R1/12

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FRV *Scotia*

Cruise 1705S

REPORT

16 November – 7 December 2005

Personnel

A Robb	(SIC)
K Coull	
J Mills	
M Mathewson	Part 2
R Watret	
A Tait	
N Brown	Part 1
M Snow	Part 2
P McKay	Part 2

Fishing Gear

GOV Trawl (BT137) with belly lines and 20 mm cod end, Ground Gears C/A.

Out-turn Project: 22 days RV0411

Objective

- To participate in the ICES co-ordinated Western Division Bottom Trawl Survey.
- To obtain temperature and salinity profiles at each trawling station.
- To collect additional biological data in accordance with the EU Data Directive 1639/2001.
- To identify and record all invertebrate species caught.
- To sample herring for presence of viral haemorrhagic septecaemia virus (VHSV).
- To sample cod and monkfish to determine the levels of specific parasitic fauna.

Area

West of Scotland, N W Ireland, Irish Sea

Narrative

Scotia sailed from Aberdeen as scheduled at 1100 on 16 November and proceeded north and west to the study area. On route, the opportunity was taken to deploy and check the operation of the trawl gear and to test the instrumentation etc. Fishing commenced the next

day at 0700 at the station in rectangle 46E6. Weather conditions were favourable and the survey continued westwards and southwards for the next six days without interruption. The ship continued to make good progress down the outside stations lying to the west of Scotland and gradually worked south towards the Irish coast. During this time, contact was made with the *Celtic Explorer* and arrangements put in place for an inter calibration exercise on the 25/26 November. However prior to this, the weather conditions started to deteriorate and the weather forecasted for the west coast of Ireland was for force 10/11 NW winds continuing for 2-3 days. After receiving additional information from the shore side and further discussion with *Celtic Explorer* it was decided to abandon the idea of an inter calibration until a later date. *Scotia* left the area and headed for the stations in the Irish Sea. Rather than lose any survey time to the weather, the half landing was brought forward and the ship docked in Dublin at 1000 on 25 November for the port call and to allow changes to the scientific staff. *Scotia* sailed again the following day at 1000 and completed the Irish Sea stations before progressing back to the west of Ireland. However, by this time the *Celtic Explorer* had completed her cruise and the opportunity for inter calibration was missed on this occasion. As in previous years, contact was made with the Irish shore side to determine the positions of any static gear before fishing operations were carried out in inshore grounds. From this area the survey progressed northwards and then up through the Minches and along the North Coast without interruption. The last trawling station was completed in rectangle 46E6 at around 1500 on 6 December. *Scotia* then proceeded to Aberdeen docking at around 0600 the following day.

Results

Trawling

Throughout the survey the weather conditions were favourable with no time being lost to adverse weather conditions. As a result the survey was completed successfully with a total of 87 trawl hauls being carried out. Time was available to allow sampling at four additional stations to the previous programme. The Scanmar metering system was used to monitor headline height, wing and door spread during each haul. Bottom tide speed and direction were also recorded. The trawl positions are shown on the attached chart. Table 1 gives the haul catch weights for the main species caught during the cruise and Table 2 summarises the historical and current indices for the major species caught in area VIa.

In terms of bulk, catch levels varied considerably over the cruise area, ranging from 10 kilos to 4 tonnes. In general, the bigger catches were dominated by pelagic species such as mackerel or horse mackerel.

Good catches of juvenile mackerel were found throughout the VIa area whereas catches of juveniles of the other main species were generally at low levels or absent. This observation is reflected in the calculated indices for 2005 which, with the exception of mackerel, all show a decrease from 2004. For cod, haddock and whiting the indices are amongst the lowest recorded in the past ten years. The mackerel index suggests that a good year class could possibly recruit into the fishery.

Biological sampling

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

A total of 770 herring and 585 sprats were sampled for the detection of viral haemorrhagic septecaemia virus (VHSV) using molecular methods. The results from this will be used to estimate the prevalence of vhsv in wild clupeoid fish, validate novel molecular detection

methods and assess the risk that a marine reservoir of virus presents to marine acquaculture.

A total of 100 monkfish and 45 cod were sampled for the presence of *Anisakis* sp and *P. decipiens*. Samples will be used for comparison of nematode loading in fish from varying geographical locations and localisation in fish tissues.

All invertebrate species were identified and recorded.

Hydrography

The CTD was deployed at each trawling station whilst the thermosalinograph was run continuously throughout the cruise.

A Robb
15 December 2005

Seen in draft: P Ramsay, OIC *Scotia*

Table 1	Q4 2005 West Coast IBTS Survey, Total Catches, Catch Weights (kgs) of Main Species								
Haul No	Rect	Herring	Sprat	Mackerel	Cod	Haddock	Whiting	Norway Pout	Total Catch
484	46E6	Foul Haul							
485	46E5	0.7			1.7	406.5	19.0	0.3	511.5
486	47E5	3.0		1200.0		23.0	1.7		109.6
487	47E6	0.5		2.4	2.5	28.6	10.4	1.3	110.4
488	48E5	3.9		8.3		37.5	1.0	0.1	109.6
489	48E4	0.6		7.0		2.3	0.5		133.6
490	48E4	3.2		20.3	9.9	32.5	1.1	6.9	236.4
491	47E4	10.6		113.0		12.2	4.2	0.1	316.0
492	47E4	0.2		0.0	1.0	19.0	2.4		115.9
493	47E3	7.0		93.8	3.2	29.0	1.7	0.4	164.2
494	47E3			0.4		8.1		32.9	128.9
495	46E3			8.7		49.9	1.6		156.4
496	46E3	1.3		2714.2	1.9	109.1	4.2		4197.6
497	45E2	5.7		1140.9		28.2	6.8	0.1	1229.0
498	46E1	5.2		1.2		21.0		4.8	78.0
499	45E1	Foul Haul							
500	45E1	132.5		423.9		64.5	1.9		752.3
501	45E0					0.7			171.4
502	45E0	1.2		94.1		11.6	1.0	44.6	378.3
503	44E0			0.1		16.7			129.7
504	44E0	107.3		942.7		9.5	3.6	43.0	1169.0
505	44E1	312.3		1536.0		34.0	3.1	0.3	1953.8
506	43E1	15.5				25.2	0.6	0.6	58.8
507	43E0	174.9		96.8		69.6	3.4	1.1	405.8
508	42E0			0.3		25.8		1.2	281.9
509	42E1	3.7		6.8		14.2	7.5	0.1	51.6
510	42E1	2.3				55.9	15.1	0.3	144.7
511	41E1	5.7		1.5		6.2	0.8	0.1	54.7
512	41E0	0.1		1.5		36.3	0.2	0.1	3062.0
513	40E0	0.8		105.0		42.6	1.3	0.0	469.2
514	39E1	0.1	0.0	129.2		12.4	3.8		176.0
515	39E0			1.2	1.4	27.6			1589.0
516	40E1	63.2		63.2		49.0	18.2	0.2	289.0
517	40E2	0.9		51.8		11.2	17.1		115.0
518	38E4	0.2	5.9		0.6	3.2	0.4	18.1	64.8
519	37E5		1.0		15.3	0.0	0.7	4.3	47.8
520	37E4	2.9	0.0			0.9	44.9	146.5	220.2
521	36E4	0.7	0.3			1.4	64.1	5.1	84.7
522	36E4	37.4	5.0		0.1	19.8	38.8	1.6	120.0
523	36E5	0.5	0.1		1.6	72.7	47.5	28.3	240.2
524	36E5	0.4	0.0	0.4		24.3	51.2	5.1	174.3
525	36E6	0.0		1.7			5.3		106.0
526	37E5		3.1	0.5		0.2	13.8		145.8
527	37E6	0.8	35.0		1.0	0.4	146.6	0.0	241.6
528	38E6	46.0	59.7	5.0	2.1	0.1	35.5	0.0	212.0
529	38E5	0.0		0.2	18.6	0.8	35.0		233.9
530	39E5	5.6	15.6			8.5	96.3	1.1	138.0
531	39E4	0.1	0.8	5.6		10.5	14.7	1.0	39.9
532	39E3	0.3					5.8		19.8
533	38D9	0.5		10.2		44.4	3.5	0.0	117.7
534	38E0	0.4	2.5	8.9		21.0	14.3	0.7	67.2
535	38E1	0.9	2.0			0.4	2.8	0.1	10.7
536	37E1		0.9	0.2		3.0	22.6	0.2	122.8
Haul No	Rect	Herring	Sprat	Mackerel	Cod	Haddock	Whiting	Norway Pout	Total Catch
537	37E0	0.6		17.3		34.3	53.4	3.9	139.0
538	36D9	0.6		1747.4		49.1	4.7	0.5	1973.9
539	36D8			45.3		43.5	1.7	0.0	585.0
540	37D9	0.2		9.1		143.2	0.5	0.1	1660.4
541	37D9	7.8		75.8	0.7	45.9	2.7		175.0
542	38E0	0.1		246.4		10.6	1.8		287.0
543	39E0	1.6		59.2		26.2	0.3	0.9	205.0
544	39E1			9.4		17.8	1.3		67.2
545	40E2	3.5		3.6	1.9	0.2	0.8		28.7
546	40E3	0.2	0.1	0.5		27.3	22.3		92.4
547	40E2	0.3				14.3	2.2		84.5
548	41E2	1.7	0.0	542.7		12.7	0.9		605.0
549	41E3	3.1	0.0		0.9	2.9	57.5	1.2	113.2
550	41E2	0.7	0.0	3.4		9.7	1.2	0.9	42.6
551	42E2		0.0	2.4		1.1	0.2	0.8	37.8
552	42E2		0.0		1.0		8.2	1.4	104.6
553	42E2	0.4					7.1	9.0	266.2
554	42E3	0.2					3.1	4.0	77.9
555	43E2	1.3	0.1	0.0		2.7	1.6	0.5	74.6
556	43E3	2.0	0.1	0.1			1.4	1.5	69.5
557	44E4	0.7	0.9	0.4	3.3	1.6	2.9	2.6	51.5
558	44E3	0.2			0.1	4.9	14.8	23.3	101.0
559	45E3	0.9	0.5			0.2	4.0	5.4	27.9
560	45E4	2.3	0.4		3.9	2.5	4.7	7.2	49.3
561	45E4	8.8	0.3			0.5	14.7	10.4	63.6
562	45E4	5.0	0.7			1.8	3.7	0.9	32.3
563	46E4	2.9	0.2			2.9	62.8	6.0	101.4
564	46E3	2.3	0.8			84.9	6.2	0.0	149.5
565	46E3	26.5	0.0	0.2		109.6	6.8	0.1	214.2
566	46E4	13.6			2.1	79.1	6.0		103.0
567	46E4	3.3	0.0		6.5	78.1	15.3	11.8	143.1
568	47E6			0.3	2.2	17.8	2.2	0.5	67.0
569	46E5	Foul Haul							
570	46E6	0.6				3.4		1.6	77.4

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

	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
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
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
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
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
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
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

+= < 0.5

2005 Q4 IBTS Trawl Positions