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

1974 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE, CRUISE 6 PART B

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

STAFF

M Greer Walker
G P Arnold
I L Davies
J Horwood
B Riches
P Witthames
T Doddington (20 April only)

DURATION

Left Lowestoft 0940 hours, 20 April
Arrived Lowestoft 0537 hours, 1 May

All times are GMT

LOCALITY

East Anglian Coast

AIMS

1. To test cod release cages.
2. To study the locomotory behaviour of cod using the ARL scanner and acoustic tags.
3. To test the QSM 2400 underwater spectroradiometer.

NARRATIVE

CLIONE left Lowestoft at 0840 hours, 20 April and the current meter rig and 2 cod release cages were laid close to the position 52°22'N, 02°00'E by 1500 hours. After fitting the dome in Harwich that evening CLIONE returned to the working area at 0500 hours, 21 April. The dan was missing from the first cage and the cod had escaped from the second. Cage 3 was laid at 1600 hours but the fish escaped at 1800 hours and was tracked until 0800 hours, 22 April. The cruise was interrupted at this point by a failure in the AC supply which occasioned a return to Lowestoft for repairs. The dome was removed in Harwich at 2200 hours and CLIONE reached Lowestoft at 0815 hours, 23 April.

The ship sailed from Lowestoft at 1000 hours, 24 April and cage 4 was laid close to the current meter at 1300 hours. The dome was refitted in Harwich at 1930 hours and the cod released from cage 4 at 0830 hours, 25 April. This fish was tracked until 0200 hours the 26 April. CLIONE steamed back to the current meter overnight and cage 5 was laid at 0830 hours. The fish was released at 2000 hours and tracking continued until 2130 hours the following day. Cage 6 was laid at 2312 hours and after release the following morning was tracked until 1800 hours, 29 April.

CLIONE steamed overnight to the Whiting Bank (close to Orford Ness). A gravel bed survey was conducted in Hollesey Bay along a Decca grid extending a mile either side of the Hook buoy. This was completed by 0930 hours. The ARL scanner array was then calibrated with a passive target at various ranges and tilt angles. CLIONE left for Harwich at 1530 hours and the dome was removed by 1830 hours, 30 April. Passage was made to the current meter rig which was raised by 2350 hours. CLIONE reached Lowestoft at 0537 hours, 1 May.

RESULTS

1. COD RELEASE CAGES

Two basic types of cage, one constructed with Dexion and the other with Durapipe were tested and with variations in the rigging a working model was evolved. Cod left in this cage for 16 hours and then returned to the surface appeared to be in good condition.

2. COD LOCOMOTION

Four cod were tracked following release from the cages for periods of 14, 17, 25 and 31 hours. All the fish moved generally in a NE direction spending a considerable time in mid-water and moving down tide.

3. QSM 2400 SPECTRORADIOMETER (Report by G P Arnold)

The QSM 2400 Spectroradiometer was tested on deck and underwater when opportunity arose. The underwater case and the basic instrument worked satisfactorily but the integrating unit developed a fault early in the cruise and could not be used. A fault also developed in one channel of the potentiometric chart recorder so that the selenium cell photometer mounted alongside the QSM 2400 to measure changes in total incident irradiance could not be used either. It is clear that the spectral irradiance curves produced by the QSM 2400 radiometer need to be corrected for changes in total irradiance occurring during the course of the spectral scan and caused largely by wave action.

4. GRAVEL SURVEY

No evidence of dredging was found in Hollesey Bay. A conical dredge sample showed that the bottom was composed of fine sand and mud.

5. CALIBRATION OF ARL SCANNER

The calibration showed that the measured beam width varied between 22° and 25° with ranges of 40-180 m and tilt angles up to 8° . There was no trend in angular width with range. The mean value was 24° .

THE EQUIPMENT

1 release cage and 6 acoustic tags were lost. The dome cover was destroyed after 237 miles. There were no faults with the ARL scanner.

Seen in draft: J F (Master)
A H B (Fishing Skipper)

Initialled: A J L

DISTRIBUTION

Basic List
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G P Arnold
I L Davies
J Horwood

B Riches
P Witthames
T Doddington

M Greer Walker
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