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FRV *CLUPEA*

Cruise 1594C

REPORT

3-22 August 1994

Personnel

K Peach	SO	3-14 August (in charge)
J McWilliam	ASO	3-14 August
J R Hutcheon	SO	14-22 August (in charge)
S Thain	SO	14-22 August

Objectives

To determine the distribution and relative abundance of sandeel (*Ammodytes marinus*) on inshore fishing grounds at Shetland and to the west of Scotland.

To obtain quantities of sandeel for use as fish food by the Fish Behaviour Section of the Laboratory.

Narrative

Scientific staff joined *Clupea* in Fraserburgh at 1100 on 3 August and sailed to Shetland to commence sampling the following day.

Sampling continued until the afternoon of 13 August when the programme for Shetland was completed and *Clupea* sailed to Scrabster for the half landing and scientific staff change. *Clupea* sailed at 0700 on 15 August to commence the western part of the survey. Sampling to the west of Scotland continued until 20 August when all the targeted grounds had been covered. *Clupea* then headed for Fraserburgh, docking at 2200 on 20 August. Scientific staff left *Clupea* at 1100 on 21 August.

Results

Between 4 and 13 August, a total of 48 valid hauls were made on commercial sandeel fishing grounds around Shetland. All of the targeted grounds were sampled three times. A total of 15 valid trawl hauls were made on five fishing grounds to the west of Scotland, all five grounds being sampled on three occasions.

Catch rates up to 14.4 tonnes and 7.1 tonnes per 30 minute haul were achieved at Shetland and on the west of Scotland grounds respectively.

Table 1 gives the catch rate by time of day in kilogrammes raised to a standard 30 minute haul. The number at age of *Ammodytes marinus* caught per 30 minute haul are given in Table 2. Table 3 shows the abundance indices of 0-group *A. marinus* caught at Shetland from 1984-1994 and for the west of Scotland from 1992-1994. The attached charts show the grounds fished and the number of hauls made on each ground.

Approximately two tonnes of sandeels were obtained for fish food on 8 August and transported to the Laboratory by P&O Ferries.

Samples were also collected for later analysis in the Laboratory and for feeding experiments.

K Peach
J R Hutcheon

2 September 1994

Seen in draft: G Geddes

Table 1*A. marinus Clupea* August 1994

Kg caught per 30 minute haul during different time periods			
Fishing ground	0700-1100	1100-1500	1500-1900
Voe	255	486	298
Grutnes	8	4	3
Ba,as	1,068	463	494
South Sands	766	368	104
Braeside	532	4,323	1,664
Mousa	14,422	8,302	6,132
Balta	93	1,549	518
Fethaland	0	0	24
Sands Voe	366	52	374
Brekkin	1,909	793	1,166
Ham of Foula	5,846	7,913	3,648
North Foula	501	2,262	281
South Foula	4,845	4,555	1,017
Trink	1,314	1,585	1,521
East Fair Isle	6	1,099	231
West Fair Isle	17	5	1
Loch Erribol	2,912	1,575	1,967
Cellar Head	228	3	194
Shingle Edge	4,083	0	129
Clash	0	0	0
North Rona	7,080	68	86

Table 2*A. marinus Clupea* August 1994

Number at age raised to 30 minute haul					
Fishing ground	0+	1+	2++	Total	No of hauls
Voe	3,214	10,185	18,475	32,145	3
Grutnes	9	90	252	351	3
Ba,as	46,548	40,463	18,891	105,901	3
South Sands	69,910	37,619	4,952	112,481	3
Braeside	272,162	184,411	32,075	488,650	3
Mousa	113,553	1,497,741	65,704	1,676,997	3
Balta	0	6,139	67,942	74,081	3
Fethaland	772	274	577	1,624	3
Sands Voe	745	4,008	23,531	28,284	3
Brekkin	0	947	83,927	84,874	3
Ham of Foula	5,037	58,570	380,251	443,857	3
North Foula	138,540	2,274	50,634	191,448	3
South Foula	441,212	103,228	180,672	725,114	3
Trink	100,710	215,673	26,652	343,034	3
East Fair Isle	385,829	828	5,791	392,449	3
West Fair Isle	203	77	634	913	3
Loch Erribol	1,851,813	62,322	0	1,914,133	3
Cellar Head	134,854	80	1,296	136,230	3
Shingle Edge	16,753	27,559	111,294	155,606	3
Clash	0	0	0	0	3
North Rona	19,449	1,730	154,392	175,570	3

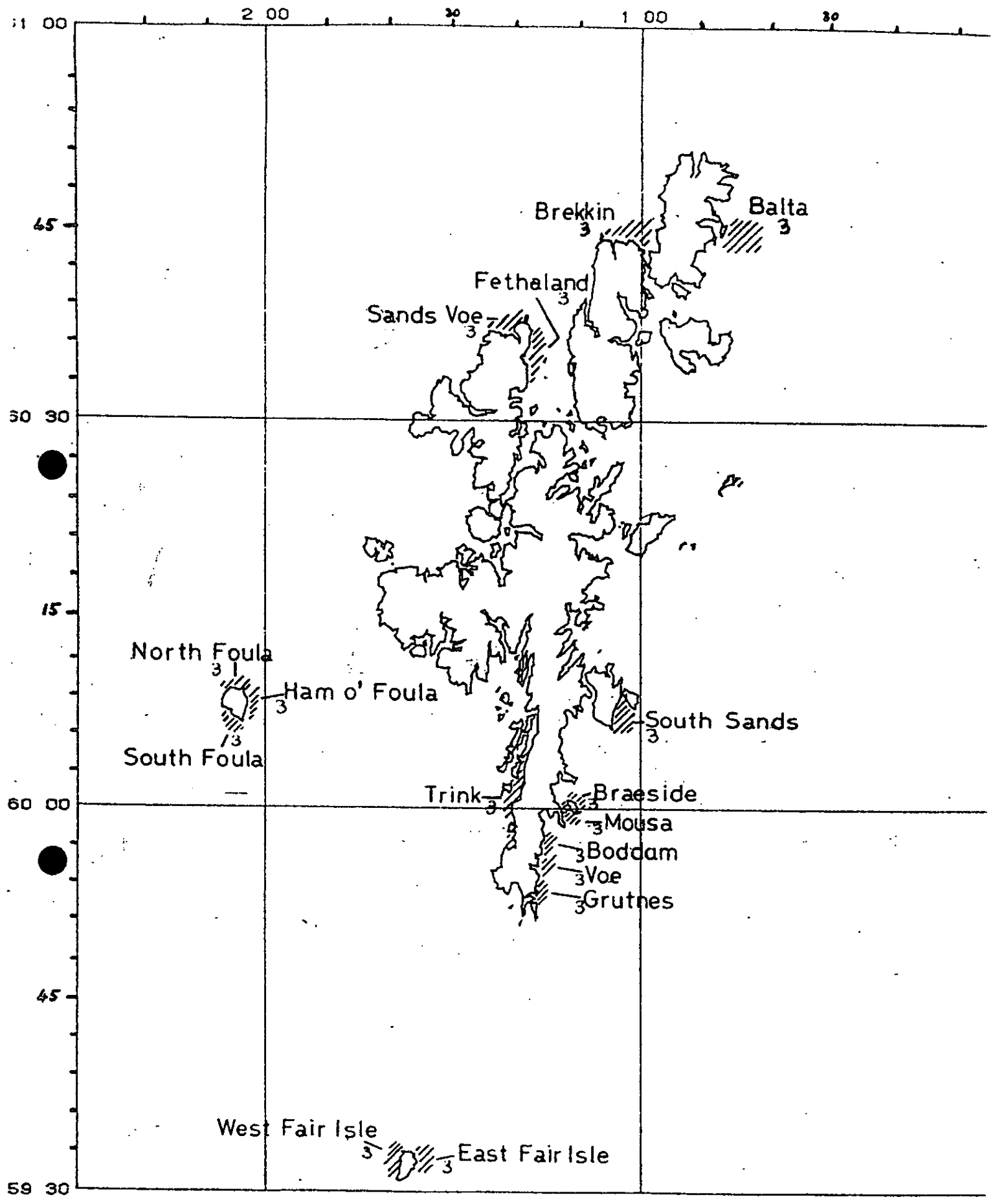
Table 8*Ammodytes marinus* abundance indices of 0-group (000's), August surveys 1984-93

Number is per 30 minute trawl haul										
Fishing ground	1984	1985	1986	1988	1989	1990	1991	1992	1993	1994
South Sands	105	109	91	11	617	1	571	434	4,564	70
Braeside	1,816	30	1,198	-	5,912	485	183	461	159	272
Mousa Sound	2,022	336	521	1,121	6,266	930	1,730	1,951	1,940	114
Clumlie Ba,as	94	-	637	-	112	1	163	90	2,254	47
Boddam/Voe	5	888	-	0	1	+	20	14	49	3
Grutnes	20	0	1	-	1	0	6	0	1	+
East Fair Isle	+	16	1	+	+	+	63	+	2	386
West Fair Isle	1	+	1	-	+	+	-	+	+	+
Trink	405	307	11	-	37	7	-	7	573	101
South Foula	398	59	4,941	-	-	7	-	33	434	441
Ham of Foula	50	52	2,737	-	+	2	-	159	186	5
North Foula	1	5	1	-	0	+	310	40	+	139
● ds Voe	14	71	764	-	1	9	251	0	+	1
Fethaland	626	+	5	+	+	+	186	0	0	1
Brekkin	0	+	+	8	0	+	118	+	0	0
Balta	0	0	0	0	0	0	8	1	0	0
Colsay	9,630	1,371	21	-	-	-	-	-	-	-
Index for all grounds combined	892	203	683	141	863	90	301	199	635	99

Fishing Ground	1992	1993	1994
North Rona	+	0	19
Shingle Edge	+	+	17
Cellar Head	6	64	135
Clash	0	0	0
Loch Erribol	1	+	1,852
●			
Index for all grounds combined	1	11	405

- = No sampling

+ = < 500 individuals



SANDEEL FISHING GROUNDS - VIa

