

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

1994 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES: CRUISE 9

STAFF:

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DURATION: 4-22 August

LOCALITY: Southern Bight, English Channel

AIMS:

1. To measure the distribution and abundance of commercial flatfish species by means of a beam trawl survey, as part of an ICES coordinated programme in the North Sea and parts of area VII.
2. To collect additional biological data on sole and plaice, and commercially important non-quota species especially dab, turbot, brill and crab.
3. To describe the seabed sediments and epibenthos using both photographic and trawl by-catch data, and also the ROXANN acoustic seabed discrimination system.
4. To obtain dredge indices of abundance for pre-recruit and fishable scallops from the standard Lizard to Eddystone survey grid.
5. To collect samples of scallops from each of the survey grids for comparative biometric analysis.

NARRATIVE:

CORYSTES sailed on the morning tide of 4 August and completed two beam trawl stations in the Outer Thames area that afternoon. The next day, in fine weather, eight further stations were completed off the coast of Kent and in the Channel, and Day grab samples of the substrate were taken to ground-truth ROXANN. During the evening of 5 August CORYSTES entered French waters and proceeded west to a group of stations in the Baie de Seine, to the east of the Cherbourg peninsula. These stations were completed on 7 August, and after three more days work on the French coast only one station remained to be completed. No difficulties were experienced with the French authorities. CORYSTES re-entered English waters on the morning of 11 August and continued fishing along the south coast of England, working west

from Rye Bay. A member of the crew was put ashore at Portsmouth on the 13 August, and the remaining stations to the west of the Isle of Wight were completed the following day. Otoliths were read, and all necessary catch data were input and processed, ready for a change of scientific staff at Weymouth on 16 August. Newhaven and French scallop dredges were deployed at 65 stations off the coast of Cornwall, in areas north and south of the Eddystone lighthouse. On 20 August the final grid of 20 stations in Lyme Bay was completed.

RESULTS:

1. Fishing stations shown on the cruise track (Figure 1) were sampled with a 4m beam trawl. All fish species in the catch were recorded and measured, and all length measurements and catch records were entered on the Fishing Survey System. Approximately 60% of all age-groups of plaice and sole in VIId were caught east of the meridian line. The total catch of plaice and sole by age-group for the English and French coast (VIId) was compared with corresponding catches during the 1993 survey:

Plaice	Age-group				
	0	1	2	3	4+
English coast					
COR 8/93	3	37	152	64	81
COR 9/94	18	101	57	63	70
French coast					
COR 8/93	0	32	173	61	161
COR 8/94	2	41	74	98	148
Sole					
English coast					
COR 8/93	0	5	192	119	127
COR 9/94	3	30	41	124	121
French coast					
COR 8/93	0	7	171	60	88
COR 9/94	49	101	27	60	68

Catches of 1-group plaice and sole along the English coast were greater than during 1993, and confirmed 0-group year-class strength estimates obtained during the 1993 Young Fish Survey. Catches of juvenile sole (0-group to 2-group) on the French coast were poor, despite apparently high total catches. All 0-groups and 95% of the 1-group catch from this area were from a single station, south-west of Boulogne.

2. Otoliths were collected from all sole, turbot and brill, and also from a stratified sample of plaice, dab, lemon sole, scaldfish and solenette. Sole, plaice and dab otoliths were all read at sea and ALD's prepared before the end of the cruise. The following table shows the numbers of otoliths collected.

Species	VIIId English side	VIIId French side	VIIId total
sole	327	245	572
plaice	181	212	393
dab	126	143	269
lemon sole	-	-	87
scaldfish	-	-	70
solenette	-	-	68
brill	-	-	25
turbot	-	-	9

All edible crabs (*Cancer pagurus*) were sexed, weighed and measured, and spider crabs (*Maia squinado*) were sexed and weighed. Samples of cuttlefish *Sepia officinalis* were frozen for processing at the Laboratory.

3: The by-catch of benthos at each fishing station was photographed on deck and a representative sample from 44 selected stations was sorted and, where possible, all fauna and flora were identified, counted and weighed. Some benthic invertebrates, such as the brittle star *Ophiothrix fragilis* were occasionally caught in very large numbers (c.1 million/hour), but other common fauna, such as the swimming crab (*Liocarcinus depurator*) and the starfish (*Asterias rubens*), occurred consistently, but in smaller numbers (400-600 individuals per hour). ROXANN was used at each fishing station to identify major changes in substrate type between areas, and the output was saved to disc for future analysis. A 35mm camera attached to the trawl beam was used to take photographs of the trawled seabed, but technical problems occurred frequently and a complete set of photographs was not obtained.

4. Catches of scallops from the Fowey to Eddystone grid (A) (Figure 2) were generally greater than in 1993, except for the area close to Hand Deep which showed signs of recent dredging. Relatively large numbers of pre-recruits were present throughout the grid. The standard 2m French dredges fished successfully south of the Eddystone (B), where catches were similar to those of 1993, but continually turned over when sampling in Lyme Bay (C). As a result, no catch data were available from Lyme Bay for comparison with previous years. The experimental small mesh French dredge worked well in all areas, successfully retaining scallops as small as 40mm.

S I Rogers
21 August 1994

SEEN IN DRAFT: B Chapman, W May

INITIALLED: GPA

Basic list +	D Eaton
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A Tetard (IFREMER, Port en Bessin); A Rijnsdorp (RIVO, Netherlands); R de Clerck (FRS, Belgium); Kent and Essex, Sussex, Southern, Devon and Cornwall SFC, States of Guernsey, States of Jersey, CFO, D Love (Foreign and Commonwealth Office).

Figure 1

CRUISE DATA FILE FOR CORY994

SHOWING :
CRUISE TRACK
STATION POSITION
COASTLINE

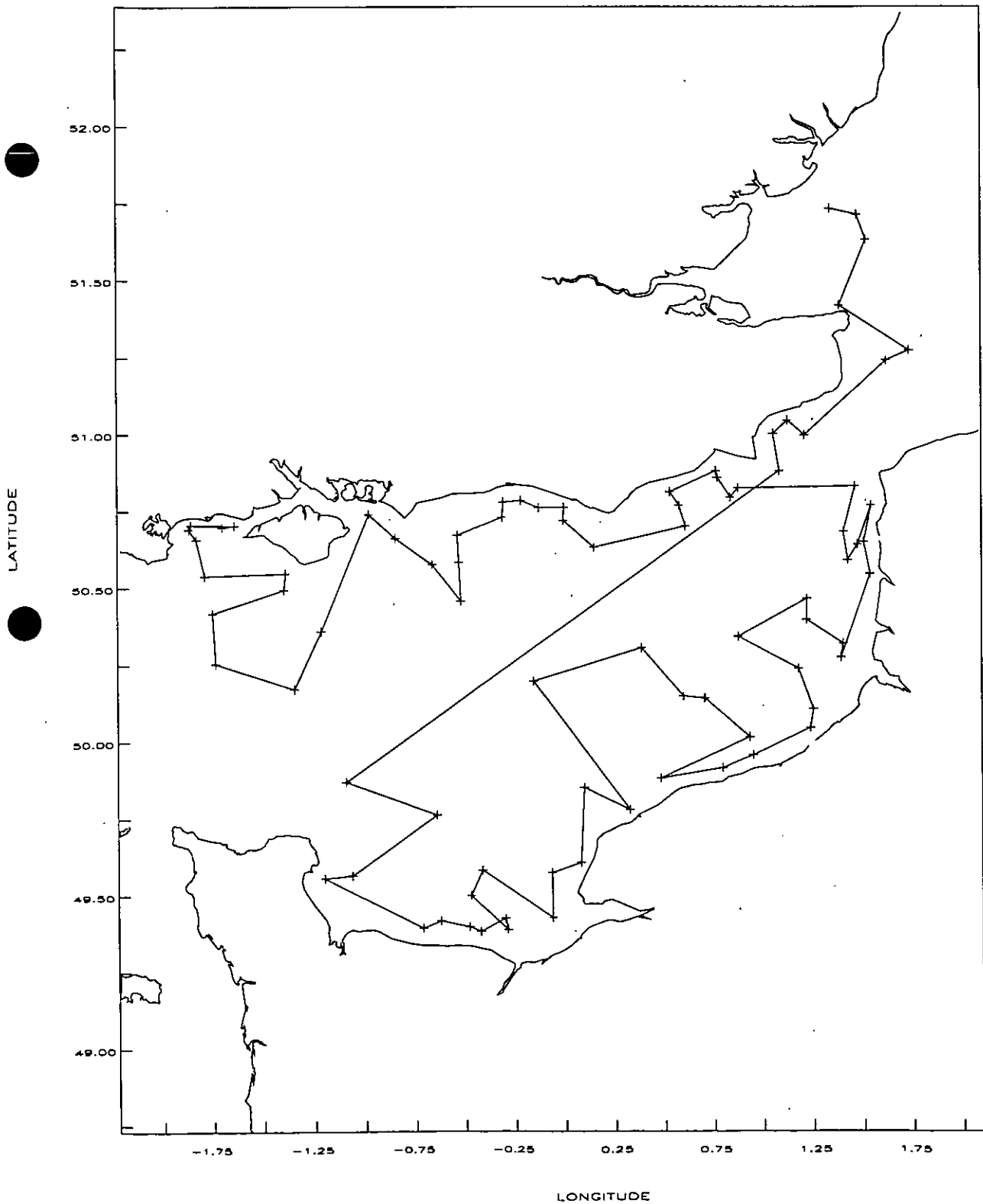


Figure 2

CRUISE DATA FILE FOR CORY994

SHOWING :
STATION POSITION
COASTLINE

