

IN CONFIDENCE: Not to be quoted without reference to the laboratory

R1/10

FRV "GOLDSEEKER"

10GR78

JG

CRUISE 10/78

REPORT

1-17 NOVEMBER 1978

Objectives

1. To compare quantity, size and sex composition of Nephrops catches and fish by-catch using different mesh-size codends. (60 and 80mm nominal mesh) on a standard Nephrops trawl.
2. To assess predation on Nephrops by examination of fish stomachs.
3. To look for incidence of the gut parasite Stichocotyle nephropis in Nephrops.

Narrative

Fishing commenced on 1 November and was carried out on the Firth of Forth Nephrops grounds, mainly between the Bass Rock and Fidra. Times of trawling, as far as possible, coincided with those of the local fleet.

Five days fishing were lost owing to severe Westerly gales. The cruise ended in Leith on 17 November.

Methods

Hauls of one and a half hours' duration were made where possible. Each cod-end was fished on alternate days. Large catches of Nephrops were sub-sampled by weight, but whenever possible the total catch was measured.

Results

Size and sex composition and mean carapace lengths of Nephrops caught are shown in the attached tables. Catches of cod were good. Whiting, Long Rough Dab and Common Dab were present in all the hauls but only in small quantities. Cod were the only fish species of commercial size.

230 cod stomachs were examined of which 34.3% contained Nephrops remains. The presence of specimens <15mm in carapace length (22.4%) is particularly interesting. The size composition of the Nephrops contained in the stomachs is shown in the attached table.

No Stichocotyle nephropis was found in any of the Nephrops guts examined.

Catch composition of Nephrops shows no difference between the 60 and 80mm cod-ends after allowance has been made for the variance in N^o caught/Hr for both cod-ends.

Note:- From 20 - 22 November further successful trials were carried out using the remote controlled television vehicle.

JAMES KINNEAR
8 December 1978

Seen in draft: W B Reid

60mm - Codend

Carapace length mm		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	N ^o Hours Fishing = 7.5 TOTAL
♂	N ^o	226	1370	3399	2282	770	204	88	17	6	
	%	2.7	16.4	40.7	27.3	9.2	2.4	1.0	0.2	0.1	Mean CL = 28.8mm
♀	N ^o	253	1436	2563	765	314	39	33	6	-	5409
	%	4.7	26.6	47.4	14.2	5.8	0.7	0.6	0.1	-	Mean CL = 26.8mm

80mm - Codend

Carapace length mm		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	N ^o Hours Fishing = 11.5 TOTAL
♂	N ^o	290	1259	3536	2571	787	190	58	4	-	
	%	3.3	14.5	40.7	29.6	9.1	2.2	0.7	0.1	-	Mean CL = 28.7mm
♀	N ^o	339	1553	2459	766	294	41	17	25	4	5498
	%	6.2	28.3	44.8	13.9	5.4	0.7	0.3	0.5	0.1	Mean CL = 26.0mm

% ♀ Berried = 0.9

% ♀ soft = 0.6

60mm Codend Average Weight of Nephrops caught/1 hour fishing = 36.7 Kg
 80mm " " " " " " " " = 25.2 Kg

Mean mesh measurements of Codends Nominal 60 = 58.5mm
 " " " " Net " 70 = 65.0mm
 " " " " " " " " " " " " = 80.4mm

Size Composition of Nephrops in Cod stomachs

CL mm	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Size range of cod 21-65cms
N ^o	10	3	17	10	14	3	-	1	-	
%	17.2	5.2	29.3	17.2	24.1	5.2	-	1.7	-	