

IN CONFIDENCE - Not to be quoted without reference to the Laboratory

R1/7

9MR78

JG

FRV "MARA"

Cruise 9/78

Report

28 August - 22 September 1978

Objectives

- (1) To carry out a midwater trawling survey for 0-group herring in inshore waters west of Scotland.
- (2) To investigate the possibilities of using the Marine Laboratory echointegrator to obtain quantitative estimates of the abundance of 0-group herring and sprats in inshore waters.

Narrative

"Mara" left Buckie at midnight on 28 August and proceeded through the Caledonian Canal, reaching Corpach by the morning of 30 August.

The echointegrator was calibrated on passage through the canal and the echointegrator survey was started in Loch Linnhe, below Fort William. Thereafter the echointegrator was used wherever practicable between hauls. For the remainder of the week "Mara" worked the area around Mull, and six trawl stations were completed before docking for the weekend at Oban.

On leaving Oban on 4 September "Mara" completed working the stations around Mull and then proceeded northwards reaching Ullapool by 8 September. Fourteen trawl stations were completed during the course of the week.

"Mara" left Ullapool again on Monday 11 September in very poor weather and the remainder of the week was spent working stations between Loch Broom and Crowlin. Very bad weather impaired progress throughout the week and on 15 September "Mara" tied up at Kyleakin for the weekend as the pier at Kyle was too exposed in the prevailing weather conditions.

By Monday 18 September the weather had improved and stations in upper and lower Loch Torridon were completed before "Mara" moved south again. The remainder of the stations were completed on the way to Corpach which was reached at 1600 on 20 September. Thirty-six trawl stations were completed during this survey.

Biological

Herring were taken in only 9 out of 36 hauls and only one herring was caught in the lochs to the north of Ardnamurchan Point. However, many more herring were caught in the southern area than in the 1977 survey. Other major constituents of the catch were sprats, Cyanea capillata and young whiting, the latter commonly occurring in association with Cyanea.

All herring caught were in the length range 6-26cm with a modal length of 8.5cm. Sprats ranged from 3 to 11 cm with a modal length of 7 cm. The whiting were all within the range 4 to 16 with a modal length of 6 cm.

Echo Integration

The echo integrator was used extensively throughout the cruise. No difficulties were experienced in manoeuvring the towed body inboard and outboard on "Mara" and the towing boom proved quite adequate.

Because of the uneven nature of the sea bed in some of the areas surveyed, the echointegrator tended to lose its "bottom lock" and consequently overloaded frequently. Considerable echo counts were also observed in areas of tidal flow, presumably because of turbulence.

Because of the need to complete the station trawl hauls the amount of steaming time involved meant that it was rarely possible to investigate echo targets other than those in the vicinity of the regular trawl stations. For the echo integration work to be really effective more time would be needed so that this would be possible. Because it is not possible to split the estimated biomass effectively into its various components without this information, no attempt has yet been made to estimate the biomass of the various species present.

J MORRISON
22 November 1978

Seen in draft: James Calder