

R1/12

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FRV *Scotia*

Cruise 0310S

REPORT

20 February – 12 March 2010

Half-landing: Greenock: 3 March

Personnel

F Burns (SIC)
R Kynoch
J Drewery
M Gault
L Allan (Part 1)
T Reilly (Part 1)
G Tyldesley (Part 2)
P Clark (Part 2)
P Copland (Part 1)
L Ritchie (Part 2)
A Stilvern (Visitor)
M maher (Visitor)
T Sykes (Visitor)

Out-turn days: 21 days RV1002

Fishing Gear: GOV Trawl (BT 137) fitted with ground gear C

Plankton Sampling Gear: Full size Methot Net with round frame.

Objectives

1. Demersal trawling survey of the grounds off the north and west coast of Scotland.
2. Collect abundance data on pre – metamorphosed herring larvae using the 2 meter circular framed methot net.
3. To obtain temperature and salinity data from the surface and seabed at each trawling station.
4. Collect additional biological data in connection with the EU data collection framework (DCF).

Narrative

Scotia sailed from Aberdeen at 0800hrs on 20 February. A familiarisation haul was completed successfully on a clear tow east of Peterhead at the Buchan Deeps with the fishing gear and scanmar sensors performing well. In addition to the usual suite of sensors used to monitor net performance we also had a Trawleye sensor away during this survey and some additional time was spent configuring this sensor for use during the survey.

With favourable weather conditions *Scotia* then made passage north and arrived at the first methot station west of Orkney at 0500hrs on 21 February. This was completed successfully and yielded 6 herring larvae. In addition 2 calibration tows were completed in order to test the efficiency of the flow-meter. Fishing operations commenced on station 5 at 0630hrs the same day west of Orkney.

With moderate winds over the next four days *Scotia* proceeded west and north successfully completing the fishing and methot stations in the northern most part of the area albeit with the survey trawl suffering constant wing damage on the harder ground that defines this part of the survey area.

Thursday 25 February saw the arrival of storm force NE winds which had been expected but arrived earlier than anticipated. With the bad weather set to remain for around 48hrs the decision was made to dodge south from St Kilda and then head east in to the Minch where the protection of the islands would hopefully allow fishing operations to resume. *Scotia* arrived at station 72, located 5nm east of South Uist at 1300hrs on 26 February with strong winds but with a much improved sea state allowing trawling to continue. Conditions continued to improve and on completion of an additional two fishing stations in the South Minch (73 & 43) *Scotia* proceeded back towards St Kilda waters, completing 4 methot stations en-route. With decreasing winds and a favourable forecast *Scotia* made good progress south covering the fishing stations and methot sampling west of the Hebrides and to the northwest of Ireland before heading east towards the Clyde. *Scotia* sailed into Greenock at 0900hrs on 3 March for a midcruise break and an exchange of personnel.

The 3 fishing stations in the Clyde were completed during 4 March. From there *Scotia* sailed out past the Mull of Kintyre to complete the remaining stations, firstly around Stanton Bank and then in the South Minch. With the weather remaining calm and the majority of the survey completed *Scotia* headed west from Barra Head to repeat an earlier station previously completed at night. *Scotia* then continued east towards the South Minch completing the rest of the stations in this area before steaming north overnight and arriving into the North Minch for first thing on 8 March completing 8 methot stations en-route. The remainder of the survey was spent completing the trawling stations in the North Minch and on the North Coast. Due to the extremely good progress made during the survey a repeat station, previously sampled at night and 15nm NW of Rona was completed on the morning of 10 March. The last fishing station was off Strathay Point on the north coast at 1700 on 10 March. Four further methot samples were completed in this area prior to *Scotia* making for Aberdeen. The vessel was alongside in Aberdeen at 2200hrs on 11 March. Unloading of all fishing and scientific equipment took place on 12 March prior to *Scotia* heading to the drydock at Leith for refit on 13 March.

Results

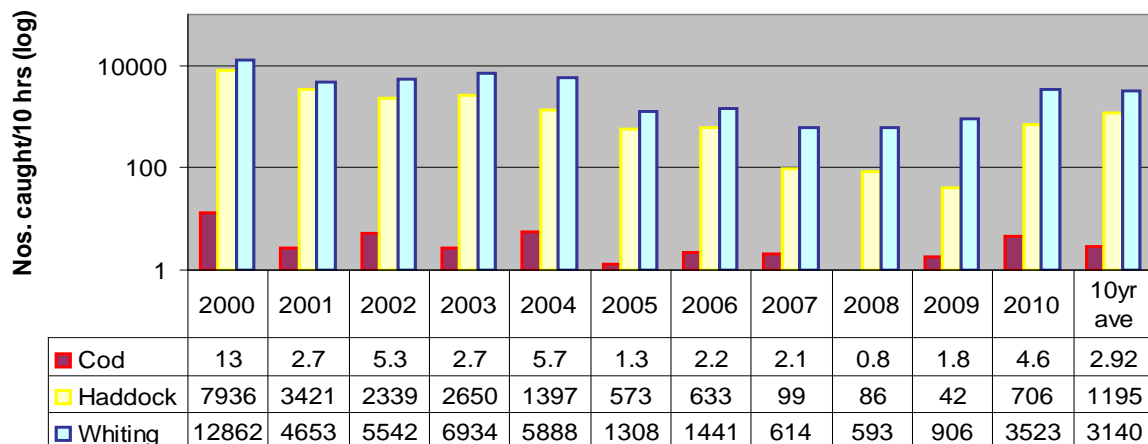
1. Trawling

The GOV was used throughout the cruise with groundgear "C" (525mm bobbins in the bosom section). The Scanmar system was used to monitor headline height, wing spread, door spread and distance covered during each tow. In addition to the usual sensors used the trawleye sensor was used on this trip to monitor fish entering the net as well as providing additional validation of touchdown and liftoff for the gear during hauls and proved to be a valuable addition to the suite of parameters collected. A bottom contact sensor was attached to the groundgear for each tow to monitor ground contact as well as to validate touchdown and liftoff of the ground-gear. The data was downloaded for further analysis in the laboratory.

Unseasonably settled weather resulted in calm conditions for the majority of the survey with only 24 hours fishing time being lost to bad weather. A total of 59 valid hauls were achieved with all but one of the core time series hauls being attempted due to presence of static gear. There were two foul hauls. Fishing was generally carried out during the daylight period commencing each day at first light. Seven of the stations were classified as night hauls although two of these were subsequently repeated at the end of the survey during daylight hours. Otoliths from all demersal species were aged at sea with the pelagic species being aged back at the laboratory. All haul summary data, length frequency and pelagic age data were also punched at sea. (See Figure 2 for station positions)

The provisional 1-group indices using a length rather than age based delimiter for cod, haddock and whiting are shown in Figure 1.

Fig.1 ICES Area 6A Numbers caught per 10 hours fishing Age 1



All species displayed a significant increase in 2010 compared with the data submitted for 2009 with both cod and whiting now above the 10 year average. A 90% reduction in the catch weight for mackerel was observed in 2010 compared with 2009, with 5.8 tonnes for 2010 being recorded compared to 52 tonnes for 2009. Total weight of herring recorded for the survey also showed a decrease compared to 2009 with 10.2 tonnes for 2010 being recorded compared to 16 tonnes for 2009. Catches of Norway Pout recorded almost a fourfold increase in weight recorded in 2010 with 6.9 tonnes in 2010 compared with 1.8 tonnes in 2009.

2. Methot Net Sampling

Settled weather conditions throughout almost the whole of the survey ensured complete coverage of the survey area this year and a total of 79 valid Methot hauls were completed with most statistical rectangles on the continental shelf being sampled twice. Methot hauls were carried out using the circular frame in order to obtain an estimate of the numbers of pre-metamorphosing herring larvae. In addition 4 calibration tows were also undertaken to check the performance of the flow-meter. Figure 3 displays the methot sample positions along with the numbers of herring larvae caught/deployment. The greatest abundance of herring larvae was located in the areas around the South Minch, Stanton Banks and Tory Island off NW Donegal although an overall increase was observed throughout the survey area when compared with the 2009 results.

3. Hydrography

The Thermosalinograph was run continuously throughout the survey. This automatically records sea surface temperature and salinity throughout the cruise. In addition to this a CTD (seabird19+) was deployed at each trawling station in order to obtain a temperature and salinity profile.

4. Biological Sampling

Additional biological data were collected from species listed in the 2009 IBTS report in support of the EU Data Collection Framework (DCF). Information on length, total weight, gutted weight, sex and maturity was collected for 30 species. A summary of numbers collected by species is displayed below in Table 1.

Table 1

Number of biological samples (maturity and age material, *maturity only):			
<i>Species</i>	<i>Age</i>	<i>Species</i>	<i>Age</i>
<i>Gadus morhua</i>	74	<i>Dipturus batis</i>	33*
<i>Melanogrammus aeglefinus</i>	715	<i>Raja brachyura</i>	2*
<i>Merlangius merlangius</i>	639	<i>Raja naevus</i>	67*
<i>Pollachius virens</i>	57	<i>Raja clavata</i>	22*
<i>Merluccius merluccius</i>	575*	<i>Molva molva</i>	6*
<i>Lepidorhombus whiffiagonis</i>	126*	<i>Raja montagui</i>	182*
<i>Lophius piscatorius</i>	31*	<i>Mustelus mustelus</i>	10*
<i>Lophius budegassa</i>	10*	<i>Mustelus asterias</i>	15*
<i>Clupea harengus</i>	997	<i>Trisopterus esmarkii</i>	280
<i>Scomber scombrus</i>	372	<i>Conger conger</i>	7*
<i>Solea solea</i>	8*	<i>Zeus faber</i>	204*
<i>Lepidorhombus boscii</i>	1*	<i>Microstomus kitt</i>	231*
<i>Pollachius pollachius</i>	3*	<i>Asp trigla cuculus</i>	302*
<i>Mullus surmulletus</i>	3*	<i>Squalus acanthias</i>	174*
<i>Brosme brosme</i>	1*	<i>Glyptocephalus cynoglossus</i>	4*

Submitted:
F Burns
 31 March 2010

Approved:
I Gibb
 09 April 2010

Figure 2: 0310S Trawl Station Positions. (Blue triangles represent valid hauls and red stars are foul hauls)



Figure 3: 0310S Methot positions and numbers of herring larvae in sample.

