

In Confidence - Not to be quoted without prior reference to the Laboratory

RV 'AORA' (Formerly 'LEANDER')

Cruise Report
13-17 August 1984

Objectives

- 1) To make TV and photographic observations on the escape and swimming behaviour of Nephrops to various types and orientations of ground rope.
- 2) To study the orientation of Nephrops in relation to tidal currents.
- 3) To obtain estimates of Nephrops density and size composition in different parts of the Clyde.

Narrative

Scientific staff travelled to Wemyss Bay on 12 August and joined RV 'AORA' at Millport early the following morning. The Aanderaa current meter frame and mooring was prepared and shot in Loch Striven in 30 fathoms depth at position 55° 55.30'N, 05° 03.35'W. The vessel then returned to Millport where the TV and Hassalblad cameras were mounted on the beam sledge. The sledge was then tested on grounds South of Little Cumbrae Island before returning to Millport.

On the following day Dr D M Neil (Glasgow University) and Dr R J A Atkinson (Millport) joined the vessel for one day.

Seventeen runs with the sledge were made during the cruise, mostly in Loch Striven. A few runs were carried out in the main Cumbrae-Bute Channel.

The current meter was raised on the morning of 17 August and the vessel then returned to Millport where the cruise ended at 14.30 hrs. The equipment was then off-loaded and scientific staff returned to Aberdeen on 18 August.

Results

- 1) Observations were made on Nephrops reacting to a chain ground rope **stretched** between the skids of the sledge. The TV camera was mounted vertically and the Hassalblad camera viewed obliquely **down from** one side of the sledge. In some runs a wooden beam was mounted along **one of** the sledge skids, projecting forwards so that the **affect** would be studied of angling the chain at 45° to the direction of tow.

Altogether 15 hours of video recordings were made and these are being analysed to show the orientation of Nephrops to the chain. 126 colour and 48 black/white photographs were taken with the Hassalblad camera.
- 2) Runs were made with and against the tide so that the possible orientation of Nephrops to the current could be determined. Current speeds in Loch Striven were weak, ranging from 0-9 cm/sec but a preliminary analysis of the video tapes suggest that most Nephrops were orientated tail on to the current. More detailed statistical analyses are being carried out.

- 3) The video tapes will be analysed later to give further information on the density of Nephrops burrows.

C J Chapman
P Newland
10 September 1984