R1/12

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FRV *Scotia*

Cruise 12/91

REPORT

27 November - 17 December 1991

Personnel

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I Gibb	SO
Miss J Simpson	ASO

Objectives

1 To carry out a survey for 0- and 1-group mackerel.

2 To compare bottom trawl catch rates at agreed fixed stations with an Irish and Dutch research vessel.

3 To collect water samples for radio-caesium monitoring.

Narrative

Scotia sailed from Aberdeen at 1300 on 27 November and headed north towards the northern end of the trawl survey area. Throughout the survey a GOV trawl fitted with a 20 mm codend, heavy ground gear C, short (47 m) sweeps, flown wings and Scanmar monitors to record headline height, wingend and door spread was used. In contrast to previous years, and in order to try and reduce possible gear damage, the ratio of warp length to depth was maintained at 3:1 + one 50 m length (in previous years it had been greater).

Gale force south westerly winds prevented any trawling on 28 November. The first trawl was made the following morning during a break in the weather but subsequently the wind increased again to prevent any more fishing that day. No further interruptions to the work were experienced between 30 November and 0900 on 9 December when *Scotia* docked in Cork for the half landing.

During the first half of the cruise 35 trawls were made between 58°30' and 48°30'N, including two hauls off the Cornish peninsula (outwith the programmed area) where the Dutch research vessel *Tridens* had caught juvenile mackerel some days earlier.

Scotia sailed from Cork at 0815 on 10 December and resumed trawling the same day. The survey continued uninterrupted until 13 December when gale force south westerlies again prevented work for a day. No further delays were incurred. Eighteen trawl hauls were made during the second half of the cruise. Water samples for radio caesium monitoring were collected at Cape Wrath, Pentland Firth and off Aberdeen between 16 and 17 December.

Fishing and scientific gear were offloaded in Aberdeen on the morning of 17 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 53 hauls were made of which three were foul. Seven of these hauls were made on Dutch station positions and three on Irish positions to enable a preliminary comparison of catch rates. Catches of juvenile 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 most of the north-south range of the survey area. First winter mackerel appeared to be particularly abundant, in comparison to previous surveys, with concentrations at St Kilda, near Stanton Bank and along the outer part of the Continental Shelf west and south of Ireland. By contrast second winter mackerel were scarce with a high catch rate in only one haul near Stanton Bank.

Otoliths from 505 mackerel were read at sea giving an overall age composition of sampled catches of:

Age group	0	1	2	2+
Yearclass	1991	1990	1989	<1988
Percentage	97	3	<.1	<.1

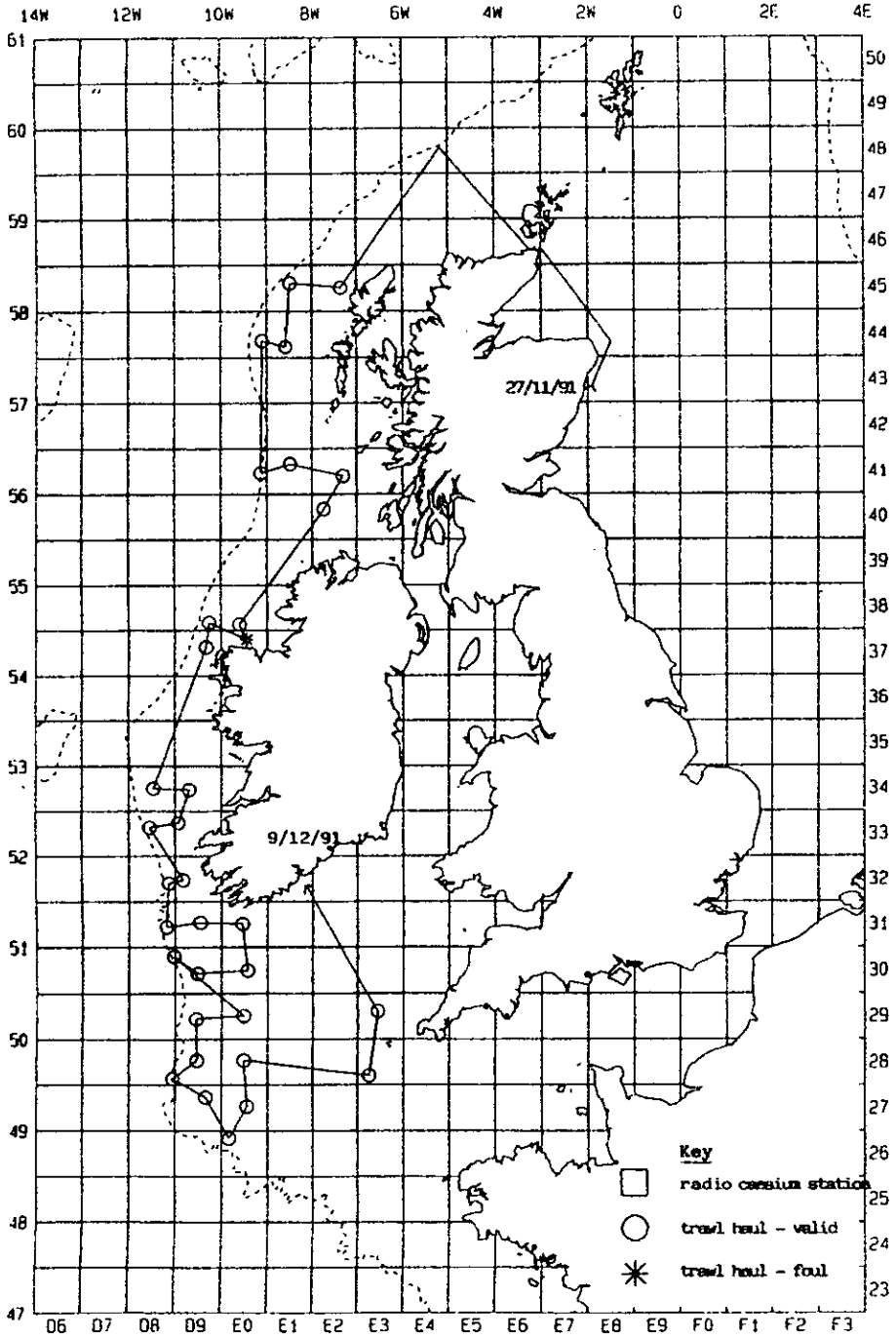
Among other pelagic species, herring were abundant in catches north of 52°N and particularly in the St Kilda area where one haul yielded 1000 baskets. Horse mackerel were also abundant in patches over much of the survey area with greater numbers of juveniles (<20 cm) than in recent surveys.

Sea surface temperature and salinity were logged throughout the survey.

M Walsh

18 February 1992

FIGURE 1. "Scotia" 12/91 cruise tracks



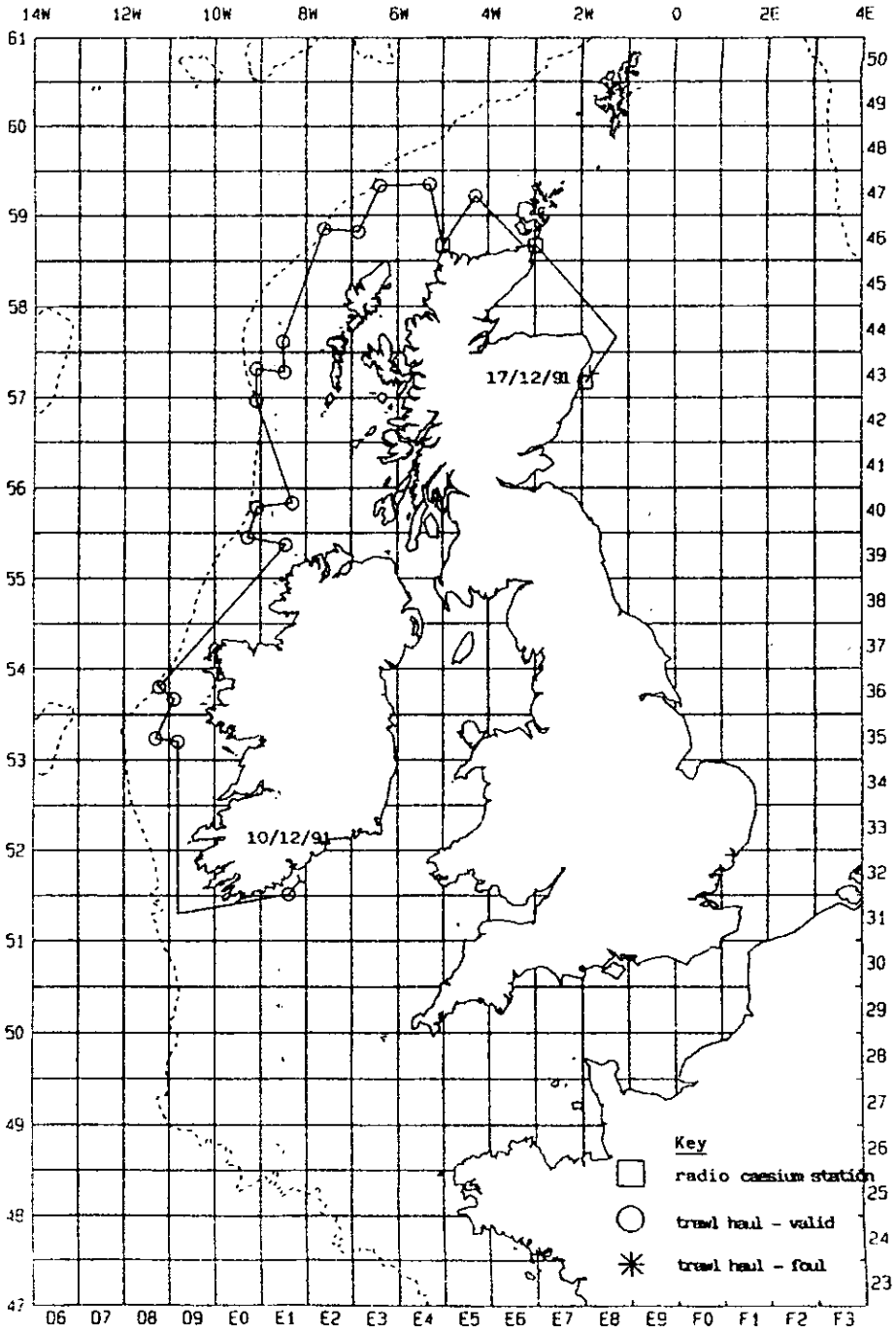
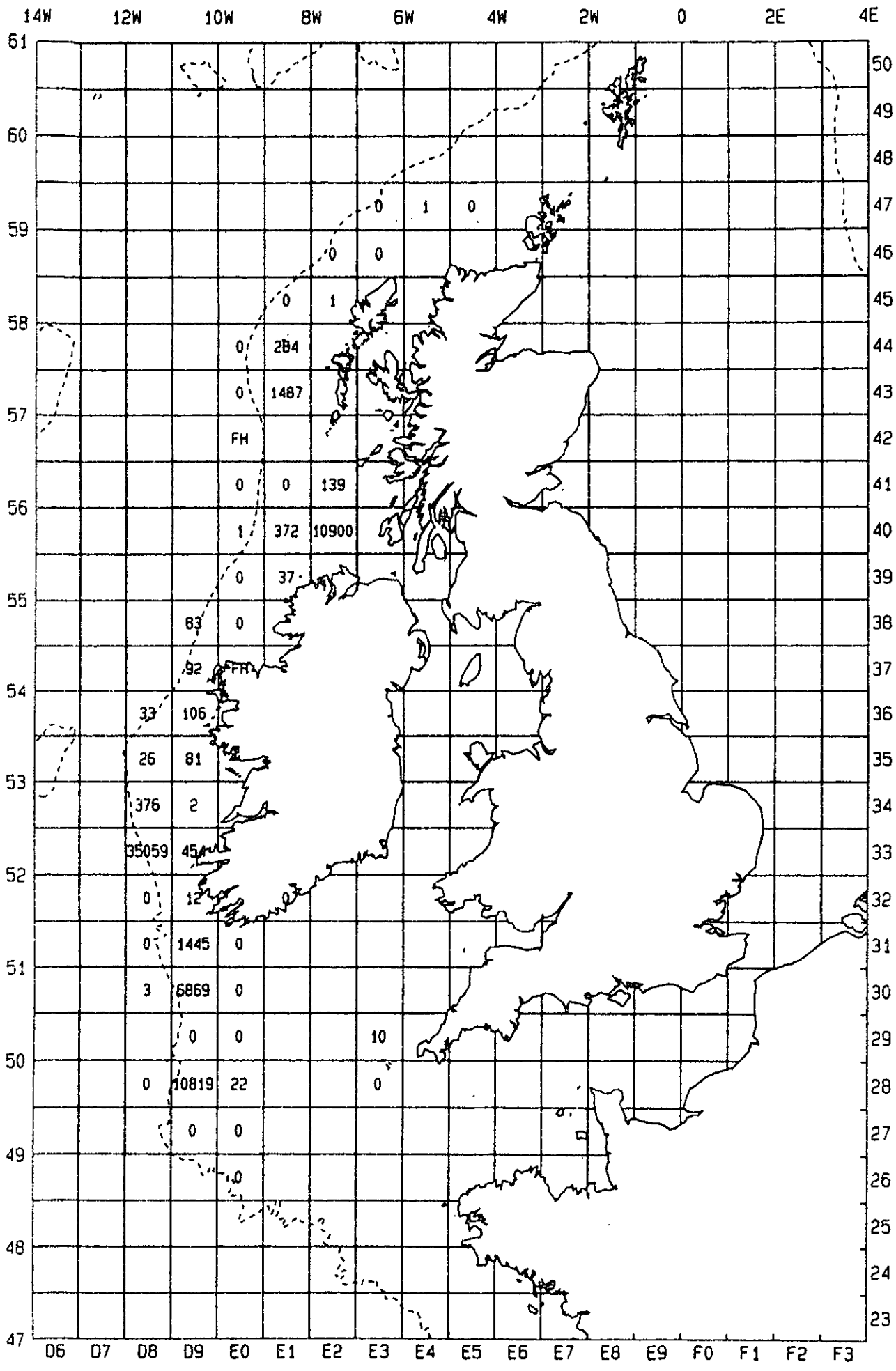


FIGURE 2


S12/91 0-gp Mackerel nos/hr GOV
14W
12W
10W
8W
6W
4W
2W
0
2E
4E
61
60
59
58
57
56
55
54
53
52
51
50
49
48
47
50
49
48
47
46
45
44
43
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26
25
24
23
0 1 0
0 0
0 1
0 284
0 1487
FH
0 0 139
1 372 10900
0 37
83 0
92 FH
33 106
26 81
376 2
35059 45
0 12
0 1445 0
3 6869 0
0 0 10
0 10819 22 0
0 0
0
D6 D7 D8 D9 E0 E1 E2 E3 E4 E5 E6 E7 E8 E9 F0 F1 F2 F3

FIGURE 3

S12/91 1-gp Mackerel nos/hr GOV