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FRV *Scotia*

Cruise 0810S

REPORT

28 June – 18 July 2010

Ports

Departure: Aberdeen, 28 June
Half-landing: Lerwick, 7 July
Arrival and unloading: Aberdeen, 18 July

Personnel

P Copland	(SIC)
J Hunter	
M Robertson	
S Keltz	
O Goudie	
F McIntyre	
J Dunn	28/6 – 7/7/10
B McIver	28/6 – 7/7/10
K Webb (JNCC)	28/6 – 7/7/10
D Kaminski	7/7 – 18/7/10
C Watt	7/7 – 18/7/10
L Cornick (JNCC)	7/7 – 18/7/10

Out-turn days by project: 21 days - RV1009 (10728)

Fishing Gear

Midwater trawl PT160 x 3.
Multisampling pelagic cod-end with one fine mesh cod-end.
OCEAN sampler
Van Veen grab and table
Sieving system
TV drop frame (Manual deployment)

Objectives

- To conduct an acoustic survey to estimate the abundance and distribution of herring in the north western North Sea and north of Scotland between 58º30'-62ºN and 4ºW to 2ºE, excluding Faroese waters.

- To obtain biological samples for echosounder trace identification using a pelagic trawl.

- To obtain samples of herring for biological analysis, including age, length, weight, sex, maturity, fat content and ichthyophonus infection.

- To obtain hydrographic data for comparison with the horizontal and vertical distribution of herring.

- To obtain plankton samples to map the distribution and abundance of zooplankton.

- To obtain information on seabed habitats using grab sampling and drop frame TV.

Narrative

All gear was loaded in Aberdeen between 24 & 27 June. Scotia did not depart until 1800 on 28 June after a delay to allow for the repair of the vessels air conditioning system. A short meeting was held with all scientists to explain the objectives of the survey, to describe general operating procedures and discuss risk assessments for tasks. A deployment of the PT160 pelagic trawl with multicodend sampler was conducted en route to Scapa Flow to familiarise staff with the handling of the equipment.

Calibration of the hull mounted transducers took place in Scapa Flow between 0630 and 1400 on 29 June. Scotia then made her way to east of the Pentland Firth to the first survey transect beginning the survey at 1545. Transects extended as far east as 1° 45E, and as far as safely possible to the west, on approaching the coast. Fish traces were abundant in the area and fishing operations were carried out very successfully up to the half landing with 15 out of the 18 hauls conducted catching significant quantities of herring. The loss of a complete top panel of the net on 30 June did not restrict fishing operations but precluded the use of the multisampler until repairs could be effected to the extension panel that attaches it to the net body. After close inspection, concerns as to the strength of the remaining nets meant that the sampler was not deployed for the remainder of the cruise. A second incident where part of the bottom panel was damaged occurred on 3 July. The Scotia crew repaired the damage to the second net using parts salvaged from the first.

From 1600 on 4 July a strong southerly gale reduced the survey speed to 8 knots and restricted fishing operations until the morning of 5 July. Where weather conditions and depth allowed, the period between 2300 – 0300 each day was used for grab sampling and TV drop frame deployments to establish sediment type and fauna.

A 24 hour half landing took place on 7- 8 July in Lerwick in accordance with the rest provision for the Working Time Directive and to allow for the exchange of personnel; (J Dunn, B McIver and K Webb left and C Watt, D Kaminski and L Cornick joined the vessel). Spare netting material and a Day grab were also delivered from Aberdeen. Due to a major hydraulic leak Scotia was delayed in sailing until 1730 on 8 July and resumed surveying South of Sumburgh at 2030.

Surveying continued around the North and down the West side of the area but few fish marks were seen. It was noted that the fish became much more difficult to catch and often the marks would either be very mobile or flatten themselves to the bottom making capture very difficult. A drifter buoy was deployed on 14 July at 60 50N, 02 29W.

Gale force winds on and 16 July reduced survey speed and precluded fishing activities. Some survey time was lost dodging the worst of the weather on 15 July.

The survey was completed on 17 July at 0915. A second calibration was carried out in Scapa Flow on 17 July. The strong winds made the calibration difficult and recorded data will be analysed later to establish the correct values for the transducers. Scotia returned to Aberdeen docking at 0800 on the morning of 18 July.

Results

Despite time lost to poor weather and equipment failure, the survey was almost fully completed as planned but with a slightly reduced survey track being carried out in the most northerly area. Fishing operations and OCEAN sampler deployments were reduced initially in the second half to accommodate for lost time. The total mileage surveyed was approximately 2400 nmiles with 910, 15 minute acoustic log intervals recorded, providing approximately 39 GB of data (*.raw files). All acoustic data were scrutinised on board to assign species allocation to fish traces. Fishing exercises were generally successful; 28 trawl hauls were carried out of which 22 contained herring.

To provide length frequency data, a total of 6395 herring were measured of which 1705 were further sampled for weight, sex, maturity and age. All otoliths collected were aged on board. Only 1 incidence of icthyophonus was observed. A total of 46 gonad samples were photographed and preserved for use in a forthcoming herring maturity workshop.

30 deployments of the OCEAN sampler were made, in which 150 individual depth stratified plankton samples were collected using 200um nets. Hydrographic data were collected from a CTD mounted on the OCEAN sampler during deployments as well as from the surface thermosalinograph which ran continuously throughout the cruise.

Habitat mapping and sediment sampling was carried out on 21 stations with 21 camera tows and 56 valid grab deployments.

Submitted:
P Copland
18 July 2010

Approved:
I Gibb
30 August 2010