

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

1978 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 6

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

STAFF

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DURATION

Left Lowestoft 1400h 14 April
Arrived Lowestoft 1045h 27 April
All times are Greenwich Mean Time

LOCALITY

Southern North Sea

AIM

To track migrating cod using acoustic tags and sector scanning sonar.

NARRATIVE

CLIONE sailed at 1500h 14 April and the first cage containing an acoustically tagged cod for adaptation was laid by 1915h in a position west of the Brown Ridge (Lat $52^{\circ}02'N$ and Long. $2^{\circ}33.6'E$). CLIONE then steamed northwards to the Botney Ground where two further cod cages were laid at $53^{\circ}39.2'N$, $2^{\circ}55.0'E$ and $53^{\circ}45.2'N$ $3^{\circ}0.0'E$. In each case the cod was confirmed as being within the cage on the seabed by using the sector scanning sonar. at 1200h course was set for Den Helder to fit the sonar dome. CLIONE remained in Den Helder between 1935h and 2106h and then steamed to cod cage 1. During the morning of April 16 measurements were made with the QSM 2400 spectroradiometer and at 1745h the same day cod 1 was released and tracked until 2000h 17 April. At 0830h 18 April cage 4 was laid at $53^{\circ}52.2'N$, $3^{\circ}06.4'E$ and the cod from cage 2 was released at 1200h and tracked for a short period before it was lost. Cage 5 was set by 1537h at $53^{\circ}41.3'N$, $02^{\circ}56.0'E$ and cod 3 was released at 1739h. The first eel cage was laid at 1940h 18 April and cod track 3 was terminated at 2230h the same day. During the following morning further measurements were made with the spectroradiometer and 2 hauls made with the Agassiz trawl. At 1700h cod cage 6 was laid ($53^{\circ}46.4'N$, $02^{\circ}49.0'E$) and at 1740h the first eel was released and tracked until 0800h 21 April. CLIONE then steamed to cod cage 5 and this fish was released at 1453h the same day and tracked until 0500h 23 April. The cod from cage 4 in Botney Cut was tracked between 0930h and 1415h the same day. The last cod (cage 6) was released at 1648h and tracked until 0300h 24 April. As there was insufficient time remaining to adapt further cod CLIONE steamed southwards to Smiths Knoll and the second eel cage was set at $52^{\circ}50.1'N$, $2^{\circ}29.3'E$ at 1215h 24 April. This eel was released at 1700h and tracked until 0800h 25 April. CLIONE then steamed to Den Helder where the dome was removed prior to docking in Lowestoft at 1045h 27 April.

RESULTS

Cod tracking

Cod 1 was adapted for 47h at a depth of 46m west of the Brown Ridge but due to incorrect rigging of the release cage it was released on the surface. It was tracked for 26h but never penetrated below midwater.

Cod 2 was adapted on the Botney Ground for 76h at a depth of 36m. On release it appeared adapted remaining on the bottom but was lost after 2h.

Cod 3 was adapted on the Botney Ground at 42m for 78h but due again to incorrect rigging it was released on the surface where it remained until it was abandoned 6h later.

Cod 4 was adapted on the Botney ground at 40m for 72h and on release was tracked for 38h. In this area the strongest tides flow east and west and the fish moved 30 n miles in an easterly direction moving consistently eastwards on both easterly and westerly tides.

Cod 5 was adapted for 120h at 55m in Botney Cut but on release the cage and rigging were found to be tangled and the fish was released on the surface where it remained and was tracked for 6h.

Cod 6 was adapted for 97h south of Markham Hole at 35m. After release which appeared satisfactory the tag was observed for 9h but as no movement was seen it was abandoned.

Successful adaptations of cod were unusually low due in two cases to incorrect rigging of the cages. Also however on account of the depths involved, lack of tide and paradoxically the good weather which caused the ropes and cages to become tangled. It appeared that cod adapted to depth but released on the surface were unable to resume normal behaviour during the periods of time for which they were tracked.

Silver eel tracking

Eel 1 was released on the Botney Ground after adaptation at 42.5m for 22h. Eel 2 was released 10 n miles east of Smiths Knoll after 6h adaptation at 43m.

The first fish moved 20 n miles in a north westerly direction, but the second showed little overall change moving with the tides. Both fish showed extensive and possibly rhythmic movements throughout the water column with scant regard to changes in pressure.

M Greer Walker
3 May 1978

SEEN IN DRAFT: Captain J R French
Mr G F Lee - Fishing Skipper

INITIALLED: AJL

DISTRIBUTION:

Basic List

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