

R1/12

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FRV SCOTIA

Cruise 1194S

**REPORT**

2-22 August 1994

**Personnel**

K A Coull	HSO (in charge)
G I Henderson	SO
D S Beveridge	SO
P Clark	ASO
C G Davis	ASO
M C Donald	ASO
A Black	MSc student (1st half)
A Criado	MSc student (1st half)
B Calvo	Visitor - University of Glasgow
K Ensor	Visitor - University of Glasgow

**Objective**

To undertake a demersal trawling survey of the North Sea.

**Out-turn days per project: 21 days DAC1**

**Narrative**

*Scotia* sailed from Aberdeen at 1300 on 2 August. Trawling commenced on the stations east of Aberdeen with four hauls being completed before R Robertson (observer) was put ashore at Montrose. Work continued uninterrupted on the southern and eastern edge of the survey area before *Scotia* docked at Lerwick at 0900 on 12 August for the mid cruise break. The vessel sailed again at 0900 the following morning and recommenced work on the stations east of Shetland. Having obtained a five day weather forecast, *Scotia* was able to avoid poor weather conditions and completed the western and northern area of the survey before moving on to the stations off the east coast of Scotland. The survey area was completed on the afternoon of 21 August and *Scotia* docked at Aberdeen at 1900 the same day.

**Results**

The survey area was successfully covered with a total of 89 hauls being completed. Water samples and temperatures were collected from 69 stations.

The numbers of 0-group haddock and whiting caught per hour in each statistical rectangle are shown in Figures 1 and 2 respectively. The numbers of cod, haddock, whiting and saithe caught per 10 hours fishing during the August groundfish surveys since 1982 are shown in Tables 1, 2, 3 and 4 respectively. While the number of 0-group haddock caught is the highest by far since the surveys commenced, the number of 0-group whiting is slightly below average. The numbers of 0-group cod caught are higher than in previous years but this index has not so far proved to be a reliable indicator of recruitment level.

All length frequency, haul summary data, and age data for cod, haddock, whiting, saithe and Norway pout were punched at sea and stored on micro-computer. The Scanmar system was used throughout the cruise to monitor headline height, wing spread and distance covered during each haul.

K A Coull

24 October 1994

Seen in draft: C Brazier - Master

# RESULTS FROM SCOTTISH SURVEYS CONDUCTED IN AUGUST

Table 1

Numbers of cod per 10 hours fishing - North Sea										
Survey year	Valid hauls	Age								
		0	1	2	3	4	5	6	7	8
1982	77	0.2	61.4	35.1	57.2	18.3	9.2	5.9	1.4	0.5
1983	79	2.3	32.5	78.0	18.1	19.7	7.5	2.3	1.5	0.0
1984	82	0.0	81.9	39.1	25.3	5.0	5.7	1.6	0.5	0.2
1985	83	0.0	6.6	114.3	19.7	11.2	3.0	2.4	0.6	1.0
1986	80	0.7	80.1	10.4	39.6	5.7	3.9	1.9	0.6	0.0
1987	73	0.0	21.9	69.5	3.4	9.2	2.9	0.7	0.2	0.0
1988	86	1.3	16.2	28.8	16.5	2.5	3.3	1.2	0.4	0.0
1989	86	0.3	56.1	13.5	16.8	9.5	2.0	0.8	0.5	0.0
1990	85	2.9	11.4	49.0	5.9	7.4	2.6	0.9	0.8	0.0
1991	90	1.4	30.3	15.4	13.3	1.3	0.6	0.4	0.2	0.0
1992	87	0.5	64.2	19.3	7.2	6.7	2.9	1.8	1.2	0.2
1993	87	3.6	34.7	74.9	10.1	2.5	1.2	0.3	0.0	0.1
1994	87	25.8	115.8	33.4	28.8	3.1	1.2	0.7	0.2	0.0

Table 2

Numbers of haddock per 10 hours fishing - North Sea										
Survey year	Valid hauls	Age								
		0	1	2	3	4	5	6	7	8
1982	77	1235	2488	996	1336	115	7	2	1	2
1983	79	2203	1813	1611	372	455	53	12	1	1
1984	82	873	4367	788	336	55	65	9	5	1
1985	83	818	1976	2981	232	103	14	22	4	2
1986	80	1747	2329	574	598	36	27	4	3	+
1987	73	277	2393	704	106	128	8	5	1	2
1988	86	406	467	1982	170	27	23	2	1	+
1989	86	432	886	214	574	31	4	7	1	+
1990	85	3163	1002	240	32	103	7	1	3	1
1991	90	3471	1705	178	21	5	16	2	+	1
1992	87	8270	3832	963	48	8	3	8	+	+
1993	87	859	5836	1380	269	6	4	1	3	+
1994	87	13762	1265	2080	210	53	2	+	+	+

Table 3

Numbers of whiting per 10 hours fishing - North Sea										
Survey year	Valid hauls	Age								
		0	1	2	3	4	5	6	7	8
1982	77	102	653	971	972	224	60	16	3	+
1983	79	210	563	578	407	511	116	17	3	5
1984	82	442	1048	371	170	77	92	18	5	+
1985	83	169	1577	973	247	63	36	18	10	+
1986	80	406	1111	452	224	27	5	5	1	0
1987	73	120	1405	1150	208	77	16	3	+	+
1988	86	642	967	1606	452	70	19	2	0	2
1989	86	427	4043	741	733	157	13	6	1	0
1990	85	1943	2239	2053	248	255	47	5	1	1
1991	90	1379	1769	950	759	51	40	9	+	0
1992	87	2417	2925	1267	553	585	47	26	5	-
1993	87	247	3169	1168	423	156	182	6	11	+
1994	87	648	2635	950	254	57	34	23	+	1

Table 4

Numbers of saithe per 10 hours fishing - North Sea										
Survey year	Valid hauls	Age								
		0	1	2	3	4	5	6	7	8
1982	77	0.4	8.4	6.8	13.7	27.0	6.9	11.1	1.9	2.2
1983	79	0.0	38.4	5.0	3.7	14.0	21.0	11.0	5.5	4.0
1984	82	0.0	5.8	83.9	264.7	67.4	11.4	12.7	1.4	0.7
1985	83	0.0	0.4	500.7	401.4	33.9	9.6	5.9	11.7	0.9
1986	80	0.0	0.0	31.6	431.8	43.6	5.2	1.5	0.6	0.4
1987	73	0.2	0.3	1.7	17.0	60.8	6.8	1.4	0.8	1.0
1988	85	0.0	0.5	3.5	14.3	10.2	18.7	2.7	0.3	0.8
1989	86	0.0	1.8	2.9	13.2	12.8	4.9	7.7	2.2	1.0
1990	85	0.0	0.7	31.3	40.1	5.9	4.0	2.0	2.2	1.0
1991	90	0.0	3.8	7.0	31.8	6.2	0.8	0.3	0.6	1.8
1992	87	0.0	0.8	3.1	18.4	47.8	8.9	1.2	1.0	0.0
1993	87	0.0	2.2	20.1	78.9	23.8	15.4	1.8	0.1	0.0
1994	87	0.2	0.0	8.1	13.9	27.8	17.2	9.3	1.3	0.5

August 1994 Haddock 0-group nos/hour

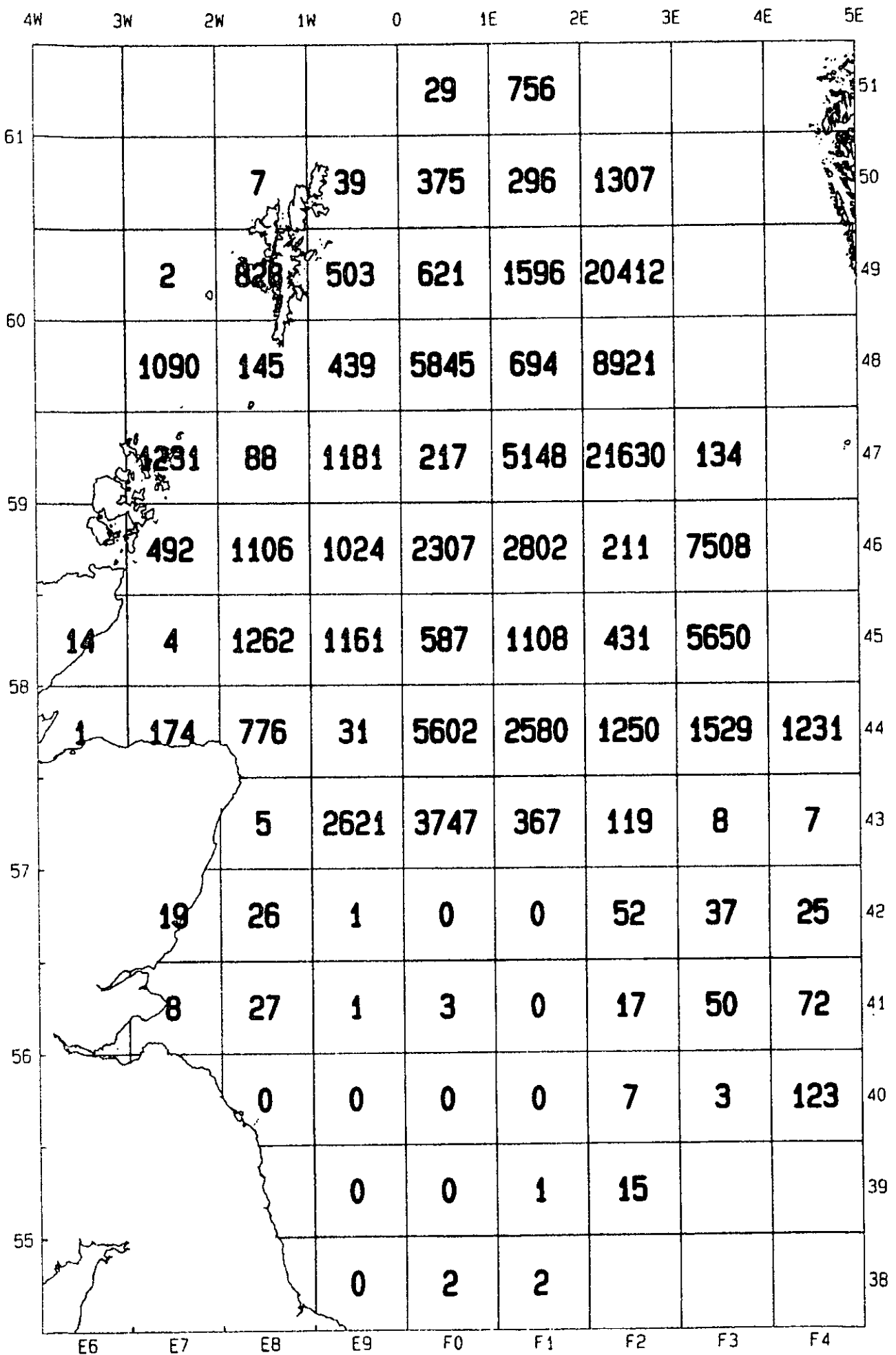


Figure 1

August 1994 Whiting 0-group nos/hour

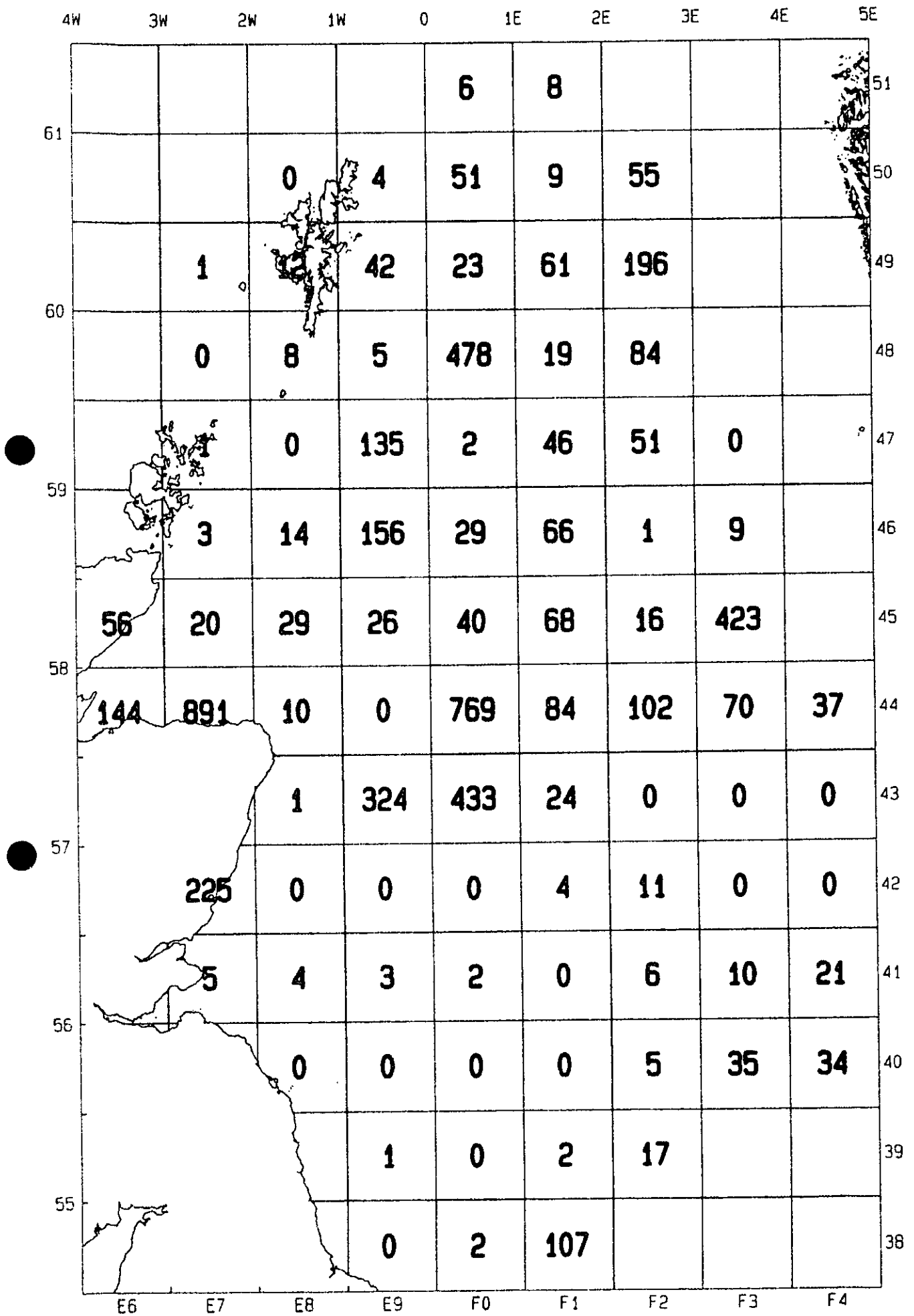


Figure 2

Scotia 2 - 22 August 1994 Cruise 11945

