

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

1971 RESEARCH VESSEL PROGRAMME

REPORT: RV TELLINA: CRUISE 4

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

STAFF

P D Wallace
B H Holford
K M Brander } Part time
R L Keable }

DURATION

Left Lowestoft 1000 hours 23 March

Arrived Lowestoft 2230 hours 1 April

All times are British Standard Time

LOCALITY

River Blackwater

AIMS

1. To measure the area of the Eagle Bank herring spawning ground and to get an estimate of the number of herring eggs deposited on it throughout the spawning season.
2. To carry out a grab survey in the area to see whether there are any other herring spawning grounds.
3. To attempt to tag herring in the area.
4. To carry out a fish larval survey in the area.
5. To carry out echo surveys in the area and to sample the traces.

NARRATIVE

TELLINA sailed from Lowestoft at 1000 hours 23 March for the River Blackwater having been delayed for a day by strong North East winds. On 24 March the Diving Team joined the ship at Brightlingsea and work started on the survey of the Eagle Bank herring spawning ground. The survey was interrupted by strong North Westerly winds on 25 March but by the following day the wind had moderated and the Diving Team finished the survey returning to Lowestoft that night. During the next six days fish tagging and grab, tin tow net and echo surveys took place in the general area of the Eagle Bank. TELLINA was based throughout the period at Felixstowe and at Brightlingsea. After completing herring tagging operations the ship returned to Lowestoft berthing at 2230 hours 1 April.

RESULTS

1. The position of the Eagle Bank herring spawning ground was first located by a grab survey on 24 March. A marker buff was then anchored over the spawning bed and the Diving Team measured the length and width of the egg carpet. The patch of eggs was approximately elliptical in shape situated about half way between the Eagle and the North Eagle buoys. There was one compact carpet of eggs about 2 to 3 cm thick stretching 110 metres from the marker buff to the North Eagle buoy. The width of this egg carpet was 20 metres in the centre tapering to 3 metres at the end nearest to the North Eagle buoy. There was another more diffuse area of eggs stretching about 115 metres from the marker buff towards the Eagle buoy. The width of this less compact patch was 80 metres. One diver reported that small isolated patches of eggs appeared to have been torn away from the main egg carpet and some were lying upside down. Samples of eggs were taken from various parts of the spawning ground using a specially designed benthic egg sampler of known area and grab samples were also taken for analysis in the laboratory. It was apparent that some of the eggs were in an advanced stage of development and some were "eyed". The sea temperature over the spawning ground was 6.4°C. Many starfish were observed over the egg carpet and several of these were taken for stomach analysis. At dead low water the section of the ridge on the Eagle buoy side of the marker buff became exposed and the scientific staff were able to walk over it and collect samples of eggs. Several cormorants had been observed standing on the egg patch and these birds may have been feeding on the eggs.
2. A grab survey was carried out on the sea bottom in the area of the Bar buoy. Several grab hauls revealed the presence of shingle, broken shell and small stones, but there was no sign of any herring eggs present.

Grab hauls carried out off the Eagle Bank ridge showed that the bottom consisted mainly of mud and again no herring eggs were found.
3. A total of 498 herring in good condition were tagged over a period of several days in the River Blackwater. It was decided to use a small fleet of three drift nets and to shoot them from the small fibre glass boat just as the tide was starting to flood and to haul the nets at short intervals. This technique proved to be quite successful, because although only a few herring were caught per net during the short time it was fishing, the majority of the herring were covered with scales, and were tagged and released within a very short time. The herring were seen to dive straight down into the water. On several occasions the nets recaptured tagged herring which had been tagged shortly before.
4. The fish larval survey was carried out in the area plankton samples and temperatures were taken from an area just off Walton on the Naze and from selected stations up the River Blackwater finishing at Osea Island.
5. Several echo surveys were carried out in the area and the echo traces were sampled with a mid-water trawl and drift nets. Echo traces were completely absent over and around the Eagle Bank and no boats were fishing there. The echo surveys showed that most of the traces throughout the cruise period were in the area between the Bar buoy and West Mersea. A tow with the mid-water trawl showed that these traces consisted of herring. Drift nets shot by TELLINA and the few commercial boats fishing the area also caught herring.

P D Wallace
8 April 1971

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DISTRIBUTION

Basic list	K M Brander
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