

R1/12

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FRV *Scotia*

12SR89

Cruise 12/89

REPORT

2-22 November 1989

Personnel

| | |
|-------------|-----------|
| M Walsh | SSO |
| D Beveridge | SO |
| C Davis | ASO |
| J Simpson | ASO |
| W Leiper | Craftsman |
| G Costa | Visitor |

Objectives

1. To carry out a survey of 0- and 1-group mackerel.
2. To monitor sea surface temperature and salinity throughout the survey.
3. To collect water samples for radio caesium monitoring.

Narrative

Scotia sailed from Aberdeen at 1130 on 2 November and headed north to the Pentland Firth where a water sample for radio caesium monitoring was collected. A second water sample was collected for the same purpose at Cape Wrath en route for the trawl survey area. Throughout the subsequent survey a GOV trawl fitted with a 20 mm. codend, heavy ground gear C, short (47 metre) sweeps, "flown" wings and Scanmar monitors to record headline height and wing end spread was used.

Trawling commenced at 0800 on 3 November in the North Rona area. Four hauls were made that day before making passage for Ullapool to pick up spare netting and repair material. The trawling survey was resumed the following day and continued until the evening of 12 November when a passage was made to Cork where *Scotia* berthed at 1000 on 13 November for the half landing. Miss G Costa disembarked on 14 November.

During the first half of the cruise poor weather halted trawling only briefly on the mornings of 9 and 10 November and 34 trawl hauls were made between 59°30'W and 48°30'N.

Scotia sailed from Cork at 1400 on 14 November, 4 hours later than planned as a result of fog and a grounded vessel in the Lee estuary. The trawl survey was resumed the same evening and continued uninterrupted until completion of the last station at 1600 on 19 November. During the second half of the survey a further 20 trawl hauls were made in the Celtic Sea and Western English Channel areas between 2°W and 9°W. Radio contact was made with the research vessel *Tridens* during this period to ensure optimum area coverage. Out of 48 programmed stations, 3 were not sampled while an additional 4 were sampled west

of Ireland since Ireland were unable to participate in the 1989 survey. Two other stations were also added, one in an area of high juvenile mackerel abundance and another south of Devon.

Fishing and scientific gear were off loaded in Aberdeen on the morning of 22 November and scientific staff disembarked at 1000.

Results

A cruise track showing fishing and radio caesium monitoring stations is given in Figure 1.

On the trawl survey a total of 54 hauls were made of which one was foul and a further 3 invalid. Catches of mackerel per hour's trawl, by age group, are shown in Figures 2 and 3. First winter (0-group) mackerel were present at both northern and southern extremities of the survey area with highest concentrations close to the edge of the continental shelf west of Donegal Bay and west of Brittany. The presence of first winter mackerel in catches north of 57°N contrasts with the results of comparable surveys in 1985, 1986 and 1988 but is similar to that in 1987.

The main concentrations of second winter mackerel was close to the continental shelf edge west of Donegal Bay, while small numbers were taken near the shelf edge from north to south of the survey area.

Otoliths were extracted from 436 mackerel and aged at sea giving an overall age composition of sampled catches of:

| Age group | 0 | 1 | 2 | 2+ |
|------------|------|------|------|-------|
| Year class | 1989 | 1988 | 1987 | ≤1986 |
| Percentage | 65 | 28 | 5 | 2 |

Among other pelagic species, herring were abundant in catches in the St Kilda area while horse mackerel and blue whiting predominated in the catches south of 57°N. In contrast to last year, juvenile horse mackerel (<20 cm) were relatively abundant in the catches. They were encountered as far north as 55°N but were most abundant in the area around the Cornish peninsula.

During the course of the cruise sea surface temperature and salinity were logged every 10 minutes and radio caesium samples were collected in the Pentland Firth and off Cape Wrath.

M Walsh
8 January 1990

Seen in draft: N E McInnes

Figure 1

Cruise Track SCOTIA 12/89 2-22/11/89

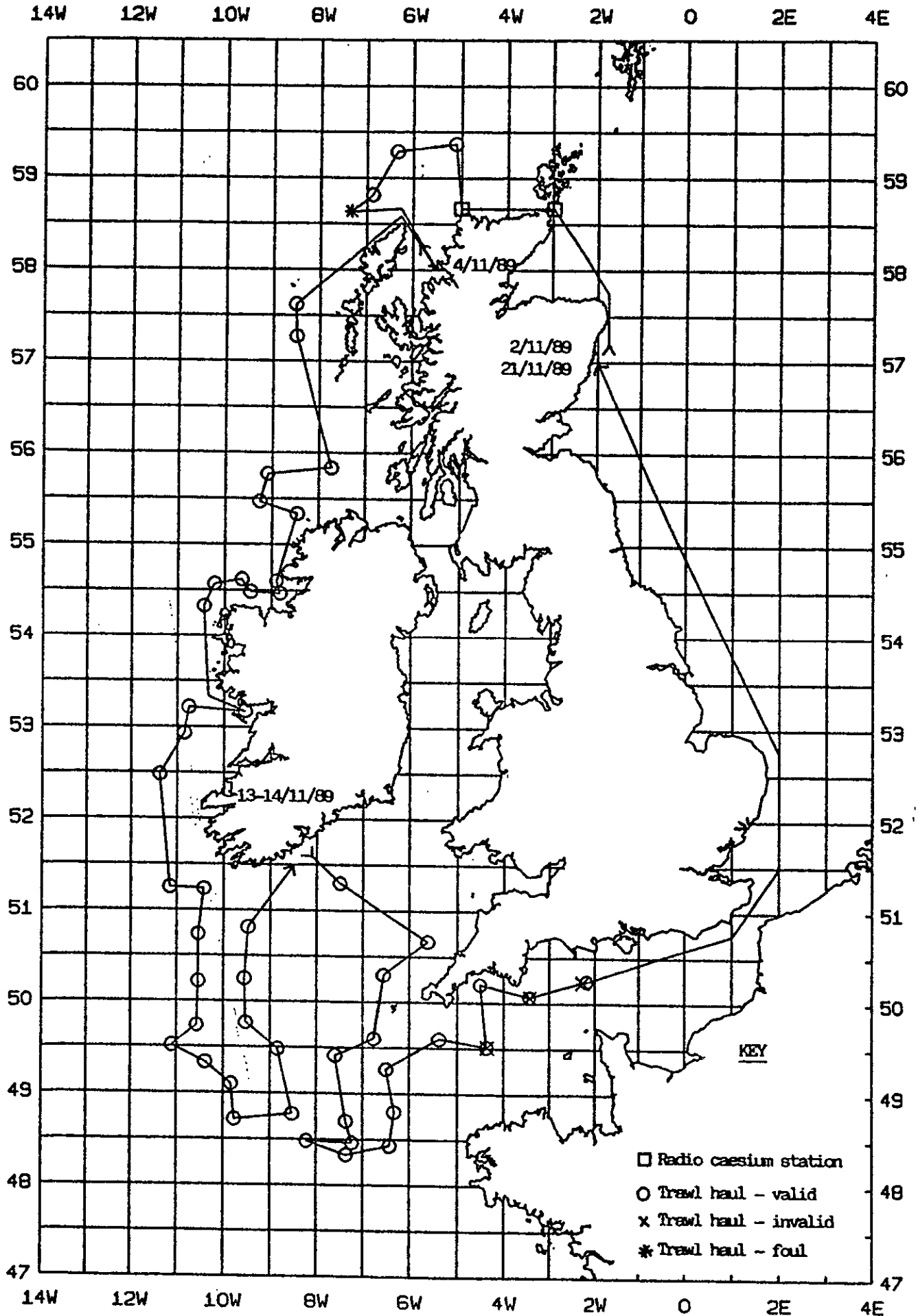


Figure 2

512/89 0-gp Mackerel Nos/hr GOV

