

R1/6

In Confidence not to be quoted without reference to the laboratory.

FRV 'Clupea'

Cruise 10/81

10CR81

JLM

Report:

20 July - 14 August 1981

Objectives

- 1) To capture freshly run salmon in the North Esk, return them to the open sea some distance from the river mouth and follow them using ultrasonic tracking gear. Subsequent open water movements of the fish will be analysed in relation to the position of the home river.
- 2) To investigate the depths at which returning salmon swim using a depth telemetering acoustic tag, if available.
- 3) To sample populations of migrating salmon and to attempt to recapture the subject fish after tracking has been terminated using drift nets

Narrative

'Clupea' was based in Aberdeen for this trip, returning each weekend. Fish were taken from Montrose either by road to Aberdeen where they were put in holding tanks on board or else the 'Clupea' sailed to Montrose where the fish were put directly onto the ship. They were then transported North and all fish were released in an area between Peterhead and Stonehaven. All tracking was carried out in an area between Peterhead and Montrose.

'Clupea' sailed from Aberdeen on July 20th at 16.00 and the cruise ended when she returned to port at 9.00 on August 14.

Results

1) Nine fish were taken from the fish trap at the Kinnaber dam, ~~one mile above the high water mark~~ on the North Esk. The fish were taken north, released and subsequently tracked for periods ranging from $\frac{1}{2}$ to 32 hours. Speed and direction of water currents were measured every $\frac{1}{2}$ hour during each track.

In all but one fish, movement through the water was approximately southward. Orientation directly to the mouth of the river North Esk was not very precise however.

As in previous years, fish appeared to follow an approximately straight line swimming course through the water. When they came into contact with river outflow however this behaviour occasionally changed and the salmon swam inshore.

The results will be examined in more detail in a future Scottish Fisheries Research Report along with further transportation experiments. In the second series of these experiments, planned for 1982, fish will be taken from the North Esk and transported south and east.

2) A depth telemetering tag was not available for the trip in 1981. Investigation of the depth at which returning salmon swim was therefore postponed to the 1982 study.

3) The salmon population could not be sampled because, on the three occasions when netting was carried out, no fish were caught. Further, we have yet to recapture a tracked animal using drift nets. This may be due, at least in part to the difficulty in manoeuvring 'Clupea' to lay the nets in the path of the animal. Until we use depth telemetering tags however, it is also difficult to estimate the depth at which the salmon are swimming.

Gordon W Smith
20 July 1982

Seen in draft A Mair