

R1/12

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FRV *Scotia*

Cruise 1206S

REPORT

25 July – 18 August 2006

Personnel

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Objectives

1. To undertake an internationally co-ordinated demersal trawling survey of the North Sea.
2. Obtain temperature and salinity profiles at each trawling station.
3. To carry out a comparative fishing exercise with the German research vessel *Walter Herwig III*.
4. To intensively map a series of boxes (3*3 nautical miles) to determine habitat type and variability.
5. Obtain low nutrient water seawater samples from statistical rectangle 45F1 (or an adjacent rectangle).

Out-turn days per project: 23 days – RV0609

Narrative

Scotia sailed from Aberdeen at 1030 on 25 July. Work commenced on the station east of Aberdeen and three survey stations were completed during the first day. During the night of 25 July a series of transects were completed, covering the site of the last trawl station of the day, in order to map the habitat type and variability of the sea bed. The next two days were spent covering the survey stations off the east coast of Scotland, with trawling being done during the day and acoustic mapping being done through the night. On the morning of 28 July *Scotia* commenced a comparative fishing exercise in the region of the Buzzard Field (44E9). A total of 14 randomly selected trawls were completed on 28 and 29 July with

contact being maintained with the German research vessel (*Walther Herwig III*). *Scotia* resumed work on the fishing survey on the morning of 30 July and worked west towards the Moray Firth stations. The vessel then worked northwards, completing stations off the Orkney and Shetland Islands before moving onto the northern part of the survey area. *Scotia* entered Norwegian waters on 4 August, completing four stations before docking in Stavanger on the morning of 5 August for the mid cruise break.

Scotia sailed at 0800 the following morning and resumed work on the stations west of the Norwegian coast. With favourable weather conditions, *Scotia* completed the stations in the northern part of the survey area before moving into the Danish sector on 10 August. Stations in the Danish, German and Dutch sectors were covered over the next five days before *Scotia* returned to the UK sector on 14 August and worked in the Dogger Bank area. Strong winds on the evening of 14 August resulted in the cancellation of acoustic and benthic sampling for the night. A slight decrease in wind strength allowed trawling to continue the next day with acoustic sampling being resumed on the evening of 15 August. Work continued uninterrupted off the north east coast of England until the survey was completed on the evening of 17 August. *Scotia* docked in Aberdeen at 0630 on 18 August.

Results

All survey stations were sampled with a total of 101 valid hauls being completed. Of these, 87 hauls were standard survey stations and 14 were carried out as part of the comparative fishing exercise with the German research vessel.

The survey indices for “0” group haddock, whiting and cod are shown in Table 1 and this indicates that the number of juvenile (2006 year class) cod, haddock and whiting encountered over the survey area were rather low. A graphic presentation of the indices for these species, over recent years, is shown in Figures 1, 2 and 3 respectively. However, the number of one year old (2005 year class) cod and haddock encountered was encouraging and the figures from recent years are highlighted in Figures 4 and 5 respectively. Numbers of one year old whiting were slightly up on those encountered during last year’s survey but as can be seen in Figure 6, they were still low when compared with recent years.

Length, weight, sex and maturity data were collected from all species listed in the EU Data Collection Regulations (EC) No 1639/2001.

A total of 21 sites were surveyed using the Simrad EM950 swathe bathymetry system. These sites were specifically selected to correspond with sites previously visited during the MAFCONS and PRODD cruises undertaken from 2001 to 2004. Data from 20 of the surveyed areas were used to generate sidescan backscatter images in QTC Multiview and from these images 15 basic sediment cluster distribution maps were created. Guided by these maps, 70 ground truthing sediment samples were collected from a wide variety of locations. These samples will be analysed by a contractor later and data generated will be used to verify differences in sediment types as indicated by the Multiview cluster analyses.

Further to the above, 70 infaunal samples were also collected from a selection of the sites visited during the cruise.

The ships thermosalinograph was run continuously throughout the cruise and a CTD and reverser bottle was deployed at each station to obtain temperature and salinity profiles. Samples of low nutrient sea water were collected in the region of statistical rectangle 45F1.

The Scanmar system was used at each station to monitor, headline height, door spread, wing spread and distance covered by the fishing gear.

TABLE 1

Number of 0+ fish per 10 hours fishing

Year	Hauls	Haddock	Whiting	Cod
1990	85	3163	1943	2.9
1991	90	3471	1379	1.4
1992	87	8270	2417	0.5
1993	87	859	247	3.6
1994	87	13762	648	25.8
1995	87	1566	1243	0.0
1996	85	1980	440	7.6
1997	87	972	317	0.2
1998*	77	3280	12302	4.0
1999+	87	54072	13409	11.8
2000	87	10375	19058	0.5
2001	87	68	10315	15.6
2002	85	1774	2190	0.2
2003	96	1780	5557	1.9
2004	97	1437	8990	16.7
2005	87	16099	1818	134.4
2006	87	1863	667	4.2

K A Coull
20 September 2006

Seen in draft: Captain Peter Ramsay, OIC, *Scotia*

Quarter 3 Groundfish Survey – Juvenile indices 1990 - 2006

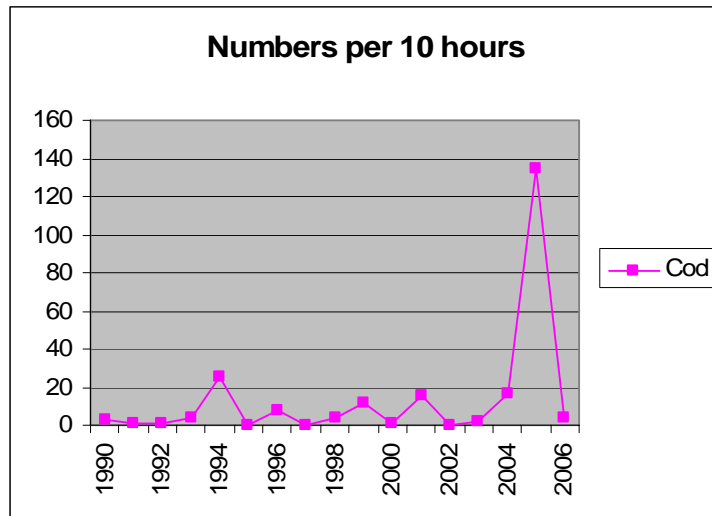


Figure 1

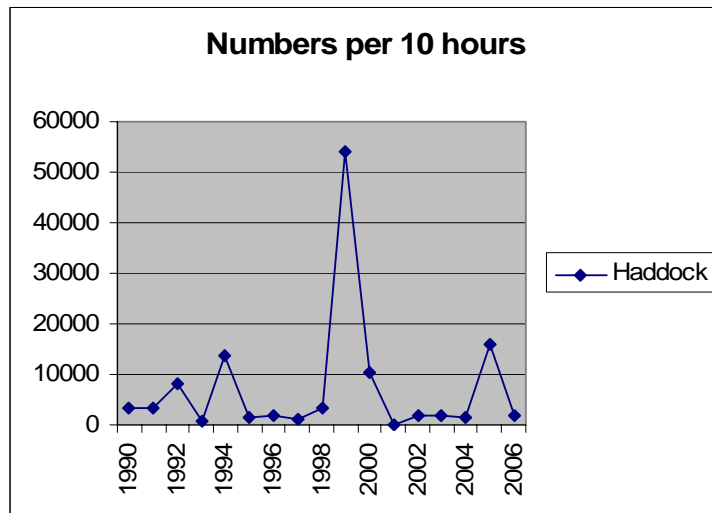


Figure 2

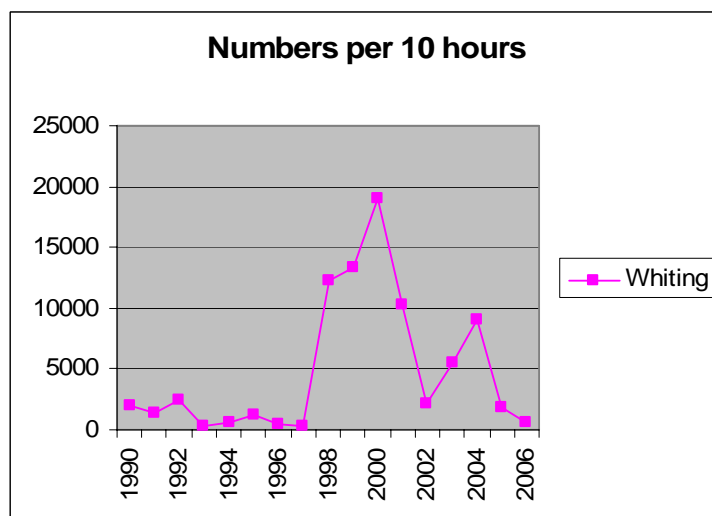


Figure 3

Quarter 3 Groundfish Survey – One year old indices 1990 - 2006

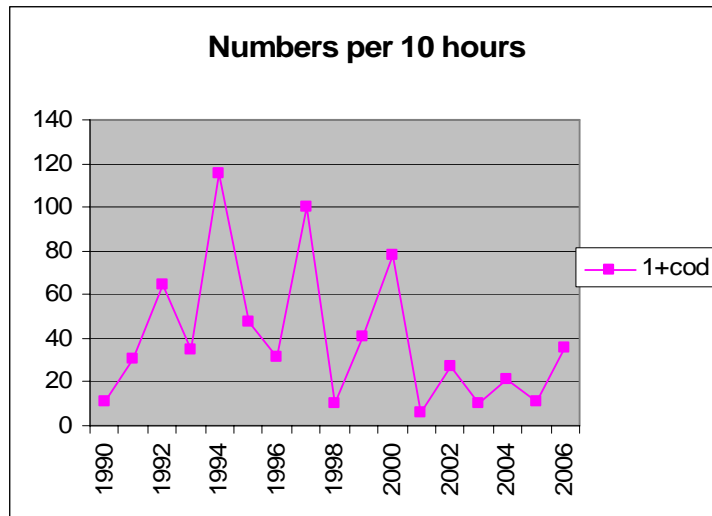


Figure 4

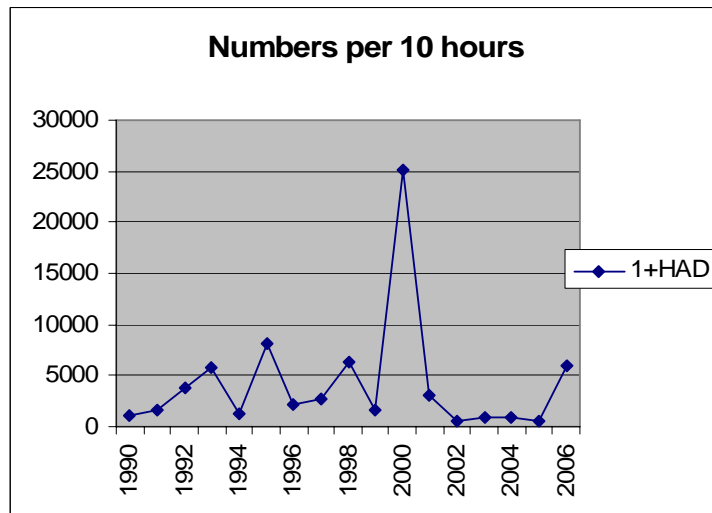


Figure 5

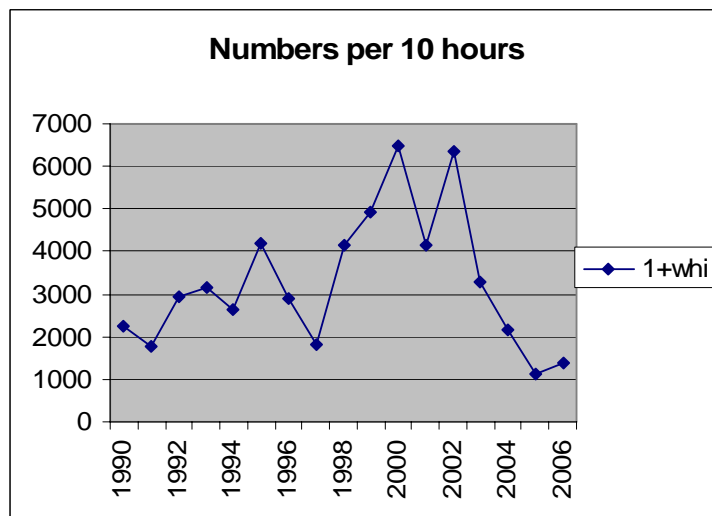


Figure 6

Quarter 3 - Groundfish Survey 2006

