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2GR87

FRV "Goldseeker"
Cruise 2/87

REPORT

26 January - 10 February 1987

Personnel

J R Hutcheon SO (in charge)
L Cargill ASO

Objectives

- 1 To carry out an echosounder and trawling survey for sprat in inshore waters from Aberdeen Bay to the Firth of Forth.
- 2 To collect water samples for radio caesium monitoring.

Narrative

After a delay of one day due to bad weather, "Goldseeker" sailed from Macduff on 27 January and made a passage direct to the Firth of Forth. During the next seven days, an intensive echosounder survey was carried out in the Forth. Four trawl hauls were made to identify fish traces. From 4 February till the end of the cruise, the east coast of Scotland, north of Peterhead, was surveyed and a further two trawl hauls were made. One and a half days were lost in Montrose due to bad weather. Scientific staff left on the morning of 9 February in Aberdeen to enable "Goldseeker" to return to Buckie for the end of the cruise.

Results

During the cruise, only two concentrations of sprat were found, one off the Forth between the Isle of May and the Bass Rock, and the other south of Montrose off Red Head. Despite the presence of apparently dense shoals in those areas, trawl catches were low with a maximum catch of three baskets and the other hauls producing less than one basket. However, the catch in all trawl hauls made in these areas was predominantly sprat, varying from 60% to 100% by volume. One haul in shallow water off Collieston caught two baskets of fish, largely juvenile herring, from a scattered trace close to the bottom. Unlike the previous year, there was no evidence of sprats to the west of the bridges in the Forth, nor was there ever a high proportion of adult sprats in any of the hauls. Due to a combination of bad weather and a shortage of time, it was not possible to fully evaluate the extent of the sprat concentration south of Montrose. There was, however a commercial fishery for sprat at the time and the local fishermen estimated that the shoals were spread over a seven mile by two mile area, six to eight miles off Red Head. Samples from this fishery were being sent regularly to the Laboratory for analysis and proved to be almost 100% sprat. It should be noted that the commercial outlet for this fishery was as whitebait and consequently any hauls of bigger 'sprats' were being released at sea. These bigger fish were found to be almost all herring according to the local fishery officer, suggesting that the smaller sprat and the herring were shoaling separately. Trawl positions are shown in Figure 1. Length frequency distributions for both sprat and herring for all hauls are shown in Tables 1 and 2 respectively.

A water sample for radio caesium analysis was collected off Arbroath.

TABLE 1

SPRAT

Length Frequency Distribution

Haul No	G87/13	14	15	16	17	18
Grounds	SW Isle of May	Off Craigleith	NNW Fidra	W of Isle of May	Red Head	Collieston
Catch	‰	‰	‰	3	‰	2
<u>cm Length</u>						
3			53			
3.5		1	214		8	
4	14	2	481	234	8	59
4.5	82	6	748	3042	42	314
5	276	7	307	9125	152	504
5.5	417	21	107	13571	286	397
6	340	35	40	18484	674	208
6.5	208	23	24	10997	396	65
7	158	16	32	6785	210	53
7.5	82	11	41	1404	59	24
8	72	8	29	234	17	
8.5	59	4	19			
9	50	1	9			
9.5	23	2	8			
10	23	11	7			
10.5	23	5	5			
11	9	2	1			
11.5		1	1			
12						
12.5						2
13						
13.5						
Total	1836	156	2126	63876	1852	1626
% sprat/wt	67	60	90	98	100	3

Length Frequency Distribution

Haul No	S87/13	14	15	16	17	18
Grounds	SW Isle of May	Off Craigleith	NNW Fidra	W of Isle of May	Red Head	Collieston
Catch	¼	½	1/10	3	1/10	2
<u>cm Length</u>						
8			3			
8.5			4			9
9	3		7			18
9.5	5		16	9		46
10	6		16	24		92
10.5	16	4	18	18		210
11	33	5	8	39		339
11.5	50	5	6	48		375
12	59	2	4	45		421
12.5	25	2	3	9		430
13	10	2	1	9		284
13.5	5					128
14	3	1				46
14.5						18
15						9
15.5						9
16						9
16.5						
17						
17.5						
18						
18.5						
19						
19.5						
20						
20.5						
21						
21.5						
22						
22.5						
23						
23.5	1					
Total	216	21	86	201		2443
% by wt	30	30	10	2		75

- - Trawl hauls
- ◉ - Entire area surveyed

