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CRUISE REPORT

FRV "GOLDSEEKER"

27 February - 22 March 1973

OBJECTIVES

1. To study the state of scallop and queen stocks in the Firth of Clyde.
2. To study the effects of various tooth-spacings, belly-ring diameters and back-mesh size on the catch of the traditional scallop dredge.
3. To take daily surface temperature readings.
4. If time allows, to investigate the stocks of Nephrops and Pandalus in the Clyde.

NARRATIVE

Staff joined the 'Goldseeker' at Troon on 26 February. Two weeks were devoted to scallop selection experiments from Campbeltown and two weeks to a similar experiment in the East Clyde and to completing a stock survey - the cruise ended at Troon on 22 March.

RESULTS

1. Queen and Scallop Stock Survey

Sixty-one hauls with 4 ft toothed dredges, lined and unlined, were made in the East Clyde. Table 1 shows the stations worked and the percentage age composition of scallops caught. For the areas off Troon and West Kilbride over 90% of the catch had seven or more rings. Catches with the standard dredge with 12 teeth were up to 6 per ft width per hour at West Kilbride and up to 13 per ft width per hour at Troon.

Queens were caught mostly in dredges with fine mesh lining up to 52 in five minutes at West Kilbride with maximum numbers in the 50-59 mm range and up to 207 in five minutes at Troon with peaks at 20-29 mm and 50-59 mm. The scallops caught from areas fished between the Heads of Ayr and Bennane Head showed a wide range of all age groups, 55% having five or fewer rings. Up to 40 scallops per ft width per hour were taken in the 15 minute hauls but very few queens were caught.

Six hauls of 15 minutes duration were made off the west coast of Arran using the 4 ft standard dredge with 12 teeth. Up to 214 queens and 31 scallops per ft width per hour were caught. The scallops showed all age groups from one to more than 9 rings.

2. Scallop Dredge Selection Experiments

An experiment off Lendalfoot was carried out whereby a standard 4 ft dredge with $3\frac{1}{4}$ inch belly rings and $1\frac{1}{2}$ inch bar back mesh and with 12

teeth was compared with a similar dredge lined with $\frac{3}{4}$ inch bar net and with 24 teeth. There was a size selection correlated with belly-ring/net mesh size. The $\frac{3}{4}$ inch belly-ring dredge with 12 teeth caught twice as many scallops as that with the $\frac{3}{4}$ inch bar net and 24 teeth.

A ground off Pluck Point, Kilbrannan Sound was chosen as a suitable area for the main experiment owing to good numbers of scallops with a wide range of ages being present. Four-foot toothed dredges were used with nine combinations of tooth-spacing, belly-ring and bar back mesh, 20 hauls of 5 minutes' duration being made with each.

The results suggest that the size of belly-ring or net-mesh size determined the size composition of scallops retained. For the $\frac{3}{4}$ inch bar net (38 mm stretched diagonal), 98% of the scallops caught had a length 35 mm or greater; for the $\frac{3}{4}$ inch belly-ring (82 mm diameter), 96% 80 mm or more; and for the $\frac{4}{4}$ inch belly-ring (109 mm diameter) 87% were 110 mm or above.

Changes in the number of teeth showed no difference in the size composition of scallops caught for a given belly-ring/net-mesh size, but there was a difference in the total numbers caught. Combinations with 12 teeth caught more scallops than those with either 24 or 9 teeth.

3. Sea Surface Temperature

Daily recordings showed that the sea surface temperatures were within the range of 6.75°C and 7.25°C for the East Clyde and 6.65°C and 7.40°C for Kilbrannan Sound.

4. Nephrops and Pandalus

Time did not allow investigation of the stocks of Nephrops and Pandalus.

A DUNTHORN
17 July 1973

Table 1 Percentage age composition of Scallops caught by 4 ft standard dredge during stock surveys.

	Numbers of Rings										
	0	1	2	3	4	5	6	7	8	9	>9
West Kilbride	-	-	4.5	1	-	2	-	15.5	35	21	21
Lady Isle											
Troon											
Heads of Ayr	-	2	6.5	21	12	16.5	14	8	4.5	3.5	11
Dunure											
Girvan											
Lendalfoot											
Bennane Head	-	7	18	20	7	7	27	8	1	2.5	2.5
West Arran											