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7Pt1SR88

FRV "SCOTIA"

CRUISE 7/88 PART 1

REPORT

6-23 July 1988

Personnel

R S Bailey	PSO (in charge)
S T Forbes	SSO
I Gibb	ASO
P A Simpson	ASO
T V Taylor	ASO
C Southcombe	MSc student visitor

Objectives

1. To participate in an ICES-coordinated acoustic survey of North Sea herring.
2. To carry out target strength measurements on identified herring traces.
3. To obtain samples of herring and other pelagic fish for age, maturation and fecundity analysis.
4. To obtain water samples for radio-caesium monitoring.

Narrative

"Scotia" sailed from Aberdeen at 1430 on 6 July and proceeded direct to Inganess Bay, Orkney, to carry out a calibration of the acoustic equipment. The echointegrator grid began to the west of Orkney. In response to directives from the Laboratory, the survey design was changed and a survey southwards from the east of Shetland was begun at 1845 on 7 July. After further communication with the Laboratory, a survey was carried out west of Shetland on 9 and 10 July and, rounding Muckle Flugga, a course was made for Aberdeen docking at 1500 on 12 July.

To avoid further delays this unscheduled visit replaced the half-landing and "Scotia" sailed again at 1600 on 13 July proceeding to the area west of Orkney and thence to the area west of Shetland. The area east of Orkney and Shetland was covered from 17-19 July and a detour into Inganess Bay was made at night on 19-20 July for a second calibration. The remainder of the time available was spent surveying the area from the east of Orkney to Aberdeen where "Scotia" docked at 0700 on 23 July.

Results

1. The acoustic survey track is shown in the attached figure. During the survey the 38 and 120 kHz sounders were run continuously. Fish echotraces were recorded over large parts of the survey area with particular concentrations northwest of Orkney, north of Shetland and southeast of Fair Isle. Echointegrator records have been returned to the Laboratory for analysis. During the cruise the thermosalinograph was run continuously and salinity and chlorophyll samples taken at regular intervals.
2. A towed body containing a dual-beam transducer was deployed on a number of occasions during the cruise to measure fish target strength, the data obtained being stored on magnetic tape for subsequent analysis. A watertight pod, containing two inclinometers and a pressure gauge, was installed inside the towed body. These devices provided information on the depth, and heel and pitch of the towed body.
3. A total of 26 midwater trawl hauls were made of which 21 contained fish and 19 herring. Besides herring, the main species caught were whiting, haddock, Norway pout and mackerel but never in large quantities. Sprats were caught in only two hauls west of Orkney and Shetland. In addition small fish (0-group Norway pout, sandeels, pearlsides and small mackerel) were trapped in the meshes of the trawl in 12 hauls. Catches of herring ranged up to 6800 individuals. In most areas small herring of modal lengths 23-24 cm predominated in the catches and only catches in the area west and northwest of Shetland contained an appreciable proportion of large herring over 30 cm in length.

A total of 1741 otoliths were taken from herring for age determination and in addition vertebral counts and weights were recorded for a further 742 herring; 267 ovaries were collected for fecundity analysis.

Samples of otoliths were taken from mackerel, horse mackerel and greater silver smelts.

4. Water samples were taken for radio-caesium analysis from the Fair Isle and Aberdeen stations.

R S Bailey

4 April 1989

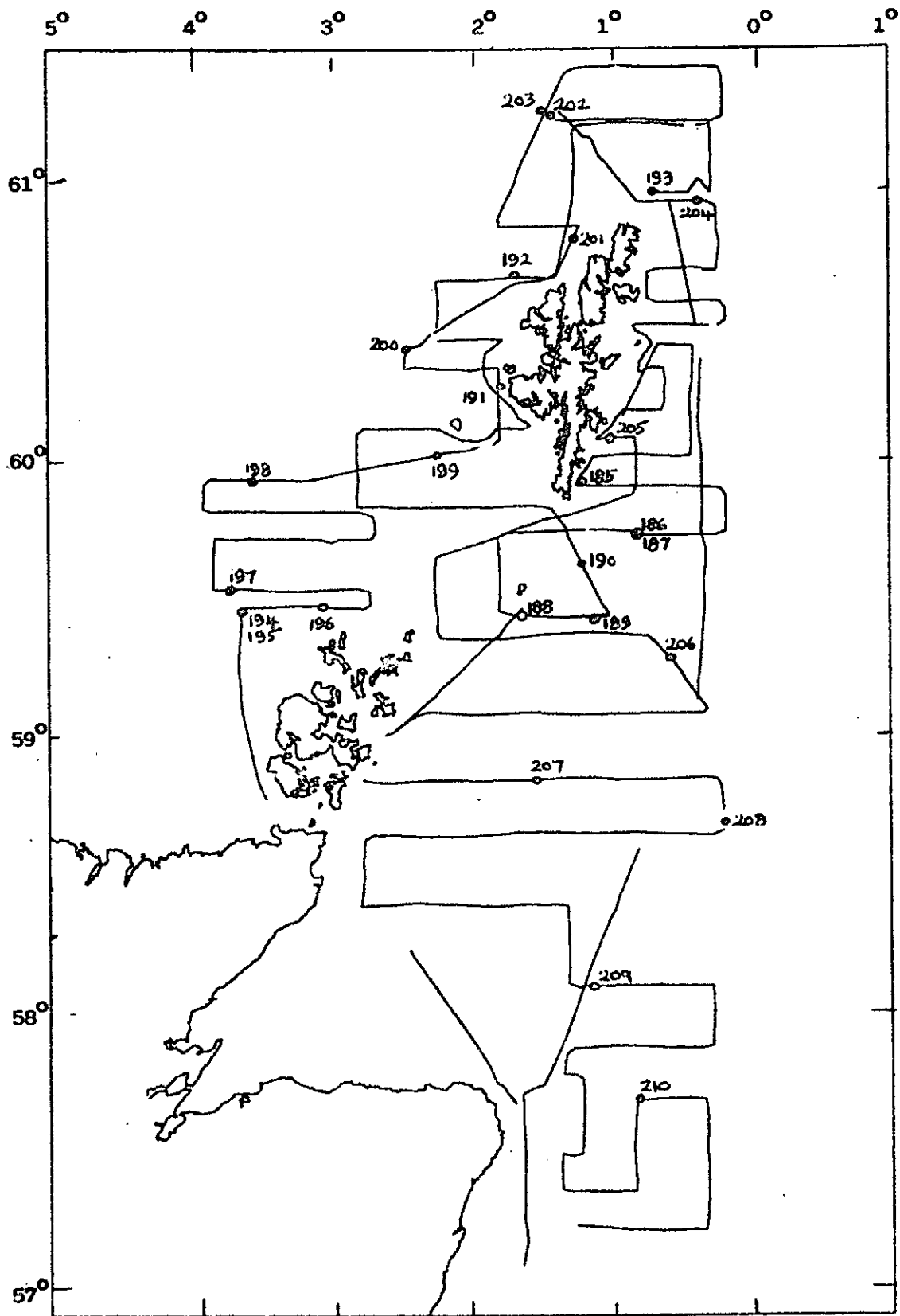


Figure 1. Cruise track and trawl haul positions for FRV 'Scotia' survey 6-23 July 1988.