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FRV *Clupea*

Cruise 1101C

REPORT

7-22 August 2001

Personnel

C G Davis In Charge
I M Gibb
F M Kennedy
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Objectives

1. To determine the distribution and relative abundance of sandeel (*Ammodytes marinus*) on inshore fishing grounds around the Shetland isles and Fair Isle.
2. To map the distribution of habitat using RoxAnn, confirmed by grab sampling.
3. To collect day-grab samples from trawl locations to determine sediment permeability and porosity.
4. To obtain quantities of sandeel for use as fish food by the Aquarium services, FRS.

Out-turn days per project: 13 days, MFO1t, 3 days C713

Narrative

Scientific staff joined *Clupea* in Fraserburgh at 0930 hours on Tuesday 8 August. Sailing had to be delayed until contractors had completed installation of new navigation PC, with the vessel eventually leaving port at 1100 hours. Once underway, *Clupea* sailed to Fair Isle, where surveying commenced the following morning. The survey continued until the evening of Monday 20 August, when it was decided to make way for Fraserburgh due to the deterioration of weather conditions and a very poor forecast. *Clupea* docked alongside Fraserburgh at 0800 hours on Tuesday 21 August.

Results

Between 8 and 20 August, a total of 54 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. Repeat tows were carried out at two historically important grounds (Mousa, Braeside,) to verify the poor results obtained there in the initial tows undertaken at the beginning of the survey.

Catch rates of up to 1.6 tonnes per 30 minute haul were achieved at the Shetland grounds. In general, all grounds showed a marked decrease in catch rates, resulting from the complete absence of the 2001 year class from some grounds and the relatively low survival (or emigration) of the 1999 and 2000 year class.

At Foula, one of the three grounds (Ham O Foula) appeared to go against the trend, with catch rates of up to 12.8 tonnes observed. However, there was no evidence of 'O' groups on this ground either.

It was noted that there appeared to be a dramatic increase in the numbers of *G. semisquamatus* present on a number of grounds and the presence of *G. semisquamatus* in areas that they have never previously been recorded on this survey. Further analysis of the *G. semisquamatus* data is intended, to attempt to identify any trends over past years.

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.

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

Approximately one tonne of sandeels was delivered to P&O Ferries to be shipped to the Aquarium services, FRS, for fish feed.

C G Davis
29 October 2001

Table 1*A. marinus Clupea* August 2001

kg caught per 30 minute haul during different time periods

Fishing ground	0700-1100	1100-1500	1500-1900	Total
East Fair Isle	0	0	0	0
West Fair Isle	<1	0	0	<1
Grutnes	3	5	<1	9
Voe	419	6	166	0
Boddam	117	983	161	0
Mousa	546	130	174	0
Braeside	254	341	271	0
South Sands	64	60	3	0
Balta	<1	0	1	1
Brekkin	<1	4	<1	6
Fethaland	<1	<1	<1	<1
Sands Voe	<1	<1	<1	<1
North Foula	2	<1	<1	2
South Foula	360	855	95	0
Ham o Foula	1604	7650	3633	0
Trink	48	196	40	0
Mousa (repeat)	358	286	313	0
Braeside (repeat)	432	515	718	0
				20816

Table 2

Ammodytes marinus, Clupea August 2001

Catch rate by age/ground

Ground	Age									
	0	1	2	3	4	5	6	7	8	9
S Sands	57969	1862	881	224	0	0	0	0	0	0
B Side	61129	10974	45443	3361	3463	3178	0	0	288	0
Mousa	19156	5611	23397	7609	12403	5666	1005	957	0	0
Voe	0	455	30305	7256	12756	5264	312	184	0	0
Boddam	24452	49651	73997	19743	7942	1257	386	290	0	0
Grutnes	4	117	433	136	109	56	14	3	0	1
E F Isle	0	0	0	0	0	0	0	0	0	0
W F Isle	0	0	0	1	0	0	0	0	0	0
Trink	4366	819	26625	1365	2193	411	128	0	0	0
S Foula	1959	50864	56986	26779	21257	8802	144	241	0	0
H Foula	5968	427654	600324	175403	67419	13817	2734	1249	0	0
N Foula	0	9	113	25	58	16	3	1	0	0
S Voe	5	2	5	2	2	2	0	0	0	0
F Land	6	0	0	0	1	0	0	0	0	0

Brekkin	53	0	12	24	33	50	27	10	5	3
Balta	3	3	51	4	55	4	1	0	0	0
Mousa (RPT)	130718	6260	9521	2477	1991	1594	232	0	386	0
B Side (RPT)	107845	9612	70915	8049	10357	2106	2093	444	192	161
Total for class	413633	563893	939008	252458	140039	42223	7079	3379	871	165
Year class	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992