

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

FRV "Clupea"

LD

Cruise 1/85

Report

11-24 February 1985

Personnel

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Objectives

1. To test a 20fm Nephrops trawl fitted with separator panel.
2. To determine catch rates, size composition and maturity of Nephrops in small and standard mesh trawls in the Moray Firth and North Minch.
3. To determine catch rates and species composition of fish by-catches in these areas.
4. To study growth of Nephrops in different parts of the Moray Firth and North Minch.
5. To determine the incidence of the Nephrops gut parasite Stichocotyle nephropis in these areas.
6. To obtain mud samples for particle size, shear stress, organic carbon and faunal analysis.

Narrative

The start of the cruise was delayed owing to a problem with the vessel's propeller which developed at the end of "Clupea's" refit. "Clupea" left Aberdeen on 16 January and proceeded to the Moray Firth. Because of the delayed start, the programme of work in the North Minch was cancelled. Bad weather further delayed the programme, and trawling did not commence until 18 January, when the separator trawl was shot. Divers went down to observe the net's operation, but visibility was so poor the attempt was abandoned. All further trawling was carried out using the small mesh 20fm Nephrops trawl BT118A. Grab samples were taken at 2 stations along the line of each trawl station. Two further days were lost because of gale force winds, and the cruise ended at Buckie on 24 January.

## Results

The separator trawl was shot off Nairn, very bad visibility made diving observations on the net's action impossible, and therefore the trials were abandoned. Using the small mesh net BT118A, 6 hauls were made on 5 known Nephrops grounds between Buckie and Nairn. Catch rates of Nephrops ranged from 3.6 to 110.0kg/hr the mean catch rate being 32.0kg/hr. The size and sex composition of these catches is shown in Table 1. Juvenile fish were taken in large quantities in every haul, whiting and herring predominated. The total weight of each of the main species caught was herring 1700kg, whiting 870kg, haddock 68kg, lemon sole 19kg, long rough dab 27kg. Young plaice were also taken in small quantities, these were kept alive, and transported to Loch Ewe.

Pleopods from a sample of Nephrops taken from each haul were examined microscopically for evidence of moulting. The proportions of Nephrops in pre-moult stages are shown in Table 2. Female Nephrops were further examined to determine the ovary stage.

Nephrops were also examined for the gut parasite Stichocotyle nephropis, no evidence of the parasite was found.

Two samples of mud were collected along the line of each trawl station for particle size, organic carbon and faunal analysis.

Water samples for radio-caesium analysis were collected off Aberdeen and Buckie.

F G Howard

11 February 1985

Seen in draft: James A Calder

**TABLE 1**

**SIZE AND SEX COMPOSITON OF NEPHROPS CATCHES IN THE MORAY FIRTH**

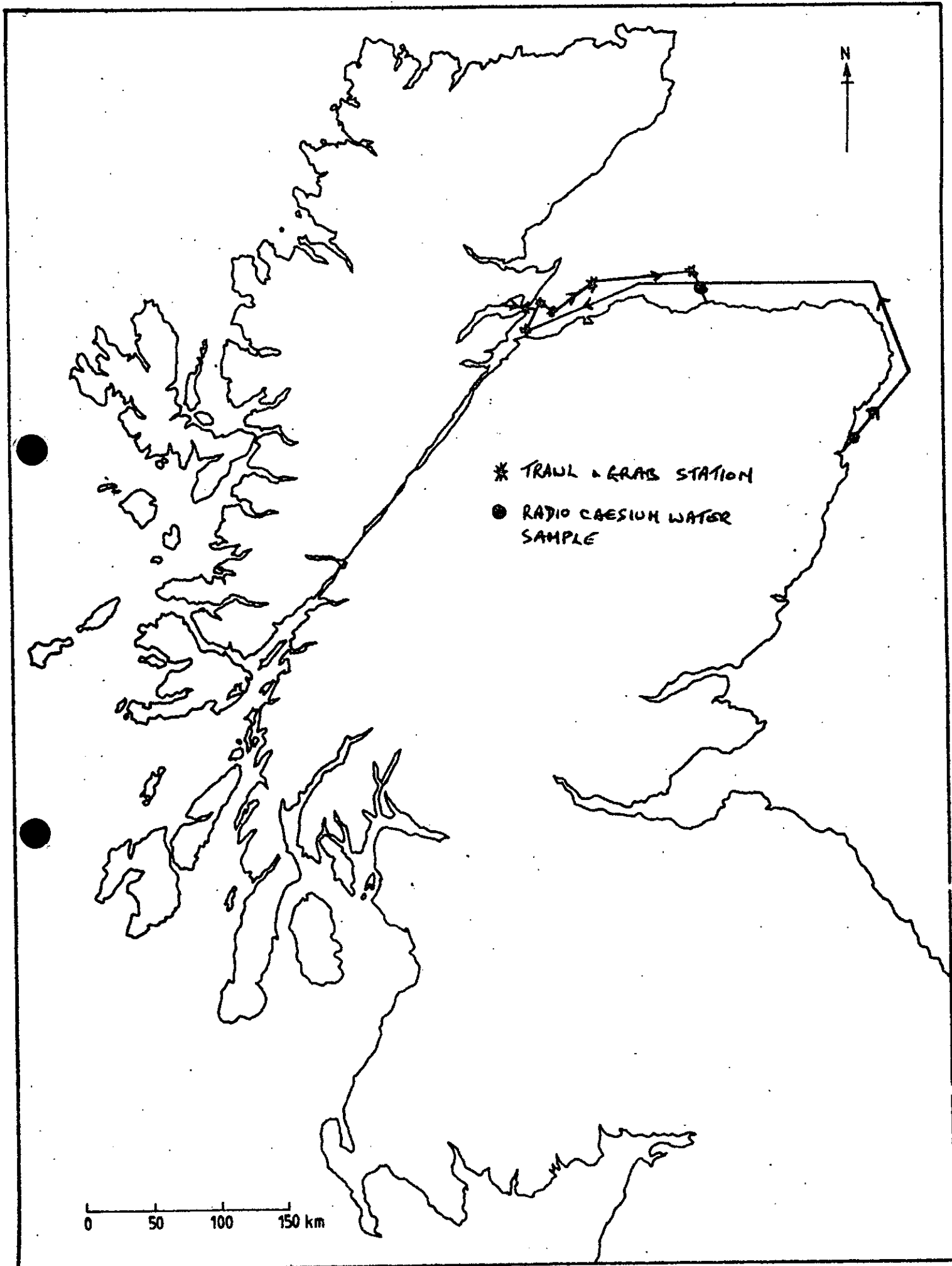
Carapace Length mm    10-14    15-19    20-24    25-29    30-34    35-39    40-44    45-49    50-54    55-59    60-64    Total

Ground Nairn:	Total catch 46.8kg; Sample 12.5kg											
Males	1	99	162	205	92	21	10	2	1			593
Females		122	162	134	5	2						425
Barrows:	Total catch 15.5kg; Sample 15.5kg											
Males		35	52	117	90	87	46	19	7	3	1	457
Females		36	41	60	9	5	1					152
Forres Hole:	Total catch 3.6kg; Sample 3.6kg											
Males		10	37	85	25	12	2					171
Females	1	12	33	47	6							99
Shads:	Total catch 110.0kg; Sample 14.0kg											
Males		1	18	134	112	90	21					376
Females		2	29	81	21	17	4					154
South Deeps:	Total catch 16.0kg; Sample 16.0kg											
Males		1	10	158	198	130	22	3				522
Females		2	11	56	21	2						92

TABLE 2

PROPORTIONS OF NEPHROPS IN PRE-MOULT STAGES. MORAY FIRTH

Ground	Nairn	Barrows	Forres Hole	Shads	South Deep
Males	8.5%	10.7%	11.4%	7.8%	11.6%
Females	7.6%	7.9%	6.0%	6.1%	3.6%



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