

CENTRE FOR ENVIRONMENT, FISHERIES & AQUACULTURE SCIENCE
LOWESTOFT LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND
2017 RESEARCH VESSEL PROGRAMME

PROGRAMME: RV CEFAS ENDEAVOUR: CRUISE 12/17

PROJECT: MB003N

STAFF: ROBIN MASEFIELD (SIC)
KAREN VANSTAEN (2SIC/CRP)
CHRIS BARRETT
ANDY LAWLER
ROSANA OURENS
ROSSLYN MCINTYRE
EWEN BELL
MARC WHYBROW
VERONIQUE CREACH
SUZIE MILLER (SEAWATCH)
JAKE TAYLOR-BRUCE (SEAWATCH)

DURATION: 19 – 26 June 2017

LOCATION: North Sea (English NE)

AIMS:

1. To conduct a standard underwater TV survey of *Nephrops* burrow densities on the Farn Deep grounds, 55° 35' - 54° 45' N and 1° 30' - 0° 40' W, and to evaluate *Nephrops* abundance (110 stations).
2. To conduct seabed multibeam survey (at each TV survey station).
3. Secondary: To conduct a standard underwater TV survey of additional stations (highlighted red on figure 2, if time allows).

PLAN:

CEFAS ENDEAVOUR will sail on 19th June from Lowestoft and will return to the same port on 26th June, 2017. This survey involves 24 hour procedures and the scientific staff will be working 4/8 hours shifts (2 people per shift).

Objectives 1, 2 & 3:

Video data will be collected from cameras mounted on a towed sledge. On the Farn Deeps grounds, 110 stations will be visited with the aim of recording a clear 10 minute continuous video transect of the sea bed at each station (Figure 2, Table 1).

A multibeam run will be conducted at each TV survey station.

All video will be analysed and the counts confirmed at sea. Data will be entered and QC onboard.

NEIFCA carry out a September/October annual TV survey on inshore nephrops grounds. If time allows we will collect TV footage from these additional stations to allow comparisons of burrow densities between June and October.

GEAR:

TV sledge: The sledge will be towed (0.7 Knot) against the tide and 10 minutes of good footage will be recorded. This corresponds to ~ 200m of track.

Multibeam: Change tower to side gantry. Multibeam has to cover the TV tracks and cross both sides of the ring. Multibeam needs to run slightly off set (~ 50m, speed 5 to 6 knots).

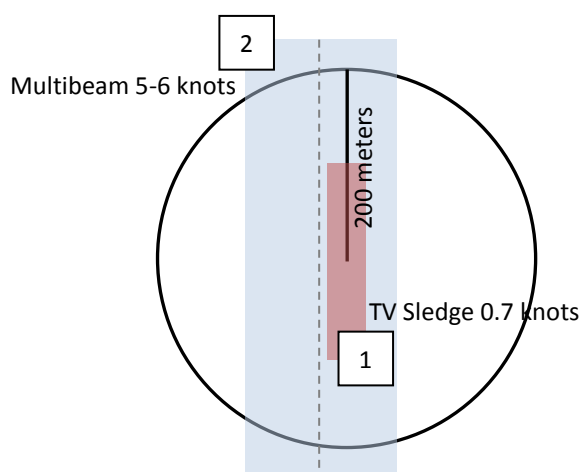


Figure 1. Representation of sledge tow (1) and multibeam tow (2) at station.

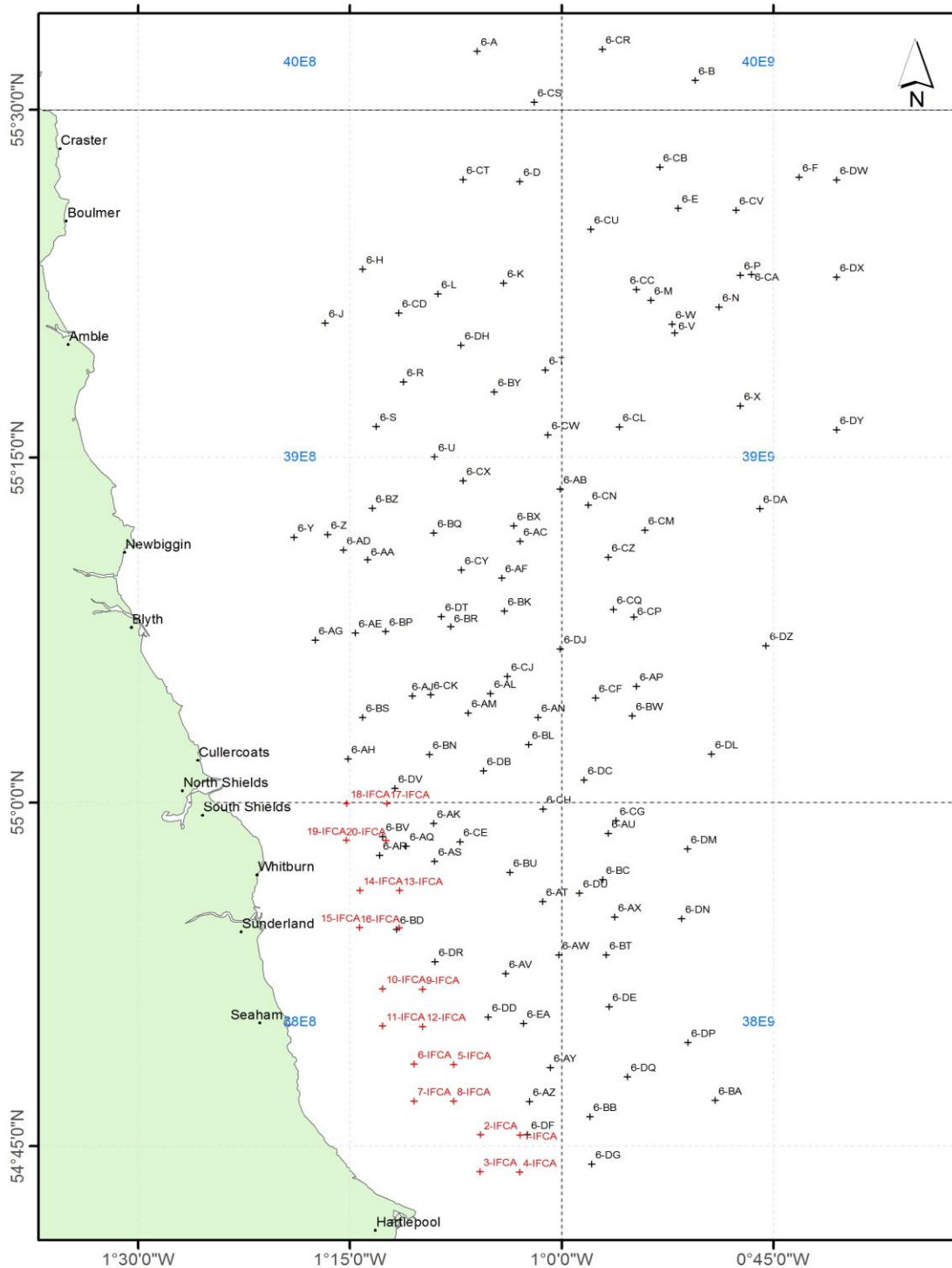


Figure 2. CEnd 12/17 final stations for Farn Deeps area (FU6), additional (secondary) stations in red.

ROBIN MASEFIELD
 (Scientist-in-Charge)
 21 April 2017

DISTRIBUTION: Cefas staff (Robin Masefield; Karen Vanstaen; Ewen Bell; Rosana Ourens; Rosslyn McIntyre; Chris Barrett; Andy Lawler; Veronique Creach; Marc Whybrow); MMO (North Shields); NE IFCA.

Table 1. CEND 12/17 station positions for the Farn Deeps area.

Area	TVID	LatD	LatM	LongD	LongM	Declat	Declong
FU6	6-A	55	32.5405	-1	5.9825	55.5423	-1.0997
FU6	6-B	55	31.2705	0	50.536	55.5212	-0.8423
FU6	6-D	55	26.9245	-1	2.9665	55.4487	-1.0494
FU6	6-E	55	25.766	0	51.727	55.4294	-0.8621
FU6	6-F	55	27.115	0	43.166	55.4519	-0.7194
FU6	6-H	55	23.1485	-1	14.108	55.3858	-1.2351
FU6	6-J	55	20.8195	-1	16.773	55.347	-1.2795
FU6	6-K	55	22.5425	-1	4.1145	55.3757	-1.0686
FU6	6-L	55	22.075	-1	8.77	55.3679	-1.1462
FU6	6-M	55	21.8065	0	53.66	55.3634	-0.8943
FU6	6-N	55	21.5175	0	48.839	55.3586	-0.814
FU6	6-P	55	22.8875	0	47.3105	55.3815	-0.7885
FU6	6-R	55	18.277	-1	11.2245	55.3046	-1.1871
FU6	6-S	55	16.3355	-1	13.155	55.2723	-1.2193
FU6	6-T	55	18.7905	-1	1.1415	55.3132	-1.019
FU6	6-U	55	15.027	-1	9	55.2504	-1.15
FU6	6-V	55	20.3955	0	51.96	55.3399	-0.866
FU6	6-W	55	20.764	0	52.156	55.3461	-0.8693
FU6	6-X	55	17.2445	0	47.312	55.2874	-0.7885
FU6	6-Y	55	11.552	-1	18.957	55.1925	-1.316
FU6	6-Z	55	11.6655	-1	16.593	55.1944	-1.2766
FU6	6-AA	55	10.5855	-1	13.7555	55.1764	-1.2293
FU6	6-AB	55	13.6265	-1	0.093	55.2271	-1.0016
FU6	6-AC	55	11.3755	-1	2.935	55.1896	-1.0489
FU6	6-AD	55	10.9925	-1	15.4685	55.1832	-1.2578
FU6	6-AE	55	7.393	-1	14.626	55.1232	-1.2438
FU6	6-AF	55	9.7795	-1	4.247	55.163	-1.0708
FU6	6-AG	55	7.076	-1	17.4725	55.1179	-1.2912
FU6	6-AH	55	1.9165	-1	15.132	55.0319	-1.2522
FU6	6-AJ	55	4.65	-1	10.57	55.0775	-1.1762
FU6	6-AK	54	59.104	-1	9.079	54.9851	-1.1513
FU6	6-AL	55	4.758	-1	5.048	55.0793	-1.0841
FU6	6-AM	55	3.919	-1	6.626	55.0653	-1.1104
FU6	6-AN	55	3.7155	-1	1.6815	55.0619	-1.028
FU6	6-AP	55	5.064	0	54.6885	55.0844	-0.9115
FU6	6-AQ	54	58.1145	-1	11.0145	54.9686	-1.1836
FU6	6-AR	54	57.71	-1	12.9065	54.9618	-1.2151
FU6	6-AS	54	57.4505	-1	9.0015	54.9575	-1.15
FU6	6-AT	54	55.703	-1	1.3515	54.9284	-1.0225
FU6	6-AU	54	58.6765	0	56.68	54.9779	-0.9447
FU6	6-AV	54	52.5465	-1	3.971	54.8758	-1.0662
FU6	6-AW	54	53.369	-1	0.185	54.8895	-1.0031
FU6	6-AX	54	55.0255	0	56.2345	54.9171	-0.9372
FU6	6-AY	54	48.4275	-1	0.8005	54.8071	-1.0133
FU6	6-AZ	54	46.949	-1	2.28	54.7825	-1.038

FU6	6-BA	54	46.9985	0	49.096	54.7833	-0.8183
FU6	6-BB	54	46.294	0	57.99	54.7716	-0.9665
FU6	6-BC	54	56.656	0	57.066	54.9443	-0.9511
FU6	6-BD	54	54.48	-1	11.704	54.908	-1.1951
FU6	6-BK	55	8.3505	-1	4.068	55.1392	-1.0678
FU6	6-BL	55	2.5395	-1	2.3485	55.0423	-1.0391
FU6	6-BN	55	2.102	-1	9.3845	55.035	-1.1564
FU6	6-BP	55	7.4605	-1	12.468	55.1243	-1.2078
FU6	6-BQ	55	11.7365	-1	9.0545	55.1956	-1.1509
FU6	6-BR	55	7.6645	-1	7.8575	55.1277	-1.131
FU6	6-BS	55	3.713	-1	14.1035	55.0619	-1.2351
FU6	6-BT	54	53.3655	0	56.8425	54.8894	-0.9474
FU6	6-BU	54	56.9725	-1	3.654	54.9495	-1.0609
FU6	6-BV	54	58.537	-1	12.695	54.9756	-1.2116
FU6	6-BW	55	3.7895	0	54.9875	55.0632	-0.9165
FU6	6-BX	55	12.0335	-1	3.393	55.2006	-1.0565
FU6	6-BY	55	17.8435	-1	4.767	55.2974	-1.0794
FU6	6-BZ	55	12.803	-1	13.43	55.2134	-1.2238
FU6	6-CA	55	22.928	0	46.5375	55.3821	-0.7756
FU6	6-CB	55	27.5395	0	53.034	55.459	-0.8839
FU6	6-CC	55	22.2735	0	54.6865	55.3712	-0.9114
FU6	6-CD	55	21.2535	-1	11.555	55.3542	-1.1926
FU6	6-CE	54	58.309	-1	7.208	54.9718	-1.1201
FU6	6-CF	55	4.576	0	57.598	55.0763	-0.96
FU6	6-CG	54	59.227	0	56.138	54.9871	-0.9356
FU6	6-CH	54	59.7265	-1	1.317	54.9954	-1.022
FU6	6-CJ	55	5.5165	-1	3.8465	55.0919	-1.0641
FU6	6-CK	55	4.7055	-1	9.294	55.0784	-1.1549
FU6	6-CL	55	16.335	0	55.915	55.2722	-0.9319
FU6	6-CM	55	11.855	0	54.075	55.1976	-0.9013
FU6	6-CN	55	12.935	0	58.1	55.2156	-0.9683
FU6	6-CP	55	8.08	0	54.88	55.1347	-0.9147
FU6	6-CQ	55	8.415	0	56.32	55.1402	-0.9387
FU6	6-CR	55	32.6215	0	57.115	55.5437	-0.9519
FU6	6-CS	55	30.33	-1	1.9465	55.5055	-1.0324
FU6	6-CT	55	27.0125	-1	6.991	55.4502	-1.1165
FU6	6-CU	55	24.8635	0	57.931	55.4144	-0.9655
FU6	6-CV	55	25.679	0	47.6245	55.428	-0.7937
FU6	6-CW	55	15.9795	-1	0.9605	55.2663	-1.016
FU6	6-CX	55	14	-1	6.985	55.2333	-1.1164
FU6	6-CY	55	10.1215	-1	7.114	55.1687	-1.1186
FU6	6-CZ	55	10.674	0	56.682	55.1779	-0.9447
FU6	6-DA	55	12.7935	0	45.923	55.2132	-0.7654
FU6	6-DB	55	1.4035	-1	5.521	55.0234	-1.092
FU6	6-DC	55	0.9965	0	58.398	55.0166	-0.9733
FU6	6-DD	54	50.6505	-1	5.2015	54.8442	-1.0867
FU6	6-DE	54	51.1	0	56.628	54.8517	-0.9438
FU6	6-DF	54	45.512	-1	2.411	54.7585	-1.0402

FU6	6-DG	54	44.203	0	57.856	54.7367	-0.9643
FU6	6-DH	55	19.8625	-1	7.126	55.331	-1.1188
FU6	6-DJ	55	6.7	-1	0.0835	55.1117	-1.0014
FU6	6-DL	55	2.1165	0	49.3725	55.0353	-0.8229
FU6	6-DM	54	57.989	0	51.0605	54.9665	-0.851
FU6	6-DN	54	54.944	0	51.4915	54.9157	-0.8582
FU6	6-DP	54	49.539	0	51.036	54.8257	-0.8506
FU6	6-DQ	54	48.0295	0	55.339	54.8005	-0.9223
FU6	6-DR	54	53.075	-1	8.97	54.8846	-1.1495
FU6	6-DT	55	8.1025	-1	8.5145	55.135	-1.1419
FU6	6-DU	54	56.0585	0	58.7305	54.9343	-0.9788
FU6	6-DV	55	0.638	-1	11.827	55.0106	-1.1971
FU6	6-DW	55	27	0	40.5	55.45	-0.675
FU6	6-DX	55	22.8	0	40.5	55.38	-0.675
FU6	6-DY	55	16.2	0	40.5	55.27	-0.675
FU6	6-DZ	55	6.8311	0	45.5009	55.1139	-0.75835
FU6	6-EA	54	50.364	-1	2.6958	54.8394	-1.04493
Optional	1-IFCA	54	45.479	-1	2.94	54.75798	-1.049
Optional	2-IFCA	54	45.496	-1	5.75	54.75827	-1.09583
Optional	3-IFCA	54	43.878	-1	5.781	54.7313	-1.09635
Optional	4-IFCA	54	43.858	-1	2.978	54.73097	-1.04963
Optional	5-IFCA	54	48.572	-1	7.638	54.80953	-1.1273
Optional	6-IFCA	54	48.597	-1	10.451	54.80995	-1.17418
Optional	7-IFCA	54	46.973	-1	10.467	54.78288	-1.17445
Optional	8-IFCA	54	46.97	-1	7.658	54.78283	-1.12763
Optional	9-IFCA	54	51.866	-1	9.867	54.86443	-1.16445
Optional	10-IFCA	54	51.888	-1	12.686	54.8648	-1.21143
Optional	11-IFCA	54	50.265	-1	12.692	54.83775	-1.21153
Optional	12-IFCA	54	50.232	-1	9.846	54.8372	-1.1641
Optional	13-IFCA	54	56.184	-1	11.477	54.9364	-1.19128
Optional	14-IFCA	54	56.194	-1	14.297	54.93657	-1.23828
Optional	15-IFCA	54	54.572	-1	14.329	54.90953	-1.23882
Optional	16-IFCA	54	54.55	-1	11.514	54.90917	-1.1919
Optional	17-IFCA	54	59.965	-1	12.4	54.99942	-1.20667
Optional	18-IFCA	54	59.977	-1	15.227	54.99962	-1.25378
Optional	19-IFCA	54	58.368	-1	15.256	54.9728	-1.25427
Optional	20-IFCA	54	58.35	-1	12.454	54.9725	-1.20757