

R1/12

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FRV SCOTIA

Cruise 1593S

REPORT

17 November - 7 December 1993

Personnel

M Walsh	SSO
W S Macdonald	SO
Ms M Bell	SO
Mrs J McMillan	ASO (21 November - 7 December)
R Payne	HSO (17-21 November)
A McIntosh	HSO (17-21 November)
J Barkess	VOM (17-21 November)
Ms S Coughlan	Visiting Irish Student (17 November - 3 December)

Objectives

1. To carry out a survey for 0- and 1-group mackerel.
2. To lay a single string current meter mooring at 59°55'N 05°00'W (to be recovered during 0194S).
3. To measure the impact of the *Braer* oil spill on common dab at selected stations around Shetland including those areas where elevated hydrocarbons in the sediment have been reported.

Narrative

Scotia sailed from Aberdeen at 1000 on 17 November and headed north towards the area of the *Braer* oil spill. Persistent southerly gales for two days prevented any trawling at the three designated *Braer* monitoring sites and *Scotia* set a course for the current meter mooring site. By 19 November a slight moderation in the weather enabled trawling to be undertaken at the two most northerly stations in the mackerel survey area but conditions remained too severe to lay the current meter mooring. On 20 November the mooring was laid and a further three trawl stations were completed before heading for Ullapool to disembark A McIntosh and R Payne and to pick up Mrs McMillan. En route to Ullapool a water sample for radio caesium monitoring was collected off Cape Wrath. The exchange of staff took place on the morning of 21 November after which *Scotia* sailed directly back to the mackerel survey area.

Throughout the survey a GOV trawl fitted with a 20 mm cod-end, heavy ground gear C, short (47 metre) sweeps, flown wings and Scanmar monitors to record headline height, wingend and door spread was used. Bellylines (to minimise gear damage) were fitted as standard to the trawl for the first time this year. The ratio of warp length to depth was maintained at 3:1 + one 50 metre length as in the last two surveys (in previous years it had been greater).

During the remaining part of the first half of the cruise the trawl survey continued without further interruption by weather. A total of 26 hauls were made in the first half of the cruise of which two were foul. One change of net was made during this period. *Scotia* docked in Cork for the half landing at 0800 on 27 November. J Barkess and S Coughlan joined the vessel later the same day.

Scotia sailed from Cork at 1300 on 28 November. South-easterly gales however prevented passage to the open sea and *Scotia* anchored off Cobh until 2200 when conditions eased. Weather conditions for the remainder of the cruise were very poor, with gale or near gale force winds throughout. These, however, only rarely prevented trawling. During one weather-enforced break, on 3 December, Ms S Coughlan was landed with scientific samples at Buncrana, Lough Swilly. In the second half of the cruise a further 21 trawl hauls were made of which one was foul and necessitated a second net change. Gear damage was less of a problem than in 1992 although weather conditions were if anything worse. Despite weather and gear problems most of survey program was successfully completed and *Scotia* docked in Aberdeen at 1700 on 6 December.

Fishing and scientific gear were off-loaded in Aberdeen on the morning of 7 December and scientific staff disembarked at 1000.

Results

Cruise tracks showing fishing stations are given in Figure 1.

On the trawl survey a total of 47 hauls were made of which three were foul. Six hauls were made on the same stations as worked by the Dutch research vessel *Tridens*, for 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 patchy in distribution with highest concentrations west and north-west of Ireland and with one exceptionally big catch of 0-group fish west of Lewis. The average catch rate of first winter mackerel was the highest in the eight year survey series but this was very much dominated by one catch. Without this value however the mean catch rate was still above average. For second winter mackerel the mean catch rate was close to the survey series average.

Otoliths from 443 mackerel were read at sea giving an overall age composition of sampled catches of:

Age group	0	1	2	2+
Year class	1993	1992	1991	<1990
Percentage	84.5	7.6	5.7	2.1

Samples of argentines, herring, squid, gurnards, common dabs and hake were collected for various research projects in the Marine laboratory and other institutes.

Sea surface temperature and salinity were logged throughout the survey.

M Walsh
17 January 1994

Seen in draft: P Ramsay, OIC *Scotia*

Figure 1

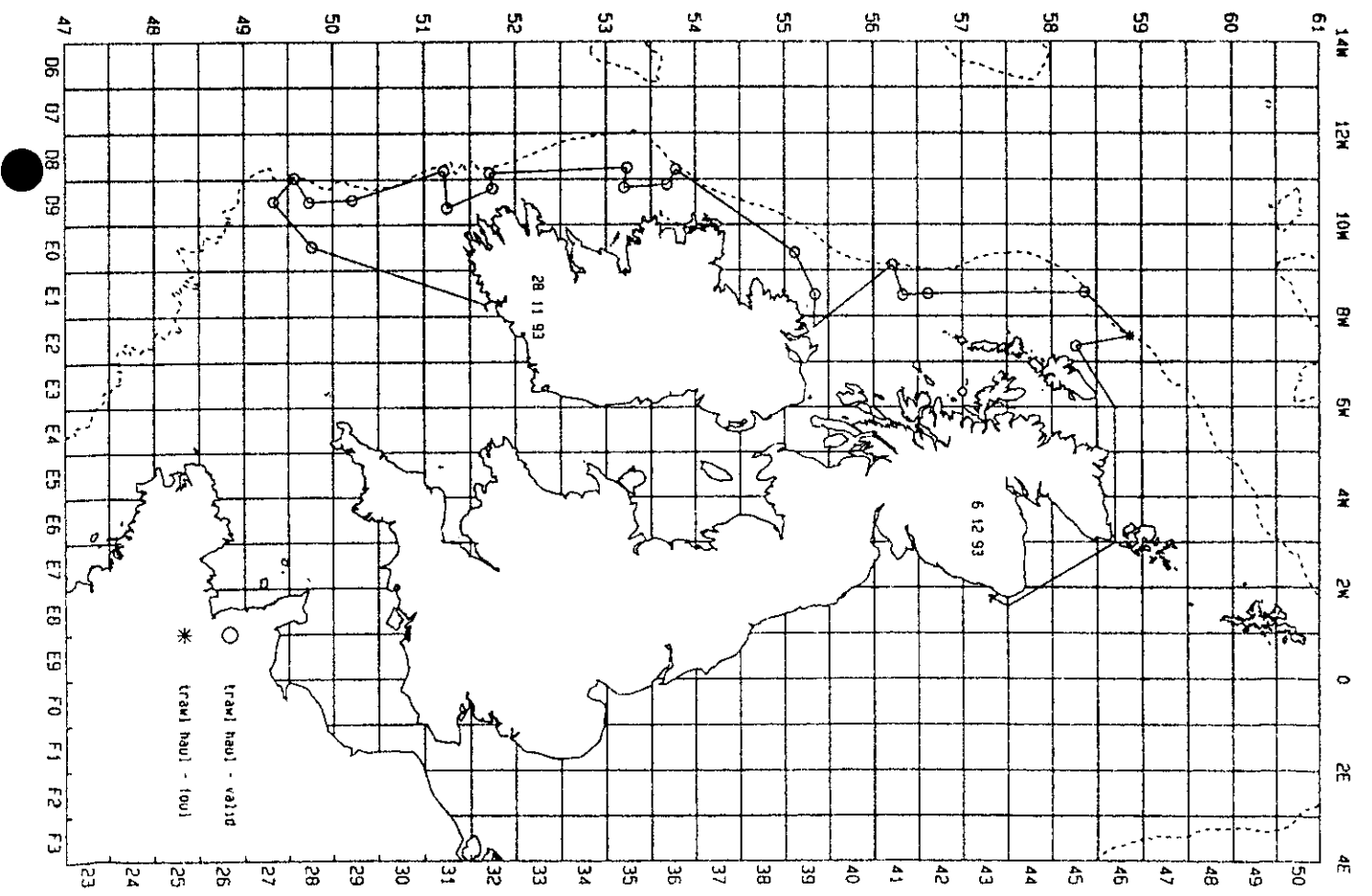
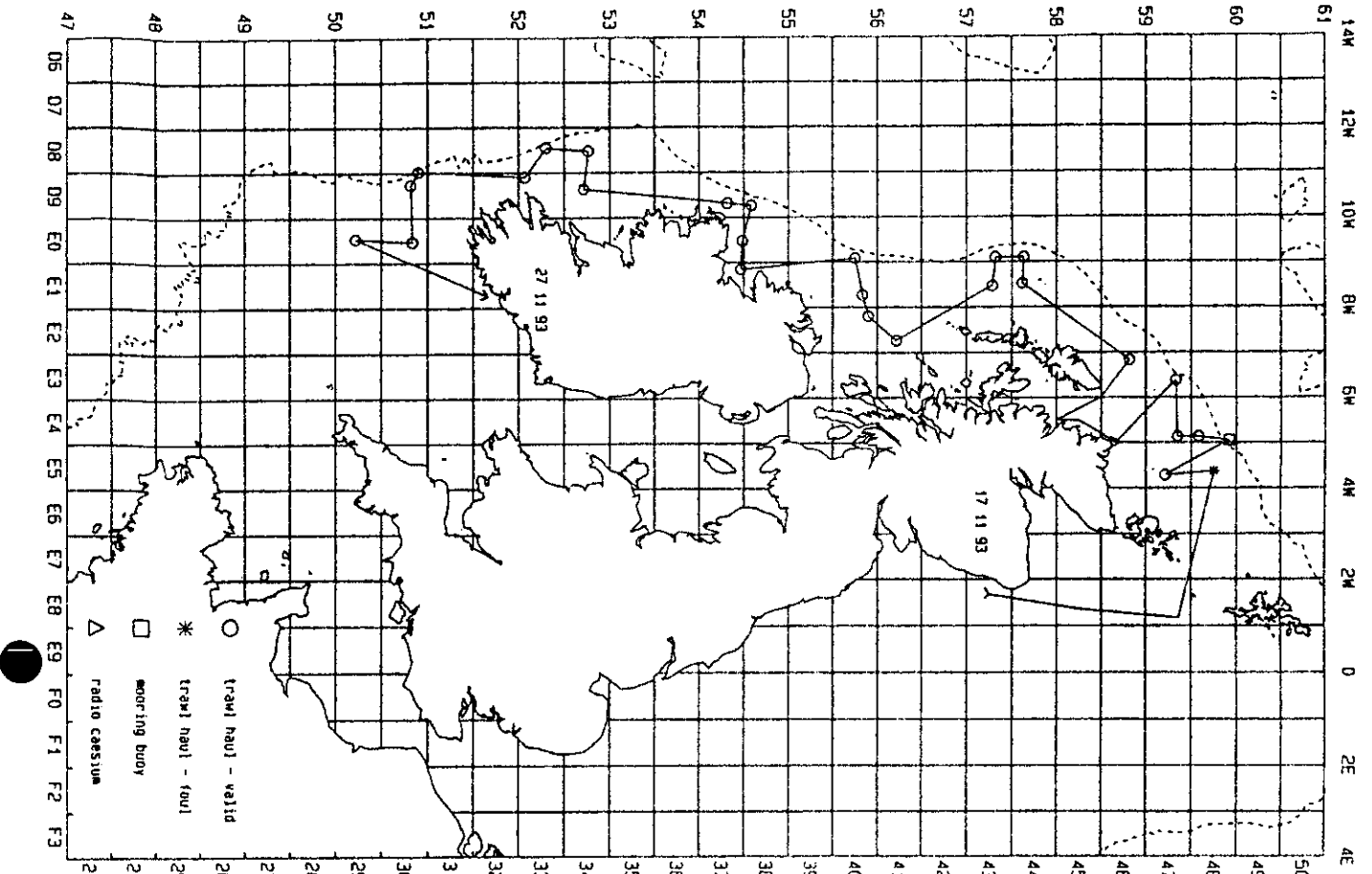


Figure 2

S15/93 Mackerel 0 gp nos/hr 60V

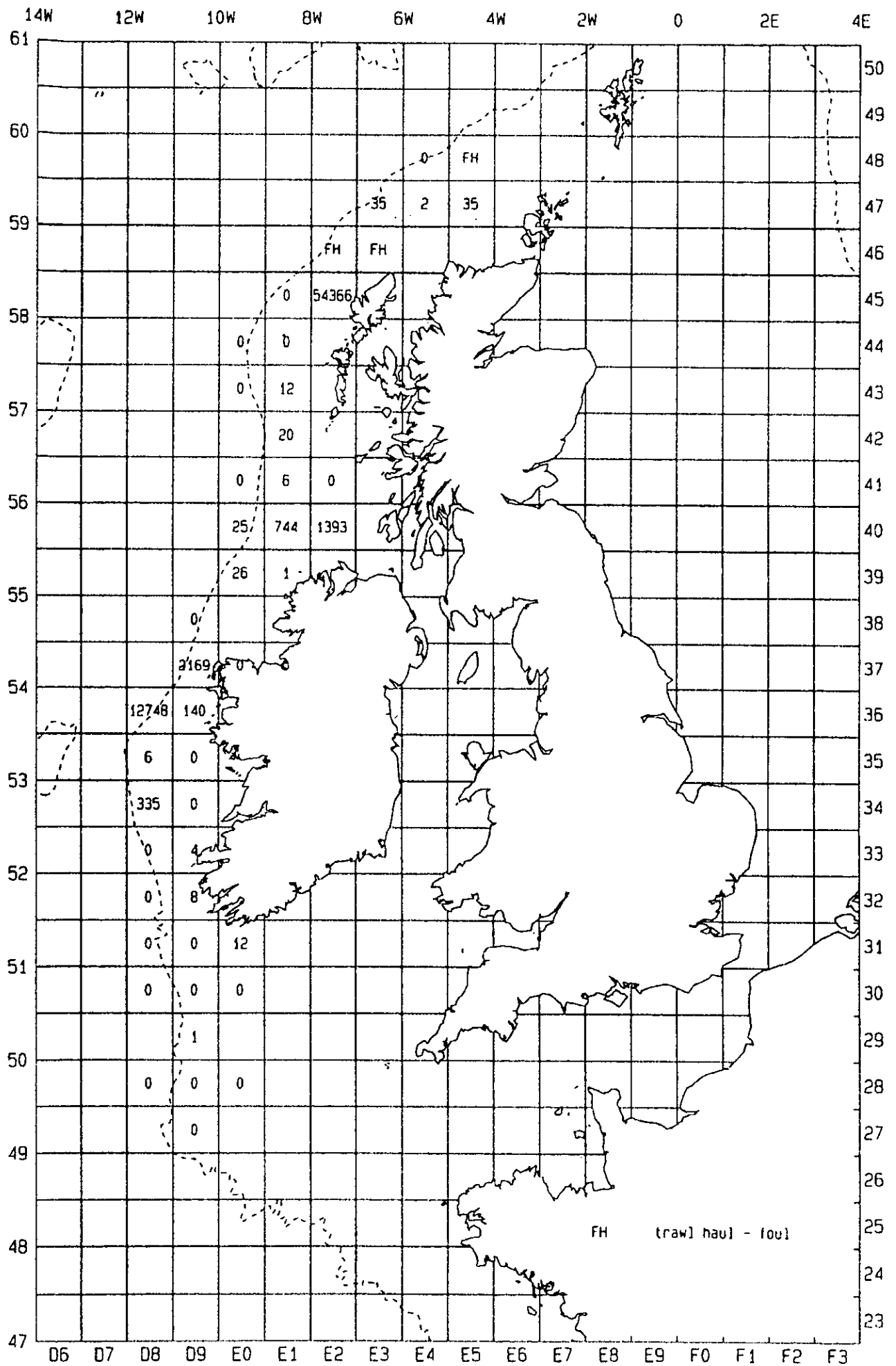


Figure 3

S15/93 1 gp Mackerel nos/hr GOV

