

R1/12

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FRV *Scotia*

Cruise 0795S

**REPORT**

22 April- 14 May 1995

**Half Landing**

Lorient 2-3 May 1995

**Personnel**

M Walsh	SSO (in charge)
Ms M Bell	SO
I Gibb	SO
Mrs J McMillan	ASO
Ms D Ortega	Visiting Scientist
Ms C Pollack	SNH

**Objectives**

1. To carry out a survey for mackerel and horse mackerel eggs on the western stocks of these species.
2. To sample adult mackerel and horse mackerel to obtain ovary samples for estimation of atresia.
3. To measure temperature and salinity in the area.

**Out-turn costs per project: 23 days EBAI**

**Narrative**

*Scotia* sailed from Aberdeen at 1030 on 22 April towards the survey area. Two flowmeter calibration tows were made the following afternoon in fair weather en route to the first plankton station and the survey proper was commenced shortly after. During the first haul a bearing on the spooling mechanism of the plankton winch broke and the sampler had to be recovered without reaching the required depth. The winch was quickly repaired and no further problems arose although the spooling mechanism continued to look under excessive strain for the remainder of the cruise. An additional potential problem throughout the cruise was a failure of the plankton metering system. Although apparently fixed before the start of the cruise, the slave monitors never functioned in the hydro laboratory, the tachometer never functioned at all and very soon after the start of sampling the system failed in the winch control cabin leaving no failsafe should the scanmar depth monitors have malfunctioned during a haul.

Plankton sampling and fishing continued unhampered during the entire first half of the cruise, assisted by exceptionally calm weather. The overall sampling strategy as well as the half-landing port, however, had to be changed on 26 April when a call was received from the *Cirolana* to the effect that she had developed a severe mechanical fault and might be out of commission for some time. Under these circumstances it was necessary to widen the inter-transect spacing in order to

allow the possibility of covering the southern half of the survey area as well as the designated area. The half-landing was changed from Cork to Lorient. A total of 62 plankton hauls and three trawl hauls were made before docking in Lorient at 0800 on 2 May.

During the half-landing contact was maintained with Lowestoft and Aberdeen. When it became apparent that *Cirolana* was unlikely to be repaired quickly and therefore *Scotia* would need to survey the total survey area, an extra three days was requested and granted for this purpose. *Scotia* sailed from Lorient at 0900 on 3 May to continue the survey.

Fine weather conditions continued until the evening of 10 May when north easterly gales briefly interrupted progress until the following morning. During the second half of the cruise two more flowmeter calibrations were made, as well as a further 71 plankton hauls and one more trawl haul. The last plankton station was completed in the early hours of 12 May when *Scotia* sailed for Aberdeen, docking there at 0600 on 14 May.

During the cruise, on-board evaluation of the plankton samples enabled the edges of the spawning distribution to be reached on the great majority of transects and very good area coverage was achieved.

Cruise tracks and stations worked are shown on the attached charts.

## Results

During the cruise, fish eggs were picked out from the 183 samples collected and all were screened for the presence of mackerel and horse mackerel eggs. A preliminary analysis indicates a broadly similar distribution of mackerel eggs to previous years with spawning concentrated close to the 200 m contour but widening out in the vicinity of Porcupine Bank and Porcupine Bight. The highest abundances of mackerel eggs were found between 47°N and 53°30'N while only low abundances of horse mackerel were observed.

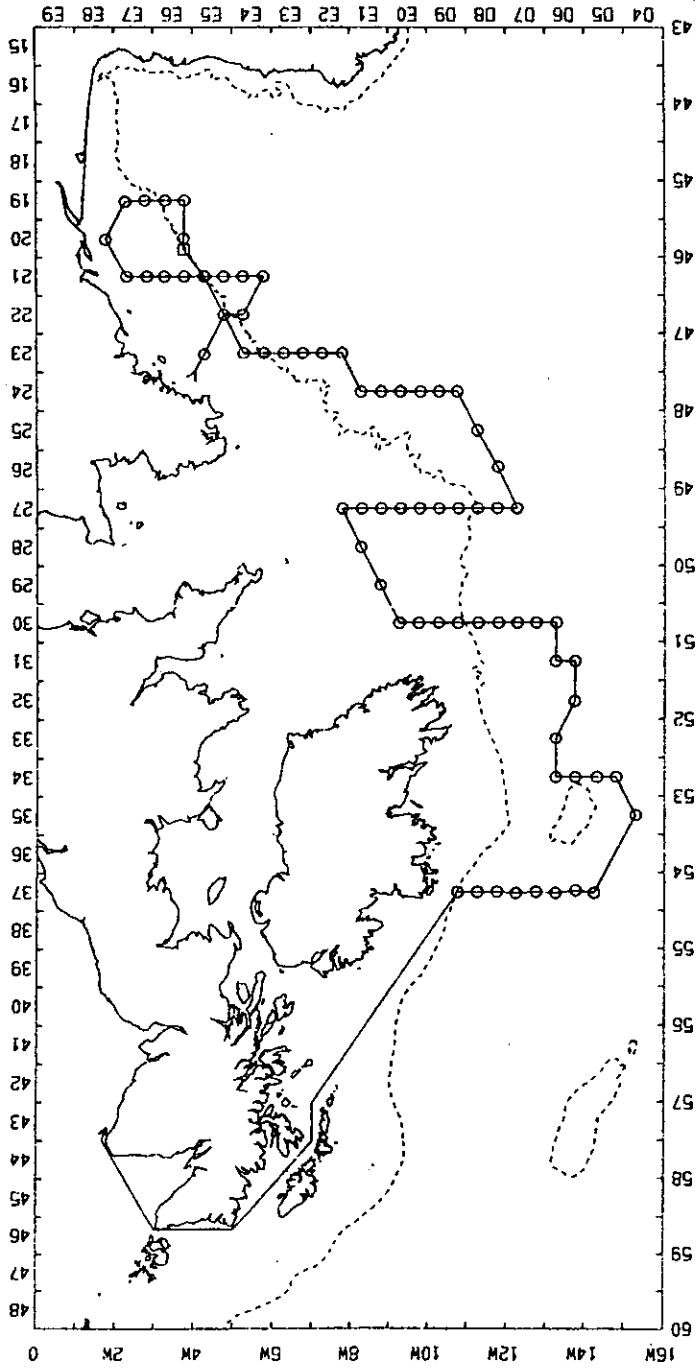
Only four trawl hauls were made but these were highly successful with regard to the target species - each containing between 40-50 baskets dominated by mackerel and horse mackerel. Out of a total ovary sample requirement of 90 per species from *Scotia* and *Cirolana* combined, 80 samples were collected for mackerel and 81 for horse mackerel. The size range of mackerel was 27-43 cm with main sample modes ranging from 31-38 cm. All mackerel were aged at sea. Ages ranged from 2-16 years with 3 and 4 year-olds (yearclasses 1992 and 1991) predominating. The size range of horse mackerel was 21-40 cm with main sample modes of 26-28 cms. Otoliths from 200 horse mackerel were taken for subsequent analysis.

Data on sea surface temperature and salinity were monitored continuously, while temperature and salinity profiles were obtained at most plankton stations using a Chelsea logger attached to the sampler. Battery pack malfunctions were responsible for the lack of Chelsea logger data at every station.

M Walsh  
25 July 1995

Seen in draft: Captain Ramsey

SCOTIA 7/95 WESTERN MACKEREL EGG SURVEY CRUISE TRACK PART 2



SCOTIA 7/95 WESTERN MACKEREL EGG SURVEY CRUISE TRACK PART 1

