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MRV *Scotia*

Survey 0212S

## **REPORT**

25 January – 15 February 2012

### **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. Collection of Hake DNA samples for Ardtoe Marine Laboratory.
4. To obtain temperature and salinity data at each trawling station.
5. To collect additional biological data in accordance with EU Data Directive 1639/2001 and 1581/2004.
6. To collect representative samples of shells (dead and or alive) for the McKay collection. A nationally important reference collection.

**Out-turn days per project:** 22 days, RV1201

### **Narrative**

*Scotia* sailed from Aberdeen at 1100hrs on 25 January and after onboard safety drills and familiarisation protocols, commenced trawling on the station east of Aberdeen with the GOV trawl fitted with Groundgear "B". The medium term forecast suggested that we were to encounter favourable conditions for the week ahead. As such, *Scotia* worked east and then north covering the offshore stations which required both ground-gear "A" and "B" to be deployed. MIK sampling was undertaken at a rate of two 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 again on the morning of 5 February and resumed the survey in the Moray Firth. *Scotia* continued to benefit from exceptionally good weather for the time of year and as such

progressed very well working up the west side of Orkney, through Fair Isle waters and up the west side of the Shetland Isles. The survey continued across the North coast of Shetland and then in a southerly direction down the east side, seeing us conclude the designated survey stations to the east side of Orkney on Monday 13 February. *Scotia* was able to undertake two extra stations and complete fishing operations on the morning of Tuesday 14 February. *Scotia* made passage for Aberdeen, docking alongside at 1900hrs.

Scientific staff disembarked on the morning of 15 February after unloading all samples and equipment not required for survey 0312S.

## Results

### Trawling

The GOV was used throughout the survey with groundgear “A” (152 mm rubber disks) being used in the southern part of the survey area and groundgear “B” (305 mm bobbins) being used in the northern part. The Scanmar system was used throughout the survey 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 55 valid hauls was achieved with all allocated stations being sampled. Two extra tow stations were undertaken in statistical rectangles 45E8 and 45E9. Figure 1 displays trawl locations.

Table 1 shows the preliminary indices for all vessels participating in this international survey with a total of 379 hauls having been completed. 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.

**Table1**

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

	<b>Final 2011</b>	<b>Preliminary 2012</b>	<b>Mean (average 1980–2011)</b>
<b>Cod</b>	1.4	<b>3.1</b>	8
<b>Haddock</b>	17	<b>12</b>	584
<b>Whiting</b>	185	<b>393</b>	489
<b>Norway pout</b>	1282	<b>1084</b>	2893
<b>Herring</b>	3015	<b>1636</b>	2002
<b>Sprat</b>	1501	<b>4091</b>	1125
<b>Mackerel</b>	92	<b>108</b>	103

The survey indices for 1980-2012 for the above species are provided in Figure 3.

### Methot Net Sampling

A total of 124 Methot Net (MIK) hauls were carried out in order to obtain an estimate of the numbers of pre-metamorphosing herring larvae. The circular Methot frame was used to complete at least two hauls in each statistical rectangle of the survey area with deployment and recovery speeds adapted in accordance with advice from the Herring Assessment WG. MIK stations in statistical rectangle 49E9 were not completed due to adverse weather conditions.

Location of MIK stations and numbers caught are displayed in Figure 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
- \* Hake DNA sampling for Ardtoe Marine Laboratory
- \* Shelled Mollusc sampling for the McKay reference collection.

## **Age determination**

Otoliths from cod, haddock, whiting, saithe, Norway pout, herring, mackerel and sprat were aged at sea.

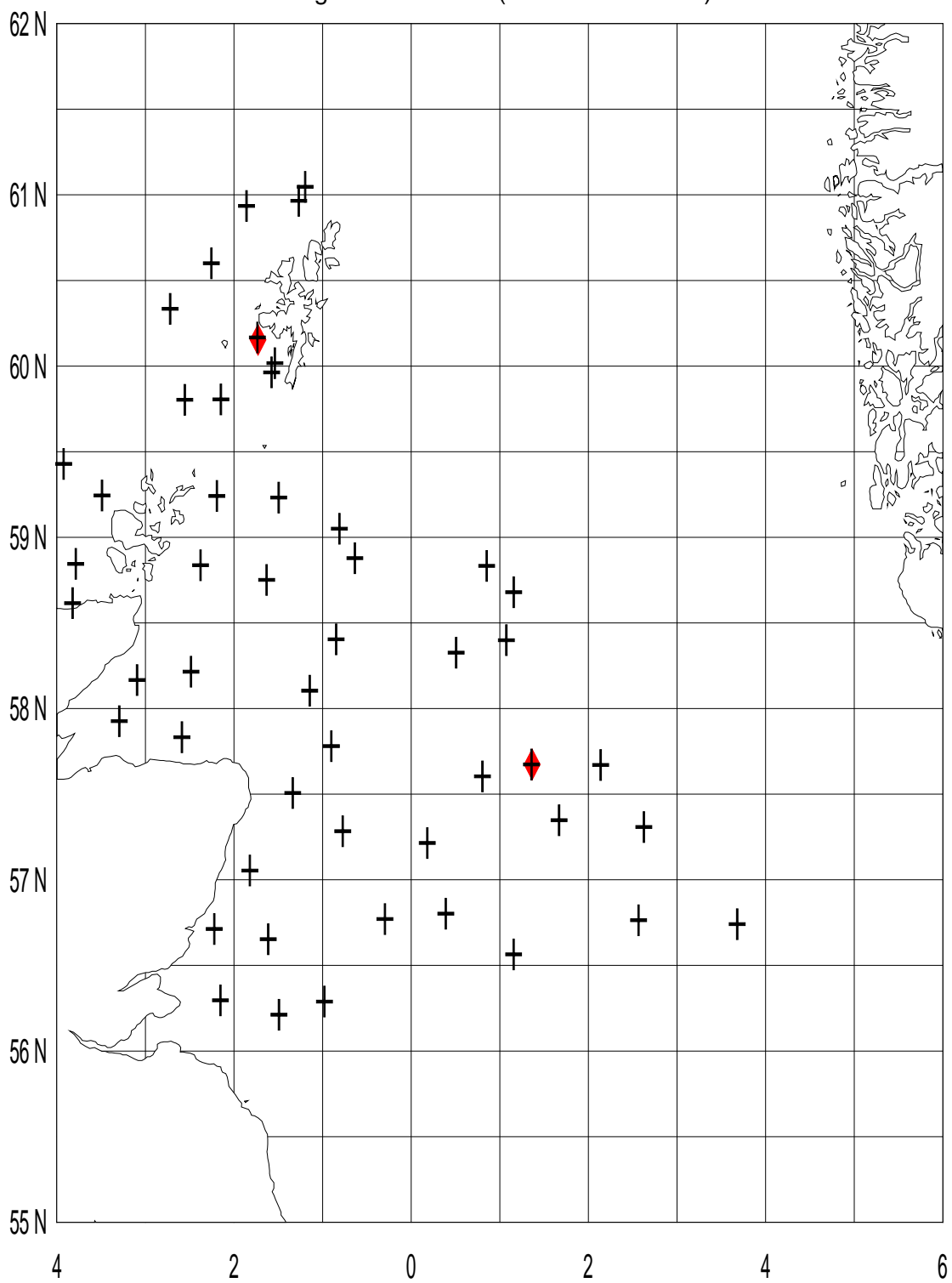
## **Hydrographic Sampling**

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

C G Davis  
10 March 2012

Figure 1

Fishing Tow Positions (invalid tows in red)



**Figure 2**

MIK Sampling locations & relative sample size.

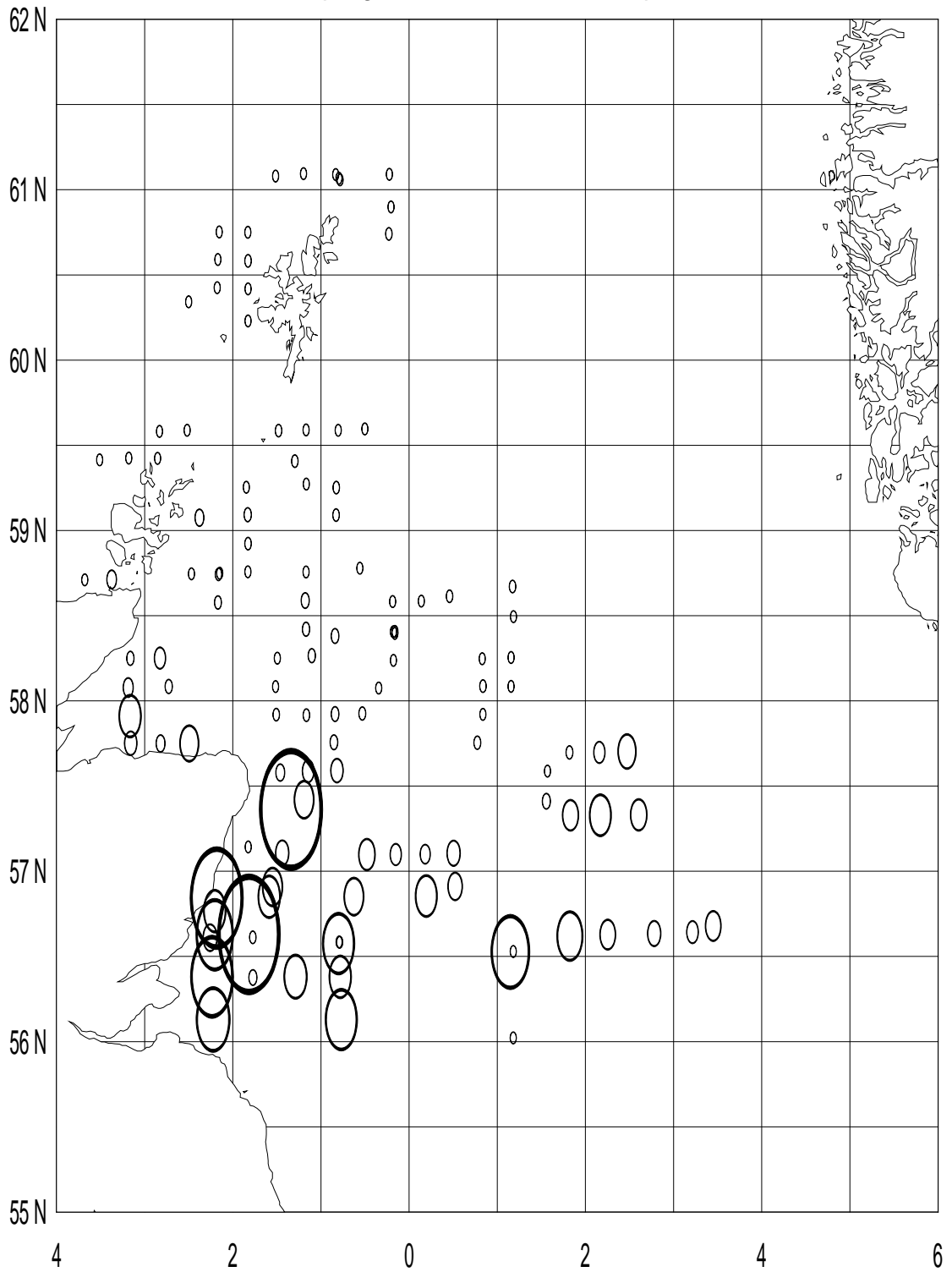


Figure 3

