

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1982 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA: CRUISE 2

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

STAFF:

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DURATION:

Left Lowestoft 0930 h 25 January
Arrived Lowestoft 0930 h 10 February
All times are Greenwich Mean Time

LOCALITY:

North Sea

AIMS:

1. To carry out an acoustic survey for sprat, as part of an ICES coordinated programme, in the Thames Estuary, Southern Bight, Wash and west central North Sea, north to $54^{\circ} 30' N$ and offshore to $40^{\circ} 30' E$.
2. To sample any major concentrations found with a mid-water trawl and plot their distributions in finer detail.
3. To carry out in situ target strength measurements on sprat using the narrow transducer beam mode.
4. To undertake intership calibration runs with RV EXPLORER, time and weather permitting.
5. To collect species of fish for the fish identification courses.

NARRATIVE:

CORELLA sailed from Lowestoft at 0930 h on 25 January and after preparing and launching the towed body commenced the acoustic survey near Smith's Knoll at 1600 h. Radio contact with RV EXPLORER was established at 1630 h and arrangements made to rendezvous the following morning off Flamborough Head where she had located an extensive area of small sprat. Course was then set via the Well Bank and Sole Pit to Flamborough. The weather deteriorated during the early hours of 26 January with the development of a strong to gale force westerly wind, but conditions had improved by breakfast and visual contact was made with EXPLORER at 0910 h and details of the comparative survey grid passed by radio. This commenced at 0920 h and was completed at 1530 h, the grid being worked in the Flamborough region. CORELLA then continued her survey south towards the Wash, but later that evening the wind suddenly increased to gale force from a north north easterly direction and the survey had to be temporarily abandoned, with the vessel dodging off Flamborough Head. The following day the wind strengthened

to 40-50 Knots from the north and a very heavy swell developed and dodging continued for the remainder of the 27 January, although conditions moderated during the evening and the survey was able to recommence at midnight. It then extended to cover the Inner Silver Pit and Wash area on 28 January, when a very extensive and dense concentration of larger sprats was located in the Lynn Deep-Lynn Well Region. Local pair boats were fishing in this region.

The weather again deteriorated that evening and with storm force winds forecast shelter was sought between Hornsea and Flamborough Head, and CORELLA remained in this region until 1400 h on 30 January when the winds had moderated sufficiently to recommence work. The next few days saw much improved weather and the survey was able to extend offshore to cover the Skate Hole - Outer Silver Pit - Botney Gut - Western Mud Hole - Indefatigable Bank areas. No large concentrations of fish were found, although very thinly dispersed traces with very low signal levels were present over a large part of the area, and fishing showed the presence of very small (modal length 5 cm) whitebait sprat. At this time one of the trawl towing blocks seized up and prevented further fishing until it was repaired at IJmuiden where CORELLA docked on 3 February for a mid-cruise break. Whilst there I paid a courtesy call to the Fisheries Institute and obtained some information on the very successful herring fishery then being prosecuted by local trawlers. An EEC ban on this fishery came into force at midnight on the day of our arrival. The fishery was then centred a few miles off the Dutch coast north from the Scheldt Estuary and was mainly exploiting recovering spent herring from the Downs stock, with some larger immature fish. Little information was available on sprat distribution in Dutch waters, and they did not appear particularly abundant, with herring the predominant pelagic species.

CORELLA sailed from IJmuiden at 1030 h on 4 February and continued the survey south to cover the Dutch coastal sector to the Scheldt estuary and Middle Deep-West Pit area. Some traces were found in this region which, according to the Dutch information, were mainly herring. The survey then covered the area between the Hinder and North Falls on 5 February, when a rather thinly dispersed area of fish was located on the east side of the North Falls. Fishing here yielded a catch of about 2 tonnes of recovering spent herring.

On 6-7 February the Thames Estuary region was surveyed, and here traces were generally sparse in most of the channelways except for a very large and dense concentration extending over a distance of 4-5 miles in the Leigh Channel region of Southend, where local sprat fishing vessels had been working. Fishing in the deeper outer channels, whose traces were rather thinly scattered, produced a sprat/whiting mixture with some codling, which were feeding heavily on the sprat.

On 8 February the survey continued north from the Thames area to the Aldeburgh Napes and then offshore to cover the central Southern Bight, where very little echo trace was recorded. Traces were mainly confined to a coastal belt up to 15-20 miles off the English coast and fishing in this region yielded a predominantly sprat/whiting mixture with a few codling. The survey was completed on 9 February with a grid around the inner Norfolk Banks, but little was recorded here after leaving the area of Smith's Knoll, and the survey ended off the Suffolk coast at 1700 hours. The towed body was then raised and overnight anchorage made in Gorton Roads at 2035 h prior to docking at Lowestoft the following morning.

RESULTS:

1. A total of 1945 nautical miles were acoustically integrated over the survey grid (see track chart). In spite of adverse weather early in the trip most of the planned grid was completed.

Only two major concentrations of sprat were located, one in the Wash and the other in the inner Thames Estuary. Very thinly dispersed sprat were found in a fairly broad belt along the English east coast, and a very wide area of small whitebait sprat trace was present over the northern part of the surveyed region. Traces were generally rather scattered at very low acoustic levels in the central Southern Bight. Traces increased towards the Dutch coast but these appear to have been predominantly herring as shown by their reported areas of commercial fishing.

2. A total of 7 mid-water trawl hauls were made and samples of sprat and herring obtained for further analysis at the laboratory.

3. An intership calibration run was successfully undertaken with RV EXPLORER off Flamborough Head over a 6 hour survey grid.

4. In situ target strength movements were not achieved due to the fact that requisite conditions for successful measurements were not found.

5. Surface temperature and salinity measurements were made continuously over the whole survey grid using the GUILDLINE TCD recorder.

Surface temperatures were generally very low over most of the surveyed area, ranging from only 2.7° - 3.5°C inshore, to mainly 4-6°C offshore.

P O Johnson (SIC)
23 February 1982

SEEN IN DRAFT:

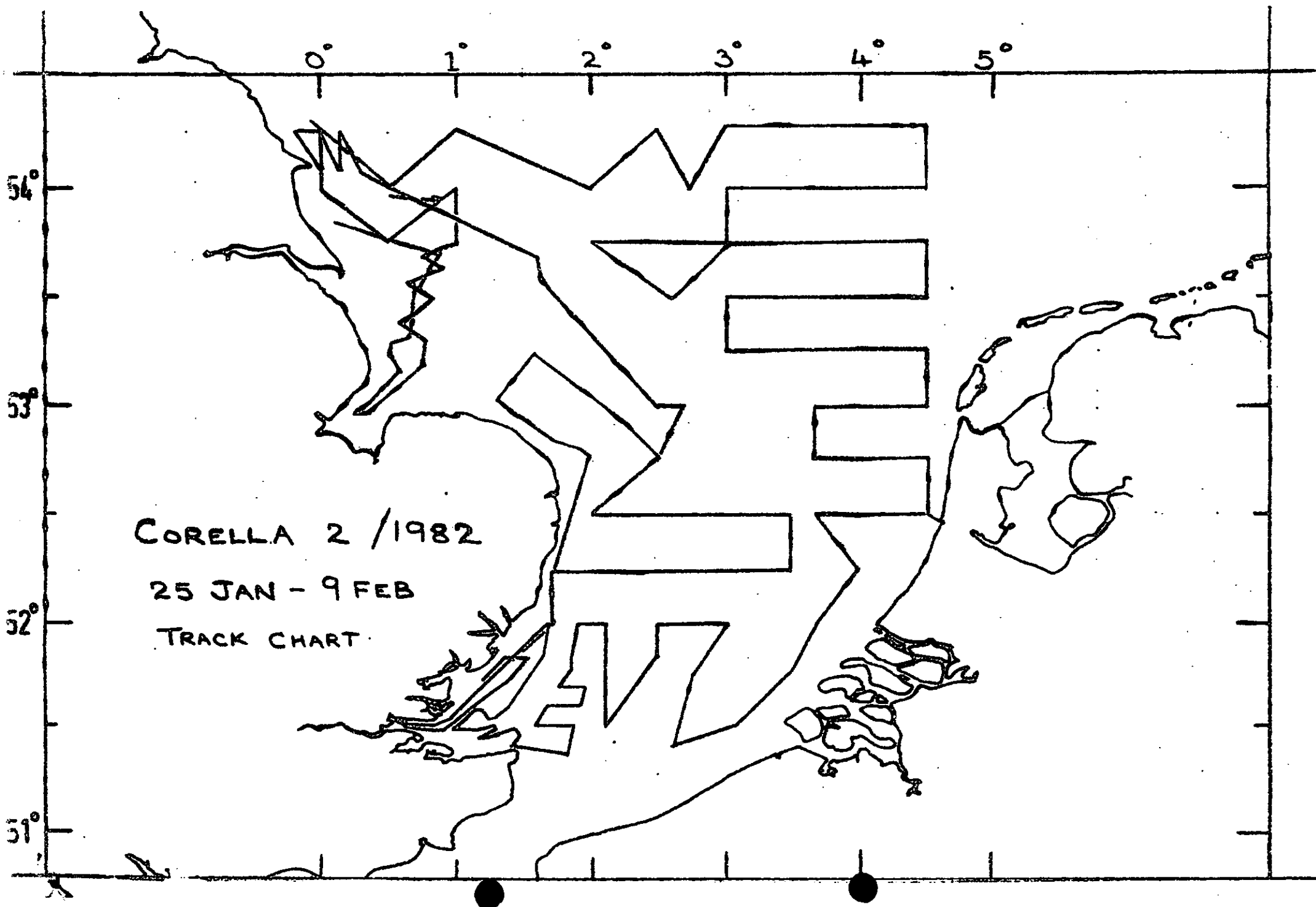
G S (Master)
R C N (Fishing Skipper)

INITIALLED:

DJG

DISTRIBUTION:

Basic List +
P O Johnson
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CORELLA 2 / 1982
25 JAN - 9 FEB
TRACK CHART