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

1988 RESEARCH PROGRAMME

REPORT: RV CORYSTES: CRUISE 3A
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

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DURATION

3-15 June

LOCALITY

Irish Sea

AIMS

1. To assess the distribution, abundance and population structure of scallop stocks between north Wales and the Isle of Man.

2. To obtain photographic and CCTV video records of the sea bed and of pre-recruit scallops on heavily and lightly dredged scallop grounds.

3. To carry out a comparative dredging trial with a Manx scalloper (chartered by Port Erin laboratory).

4. To sample bottom substrates and collect hydroids for scallop spatfall studies.

NARRATIVE

CORYSTES sailed from Lowestoft at 1130h on 3 June and reached the survey area in the Irish Sea at 1730h on 5 June. Familiarisation trials with handling the two beams of scallop dredges were made that evening before starting the grid survey next morning. During 6-7 June part of the November 1987 (CLIONE) grid was resampled south-east of the Isle of Man (Aim 1, and see chart attached). On 8 June, contact was made with FV MATHILDE which was dredging a commercial ground, about 10nM south of Port St Mary, to provide scallops for the Manx tagging exercise being conducted aboard the accompanying RV CUMA from Port Erin Marine Laboratory. CORYSTES made a series of tows near FV MATHILDE for later comparison of RV and FV catch rates (Aim 3).

A 2.5 x 2.5nM block of this commercial ground was selected for a detailed patch study and to evaluate dredging disturbance (Aim 2). After a half-day delay, while CORYSTES dodged in a brief N E Gale, the cameras sledge was deployed successfully later on 9 June, and a series of tows was then made across this experimental plot during 9-11 June. Dredging was then carried out on 12-13 June; in addition, the epibenthos sledge was tested. Samples of hydroids were collected (Aim 4) wherever feasible during grid and plot work.

Finally, on 14 June, two tows with the cameras sledge were made on an undredged area, about 15nM north of Anglesey, before CORYSTES began steaming to Barry at 1300h.

CORYSTES docked in Barry at 0810h on 15 June, and scientific staff returned to Lowestoft by road.

RESULTS

1. Scallop Stock

A total of 33 of the November 1987 stations was resampled (see chart) using 8 Newhaven dredges (4 commercial and 4 fine-meshed) with 15 min tows. Throughout the survey area, scallop abundance was much lower than it was last autumn, the mean catch rate index for commercial dredges being about 2.4 scallops/dredge/nautical mile compared with 7.3/dr/nM last November. The CRI for fine-mesh dredges on the present survey was about 2.0/dr/nM.

Age distribution of scallops ranged from 2-15 annual rings, most being from 4-6 rings in the commercial dredges. Approximately 84% of the catch in commercial gear exceeded the 110mm MLS, compared with 58% of scallops from fine-meshed dredges. Gonad (roe) condition was assessed; virtually all adult scallops were either fully ripe or just starting to spawn (sea temperatures = 10.9-12.0°C).

Queenies were locally abundant and taken in hundreds by the fine-mesh dredges at several stations.

2. Patch Study

The 2.5 x 2.5nM plot was divided into 9 dredging transects, along which 40 standard 15 min tows were made with the 8 dredges. Comparison of CORYSTES catch rates with those of FV MATHILDE will be made later when the latter data become available. Mean catch rates and scallop population structure were similar to those observed on the survey grid. There was strong evidence of small, localized patches of scallops on this very stony ground. Shells were collected for growth measurements, predatory starfish were counted, and associated epibenthos was recorded.

Twelve tows were made with the cameras sledge, during which about 20 hours of high quality colour CCTV tapes were video-recorded, and approximately 1,500m^2 of seabed were photographed. Evidence of dredge tracks and of seabed disturbance were obtained, and numbers of scallops were visible.
At another (undredged) site, nearer to Anglesey, a further 3½ hrs of CCTV were recorded and about 300m^2 of seabed were photographed.

3. Cameras and Sledge

The Osprey CCTV performed faultlessly throughout its 24 hrs of deployment. The 35mm camera system experienced a stoppage problem at one stage, but overall it exposed about 85% of the film footage. CORYSTES is an excellent platform for deploying the sledge, with a launch-seabed time of about 4 minutes (favourable sea states). However, strong tides made towing a course difficult at times using the lighter MK2 sledge and a 220m umbilical.

4. Hydroids and Substrates

Hydroids were generally much scarcer than in November 1987, and fewer samples were collected for later examination for scallop and queen spat. The epibenthos modified sledge was rigged between two commercial dredges and worked satisfactorily. It caught many 3-45 mm bivalves (4 species) during its 3 tows, but no small scallops were taken.

5. Fish

The following commercial species were taken by the dredges: 17 anglers, 5 sole, 4 lemon sole, 7 cuckoo ray, 1 saithe, 1 poor cod, 1 grey gurnard; also 4 brown crab. Otoliths were collected from 14 anglers and 5 sole for FSM2.

Acknowledgements

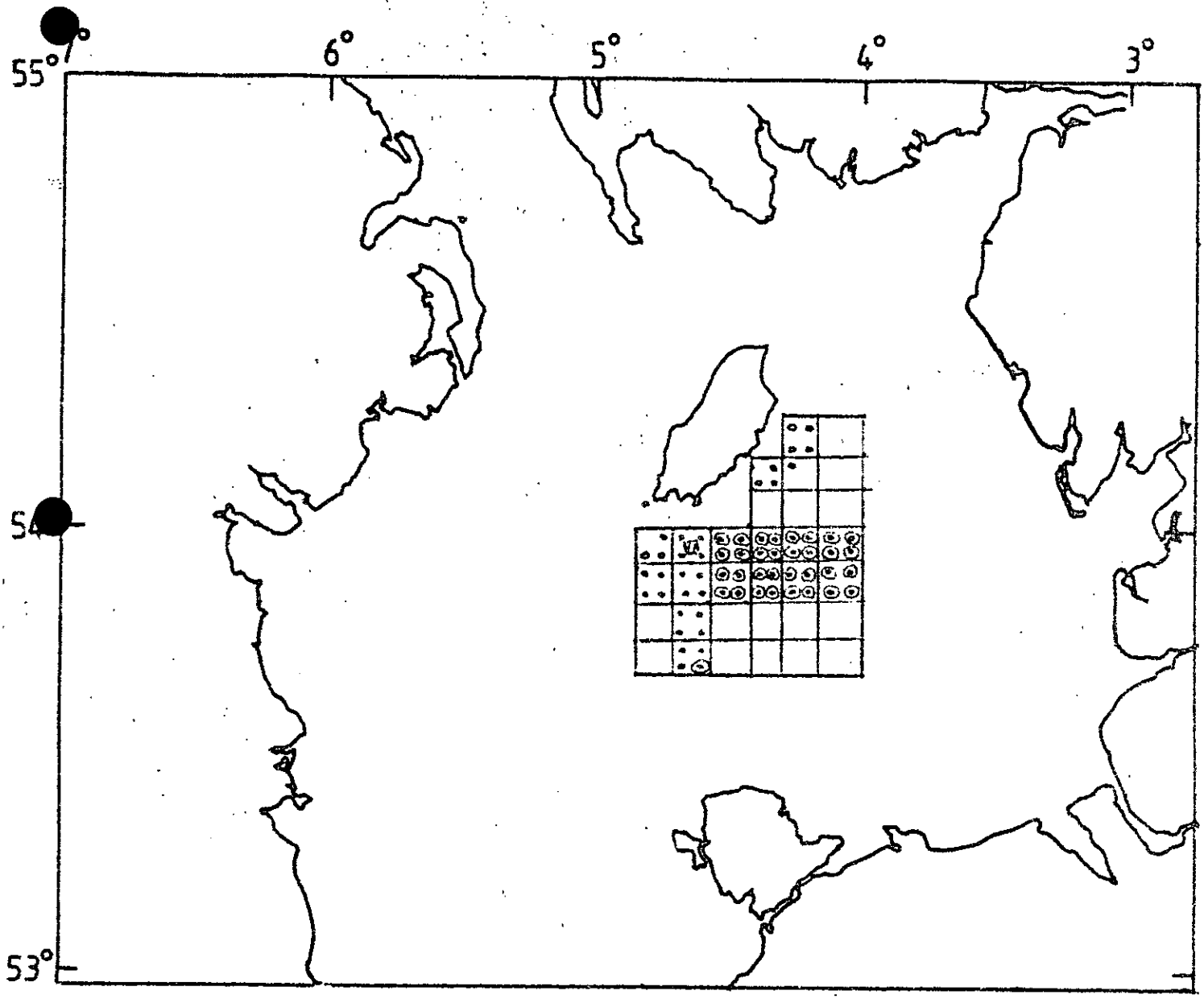
We are grateful to Mr E Allinson and the master of RV CUMA (Port Erin Marine Laboratory), and to Mr K Christian of FV MATHILDE, for information, for guidance with selecting the detailed study plot, and for the comparative fishing trial.

P J Dare
(Scientist-in-Charge)
21 June 1988

SEEN IN DRAFT: Captain G Sinclair
Senior Fishing Mate: J Harper

INITIALLED: DJG

DISTRIBUTION: Basic List +
P J Dare (SIC), D Key, C Darby, P Walker, D Palmer, R Flatt



CORYSTES 3A/88. Scallop Survey, June 1988.
The November 1987 grid of dredge stations • and those resampled ⊙ , together with the site ▨ of the detailed patch study.