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FRV "G A Reay"

MB

Charter

REPORT

1 - 22 October 1984

Personnel

J I Edwards	SSO	1-14 October (Officer In Charge)
M Walsh	SSO	
E Armstrong	SO	
A N Other		
I MacDonald	TRS	15-22 October (Officer In Charge)
P Hill	TRS	

Objectives

- 1 To carry out an echo-integration survey for mackerel in the Minch and off the North coast of Scotland.
- 2 To capture mackerel for identification and experimental work (TRS).
- 3 To collect acoustic data from each consecutive transmission for subsequent detailed analyses.

General

"G A Reay" arrived in Aberdeen at 1400 on Sunday the 30 September. The electronic and acoustic equipment were then installed, the task being completed by 2000 on the 1 October. The "G A Reay" then sailed for Loch Eriboll arriving at 1130 on the 2 October, where the acoustic equipment was calibrated. However the calibration was not totally successful, strong winds combined with fish in the vicinity of the standard target resulted in high standard deviations.

The survey commenced at 1100 on the 3 October with a trial trawl haul being made at 1400. The ship then detoured to drop J Marr at Scrabster. A cable fault was discovered at approximately 0900 on the 4 October, the cable being replaced with a spare. A second trawl haul on a large mark (58° 20' N 05° 20' N) captured 4 baskets of horse mackerel. The survey continued in the Minch and off the North coast with a break for bad weather which was combined with a further acoustic calibration on the 6 October. The survey then concentrated in the area to the west of Orkney Islands, (59° 00' N to 59° 15' N and 03° 45' to 04° 05' W). Dense echotraces were located off the west coast of Papa Westray on 7 October but trawling revealed these to be sprats.

Poor weather condition forced "G A Reay" to shelter in Loch Eriboll on the 8 October, where problems with the windlass motor delayed departure and forced an unscheduled stop at Ullapool to collect an electrical engineer. The windlass motor was eventually landed at Ullapool for repair, thus effectively preventing further acoustic calibrations. "G A Reay" sailed from Ullapool at 2300 on the 11 October and steamed directly to the area in which the commercial fleet was operating. At 1900 on the 12 October a large fleet of commercial vessels

(approximately 60) was located fishing in a very small area, this area appeared to contain a concentration of mackerel marks, but could not however be surveyed in an entirely satisfactory manner because of tight packing by the fleet over the mackerel shoals.

The survey grid was continued until 0930 on the 13 October when weather conditions deteriorated and a second cable fault became evident. The fault was repaired and the survey resumed at 1740 and continued until the "G A Reay" called at Scrabster to drop Mr Edwards at 0745 on the 15 October. During this period a number of mackerel echotraces were observed and measured. The "G A Reay" then steamed back to the area where the fishing fleet was working but persistent problems with the electrical towing cables prevented further acoustic surveys.

Results

Eleven trawl hauls were made, the mackerel captured having a similar size distribution to the commercial landings caught in the same area and at the same time. The size range of fish captured was 10 to 43cm (but predominately in the range 31 to 43cm) with a modal size of 35cm. The dominant age being the 1981 year class. All the mackerel were located in a relatively small area to the west of Orkney Islands (59°00'N to 59°15'N and 03°45'W to 04°05'W) the area being close to the 100m contour line. No mackerel were located in the Minch. Acoustic data on mackerel shoal size were collected on both an analogue chart recorder and in digital form on magnetic tape, which will be analysed at a later date. The samples taken with the midwater trawl adequately identified fish concentrations on 7 out of the 11 occasions when the trawl was shot, with catches ranging from a few baskets to 6 tonnes.

J I Edwards

15 February 1985

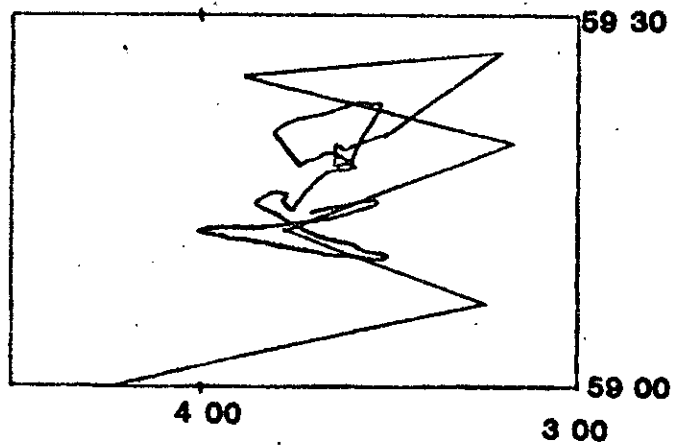
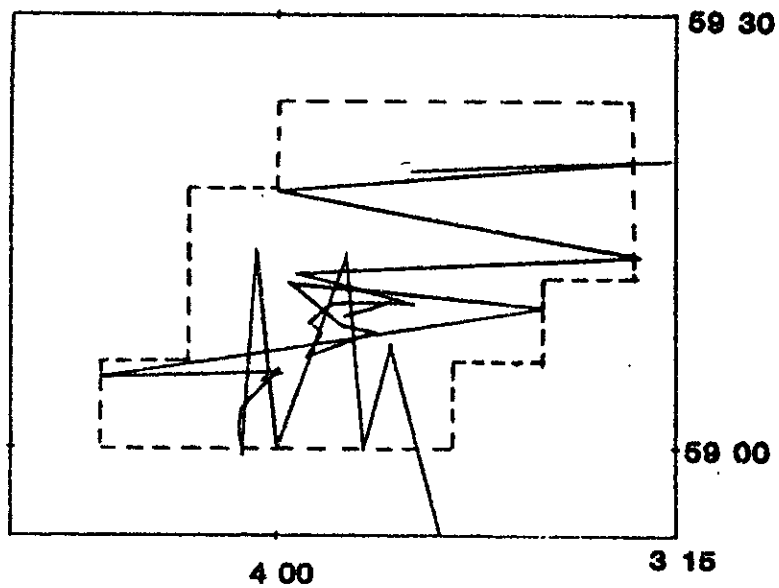
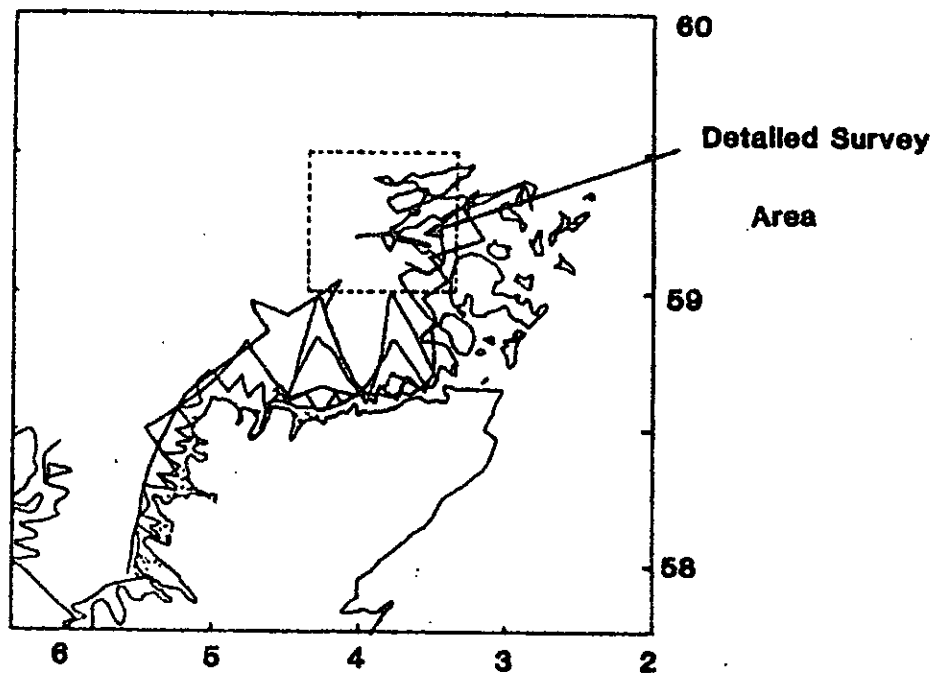


Fig 1. Initial Survey Grid and subsequent detailed surveys. "G A Reay" 1 to 22 October 1985.