

7 JAN 1983

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LOWESTOFT

1982 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA: CRUISE 16

(Provisional: not to be quoted without prior reference to the author)

STAFF:

P O JOHNSON
B J ROBINSON
J M LAST
S WARNES
M HEGAZY (VISITOR)

DURATION:

LEFT LOWESTOFT 0920h 30 NOVEMBER
ARRIVED LOWESTOFT 1000h 15 DECEMBER

LOCALITY:

NORTH SEA - EASTERN ENGLISH CHANNEL

AIMS:

1. To carry out an acoustic survey for spawning herring shoals over the Southern Bight and eastern English Channel.
2. To obtain samples of spawning herring using a pelagic trawl.
3. To carry out an acoustic survey for sprat off the north-east coast of England between the Farne Islands and Flamborough Head.
4. To obtain samples of sprat from this region with a pelagic trawl and determine the proportion of young herring in the catches.
5. To carry out in situ target strength measurements on herring and sprat if suitable opportunities arise.
6. To collect species of fish for fish identification courses.

NARRATIVE:

The towed body was prepared and launched soon after leaving Lowestoft and equipment checks carried out en route to the start of the survey grid. The acoustic survey commenced at 1900h on 30 November in the Dover Strait, CORELLA then working down Channel in the main shipping lane to 0° of longitude. The eastern Channel region was then surveyed in remarkably fine weather conditions over the next few days covering most of the likely herring spawning grounds. Little was recorded until the 2 December, when a concentration of Dutch and French trawlers (up to 40 vessels) was found working on a ground centered 22' north westerly from Dieppe. Several dense patches of herring were recorded in this area, and it was also evident that the intensive fishery was breaking up the shoals since much of the echo-traces were very fragmented. Samples of spawning herring were taken with the Engel trawl. A close survey grid was run over this region, following which a return run was made off the French coast to the Sandettie area. On 3 December the survey extended into the Southern Bight to cover the Hinder-Fairy-Schouwen Bank region with a return towards the English coast off the Thames Estuary the following day. Only thinly scattered traces were recorded over most of this area, and a haul made near the Galloper Light showed the presence of mainly spent, but some spawning herring. The survey continued in the immediate offshore Thames area, but had to be temporarily suspended on 5 December due to a SW'ly gale.

Conditions improved early on 6 December and the survey resumed to cover the central Southern Bight, including the Brown Ridges area, on 6-7 December. Traces were generally very sparse over this region. The weather again deteriorated with a SE'ly gale developing in the afternoon of 7 December, when off the Dutch coast. It was then decided to raise the towed body and course was set for Ijmuiden, where CORELLA docked at 1630h.

Whilst in Ijmuiden a courtesy call was made to the Fisheries Institute where information was obtained on the Dutch herring fishing. It was confirmed that most of their fishing effort had recently been concentrated about 25 miles NW of Dieppe.

Gale force winds continued until early on 9 December, and with a lull in the weather CORELLA sailed at 0930h to make passage towards the English coast. However, a few hours after leaving the wind increased to a severe W'ly gale, with speeds up to 50 knots and a very rough passage ensued until the lee of the English coast was reached.

The towed body was eventually relaunched off Flamborough Head at 0845h on 10 December, but again due to deteriorating weather a limited grid was worked off the Yorkshire coast between Flamborough Head and Robin Hood's Bay, until a NW'ly again forced anchorage, under the lee of Flamborough Head later that day.

The survey was able to resume at 1400h on 11 December and then progressed northwards to cover the area between Tees Bay and the Farne Islands, offshore to the Farne Deeps over the period 12-14 December. In this region traces were generally sparse and very

diffuse, and large shoals were absent. During the morning of 14 December the wind increased to a southwesterly gale and in view of the very bad weather forecast over the next few days the survey ended following a final trawl haul off Tees Bay, and the towed body was raised at 1415h.

The wind then increased to speeds of 50 - 60 knots, and an overnight return passage was made to Lowestoft where CORELLA docked at 1000h on 15 December.

RESULTS:

1. A total of 1697 nautical miles were acoustically integrated and no major problems were encountered with the equipment.

The Furuno colour sounder was also run throughout the survey and proved very useful in helping the interpretation of signals. A representative selection of recordings from different areas were made on tape cassettes.

2. Eight trawl hauls were made with the 800 mesh Engel pelagic trawl.

3. In the Southern Bight and over a large part of the eastern Channel traces were generally thinly scattered and shoals small, except for an area 20-25 miles NW from Dieppe, where a fleet of up to 40 Dutch and French trawlers were operating. Here several larger dense patches of spawning herring were located.

4. Samples of spawning herring were taken in this region and these ranged in length from 23-31 cm, with modal lengths at 25 cm and 27 cm.

5. A further sample of mainly spent with some spawning herring was also taken about 9 miles NNE'ly from the Galloper Light. These showed a similar length range to the Dieppe fish, but were broadly unimodal (25.5 - 26.0 cm). A diverse mixture of other species also appeared in this haul including pilchard, sardines, blue whiting, sprat, anchovy and two small red mullet.

6. Off the north east coast echo-traces were generally light, thinly scattered very small shoals, with broader areas of very diffuse trace generated by very small fish. No large shoals were found.

7. Trawl samples suggested that a high proportion of this trace may have been contributed by very small 0-group sprat (25-45 mm). These were noted in very large numbers hanging on the trawl meshes after several tows. Small herring (10-15 cm) were also evident on some hauls, but sprat larger than 7.5 cm were very scarce.

8. Samples of fish were deep frozen for the fish identification courses and a sample each of small herring and sprat were preserved in formalin for heart muscle studies as requested by Dr. Greer Walker.

9. Two sardines (12 cm) were also taken in a haul off Filey Brigg and a single one in a haul off Tees Bay.

A chart showing the main survey areas and trawl station positions is attached.

P O Johnson
30 December 1982

Seen in draft: G Sinclair (Master)
R G Newrick (Fishing Skipper)

Initialled

Distribution

D J G

Basic List +

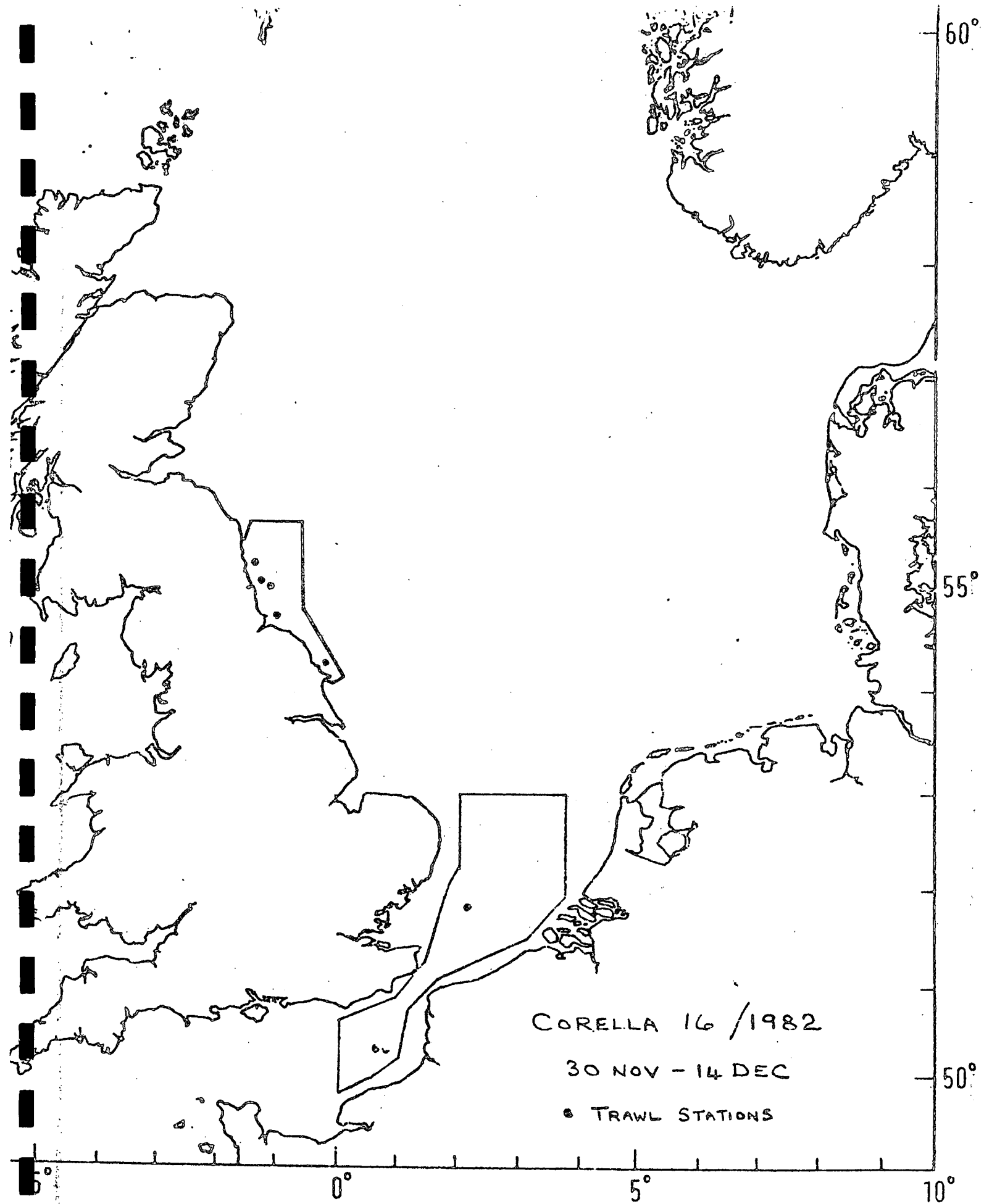
P O Johnson

B J Robinson

J M Last

S Warnes

M Hegazy



CORELLA 16 / 1982

30 NOV - 14 DEC

• TRAWL STATIONS



BOUNDARIES OF ACOUSTIC SURVEY AREAS