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FRV *Scotia*

Cruise 0308S

Report

Dates

1 March-21 March 2008

Half-landing: Ullapool, 10-11 March

Personnel

| | |
|------------|-----------|
| F Burns | (SIC) |
| R Kynoch | |
| O Goudie | |
| L Ritchie | |
| K Couston | |
| A Jaworski | Part 1 |
| L Allan | Part 2 |
| R Watret | Part 1 |
| M Gault | Part 2 |
| B O'Hea | (Visitor) |

Out-turn days: 20 RV0803

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

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. Identify, quantify and record all Benthic species caught.
5. Collect additional biological data in connection with the EU Data Directive 1639/2001 and 1581/2004.

Narrative

Scotia sailed from Aberdeen at 1000 on 1 March. A familiarisation haul was completed successfully on a clear tow just north of Aberdeen with the fishing gear and sensors performing well.

Scotia then made passage to the first trawl station at position 58° 50N 03° 40W. Despite westerly gales *Scotia* made good speed and arrived on station at 0930 on Sunday 2 March. A further two stations were completed on the Sunday with the gear working well. In addition

3 methot stations were completed in the area until deteriorating weather curtailed operations. *Scotia* then proceeded to the next fishing station in time for daybreak. Four fishing stations were successfully completed on the 3 March in the north of the survey area, 40 – 50nm north of Cape Wrath with five methot samples also being completed overnight in the same area. Good progress continued to be made on the 4 March until late in the afternoon when *Scotia*, heading south enroute to the fourth station was forced to alter course in order to put ashore one of the deck crew whose health had started to deteriorate very rapidly. The crewmember was transferred onto the Stornoway lifeboat at around 2000 near the entrance to Stornoway Harbour. From here he was taken to the Western Isles Hospital in Stornoway. With the wind freshening *Scotia* headed back west around the Butt of Lewis to continue the survey. Due to the deteriorating weather only two of the four methots planned were completed. Fishing operations were also disrupted with only one haul completed on 5 March. The weather moderated during the evening which allowed 4 methot samples to be completed. The following day three fish stations were completed around the Flannan Islands before the severe gale force winds once again disrupted fishing operations. With no sign of the weather moderating in the next 48 hours the decision was made to head back east into the Minch. *Scotia* arrived into the North Minch in the early hours of Friday the 7 March and was successful in completing 3 methot samples before daybreak and the commencement of trawling. Five trawl stations were completed successfully in the North Minch before *Scotia* headed south on her way to stations southeast of Barra Head. Enroute *Scotia* picked up three methot samples. Unfortunately the gales had still not abated and with the swell now south-westerly *Scotia* was forced to turn back before arriving at the stations south of Barra Head, instead completing 2 stations further north in the Minch, west of Canna. *Scotia* then proceeded to dodge south waiting for the weather to moderate. Overnight, five methots were completed in the sheltered waters around Coll and Tiree and by first light on 9 March the situation had improved. Five fishing stations were successfully completed in the South Minch before *Scotia* headed North with another five methot samples being picked up during the passage north. *Scotia* headed into Ullapool for the mid trip port call on the afternoon of the 10 March at 1600 having completed another three stations in the Minch prior to docking.

Scotia sailed at 1600 on 11 March and headed south through the Minch with a view to completing the remaining stations in the South Minch the following morning. Unfortunately once again the weather intervened to disrupt the survey plan and by the early hours of the 12 March extreme weather forced *Scotia* to take shelter behind Barra with gusts in excess of 70 knots being experienced. By mid afternoon conditions had eased sufficiently that *Scotia* was able to head back across the Minch and through the Sound of Mull enroute to the Clyde where fishing would commence the following morning (13 March). One methot sample was completed on the steam round just east of the Mull of Kintyre. With two hauls completed in the Clyde and a favourable long range forecast ahead, *Scotia* was finally able to make decent progress and over the next week was able to successfully complete the majority of the offshore stations in the south west and west of the survey area. Excellent progress was also made with regards to the methot sampler with most of the rectangles being sampled twice. The weather once more started to deteriorate on the morning of Thursday 20 March however by this time the survey was more or less complete. One more haul was completed along the north coast before the conditions once again curtailed operations and *Scotia* finally headed for Aberdeen and was alongside by 0800 on 21 March.

Results

1. Trawling

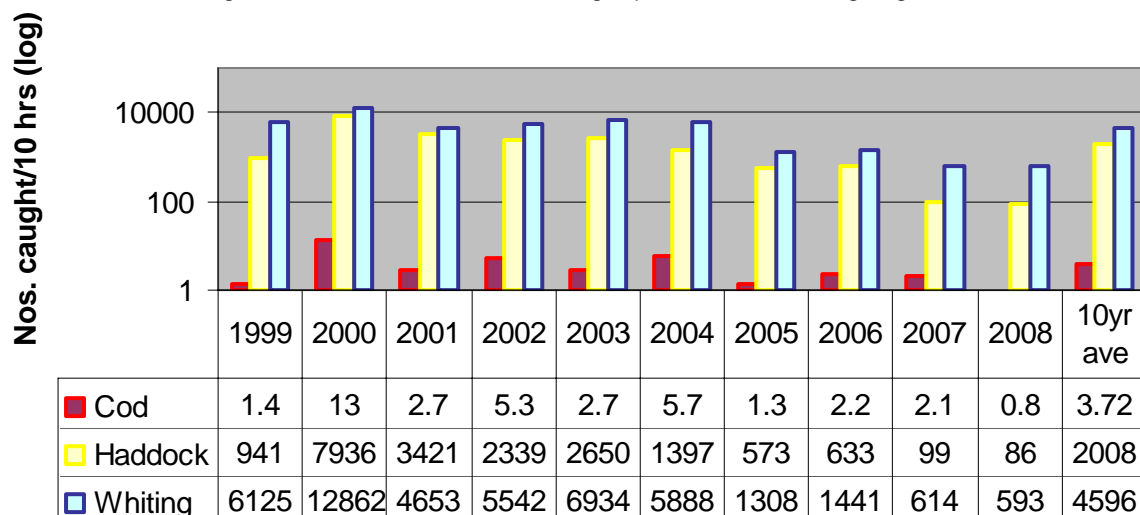
The GOV was used throughout the cruise with groundgear “C” (525mm bobbins in the bosom section). The Scanmar system was used throughout the cruise to monitor headline height, wing spread, door spread and distance covered during each tow. A bottom contact

sensor was attached to the groundgear for each tow and the data downloaded for further analysis in the laboratory.

Despite atrocious weather and a couple of setbacks in the first half of the cruise Scotia still managed to complete the survey. A total of 56 valid hauls were achieved with all the core time series hauls being completed. In addition 5 extra stations were completed and one station was repeated. (See figure 2 for haul positions) There was one foul haul. Fishing commenced each day at first light with all hauls being completed during the daylight period. The herring, mackerel and sprat otoliths collected were aged at sea whereas the majority of the demersal otoliths were mounted at sea and returned to FRS for age determination. All haul summary data, length frequency, benthic and pelagic age data were punched at sea and stored on computer disk.

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

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



The index continues to display the downward trend of recent surveys for the three main commercial species, producing very low values that in all cases are well below the 10 year average. As in previous years pelagic species dominated the catches with 25 tonnes of mackerel and 4 tonnes of herring being caught.

Haul 118 yielded a Sailfin Dory (*Zenopsis conchifer*). This is a southern relative of the John Dory which is only ever rarely seen this far north. It was caught in statistical rectangle 42E0 at a depth of 160 meters. It is the first ever recorded specimen by FRS on a bottom trawl survey.

2. Methot Net Sampling

Weather disrupted sampling quite significantly in the first half of the survey, however despite this a total of 67 Methot Net hauls were carried out in order to obtain an estimate of the numbers of pre-metamorphosing herring larvae. The newly acquired circular frame was initially used until it became damaged and unusable. The remaining 36 deployments tows were completed using the square frame which had been retained as a backup. Sampling was undertaken outwith daylight hours after cessation of fishing activities. With the exception of a couple of rectangles in the SW a minimum of one sample was collected from every statistical rectangle within the survey area and where time allowed two hauls were completed. In addition 4 calibration tows were also undertaken to check the performance of

the flowmeter. Figure 3 displays the method sample positions along with the numbers of herring larvae caught / deployment.

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 reverser bottles were deployed at the surface and bottom at each station in order to obtain temperature data as well as water samples for analysis for salinity.

4. Benthic Organisms

All benthic organisms encountered during the trawl survey were recorded and quantified. Where possible identification was to species level although often this was not possible and identification was only possible to the genus/family. All problem specimens were retained for further investigation back at FRS.

5. Biological Sampling

Additional biological data were collected from species listed in the 2007 report of the IBTS in support of EU Data Collection Regulation (EC) No 1639/2001 and No 1581/2004. Information on length, total weight, gutted weight, sex and maturity was collected for 19 species. A summary of numbers collected by species is displayed below in Table 1.

Table 1

| Species | Nos. collected | Species | Nos. collected |
|----------------------|-----------------------|--------------------|-----------------------|
| Cod | 103 | Turbot | 4 |
| Haddock | 895 | Cuckoo Ray | 46 |
| Whiting | 649 | Thornback Ray | 28 |
| Saithe | 175 | Ling | 12 |
| Hake | 713 | Blonde Ray | 2 |
| Megrim | 115 | Red Mullet | 2 |
| Angler | 41 | Spotted Ray | 101 |
| Black Bellied Angler | 3 | Smoothhound | 3 |
| Skate | 28 | Starry Smoothhound | 2 |
| Brill | 1 | | |

Finlay Burns
23/5/08

Figure 2: 0308S Haul Positions

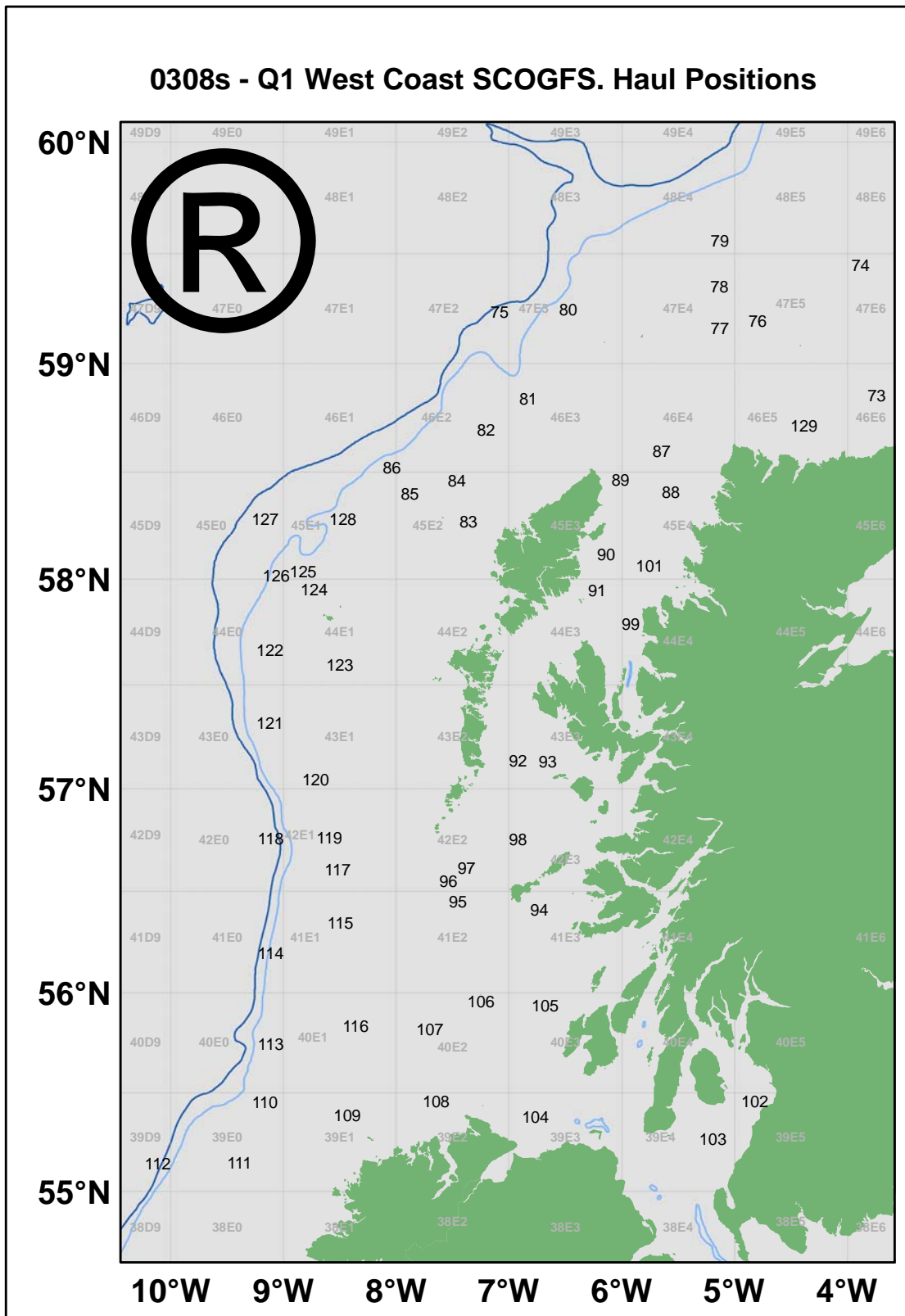


Figure 3: 0308S Methot positions and numbers of herring larvae in sample.

