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FRV *Clupea*

Cruise 1299C

REPORT

26 July - 5 August 1999

Personnel

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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 Aquarium services, Marlab.

Out-turn days per project: 11 days, C641

Narrative

Scientific staff joined *Clupea* in Fraserburgh at 1000 hours on Monday 26 July and sailed to Fair Isle to commence survey the following day. The survey continued with no weather or operational difficulties until the morning of Wednesday 4 August, when North Atlantic Fisheries College staff disembarked at Scalloway. *Clupea* made for Fraserburgh and docked at 0200 hours on the morning of Thursday 5 August, with scientific staff and equipment offloaded at 0800 hours.

Results

Between 27 July and 4 August, a total of 48 valid hauls were made on commercial sandeel fishing grounds around the Shetland Isles and Fair Isle. All of the targeted grounds were surveyed on three occasions.

Catch rates of up to 12.21 tonnes per 30 minute haul were achieved at the 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 O-group *A. marinus* caught at the Shetland grounds from 1984–1999 (no survey conducted in 1987 and 1995).

The attached chart displays the general positions of the grounds surveyed.

Approximately 2.5 tonnes of sandeels were delivered to *Shetland Catch* and block frozen for fish food for the Aquarium services of Marlab.

Additional samples and sampling data from the commercial sandeel fishery at Shetland, which had been collected by staff from the North Atlantic Fisheries College, was returned to Marlab for further analysis.

C G Davis
17 September 1999

Seen in draft: OIC, FRV *Clupea*

TABLE 1

Ammodytes marinus. *Clupea* July/August 1999

KG caught per 30 minute haul during different time periods

Fishing ground	0700-1100 hours	1100-1500 hours	1500-1900 hours	Total
Grutnes	56	122	14	192
Voe	150	322	2,446	2,918
Boddam	2,952	3,074	2,296	8,322
Mousa	2,918	1,653	9,212	13,783
Braeside	7,524	7,776	12,210	27,510
South Sands	12,005	11,760	10,080	33,845
Balta	19	10	22	51
Brekkin	6	33	13	52
Fethaland	415	11	3,842	4,268
Sands Voe	298	551	486	1,335
Ham O Foula	2,500	1,096	2,136	5,732
North Foula	0	10	80	90
South Foula	2,718	2,898	1,547	7,163
Trink	428	393	633	1,454
East Fair Isle	236	0	0	236
West Fair Isle	0	<1	1	2
				106,953

TABLE 2

Ammodytes marinus. Clupea July/August 1999

Mean catch rate by age/ground

Ground	Age									
	O	1	2	3	4	5	6	7	8	9
S Sands	8,168,807	0	0	0	0	0	0	0	0	0
B Side	3,193,803	66,184	38,205	21,279	7,706	2,554	5,152	0	0	0
Mousa	2,401,772	18,078	6670	5118	0	0	0	0	0	0
Voe	392,356	1,522	2,770	3,425	442	363	0	126	251	0
Boddam	1,745,570	2,316	0	0	0	0	0	0	0	0
Grutne s	3,774	124	1,238	2,027	228	67	33	35	59	0
E F Isle	2,249	3,904	5,098	2,072	67	89	33	33	0	0
W F Isle	112	1	26	8	2	1	0	0	0	0
Trink	94,911	0	24,508	8,970	216	678	0	201	0	0
S Foula	1,883,799	2,546	1,273	0	0	0	0	0	0	0
H Foula	649,234	448	45,339	8,654	0	0	0	0	0	0
N Foula	32,702	14	0	100	0	0	0	0	0	0
S Yoe	80,420	6,675	30,855	3,148	95	236	0	0	0	0
F Land	0	741	15,115	110,936	12,603	1,658	582	401	36	259
Brekkin	0	0	52	55	200	116	36	62	51	32
Balta	0	9	1,107	243	59	4	3	0	2	0
	0	1	2	3	4	5	6	7	8	9
Overall index	1,165,594	6,410	10,766	10,377	1,351	360	365	54	25	18
Year class	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990

TABLE 3

Ammodytes marinus* at Shetland*Survey indices, mean No fish per 30 minute haul. 1984-1999**

Year	Age							
	0	1	2	3	4	5	6	7
1984	345,774	47,590	34,613	9,921	3,999	1,369	856	258
1985	121,905	74,509	38,843	23,455	10,872	1,959	962	119
1986	681,869	49,816	11,399	15,376	7,049	2,893	1,210	191
1987	0	0	0	0	0	0	0	0
1988	73,371	898	7,189	4,843	4,612	3,031	1,619	20
1989	813,752	9,059	977	3,820	3,893	2,017	462	86
1990	90,148	30,118	3,771	1,346	1,736	1,142	444	329
1991	1,009,024	10,001	1,925	1,694	750	53	21	5
1992	199,301	465,958	1,215	347	168	43	10	12
1993	635,331	18,180	73,176	2,176	361	150	72	23
1994	98,653	135,158	14,272	41,299	3,369	296	12	17
1995	0	0	0	0	0	0	0	0
1996	589,368	23,056	12,513	1,836	1,185	1,387	524	72
1997	2,953,350	88,582	6,519	8,938	1,211	1,353	1,159	357
1998	559,203	222,137	18,583	2,841	1,840	227	607	175
1999	1,165,594	6,410	10,766	10,377	1,351	360	365	54

