

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

1976 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA: CRUISE 13

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

STAFF

C T Macer
J P Bridger (28 September - 5 October)
J M Last
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DURATION

Left Lowestoft 1000 h, 28 September

Arrived Lowestoft 0830 h, 10 October

All times are Greenwich Mean Time

LOCALITY

West Central North Sea: north coast of Norfolk to 56°N.

AIMS

1. To carry out a survey for herring larvae in the western half of the central North Sea, as part of an international survey of the abundance and distribution of autumn-spawned herring larvae in the North Sea and adjacent waters, using the Lowestoft multi-purpose plankton sampler.
2. To investigate the abundance and distribution of planktonic fish eggs and larvae, zooplankton predators and competitors and the phytoplankton.
3. Monitor sub-surface water continuously along the ship's track for temperature, salinity, transparency and chlorophyll 'a'.
4. Collect water samples from the pump for salinity and nutrient analysis; calibrate the fluorometer with chlorophyll 'a' extracts; measure phaeophytin and identify the phytoplankton contribution to chlorophyll 'a' fluorescence, including the preparation of slides for electron microscope examination of the micro-flagellates.
5. Carry out hauls with the 2 sq m Lowestoft frame trawl to sample young fish.
6. Carry out hauls with the 2 m diameter ring net within 10 miles of the coast, to sample lobster larvae.
7. Use the changing net sampler to investigate the vertical distribution of herring larvae and other zooplankton.
8. Continue estimating sampling variance by carrying out replicate hauls with the multi-purpose plankton sampler.
9. Collect live plankton as required.

10. To release 700 seabed drifters at 14 standard stations on the plankton survey grid.

NARRATIVE

Working the grid in a northerly direction, the first station off the Norfolk coast was reached at 1546 h, 28 September, free-flow calibrations having been made en route. Work continued uninterrupted until the ship entered Sunderland harbour at 1230 h, 5 October to take on water, although eight stations in shoal water on the edge of the Dogger Bank and one in Bridlington Bay had to be omitted due to strong easterly winds.

CORELLIA sailed at 0730 h, 6 October but, after completing four inshore stations south of the Farne Islands, she was forced to dodge into a force 9-10 SSW gale at 1400 h. Work was resumed at 0820 h, 7 October and the main grid was completed at 2400 h, 8 October.

The ship then steamed to a position 60 miles ESE of Flamborough Head where the only patch (albeit small) of herring larvae had been located. A grid of stations at a radius of 5 miles from the previous centre of the patch was started at 1344 h, 9 October and completed by 1900 h. The patch was still found to be present but at much reduced densities. A series of ten replicate tin townet hauls was made in the patch, this being completed at 2230 h, 9 October. After three further free-flow calibrations had been made, the ship steamed for Lowestoft, leaving at 2330 h.

RESULTS

Aims 1 & 2. 130 stations were sampled on the main grid with the 30" tin townet (complete with 'pup' samplers and water sampler). Preliminary examination of the samples did not reveal any significant quantities of herring larvae. The only patch located was a small one 60 miles ESE of Flamborough Head. Other fish eggs and larvae were also scarce.

Aim 3. The recording unit was run continuously throughout the cruise.

Aim 4. Salinity samples were collected at the 130 stations of the main grid. Samples for nutrient analysis were collected at 79 stations. The usual fluorometric determinations of chlorophyll 'a' and phaeopigments in the sub surface waters were made at all 130 stations on the main grid. Material for examination by light microscope and by electron microscope was preserved at selected stations.

Aim 5. 28 hauls with the 2 sq m Lowestoft Frame Net were made. Very few 0-gp fish were caught.

Aim 6. 30 hauls with the twin-buffed 2m ring net were made close inshore. A few lobster larvae were caught.

Aim 7. This aim could not be carried out, due to the scarcity of herring larvae.

Aim 8. Ten replicate hauls with the 30" TTN were made on a low-density patch of herring larvae off Flamborough Head.

Aim 9. No live plankton was requested but a preserved sample for Dr Dodge was taken.

Aim 10. Fifty seabed drifters were released at each of 14 standard stations.

MISCELLANEOUS

The ship was visited by an unusually large number and selection of migrating birds, amongst which rock pipits and chaffinches were numerous, both above and below decks. Other species noted were blackcap, chiff chaff, warblers, sanderling, sparrow hawk, hobby, and storm petrel.

C T Macer
25 October 1976

SEEN IN DRAFT: JEWB, ETB

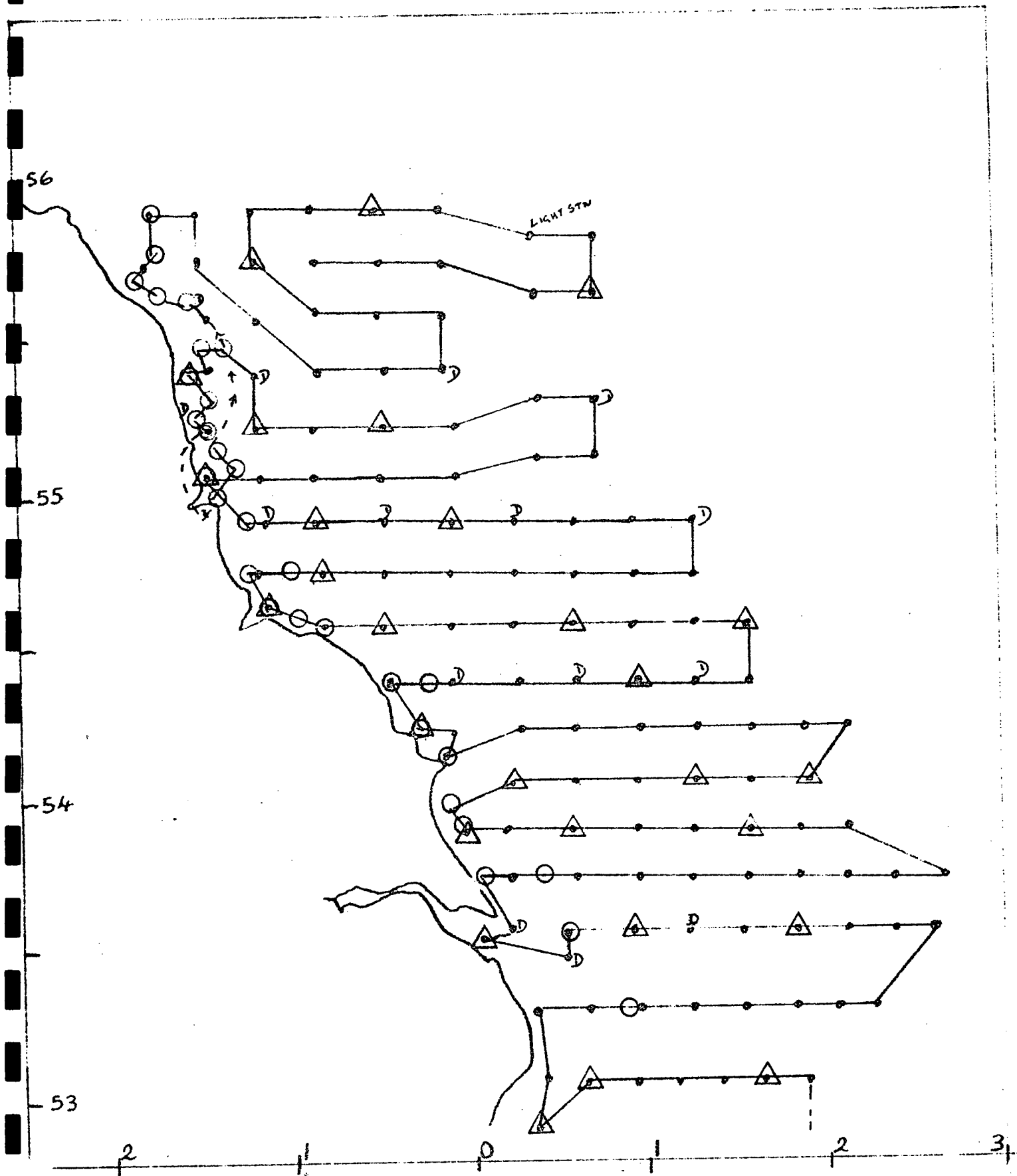
INITIALLED: AJL

DISTRIBUTION:

Basic list +

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R.V. CORELLA CR 13/76 SURVEY GRID and SAMPLING STNS



△ L.T. FRAME TRAWL
 ○ 2M NEUSTON NET
 • PLANKTON STN

D = SEA BED DRIFTERS