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FRV "Clupea"
Cruise 5/86

5CR86

Report

PB

2-22 April 1986

Personnel

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Objectives

- 1 To determine trawl catch rates and Nephrops size and sex composition on grounds in the Clyde, South and North Minches.
- 2 To obtain underwater television and photographic records of Nephrops burrows in the same areas.
- 3 To study variations in Nephrops catch at different times of the day and night.
- 4 To study Nephrops distribution and population parameters in relation to sediment characteristics.
- 5 To determine trawl catch rates and Pandalus size and sex composition on the Fladen grounds.
- 6 To observe Pandalus and its reaction to trawl gear.
- 7 To take sediment samples for pollution analysis in the Upper Clyde.

Narrative

Equipment was loaded, and the scientific staff joined "Clupea" at Greenock on 2 April, and the vessel sailed from there at 1730 hrs. Objective 7 having been rescheduled to take place at a later date on "Scotia", "Clupea" proceeded to trawling grounds off Campbeltown. Following a series of half-hour hauls using the 22 mm Prawn trawl (BT118A) throughout a 24 hour period, "Clupea" then proceeded with a programme of trawling, photographic survey and grab sampling at 5 other stations in the Clyde. On 7 April, "Clupea" proceeded into the Sound of Jura, and after sampling one station off Gigha steamed for Oban.

Leaving Oban on the 9th April, a further series of half-hour hauls were undertaken off Loch Boisdale throughout a 24 hour period, and the full sampling programme undertaken at 4 other stations in the South Minch. On 12 April, "Clupea" proceeded into the North Minch, and after surveying one station off Gairloch headed for Buckie.

At Buckie, the camera equipment was off-loaded, and the RCTV taken on board and rigged. Easterly gales prevented "Clupea" leaving Buckie until 17 April, and due to the adverse weather conditions Objectives 5 and 6 were abandoned. Instead, a programme of sampling and gear observation using the RCTV was undertaken in the Moray Firth. The cruise ended at Buckie on 22 April.

Results

- a) Trawling: A total of 33 hauls were made using the 22 mm Prawn trawl. Eight of these were made at a shallow water station off Campbeltown, and 8 at a deep water station off Loch Boisdale, in order to determine the variation in Nephrops catch rates with time and depth. Catch rates on the shallow water (50 m) site varied from 0 kg/hr throughout the daylight hours to 12.5 kg/hr at night. In the deeper water (140 m) the catch rate varied from 1.6 kg/hr at dawn to 30.0 kg/hr in mid-morning. Little diel variation in the mean size of Nephrops was found on the shallow water station, but some diel variation in mean size was found on the deep water ground. The mean size was smallest in catches taken around dawn.

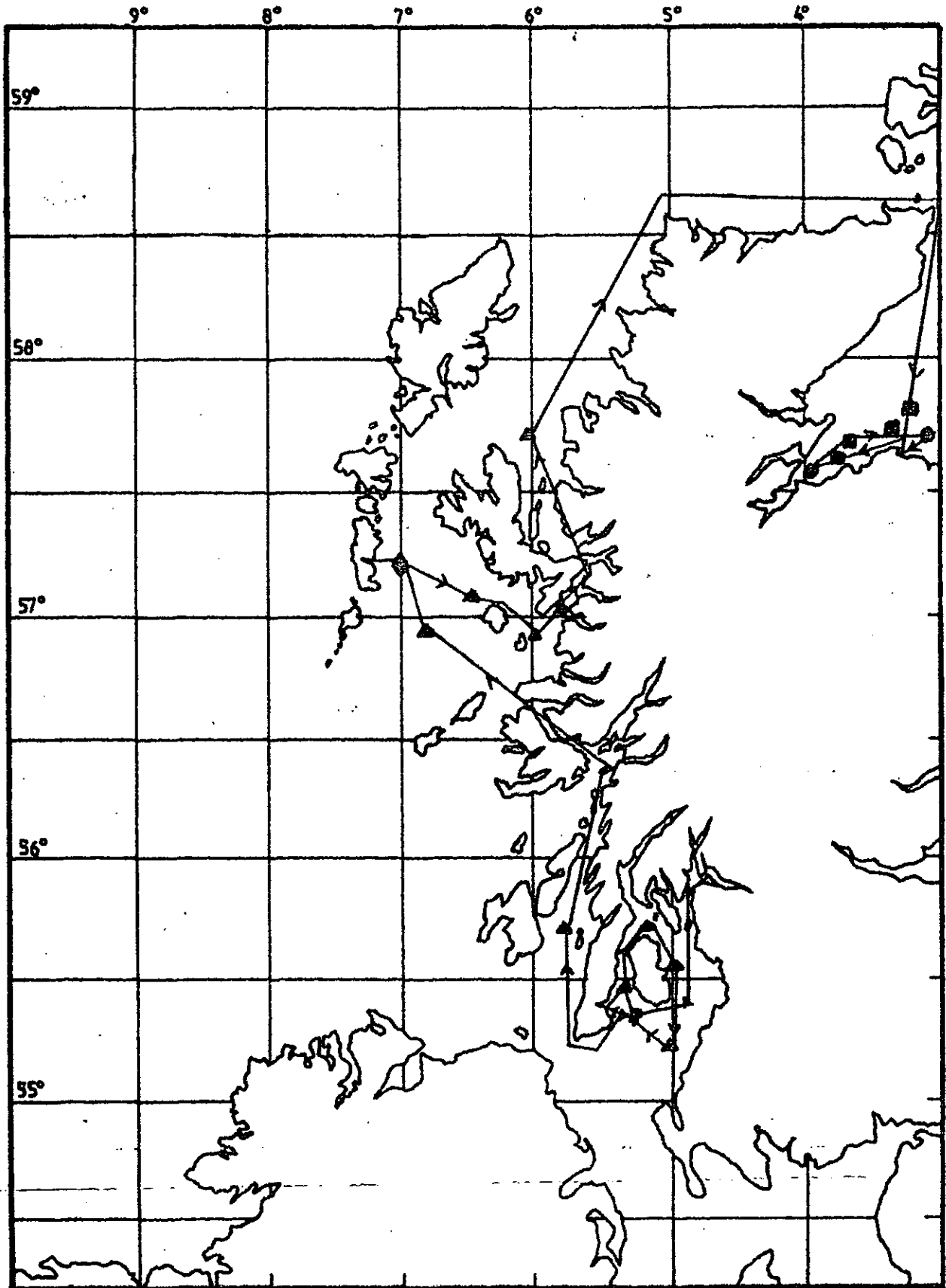
On other grounds on the west coast, Nephrops catches varied from 6 to 109 kg/hr.

On Moray Firth grounds Nephrops catches were very poor, a maximum of 5 kg/hr being taken.

Samples of Nephrops from all grounds were examined for ovary maturation and for evidence of pre-moult frequency.

- b) Camera survey: The towed underwater sledge mounted with TV and still cameras was used to survey a line on each trawl station on the west coast. Records of burrow density and Nephrops activity were made.
- c) Grab sampling: Thirty grab samples were obtained, 2 from each trawl station. Sediment samples were despatched for particle size and organic carbon determination and samples preserved for faunal analysis.
- d) Shrimp trawl/RCTV: Four runs were made using the RCTV in the Moray Firth. Visibility was very poor due to 'growth' in the water, but film of the shrimp trawl in operation was obtained.

F G Howard
27 June 1986



KEY

- * Shallow water site: Prawn trawl, grab and TV.
- ◆ Deep water site: Prawn trawl, grab and TV.
- ▲ Trawl station, grab and TV.
- Shrimp trawl and RCTV and grab.
- Prawn trawl and grab.