

IN CONFIDENCE Not to be quoted without reference to the laboratory

R1/10

8GR78

FRV "GOLDSEEKER"

JG

CRUISE 8/78

REPORT

30 August - 21 September 1978

Objectives

1. To investigate the use of television and still photography in the study of scallop distribution and density and to compare the results with those obtained by dredging and diving.
2. To provide material for the divers based at Tarbert for their study of the survival of scallops taken by the dredge and returned to the sea.
3. To investigate the occurrence of the spat of Pecten maximus and Chlamys opercularis on various substrata.

Narrative

"Goldseeker" left Corpach at 08.00 on 30 August and made a passage to Tarbert, Loch Fyne, arriving at 14.30 on 31 August. Equipment was loaded on the afternoon of the 31st. The television was set up, adjusted and tested on 1st, 2nd and 4th September. Messrs Drinkwater and Priestley left on the evening of the 4th and were replaced by Mr Barkel.

The start of the television survey proper was delayed by strong winds until 6th September. The survey, together with dredging, went on until 16 September, but the programme was badly hit by the weather, three whole days and three part days being lost.

The scientists left Tarbert on 17 September. "Goldseeker" left on the morning of the 18th to make a passage to Buckie, where she arrived on the 21st.

Results

1. Scallop survey

An area 1200 x 100m at Claonaig, with its long axis parallel to the shore, was buoyed off and surveyed by divers before the "Goldseeker" cruise. Divers searched for scallops (Pecten maximus) on twenty five transects of the sea bed, each 2m wide, at right angles to the shore. The marked area was then surveyed by means of a television camera mounted on a specially designed sledge towed by "Goldseeker". Five runs, 25m apart, were carried out over the whole length of the area, the width of the strip of sea bed observed being 0.8m. Hauls using two 4ft (1.2m) standard toothed dredges were made, following as far as possible the lines of the television survey. The numbers of scallops

observed by divers and television or caught by dredge, together with the area of sea bed covered are shown in the Table.

	Area covered (m ²)	No of scallops	No per 100m ²	Efficiency (%)
Divers	5000	370	7.40	100
TV	4800	129	2.68	36
Dredges	11520	154	1.33	18

Assuming that the divers observed all the scallops in their path, these results suggest that 36% were observed on the television monitor and 18% were picked up by the dredges. The figure for dredge efficiency agrees well with earlier results. The relatively low figure for television results from the recessing habit of the scallop which makes observation difficult on the screen unless the scallop moves (closes its shell or swims).

While dredging remains the best method for obtaining samples of scallops, television gave much additional information. This included the patchiness of the distribution of scallops, the nature of the substratum and the abundance and reactions of other species (including queens, Chlamys opercularis). It also has the advantages over diving of being quicker and enabling bigger areas to be covered, less dependent on depth, and providing a permanent record on tape. It would seem useful to commence surveys with television and use other methods as appropriate to supplement it.

2. Long (30-60min) and short (5 min) dredge hauls were made. The scallops caught were aged, measured, examined for degree of shell damage, and numbered. They were then handed over to divers and placed in an enclosure on the sea bed to study their survival.

3. Laminaria was collected from depths of 4-14m off Skipness. Queen spat, 1-13mm long, was abundant on the weed, especially at 10-14m deep. No scallop spat was found in depths of 8m or less, and it was present but scarce in depths of 10-14m. No spat of either species was found on shells or stones or among the bottom deposit.

JAMES MASON
7 December 1978

Seen in draft: W B Reid