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FRV EXPLORER

Cruise 8/79
REPORT
7-28 August 1979

Objective:

To carry out an acoustic and trawling survey for herring in the Shetland area and off the north east coast of England as part of an ICES coordinated survey.

Narrative:

EXPLORER sailed from Aberdeen at 1615 on 7 August and proceeded to the Shetland area where an extensive echosounder search was made for herring concentrations. The area covered by the survey and the position of trawl stations are shown in the appended track chart. At the end of the first part of the cruise EXPLORER returned to Aberdeen, docking at 0830 on 16 August.

After the half-landing EXPLORER left Aberdeen at 1315 on 17 August and proceeded to the survey area off the north east coast of England. The area searched for herring concentrations and the position of trawl stations are shown in the appended track chart. The survey off the north east coast of England continued without interruption until 27 August when EXPLORER sailed for Aberdeen, docking at 0130 on 28 August.

Survey Results:

a) Shetland

Although a fairly extensive area around Shetland was searched, echotraces of a type expected from herring were found only in one small area off Foula and the density of shoals in this area was very low. During the day the typical herring plumes were on or close to the sea bed in depths of 85-95 metres. The larger plumes extended from the sea bed up to 50 metres above it. No shoals were recorded at night but scattering layers were observed. The herring biomass in this area was estimated to be about 1,500-2,000 tonnes. However, as only a few shoals were recorded the error of the estimate is likely to be high.

b) North east coast of England

In the search carried out off the north east coast of England herring concentrations were found between Hartlepoons and Flamborough Head and also in the Bayman's Hole region. An intensive integrator survey was carried out between Hartlepoons and Flamborough Head which covered an area of about 2,200 square kilometres. Depth of water in the survey area was mainly 40-60 metres and the herring traces generally occurred at depths greater than 20 metres. The acoustic biomass for the survey area for echo returns below 20 metres was estimated to be 20,000 tonnes. From the trawl hauls made in the survey area the total catch was 89 baskets of which there were 48 baskets of herring (54%). Sub-dividing the acoustic biomass on the basis of the catch gives an estimate of herring biomass of 11,000 tonnes. In the Bayman's Hole region the integrator survey covered an area of 810 square kilometres. The estimate of acoustic biomass for this area was 11,000 tonnes and on the basis of the catch the herring biomass was estimated to be about 900 tonnes.

Herring Sampling:

During the first part of the cruise in Shetland waters a delagic trawl PT129 fitted with a 20mm cod end was used. Catches were small and consisted mainly of small whiting, small haddock and jellyfish.

A bottom trawl BT103 fitted with a 20mm cod end was used for herring sampling off the north east coast of England. Catches of up to 32 baskets of herring per hour were taken with this gear but most catches of herring were less than 8 baskets per hour haul. The herring ranged in length from 15.0cm to 33.5cm but most were over 25cm and mainly in maturity stages III-IV.

I G Baxter
31 October 1979

Seen in draft: J Ross Officer-in-charge



