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9CR86

FRV "Clupea"
Cruise 9/86

Report

23 July - 1 August 1986

Personnel

F G Howard	HSO
K A Ballantyne	SO
K MacKenzie (Jnr)	ASO
M A Ngoile (Visitor)	

Objectives

- 1 To determine trawl catch rates and Nephrops size and sex composition on grounds in the North and South Minches, and the Moray Firth.
- 2 To study variations in Nephrops catch at different times of the day and night.
- 3 To study Nephrops distribution and population parameters in relation to sediment characteristics.

Narrative

Equipment was loaded and the scientific staff joined "Clupea" at Buckie on 23 July. The ship left Buckie at 1530 that day, and proceeded directly to trawling grounds in the North Minch. Trawling operations commenced on grounds off Gairloch on 24 July, but extremely strong tides hampered the work. "Clupea" then steamed south to the South Minch and a programme of trawling was started south east of Eigg on 25 July. Seven trawl hauls were made on these grounds, before "Clupea" left to return to the North Minch. Eleven hauls were made on grounds here between 27 July and 29 July, when "Clupea" left the area and steamed for the Moray Firth. Sediment samples were obtained by grabbing from 2 stations along the track of each trawl station in the North and South Minches. "Clupea" arrived in the Moray Firth on 30 July, and one trawl haul was made before docking at Buckie at 2030 that day.

Strong northerly gales on 31 July prevented any work, and the gear was off-loaded and staff left the ship on 1 August.

Mr Ngoile of Aberdeen University joined the cruise in order to obtain samples of Cephalopods.

Results

The study of diel variation in Nephrops catch rates was conducted at 2 sites, one a shallow water site (60 m) south east of Eigg; the other a deep water site (155 m) off Gairloch. Seven, half hour trawl hauls were made at Eigg, and 8 at Gairloch. Peak catches at the shallow water site occurred about 3½ hours after sunrise (120 kg/hr) and about 2½ hours before sunset (126 kg/hr). At the deep water site, the peak catch was made 5½ hours after sunrise (27 kg/hr). Catch rates at Eigg varied from 6 kg/hr to 126 kg/hr, and at Gairloch from 3.6 to 27 kg/hr.

A diel variation in the mean carapace length was noted in catches at Eigg. The lowest mean size was found around midday, and the highest mean occurred one hour before sunrise. No significant variation was noted in catches off Gairloch.

In the North Minch, a further six, one hour hauls were made at different grounds; catch rates varied from 1.2 to 34.5 kg/hr. One haul of one hour was made in the Moray Firth (35 kg/hr).

In all areas, the ratio of males to females was about 40:60.

Samples of the catches from each ground were analysed to determine ovary maturity stages, and for evidence of pre-moult frequency.

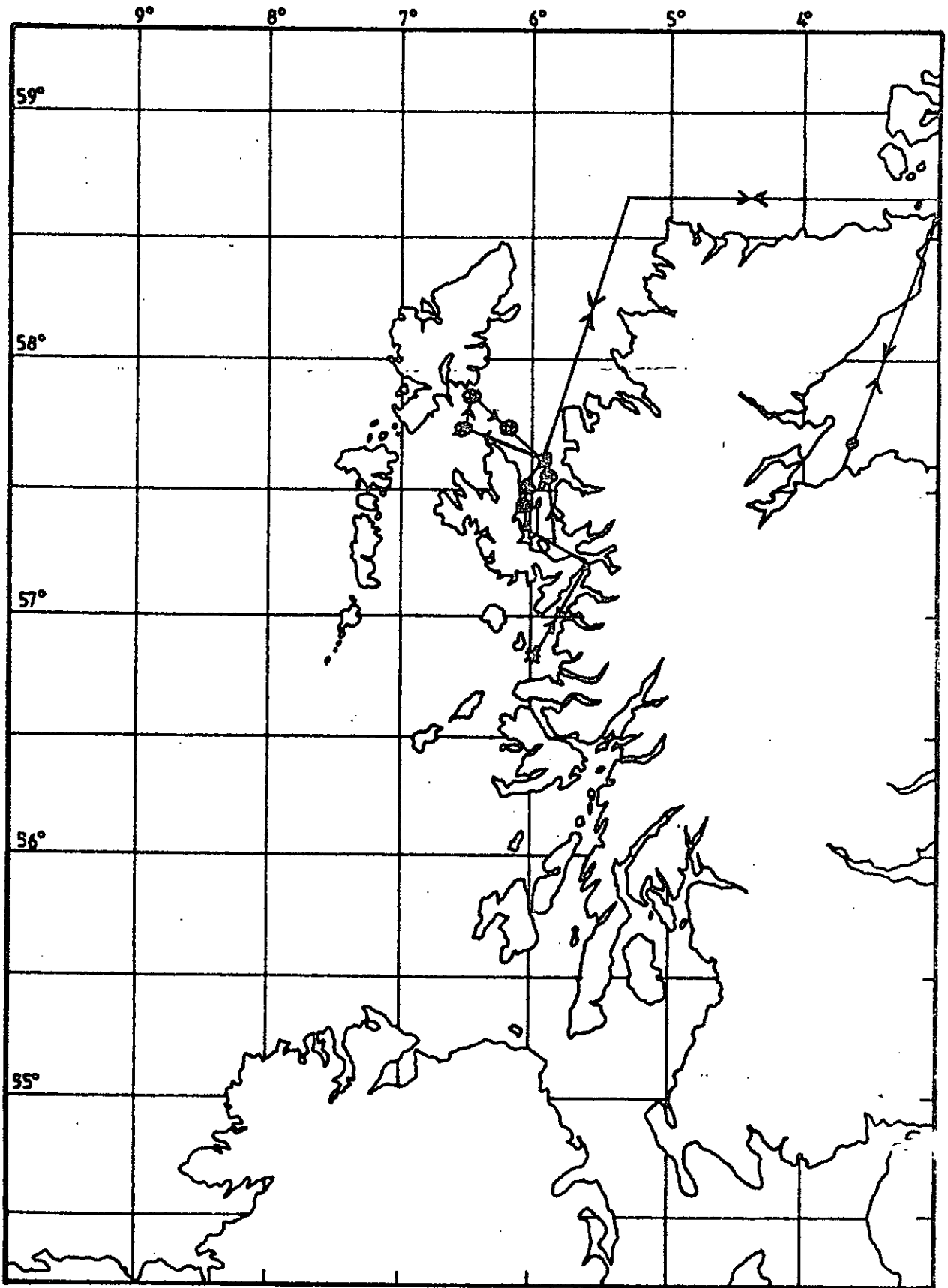
Sediment samples were obtained from all trawl positions on the west coast, and sent for organic carbon and particle size determination. Samples were also preserved for macro- and meio-fauna analysis.

Various species of Cephalopods were preserved for later analysis.





F G Howard
15 August 1986

Seen in draft: W Saith

CLUPEA 23 JULY - 1 AUGUST 1986



KEY

-  Shallow water site: Trawl and grab
-  Deep water site: Trawl and grab
-  Trawl and grab station
-  Trawl station