

R1/12

Not to be cited without prior reference to the Marine Laboratory, Aberdeen

FRV SCOTIA

Cruise 1094S

REPORT

6-26 July 1994

Personnel

E J Simmonds	PSO (in charge)
P J Copland	HSO
D S Beveridge	SO
S E B Thain	SO
M J Burns	ASO
M Lane	Visitor (MSc student) 6-16 July

Objectives

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

Out-turn Days Per Project: 21 days, EAA1

Narrative: *Scotia* departed from Aberdeen at 1000 on 6 July 1994 and made passage north to Scapa Flow for calibration of the acoustic equipment. This was completed by 0200 on 7 July. The echo-integrator survey was started at 0600, carrying out east-west transects from the Scottish coast to 1°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. Fishing was carried out on fish traces detected during the survey. At 1700 on 15 July after reaching 61°00'N on the survey grid *Scotia* proceeded to Haroldswick for a second calibration completed by 2200. *Scotia* sailed for a half-landing on 16 July and docked in Lerwick at 0900.

Scotia sailed from Lerwick at 0900 on 17 July to restart the survey grid at 61°05'N at 1500. The survey progressed north reaching the northern transect limit of the area at 61°50'N on 19 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. The western ends of the transects were terminated at approximately the 300 m depth contour or at 4°W whichever was the shorter. The grid was finished at 1400 on 25 July at 58°41'N 03°25'E. *Scotia* sailed to Aberdeen and docked at 0800 on 26 July at the end of the cruise.

Data Collection: The survey grid provided 1036 echo integrator 2.5 mile runs. Thirty-five pelagic trawls were carried out to obtain identification and biological samples. From these hauls 19 provided samples of herring which were sampled for length (7905 fish), weight (1000 fish), age, sex, maturity and the presence of ichthyophonus (2612 fish). In addition, surface temperature and salinity readings were logged automatically throughout the cruise. A total 45 CTD profiles were collected one at each trawl station and one at 2300 at the end of the survey period. Sea-bed type data (RoxAnn) was collected throughout the cruise.

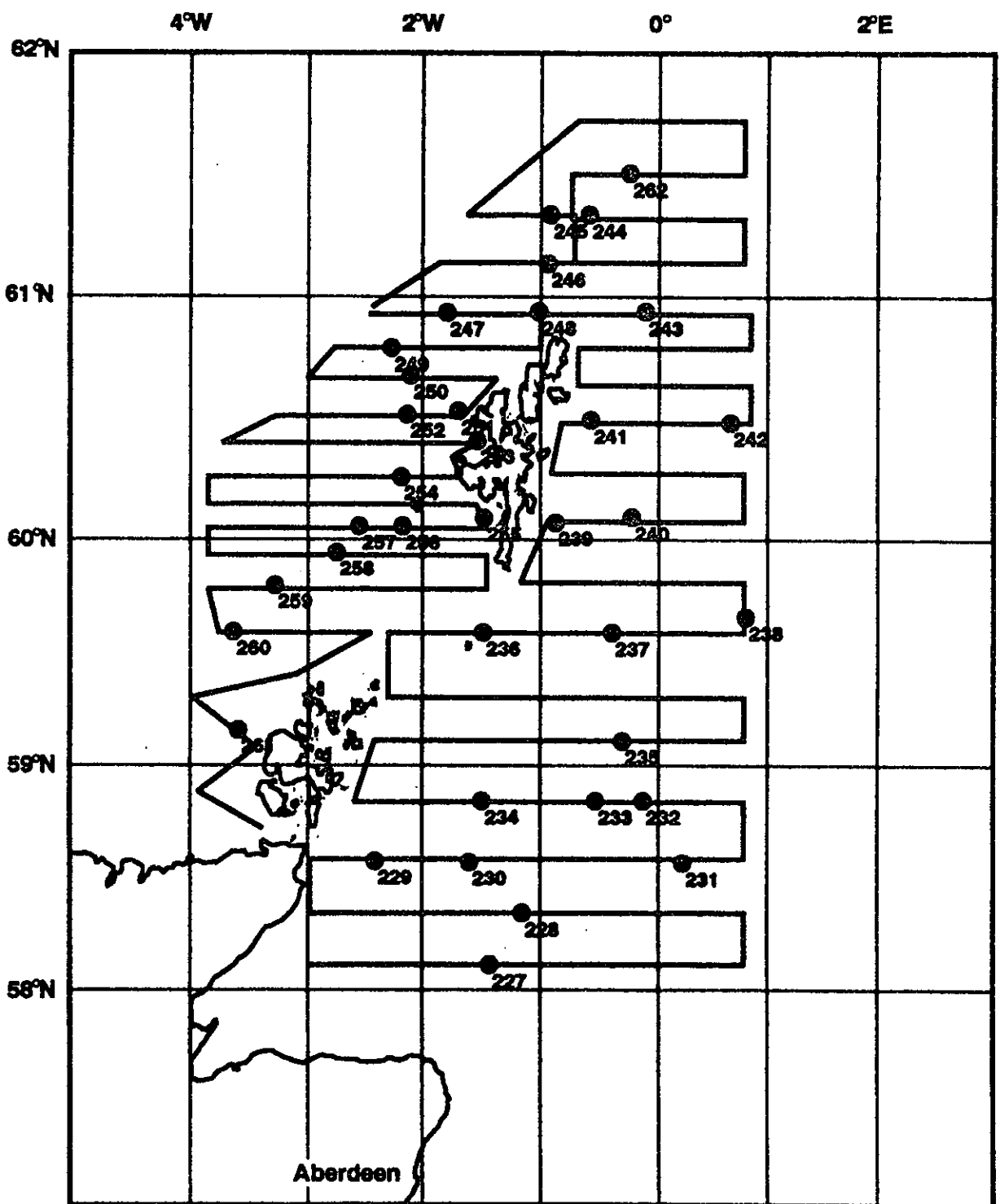
Results: Data on abundance of herring at age, sex and maturity remain to be worked up. The length weight data has been analysed and the equation length weight is:

$$W = 0.00178 L^{3.485}$$

The occurrence of ichthyophonus was very low with 17 of 19 herring samples giving zero incidence, the only two hauls with incidence gave an infection rate of less than 2%.

E J Simmonds
15 August 1994

Seen in draft: Captain P Ramsay



Cruise Track for Scotia (Cruise 10 94) 6 to 26 July 1994