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FRV *Clupea*

Cruise 1296C

REPORT

5-16 August 1996

J R Hutcheon	SO (in charge)	
I Napier	North Atlantic Fisheries College	(5-14 August)
D Goodlad	North Atlantic Fisheries College	(5-16 August)
M Goodlad	North Atlantic Fisheries College	(13 August)
M Wishart	North Atlantic Fisheries College	(6-10 August)
L Bannister	North Atlantic Fisheries College	(8-12 August)

Objective

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

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 1100 hours on 5 August and sailed to Shetland to commence sampling the following day. Staff changes were made as and when convenient without disruption to the programme. Sampling continued until the afternoon of 15 August when the programme was completed and *Clupea* sailed to Fraserburgh docking at 0030 hours on 16 August. Scientific staff left *Clupea* at 1100 hours on 16 August.

Results

Between 6 and 14 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. Catch rates up to eight tonnes per 30 minute haul were achieved as shown in Table 1 which also gives the catch rate by time of day in kilogrammes raised to a standard 30 minute haul. The number at age of *A. 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 1984-1996. The attached chart show the grounds fished and the number of hauls made on each ground.

Approximately two tonnes of sandeels were obtained for fish food on 13 August and transported to the Laboratory by P&O Ferries.

Additional samples were also collected and frozen on board for feeding experiments in the Laboratory.

The sampling data from the commercial sandeel fishery at Shetland, which had been collected by staff from the North Atlantic Fishery College, was passed to J Hutcheon for analysis in the Laboratory.

J R Hutcheon
2 October 1996

Seen in draft: A Simpson, OIC

Table 1*A. marinus Clupea* August 1996

kg caught per 30 minute haul during different time periods

Fishing ground	0700-1100 hours	1100-1500 hours	1500-1900 hours
Voe	10	3	<1
Grutnes	6	12	19
Boddan/Ba'as	620	736	218
South Sands	4,018	2,730	360
Braeside	1,185	8,058	5,722
Mousa	942	7,097	2,440
Balta	32	16	11
Fethaland	0	182	0
Sands Voe	1,066	2,564	2,547
Brekkin	261	164	280
Ham of Foula	2,695	4,447	693
North Foula	60	90	62
South Foula	1,358	818	329
Trink	1,525	825	1,432
East Fair Isle	<1	39	636
West Fair Isle	<1	2	1

Table 2*A. marinus Clupea* August 1996

Number at age raised to 30 minute haul

Fishing ground	0+	1+	2++	Total	No of hauls
Voe	313	252	223	787	3
Grutnes	2,640	108	585	3,333	3
Boddam/Ba'as	354,342	0	0	354,342	3
South Sands	1,918,291	2,658	0	1,920,949	3
Braeside	2,666,536	79,911	2,324	2,748,771	3
Mousa	2,237,832	24,869	0	2,262,702	3
Balta	44	1,558	567	2,169	3
Fethaland	3,794	3,624	1,645	9,063	3
Sands Voe	970,431	19,498	416	990,343	3
Brekkin	0	490	8,946	9,437	3
Ham of Foula	9,529	99,668	149,648	258,844	3
North Foula	31,863	1,515	2,090	35,468	3
South Foula	497,374	25,641	17,464	540,479	3
Trink	147,508	86,881	65,663	300,052	3
East Fair Isle	61	725	13,821	14,607	3
West Fair Isle	4	1	42	47	3

Table 3

Ammodytes marinus abundance indices of 0-group (000's), August surveys 1984-96

Number is per 30 minute trawl haul

Fishing ground	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Voe	5	888	-		0	1	+	20	14	49	3		+
Grutnes	20	0	1		-	1	0	6	0	1	+		3
Boddam/Ba'as	94	-	637		-	112	1	163	90	2,254	47		354
South Sands	105	109	91		11	617	1	571	434	4,564	70		1,918
Braeside	1,816	30	1,198		-	5,912	485	183	461	159	272		2,667
Mousa Sound	2,022	336	521		1,121	6,266	930	1,730	1,951	1,940	114		2,238
Balta	0	0	0		0	0	0	8	1	0	0		+
Fethaland	626	+	5		+	+	+	186	0	0	1		4
Sands Voe	14	71	764		-	1	9	251	0	+	1		970
Brekkin	0	+	+		8	0	+	118	+	0	0		0
Ham of Foula	50	52	2,737		-	+	2	-	159	186	5		10
North Foula	1	5	1		-	0	+	310	40	+	139		32
South Foula	398	59	4,941		-	-	7	-	33	434	441		497
Trink	405	307	11		-	37	7	-	7	573	101		148
East Fair Isle	+	16	1		+	+	+	63	+	2	386		+
West Fair Isle	1	+	1		-	+	+	-	+	+	+		+
Colsay	9,630	1,371	21		-	-	-	-	-	-	-		-
Index for all grounds combined	892	203	683		141	863	90	301	199	635	99		533

- = No sampling

+ = <500 individuals

