

R1/12

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FRV *Scotia*

Cruise 0904S

## **REPORT**

8-28 June 2004

### **Personnel**

D Reid	(In charge, part 2) 16-28 June
I Gibb	(In charge, part 1) 8-16 June
D Beare	8-16 June
K Peach	
F Burns	
C Davis	17-28 June
M Jones	16-28 June
O Goudie	8-16 June
J Beaton	8-16 June
E Portilla	
P Souquet	Visitor (8-16 June)

**Half Landing:** Galway, 16-17 June 2004

### **Objectives**

1. To carry out mackerel egg survey (ICES Triennial Survey), on the western shelf edge.
2. To collect fish samples from trawling for atresia and maturity assessment.
3. To deploy Hydro mooring

**Out –turn Days per Project:** RV0404 – 21 Days.

### **Narrative**

*Scotia* sailed from Aberdeen at 0900 hours on 8 June and proceeded to the Moray Firth to perform calibrations on the sampler flowmeters. *Scotia* then proceeded northwards to deploy ADCP mooring in the Faroe-Shetland Channel at the NWSE mooring site – position 60°16.5'N 4°20.0'W. The mooring was deployed overnight. The vessel arrived at the first station (59°45'N, 4°45'W) at approximately 0600 hours on 9 June to commence the survey. Survey stations were then taken at 30'E/W intervals, on transects separated by one degree of latitude. This was continued up to the half landing in Galway on the afternoon of 16 June. It became necessary for I Gibb to leave the vessel in Galway and return to base on medical grounds. C Davis was able to join the vessel at very short notice to replace him which was greatly appreciated by both OICs.

After the half landing *Scotia* sailed at 1700 on 17 June and resumed the survey sampling at 52°15'N 10°45'W. Sampling continued on alternate transects down to 50°45'N. The survey thereafter sampled northwards, on alternate rows of latitude to those covered during the first half. Sampling was completed at 1500 on 27 June and the ship headed for Aberdeen.

## Results

A total of 167 full plankton stations (see Fig. 1) and 20 calibration stations were collected during the cruise with the *Gulf III*. In addition 62 m deployments to 50 m were carried out at a single site (52°15'N, 11°45'W) for a directed study on stage specific egg mortality. This gave a grand total of 229 plankton stations.

All samples were sorted for fish eggs during the survey with the eggs also being successfully staged and identified at sea for mackerel and horse mackerel. The highest densities of mackerel eggs were recorded in the area of the Porcupine Seabight and the shelf edge south of there between 51° and 53°N. Large numbers were also recorded near to the 200 m contour at 56°45'N and 58°45'N. Overall, the mackerel egg concentrations were concentrated along the 200m contour with eggs being encountered in reasonable numbers along the entire length of the survey area at this depth. Large densities of horse mackerel eggs were also recorded during this survey. These samples were mostly along the 200 m contour south of 52°N although a scattering of eggs were recorded on or near the 200 m contour north of this. The distributions of mackerel and horse mackerel eggs at stage 1 and all stages are shown in Figures 2 to 5. The distribution of stage 1 mackerel eggs appeared to be broadly similar to that for all stages, although there was a tendency to find relatively more stage 1 eggs in the northern part of the survey area. Egg production results from this survey will be included in the international database for further analysis.

In addition to the mackerel egg samples, plankton samples were also collected for Steve Hay for genetic sub population plankton analysis. These were collected from a pup net which was attached to the side of the *Gulf III* sampler. These samples were then placed in ethanol for analysis back in the lab.

A total of three tows were carried out using the GOV trawl and three with the PT170 trawl to collect mackerel and horse mackerel ovaries for fecundity and atresia assessment. Information on length, total weight, liver weight and age was also collected from each sample.

Sea surface temperature and salinity were collected continuously using the thermosalinograph whilst cast profile information on temperature and salinity were recorded at each station using a Seabird 19 CTD. Plots of temperature and salinity contoured across the area are presented in Figure 6.

D G Reid/I Gibb  
5 July 2004

Seen in draft: P Ramsay, OIC *Scotia*

## Circulation List: Cruise Programmes and Reports

### SCOTIA VESSEL

Programmes - Mr J A Morrison for approval. Reports - Mr J A Morrison for approval.

Issue two copies of Record of Haul and Station Numbers pro-forma with Scientist-in-Charge's copy of *Scotia* and *Clupea* programmes. Two xerox copies of track chart for reports to be sent to Dr L Rickards.

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### PROGRAMMES ONLY

Lab staff	Non-lab staff
Mr J T M Hunter	Island Cmdr Faroes (Faroes only)
Mr T Reid	Flag Officer, Denmark (Danish part of N Sea only)
Mr P J Copland	Coastguard
Mr J Dunn	G Lees
Mr A Beaton	
Mr G Howard	
Security	

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Mr J A Morrison	Library, Danmarks Fisk (reports only)
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Mr R S T Ferro ) Fish Man team	Mr A Souplet (Fishing Cruises only)
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Mr M R Heath	Dr L Rickards
Mr A Macdonald	Dr I Joint
D Lichtman (+ additional copy of track chart of reports only)	Director – Havfor Inst, Norway
Mrs E Morrison	Dr S Ehrich
CO/OIC of Vessel ( <i>Scotia</i> ) (to be faxed)	Monsieur le Chef du dépt, Nantes
Library (2)	Mr J C Brabant
File	Mrs van Duyvenvoorde
	Dr J G Gordon
	G Kane
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	Mr B Stewart
	Capt J Cannan ( <i>Scotia</i> and <i>Clupea</i> only)
	Controller Coastal Ops - A Stewart
	Dr P Grieg-Smith
	Mr H C Boyar
	Dr R J A Atkinson
	Mr H i Jákupsstovu
	Mr C Bullimore (To be faxed: 01923 846392)

Laboratory Personnel on Vessel		Fishery Officers at
D Reid	M Jones	
D Beare	O Goudie	
I Gibb	J Beaton	
K Peach	E Portilla	
F Burns	P Souquet	
C Davis		