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FRV GOLDSEEKER
CRUISE 12/77
REPORT
5 - 22 December 1977

Objectives

1. To carry out an echosounder and midwater trawling survey for sprats in the Moray Firth.
2. To relate the distribution of sprats to spatial variation in temperature, salinity and turbidity.

Narrative

During the first week bad weather hampered operations and only two short echosurveys were carried out between Lossiemouth and Buckie. In both cases few traces of sprats were recorded.

In the second week, GOLDSEEKER sailed from Buckie on 12 December and did a transmissometer and secchi disc survey of the Moray Firth west of Buckie and of the Inverness, Beaully and Cromarty Firths. On 15 December the tail fin of the transmissometer was lost for no explicable reason while being towed off Cromarty and the rest of the survey was completed using a secchi disc. The GOLDSEEKER returned to Buckie on the morning of 16 December.

In the third week GOLDSEEKER left Buckie at 1030 on 19 December to carry out an acoustic survey along the coast to Nairn and Invergordon and in the Inverness Firth, returning to Buckie on 20 December. The following day bad weather restricted the work to a short echosurvey off Buckie and on 22 December the weather worsened and the scientific staff returned to Aberdeen.

Acoustic survey

During the survey sprats were mostly distributed in the inner reaches of the Moray Firth around the Sutors, in the outer parts of the Cromarty Firth and north towards Balintore. Sprats were being caught by the commercial fishery in these areas and samples were obtained from two boats working close to the Sutors on 19 December. In addition, a few small sprats (ca 4 cm) were caught in one haul in the Inverness Firth on 20 December.

Transmissometer survey

Results from the turbidity survey on GOLDSEEKER were very similar to results obtained using the transmissometer on the MAID in the Inverness Firth during the fortnight prior to the cruise. The turbidity was high in the Inverness and Beaully Firths with only 16 - 18% of the light being transmitted through the metre tube. The same range of values was found in the Cromarty Firth, between the Sutors and extending north towards Balintore. The previous December values as high as 60% transmission had been found in the Cromarty Firth. Offshore the transmission percentage increased with distance from shore and reached a 60% level.

The sprat fishery was operating in the area of more turbid water.

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Seen in draft: W B Reid