

R1/12

Not to be cited without prior reference to the Marine Laboratory, Aberdeen

FRV *Scotia*

Cruise 0299S

**REPORT**

25 January - 14 February 1999

**Personnel**

A W Newton	B3 (in charge)
A P Robb	B3
G I Henderson	B1
I M Gibb	B1
D J Tait	A4
J Drevrey	A3
I Penny	A3
H E Emmerson (Mrs)	A3
I J Garioch	CW

**Objective**

To take part in the ICES International Bottom Trawl Survey in the North Sea

**Out-turn days per project:** M01T:21

**Narrative**

Sailing was delayed by six hours whilst some extra scientific equipment was installed and *Scotia* departed from Aberdeen at 1600 hours on Monday 25 January. Work started immediately off the Aberdeenshire coast and all equipment was tested and deemed to be working as per specification. The next nine days provided unusually calm conditions for the time of year and full advantage was taken to complete as much of the survey work before the weather broke. Progress was so advanced that the port of half landing was changed from Stavanger to Lerwick and *Scotia* was well into the northern sector of the survey area by the time a port call was made on Thursday 4 February. The visit to Lerwick coincided with a complete change in the weather and a westerly storm force 11 forced the vessel to remain at Lerwick until Saturday 6 February. The next seven days saw continuous northerly gales and survey work continued whenever the weather permitted. The work around the northern isles was finally completed and *Scotia* proceeded to the Moray Firth where the last of the scheduled trawling stations were sampled. An additional three stations off the Aberdeenshire coast were re-sampled to confirm results obtained earlier in the survey. Finally *Scotia* undertook extensive Methot net sampling in this region before completing the survey. The vessel docked in Aberdeen at 0830 hours on Sunday 14 February.

**Results**

A total of 53 half hour hauls were made using the GOV trawl. During the first part of the survey the ground gear consisted of the standard set of 152 mm rubber discs but these discs were replaced with 305 mm bobbins for the stations in the northern part of the North Sea. Short

(60 m) sweeps were used for all tows. Each haul was monitored for headline height, wingend and door spread and the speed of the net through the water.

Table 1 shows the preliminary indices for the principal species sampled during the survey. The index is based on the numbers of fish per hour caught below a length selected as a probable upper delimiter of 1+ fish. These indices are liable to some revision after the ages of the various species are confirmed.

Provisional figures show that the recruiting year classes of cod, haddock, herring are poor when compared with data from the previous five years. The 1998 whiting year class is above average whilst Norway pout are below the five year average. It should be emphasised that these data are provisional and the indices are liable to adjustment in the near future.

One hundred hauls were made with the Methot net in order to obtain an estimate of the number of pre-metamorphosing herring larvae. The final analysis of these data is made by Dr P Monk of DIFR, Copenhagen who is the international coordinator for 0-group herring data.

In addition to the normal biological sampling for this survey a total of 2,401 haddock and 251 cod were sampled as part of an ongoing investigation into the maturity stages and oocyte development in the gonads of demersal fish. A large number of various *ad hoc* requests eg dogfish embryos, material for DNA testing on squid and cod, were also fulfilled.

During the survey a Simrad EK500 was used continuously to obtain integrated traces in the water column with particular emphasis on demersal marks near the bottom. In addition a Simrad EM950 (swathe bathymetry sounder) was used at every fishing station in order to plot a three dimensional topography of each tow.

Top and bottom temperatures, salinities, phosphates, nitrates and silicates were taken at all trawling stations.

A W Newton  
15 March 1999

Seen in draft: Captain D Hodge

Table 1 Indices of 1+ fish from recent IBT surveys

Year	Herring	Cod	Haddock	Whiting	N pout	Mackerel
1999	707	2.0	195	704	3,244	43.0
1998	2,067	2.7	374	556	1,006	27.7
1997	4,069	40.0	860	288	9,752	718.8
1996	1,735	3.5	267	502	923	10.4
1995	1,886	9.7	1,375	679	5,941	2.3
1994	1,667	14.8	229	721	1,868	2.2