

P17/15

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FRV *Scotia*

Cruise 1601S

REPORT

23 October - 14 November 2001

Personnel

A P Robb	(In charge)
K A Coull	
M Mathewson	
J McWilliam	
T Blasdale	(23 October - 5 November)
P Clark	
E Hatfield	(5-14 November)
S P R Greenstreet	
M Robertson	
H M Fraser	

Fishing Gear

GOV trawl (BT137) with belly lines and 20 mm cod-end, ground gear, C and A

Out-turn days per project: MF01t (20), MF07n (3)

Objectives

1. To participate in the ICES coordinated Western Division Demersal Trawling Survey.
2. To obtain temperature and salinity data at each trawling position.
3. To carry out benthic sampling at selected trawling stations.

Area

West of Scotland, NW Ireland, Irish Sea

Narrative

After a short delay due to the low water level in the channel, *Scotia* sailed from Aberdeen at 1600 hours on 23 October and proceeded north and west through the Pentland Firth to the survey area. Work commenced the following day to the west of Orkney at the station in statistical rectangle 46E6. Early arrival permitted deployment trials with the Usnel box corer before fishing commenced. Generally trawling took place between 0630 hours and 2300 hours whilst benthic sampling was carried out in between times. Progress westwards was short lived as poor weather conditions on 26 October stopped operations and the ship was forced to dodge until the following

morning when fishing recommenced. However, only two further days work were successfully completed before the weather once again stopped operations for another twenty four hour period. The sea conditions showed a slight improvement and work recommenced in the late evening of the 29th continuing on southwards, then back around the Irish coast and into the Irish sea before the ship arrived in Dublin at 2330 hours on 5 November for the half landing. *Scotia* sailed at 1100 hours on 7 November and fishing began the same evening at the Firth of Clyde stations. However on the following day gale force conditions once again stopped work until the morning of 9 November. The remainder of the survey was subsequently completed in reasonable weather and the last station was completed at 1800 hours on 13 November. *Scotia* then proceeded to Aberdeen docking at 0900 hours on Wednesday 14 November.

Results

Trawling

Despite the less than ideal conditions only one trawl station in deep water off the shelf edge was not sampled due to the weather. The survey was successfully completed with a total of 77 valid survey hauls carried out with the GOV trawl. The trawl positions are shown in Figure 1. Hauls were of 30 minutes duration and the scanmar system was used to monitor headline height, door spread and wing spread. Testing of a bottom contact logging sensor which was attached to the footrope was also carried out.

Table 1 gives the catch weights for each of the main species and Table 2 gives the provisional indices for the main species caught during the survey.

Benthic sampling

During the cruise a total of 20, two minute beam trawl hauls were completed while 18 infaunal stations were sampled by USNEL box corer (two deployments per station) or by Day grab (six deployments). The positions are shown in Figure 2.

All the animals collected in the beam trawl were examined and the majority identified to species level on the ship. Unidentified fauna were preserved in formal-saline and returned to the laboratory for examination.

Sediments were sieved through a 250 micron mesh, preserved in formal-saline and also returned to the laboratory for analysis. Further small core samples were collected from each site for meiofaunal and for particle size analysis.

Hydrography

The CTD was deployed at each trawling position and the thermosalinograph run continuously throughout the cruise.

A P Robb
20 March 2002

Seen in draft: R Walton

Table 1 Major Species Catch weights (kgs)

Haul No.	Stat Sq.	Herring	Sprat	Mackerel	Cod	Haddock	Whiting	N Pout
416	46E6	1	0	0	0.9	389.1	131.7	76.8
417	47E6	631.2	0.4	4.1	0	182.3	29.8	8.7
418	47E5	5	0	0	0.5	303.5	1.5	8.4
419	46E5	0.1	0.1	9.5	0	129.1	29.4	0
420	47E4	9	0	39	0	97.3	3.2	21.5
421	47E3	1.7	0	0.6	15	67.8	6.6	18.4
422	46E3	128.9	0	12.9	0	242.2	83	162.8
423	46E3	0.4	0	0	0	59.4	9	0
424	45E3	3.6	2.8	0	0	25.4	17.3	10.8
425	45E2	1.9	0	10.1	0	180.2	147	0
426	46E2	10.4	0	10.6	1.2	274	7.7	8.2
427	46E1	0	0	0	1.8	19	0	0.3
429	45E1	27.9	0	0	0	25	11.2	70.9
430	45E0	0	0	0	1.8	0	0	0
431	45E0	22	0	0	0	52.5	46.1	24
432	44E0	0	0	0	0	0	0	0.1
433	44E0	28.1	0	0	0	105.5	22.5	104.2
434	44E1	86.3	0	0.1	0	66.9	82.1	313.4
435	43E1	2.4	0	0.1	0	74.4	8.8	8.6
436	43E0	0	0	0.4	0	98.3	0.6	4
437	42E0	0	0	0	1.4	0	0	0
438	42E0	0	0	0	0	76	0.3	0.1
439	42E1	2580	0	1.1	0	28.1	15.8	37.8
440	41E1	423.4	0	0	0	78.4	29.1	1.4
441	41E0	0	0	0	2	60.9	0.8	2.2
442	40E0	0.7	0	0	0	93.5	0	4.2
443	39E0	0	0	0	0	41.8	3.4	5.9
444	39D9	0	0	0	0	0	0	0.6
445	36D8	0.8	0	0	0	89.1	39.8	21.4
446	36D9	1.5	0	0	0	668.2	21.4	7.9
447	37D9	0.3	0	0.3	0	196.3	28.6	0.1
448	38D9	1.8	0	53.2	0	81.7	6.6	4
449	38E0	43.2	0	37.9	0	129.4	78.1	0.1
450	37E0	4	0	45.4	0	80.6	53.8	0.3
451	37E1	0	0	0.2	0	6.8	3.5	0.1
452	38E1	12.8	0.1	0.5	0	1.8	333.1	129.7
453	39E0	2	0	61.3	0	43.7	7.8	6.3
454	39E1	0.4	0	0.5	1.4	26.4	7.2	0.6
455	40E1	14	0	0.2	0	52.6	77.1	87.2
456	40E2	7	0	5.4	0	37.7	14.2	0.2
457	40E2	2.9	0	1.1	0	92.4	43.6	0
458	39E2	0	0	0	0	29.2	0	0
459	39E3	0.6	0.2	0	1.2	3.8	43.9	0
460	38E4	0.7	0.2	0	7.5	2.3	19	9.2
461	37E5	0.3	0.3	0	7.8	1.6	28	10.6
462	38E5	0	0.1	0.4	2.7	6.8	71.6	0
463	38E6	0.1	2.3	0	18	0.3	171.7	0
464	37E6	0.1	14.1	0	0.1	0	76.1	0.2
465	37E5	0	0.6	0	0.6	0	2	0
466	36E6	1.1	1.6	0.4	0	0	92.5	0
467	36E5	0	0.1	0	24.2	46.6	86.9	2.3
468	37E4	54.1	0	0	0.7	2.8	212.1	12.6
469	36E4	2.3	1.4	0	0	0.1	49.5	0.8
470	36E4	24.4	0.2	0	1.7	0.4	280.4	0.2
471	39E4	0.1	2.4	0	0	0	97.6	1.1
472	39E5	3.1	3.3	0	0	1.4	84.6	0.2
473	40E3	0.9	0	0.1	0	41	154.5	0.3
474	41E3	0	0.1	5.9	0	9.3	106.3	5.5
475	41E2	16.8	0.1	18.4	0	83.1	15.4	0.4
476	42E2	2.8	0	0	0	83.1	46.8	72.8
477	42E2	2	0	0	0	8.6	34.6	44.8
478	42E2	4.1	0	0	2.8	3.6	77	58.5
479	42E3	1.4	0.1	0	0	18.2	204.5	73.2
480	43E2	0.5	0.1	0	2.1	45	42.3	11.1
481	43E3	0.2	0.1	0	0	125.8	59.1	16.9
482	44E4	2.9	0.2	0	0	37	5.4	22
483	44E3	3.1	0.1	0.4	0.1	112.2	22.2	19.6
484	45E4	1	0.1	0	0	70.3	12.8	36
485	45E3	3.2	0.9	0	8.4	32	25.8	49.2
486	45E4	1	0.1	0	0	58.3	41.1	13.4
487	46E4	3.3	0.1	0.2	0	69.3	37.6	11.6
488	47E4	0.9	0	0	8.7	459.5	8.4	0
489	48E4	21.4	0	0.8	1.9	76.6	13	49.6
490	48E4	0	0	0	7.4	82.7	49	27
491	48E5	6.4	0	1.5	4.9	39.4	8	20.8
492	48E6	3.9	0	0	7.2	54.2	1.4	1
493	46E6	0.5	0.1	0.4	0	3	5.8	73.3

Table 2		Numbers at Age per 10hrs Fishing					
	Year	0	1	2	3	4	5
Cod	1996	0	1	14	5	3	1
	1997	1	11	2	1	1	1
	1998	+	15	9	1	0	0
	1999	2	4	6	9	1	0
	2000	0	16	3	0	0	0
	2001	1	2	9	1	1	0
Haddock	1996	2907	761	656	70	137	57
	1997	3713	1359	282	151	25	26
	1998	399	1640	486	148	137	17
	1999	4670	366	574	267	92	68
	2000	2959	4231	147	191	59	25
	2001	3083	2219	3563	48	138	22
Whiting	1996	5154	1908	1116	570	188	51
	1997	8001	2869	951	323	160	46
	1998	1852	2713	1124	149	100	20
	1999	8203	2338	582	141	33	24
	2000	4434	4055	789	160	9	7
	2001	9615	1957	1420	155	40	12
Saithe	1996	0	365	21	10	1	0
	1997	0	0	1	3	1	1
	1998	0	1	2	2	1	0
	1999	0	0	32	7	0	0
	2000	0	0	1	1	0	0
	2001	0	0	50	15	2	0
Norway Pout	1996	83945	16480	10614	49	0	0
	1997	23730	9594	1131	808	0	0
	1998	51210	7874	4226	13	14	0
	1999	20784	2295	304	140	0	0
	2000	25311	5984	2166	302	23	0
	2001	34355	2498	1977	112	0	0
Herring	1996	5	496	1142	1623	494	399
	1997	57	82	382	644	467	473
	1998	86	59	351	522	533	625
	1999	37	247	99	493	277	285
	2000	153	208	242	112	333	169
	2001	223	121	3335	1452	588	1186
Mackerel	1996	426	3933	327	46	2	3
	1997	873	102	16	4	4	1
	1998	4904	54	11	3	0	1
	1999	549	3631	451	101	3	35
	2000	102	98	118	47	9	1
	2001	720	15	58	32	17	1

Scotia Q4 IBTS Trawl Positions

