

NOT TO BE QUOTED WITHOUT REFERENCE TO THE LABORATORY

R1/10

6GP80

IN CONFIDENCE

HJT

FRV 'GOLDSEEKER'

CRUISE 6/80

REPORT:

6-29 May 1980

OBJECTIVES:

- (1) To study distribution and density of Nephrops in the Sound of Jura and Clyde.
- (2) To make observations on the size composition of Nephrops stocks in relation to density.
- (3) To measure selectivity of a 70mm Nephrops trawl.
- (4) To measure moult increments in growth of Nephrops.

NARRATIVE:

'Goldseeker' left Buckie on 6th May and made a good passage via the Caledonian Canal, arriving in Oban on 8 May. Equipment was loaded on board and scientific staff joined the vessel the following day. Preliminary trials with the camera sledge were carried at near Oban and in the Lynn of Morven (56°30'N, 05°35'W). The vessel proceeded to the Sound of Jura on 14 May but underwater visibility in this area was poor so it was decided to continue working in the Lynn of Morven. On 21 May 'Goldseeker' proceeded to the Clyde, via the Crinan Canal, and worked off the Little Cumbrae (55°42'N, 04°57'W) for the remainder of the cruise. The cruise terminated at Troon on 28 May.

RESULTS:

(1) TV and still camera observations

The camera sledge, modified to accommodate the Hasselblad camera in a vertical position, handled very well. 15 video tapes and 515 colour photographs were taken of Nephrops and the sea bed. These will be analysed in the Laboratory to give information on burrow density and Nephrops size composition. The density of burrows was particularly high in the Lynn of Morven. Many burrows appeared to be of Calocaris but Nephrops burrows were also abundant. Several burrows were occupied by the Echiuroid, Maxmülleria lankesteri. At times, the underwater visibility off Little Cumbrae was poor, probably due to disturbance of the sea bed caused by commercial vessels trawling in the vicinity.

(2) Growth studies

Nephrops, adjudged from their colour and pleopod condition to be in the pre-moult stage were placed in cages on the sea bed. Three cages containing 52 Nephrops were set up in the Lynn of Morven on 19 and 20 May

and four cages containing 70 Nephrops were laid off the Little Cumbrae on 27 and 28 May. All seven cages were marked by dahns and left in the sea at the end of the cruise.

(3) Trawling

A few hauls were made in the Lynn of Morven and off Little Cumbrae to provide animals for the growth experiments. Once the photographs and video tapes have been analysed it should be possible to compare the size composition and density of Nephrops with the catches to obtain an indication of the efficiency and selectivity of the trawl. A summary of the catch composition is given in Table I. For the Lynn of Morven females accounted for 56% of the total catch and 15% were berried. Off the Little Cumbrae only 15% of the catch were females, none of which were berried.

Table I Numbers and composition of Nephrops in trawl catches.

(A) Lynn of Morven (2 hours fishing)

Carapace length range (mm)	10/14	15/19	20/24	25/29	30/34	35/39	40/44	45/49	50/54	Total
Males	1	3	221	456	357	171	61	15	4	1289
Females	-	20	284	810	421	104	17	4	-	1660

(B) South of Little Cumbrae (1½ hours fishing)

Carapace length range (mm)	20/24	25/29	30/34	35/39	40/44	45/49	50/54	55/59	60/64	Total
Males	6	62	276	388	315	148	24	13	8	1240
Females	-	97	72	11	14	20	5	2	-	221

C J Chapman
19.8.80

Seen in draft: W Smith