

R1/12

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FRV *Scotia*

Cruise 1296S

REPORT

13-31 July 1996

Half landing: Lerwick 20 July 1996

Personnel

E J Simmonds	PSO (in charge)
P J Copland	HSO
G I Henderson	SO
M C Mathewson	ASO
M J Burns	ASO
I J Garioch	CON

Objectives

1. To participate in an ICES coordinated acoustic and mid-water trawling survey in the north western North Sea and north of Scotland from 58° to 62°N and 4°W to 1°E excluding Faeroese waters.
2. To obtain samples of herring for biological analysis, including age, length, maturity and ichthyophonous infection rates.
3. Obtain CTD and XBT profiles and sea surface T&S for analysis of herring distribution data.

Out turn days per project: 18 days EAA1.

Narrative

Scotia sailed from Aberdeen at 1100 hours on 13 July and made a passage to Scapa Flow for calibration of the acoustic survey system. The measurements were carried out and confirmed that the echosounder was performing to specification but only a poor quality calibration was obtained due to high winds. *Scotia* left Scapa Flow and commenced the survey at 0730 hours on 14 July at 58°25'N 003°00'W. The survey was conducted between 0300 to 2300 BST using east-west transects spaced at 15 nm (Fig. 1), progressing in a northerly direction to the east of Orkney and Shetland. Fishing was carried out opportunistically on observed fish traces (Table 1). The survey was interrupted at 60°25'N 000°22'W at 2300 hours on 19 July and a calibration was carried out in Gulberwick Bay overnight. This calibration was of a high standard. *Scotia* called at Lerwick for a half landing at 0900 hours on 20 July.

Scotia sailed from Lerwick at 2200 hours on 20 July and resumed the survey where it had been interrupted at 0300 hours on 21 July. The survey was continued to 61°25'N to the north and east of Shetland using 15 nm and 7.5 nm spaced transects. The survey was then continued southwards using east-west transects to the west of Shetland and Orkney. At 0830 hours on 25 July the survey was interrupted due to the loss of the acoustic towed body. A replacement body was picked up at Scrabster at 2000 hours and *Scotia* proceeded to Scapa Flow for a calibration of the new transducer. The survey was recommenced at 0540 hours on 26 July and completed at 1300 hours on 30 July at 59°30'N 003°30'W. *Scotia* sailed for Aberdeen and docked at 0600 hours on 31 July.

Results

During the survey a total of 922 15 minute echo integrator runs were completed, along with 42 trawl hauls, 55 CDT stations and 24 XBT stations. From the trawl hauls 30 gave samples of herring and 3,973 fish were examined in detail for biological parameters: length, otolith, sex, maturity, weight, weight without gonad and ichthyophonus infection. Sea surface salinity and temperature were logged during the whole cruise, RoxAnn seabed classification data was recorded from 13-25 July. All the echosounder output rolls were analysed for herring traces and all the data collected (with the exception of otolith readings) were entered into computer onboard.

The analysis for the overall survey results to provide population estimates and numbers at age remain to be completed. However, the biological data showed that only two of the fish examined showed signs of ichthyophonus infection, confirming that this disease no longer appears to be a problem for North Sea herring.

E J Simmonds
13 August 1996

Seen in draft: J B Nichols (Captain)

Table 1 Numbers of fish caught by species Scotia 13-31 July 1996

Haul No	Date	Time	Position		Depth	Species						Comments	
			Lat	Long		Herring	Sprat	Mackerel	Haddock	Whiting	Norway Pout		Blue Whiting
236	15/7	05:20:00	58 39.60N	000 00.17W	148								Foul Haul
237	15/7	12:50:00	58 40.36N	001 20.54W	116	1174	53			29	3		
238	15/7	17:45:00	58 40.80N	002 25.25W	75				5	2	195		
239	16/7	08:05:00	58 55.24N	000 30.80W	135	4004		6	24		105		
240	16/7	11:44:00	58 54.99N	000 11.69E	142								'O' Group Pout
241	16/7	17:22:00	59 10.38N	000 33.70E	128								'O' Group Pout & Sandeels
242	16/7	22:25:00	59 10.13N	000 32.28W	145	7780							
243	17/7	11:30:00	59 24.69N	001 56.43W	119	1414	1540		1	1			
244	17/7	15:15:00	59 24.70N	001 11.01W	121	4720							
245	17/7	20:04:00	59 25.15N	000 09.72W	143								'O' Group Pout
246	18/7	09:35:00	59 40.55N	000 38.11W	135	5834			18	9	141		
247	18/7	17:41:00	59 50.40N	000 37.75W	130	22008							
248	19/7	07:09:00	60 10.35N	000 07.42W	120								'O' Group Pout
249	19/7	10:13:00	60 08.81N	000 38.69W	125	324			3	3		22	9 Argentina
250	19/7	18:50:00	60 32.80	000 39.68W	115	3045		10					
251	21/7	11:55:00	60 40.00N	000 32.58W	118	2490		35		5			5 Argentina
252	21/7	15:26:00	60 47.54N	000 36.04W	111	4		3			143		
253	21/7	17:36:00	60 47.69N	000 29.05W	112	126		1		3	176		2 T. Minutus
254	21/7	20:55:00	60 48.08N	000 03.04E	149	4800							

255	22/7	07:30:00	61 03.04N	000 50.42W	142	5530							
256	22/7	10:50:00	60 55.05N	000 41.69W	104								
257	22/7	14:10:00	60 54.79N	000 08.32W	154	27950							
258	23/7	05:55:00	61 07.17N	000 15.10W	144	333		1					3 Saithe
259	23/7	18:46:00	60 54.91N	001 48.70W	137	1161							7 Horse Mackerel
260	24/7	04:02:00	61 03.15N	001 19.07W	135	6337		349					60 Horse Mackerel
261	24/7	10:37:00	60 47.89N	001 13.73W	98	124		48	1				8 Horse Mackerel
262	24/7	16:35:00	60 40.28N	002 11.15W	138	1427		14				366	7 Horse Mackerel
263	24/7	20:25:00	60 40.06N	002 54.02W	242			216				643	
264	25/7	06:10:00	60 24.90N	002 53.80W	160	29						1151	28 M. Muelleri 1 Saithe
265	26/7	12:29:00	59 22.91N	003 38.92W	179	12750		960					
266	26/7	16:41:00	59 41.00N	003 45.18W	140	186	20			3	212		1 Argentina
267	26/7	19:47:00	60 00.00N	003 46.00W	120	1875		250				155	
268	27/7	09:15:00	60 32.63N	002 40.60W	138	3520		50					'O' Group Pout
269	27/7	17:02:00	60 25.56N	002 15.96W	151	24825							
270	28/7	09:34:00	60 09.81N	002 33.02W	92	1464		4					
271	28/7	12:23:00	60 10.17N	002 56.45W	159	12700							
272	28/7	15:15:00	60 02.92N	002 45.42W	79								'O' Group Pout
273	28/7	19:07:00	60 03.04N	001 58.87W	94	10			1	126	3		
274	29/7	09:22:00	59 52.68N	003 29.66W	148	6630		60					
275	29/7	13:30:00	59 47.82N	002 42.66W	76			1					'O' Group Pout
276	29/7	18:07:00	59 47.95N	001 40.11W	115	65		3	16	52	8		'O' Group Pout
277	30/7	07:20:00	59 36.18N	003 30.04W	160	63	1		1	7			

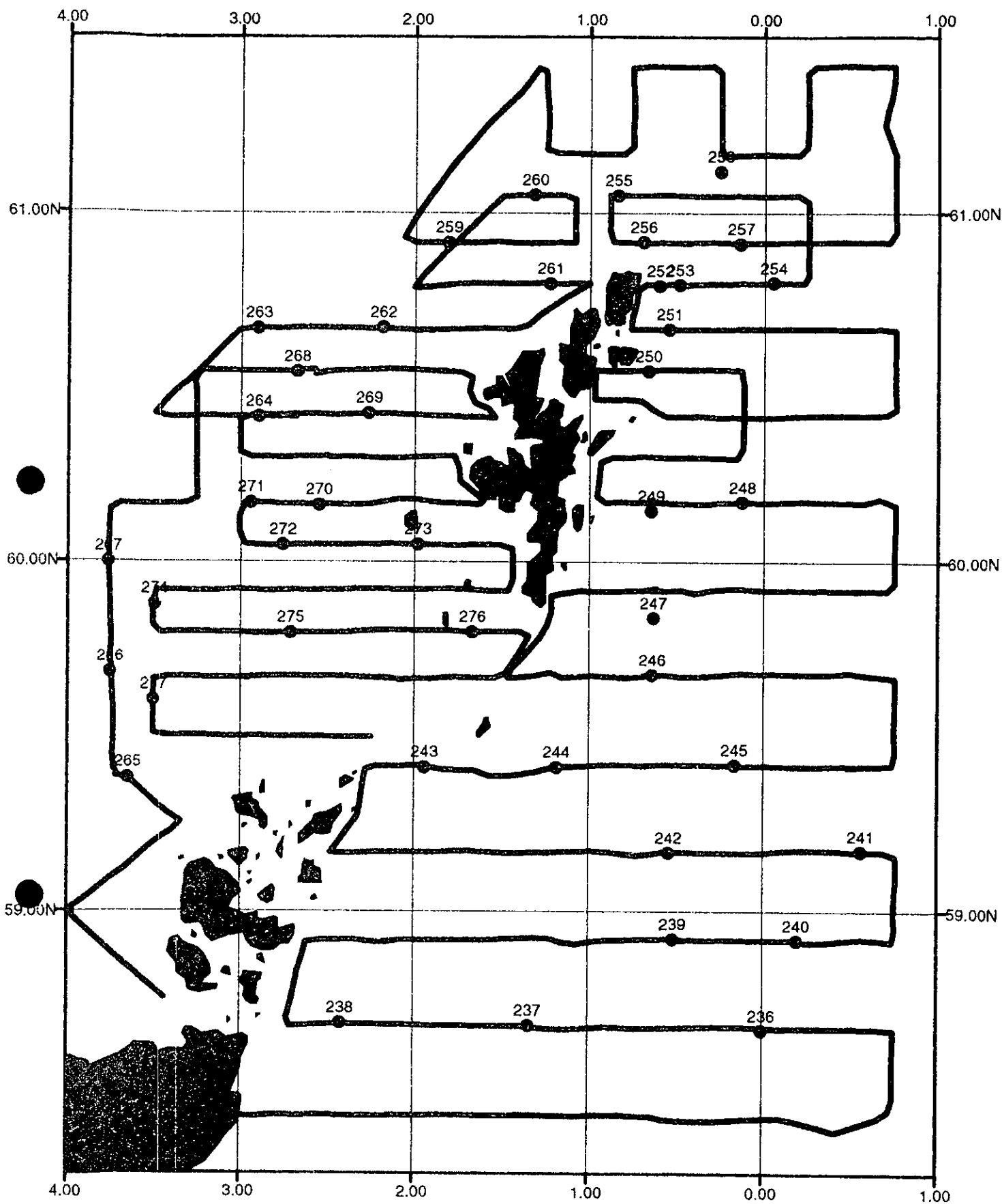


Figure 1 Cruise track and trawl positions SCOTIA 13-31 July 1996