

R1/10

In Confidence: Not to be quoted without reference to the Laboratory

FRV "Goldseeker"  
Cruise 8/85

Report

29 May - 12 June 1985

Personnel

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Objectives

- 1) To determine catch rates, size composition and maturity of Nephrops in small and large mesh trawls in the Firth of Forth.
- 2) To study growth of Nephrops in different parts of the Forth.
- 3) To obtain mud samples on the grounds for particle size, organic carbon and faunal analysis.

Narrative

Scientific staff joined "Goldseeker" at Leith on 29 May. After loading its gear and taking on stores, "Goldseeker" left Leith to take on water at Granton before sailing to grounds SSE May Island. Trawling commenced the following day and continued until 4 June when "Goldseeker" returned to Leith for the half landing. In addition to the May Island grounds trawling was carried out in the vicinity of Bass Rock and Fidra and on the "Buckers" and "Braes" grounds. During the second half of the cruise trawling was carried out west of May Island, off Dunbar and Craig Leith and in Aberlady Bay. In addition repeat tows were made on the most productive grounds located on the first half of the cruise. One trawling station was omitted due to heavy swell conditions.

On 10 June, mud samples were collected from the most productive grounds, "Goldseeker" then left the Firth of Forth and proceeded to Aberdeen. Water samples for radio-caesium analysis were collected off Arbroath and "Goldseeker" docked in Aberdeen at 1100hrs on 11 June. Scientific staff left the ship in Aberdeen. The ship docked at Peterhead overnight before arriving at Buckie on 18 June. Gear was offloaded at the start of the next cruise on 19 June.

Results

1) Trawling

A total of 21 trawl samples were taken from the grounds, 10 using a small mesh net (B 126D). The tows were timed to coincide with peak emergence times of Nephrops, established from previous work. On 2 occasions extra trawls were conducted during the night.

The catches from the outer Firth of Forth grounds were consistently very poor, however Nephrops started to come "on" in the "Buckers", "Braes", and "Aberlady Bay" areas.

The length composition of catches is summarised in Table.1. Fish by-catch species were recorded.

## 2) Growth

Nephrops pleopods were examined microscopically to determine moult-stage. This information will be used in conjunction with length/frequency data from the catches to give indication of growth rate. Some information on the proportion of pre-moult Nephrops in the catches is summarised in Table 2.

## 3) Grab Sampling

Two grab samples were taken from the most productive trawling areas (ie "Braes" "Buckers" and Aberlady Bay). A sample of mud was taken for particle size and organic carbon analyses. A core was taken from each grab sample and preserved for meiofauna and the remainder was sieved through 0.5mm mesh to retain the macro fauna.

K Ballantyne

24 June 1985

Seen in draft: A Mair

TABLE 1

Size and sex composition of Nephrops (all hauls combined for each net)

Carapace length mm	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	Mean
Small mesh (hrs fishing = 9 hrs 4 min)											
Male	4	14	143	634	694	265	123	45	10		31.3
Female	2	14	71	225	135	40	18	5	1		29.0
Total	6	28	214	859	829	305	141	50	11		30.8
Lar Mesh hrs = 9 hrs 37 mins											
Male	2	1	32	318	635	476	260	99	18	3	
Female	0	3	22	169	232	84	44	14	1	1	
Total	2	4	54	487	867	560	306	113	19	4	

TABLE 2

Numbers and percentage of Nephrops in pre-moult stages

Cl range	<u>MALE</u> Total Sample	No in pre-moult	% pre moult	<u>FEMALE</u> Total in sample	No in pre moult	% pre moult
<20	14	10	71.4	25	15	60.0
21-30	500	106	21.2	426	45	10.6
31-40	808	64	7.9	323	12	3.7
41-50	198	5	2.5	40	1	2.5
>50	10	0	0	0	0	0

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