

R1/12

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FRV *Scotia*

Cruise 0210S

## **REPORT**

27 January – 17 February 2010

### **Personnel**

C G Davis	(SIC)
M Mathewson	
K Summerbell	
D Bova	
R Watret	
M Leys	
P Copland	(Part1)
L Ritchie	(Part2)
T Fujii	(Oceanlab – Part1)

### **Objectives**

1. To take part in the coordinated International Bottom Trawl Survey in the North Sea.

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

### **Narrative**

*Scotia* sailed from Aberdeen at 1000hrs on 27 January and commenced trawling on the station east of Aberdeen with a GOV trawl fitted with Groundgear “B”. The medium term forecast suggested 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. Methot Net (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 6 February when *Scotia* docked in Aberdeen for her scheduled half landing. Only a few hours of survey time were lost on the first half of the survey due to adverse weather.

During the half landing the opportunity was taken to change to a new trawl and to strip off gear “A” on the top net drum and to replace this with a second set of “B” gear.

*Scotia* sailed again from Aberdeen on the morning of 7 February and resumed survey work in the Moray Firth area. The survey progressed up the west of Orkney and Shetland Isles, returning south down the east side of the Shetlands and Fair Isle.

During the second part of the survey, several ‘foul’ hauls were recorded with considerable damage to trawl gear. Although one of these foul hauls was on new ground surveyed, in an attempt to establish an additional station for this survey, the remaining foul hauls were encountered on historically ‘clean’ established trawl positions.

*Scotia* continued surveying up until the evening of Tuesday 16 February when she began making way for Aberdeen.

Scotia docked alongside Aberdeen at 0600 hrs on Wednesday 17 February.

## Results

### Trawling

The GOV was used throughout the cruise 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 the cruise 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 52 valid hauls were achieved with all allocated stations being sampled other than one located in 43E9, where substantial gear damage was encountered. Chart 1 displays trawl locations.

Table 1 shows the preliminary indices for all vessels participating in this international survey with a total of 383 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 2009</b>	<b>Preliminary 2010</b>	<b>Mean (average 1980–2009)</b>
<b>Cod</b>	1.2	<b>3.7</b>	8
<b>Haddock</b>	74	<b>607</b>	600
<b>Whiting</b>	259	<b>385</b>	506
<b>Norway pout</b>	5496	<b>4976</b>	2891
<b>Herring</b>	2347	<b>1472</b>	1994
<b>Sprat</b>	3468	<b>4086</b>	1093
<b>Mackerel</b>	0.8	<b>0</b>	106

The survey indices for 1980 – 2010 for the above species are provided in Figure 1.

### Method Net Sampling

A total of 99 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 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. Location of MIK stations and numbers caught 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 for the subsequent requests:

1. Collection of 100 common dabs from each location at Orkney and Shetland for MSS.
2. Collection of otoliths and biological parameter data from 100 three year old cod, haddock and whiting from a possible 12 areas for MSS.

3. Collection of a considerable quantity of fish specimens from a diverse selection of species for dissection experiments at Aberdeen University.
4. Collection of a variety of specimens from selected species for DNA analysis by the University of Helsinki
5. Collection of DNA samples from Turbot and Halibut for a PhD Student.
6. Collection of representative samples from all shelled mollusc species caught in each haul, for an established reference collection.

### **Age Determination**

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

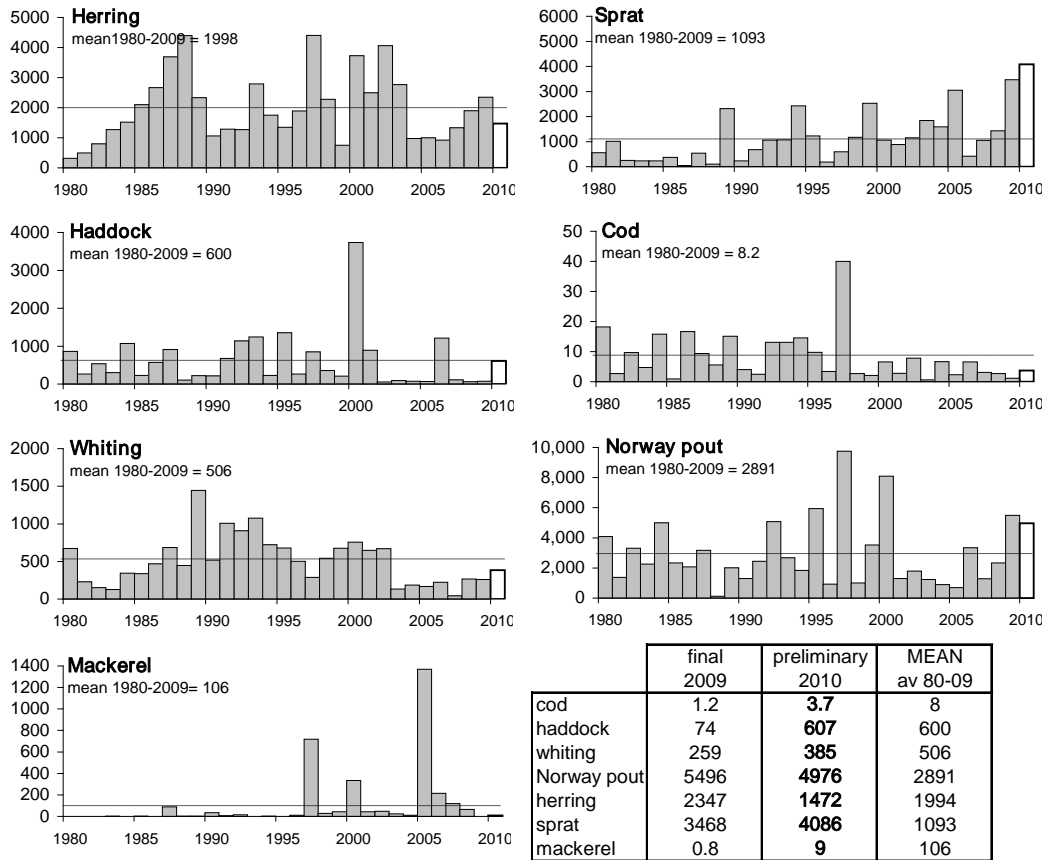
### **Hydrographic Sampling**

The ship's thermosalinograph was run continuously throughout the cruise. A CTD was deployed at each station (with 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*  
24 March 2010

Approved:  
*I Gibb*  
12 April 2010

Figure 1



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

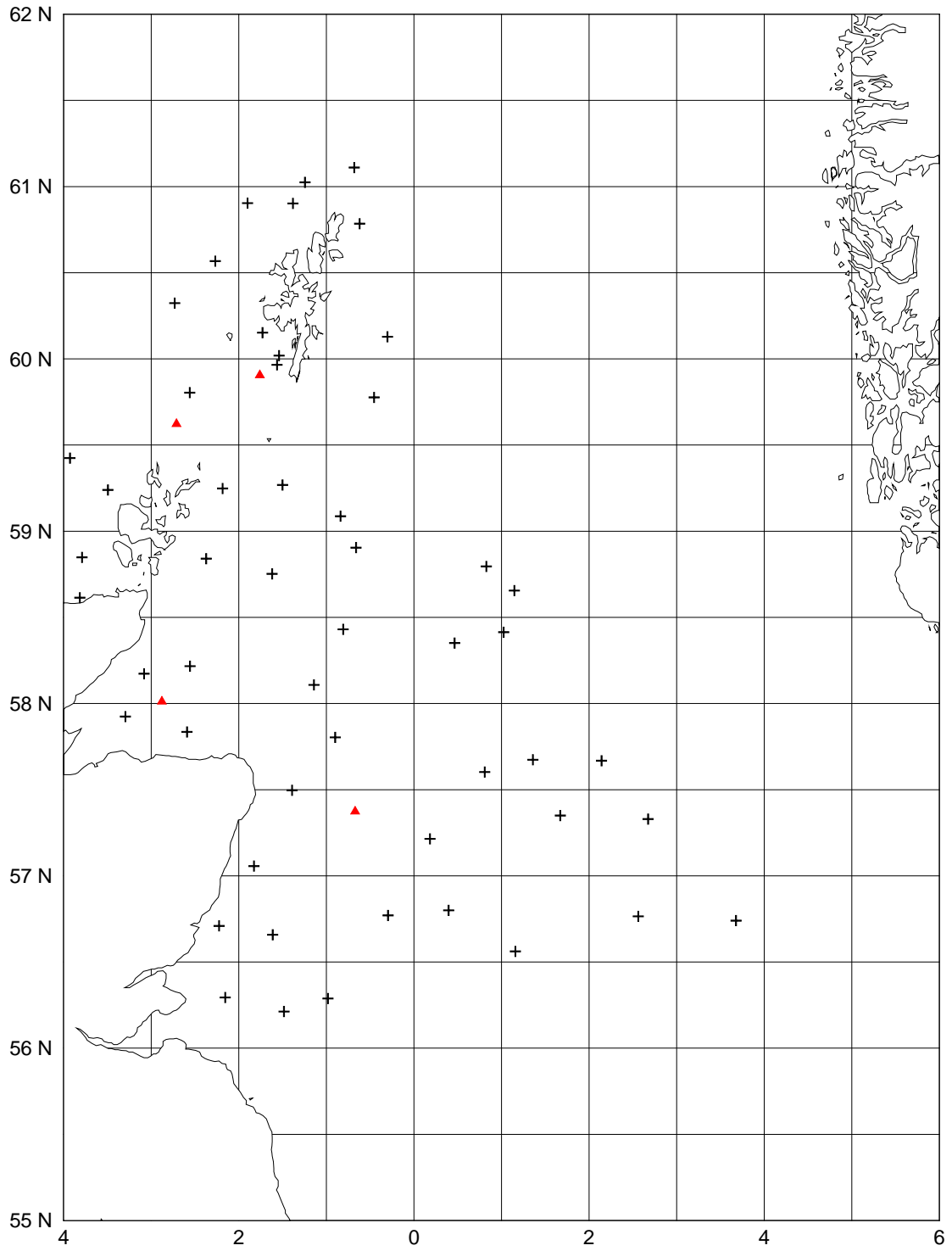


Chart No.2: MIK Sampling locations and numbers caught.

### Scotia Q1 IBTS 2010 Actual numbers caught

