

R1/3

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*Seaboard Invincible*

Cruise 0293H

## REPORT

2-13 September 1993

### Personnel

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### Objectives

1. To conduct a plankton survey of the Scottish north and west coasts as part of the ICES international herring larval surveys (area VIa).
2. To collect surface temperature and salinity data over the survey area.

**Out-turn days per project:** 12 days EAA1.

### Narrative

Cruise tracks for the two survey parts are given in Figure 1 and 3 respectively. After loading and setting up the gear, the ship left Aberdeen at 1815 on 2 September and made passage north to the survey area, calibrating flowmeters en route and starting the station grid sampling at 0800 on 3 September 1993. Over the next seven days, ending 8 September 1993, first the southern stations off the north coast, then those west of the Hebrides and finally the Minches stations were all sampled. No time was lost to bad weather and some additional stations were sampled to extend the survey area in the Minches. Having thus completed all but the most northerly stations, a second survey of the northern area was commenced and completed without loss of time in the face of north easterly gales. The second survey extended from northwest of Lewis eastward towards Orkney and was completed by 2100 on 11 September 1993. After recalibrating the depth meters in Loch Erribol the flowmeters were calibrated and a series of sixteen hauls were made with the standard Dutch Gulf III net and a newly developed prototype net to compare their performances. This exercise was completed by 1200 on 12 September 1993 and the ship returned to Aberdeen to dock at 0400 13 September 1993.

### Results

The preliminary results of the herring larval surveys are illustrated in Figures 2 and 4. A continuous record of surface temperature and salinity was obtained by thermosalinograph. Herring larvae were widely distributed during both surveys, 160 samples were collected. The herring larvae distribution on the first survey showed

a series of "patches" of larvae throughout the area. The largest of these was found close to the north coast and northwest of the Hebrides. Very few larvae were found in the Minches. In the densest "patches" the larvae were very small, at times with yolk sacs, indicating recent hatching on the spawning grounds. Larger larvae were found less abundantly and generally at more offshore positions. There were few or no larvae in the most westerly stations with few larvae in the south of the survey area.

The results of the second survey again showed inshore "patches" of high abundance of herring larvae with considerable numbers also at northern offshore stations. The distributions revealed by these surveys show herring larvae as widely spread but with the major concentrations in coastal waters and abundance thinning out towards the shelf edge. Comparison between surveys suggests that larvae are quite rapidly transported out of the survey area. The results will form a useful contribution to the long term data set of ICES Herring Larvae Surveys held at the SOAFD Marine Laboratory at Aberdeen. Later analysis of the temperature and salinity data and larval size analysis should enhance understanding of these preliminary results.

Stephen J Hay

4 October 1993

VIA(N) IHLS SURVEY GRID

PART 1 CRUISE TRACK

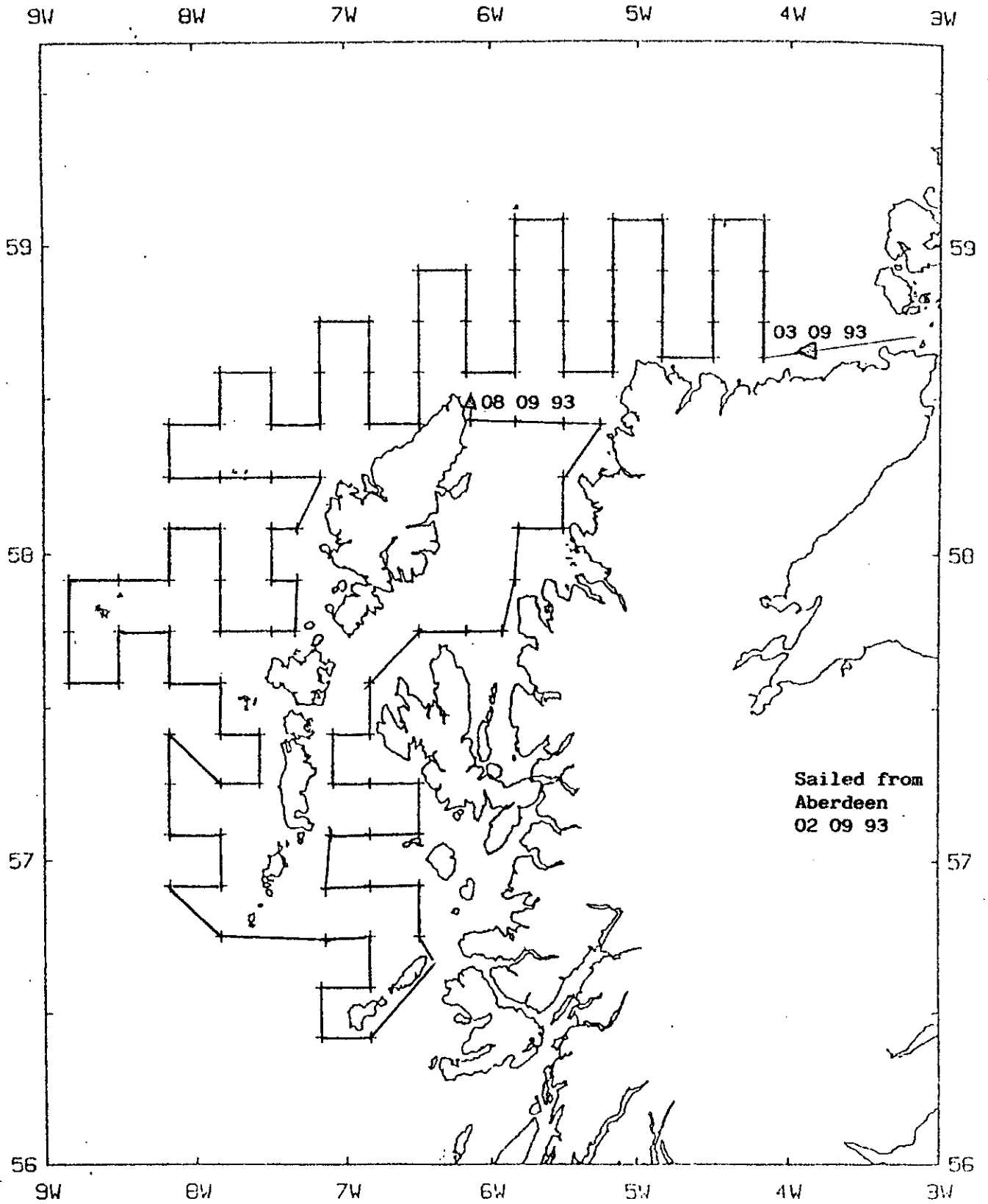


FIGURE 1

Preliminary results  
Vla(N) IHLS Survey Grid  
Herring larvae per m<sup>2</sup>

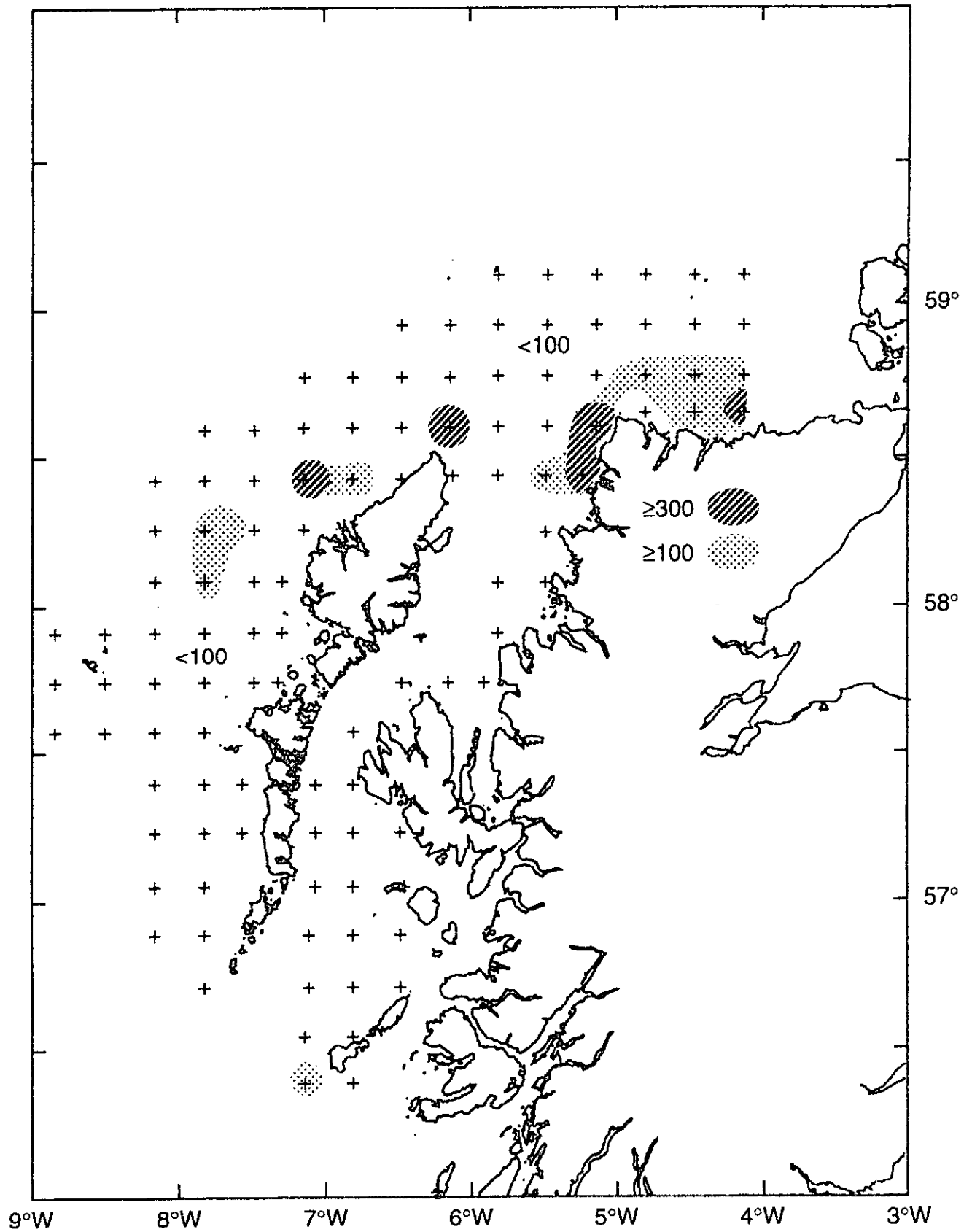


Figure 2

VIA(N) IHLS SURVEY GRID

PART 2 CRUISE TRACK

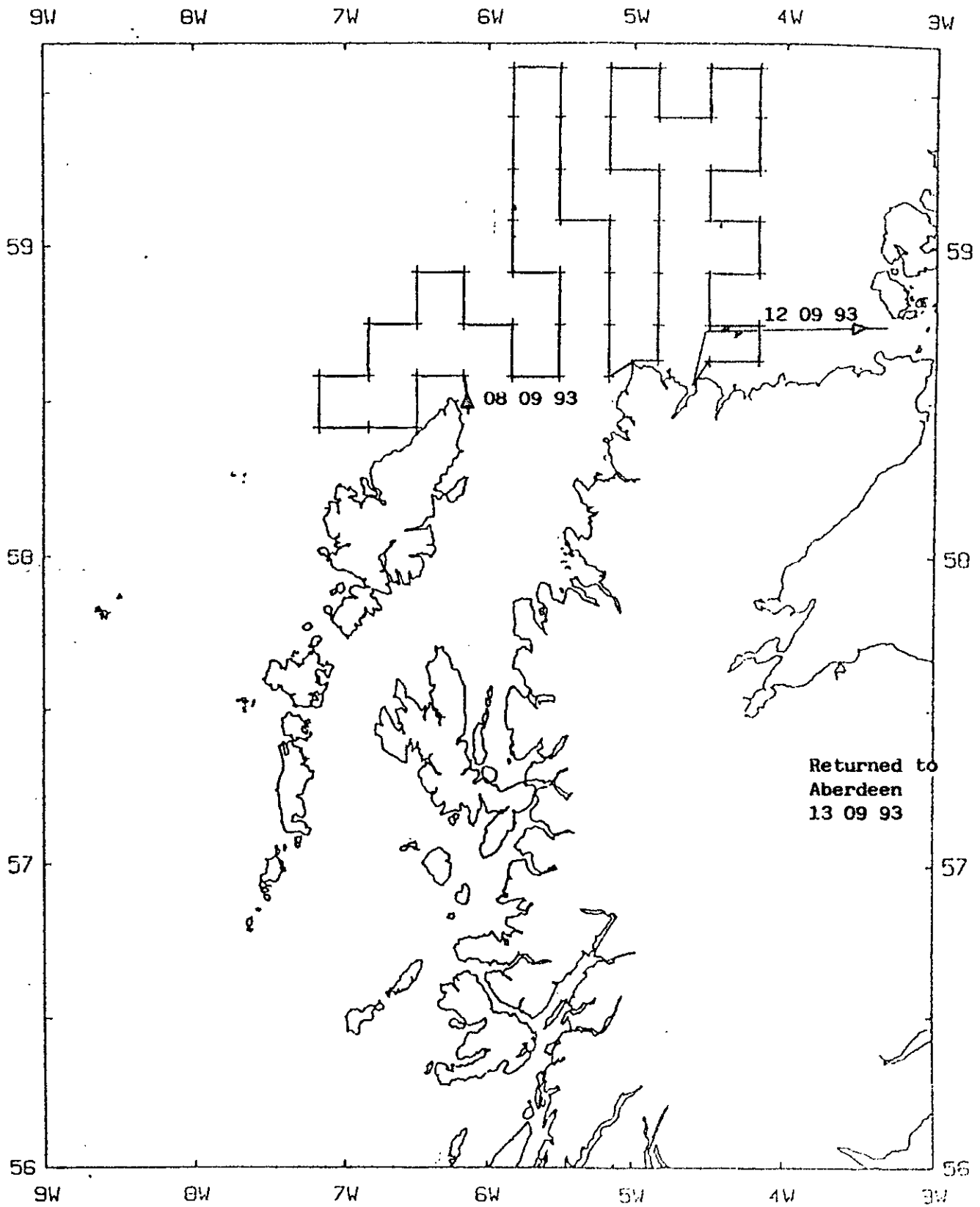


FIGURE 3

Preliminary results  
Via(N) IHLS Survey Grid  
Herring larvae per m<sup>2</sup>

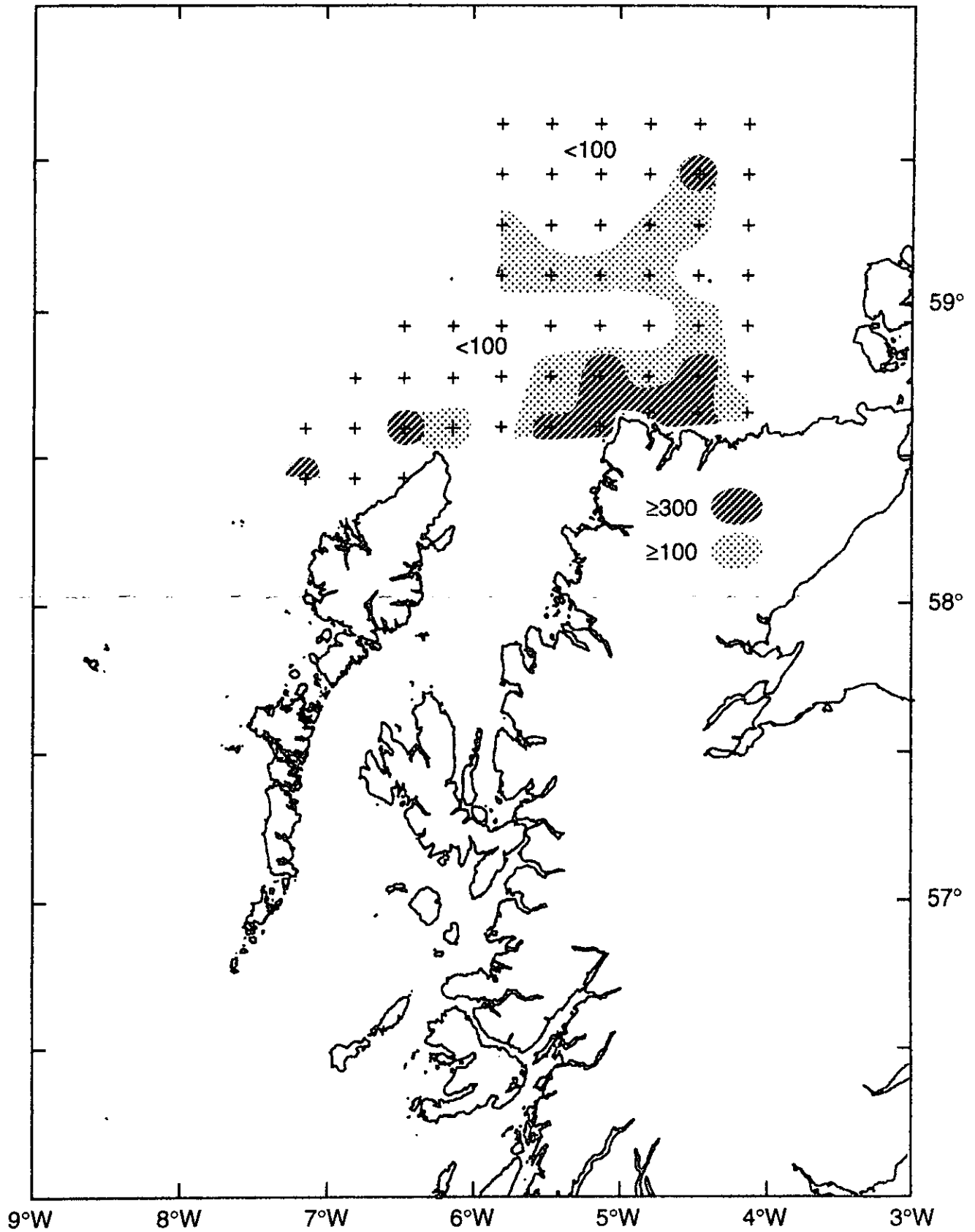


Figure 4