

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

1981 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA : CRUISE 15

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

STAFF:

P O Johnson  
B J Robinson  
M R Vince  
S Warnes  
L Cox

DURATION:

Left Lowestoft 1015 h 1 December  
Arrived Lowestoft 0930 h 15 December

LOCALITY:

Western Channel - Lyme Bay

AIMS:

1. To carry out an acoustic survey for sprat within the western Channel between about 2-4°W, offshore to 50°N, concentrating on Lyme Bay.
2. To sample and identify any major pelagic shoal concentrations with a mid-water trawl and plot their distributions in finer detail.
3. To run a series of repeat surveys over the main areas of sprat concentration to estimate repeatability errors, particularly day/night comparisons.
4. To carry out in situ target strength measurements on sprat using the narrow beam transducer.

NARRATIVE:

CORELLA sailed from Lowestoft at 1015 h on 1 December and set course to the western Channel where the acoustic survey commenced at 1545 h on 2 December after preliminary calibrations on the towed body and recording equipment. The survey commenced near Portland Bill and progressed westwards to reach the Start Point area on 4 December. It then extended west from Start Point to the Eddystone area with a return to Start Point on 5-6 December. The survey then continued within the western half of Lyme Bay on 7-8 December during which an opportunity arose to carry out some in situ target strength measurements on sprat. Anchorage was then made in Torbay prior to the mid-cruise break which had been provisionally planned at Brixham. We were then informed that due to unexpected arrivals of Scottish vessels a suitable berth was not now available. An alternative berth at Plymouth had thus to be hurriedly organised and CORELLA weighed anchor from Torbay at 1125 h, docking at Plymouth by 1730 h on 8 December. The following morning I paid a courtesy visit to the Fisheries Office and obtained some local fishing intelligence. CORELLA sailed from Plymouth at 1415 h that day and continued the survey to the south of the Eddystone. Early on 10 December a deterioration in weather forced a short period of dodging but the survey was able to resume after a few hours and a return was then made to the Start Point area. The following two days were spent in Lyme Bay carrying out east-west-east transects, recovering the area surveyed in the early part of the trip. The final stage of the survey then extended east to cover the region between Portland Bill and the Isle of Wight. Early on 13 December there was a rapid deterioration in the weather and the survey was terminated at 0800 h, the towed body lifted

aboard, and a run made to shelter at an anchorage off Ryde, Isle of Wight. The wind increased to storm force S'ly, and after veering westerly early on 14 December forced changes in anchorage, eventually to Sandown Bay. Conditions moderated overnight and the anchor was weighed at 0800 h when the return to Lowestoft was made in a strong westerly wind, CORELLA eventually berthing there at 0950 h on 15 December.

#### RESULTS:

1. A total of 1215 nautical miles were acoustically integrated on the survey, which covered an area between Poole Bay and the Eddystone ( $01^{\circ}40' - 04^{\circ}20'W$ ) extending up to 25-30 miles off the coast.

2. Sprat shoals appeared to be mainly distributed within the western half of Lyme Bay, where most of the local sprat fishing effort was then concentrated. Sprat shoals were generally small and fairly thinly scattered by day very close to the bottom. At night these formed a dispersed layer of fish between about 10-25 metres beneath the surface. Several very large and dense concentrations of small mackerel (modal lengths 26-27 cm) and scad were located in the area between Start Point and the Eddystone, mainly within the rectangle bounded by  $49^{\circ}45' - 50^{\circ}10'N$  and  $03^{\circ}10' - 04^{\circ}20'W$ .

A number of fishing vessels were observed operating in this region, including purse seiners, pair-trawlers and single trawlers of various nationalities, including Danish industrial pair trawlers. One of these was observed hauling in a large catch and its number was passed on to the FP vessel HMS CRICHTON to investigate. This pair later berthed at Plymouth when one had to tow in the other due to engine failure. Their catch was then examined by the local inspectorate and found to consist of a 50:50 mix of scad and pilchard, about 350 tonnes in all.

Three Russian transshipment vessels were anchored in Torbay to take on sprat and these were being supplied by local Brixham vessels, Scottish pair trawlers and purse seiners.

3. A total of 14 hauls were made with the pelagic Engel trawl and samples of sprat, mackerel, scad, bass and various mixed species for fish identification courses were deep frozen for further analysis on returns.

4. A number of repeat surveys were made in the Lyme Bay area to investigate day/night differences in fish distribution and repeatability errors.

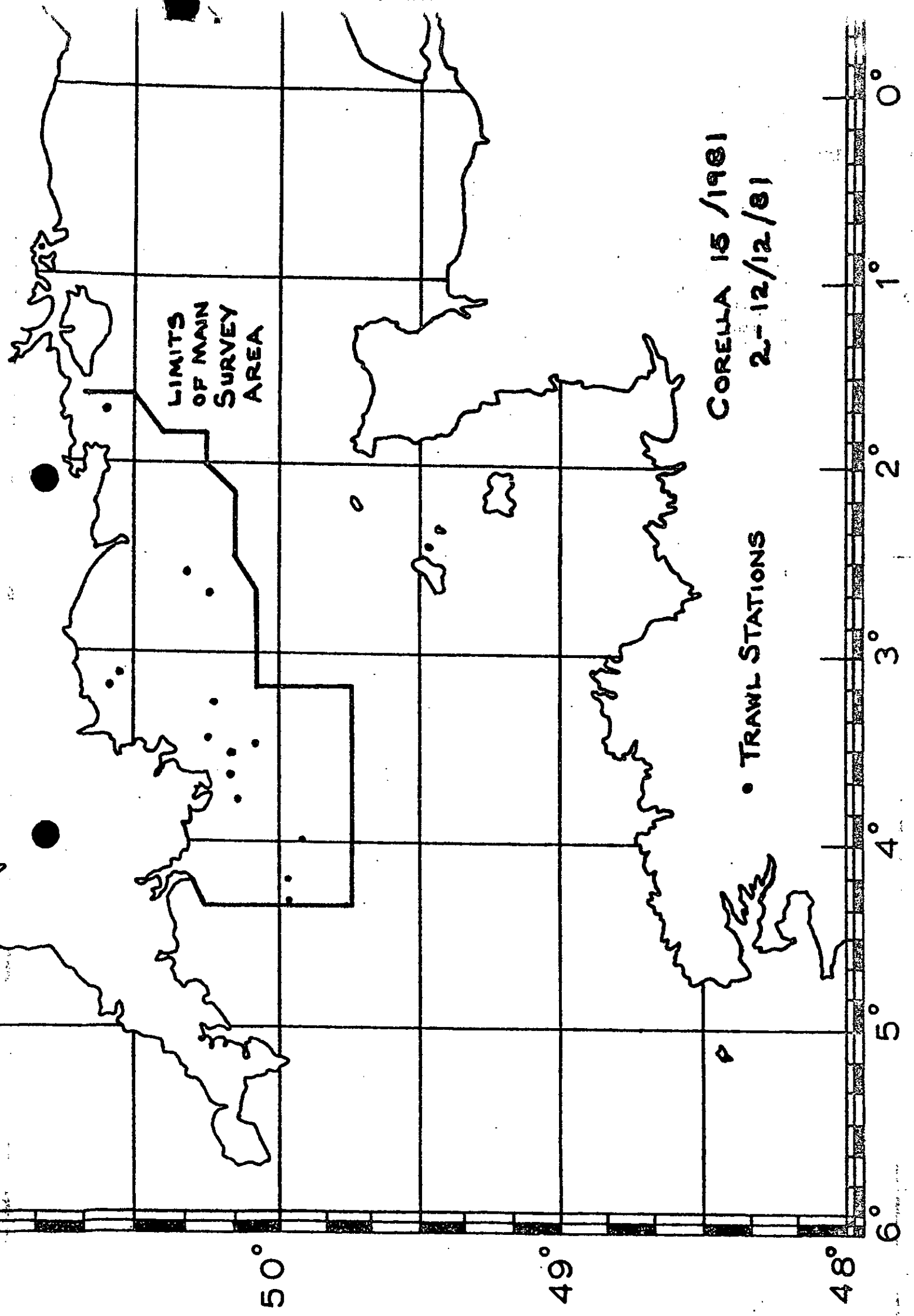
5. In situ target strength measurements were successfully carried out on a dispersed layer of sprat in Lyme Bay, these with a mean length of about 12.5 cm. Two hours of single fish recordings were made on tapes.

6. The SIMRAD QD integrator was tested on the trip and although it ran for considerable periods trouble free, proved unreliable due to an intermittent fault.

7. It was also hoped to run the FUKUNO colour sounder, but this would not trigger on our input signals, although operating perfectly normally when using signals from a pre-recorded tape.

8. The 'GUILDLINE' CTD system was also run throughout the survey and operated trouble-free to provide a continuous record of surface temperature and salinity.

P O Johnson  
22 December 1981



SEEN IN DRAFT:

G R O

J C

INITIALLED:

D J G

DISTRIBUTION:

Basic List +

P O Johnson

B J Robinson

M R Vince

S Warnes

L Cox

STIMUL  
MIAMI 30  
YAVAPAI  
AREA

COSE

SHOOTS WEST

84

24

20