

Indexed *HP*

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R1/10

In Confidence - Not to be quoted without prior reference to the Laboratory

FRV "Goldseeker"

Cruises 1 and 2/86

Report

3-16 January and 21-29 January 1986

Personnel

J R Hutcheon
D L Baird

Objectives

- 1 To carry out an echosounder and fishing survey for sprat in the inner reaches of the Firth of Forth and the Moray Firth.
- 2 To collect live whiting from the Moray Firth.

Narrative

Scientific staff joined "Goldseeker" in Leith on the afternoon of 3 January and "Goldseeker" sailed that evening to Granton. From 4 to 9 January "Goldseeker" surveyed the entire area from Grangemouth to the Bass Rock and north to Pittenweem using the ship's echosounder, trawling on 8 occasions. Due to severe gales from 10 to 12 January it was impossible to continue the survey and with no sign of a let up in the weather, scientific staff left "Goldseeker" on the afternoon of 12 January, the vessel eventually docking in Peterhead on the evening of 15 January.

Scientific staff rejoined "Goldseeker" in Peterhead on the afternoon of 21 January and sailed that evening, stopping in Fraserburgh that night. "Goldseeker" sailed on the early morning of 22 January to steam to Inverness. An echosounder survey was attempted during the passage but had to be abandoned off Lossiemouth due to worsening weather conditions. "Goldseeker" arrived in Inverness later that evening and had to remain there the following day because of continuing bad weather. From 24 to 29 January the inner Moray Firth from Inverness to Buckie, and the Inverness, Beauly and Cromarty Firths were all surveyed using the ship's echosounder and a total of 7 trawl hauls were made. Scientific staff left "Goldseeker" on the afternoon of 29 January at Muirton locks.

The area surveyed on each of the cruises is shown on the attached chart.

Results

Cruise 1

Although fish traces were observed over large areas of the Firth of Forth, trawl hauls revealed only small quantities of sprats except for 2 trawls in the inner Forth, west of Rosyth, where catches of 3 and 6 baskets consisting of 60% and 90% sprat respectively were obtained for short tows, the remainder of the catch being herring on both occasions.

Length frequency distributions for both sprats and herring for all hauls are shown in Tables 1 and 2 respectively and the survey area plus positions are shown in Figure 1.

Cruise 2

Despite intensive surveying of the inner firths, very few traces were observed that proved to be fish, with the exception of one large shoal to the west of the Kessock bridge. It was decided not to trawl on this mark early in the trip as the tidal stream was so strong as to be potentially hazardous. The extent of the shoal was determined by steaming back and forth across it, with the echosounder running, and plotting its outer limits. The shoal was found to be 0.65 of a mile long by 0.25 of a mile wide at its widest point, and 8 fathoms deep. The shoal was eventually sampled by trawl on the last day of the cruise. An estimated 100 baskets were caught during a 10 minute haul on this shoal, comprising 75% sprat and 25% herring. The other 6 hauls from the rest of the survey area failed to produce any more than half a bucket of mixed sprats and herring, although the net was shot on what appeared to be promising traces. There were quantities of Pleurobrachia and Pandalus in the codend after most of these hauls and it is possible that these were responsible for the appearance of fish traces on the echosounder.

Length frequency distributions for both sprat and herring for all hauls are shown in Tables 3 and 4 respectively and the survey area plus trawl positions are shown in Figure 1.

No quantities of whiting were caught during the survey and consequently it was not possible to fulfil Objective 2.

J R Hutcheon

26 2 86

Seen in draft: A Mair

TABLE 1

SPRAT

LENGTH FREQUENCY DISTRIBUTION FIRTH OF FORTH

Haul No	G86/1	2	3	4	5	6	7	8
GROUND	BASS ROCK	S. of ELLIENESS	TORRY BEACON	BLAE ROCK	MUSSEL- BURGH	BO'NESS	TORRY BAY	KINGHORN
CATCH (BASKETS)	22	1/10	3	1/10	1/2	1/2	6	1/5
CM LENGTH								
3		5						
.5		45				4		1
4		83		1	5	25		3
.5		21	23		18	70		5
5		18	23		22	53		2
.5	1	9			13	18		2
6	1	10			20	23		1
.5		5			9	6		1
7	1	4				4		
.5					2	2		
8					5	2		
.5	1		23		2	1	83	
9					4	1	83	
.5			136		27	4	333	
10	1		543		83	13	1332	
.5			678		93	29	2081	
11			904		56	22	3580	
.5	2		1130		57	29	4745	
12	1		1176		29	44	3247	
.5	2		565		16	27	1166	
13			249	1	2	16	333	
.5			45			3		
14			23			1		
.5								
TOTAL	10	200	5517	2	463	397	16983	15
% SPRAT by WEIGHT	1	95	60	1	33	40	90	5

TABLE 2

HERRING

LENGTH FREQUENCY DISTRIBUTION FIRTH OF FORTH

HAUL NO	S 86/1	2	3	4	5	6	7	8
GROUND	BASS ROCK	S of ELLINNESS	TORRY BEACON	BLAE ROCK	MUSSEL- BURGH	BO'NESS	TORRY BAY	KINGHORN
CATCH (BASKETS)	2	1/10	23	1/10	1/4	1/4	6	1/5
CM LENGTH								
8					3	8	6	1
8.5			6		32	10		4
9			6		80	10	18	8
9.5	1		12		91	13	48	11
10			12	3	50	13	24	13
10.5	1		24	3	16	6	12	9
11			18		18	9	36	4
11.5	2		6	2	15	5	24	3
12	2		24		12	6	108	7
12.5	1		72	1	6	6	96	4
13	1		132		4	14	258	1
13.5			192	1	6	9	258	2
14			282			9	384	4
14.5	2		264		3	9	222	3
15			156		1	6	96	2
15.5			90	1	3	1	60	
16			42			2	24	
16.5			54			1	12	3
17			18	2			18	2
17.5			36			1	18	
18		1	42	1			18	1
18.5			18			1	30	1
19			42			1	18	2
19.5			30				18	1
20			6			2	12	1
20.5			12					
21			12			2	18	
21.5			36					
22			6		1	1	6	
22.5							6	
23			12					
23.5								
24			6					1
24.5								
25						1		
25.5								
TOTAL	10	1	1668	14	341	146	1848	88
% HERRING	<5	<1	38	<5	30	40	10	33
by WEIGHT								

TABLE 3

SPRAT

HAUL No	9	10	11	12	13	14	15
GROUND	MUNLOCHY	NAIRN	PETTY BANK	NAIRN	NAIRN	LOSSIE- MOUTH	KESSECK
CATCH (BASKETS)	0	1/10	0	0	1/10	0	100
CM LENGTH							
3							
.5							
4		8					
.5		10			8		
5		37			20		
.5		42			29		
6		107			51		
.5		118			40		
7		165			34		
.5		125			27		
8		94			8		
.5		18					826
9		3					4958
.5		1					9089
10		4			1		27267
.5					2		42966
11					1		56486
.5					1		61144
12		1					33877
.5							5784
13							1653
.5							
14							
.5							
TOTAL	0	733	0	0	222	0	243750
% SPRAT		60			40		75
BY WEIGHT							

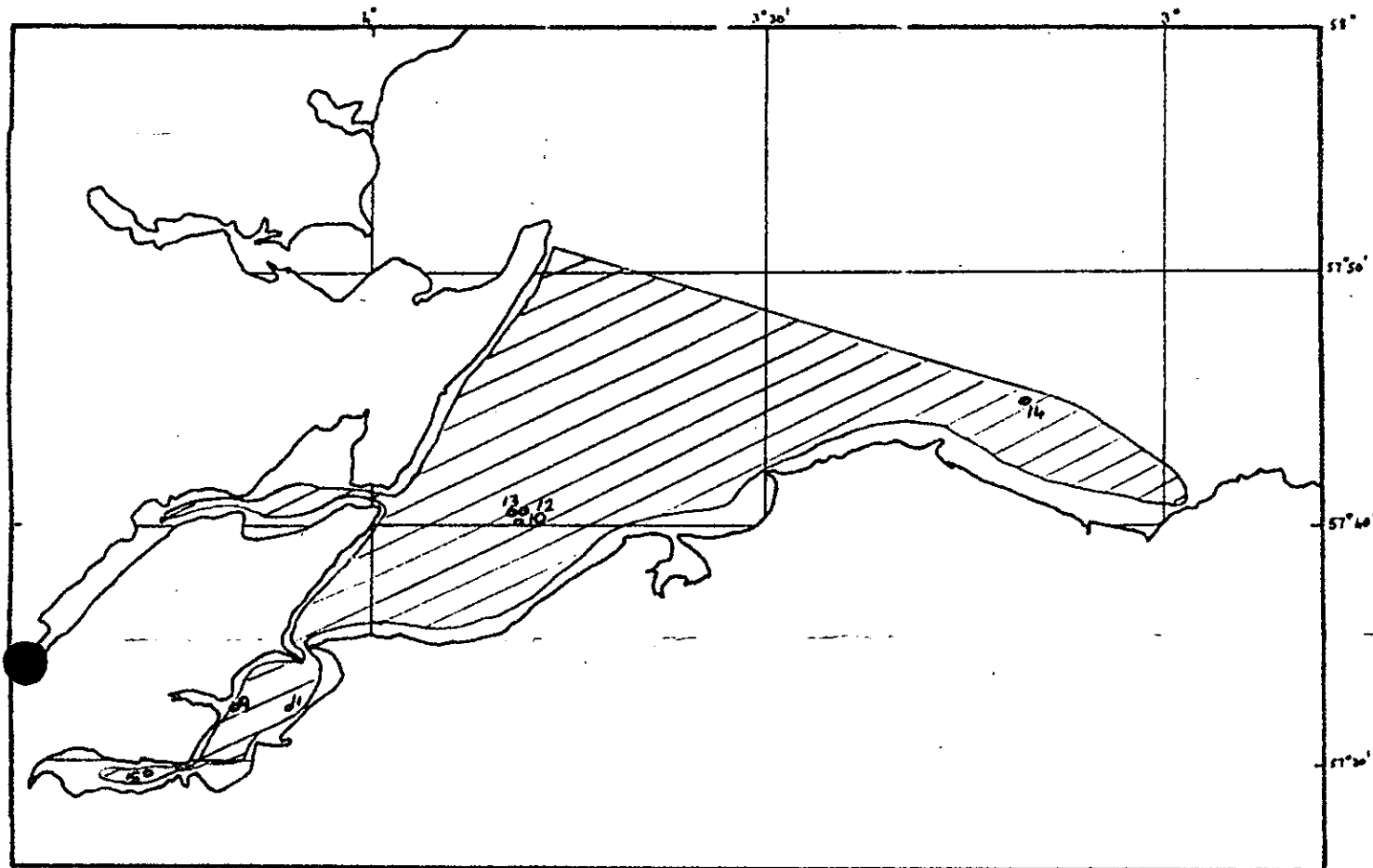
TABLE 4

HERRING

LENGTH FREQUENCY DISTRIBUTION

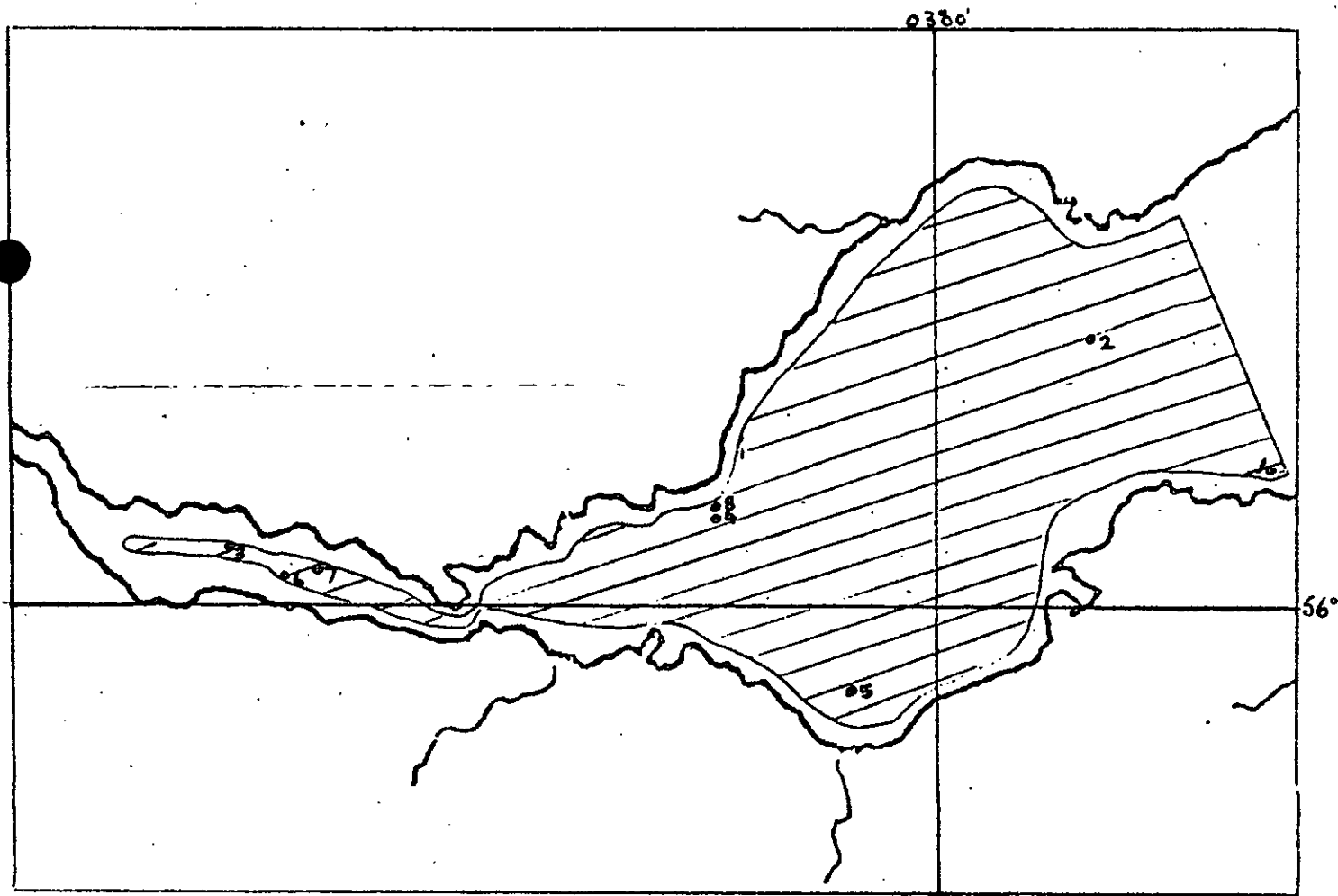
MORAY FIRTH

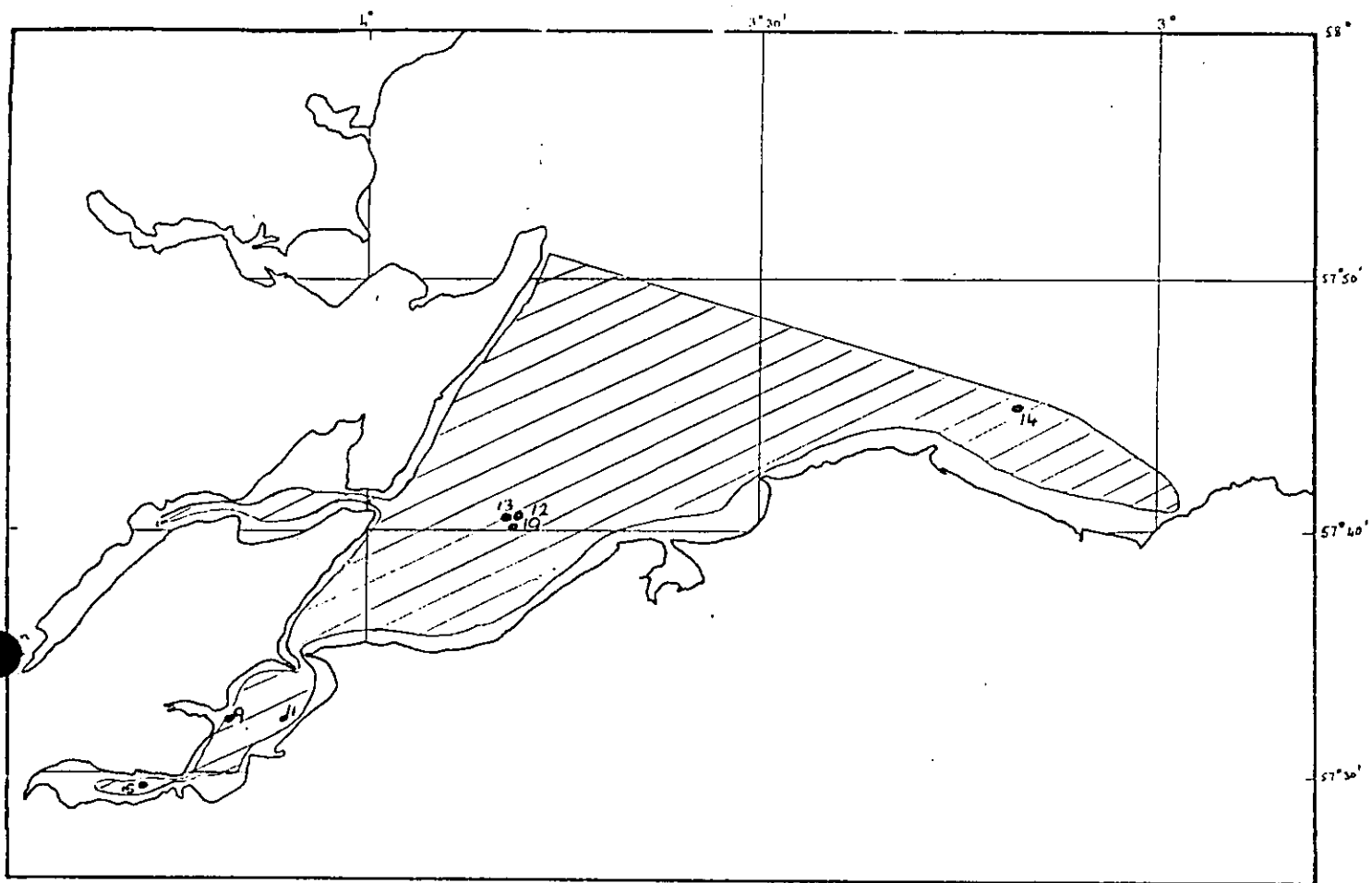
HAUL NO	9	10	11	12	13	14	15
GROUND CATCH (BASKETS)	MUNLOCHY	NAIRN	PETTY BANK	NAIRN	NAIRN	LOSSIE- MOUTH	KESOCK
	0	1/10	0	0	1/10	0	100
CM LENGTH							
8							125
.5					1		250
9		2			21		375
.5		26			48		250
10		45			48		250
.5		40			13		125
11		17			6		125
.5		16			2		625
12		10			4		1125
.5		11			6		3125
13		6			4		2625
.5		8			3		2500
14		2					1875
.5		2					1500
15							375
.5		1			1		1000
16							625
.5							1750
17							2000
.5							3000
18							1625
.5							2250
19							1000
.5							875
20							1000
.5							750
21							250
.5							125
22							
.5							
23							
.5							125
24							
.5							
25							
.5							
Total	0	186	0	0	157	0	31625
% Herring		40			60		25
BY WEIGHT							



SURVEY AREA

FIRTH OF FORTH

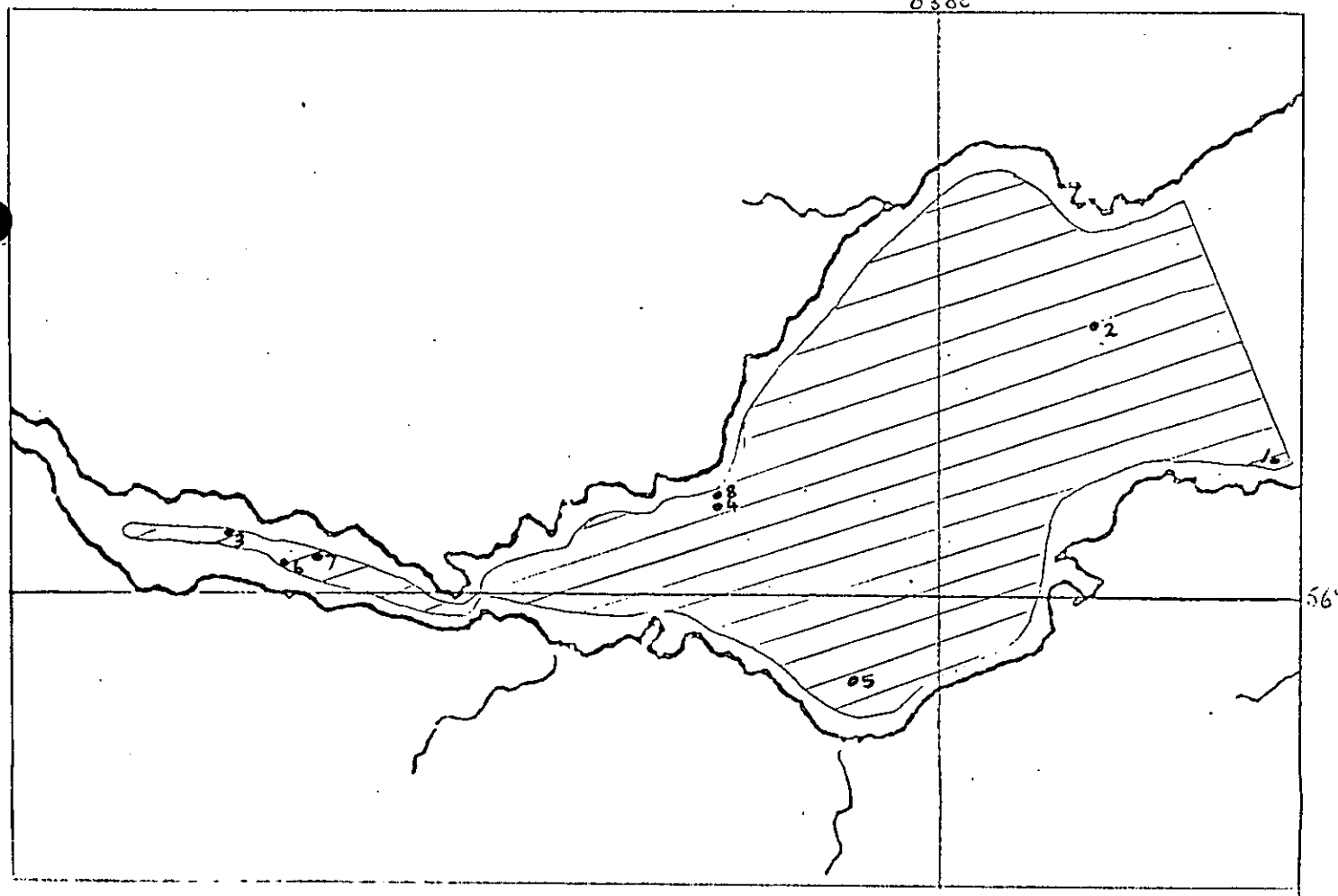


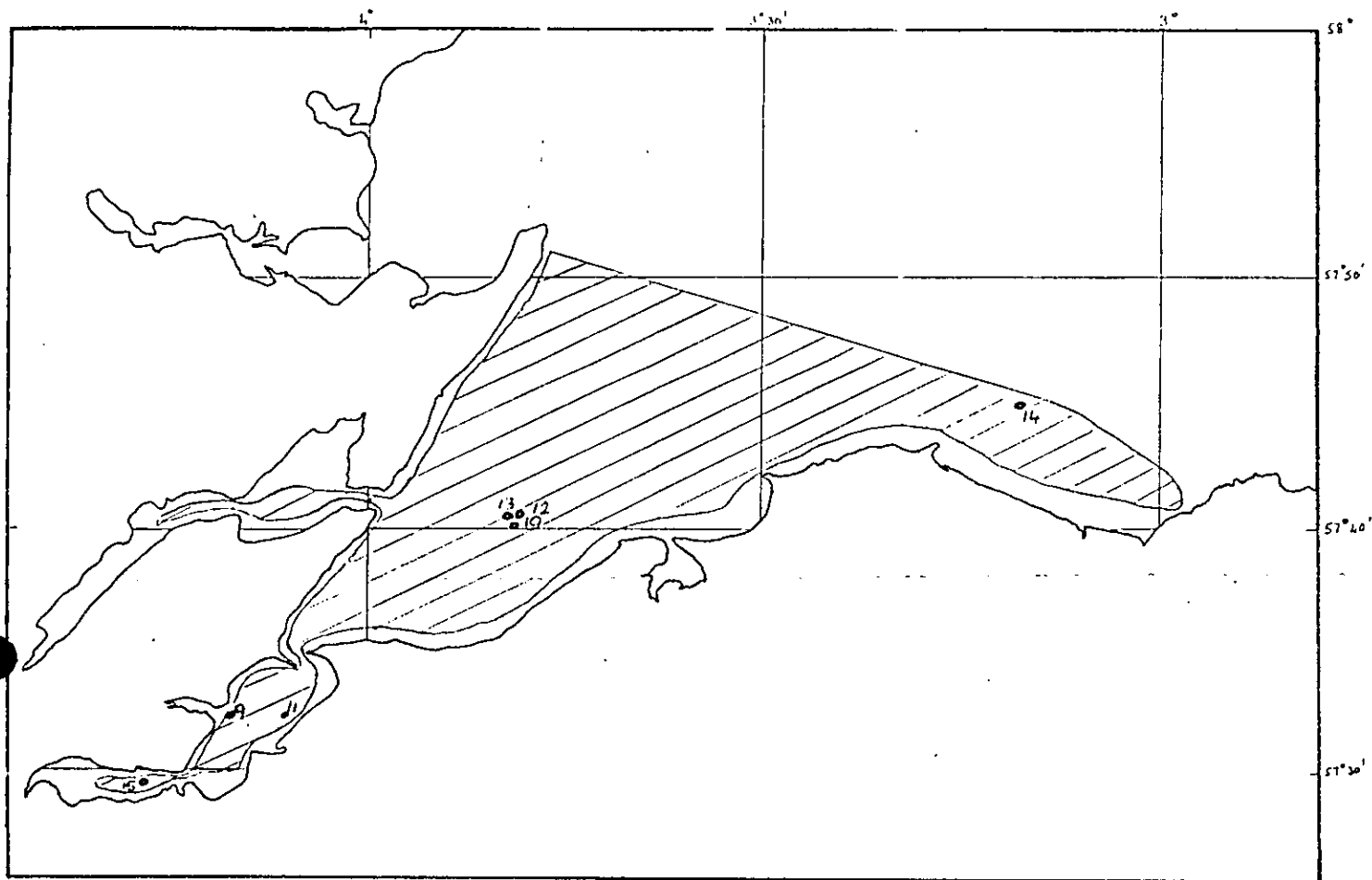


SURVEY AREA

FIRTH OF FORTH

0380





SURVEY AREA

FIRTH OF FORTH

