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FRV *Clupea*

Cruise 1397C

REPORT

4-14 August 1997

Personnel

C G Davis	SO (SIC)
D Goodlad	North Atlantic Fisheries College (4-13 August)
G Arthur	North Atlantic Fisheries College (5-13 August)
E Mouat	North Atlantic Fisheries College (7-13 August)
D Beveridge	North Atlantic Fisheries College (5-7 August)
C Laurenson	North Atlantic Fisheries College (5-7 August)

Objective

To determine the distribution and relative abundance of sandeels (*Ammodytes marinus*) on inshore fishing grounds around the Shetland Isles.

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

Out-turn days per project: 12 days C576

Narrative

Scientific staff joined *Clupea* in Fraserburgh at 1200 hours on Monday 4 August and sailed to Fair Isle to commence sampling the following day. Staff changes were made as and when convenient, without significant disruption to the programme. Sampling continued until the afternoon of 13 August when the programme was completed and *Clupea* sailed to Fraserburgh, docking at 0900 hours on 14 August. Scientific staff disembarked at 1100 hours on 14 August.

Results

Between 5 and 13 August a total of 46 valid hauls were made on commercial sandeel fishing grounds around the Shetland Isles. All of the targeted grounds were sampled on three occasions.

Catch rates up to 27.4 tonnes per 30 minute haul were achieved at Shetland grounds.

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 1984-1997. The attached chart displays the grounds fished and the number of valid hauls made on each ground.

Approximately two tonnes of sandeels were obtained for fish food on 6 August and transported to the Laboratory by P&O Ferries.

Additional samples and sampling data from the commercial sandeel fishery at Shetland and the West Coast of Scotland, which had been collected by staff from the North Atlantic Fisheries College, was passed to C G Davis for analysis in the Laboratory.

C G Davis
15 September 1997

Seen in draft:

TABLE 1

A. marinus Clupea August 1997

Kg caught per 30 minute haul during different time periods

Fishing ground	0700-1100 hours	1100-1500 hours	1500-1900 hours
Voe	60	50	18
Gnutnes	360	*	2142
Boddam	198	774	0
South Sands	10847	22394	27428
Esland	12052	5896	8776
Mousa	6711	13782	8960
Balta	578	297	466
Fethaland	53	36	331
Sands Voe	2656	9427	8050
Brekkin	269	802	923
Ham of Foula	6711	13209	2478
North Foula	1217	326	513
South Foula	4545	4270	6044
Trink	2098	1400	2763
East Fair Isle	4816	*	910
West Fair Isle	1	99	2

* = Foul haul

TABLE 2

A. marinus Clupea August 1997

Number at age raised to 30 minute haul

Fishing ground	0+	1+	2++	Total	No. of hauls
Voe	5676	3893	6459	16028	3
Grutnes	400	336845	46061	383306	2
Boddam	419817	18748	870	439435	3
South Sands	59288400	0	0	59288400	3
Braeside	11857520	1345269	95719	13298508	3
Mousa	23494640	243463	0	23738103	3
Balta	845774	12504	11993	870271	3
Fethaland	294051	425	8292	302768	3
Sands Voe	17650700	0	0	17650700	3
Brekkin	184940	5668	87185	277793	3
Ham of Foula	13212996	149830	29030	13391856	3
North Foula	690226	13045	128741	832012	3
South Foula	5478580	566134	236451	6281165	3
Trink	2694735	52482	115053	2862270	3
East Fair Isle	569715	890066	100674	1560455	2
West Fair Isle	3795	663	331	4789	3

TABLE 3

Ammodytes marinus abundance indices of 0-group (000's), August surveys 1984-97

Number ls per 30 minute trawl haul.

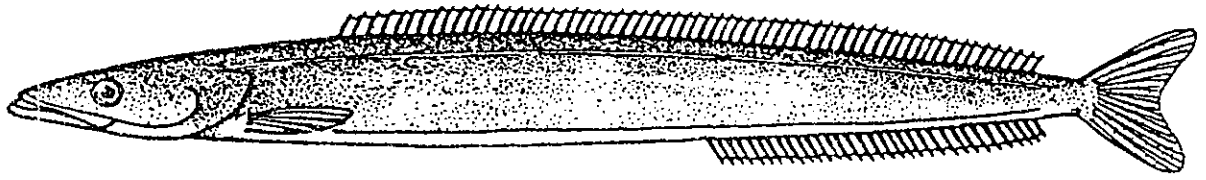
Fishing ground	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Voe	5	888	-		0	1	+	20	14	49	3		+	6
Grutnes	20	0	1		-	1	0	6	0	1	+		3	+
Boddam	94	-	637		-	112	1	163	90	2254	47		354	420
South Sands	105	109	91		11	617	1	571	434	4565	70		1918	59288
Braeside	1816	30	1198		-	5912	485	183	461	159	272		2667	11858
Mousa Sound	2022	336	521		1121	6266	930	1730	1951	1940	114		2238	23495
Baita	0	0	0		0	0	0	8	1	0	0		+	846
Fethaland	626	+	5		+	+	+	186	0	0	1		4	294
Sands Voe	14	71	764		-	1	9	251	0	+	1		970	17651
Brekkin	0	+	+		8	0	+	118	+	0	0		0	185
Ham of Foula	50	52	2737		-	+	2	-	159	186	5		10	13213
North Foula	1	5	1		-	0	+	310	40	+	139		32	690
South Foula	398	59	4941		-	-	7	-	33	434	441		497	5479
Trink	405	307	11		-	37	7	-	7	573	101		148	2695
East Fair Isle	+	16	1		+	+	+	63	+	2	386		+	570
West Fair Isle	1	+	1		-	+	+	-	+	+	+		+	4
Index for all grounds (combined)	892	203	683		141	663	90	301	199	635	99		533	8041

- = No sampling

+ = <500 individuals

Common synonyms: none.

Common names: Lesser sand-eel, Raitt's sand-eel (En), Equille (Fr), Kleiner Sandaal (G), Lanzon voladores (Sp).



Sandeel Grounds at Shetland

