

R1/12

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FRV *Scotia*

Cruise 1095S

REPORT

8-27 July 1995

Half Landing: Lerwick**Personnel**

E J Simmonds	PSO (in charge)
P J Copland	HSO
A P Robb	HSO
M C Mathewson	ASO
N S Collie	PTO
C Maravelias	PhD Student
X Chalen	Visitor

Objectives

1. To participate in an ICES - coordinated acoustic and mid-water trawling survey in the north western North Sea and north of Scotland from 58 to 62°N and from 4°W to 2°E excluding Faeroese waters.
2. To obtain samples of herring for biological analysis, including age, length, maturity and ichthyophonus infection rates.
3. To obtain CTD profiles and sea surface T&S for analysis of herring distribution in relation to the environment.

Out-turn costs per project: 20 days EAA1**Narrative**

Scotia departed from Aberdeen at 1030 on 8 July 1995 and made passage north to Scapa Flow for calibration of the acoustic equipment. This was completed by 0130 on 9 July. The Echo-Integrator Survey was started at 0330, carrying out east-west transects from the Scottish coast to 2°E. The cruise track is attached. The transects were carried out sequentially with a 15 mile spacing in a northerly direction. The western ends of the transects were terminated along the coast of Orkney and Shetland. Extra short transects with 7.5 Nm spacing were included on the area close to Shetland. Fishing was carried out on fish traces detected during the survey. At 2300 on 17 July after reaching 61°10'N on the survey grid *Scotia* proceeded to Lerwick for a half-landing on 18 July and docked there at 0900 hours.

Scotia sailed from Lerwick at 0900 on 19 July to calibrate the acoustic equipment in Gulberwick Bay. At 1130 *Scotia* made course to restart the survey grid at 61°25'N at 2000 hours. The survey progressed north reaching the northern transect limit of the area at 61°40'N on 20 July. *Scotia* then continued the survey southwards following a similar transect design to the west of Shetland with selected transects at 7.5 mile spacing inshore and 15 Nm offshore. The western ends of the transects were terminated at approximately the 250 m depth contour or at 4°W which ever was the shorter. The grid was finished at 1600 on 26 July at 58°42'N 3°25'E. *Scotia* sailed to Aberdeen and docked at 0600 on 28 July at the end of the cruise.

Data Collection

The survey grid provided 1,013 Echo Integrator runs each of 2.5 miles. Thirty seven pelagic trawls were carried out to obtain identification and biological samples. From these hauls, 22 hauls provided samples of herring which were sampled for length, and weight (1,205 fish), age, sex, maturity and the presence of ichthyophonous (2,721 fish). In addition surface temperature and salinity readings were logged automatically throughout the cruise. A total of 48 CTD profiles were collected, one at each trawl station and one at 2300 hours each day at the end of the survey period. In addition 57 XBT's were used to provide temperature profiles between CTD stations to augment the CTD data. Sea bed type data (RoxAnn) was collected throughout the cruise.

Results

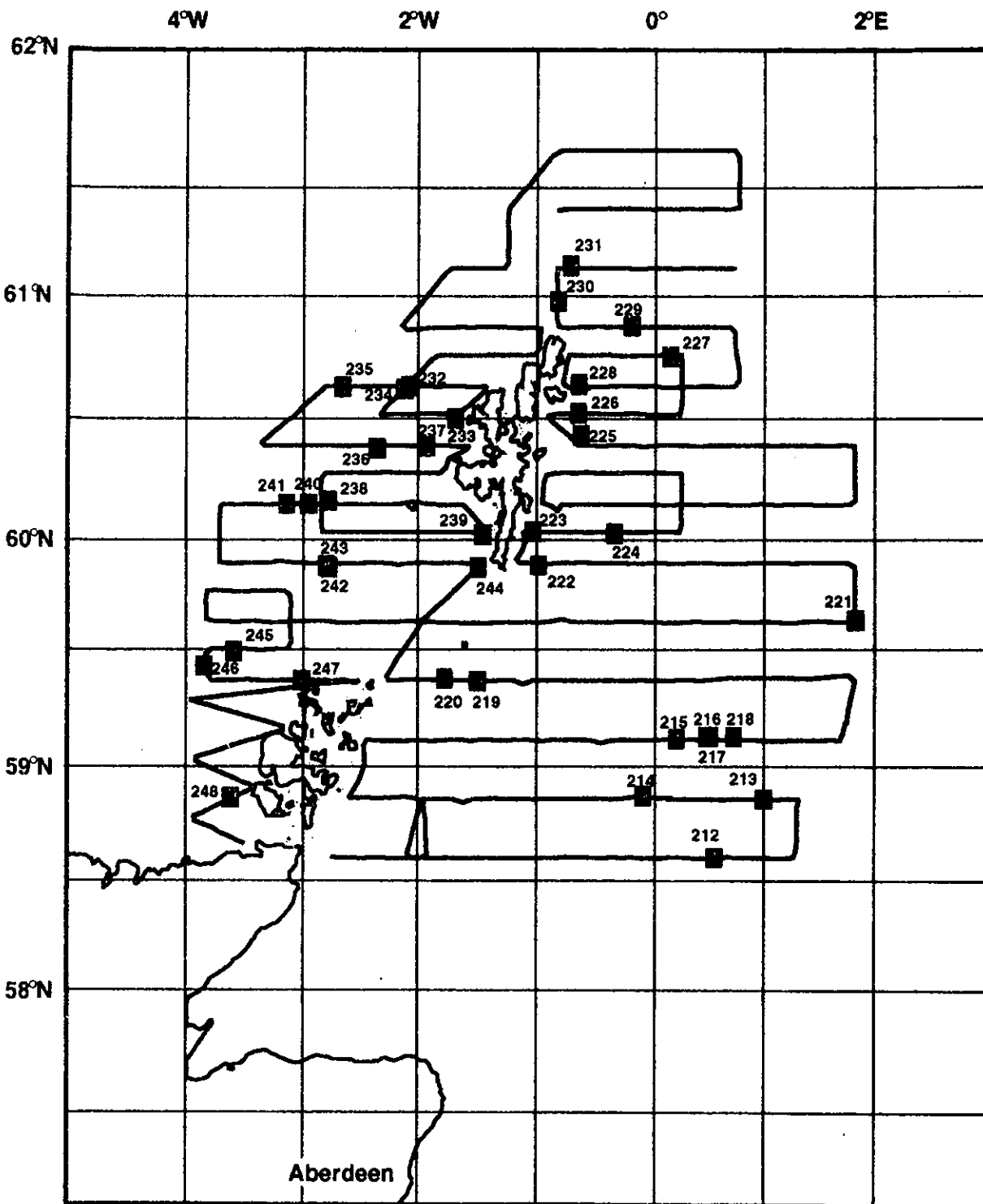
Data on abundance of herring at age, sex and maturity remain to be worked up. The length weight data has been analysed and the equation length weight is:

$$W = 1.306 \times 10^{-7} L^{3.757} \quad (W - g \quad L - mm)$$

The occurrence of ichthyophonous was very low, with 20 of 22 herring samples giving zero incidence. The only two hauls with any incidence (six fish) gave an infection rate of less than 2%. Both these hauls were taken to the north east of Shetland.

E J Simmonds
14 August 1995

Seen in draft: Captain P Ramsay



Cruise Track and Trawl Positions for Scotia Survey 8-27 July 1995