



Cruise Report: CO 1609
Vessel: RV *Corystes*
Date: 16th – 20th April 2009
Area: Irish Sea (north); ICES div. VIIa
Survey Type: Nephrops Trawl Survey

Personnel:

R Briggs (SIC)	PSO	AFBI	16 – 20 April
P McCorrison	SO	AFBI	16 – 20 April
J Peel	ASO	AFBI	16 – 20 April
C McKenna	SO	AFBI	16 – 20 April
E O’Callaghan	SO	AFBI	16 – 20 April
G McNeill	SO	AFBI	16 – 20 April
F O’Neill	Student	NIEA	16 – 20 April

Objectives:

- i. Trawl each station sampled during previous cruises and quantify catches.
- ii. Collect maturity data for female Nephrops.
- iii. Assess the prevalence of the dinoflagellate parasite Hematodinium in Nephrops catches.
- iv. Identify and quantify bycatch species associated with Nephrops catches.
- v. Collect biological data (length, weight, age, maturity, parasite infection) of cod
- vi. Carry out a marine litter survey.
- vii. Perform a multibeam survey of parts of the Nephrops grounds.

Circulation

- DCEO & CEO**
- Ship Managers**
- Fisheries Division**
- ANIFPO**
- NIFPO**

✓
✓
✓
✓
✓

<u>Comments</u>
<hr/> Signed Head of Branch

Methods:

The fishing gear was the same as that used in earlier cruises and was a custom made 20-fathom *Nephrops* net of nominal mesh size 50mm throughout. Warp was deployed at 3.5 x water depth and towed at 2.5-2.7 knots. Catch bulk at stations fished during previous surveys (Fig. 1) was quantified using the new crane scale. Sample baskets of catch after 30 minutes trawling were sorted to provide an assessment of species composition. The *Nephrops* in sub-samples of 6-7kg were divided into male and female components and the ovary maturity stage of female animals noted. Carapace length frequency distributions of both male and female *Nephrops* were measured and the prevalence of the parasitic dinoflagellate *Hematodinium* was assessed. Stratified sampling procedures used for sampling whitefish were similar to those used during AFBI groundfish surveys. The contribution of finfish to catches was quantified and their length compositions measured. Biological data (length, weight, age, maturity and parasite infection) of cod was measured and otoliths retained for age determination.

Cruise Narrative:

Wednesday 15th April

Scientific staff boarded during the evening and following a safety brief the ship sailed at 22.00 to the southern edge of the western Irish Sea *Nephrops* grounds.

Thursday 16th April

Work commenced at station **102** followed by stations **103, 104, 105, 106** and **200** in an easterly breeze (wind mean = 20 knots). The night was spent completing a multibeam grid over stations 7-108 to be fished the following day.

Friday 17th April

Stations **108, 210** were fished whereupon a problem with the ship's hydraulic system affected the trawl winches and work was suspended while the problem was investigated. With the winches operational again work commenced at station **109** followed by stations **20** and **10**. The night was spent on a multibeam survey of the central part of the *Nephrops* grounds.

Saturday 18th April

Stations **101, 7, 107, 8, 207, 15** and **30** were fished in fine weather conditions. The night was spent completing another multibeam grid of transects.

Sunday 19th April

The remaining stations **208, 209, 17, 35, 2** and **1** were completed by 14.25 and RV *Corystes* set course for Belfast where she docked at 19.30.

Results:

During this successful cruise all 24 *Nephrops* trawl stations were completed (Figure 1). Table 1 is a summary of trawl station details and Table 2 shows the mean size; catch rate, proportion of female *Nephrops* and percentage (by number) of animals infected by *Hematodinium*. Infection of *Hematodinium* had a mean level of 3.2%. Although higher than in 2008 at 2.3% this difference is not significant and is lower than that reported in earlier years. Bycatch consisted of a wide range of taxa and details of the major species are shown in Table 3. The predominant commercial species was whiting, though these were mainly below the minimum landing size of 27cm. The otoliths of 24 cod caught during the survey were removed for age determination. Length frequency distributions of the major commercial fish species are shown in Figure 2.

Acknowledgements:

The scientific staff are congratulated for their productive teamwork during this successful survey. The officers and crew of *RV Corystes* are thanked for their continued support.

Richard Briggs

Alan Hughes (seen in draft)

Scientist in Charge

Master

19 April 2009

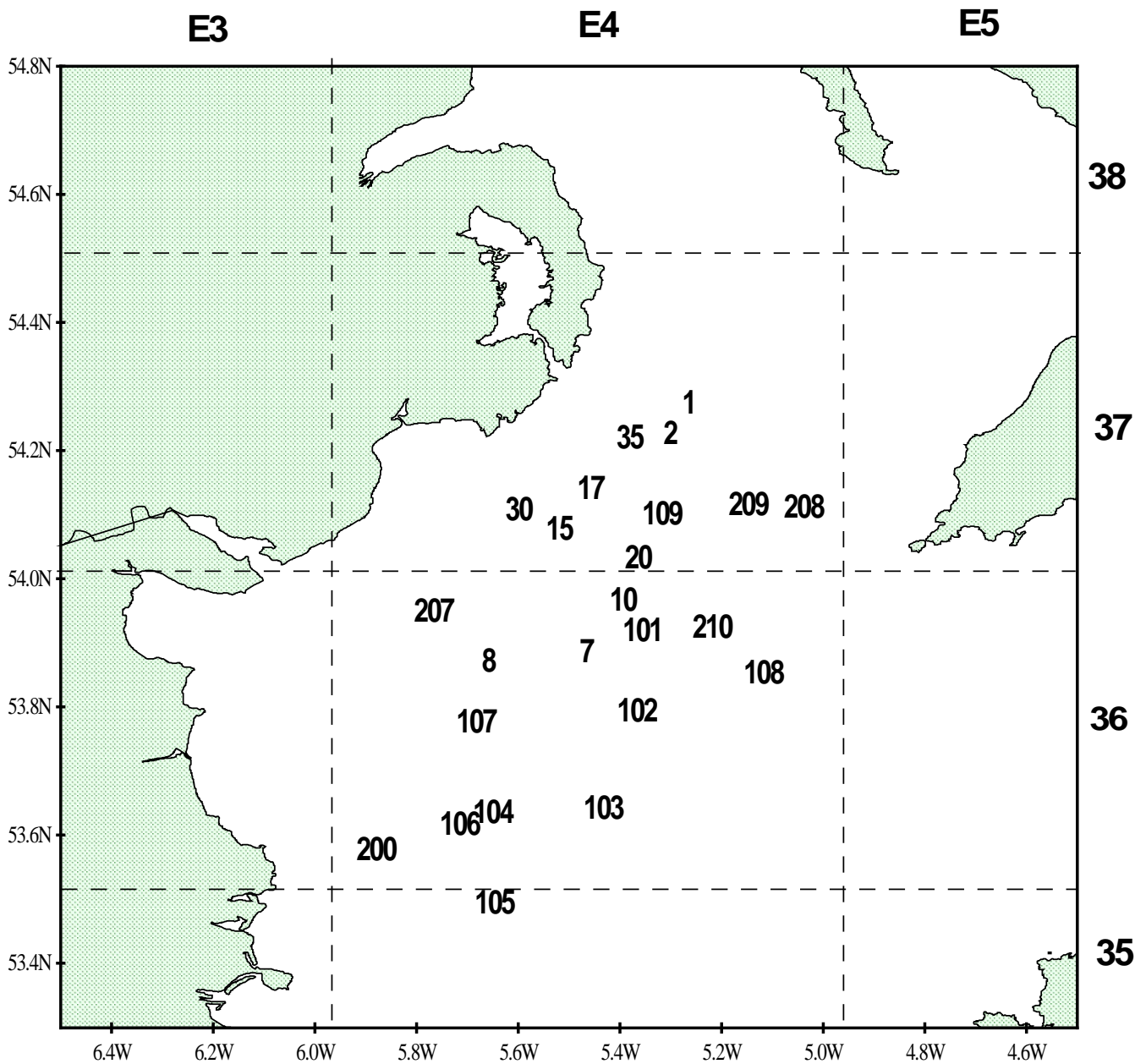


Figure 1: Western Irish Sea Nephrops stations

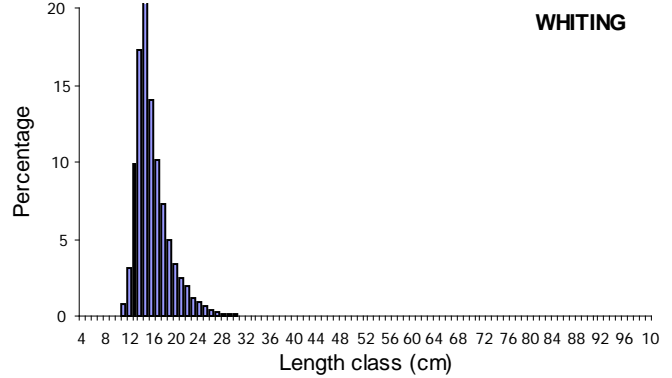
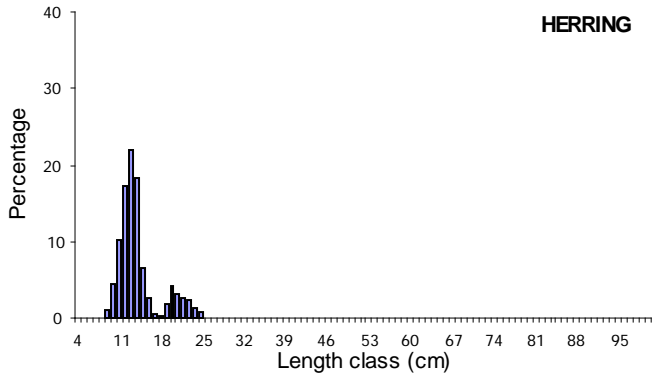
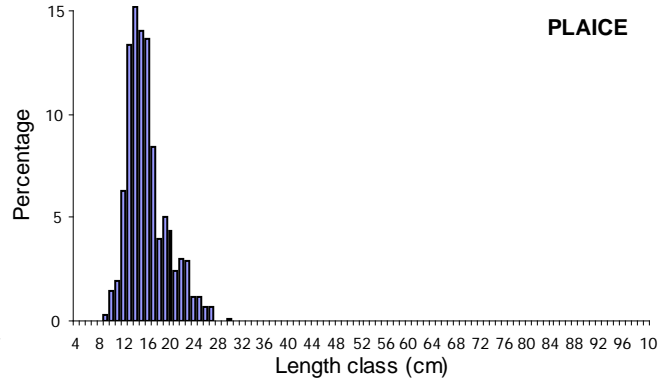
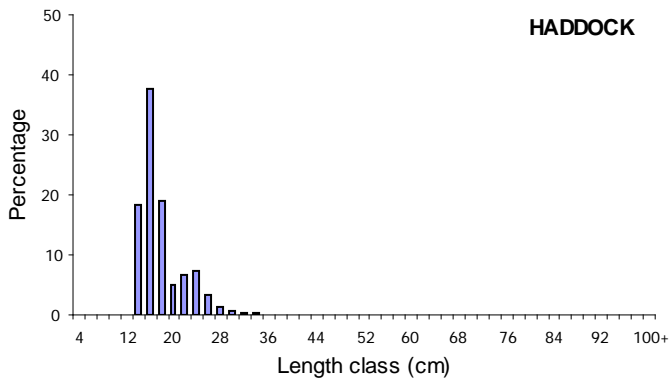
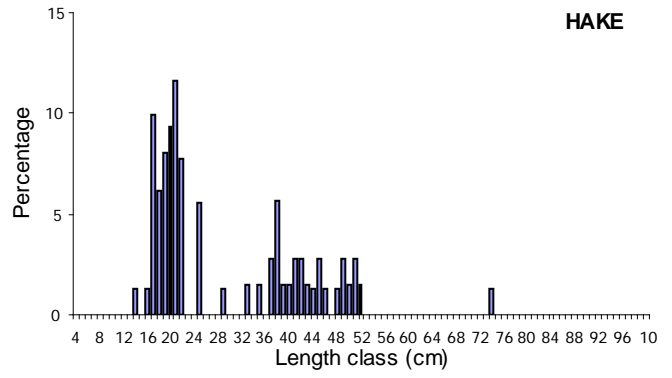
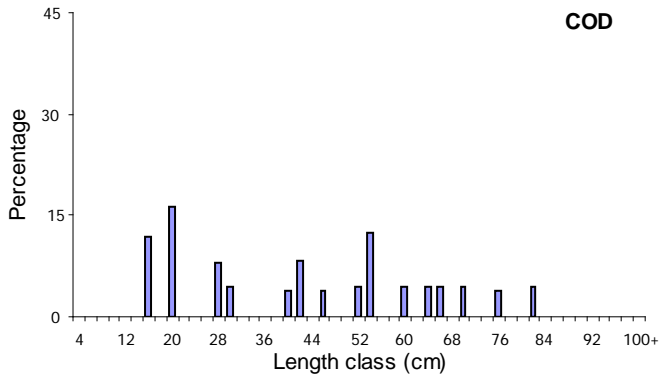


Figure 2: Length frequency of fish for the Western Irish Sea.

Table 1: Trawl details

Date	Station	Haul	Time shot	Shooting Position		Hauling Position		Shot Depth (m)	Haul Depth (m)	Mean Depth (m)	Distance towed (nm)	Wind Speed
				Latitude	Longitude	Latitude	Longitude					
16/4/2009	102	1	06h.10	53 47.6	5 20.78	53 46.6	5 22.6	87	95	91	1.5	28
16/4/2009	103	2	07h.55	53 39.2	5 25.47	53 40.3	5 24.65	99	95	97	1.3	24
16/4/2009	104	3	09h.45	53 36.4	5 38.79	53 37.7	5 38.83	97	97	97	1.32	26
16/4/2009	105	4	11h.40	53 30	5 37.5	53 30.2	5 39.75	84	84	84	1.35	16
16/4/2009	106	5	13h.27	53 38.5	5 42.63	53 37.2	5 43.34	83	80	81.5	1.36	12
16/4/2009	200	6	14h.55	53 35.1	5 53.59	53 33.7	5 53.03	52	51	51.5	1.35	16
17/4/2009	108	7	06h.05	53 50.2	5 7.78	53 51.4	5 6.98	71	70	70.5	1.27	11
17/4/2009	210	8	07h.25	53 54.6	5 14.19	53 55.6	5 13.03	82	77	79.5	1.27	14
17/4/2009	109	9	13h.23	54 7.08	5 19.31	54 5.82	5 18.76	92	117	104.5	1.3	20
17/4/2009	20	10	14h.32	54 2.35	5 20.17	54 1.66	5 22.18	93	97	95	1.36	15
17/4/2009	10	11	15h.34	53 59.3	5 23.52	53 58	5 23.86	96	98	97	1.31	12
18/4/2009	101	12	06h.03	53 55.2	5 21.43	53 54	5 21.48	116	118	117	1.25	8
18/4/2009	7	13	07h.12	53 53.4	5 26.75	53 52.6	5 28.66	102	100	101	1.4	15
18/4/2009	107	14	09h.05	53 46.5	5 40.95	53 47.9	5 40.81	88	88	88	1.37	10
18/4/2009	8	15	10h.12	53 51	5 39.63	53 52.3	5 39.32	90	92	91	1.31	12
18/4/2009	207	16	11h.42	53 56	5 46.07	53 57.3	5 45.8	54	54	54	1.36	10
18/4/2009	30	17	13h.57	54 7.45	5 35.14	54 6.29	5 36.22	51	51	51	1.33	10
18/4/2009	15	18	15h.11	54 5.4	5 31.25	54 4.03	5 31.61	70	74	72	1.38	10
19/4/2009	208	19	06h.01	54 8.17	5 1.09	54 7.06	5 1.99	86	81	83.5	1.24	10
19/4/2009	209	20	07h.15	54 8.28	5 7.74	54 7.24	5 9.02	126	124	125	1.3	12
19/4/2009	17	21	09h.15	54 8.29	5 27.37	54 9.65	5 27.28	67	58	62.5	1.35	10
19/4/2009	35	22	10h.20	54 11.8	5 23.33	54 13.1	5 22.58	61	56	58.5	1.37	10
19/4/2009	2	23	11h.45	54 14.6	5 18.95	54 13.3	5 18.87	64	69	66.5	1.36	12
19/4/2009	1	24	12h.55	54 15.1	5 15.24	54 16.4	5 15.75	86	82	84	1.32	10

Table 2: Details of *Nephtrops* catch by station

TOW	1	2	3	4	5	6	7	8	9	10	11	12
STATION	102	103	104	105	106	200	108	210	109	20	10	101
MALE CL	24.3	27.6	24.8	28.0	25.5	30.3	37.5	27.6	26.1	25.5	25.8	28.3
FEMALE CL	21.6	22.6	22.2	24.4	22.6	25.4	0.0	23.5	22.7	22.5	22.7	22.7
No per Nm	6806	1246	5950	3879	6747	1570	2	30	1512	3164	2396	1799
kg per Nm	67.1	19.1	61.3	64.3	74.8	31.5	0.1	0.9	17.7	33.8	26.6	28.7
% female	45.7	23.5	43.9	25.9	34.3	30.1	0.0	25.7	37.5	43.3	44.0	23.6
% Hem Males	0.9	2.2	2.0	1.9	2.9	1.2	0.0	3.6	3.0	2.9	0.6	1.2
% Hem Females	0.7	3.1	1.4	2.7	2.5	6.4	0.0	0.0	3.7	5.4	3.3	3.8
% Hem Overall	0.8	2.4	1.8	2.1	2.8	2.7	0.0	2.7	3.3	4.0	1.8	1.8

 small catch

TOW	13	14	15	16	17	18	19	20	21	22	23	24
STATION	7	107	8	207	15	208	209	17	17	35	2	2
MALE CL	24.2	21.5	24.4	25.4	28.7	25.2	24.4	25.8	27.7	0.0	27.0	27.0
FEMALE CL	22.0	21.8	22.0	22.3	25.2	23.2	22.5	22.2	24.8	0.0	23.9	23.9
No per Nm	4474	6311	5481	470	35	2712	10889	1253	361	2	49	49
kg per Nm	41.3	55.1	47.8	5.5	0.5	29.8	107.9	13.5	5.1	0.1	0.7	0.7
% female	51.1	49.4	51.6	43.7	30.4	43.1	44.0	39.9	37.9	0.0	38.8	38.8
% Hem. Males	0.9	1.9	0.3	5.0	0.0	0.3	1.3	4.3	4.0	0.0	4.9	4.9
% Hem. Females	4.5	1.6	0.9	16.5	0.0	0.4	2.4	4.6	19.5	0.0	15.4	15.4
% Hem. Overall	2.7	1.7	0.6	10.0	0.0	0.4	1.8	4.4	9.8	0.0	9.0	9.0

Table 3: Summary of catches by station (kg)

Stn	GADOIDS					PELAGIC		FLATFISH			ELASMONBRANCHS		INVERTEBRATES			
	COD	HAD	HKE	WHG	OTHER GADOIDS	HER	OTHER PELAGIC	DAB	PLE	OTHER FLATS	OTHER TELEOSTS	SKATES + RAYS	SHARKS+DOG FISH	NEP	CEPHALOPODS	OTHER INVERTS
1	0.072	1.1		53.0	30.3	1.7	0.1	0.9	1.1	2.3	2.8		4.3	32.8	0.4	165.3
2	0.738	2.8	0.3	19.2	4.9	10.4	0.3	3.2	0.7	3.4	7.3		0.5	1.0	0.1	6.6
7	6.73	2.9		38.0	4.1	0.3	0.0	0.6	0.1	0.1	14.0		5.7	57.8	0.1	289.6
8	6.79	7.4	0.2	101.5	20.8	2.4	0.1	1.0	0.6	0.3	8.7		29.6	62.6	0.3	251.0
10	4.16	4.3	2.7	24.7	8.1	2.1	0.1	0.4		0.7	13.2		4.5	34.9	0.1	188.9
15		16.2	1.3	44.6	10.3	1.6		5.6	0.7	2.4	18.8		5.0	41.2	1.0	170.5
17	1.056	4.5	0.4	26.7	4.3	3.0	0.1	3.0	1.2	1.3	10.7		3.4	6.9	0.2	42.9
20		2.4	5.4	33.4	7.8	1.2	0.1	0.1		0.6	10.5		1.8	45.9	0.0	236.9
30		1.8	0.7	49.5	2.4	14.9	0.1	4.1	28.4	2.6	18.4		0.6	0.7	0.3	2.9
35	0.264	2.0	1.0	31.9	1.3	21.0	1.2	1.8	1.1	1.6	11.3		1.5	0.1	0.2	1.4
101	1.682	3.6		14.6	2.4	0.7	0.1	0.6		0.0	0.1	0.0		35.9	0.0	182.1
102	0.24	6.9		129.0	15.2	2.6	0.3	0.3		0.8	15.7		6.5	100.7		403.7
103		0.2		47.2	2.2	1.9	0.0	0.3	0.5	1.5	3.0		9.1	24.9		101.1
104		7.9	0.6	78.7	1.8	0.2	0.0	1.4	1.8	0.3	23.6		57.7	80.9	0.4	406.2
105		103.4		83.8	2.6	5.8	0.1	15.8	40.9	3.0	38.0	12.6	27.5	86.9	0.1	353.0
106		15.8		113.2	36.4	3.5		0.8	3.2	1.1	53.3		37.3	101.7	0.2	406.9
107		1.8	1.3	28.3	14.2	0.7	0.1	0.7	0.2	0.8	6.5		22.5	75.5	0.2	453.2
108	7.47	15.9	5.5	44.7	0.6	31.8	0.1	11.8	8.7	7.4	17.7		83.8	0.1	0.2	4.8
109		0.6	0.1	40.0	7.7	0.4		0.5	0.2	0.7	0.8		1.4	23.1	0.0	92.6
200	0.064	79.8		257.6	40.7	4.8		19.2	39.0	9.3	69.3		2.2	42.5	0.3	142.0
207	1.764	2.6	0.1	34.9	3.6	16.5	0.1	3.8	4.1	1.3	3.8	1.4	1.2	7.5	0.2	38.0
208	0.276	4.4	1.2	64.7	26.2	0.1	0.0	0.4	0.4	8.4	4.7	0.5	6.0	133.8	0.2	696.3
209	3.45	0.3		1.2	6.1	0.2	0.1	0.3		1.4	0.2	0.7		17.5	0.1	92.9
210	0.306	2.7	0.7	40.2	60.3	10.0		1.2		1.6	13.7		19.1	1.2	0.4	9.5