

R1/12

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FRV *Scotia*

13SR90

Cruise 13/90

REPORT

28 November - 18 December 1990

Personnel

M Walsh	SSO
W S Macdonald	SO
I Gibb	SO
Miss J Simpson	ASO
B Best	Visitor (NCC Seabirds-at-Sea Team)

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 1200 on 28 November and headed north to the Pentland Firth where a water sample for radio caesium monitoring was collected. A second water sample for the same purpose was collected 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 wingend spread was used.

Trawling commenced at 0900 on 29 November in the North Rona area. The survey continued without interruption until mid morning on 8 December when northerly gales prevented further trawling for the remainder of that day and the next. A passage was made to Cork where *Scotia* berthed at 0900 on 10 December for the half landing.

During the first half of the cruise 38 trawl hauls were made between 59°30' and 48°00'N.

At the half landing Mr B Best of NCC joined *Scotia* which sailed from Cork at 1000 on 11 December. Following discussions with scientists on board the Dutch research vessel *Tridens* during the first half of the cruise, it was decided to resurvey the area west of Ireland, where large concentrations of juvenile mackerel were found, and to extend the survey area boundary further north rather than continuing south during the second half of the cruise. *Tridens*, together with *Cirolana*, would then cover the southern area. Resumption of trawling on 12 December was delayed by some eight hours while the ship's engineers had to effect repairs on two of *Scotia's* engines. The trawling survey then continued until the evening of 14 December when a breakdown in steering occurred. This was quickly repaired and resulted in the loss of only about three hours to the programme.

No further delays were incurred. Eighteen trawl hauls were made during the second half of the cruise. This included repeat sampling in five stations of high mackerel abundance, and additional sampling of seven stations north of 59°30'N.

Fishing and scientific gear were off loaded in Aberdeen on the morning of 18 December and scientific staff disembarked at 1000.

Results

Cruise tracks showing fishing and radio caesium monitoring stations are given in Figure 1.

On the trawl survey a total of 56 hauls were made of which nine were foul and one invalid. Catches of mackerel in number per hour, by age group, are shown in Figures 2 and 3. First and second winter mackerel (0- and 1-group respectively) were present over the entire area surveyed but in both cases the main concentrations were located to the west of Ireland between latitudes 52°N and 56°N. Within this area the catch rate was higher in 1990 than in 1989 and high catches occurred over a wider area. This was an unusual feature compared to the previous five years. Distribution of juveniles south of Ireland was patchy and abundance, as confirmed by *Tridens* and *Cirolana*, was relatively low compared to some previous years.

Otoliths from 437 mackerel were read at sea giving an overall age composition of sampled catches of:

Age group	0	1	2	2+
Year class	1990	1989	1988	≤1987
Percentage	19	52	22	7

Among other pelagic species, herring were abundant in catches in the St Kilda area and west of Ireland between 54°N and 56°30'N while horse mackerel were abundant in patches from 51°N northwards. Juvenile horse mackerel (<20 cm) were very scarce in the catches.

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, off Cape Wrath and Aberdeen.

M Walsh
14 February 1991

Seen in draft: N E McInnes, CO
17 December 1990

Fig. 1. Scotia 13/90 cruise tracks

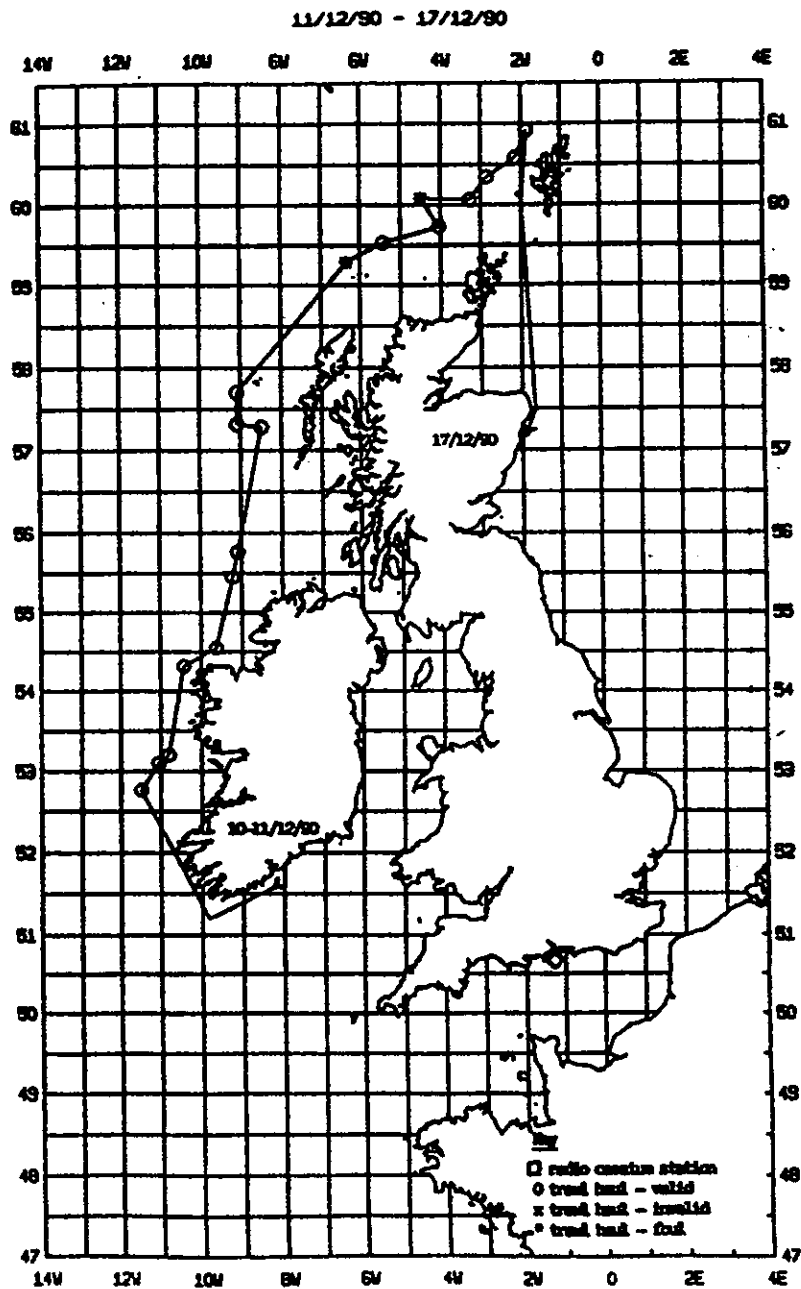
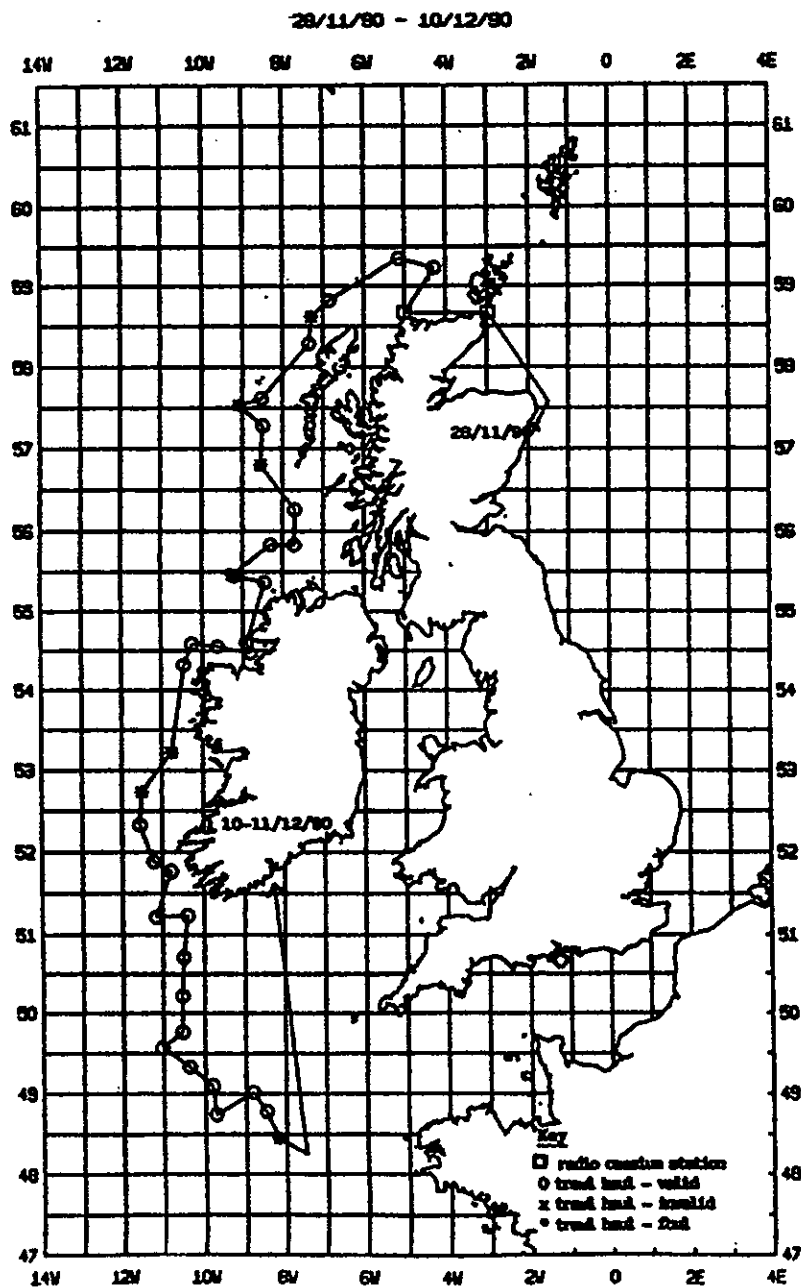


Fig. 2

S13/90 0-gp Mackerel Nos/hr GOV

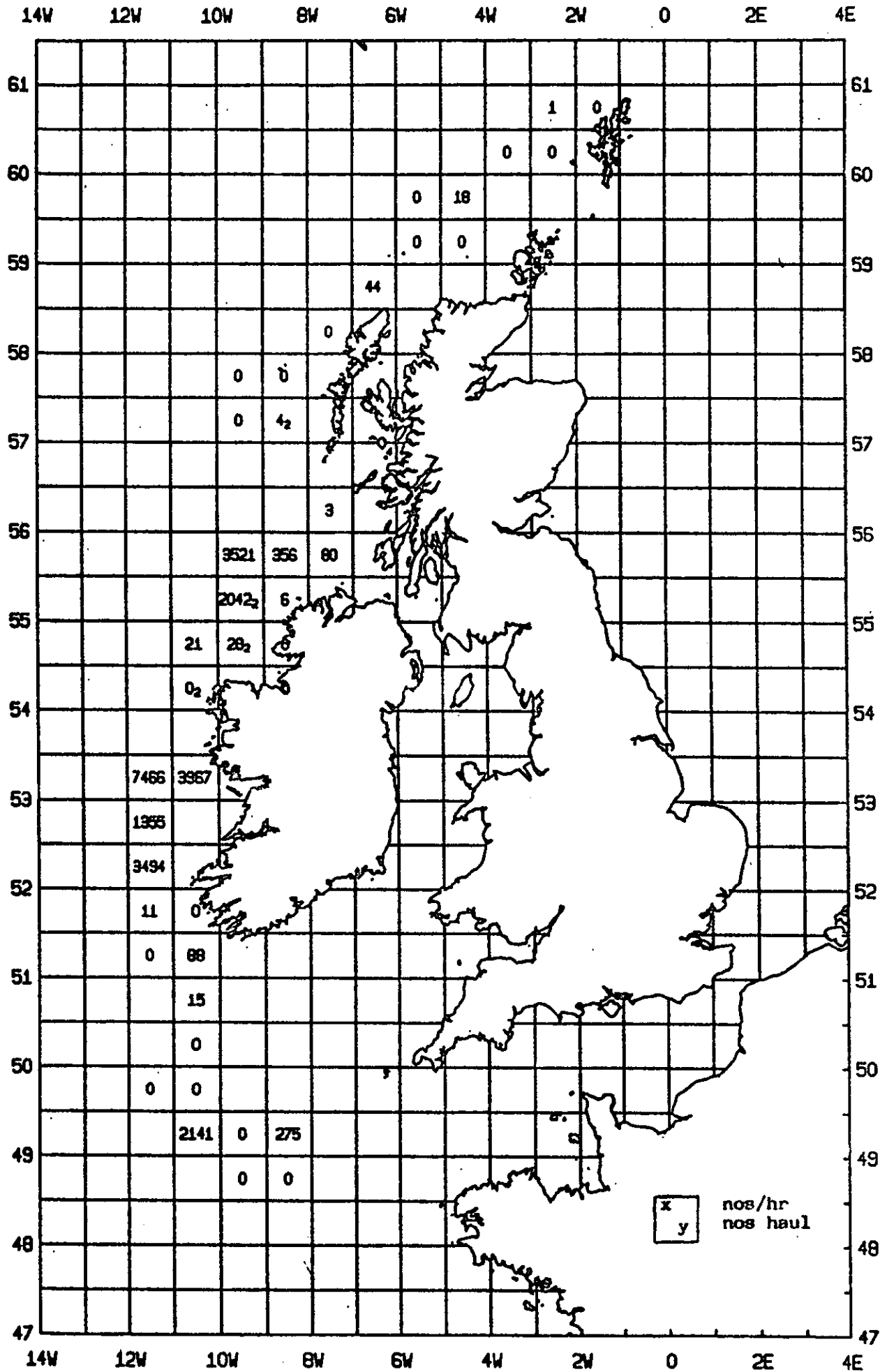


Fig. 3

S13/90 1-gp Mackerel Nos/hr GOV

