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MFV *Sunbeam*

Survey 0717H

Report

29 June – 8 July 2017

Ports
Loading: Fraserburgh, 26 June 2017
Departure: Fraserburgh, 29 June 2017
Arrival and unloading: Fraserburgh, 8 July 2017

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 survey with staff on-board before work is commenced.

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

Personnel

E Armstrong (SIC)
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Estimated days by project: 10 days – RV1613 (20388)

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 east of Shetland to 2ºE, excluding Faroese waters.

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

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

Procedure

All scientific equipment was transported to Fraserburgh on 26 June and installed on the vessel. The vessel departed at 0030hrs on 29 June and made passage to Scapa Flow, Orkney Islands, where a calibration of the EK60 was performed.

On completion of the calibration the vessel made passage to the start of the first transect, arriving at approximately 0300hrs UTC.
The survey was conducted using a transect spacing of 15 nm with the intention of interlacing the transects with Scotia, giving a 30 nm spacing per vessel. As Scotia had a later start than Sunbeam, and encountered more fishable echosounder traces, the track (Figure 1) was adapted during the survey to allow Scotia to catch up.

Acoustic data was collected at three frequencies (38, 120 and 200 kHz) between 03:00 and 23:00 hours. Approximately 1180 nm of acoustic track was recorded. Fish shoals seen on the echosounder were identified using the vessels pelagic trawl. A total of 6 trawling operations were carried out. Samples of all species caught were measured for length to partition the echo integral amongst species and size classes for target strength functions. Fish were also weighed to establish a length-weight relationship. Otoliths were collected from a sub-sample of the herring (458 in total) according to the following length stratified scheme to determine age; two per 0.5 cm class below 22 cm, five per 0.5 cm class from 22.5-27.5 cm and ten per 0.5 cm class for 28.0 cm and above. For each herring in the subsample the state of maturity (using the Scottish 8 stage maturity scale), gonad weight, liver weight, whole and gutted weight and presence of food in the stomach, were recorded. The presence of Icthyophonus infection was recorded in 5 of the subsampled herring.

The vessel returned to Fraserburgh on the morning of the 8 July, where the scientific equipment was unloaded and returned to Aberdeen by lorry/pick up. Staff returned to the laboratory by lab vehicle.

Submitted: E Armstrong 11 January 2018

Figure 1: Survey track executed by MFV Sunbeam on charter 0717H along with position of hauls.