

R1/10

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FRV 'Goldseeker'

Cruise 11/89

11GR89

REPORT

4-22 September 1989

Personnel

D I Fraser HSO (in charge)
J Mason PSO (4-13 September)
P Duncan ASO (13-22 September)

Objectives

1. To investigate the settlement of scallops, queens and crabs in the Clyde sea area, the Sound of Jura and the Sound of Mull.
2. To study the size and age composition of scallop and queen stocks in the same areas and to examine the gonads of both species to determine their maturity stages.
3. To record surface and subsurface temperatures.

Narrative

Scientists and crew joined 'Goldseeker' at Troon in the afternoon of 4 September and work started at north east Arran next morning. Six days were spent in the Clyde sea area, retrieving spat collector strings and dredging, before the vessel made passage through the Crinan Canal on 11 September. Work continued west of Kintyre until the half landing on 13 September, at west Loch Tarbert, where P Duncan replaced J Mason.

Poor weather prevented sea work on 15, 16, 19 and 20 September and on those days scientific staff analysed spat samples which had been previously collected and frozen. Work was completed in the Sound of Mull on 21 September and the scientific staff left the vessel at Corpach on the morning of 22 September. The vessel then made passage for Buckie for unloading prior to decommissioning.

Results

1. From a total of 100 spat collectors set during 'Goldseeker' cruise 7/89, 61 were retrieved from 26 stations, 11 in the Clyde sea area, 12 west of Kintyre and 3 in the Sound of Mull. Numbers of scallop, queen and crab spat settled per collector string are shown on Tables 1 and 2. Queen spat was more numerous than scallop spat at all stations, particularly west of Kintyre (at Loch Stornoway and at Gigha).

2. Dredging was undertaken using an array of 3, 85 cm dredges, 2 standard 9 toothed dredges at port and starboard and an 11 toothed dredge in the central position. A total of 27 hauls of 30 minutes duration were made and results are shown in Table 3.

From a study of scallop gonads there was evidence of a recent late summer-autumn spawning in all areas fished. Many scallops were observed to have spent and partially spent gonads or to be in various states of recovery (Table 4).

From a total of 209 queens caught in 3, 30 minute dredge hauls at north Arran, 94%, 5% and 1% respectively were aged 2, 3 and 4 years. Few queens were caught elsewhere.

3. Water temperatures were taken at all areas and the results are shown in Table 5.

D I Fraser

25 October 1989

Seen in draft: D Pindlay

Table 1

Numbers of scallop and queen spat settled per collector string

AREA	SCALLOP NUMBER	MEAN NUMBER	SIZE RANGE	QUEEN NUMBER	MEAN NUMBER	SIZE RANGE	NO OF STRINGS
	PER STRING		MM	PER STRING		MM	
East Clyde	6-23	12	7-22	69-167	130	4-20	5
North Arran	16-107	78	3-18	139-555	408	3-20	3
Kilbrannan Sound	28-54	40	3-18	105-182	113	2-18	6
Loch Fyne	0-27	8	3-17	27-176	82	3-18	12
West Kintyre	28-254	123	3-22	430-8920	3883	2-21	6
Islay Shore	13-134	42	2-20	137-538	329	1-21	17
Jura Shore	2-5	3	4-10	61-208	124	1-14	4
Sound of Mull	9-22	15	1-18	272-799	481	2-16	8

Table 2

Numbers of crabs settled per collector string

AREA	NUMBER OF	RANGE	NUMBER OF	RANGE	NUMBER OF	RANGE	NUMBER OF	NUMBER OF	NUMBER OF
	SWIMMING CRABS	MM	SHORE CRABS	MM	EDIBLE CRABS	MM	SPIDER CRABS	PORCELLANA	STRINGS
East Clyde	13	6-19	1	14	-	-	2	3	5
Kilbrannan Sound	2	4-19	2	10,12	-	-	16	2	7
Loch Fyne	2	17-18	13	6-17	-	-	22	-	12
West of Kintyre	25	6-25	5	6-11	1	5	3	16	6
Islay Shore	167	4-18	15	4-8	2	5,5	11	10	17
Jura Shore	7	4-10	1	4	-	-	2	-	4
Sound of Mull	34	2-12	7	3-5	2	6,6	2	30	8

Table 3**Size and age composition of the scallop stock****a) Numbers of scallops caught at each age group**

AREA	HOURS FISHED	GROWTH RINGS										TOTAL
		1	2	3	4	5	6	7	8	9	>9	
East Clyde	1.0		3	1	5	1		1	1	2	1	15
North East Arran	4.0			2	10	11	7	3	7	2	7	49
Loch Fyne	5.5		2		1	7	2	3	8	7	26	56
Kilbrannan Sound	1.5						3		1	1	4	9
Gigha	0.5				2	1						3
Sound of Mull	0.5		2	3	4	2	7	3	1	2	1	25

b) Mean length of scallops caught at each age group (mm)

AREA	GROWTH RINGS										OVERALL MEAN LENGTH	
	1	2	3	4	5	6	7	8	9	>9		
East Clyde		93	96	120	127		137	147	141	166		122
North East Arran			91	94	102	117	112	113	130	116		107
Loch Fyne		79		88	109	127	114	114	116	117		114
Kilbrannan Sound						114		125	126	118		118
Gigha				117	120							118
Sound of Mull		80	93	107	112	119	117	125	122	125		111

Table 4**Scallop Gonad stages**

AREA	III RECOVERING	IV FILLING	V HALF FULL	VI FULL	VII SPENT	VIIp PARTIALLY SPENT	TOTAL
Arran	3	17	7	1	10	6	44
Loch Fyne	2	36	6	5	7	6	62
Kilbrannan Sound		4	2		3		9
East Clyde	1	7				6	14
North West Gigha					3		3
Sound of Mull					21		21
TOTAL	6	64	15	6	44	18	153

Table 5

AREA	DEPTH (M)	WATER TEMPERATURES °C		
		BOTTOM	MID WATER	SURFACE
East Clyde	12	11.5	11.5	11.5
Kilbrannan Sound	15	10.5	10.5	10.5
Loch Fyne	12	11.5	11.5	11.5
Loch Fyne	5	12.25		12.5
West Kintyre	15	12.25	12.25	12.25
Islay Shore	16	11.5	11.5	11.5
Jura Shore	16	12.25	12.25	12.25
Sound of Mull	19	12.25	12.25	12.25