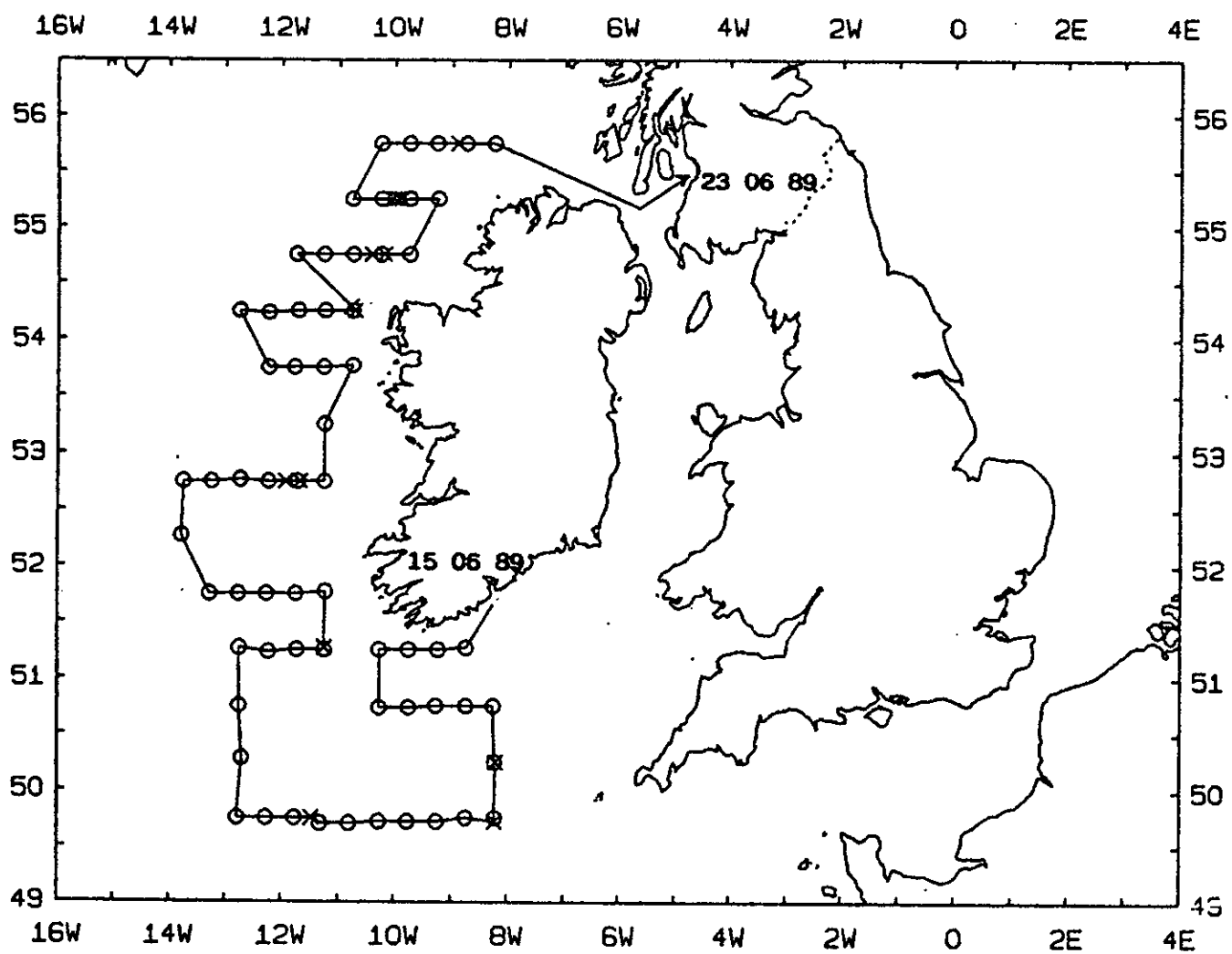
CRUISE TRACK LOUGH FOYLE LF1/89 PART 1



O Plankton haul

X Handline haul

# CRUISE TRACK LOUGH FOYLE LF1/89 PART 2



○ Plankton haul

× Handline haul