Not to be cited without prior reference to Marine Scotland, Marine Laboratory, Aberdeen

FRV *Scotia*

Cruise 0810S

PROGRAMME

28 June – 18 July 2010

Ports

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

In setting the cruise programme and specific objectives, etc the Scientist-in-Charge needs to be aware of the restrictions on working hours and the need to build in adequate rest days and rest breaks as set out in Marine Scotland's Working Time Policy (Lab Notice 34/03). In addition, the Scientist-in-Charge must formally review the risk assessments for the cruise with staff on-board before work is commenced.

In the interest of efficient data management it is now mandatory to return the Cruise Report, to I Gibb and the Cruise Summary Report (old ROSCOP form) to M Geldart, within four weeks of a cruise ending. In the case of the Cruise Summary Report a nil return is required, if appropriate.

Personnel

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

Estimated 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

Day 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.

Procedure

Loading of fishing gear, multisampler frame and Ocean sampler will commence on Thursday 24 June. Remainder of scientific equipment, including grab, grab table, sieves and drop camera frame will be loaded on vessel as available. MS staff will fit acoustic transducers for control of the multisampler net to the drop keel prior to sailing. The vessel will depart Aberdeen on 28 June and head for Scapa Flow, Orkney Islands, where a calibration of all echosounders will take place (approximately 8-12 hours at anchor). Crew training and trial deployments of fishing gear OCEAN sampler, grab and drop frame will take place en route as convenient for the fishing master.
The survey will commence after calibration and follow a pattern of parallel transects running east/west, at normal steaming speed (approximately 10.5 knots), progressing northwards, along the east side of Orkney/Shetland, and southwards along the west side. The survey area is bounded by 58º30'-62ºN and 02ºE-04ºW or the 250m contour. A half landing will take place on 7 July in Lerwick to allow for the transfer of staff and to comply with the WTD policy. Messrs Dunn, MacIver and Webb will leave the vessel in Lerwick and be replaced by Messrs Watt, Kaminski and Cornick. The survey will be completed in the south-western part of the area to coincide with the acoustic survey in the adjacent area (ICES division VIa). A calibration will be conducted in Orkney at the end of the cruise if time permits.

Acoustic data will be collected at four frequencies (18, 38, 120 and 200 kHz) between 0300 and 2300 hours. Fish shoals seen on the echosounder will be identified using a pelagic trawl (PT160). Trawling operations will be carried out between two and four times per day at anytime between 0300 and 2300. Fishing operations will normally be carried out using the multisampler cod end but if there is a possibility that large shoals are in the area, the normal net will be used. Samples of all species caught will be measured for length to partition the echo integral amongst species and size classes for target strength functions. Fish will also be weighed to establish a length-weight relationship. Otoliths will be collected from a sub-sample of the herring to

determine age; the state of maturity fat content and presence of Icthyophonus infection will also be recorded.

Where required, an OCEAN Sampler deployment will be carried out immediately following a pelagic trawl. The decision to carry this out will be based on achieving at least one CTD and plankton cast in each ICES rectangle. The OCEAN sampler will be equipped with a CTD to record temperature and salinity and zooplankton nets to collect samples from throughout the water column. The ships thermo-salinograph will be run continuously to obtain sea surface temperature and salinity throughout the survey area.

Benthic investigations will take place between 2300 and 0300. With the vessel in DP mode, a day grab will be used to collect sediment samples which will be processed by sieving and then preserved on board. A camera drop frame will be deployed from the hanger deck. It is expected that up to 4 sites will be surveyed in each overnight period. Roxann will be run to collect sediment information throughout the survey.

Normal contact will be maintained with the Marine Laboratory and the appropriate Fisheries Officers. Radio contact will also be maintained with the other vessels taking part in the internationally co-ordinated survey.

Scotia will be unloaded of fishing and scientific gear on her return to Aberdeen on Sunday 18 July.

Submitted:
P Copland
11 June 2010

Approved:
I Gibb
15 June 2010