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FRV "Scotia"

Cruise 7/89

7SR89

5-25 July 1989

REPORT

Personnel

E J Simmonds	PSO (in charge 18-25 July)
S T Forbes	SSO (in charge 5-17 July)
M E Black (Mrs)	HSO
J R Hutcheon	SO
T V Taylor	ASO
F Burns	ASO
I MacKenzie	RGIT (visitor)(5-17 July)

Objectives

1. To participate in an ICES - coordinated acoustic and midwater trawling survey in the north western North Sea and north of Scotland.
2. To carry out target strength measurements on identified herring traces.
3. To obtain samples of herring for biological analysis.
4. To obtain hydrographic samples for radio caesium monitoring.

Narrative

"Scotia" sailed from Aberdeen at 1130 on 5 July and proceeded to Inganess Bay to carry out a calibration of acoustic survey and dual beam target strength measurement equipment. This was completed and at 0730 on 6 July an echo integrator survey grid was commenced north of 58°30'N working east and west with a grid spacing of 7.5 nautical miles in areas where greater concentrations had been observed in previous years, and 15 nautical miles in areas of lower density. The grid to the east of Shetland was completed on 11 July and "Scotia" surveyed south to the west of Shetland and Orkney before docking at Lerwick at 0900 on 17 July.

Following the half landing "Scotia" sailed at 0900 on 18 July for a second calibration in Voe of Sound. The survey was resumed at 1315 and continued the east and west variable density grid south to 57°00'N and with a fixed density grid with 15 nautical mile spacing to the southern limit of the area at 56°00'N. "Scotia" docked in Aberdeen at 0900 on 25 July.

Results

1. Acoustic and midwater trawling survey.

The cruise track and positions of midwater trawls are shown on the attached chart. Echo traces attributable to herring on the basis of the midwater trawls were widespread. A total of 26 trawls were carried out using a Pelagic Sampling Trawl PT 160 fitted with 20 mm codend; catches of herring were made in 24 of them. Larger fish were found in the north of the area with the smaller fish east and south east of

Orkney. Extensive concentrations of unusually small '0' group herring of between 6.5 and 10 cm were found in the Moray Firth and in small quantities in shallow water south of Aberdeen.

The echo sounder output at 38 and 120 kHz was recorded at 0.5 metre depth intervals throughout the survey.

2. Dual Beam Target Strength Measurements

Target strength data was collected during the first part of the survey. The data has been recorded and taken back to Aberdeen for analysis.

3. Biological Sampling

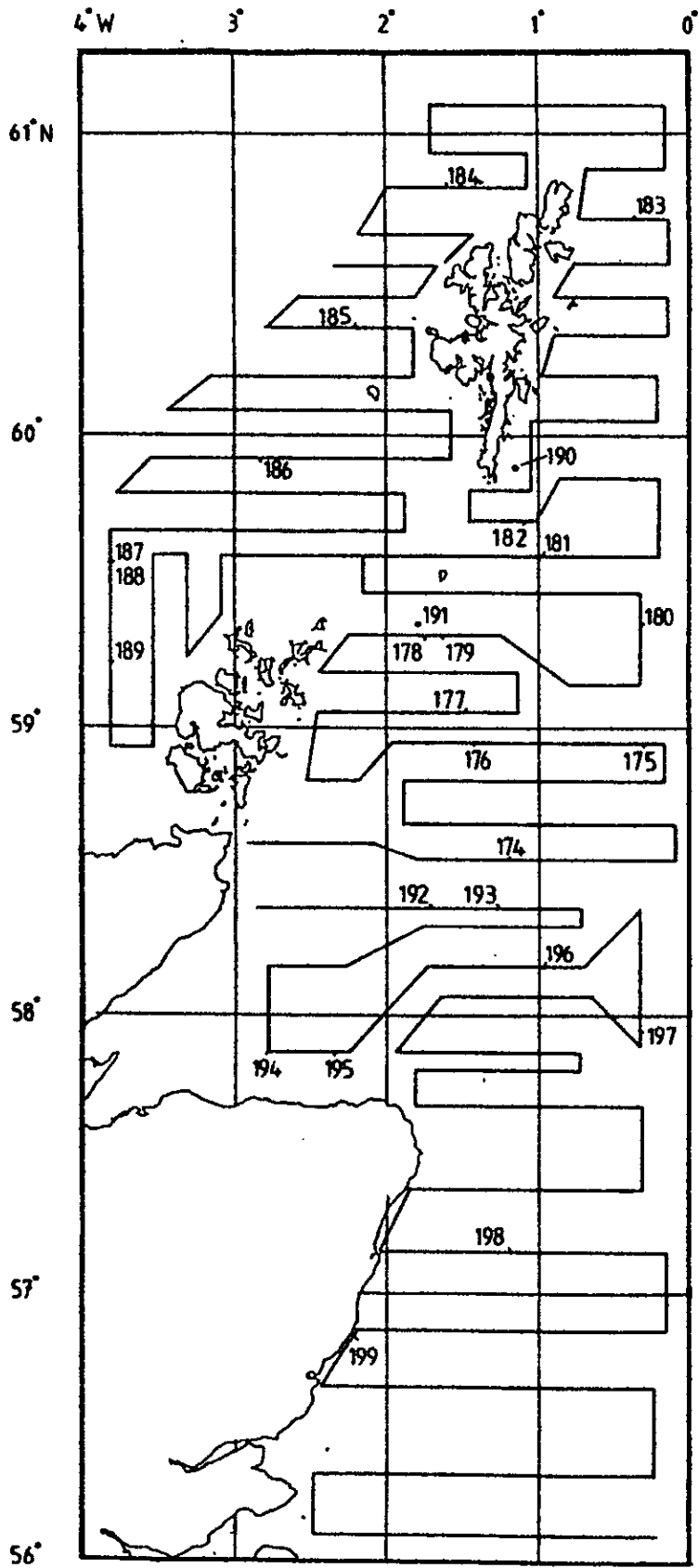
Catches of herring were sampled for length, weight, age, sex and maturity from every haul with catches greater than half a basket. A total of 950 fish were weighed from 19 hauls and 1,643 otoliths were taken from 21 hauls. Ovaries from maturity stages 3 or 4 were preserved for fecundity studies.

4. Water samples were collected for radio caesium sampling at two stations, one off Aberdeen the other in the Pentland Firth.

5. A thermosalinograph was run continuously during the survey, date, time, position, temperature and salinity logged every 15 minutes.

E J Simmonds

Sen in draft: H A MacKenzie



Cruise Track FRV "Scotia" 5-25 July 1989
 Showing trawl hauls 174 to 199.