

MR BADE

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

1974 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA: CRUISE 16

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

STAFF

F R Harden Jones (NIC)
P Scholes
B H Holford
P Walker
P Dean (Student)

DURATION

Left Lowestoft 1100 h, 18 November

Arrived Lowestoft 1800 h, 27 November

All times are Greenwich Mean Time

LOCALITY

Southern Bight

AIMS

This cruise was the first of two joint cruises with RV CLIONE in which data are being collected to test a hypothesis concerning plaice migration in the Southern Bight. CORELLA's roles in this exercise are:-

1. to determine the relation, if any, between the catch of plaice taken by a midwater trawl and the direction of the tide.
2. to provide CLIONE with maturing plaice suitable for tracking.

NARRATIVE

CORELLA left Lowestoft at 1100 h, 18 November and steamed to the Smiths Knoll area where a trial shot was made with the Engel 800 mesh midwater trawl. On 19 November work began a few miles west of the Brown Ridges and was continued over the Western Deep Water (52°20' to 52°40'N, 2°25'E) from 20-21 November until gale force winds intervened. Work in this area was completed on 22 November, radio contact being maintained with RV CLIONE which was tracking a 'laboratory held' plaice. The following day CORELLA moved north east to work the Leman Ground. During one tow CLIONE measured the parameters of the Engel trawl with the ARL Sector Scanner. On 24 November CORELLA fished immediately to the east of Smiths Knoll but work was interrupted by a southerly gale and we found shelter off Mundesley. The wind veered to the west on 25 November and CORELLA moved south to anchor in Gorleston Roads. The weather moderated on 26 November and allowed a further 24 h work near the

Western Deep water (15-20 miles off Lowestoft) until another westerly gale intervened. CORELLA returned to Lowestoft on 27 November, berthing at 1800 h.

RESULTS

1. The catch of plaice taken by a midwater trawl in relation to the direction of the tide. Our original intention was to collect data by making two tows on each of 4 consecutive tides over a 24 h period. The trial shots showed that it would be more practical to make on 3 h tow on each tide over the period of maximum velocity. The net was towed along the tidal axis and with the stream. Only a few plaice were caught by the Engel trawl, 21 mature fish in 14 tows. But 19 of these fish were taken on south-going tides, the catch rates per hour's fishing being 0.09 for north-going tides and 1.04 for south-going tides. The highest catches were taken along the line of $02^{\circ}14'E$ where 4 consecutive tows gave 0, 4, 1 and 12 mature or ripe plaice respectively, the two highest catches being taken on the south-going tides. These preliminary results are consistent with the hypothesis that plaice use a tidal transport system on their north to south spawning migration in the Southern Bight.

2. Plaice suitable for tracking. Only one of the 21 plaice caught by the Engel trawl was in a condition suitable for tracking and this fish was passed over to CLIONE on 23 November.

OTHER ACTIVITIES

Dinoflagellate samples were collected for Dr Dodge.

F R Harden Jones
4 December 1974

SEEN IN DRAFT: JEMB

ETB

INITIALLED: AJL

DISTRIBUTION:

Basic List

F R Harden Jones
P Scholes
B H Holford
P Walker
P Dean (Student)