

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

1979 RESEARCH VESSEL PROGRAMME

REPORT: R V CLIONE: CRUISE 8

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

STAFF:

M Greer Walker
G Arnold
P Scholes
L Cox
E Shreeve (18-28 July)
M Reid (Aberdeen University) (18-28 July)
A Swain (28 July - 3 August)
B Riches (28 July - 8 August)
T Potter (3 - 8 August)

DURATION: Left Lowestoft 1700 h 18 July
Arrived Lowestoft 0900 h 8 August

LOCALITY: Markhams Hole: North east coast

AIMS:

- 1 To track acoustically tagged plaice on the feeding grounds in the region of Markhams Hole.
- 2 To track acoustically tagged salmon off the north east coast.
- 3 To investigate with the Diving Team the possibility of studying acoustically tagged plaice on the seabed using hand held sonar.

NARRATIVE:

R V CLIONE left Lowestoft at 1700 h 18 July and steamed overnight to Markham's Hole. On the following day the ship took part in a search for survivors from a sinking coaster. They were rescued during the afternoon by another ship. An acoustically tagged plaice was released 10 km south of Markham's Hole at 2000 h and tracked until 0700 h 22 July. A second plaice was released at 1000 h the same day; however, the weather deteriorated and tracking was terminated at 1230 h. Because of the continuing heavy swell and poor forecast it was decided to advance the programme and attempt Aims 2 and 3. Consequently CLIONE steamed for the North east coast arriving in Alnmouth Bay at 0500 h 24 July. This day was spent making underwater light measurements and during the 25-26 July observations were made with the Diving Team on acoustically tagged plaice.

At 0930 h 27 July CLIONE reached Blyth to replenish stores and water and fit the sonar dome. Mr Shreeve and Mr Reid disembarked and were replaced by Mr Swain and Mr Riches. CLIONE sailed at 0600 h 29 July and salmon tracking (Aim 2) in conjunction with Mr Potter and Mr Henderson aboard a coble began off Amble at 0900 h, and continued until 0800 h 3 August. At 1400 h Mr Swain was exchanged for Mr Potter by coble and CLIONE then steamed for the shelter of Bridlington Bay where the sonar dome was removed between 0500 h and 0600 h 4 August. Thereafter a course was set for Markham's Hole to continue Aim 1. Work with acoustically tagged plaice began in the area at 1800 h 4 August and finished at 1830 h 7 August. CLIONE docked in Lowestoft at 0900 h 8 August.

RESULTS

1 Acoustically tagged plaice from the Southern Bight stock were released south of Markhams Hole to study their behaviour on their summer feeding grounds. The first plaice was released at 2019 h 19 July and was tracked for 60 h. This fish showed a pronounced diurnal pattern of activity during the three days under observation remaining static during daylight hours but during each of the periods of darkness the fish moved continuously, often with long periods in mid-water. The overall movement was 20 km in a southerly direction. The third plaice was released at 1720 h 4 August and was tracked for 72 h. This fish showed a similar diurnal pattern of behaviour to the previous fish.

2 Three salmon were caught by drift net east of Coquet Island near Amble and acoustically tagged. The first fish was lost after three hours but the second fish released at 1600 h 29 July was tracked for 61 h and travelled 150 km. On release the fish moved 37 km, southwards to the River Wansbeck before turning east for 11 km, and then northwards passing outside the Farne Islands before approaching the River Tweed at 0100 h 31 July. The fish then moved northwards again and was lost in shallow water outside Eyemouth harbour. The second fish was also released east of Coquet Island at 1240 h 1 August and was tracked for 43 h and travelled 65 km before the track was terminated. This fish continued northwards for the entire track unlike the previous fish which turned westwards at the Farne Islands for the River Tweed. Both fish travelled close to the surface, swimming northwards on both northerly and southerly tides. The second fish was subsequently recovered in the River Tay.

3 The Diving Team worked in conjunction with the ship in the centre of Alnmouth Bay, where the bottom was sandy and where, with the exception of a low swell, the water was calm. Using a hand held 300 kHz sonar the divers were easily able to detect and locate an acoustic tag suspended 2 m above the seabed at ranges up to 100 m. The directional response of the sonar was good and the diver was able to swim towards the target until he could see it. Directed by VHF radio from R V CLIONE the divers were also able quickly to recover a tag dropped on the bottom ahead of the ship and located by the sector scanner. Neither the sector scanner nor the portable sonar could locate a tag buried 2-3 cm below the sand. Again directed by VHF radio the divers were able to locate an acoustically tagged plaice released from the ship and observe that it was well buried in the sand, lying at right angles to the axis of small sand ripples with only the eyes, the top of the operculum and the acoustic tag exposed. After being deliberately disturbed the plaice no longer buried itself but rested on top of the sand and swam off each time a diver approached, usually before he could see it. Attempts to recover the tag were abandoned when the fish swam into a rocky area where reverberation prevented acoustic location.

M Greer Walker
13 August 1979

Seen in draft: P O T Master
G F L

INITIALLED: A J L

DISTRIBUTION:

Basic List

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