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FRV *Clupea*

Cruise 1398C

REPORT

30 July - 10 August 1998

Personnel

C G Davis	SO (SIC)
D Goodlad	(NAFC) (30 July - 10 August)
A Tait	(NAFC) (30 July - 7 August)
G Arthur	(NAFC) (31 July - 7 August)
C Laurensen	(NAFC) (30 July - 3 August)
N Scott	(NAFC) (30 July - 31 July)

Objectives

1. To determine the distribution and relative abundance of sandeels (*Ammodytes marinus*) on inshore fishing grounds around the Shetland Isles.
2. To obtain quantities of sandeels for the Fish Behaviour Section of the Laboratory.

Out-turn days per project: 12 days C641

Narrative

Scientific staff joined *Clupea* in Lerwick on the evening of Wednesday 29 July. *Clupea* sailed at 0530 hours the following morning, to commence sampling at the southern stations. Staff changes were made as and when convenient, without disruption to the survey programme.

Sampling continued until the afternoon of 9 August when the survey was completed at Fair Isle, and *Clupea* sailed to Fraserburgh, docking at 0100 hours on 10 August. Scientific staff disembarked at 1100 hours on 10 August.

Results

Between 30 July and 9 August a total of 47 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 of up to 15.6 tonnes per 30 minute haul were achieved at Foula, and up to 7.8 tonnes per 30 minute haul at Shetland grounds.

Table 1 gives the catch rate by time of day in kilogrammes, raised to a standard 30 minute haul. The mean numbers at age, by ground, of *Ammodytes marinus* caught per 30 minute haul are given in Table 2. The attached chart displays the grounds surveyed and the number of valid

hauls made on each. Table 3 displays the survey mean catch rate/age per 30 minute haul from years 1984 1998.

Approximately 2.25 tonnes of sandeels were obtained for the Fish Behaviour Section on 31 July and transported to the Laboratory by P&O Ferries.

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

C G Davis
9 September 1998

Seen in draft: A Simpson (Master)

TABLE 1

A. marinus. Clupea August 1998

Kg caught per 30 minute haul during different time periods

Fishing ground	0700-1100 hours	1100-1500 hours	1500-1900 hours
Grutnes	+	8	8
Voe	+	+	1
Boddam	27	11	1
Mousa	2,240	7,315	7,455
Braeside	4,704	3,696	4,872
South Sands	2,800	1,680	7,840
Balta	14	12	18
Brekkin	19	77	69
Fethaland	Foul haul	17	0
Sands Voe	1,750	2,213	1,847
Ham of Foula	15,615	7,776	12,842
North Foula	83	68	12
South Foula	5,750	1,752	1,788
Trink	1,184	27	125
East Fair Isle	478	1,641	0
West Fair Isle	0	+	+

TABLE 2

Mean Catch Rate by Ground

Gnd/age	0	1	2	3	4	5	6	7
SSA	3,144,437	34,461	0	0	0	0	0	0
BRA	2,401,017	0	0	0	0	0	0	0
MOU	3,072,303	0	1,380	0	0	0	0	0
VOE	57	21	25	8	8	2	5	2
BOD	3,952	1,152	187	17	12	0	5	12
GRU	267	162	306	59	40	15	21	1
EFI	0	49,896	27,344	8,213	6,201	930	73	820
WFI	0	8	5	0	0	0	0	0
TRI	0	82,359	10,835	0	634	0	0	0
SFO	168,751	409,280	91,023	21,591	18,452	1,888	1,586	1,609
HAM	148,691	2,710,377	133,331	5,700	0	0	6,894	0
NFO	8	7,081	2,686	373	106	18	42	31
SVO	7,760	257,844	29,746	8,107	3,373	442	884	0
FET	0	21	104	333	82	59	5	16
BRE	0	265	102	913	510	269	186	298
BAL	0	1,272	247	140	17	5	6	12

TABLE 3

Survey indices, mean no fish per 30 minute tow 1984-1998

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	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-
1996	589,368	23,056	12,513	1,836	1,185	1,387	524	72
1997	2,953,350	88,582	6519	8,938	1,211	1,353	1,159	357
1998	559,203	222,137	18,583	2,841	1,840	227	607	175

