

R1/12

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FRV *Scotia*

Cruise 1401S

REPORT

20 September - 2 October 2001

Start port: Aberdeen

End port: Aberdeen

Personnel

Ian Tuck (In charge)

Jim Kinnear

Charlie Shand

Dave Bova

Adrian Weetman

Beth Mouat Student visitor (Glasgow University)

Fishing, Sediment Sampling and Underwater Television Gear

Scotnet 50 mm prawn trawl (headline 176') (+ SCANMAR); Day Grab.

Towed TV sledge, drop frame, umbilical towing cable and cameras (+ backup).

Objectives

1. To obtain estimates of distribution and abundance of *Nephrops* in the Firth of Clyde, South Minch and Stanton Banks using underwater television. If time permits the survey will include stations in the Sound of Jura and Noup.
2. To make use of the TV survey to estimate the densities of other shellfish species and benthic organisms and to record evidence of trawling activity. To collect samples of the sediment at each TV station.
3. To carry out *Nephrops* trawling in each stratum throughout the survey areas for size and sex composition analysis and examination of biological features.
4. To collect samples of *Nephrops* for comparison of reproductive condition and morphometrics in different areas.
5. To make observations of edible crab stocks in the Cape Wrath to North Rona area, using underwater TV.

Estimated Days per Project

13 days MF01t

Narrative

Scotia sailed from Aberdeen at 12:30 on Thursday 20 September, and arrived at the first TV station at the southern end of the North Minch next day, at 1100 hours. Survey work proceeded into the South Minch, and out to the Stanton Banks, with the first half of the South Minch completed on Sunday morning, when the vessel sailed for the Clyde. Work continued in the Clyde until Tuesday 25 September, when the vessel moved on to the Sound of Jura. While trawling in the Clyde, problems were encountered with the winch control cards, which were later repaired by the ship's engineers. Work was completed in the Sound of Jura on Wednesday morning, and *Scotia* sailed to the South Minch, to complete the stations in that area by Friday night. By this time it was clear that gales to the north of Scotland would prevent TV work in the Cape Wrath, North Rona, Noup areas. Additional TV work was therefore carried out in inshore areas of the North Minch on Saturday and Sunday. *Scotia* sailed around the North of Scotland overnight on Sunday, and trawling work was carried out in the Moray Firth on Monday. *Scotia* docked in Aberdeen during the night of Monday 2 October.

Results

Preliminary estimates of mean *Nephrops* burrow density for each station are shown in Table 1. The distribution and comparative densities are shown on the figure.

Final analysis of the video tapes will be carried out within the Laboratory.

Ian Tuck
2nd October 2001

Seen in draft: R Walton, OIC, 5 October 2001

Table 1

South Minch				Firth of Clyde				North Minch			
Station	Lat	Long	Preliminary Density	Station	Lat	Long	Preliminary Density	Station	Lat	Long	Preliminary Density
301	57.1915	-6.9105	0.675159	401	55.0995	-5.295	1.247368	534	57.7325	-6.7845	0.087336
302	57.1625	-6.9265	0.681529	402	55.1375	-5.3875	1.005814	535	57.59	-6.992	0.333333
303	57.1315	-7.063	0.48503	403	55.2335	-5.276	1.554404	537	57.5055	-6.944	1.177215
304	57.023	-7.103	0.522293	404	55.242	-5.195	1.565934	538	57.5475	-6.7385	0.90184
306	56.95	-7.209	0.328671	405	55.3865	-5.1715	1.26776	539	57.549	-6.454	0.85625
307	56.921	-7.325	0.205714	407	55.3465	-5.2695	1.4	540	57.582	-6.44	1.159509
308	56.822	-7.2615	0.377778	408	55.308	-5.307	1.471429	541	57.412	-6.1105	0.813665
309	56.823	-7.0765	0.256281	409	55.3255	-5.3835	0.682028	542	57.569	-6.0515	0.421053
310	56.7545	-6.9615	0.324022	410	55.4055	-5.4815	0.265487	543	57.6185	-5.993	0.243243
311	56.687	-6.8905	0	411	55.453	-5.471	0.616667	544	57.664	-5.957	0.65
312	56.653	-7.166	0.685393	412	55.44	-5.414	1.308511	545	57.7	-5.898	0.566879
313	56.7225	-7.114	0.130682	413	55.501	-5.417	0.647727	546	57.714	-5.8095	0.441489
314	56.742	-7.213	0.064	414	55.631	-5.4345	1.14557	547	57.727	-5.974	0.6
315	56.685	-7.3115	0.413333	415	55.714	-5.3905	0.865591	548	57.795	-5.9975	0.488372
316	56.608	-7.3375	0.765823	416	55.7395	-5.369	0.566327	549	57.837	-6.1235	0.668874
317	56.615	-7.445	0.453846	417	55.9415	-5.39	0.652439	550	57.861	-5.1015	0.140884
318	56.5635	-7.68	0.036364	418	55.8735	-5.356	0	551	57.85	-5.0935	0.132653
	56.5865	-8.224	0.459302	420	55.757	-5.145	0.165	552	57.965	-5.391	0.706215
320	56.603	-8.346	0.385542	422	55.6405	-5.079	0.858586	553	57.8795	-5.3925	0.289617
321	56.569	-8.398	0.418129	423	55.58	-5.019	0.934426	554	57.877	-5.3175	0.247191
322	56.484	-8.367	0.147541	424	55.684	-5.014	1.009434	555	58.1775	-5.4565	0.68617
323	56.4795	-8.2555	0.295302	427	55.66	-4.92	1.036458	Sound of Jura			
324	56.3995	-8.3665	0.147727	429	55.591	-4.838	0.360825	Station	Lat	Long	Preliminary Density
325	56.31	-8.1165	0.374016	430	55.5555	-4.8215	0.90404	201	55.546	-6.0125	1.795181
330	56.393	-6.686	0.588608	433	55.4395	-5.0135	1.093407	202	55.5735	-5.869	0.349754
331	56.405	-6.4635	1.044872	435	55.3615	-4.8555	0.134715	203	55.621	-5.879	0.726872
332	56.6655	-6.114	1.158192	436	55.3445	-4.9375	0.475	204	55.6415	-5.9505	0.910828
333	56.7605	-6.219	0.047619	437	55.341	-5.0085	1.022472	205	55.6215	-6.0135	1.863905
334	56.7945	-6.156	1.391566	438	55.403	-5.0655	0.594771	206	55.698	-5.864	0.877863
335	56.901	-5.9815	0.678571	439	55.327	-5.117	1.175	207	55.789	-5.734	1.023669
336	57.093	-5.8265	0.50974	440	55.2845	-5.095	1.359551	208	55.841	-5.721	0.814433
337	56.9805	-5.9925	0.357143	441	55.2415	-5.0775	1.273333	209	55.81	-5.772	1.225434
338	56.945	-6.2205	0.68617	442	55.2265	-5.0235	1.140777	210	55.821	-5.811	0.82971
339	57.001	-6.211	1.353261	443	55.0975	-5.1015	0.558252	211	55.805	-5.8465	0.780303
340	57.0905	-6.099	0.225806	444	55.109	-5.216	1.161458	212	55.776	-5.814	0.674603
	57.105	-6.332	1.023952	445	55.144	-5.2375	1.207447	213	55.7455	-5.896	0.506173
342	57.1355	-6.3615	0.043478								
343	57.1025	-6.525	1.217647								
344	56.9375	-6.5805	0.664706								
345	56.883	-6.626	0.502959								
346	56.852	-6.755	0.38								
347	56.8965	-6.5245	0.490566								
348	56.878	-6.476	0.695652								
349	56.8895	-6.023	0.974359								
350	56.981	-6.0345	0								
351	56.688	-6.596	0.082051								
352	56.912	-6.879	0.188034								
353	57.0205	-6.843	0								
354	57.1035	-6.823	0.006993								
355	57.246	-6.691	0.857955								

Relative Nephrops burrow density, 1401S

