R1/12

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FRV Scotia

Cruise 1707S

Report

13 November–4 December 2007

Personnel

C G Davis	SIC
M Mathewson	
I Penny	
O Goudie	
A Pout	(Part 1)
L Allan	(Part 1)
J Mair	(Part 2)
C Stewart	(Part 2)

Out-turn Project: 22 RV0713

Fishing Gear

GOV trawl (BT137) with belly lines & ground gear C

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 collect additional biological data in accordance with the EU Data Directive 1639/2001.

4. To identify and record all invertebrate species caught.

5. To sample and collect DNA from specified Elasmobranchs, for FTFB group on behalf of MBS

6. To collect samples of selected O-group Gadoids for the Population Biology group

Narrative

Scotia sailed from Aberdeen at 1100 on the 13 November and proceeded northwards toward the survey area. On route, the opportunity was taken to deploy and check the operation of the trawl gear; in particular to measure the gear dimensions under strain. It was also decided at this time to test deploy the CTD to check the associated software and to provide a training opportunity for a member of staff unfamiliar with the CTD operation. Unfortunately, during the recovery of the CTD, the hydro winch cable parted, resulting in the loss of the CTD, reverser bottle and a deepwater digital thermometer. At no time during the recovery procedure did the equipment foul the ships side or any other obstruction. Initial investigations

suggest wear on the cable due to a malfunctioning block suspended by the hydro crane or wear from some other part of the hydro winch roller assemblage. Further discussions will take place between FRS and MVM regarding this incident.

Fishing commenced the next day at 0630 at the station in rectangle 46E5. The medium term weather forecast was very favourable for this time of year and we took advantage of this to progress westward and southwards for the next eight days, allowing us to complete all the exposed stations to the west of the Hebrides and Ireland.

Scotia docked alongside Killybegs port at 0800 on the morning of the 23 November, to allow for an exchange of scientific staff and to adhere to FRS's working time policy.

Scotia sailed from Killybegs port at 0800 on the 24 November and resumed the survey, beginning with stations to the north of Ireland. The survey continued with no weather restrictions, from the Clyde up through the South and North Minches and terminated with additional stations to the west of the Orkney Isles. The final station was completed on the morning of the 3 December. *Scotia* then immediately proceeded to Aberdeen, docking at around 0100 the following morning.

Results

Trawling

For the majority of the survey, *Scotia* was fortunate to have good weather conditions for the time of year. As a result, no time was lost due to weather and good progress was made throughout the survey. This resulted in the trip achieving a total of 88 trawl hauls with the GOV. Of this total, 3 were assigned as foul hauls due to the level of gear damage sustained and 1 due to an unsecured cod-end. Of the remaining 84 hauls, 78 were undertaken in ICES area VIa.

The Scanmar gear monitoring system and the NOAA bottom contact sensor were used throughout the survey to observe the gear performance.

The completed valid trawl positions are shown on the attached chart.

Table 1 shows the total catch of all species for each haul and also for some of the main species caught.

Table 2 summarises the historical and current survey indices for the major species caught in ICES area VIa.

Length, weight, sex and maturity were collected from all species listed in the EU Data Collection Regulation (EC) No 1639/2001.

All invertebrate species present in the trawl catches were identified and recorded.

Hydrography

The thermosalinograph was run continuously throughout the cruise.

The CTD should have been deployed at each station to obtain temperature and salinity profiles; however, since it loss on day one, this was not possible.

Temperature and salinity samples were however obtained at each station for surface and bottom only, using reverser bottles and digital deepwater thermometers.

These data cover the minimum requirements for an IBTS cruise, as set by ICES.

Biological sampling

Biological data was recorded for a number of species in accordance with the requirements of the EU Data Regulations.

All invertebrate species caught were identified (where possible) to species level. Invertebrates were present in most hauls, with the largest number of species present in a single haul being sixteen.

Selected elasmobranchs species were sampled and DNA collected from them for FTFB group on behalf of MBS.

O-group gadoid samples were collected from the Clyde, South Minch and North Minch sea areas, for FRS Population Biology group.

C Davis
25 April 2008

Seen in Draft

F.Rogers, Captain
P.Carmichael, Fishing Master
3 December 2007

Table 1. Scotia 1707 IBTS Q 4 Fish wts. (Kg)

Haul No.	Rect	Cod	Haddock	Whiting	Pout	Herring	Mackerel	All Species
471	46E5	1.87	148	20.1	0.59	0.26	1.33	261.79
472	46E6	0.64	0.77	0.1	1	0	0	89.15
473	47E6	4.6	71.4	6.1	0.01	0.38	0	151.58
474	47E6	0	43	7.4	181.9	0.16	0	386.59
475	47E5	0.9	49.3	14.1	192.9	2.94	70	421.38
476	48E5	36.7	79.7	1.79	0	0	23	406.61
477	48E4	0	14.6	0.7	0	0	0	68.85
478	48E4	3	88.8	0.62	0.14	0	0	140.34
479	47E4	6.5	288.1	4.57	2.31	536.9	644.5	1757.28
480	47E3	10.1	29.8	0.48	0.79	0	2.79	129.12
481	47E3	3.9	4.4	0	23.6	0	0	590.56
482	46E3	0	23.1	10.6	0.1	0	17.5	109.06
483	46E2	9.3	235.3	23.8	0	1481.8	2.65	2540.01
484	45E2	0	26	1.11	0	0	8.9	93.22
485	45E2	9.9	132.4	2.8	0.01	0	0	201.58
486	46E1	2	36.3	0	0	0	0	77.35
487	45E1	3.8	24.3	3.1	0.05	5.3	0.02	98.32
488	45E0	3.8	0	0	0	0	0	136.05
489	45E0	1.6	46.2	0.48	6.1	0	0	622.81
490	44E0	0	3.8	0	0	0	0	162
491	44E1	1.7	18.2	18.3	1.07	29.1	2.37	133.26
492	44E1	0	19.2	9.3	20.8	2.23	6.4	169.63
493	44E0	1.9	45.2	0.39	0	0	6.7	107.36
494	43E0	0	35.4	0	0	0	0	79.1
495	43E1	0	53.1	10	10.6	35.6	86.4	245.26
496	43E1	7.4	28.5	2.22	0.07	0.21	2.26	108.05
497	42E0	0	3.5	0	0	0	0	425.82
498	42E1	0	27.1	3.9	0	0.87	0	40.28
499	42E1	1.3	6.8	4.8	8.2	5.1	0.96	105.61
500	41E1	0	13.1	4	21.3	8.1	0	94.77
501	41E0	2.6	7.9	0	0	0	1	105.02
502	40E1	1.6	20.9	0	0	0.19	2.6	85.2
503	40E0	0	26.9	0	0	0	0	248.46
504	40E1	0	34.1	0.4	0	6.1	20.1	664.33
505	39E0	0	16.4	0	0	0	0	504.82
506	39E0	0	13	0.41	0.77	0	4	104.84
507	36D9	0	59.6	0.96	0.52	7.9	4.82	201.94
508	36D8	0	27.9	1.5	0	0	0	774
509	37D9	0	105.2	0	0	0.14	0	756.68
510	37D9	0	83	2.57	0.01	2.93	10.5	201.11
511	38D9	0	39.2	0	0	0	1.28	85.58
512	38E0	0	3.6	0.16	0	3.6	1.94	85.39
513	38E0	0	55.2	78.1	0	569	3875.8	4727.17
514	37E0	0	30.5	74.2	1.46	6.7	0	228.63
515	38E1	0	0.41	4.1	0.21	2.2	0	49.57
516	37E1	0	0.08	42.6	0	0.03	0	236.06
517	39E1	0	6.8	3.8	0	6.7	0.29	75.14
518	39E1	foul						
519	40E4	3.3	2.2	6.8	1.15	0.25	0	45.25
520	39E5	0	8.4	113.74	12.2	11.4	0.52	174.71

Haul No.	Rect	Cod	Haddock	Whiting	Pout	Herring	Mackerel	All Species
521	39E4	0	8.5	27.5	3.47	1.41	1.3	113.72
522	39E3	10.3	3	12	0	0.68	0.12	50.9
523	40E2	14.4	0	5.8	0	11.4	0.2	71.82
524	40E2	foul						
525	40E2	0	30.6	21	0.26	5.7	0.33	225.02
526	41E1	0	0	0.8	1.42	3	0	47.34
527	40E1	0	21	17	13.6	13.3	4.4	204.26
528	40E3	0	1.88	3.49	0	0	0	122.26
529	40E2	0.75	36.4	233.2	0	0	0.97	492.13
530	41E2	0	10.5	62.2	0	0.31	12.6	1089.44
531	41E2	0	16.4	4.6	0.08	0.14	0	324.81
532	42E2	4.1	0	7.3	3.56	0	0.15	122.27
533	42E2	7.6	1.01	5.3	6.2	0	0.12	77.13
534	42E2	0	5.3	1.33	0.58	0	0	28.33
535	41E3	0.59	1.9	45.8	11.3	0.27	0	174.5
536	42E3	1.4	4.1	57.7	8	0.28	0	438.41
537	43E3	0	0.32	5.6	4.5	0	0	144.66
538	43E2	0	1	0.69	3.5	0.38	0	70.01
539	47E4	1	40.3	14.1	0	0.14	0	513.79
540	46E3	0	66.4	12.7	3.8	0.91	0	171.18
541	46E4	0	79.2	9.2	9	0.11	0	140.87
542	46E4	0	10.5	8.6	4.9	0	0	58.08
543	46E4	5	52.1	8.5	0.47	9.8	0.56	98.44
544	44E4	7.3	0	0.08	0.4	0.17	0	30.01
545	44E3	0	0.4	48.5	23.9	347.7	0	506.7
546	45E3	0	0.62	1.9	15.4	0	0	83.33
547	45E4	2.4	0.74	1.1	3.6	0.17	0	27.38
548	45E4	0	2.06	0.16	12.9	0.28	0.02	47.78
549	45E4	0	1.9	2.3	30.9	0.03	0	71.48
550	45E4	foul						
551	45E4	0	9.2	1.4	6.2	0.02	0	46.07
552	46E3	1.1	11.5	0.7	39	0.1	0	74.58
553	45E3	foul						
554	47E5	0	15.2	4.5	4.2	1.26	0.03	106.44
555	47E5	0	15.9	0	0	0	0	25.78
556	47E5	4.4	142.1	9.9	0.02	2.62	0	342.82
557	47E4	6.9	55.6	14.6	0.08	0.65	0.58	248.52
558	46E5	6.8	66.9	10.7	6.8	0	0	117.33

Table 2. West Coast Q4 IBTS Area VIa, Numbers at Age per 10hrs Fishing Effort.

Year	Hauls	0	1	2	3	4	5	6
Cod								
2000	53	0	16	3	0	0	0	0
2001	58	1	2	9	1	1	0	0
2002	64	1	10	3	7	1	0	0
2003	63	1	2	11	3	1	0	0
2004	59	0	5	4	0	+	0	0
2005	63	+	2	3	0	1	+	0
2006	58	0	17	6	1	1	0	0
2007	**75**	**0**	**72**	**216**	**17**	**9**	**0**	**7**
Haddock								
2000	53	2959	4231	147	191	59	25	5
2001	58	3083	2219	3563	48	138	22	12
2002	64	2943	1709	1770	2841	34	50	24
2003	63	293	2023	965	1470	639	28	17
2004	59	542	574	1068	410	649	524	5
2005	63	286	419	409	410	223	309	87
2006	58	19	543	233	162	281	79	100
2007	**75**	**3566**	**808**	**11927**	**852**	**1165**	**753**	**340**
Whiting								
2000	53	4434	4055	789	160	9	7	1
2001	58	9615	1957	1420	155	40	12	2
2002	64	14658	1591	621	479	30	9	5
2003	63	9932	3446	567	338	83	27	4
2004	59	5923	1758	940	83	57	62	1
2005	63	2297	308	318	76	9	4	1
2006	58	415	296	140	101	35	8	3
2007	**75**	**39615**	**4005**	**2430**	**625**	**458**	**248**	**3**
Saithe								
2000	53	0	0	1	1	0	0	0
2001	58	0	+	50	15	2	0	0
2002	64	0	1	8	6	1	0	0
2003	63	0	**+**	25	5	1	+	0
2004	59	0	0	14	8	1	+	0
2005	63	0	+	4	6	3	+	0
2006	58	0	1	10	6	1	0	0
2007	**75**	**0**	**69**	**2121**	**117**	**28**	**22**	**11**

Year	Hauls	0	1	2	3	4	5	6
N.Pout								
2000	53		25311	5984	2166	302	23	0	0
2001	58		34355	2498	1977	112	0	0	0
2002	64		59207	5843	493	355	8	0	0
2003	63		10549	7715	2291	108	92	0	0
2004	59		5281	4021	1757	530	0	0	0
2005	63		3118	455	143	117	31	0	0
2006	58		4351	1119	126	24	14	0	0
2007	**75**		**7352**	**455**	**528**	**22**	**10**	**1**	**0**
Herring								
2000	53		153	208	242	112	333	169	15
2001	58		223	121	3335	1452	588	1186	72
2002	64		144	94	124	230	18	31	7
2003	63		95	8861	5227	1124	1251	111	19
2004	59		433	194	807	1717	1903	2806	26
2005	63		292	252	251	194	482	527	30
2006	58		102	23	940	566	423	913	660
2007	**75**		**3278**	**9687**	**3007**	**1916**	**1229**	**2568**	**4047**
Mackerel								
2000	53		102	98	118	47	9	1	1
2001	58		720	15	58	32	17	1	1
2002	64		12045	270	91	154	42	5	8
2003	63		1244	771	460	72	62	10	8
2004	59		23476	2095	8543	1591	262	108	10
2005	63		30446	5299	730	1694	492	138	6
2006	58		10040	2110	692	148	217	89	6
2007	**75**		**3910**	**14288**	**7191**	**3786**	**1119**	**253**	**95**

+= < 0.5

2007 Q4 W.Coast IBTS Trawl Station Locations
(Stations in red are foul / invalid)