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FRV "SCOTIA"
CRUISE 11/87

11SR87

Report

4-24 November 1987

Personnel

P Hopkins	HSO (in charge)
R Payne	HSO
G Slesser	HSO
M Black (Mrs)	HSO
P Copland	SO
J Staples (Miss)	ASO

Objectives

1. To carry out an echointegration survey off the north and west coasts of Scotland.
2. To collect biological data from catches of herring and mackerel.
3. To collect water samples for radio caesium monitoring.
4. To record sea water temperatures and salinities in the survey area and to work hydrographic sections on the north-west shelf.
5. To locate a hydrographic mooring at $57^{\circ}59.3'N$, $1^{\circ}19.7'W$ and to replace missing buoy.

Narrative

"Scotia" left Aberdeen at 0600 on 5 November after a delay caused by engine problems and latterly a fault in the computer associated with the echointegration equipment. The hydrographic mooring was reached by 1100 and deployment of the buoy successfully completed by 1430. "Scotia" then made for Scapa Flow where the sonar equipment was calibrated overnight.

Echointegration began at 0600 on 6 November. On 7 November it was discovered that the transducer cable was faulty. This was replaced and the new cable calibrated at Loch Eriboll. Echointegration resumed at 0230 on 8 November, working to the north of Scotland. Severe weather confined the survey to the North Minch from 10 November until the half landing in Stornoway on 12 November.

"Scotia" left Stornoway at 1000 on 13 November. After examination of the echosounder rolls it was decided to restrict echointegration to approximately 0600-2200 daily, since few shoals were observed at night. Severe weather restricted the survey throughout the second half, and areas outside of the Minch were covered opportunistically. One half day was lost on 20 November due to engine failure. A final calibration of the sonar equipment was carried out on Mingary Bay on 22 November.

Sea surface temperatures and salinities were recorded every 10 minutes throughout the cruise. Initial delays and subsequent bad weather prevented the working of the hydrographic section.

"Scotia" docked at Greenock at 1330 on 24 November.

Results

A total of 20 hauls were made during the survey. Their positions are shown together with the cruise track in Figure 1.

Concentrations of herring were observed in the North Minch and off the north coast of Scotland. Modal sizes were from 20.5 to 22 cm. Concentrations of larger herring with modal sizes of approximately 28 cm, were observed west of the Hebrides, particularly near St Kilda. Probable herring shoals were also seen over Stanton Banks, but poor weather prevented any sampling in this area.

The mackerel fleet was observed working north of North Rona, and large echotracings probably of mackerel shoals were seen in the area. Fishing on these shoals failed to provide a sample. Few echotracings attributable to mackerel were seen further south, and few mackerel were caught in the trawl hauls. A total of 168 mackerel were caught north of 57°30'N, mainly west of the Hebrides, and were all >29 cm. South of 57°N, a total of 56 mackerel were caught, 46 of which were 1987 class (<21 cm).

Concentrations of sprat were observed, mainly in association with herring in the North Minch. Large concentrations of horse mackerel were seen and caught in trawl hauls around St Kilda and in the South Minch.

A total of 723 herring otoliths, 151 sprat otoliths and 105 mackerel otoliths were taken. 362 herring were weighed for the establishment of a weight-length relationship. Ovaries from 11 mackerel were preserved for fecundity studies.

Water samples for radio caesium monitoring were collected from the following locations:

Cape Wrath	58°40'N	05°00'W
Pentland Firth	58°40'N	02°59'W
Buckie	57°49'N	02°58'W
Aberdeen	57°10'N	01°55'W

P Hopkins

9 December 1987

Seen in Draft: N E McInnes, CO

Scotia 11/87 Cruise track 4-24/11/87

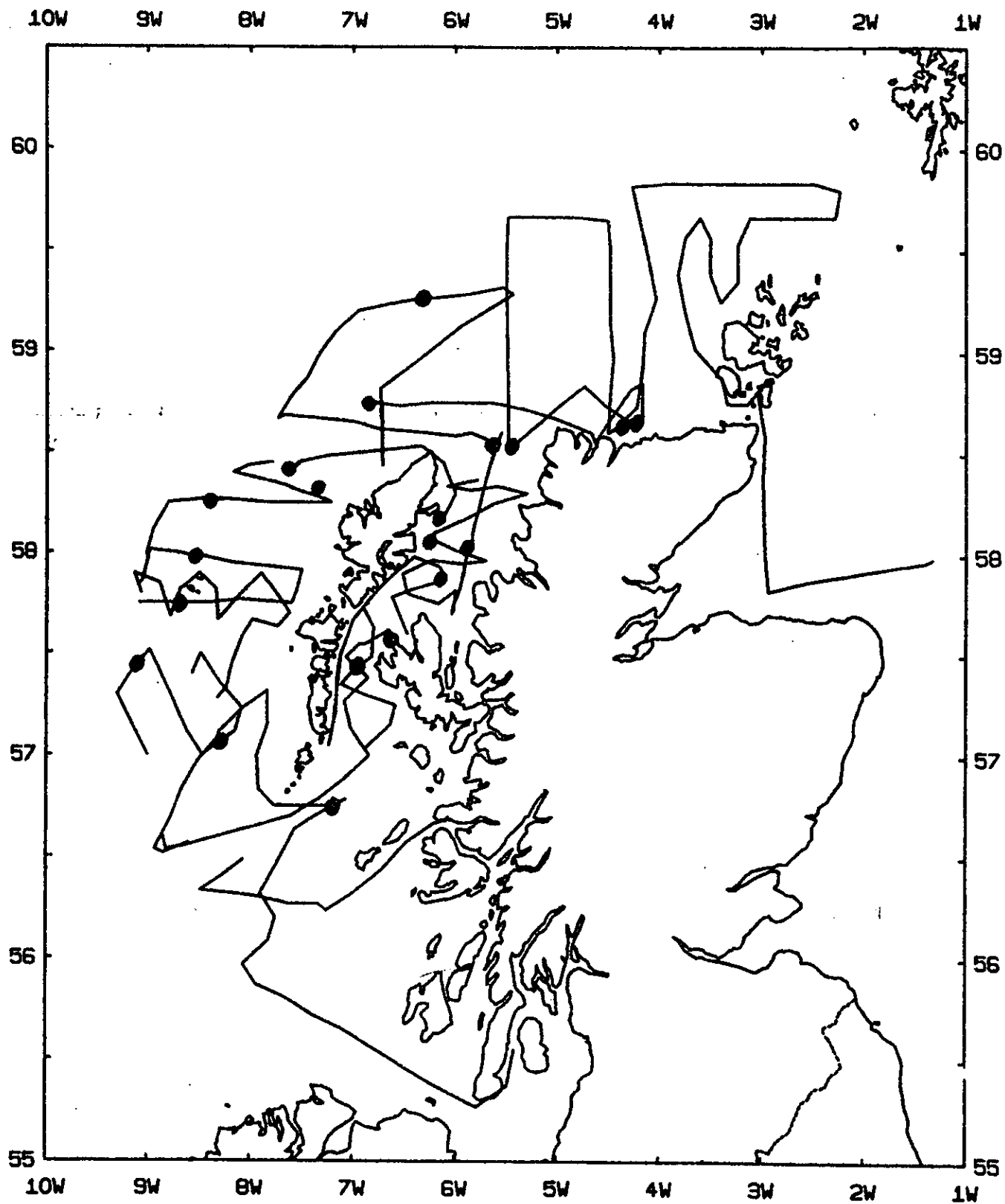


Fig 1. Cruise track and trawl haul positions.