

R1/10

AMM

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

FRV "Goldseeker"

11GR81

Cruise 11/81

REPORT

29 September - 15 October (see note below)

Objectives

- 1 To sample Nephrops populations in the Clyde and Sound of Jura.
- 2 To investigate aspects of Nephrops growth.
- 3 To study feeding of Nephrops from analysis of gut contents.
- 4 To investigate predation on Nephrops by analysis of fish stomachs.

Note

After the commencement of this cruise it was discovered that the Caledonian Canal was scheduled to close for repairs at the end of October and also that the Crinan Canal had already closed. It meant that this programme and that for the next cruise had to be changed. The vessel was unable to reach the Clyde and work in the Sound of Jura was hampered because the sea loch at Crinan was closed. In the circumstances it was decided to terminate this programme on 9 October so that the next cruise (12/81) could be fitted in before closure of the Caledonian Canal.

Narrative

"Goldseeker" left Buckie on 29 September and reached Crinan on 5 October after the passage was delayed by bad weather. Some trawling was carried out NW of Gigha on 6 October before deteriorating weather forced the vessel to steam to Oban. On 8 October more trawling was carried out in the Lynn of Morvern. The cruise terminated at Corpach on 9 October.

Results

1 Trawling

The new 22 mm mesh Nephrops trawl performed very well and caught large numbers of small Nephrops. A single 15 minute haul in the Sound of Jura caught nearly 1000 Nephrops, the majority being below 30 mm CL. Females accounted for 48.5% of the catch and of these only two individuals were berried.

In the Lynn of Morvern a high proportion of males (51%) were greater than 30 mm CL. Females accounted for 52% of the catch and of these 22% were berried. A summary of the catches in each area is given in Table I.

2 Growth

No cage experiments were carried out but some information on growth was obtained from the appearance of modes corresponding to year-classes in the length compositions. In the Sound of Jura there was a peak at 15 mm CL in both males and females (probable age 1+) with another peak for females at 20-21 mm (age 2+). The corresponding peak for males appeared to be bimodal which might indicate the beginning of a moulting period with animals at pre- and post-moult lengths. Similar modes were obtained in the Lynn of Morvern with a third peak at 28-30 mm. The length composition of the catches indicating probable year-classes is given in Table II.

In the Sound of Jura 1.6% of males and 2.3% of females were in post-moult (soft) condition. Microscopic examination of the pleopods revealed epidermal retraction (indicating pre-moult preparation) in 2% of males (sample size 149) and in 3.2% of females (123). These animals would be expected to moult in November.

3 Nephrops feeding

88% of foreguts examined were less than $\frac{1}{4}$ full. Abra sp. remains were the most common food items, present in 68% of foreguts. Remains of Nephrops, Calocaris, various polychaetes and meiofaunal species were present to a lesser extent.

4 Predation

In the Sound of Jura the fish by-catch consisted of large numbers of small pout, poor cod and whiting (length less than 10 cm). There were few fish in the area capable of preying on Nephrops.

Seen in draft: W B Reid

N Bailey
C Chapman

29 April 1982

TABLE I Summary of Nephrops catch per 15 minute hauls
A Sound of Jura, B Lynn of Morvern

	Numbers per 5 mm CL group							Total	% Soft	% Berried
	10-14	15-19	20-24	25-29	30-34	35-39	>40			
A Males	3	68	288	121	23	2	5	510	1.6	-
Females	4	126	294	55	2	-	-	481	2.3	0.4
B Males	1	13	27	58	77	49	13	238	4.6	-
Females	1	10	24	106	98	13	2	254	2.0	22.0

TABLE II Length composition of Nephrops (males and females combined)
indicating modes corresponding to year-classes (marked by *)

CL (mm)	Sound of Jura	Lynn of Morvern
14	4	2
15	19 *1+	3
16	12	7 *1+
17	26	4
18	54	3
19	83	6
20	153 *2+	5
21	132	14 *2+
22	121	12
23	99	9
24	77	11
25	67	17
26	43	34
27	30	32
28	21	48)
29	15	33) *3+
30	9	54)
31	6	34
32	5	30
33	3	28
34	2	29
35	0	25