

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

## 1979 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA: CRUISE 2  
(PROVISIONAL: Not to be quoted without prior reference to the author)

## STAFF

P O Johnson  
M R Vince  
H R Stewardson  
B J P Croucher (substitute for C Brown)  
R N Robinson (N Shields)  
Capt T Sellers (Part time)

## DURATION

Left Lowestoft 1133 h 30 January  
Arrived Lowestoft 1215 h 19 February  
(All times Greenwich Mean Time)

## LOCALITY

Western central North Sea (Wash-Farne Islands)

## AIMS

1. To carry out an acoustic survey for sprat within the sector Farne Islands to Wash extending up to 60 miles off the coast, concentrating on the coastal belt.
2. To sample any major concentrations found with a mid-water trawl and survey their distribution in finer detail.
3. To calibrate the towed body transducer.
4. To make in situ target strength measurements on sprat.
5. To carry out an inter-ship calibration run with the Scottish research vessel SCOTIA in the Tyne area.
6. To collect various species of fish deep-frozen for the fish identification courses (Mr R W Blacker).

## NARRATIVE

CORELLA first proceeded to a position about 10 miles south-easterly from Lowestoft to carry out trials on the towing rig and techniques for launching and retrieving the towed body. These were successfully completed during the afternoon in moderate sea conditions. The vessel then set course for Corton Roads where Captain Sellers disembarked. Following a short delay at anchor awaiting (unsuccessfully) the arrival of a service engineer to attend to a fault in the Kelvin Hughes radar, CORELLA set off at 1812 h to make an overnight passage to Filey Bay where she anchored at 0845 h on 31 January to commence calibration work on the towed body transducer. Arrangements were then made to pick up a Kelvin Hughes radar engineer the following morning off Scarborough and CORELLA re-anchored there at 0935 h

1 February, where the calibration work continued. However, a freshening NE'ly wind brought operations to an end by 1315 h when the towed body was raised and the vessel was forced to dodge in gale force winds until the following morning. Then, in company with RV CLIONE, shelter was sought off Bridlington Bay where anchorage was made at 1155 h. The calibration work then resumed and continued until completed by 0900 h 4 February, progress having been delayed by some technical problems in the equipment. The echo and fishing survey then commenced; initially off Flamborough Head and extending north to the Tyne area and covering the coastal water belt up to 20 miles off the coast. Radio contact was made with RV SCOTIA and a rendezvous arranged for the following morning about 12 miles east of the Tyne. The joint survey with SCOTIA commenced at 0740 h 5 February and continued until 1645 h that day. The grid covered a sector from just north of Blyth to just south of Sunderland, extending up to 25 miles from the coast.

The next stage of the survey covered the area north to the Farne Deepes with a return to the area off Blyth on 6 February. After fishing in this region in situ target strength measurements were carried out that evening, but following this the weather rapidly deteriorated with an increasing SSE'ly wind. This resulted in overnight dodging towards Baymans Hole where the survey was able to resume in far from ideal conditions the following morning. At 2030 h work was again curtailed by 40 knot NE'ly winds and dodging resumed until 0900 h 8 February when a survey leg was run with the swell astern. This took the vessel to the coast and the towed body was retrieved at 1235 h and CORELLA then docked at Sunderland by 1407 h, to take on stores and water. Departure was made at 1300 h 9 February, and final tests were made with the calibration rig about 6 miles off the coast. The survey was resumed at 2000 h to cover in more detail the area between the Tyne and Tees. Work was again interrupted early on 10 February by strong easterly winds and CORELLA was forced to dodge offshore. However, it was then found possible to run a survey leg back to the coast with the swell astern, and by repeating the procedure of dodging and running a few extra legs were achieved. This was terminated at 1230 h 11 February when the Cook had to be landed at Sunderland for medical attention. Whilst in port the weather rapidly deteriorated with severe easterly gales, and this weather continued without let-up until 16 February when conditions had moderated sufficiently for CORELLA to sail at 1800 h. However, the swell was still very heavy and this necessitated dodging until 0800 h 17 February when it was possible to launch the towed body and resume the survey, which then covered the Tees Bay area and extended south towards Whitby. At 1930 h 17 February a request was received from Tees coastguard for search assistance following the sighting of distress flares just north of Scarborough. CORELLA reached the search area at 2100 h and in company with the co-ordinating vessel, HMS SHETLAND, carried out a search pattern 4-6 miles off the coast. Nothing was sighted by the vessels engaged and the operation was called off at 2200 h, following which the survey was resumed and extended south to the Inner Silver Pit region. This area was intensively surveyed on 18 February and operations were completed at 2015 h. An overnight steam was then made to Corton Roads where anchorage was made at 0625 h to await the tide, CORELLA finally berthing at Lowestoft at 1215 h.

## RESULTS

1. The extremely bad weather prevailing during the trip resulted in a much reduced survey to that originally planned. Nevertheless, the coastal belt from Flamborough Head to the Farne Islands was effectively covered up to 25-30 miles from the coast, and also the Inner Silver Pit area off the Humber. (See attached chart). The general findings were of an almost continuous distribution of thinly diffused fish traces in one or more layers between Blyth and Flamborough Head and also within

the Inner Silver Pit, the denser regions of these layers giving biomass estimates falling generally within the range 10-100 tonnes per Km<sup>2</sup>. These traces tended to thin out fairly rapidly outside the 12 mile limit, and very little was recorded north of Blyth, over the Farne Deeps and beyond 15-20 miles off the coast. A large proportion of these traces appeared to be made up of whitebait sprat (0 group fish, 4-7cm in length) with some small whiting (6-15 cm), whilst those at deeper levels yielded predominantly larger whiting (20-35 cm) and smaller numbers of cod and codling. These gadoids were all feeding heavily on the small sprat. No major concentrations of sprat were located except for a localised area of higher density (200-250 tonnes per Km<sup>2</sup>) a few miles north-easterly from Blyth. One commercial fishing vessel was operating in this area and he reported that he had caught about 70 tonnes fishing there that day. However, the fish were predominantly small (7-8 cm mode), and larger sprat were generally scarce on all the hauls made. In situ target strength measurements were made in this locality and 2 hours of recordings were made on magnetic tape.

2. The towed body transducer was successfully calibrated after some initial technical problems, and the towing rig worked well.

3. The inter-ship calibration run with the Scottish research vessel SCOTIA was successfully accomplished over a distance of about 90 nautical miles and the results will be compared at a later date.

4. A number of samples of small gadoids and sprat were deep-frozen for the fish identification courses (Mr R W Blacker).

5. Of rare fish interest was the appearance of Myctophids (probably MAUROLICUS sp.) in two of the hauls. Three specimens were found in a catch taken close to Flamborough Head, whilst another turned up in a haul made about 5 miles east of Blyth. Quantities of pink shrimps were also in evidence on a number of the mid-water tows, together with generally 2 or 3 young lump-suckers. Only 5 young herring were caught.

P O Johnson  
28 February 1979

SEEN IN DRAFT: G R Oliver - Master  
R C Newrick - Fishing Skipper

INITIALED: AJL

DISTRIBUTION:

Basic List  
P O Johnson  
M R Vince  
H R Stewardson  
B J P Croucher  
R N Robinson (N Shields)  
Capt T Sellers

