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

1979 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA: CRUISE 4

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

STAFF:

D S Tungate
Mrs B Thompson
C Garrod
P Witthames
C R Hood
R Stewardson (1st day)

DURATION:

Left Lowestoft 0908 h, 12 March
Arrived Lowestoft 1230 h, 21 March

LOCALITY:

North Sea

AIMS:

1. To survey a cod spawning area and collect larvae for otoliths and feeding studies.

2. To measure temperature, chlorophyll, turbidity, salinity and particle size in the survey area.

3. To carry out an acoustic survey covering the spawning area.

4. To identify fish shoals by trawling.

5. To collect Euphausids for Dr Jamieson

NARRATIVE:

RV CORELLA sailed from Lowestoft at 0908 h 12 March and proceeded to Sole Bay to calibrate the acoustic survey equipment. Mr Stewardson was disembarked at Gorleston at 0830 h 13 March. CORELLA then steamed to position Lat. 53°00'N, Long. 3°00'E, and started the cod larvae survey at 1800 h 13 March. The survey continued until 2200 h 14 March when gale force winds forced CORELLA to dodge. With force 9 N.E. winds and heavy snow showers and both radar sets cut of action it was decided to make for Den Helder for repairs. CORELLA sailed from Den Helder at 1300 h 16 March and continued with the larval survey until 0030 h 19 March. The stern ramp was rigged for fishing in the lee of Texel and the acoustic survey commenced at 0830 19 March and continued until 1000 h 21 March. CORELLA docked at Lowestoft at 1230 h 21 March.

RESULTS:

A total of 44 hauls were made with Bongo nets to determine the distribution of cod larvae. The numbers of larvae caught were low, but cod eggs were numerous indicating that hatching had been delayed by the low sea temperature of 3° to 4°C. Cod and plaice larvae were collected at position Lat. 53°00'N, Long. 04°30'E for otoliths and feeding studies.

2. Temperature, turbidity, salinity, chlorophyll and particle size were continuously monitored along the ship's track.

3. The acoustic counting equipment and the towed transducer were fully calibrated on the first day of the cruise. The towed transducer was tuned and its performance checked using the hydrophone and standard target test rig. The survey electronic equipment was calibrated and values obtained for source level, sensitivity, frequency, T.V.G amplication, transmitter pulse change and transmitter power output. Standard noise level measurements were made on the hull and towed transducers for a range of speeds. The maximum noise level on either transmission at a speed of 10 knots was acceptable and did not affect the survey results. The length of towing cable was adjusted to obtain the best survey depth for the towed transducer. A depth of 5 metres cleared the ship's wash and gave good results. The distance from the towing point to the transducer face was 15 metres and the ship's speed 10 knots: this gave approximately an 8 metre depth of trawling speed. A shorter cable resulted in the towed transducer yawing in the ship's wash at 10 knots. Using this equipment in the relatively shallow waters of the North Sea on a rapidly undulating sea bed resulted in rapid changing of the "resets". Many signals from fish that were located below the ridge peaks were lost. A "bottom follower" modification is required to overcome this.

4. Fish shoals were identified using the Engels 800 mid-water trawl. The most common species were whiting, sprats and cod.

5. A number of Euphausids were identified and deep frozen for Dr Jamieson.

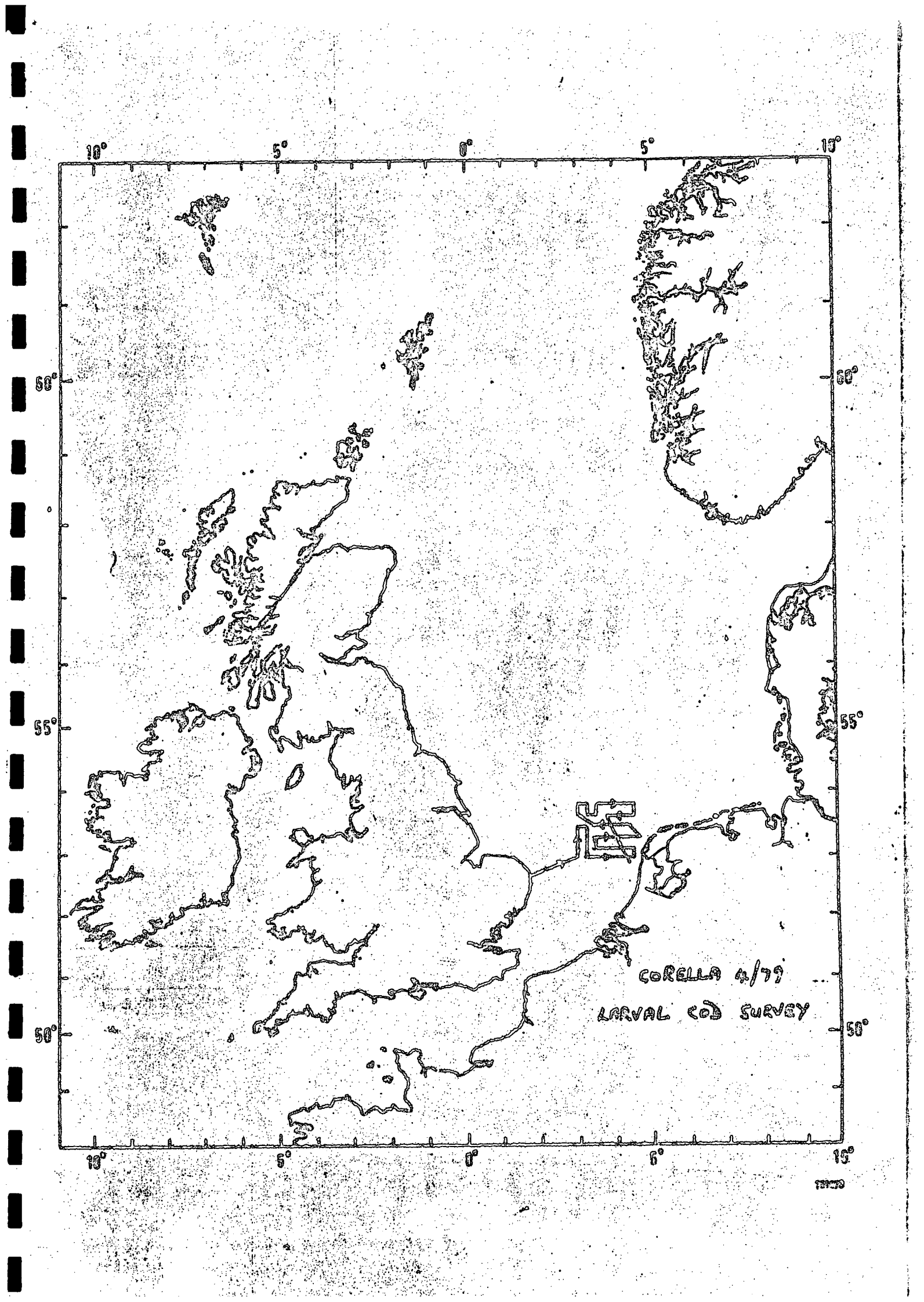
D S Tungate
26 March 1979

SEEN IN DRAFT: GS, RCN.

INITIALLED: AJL

DISTRIBUTION: Basic list +

D S Tungate
Mrs B Thompson
C Garrod
P Witthames
C R Hood
R Stewardson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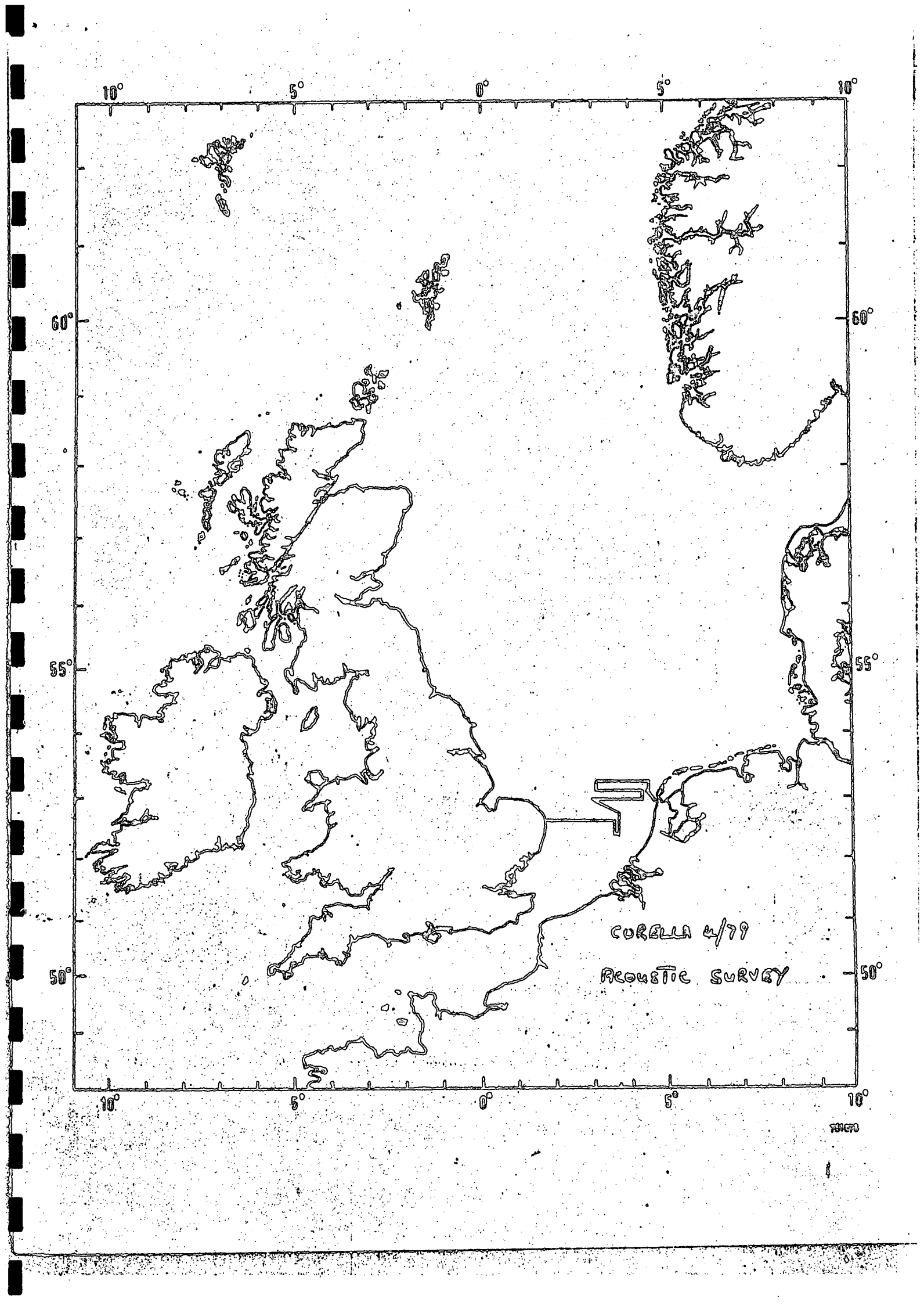
CORELLA 4/79
LARVAL COD SURVEY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ACOUSTIC SURVEY