R1/6

FRV *Clupea*

Cruise 1200C

REPORT

17 August - 1 September 2000

Personnel

Ian Tuck	(In charge)
Charlie Shand	
Adrian Weetman	
Hector Lizarraga	(17-24 August) (Student visitor, University of Aberdeen)
Dave Bova	(24 August - 1 September)

Objectives

- To obtain estimates of distribution and abundance of *Nephrops* in the Firth of Forth and Moray Firth using underwater cameras.
- To collect sediment samples at each station.
- To use trawl caught samples of *Nephrops* to examine biological features at different sites throughout the survey areas.
- The TV survey will also be used to collect data on other potential commercial species.
- Make video observations of crab and lobster habitat using the drop frame.

Estimated Days per Project: 16 Days MF01T

Narrative

Clupea sailed from Fraserburgh at 1230 hours on Thursday 17 August 2000 and steamed for the Firth of Forth. TV survey work commenced at 0800 hours on 18 August 2000 in the outer Firth, working towards the west. The initial survey consisted of 39 stations, which were completed by lunch on 21 August 2000. An additional 15 stations were then determined (allocated to strata on the basis of the results of the first survey), and these were completed by the evening of 22 August 2000. At each TV station, a sediment sample was collected for granulometric analysis. In addition to the TV stations, three trawls were undertaken. On the morning of 23 August 2000, eight TV transects were carried out over the lobster grounds off Fife Ness with the drop frame system. *Clupea* left the Firth of Forth area at 1300 hours on 23 August 2000, and headed for Fraserburgh for the half landing.

Work recommenced in the Moray Firth on 25 August 2000. The 35 stations of the initial survey were completed during 29 August 2000, and 15 additional stations were determined. Three trawls were undertaken, and sediment samples were collected at each TV station. Thirteen of these additional stations were completed by 1300 hours on 31 August 2000 this then meant that it was no longer possible to carry out TV operations. *Clupea* therefore returned to Fraserburgh, and was offloaded on the following day.

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 charts.

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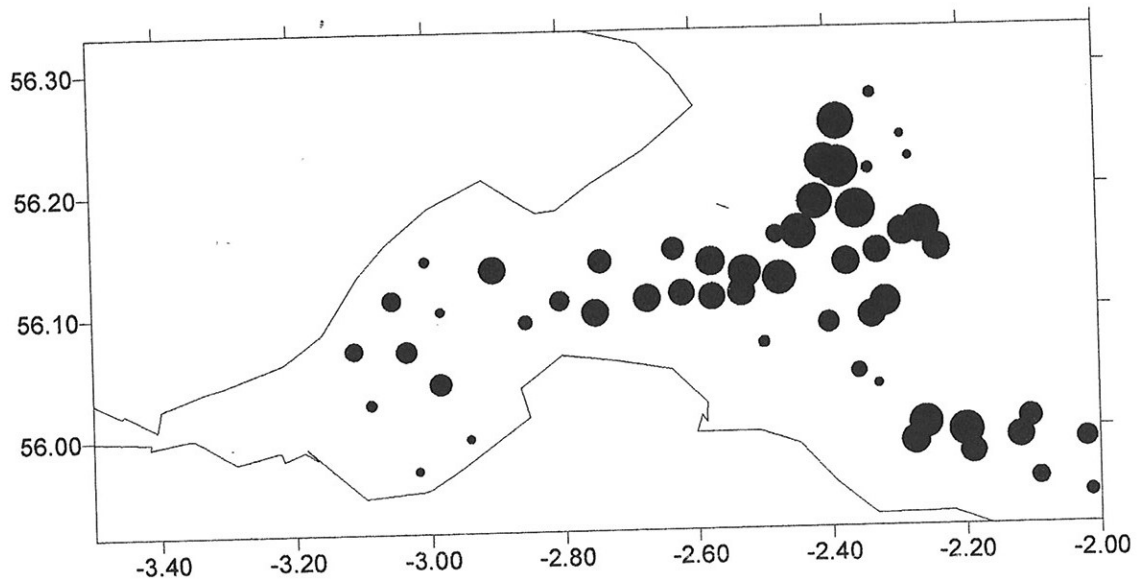

Ian Tuck
21 September 2000

Seen in draft: A Simpson, OIC

Table 1. Preliminary Nephrops density for TV survey, 2000.

	Firth of Forth				Moray Firth		
Station	Lat	Long	Burrow density (m⁻²)	Station	Lat	Long	Burrow density (m⁻²)
801	56.252	-2.384	1.1016	701	57.788	-2.017	0
802	56.241	-2.289	0	702	57.806	-1.879	0
803	56.215	-2.384	1.322	703	57.833	-2	0.3309
804	56.18	-2.358	1.2342	704	57.829	-2.119	0.3007
805	56.138	-2.374	0.7713	705	57.893	-2.141	0.1005
806	56.162	-2.289	0.8054	706	57.923	-1.989	0.1095
807	56.148	-2.238	0.7558	707	57.946	-2.208	0.4031
808	56.104	-2.316	0.8601	708	57.852	-2.269	0.2943
809	56.048	-2.357	0.2941	709	57.821	-2.371	0.1955
810	56.005	-2.259	1	710	57.784	-2.299	0.0083
811	55.98	-2.189	0.697	711	57.825	-2.478	0.227
812	55.993	-2.118	0.7254	713	57.762	-2.574	0
813	55.99	-2.02	0.4908	714	57.829	-2.612	0.1371
814	55.946	-2.013	0.174	715	57.818	-2.751	0.1844
815	55.959	-2.09	0.3716	716	57.96	-2.708	0.1888
816	56.008	-2.103	0.5819	717	57.98	-2.768	0.3593
817	56.088	-2.401	0.5023	718	57.943	-2.95	0.1299
818	56.073	-2.498	0.1219	719	57.881	-2.885	0.1012
819	56.125	-2.474	1	720	57.85	-2.994	0.1929
820	56.163	-2.444	1.0596	721	57.899	-3.111	0.1923
821	56.131	-2.525	0.9609	722	57.835	-3.104	0.1463
822	56.14	-2.576	0.8163	723	57.813	-3.195	0
823	56.111	-2.575	0.7097	724	57.842	-3.292	0
824	56.15	-2.632	0.5588	725	57.817	-3.317	0.0108
825	56.111	-2.673	0.7596	726	57.819	-3.452	0.0593
826	56.141	-2.743	0.6006	727	57.729	-3.55	0.199
827	56.11	-2.805	0.4448	728	57.712	-3.66	0.3324
828	56.093	-2.857	0.2241	729	57.676	-3.815	0.4318
829	56.136	-2.905	0.7368	730	57.679	-3.923	0
830	56.103	-2.983	0.0292	731	57.868	-3.532	0.26
831	56.07	-3.034	0.4968	732	57.901	-3.381	0.4586
832	56.071	-3.111	0.3833	733	57.933	-3.605	0.0714
833	56.027	-3.087	0.1011	734	57.914	-3.822	0
834	56.043	-2.984	0.531	735	57.919	-3.904	0
835	56.112	-3.054	0.4183	736	57.868	-3.682	0.5307
835	56.144	-3.005	0.0655	737	57.7	-3.712	0.425
838	55.972	-3.018	0	738	57.723	-3.61	0.4599
839	55.998	-2.941	0	739	57.838	-3.223	0
840	56.099	-2.751	0.7458	740	57.884	-2.938	0.0893
841	56.114	-2.621	0.7086	741	57.909	-2.774	0.2561
842	56.114	-2.531	0.7562	742	57.988	-2.655	0.3792
843	56.037	-2.328	0.0225	743	57.784	-2.428	0.1717
844	55.998	-2.199	1.0271	744	57.757	-2.516	0.1379
845	55.99	-2.275	0.8125	745	57.781	-2.316	0
846	56.094	-2.337	0.7589	746	57.866	-2.213	0.3041
847	56.146	-2.327	0.7318	747	57.92	-2.169	0.0052
848	56.167	-2.26	1.1429	748	57.909	-2.06	0
849	56.223	-2.278	0.0024				
850	56.214	-2.338	0.1142				
851	56.275	-2.333	0.1149				
852	56.22	-2.405	1.0709				
853	56.187	-2.419	1.0575				
854	56.161	-2.478	0.3808				

Firth of Forth, Nephrops burrow densities, 2000

Moray Firth Nephrops density, 2000