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MRV *Scotia*

Survey 0213S

## **REPORT**

25 January – 15 February 2013

### **Personnel**

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### **Objectives**

1. To participate in the coordinated International Bottom Trawl Survey in the North Sea.
2. To collect data on the distribution and abundance of seabirds and cetaceans using ESAS line transect techniques
3. To obtain temperature and salinity data at each trawling station.
4. To collect additional biological data in accordance with EU Data Directive 1639/2001 and 1581/2004
5. To collect representative samples of shells for the McKay collection. A nationally important reference collection.
6. To collect offshore sea water samples for the onshore cultivation of parasitic organisms

**Out-turn days per project:** 22 days, RV1301

### **Narrative**

*Scotia* sailed from Aberdeen at 10:15hrs on 25 January. After safety drills and familiarisation protocols, the vessel deployed both trawls (A & B gear) to ascertain adjuster chain length and to ensure the operation of the Scanmar net monitoring system. The MIK net was also deployed for familiarisation purposes and to undertake flow meters calibration runs. The medium term weather forecast suggested that we were to encounter moderate conditions for the next 48 hours. As such, *Scotia* worked

south from Aberdeen, then east and north, covering the offshore stations which required both ground-gear “A” and “B” to be deployed. Weather conditions deteriorated from the 28 of January onwards up to the time of the half landing on the 4 February. MIK sampling was undertaken at a rate of 2 tows per statistical rectangle where trawling events took place. This pattern of operation continued up until 4 February when *Scotia* docked in Aberdeen for her scheduled half landing. *Scotia* departed from Aberdeen on the morning of 5 February and resumed the survey in the Moray Firth. *Scotia* then worked up the west side of Orkney, through Fair Isle waters and up the west side of the Shetland Isles. The survey continued across the top of Shetland and then in a southerly direction down the east side. This continued until the morning of 13 February, when *Scotia* was forced to dodge in the Fair Isle channel due to poor weather conditions. The vessel sustained minor damage to forward port side of her bow, including a smashed port hole, which saw slight ingress of water. The weather improved rapidly from 03:00hrs on the morning of 14 February, allowing 1 MIK tow to be completed before recommencing fishing operations at 07:15hrs. The standard scheduled sampling stations were completed by the 15:00hrs, when *Scotia* made way south to complete 2 further MIK stations. Once all scientific operations were completed, *Scotia* then made way for Aberdeen, docking alongside at 05:30hrs on 15 February.

Scientific staff disembarked on the morning of Friday 15 February after unloading all samples and equipment not required for the following survey 0313S.

## RESULTS

### Trawling

The GOV was used throughout the survey with groundgear “A” (152mm rubber disks) being used in the southern part of the survey area and groundgear “B” (305mm bobbins) being used in the northern part. The Scanmar system was used throughout to monitor headline height, wing spread, door spread and distance covered during each tow. A NOAA bottom contact sensor was attached to the groundgear for each tow and the data downloaded for further analysis in the laboratory

A total of 56 valid hauls was achieved with all allocated stations being sampled. Chart 1 displays trawl locations.

Table 1 shows the preliminary indices for all vessels participating in this international survey. The indices are based on the numbers of fish caught per hour below a pre-defined length selected as a probable delimiter of 1+ fish.

**Table 1:** Preliminary indices for Quarter 1 International Bottom Trawl Survey (All countries)

	Final 2012	Preliminary 2013	Mean (average 1980–2012)
<b>Cod</b>	3.1	2.5	8
<b>Haddock</b>	11.9	36	576
<b>Whiting</b>	39.2	66	479
<b>Norway pout</b>	994.8	4694	2810
<b>Herring</b>	2939	1442	1963
<b>Sprat</b>	2451.7	1576	1107
<b>Mackerel</b>	98.7	9	103

## **Method Net Sampling**

A total of 94 Method Net (MIK) hauls were carried out in order to obtain an estimate of the numbers of pre-metamorphosing herring larvae. The circular frame was used to complete at least 2 hauls in each statistical rectangle of the survey area and the deployment and recovery speeds were adapted in accordance with advice from the Herring Assessment WG.

MIK stations in statistical rectangles 42F1 & 42F2 were not undertaken due to poor weather conditions encountered at the time. 5 other stat rectangles received only 1 MIK sampling event also as a result of unsuitable weather conditions at the time. Location of MIK stations are displayed in Chart 2.

## **Biological Sampling**

Additional biological data were collected from various species in support of EU Data Collection Regulation (EC) No 2008/949.

In addition to above, the following biological sampling was also undertaken :

- \* Dissection material for Aberdeen University
- \* Shelled Mollusc sampling for the McKay reference collection.

## **Age determination**

Otoliths from cod, haddock, whiting, saithe, Norway pout, herring, mackerel and sprat were collected, with the pelagic species being read and aged at sea.

## **Hydrographic Sampling**

The ship's thermosalinograph was run continuously throughout the survey. The CTD was deployed at each station (with a reverser bottle attached) in order to obtain temperature data as well as water samples for analysis for salinity, nitrate, silicate and phosphate.

Submitted:  
C.G.Davis  
4 July 2013

Approved:  
I Gibb  
4 July 2013

Chart No. 1 Fishing Tow Positions (invalid tows in red)

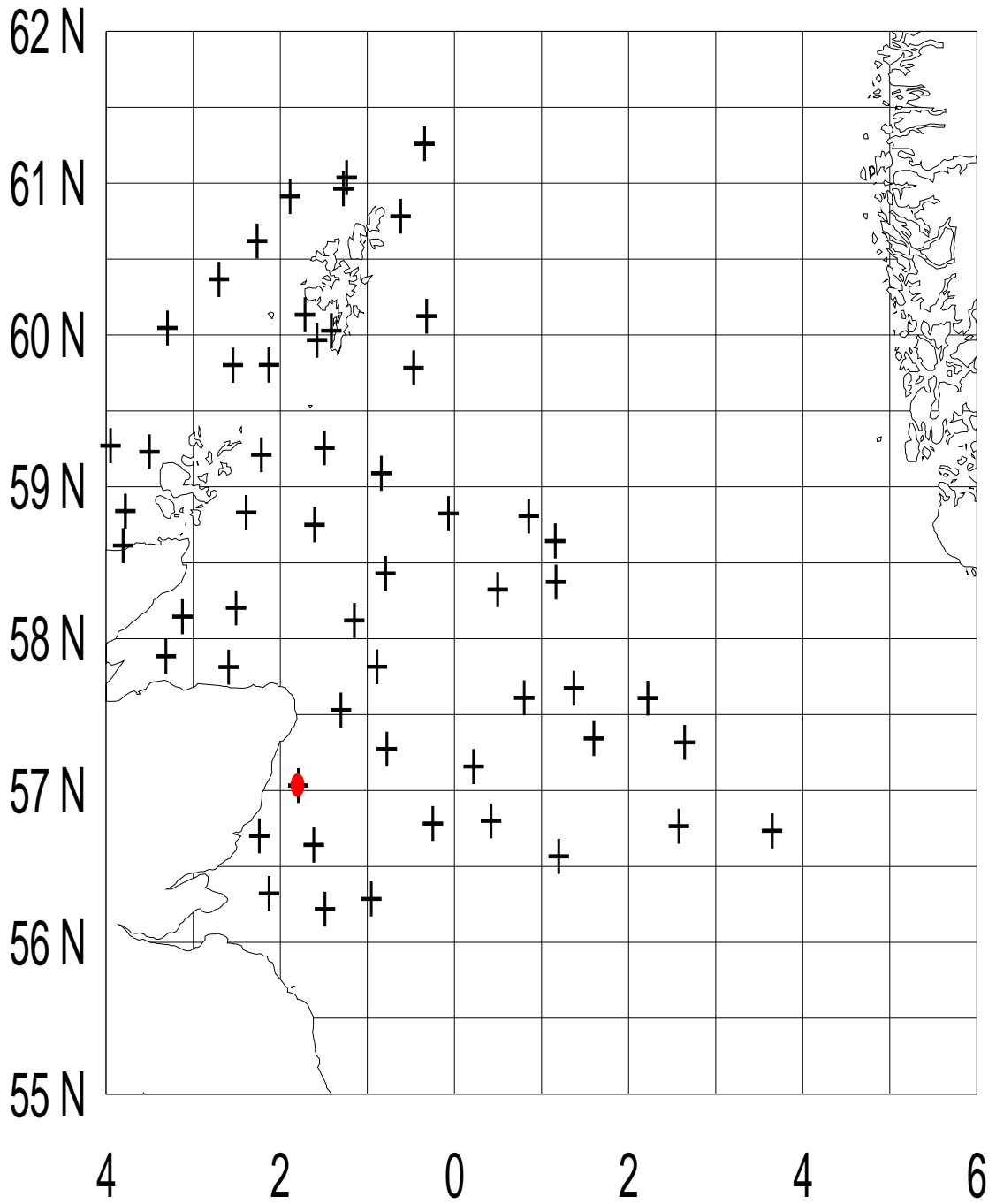


Chart No.2. MIK Sampling locations.

