

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. Catch bulk at Stns fished during previous surveys (Fig. 1) was quantified by weighing baskets filled from the catch. Sample baskets of catch after 30 minutes trawling were sorted to provide an assessment of species composition. The *Nephrops* in sub-samples of 6-10kg 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; their length compositions measured and the otoliths of cod were retained for age determination. A two-metre beam trawl was deployed for 5 minutes at each station and the catch identified and quantified.

During the UWTV survey the camera and sledge was deployed at stations within a randomized fixed grid design as in 2003-2009 surveys. A grid of Stns was also surveyed on the eastern Irish Sea as in 2007, 2008 and 2009. Film data from 10-minute tows at each Stn were stored on DVDs and re-counts of burrow cluster abundance were performed as proposed by WKNEPH09 of ICES. Two re-count Stations were established on the ship and staff performing recounts attended a one day refresher course whilst in Dublin on 9 August. A USBL system was used to track the course taken by the camera sledge during tows. This information is essential for estimation of the area swept by the sledge. Sampling continued 24 hours a day with scientific staff operating a rota system of 4 hrs on and 8 hours off.

Cruise Narrative:

Tuesday 3 August

Scientific staff boarded during the evening. RV *Corystes* sailed at 23.00 and a safety briefing was given to by the Fishing Master.

Wednesday 4 August

Nephrops gear was shot at 08.00hrs at **Stn 1**. This was followed by hauls using both beam trawl and *Nephrops* trawl at Stns **2, 35, 17, 30, 15** and **20**. Very large catches of weed (mainly *Laminaria* spp) prevented catch bulk being estimated at **Stn 30**, despite an apparently good *Nephrops* catch. It was possible however, to carry out a full analysis of a *Nephrops* sub-sample. The night was spent dodging.

Thursday 5 August

The first haul was at **Stn 208** followed by **Stns 209,109,10,7** and **8**. A torn net at **Stn 109** slowed progress, but despite this problem 6 Stns were completed using both gears.

Friday 6 August

Stns 108, 210, 101, 102, 103 and **105** were fished in fine weather conditions.

Saturday 7 August

Stns 207, 107, 104 and **200** were fished in fine weather and with all objectives for this phase of the survey complete, RV *Corystes* set course for Dublin and docked at 19.00hrs for a mid-cruise break.

Sunday 8 August

The day was spent in Dublin preparing for the second phase of the survey and implementing staff changeovers.

Monday 9 August

With the arrival of Marine Institute and Cefas staff a one day training course on burrow identification and counting techniques was organized by Jennifer Doyle (MI) according to protocols recommended by the ICES Benchmark assessment group. With the training complete and equipment installed RV Corystes sailed at 22.00hrs.

Tuesday 10 August

In view of a poor weather forecast a decision was made to commence the UWTV survey on the eastern Irish Sea Nephrops grounds. A course was set for Cumbria coastal waters where work commenced at 08.00hrs on **Stn 37**. This was followed by a new station at the southern limit of the grounds (**Stn 38**), followed by a northward progression at the rate of approximately one station per hour. **Stn 36** had to be abandoned due to a recent wind farm development in the area.

Wednesday 11 August

Work on the main eastern grounds was completed with **Stn 4** at 13.45hrs and a course was set for the isolated grounds in Wigtown Bay, where work recommenced at 15.30hrs on **Stn 3**. This was followed by **Stns 2** and **1** which were completed by 17.00hrs with reasonable footage being obtained for two stations (**1 & 2**). RV Corystes then set course for the western Irish Sea where work re-commenced at 22.50hrs on **Stn 172**.

Thursday 12 August

Stns 171, 26, 18, 17 and **12** were completed with mixed success. NW winds forced the decision to move to the more sheltered Northern Ireland coastal waters where work commenced on **Stn 13**. The survey then worked southwards along the western side of the Irish Sea to **Stn 170**.

Friday 13 August

Southern “redo” stations from RV Celtic Voyager’s survey were re-visited after which the vessel moved NE via **Stns 90** and **47** to complete the remaining northern stations. This was hampered by windy conditions making it difficult to retain bottom contact with the camera sledge.

Saturday 14 August

Work was suspended for 4 hours at 01.00hrs on **Stn 24** due to weather induced difficulties in retaining bottom contact. The survey resumed at 05.00hrs when **Station 24** was repeated. Improved weather for the rest of the day enabled good progress to be made with some excellent footage being recorded. The good conditions provided an opportunity to re-visit nearby stations where earlier results were poor due to the inclement weather.

Sunday 15 August

Continued fine weather allowed good progress through the remaining NW stations (**Stns 1-10**). The final station was on the mussel (*Mytilus edulis*) grounds off the Ards peninsula (**Stn 203**) and was completed by 07.45hrs. With all objectives complete RV Corystes set course for Belfast where she docked at 10.30hrs.

Results:

Trawl Survey

During the fishing phase of this cruise all 24 Stations (Figure 1) were sampled by *Nephrops* trawl and 2-metre beam trawl. Although a good *Nephrops* sample was acquired at **Stn 30** the catch was mainly seaweed (*Laminaria spp.*) preventing a full assessment of catch composition, though it was possible to take a *Nephrops* sub-sample. Station details are presented in Table 1 and Table 2 shows the mean size, catch rate, proportion of female *Nephrops* along with the percentage (by number) of animals infected by *Hematodinium*. A total of 11,685 *Nephrops* were measured during the cruise and the combined size composition of *Nephrops* caught is shown in Figure 2 which includes the size of *Nephrops* caught in the beam trawl. Although catches varied between stations the average catch rate was lower than in 2009. Similarly the sex ratio differed between stations ranging from 35.9% to 74.7% female *Nephrops* (Figure 3) with an average of 61.4% females by number. This was higher than in earlier surveys. By-catch consisted of a range of taxa and details of the major groups are shown in Table 3. Apart from *Nephrops* the predominant burrowing species was *Calocaris macandreae* and their distribution by number is shown in Figure 4. The most common finfish species caught was whiting, though these were mainly below the minimum landing size of 27cm. The otoliths of 40 cod caught during the survey were removed for age determination. Length frequency distributions of the major commercial fish species are shown in Figure 5

UWTV Survey

The UWTV sledge was deployed over 100 times during the cruise. In the western Irish Sea 65 Stns were surveyed (Figure 6) and included 6 stations requested by AFBI's Coastal Zone Management Programme (**Stns 201-206**). Several stations surveyed were repeats from the Celtic Voyager's survey which finished on 9 July. A total of 37 Stations were completed in the eastern Irish Sea (Figure 7) and good video footage was obtained which included information on the extent of the grounds. This is the fourth time the eastern Irish Sea *Nephrops* stock has been surveyed and is an expansion of the western Irish Sea study which commenced in 2003. All recordings made during the cruise were re-counted whilst at sea and the results will be combined with those from the Marine Institute's *RV Celtic Voyager* survey. After further analysis *Nephrops* density estimates will contribute to the provision of fisheries management advice through the ICES forum.

Acknowledgements:

The Officers and Crew of *RV Corystes* are thanked for their enthusiastic help towards the success of this important survey. The scientific staff is commended for their teamwork and the valuable contributions by Jennifer Doyle (MI), Jon Elson (Cefas) and Ana Leocadio (Cefas) are sincerely acknowledged. Bill Clarke is thanked for installing the UWTV equipment and Jennifer Doyle (MI) is thanked for organizing a comprehensive training day in Dublin.

Richard Briggs

Sam McBride (seen in draft)

Scientist in Charge

Master

15 August 2010

Table 1: Trawl details

| Date | Station | Haul | Time shot | Shooting Position | | Hauling Position | | Depth (m) | Distance towed (nm) | Wind Speed (knts) | Surface Temp °C |
|-----------|---------|------|-----------|-------------------|-----------|------------------|-----------|-----------|---------------------|-------------------|-----------------|
| | | | | Latitude | Longitude | Latitude | Longitude | | | | |
| 04-Aug-10 | 1 | 1 | 06h.40 | 54 17.6 | 5 16.3 | 54 16.1 | 5 15.9 | 85 | 1.57 | 10 | 13.6 |
| 04-Aug-10 | 2 | 2 | 08h.54 | 54 15.1 | 5 19.0 | 54 13.7 | 5 18.9 | 68 | 1.42 | 8 | 13.8 |
| 04-Aug-10 | 35 | 3 | 09h.59 | 54 12.8 | 5 22.5 | 54 14.2 | 5 22.2 | 63 | 1.41 | 10 | 13.9 |
| 04-Aug-10 | 17 | 4 | 12h.24 | 54 8.6 | 5 27.6 | 54 9.9 | 5 27.2 | 57 | 1.31 | 8 | 14.3 |
| 04-Aug-10 | 30 | 5 | 13h.39 | 54 5.7 | 5 30.6 | 54 4.4 | 5 31.1 | 52 | 1.33 | 8 | 14.1 |
| 04-Aug-10 | 15 | 6 | 15h.24 | 54 7.6 | 5 34.9 | 54 6.4 | 5 35.8 | 75 | 1.38 | 12 | 14.4 |
| 04-Aug-10 | 20 | 7 | 16h.50 | 54 2.2 | 5 21.9 | 54 0.7 | 5 21.7 | 104 | 1.49 | 10 | 15.0 |
| 05-Aug-10 | 208 | 8 | 06h.28 | 54 8.1 | 5 0.8 | 54 6.8 | 5 2.1 | 88 | 1.44 | 12 | 14.8 |
| 05-Aug-10 | 209 | 9 | 08h.44 | 54 7.9 | 5 8.2 | 54 6.6 | 5 9.4 | 125 | 1.44 | 15 | 15.0 |
| 05-Aug-10 | 109 | 10 | 11h.35 | 54 6.1 | 5 19.1 | 54 4.8 | 5 18.4 | 125 | 1.35 | 9 | 14.1 |
| 05-Aug-10 | 10 | 11 | 14h.16 | 53 58.7 | 5 23.6 | 53 57.3 | 5 23.7 | 100 | 1.48 | 8 | 15.0 |
| 05-Aug-10 | 7 | 12 | 15h.30 | 53 54.6 | 5 27.8 | 53 53.3 | 5 28.4 | 110 | 1.38 | 5 | 15.0 |
| 05-Aug-10 | 8 | 13 | 17h.57 | 53 51.5 | 5 39.6 | 53 50.1 | 5 39.3 | 97 | 1.47 | 5 | 14.9 |
| 06-Aug-10 | 108 | 14 | 06h.22 | 53 52.3 | 5 6.0 | 53 51 | 5 6.7 | 75 | 1.38 | 22 | 14.8 |
| 06-Aug-10 | 210 | 15 | 08h.24 | 53 55.3 | 5 13.5 | 53 56.4 | 5 12 | 85 | 1.37 | 18 | 14.7 |
| 06-Aug-10 | 101 | 16 | 09h.50 | 53 55.8 | 5 20.9 | 53 54.4 | 5 21.3 | 115 | 1.4 | 15 | 14.9 |
| 06-Aug-10 | 102 | 17 | 12h.16 | 53 47.7 | 5 22.1 | 53 48.9 | 5 21.6 | 99 | 1.31 | 7 | 14.7 |
| 06-Aug-10 | 103 | 18 | 13h.56 | 53 40.4 | 5 24.7 | 53 39.2 | 5 25.7 | 96 | 1.32 | 18 | 14.8 |
| 06-Aug-10 | 105 | 19 | 16h.58 | 53 30.4 | 5 40.6 | 53 29.2 | 5 39.6 | 88 | 1.42 | 15 | 14.8 |
| 07-Aug-10 | 207 | 20 | 06h.17 | 54 1.2 | 5 45.2 | 53 59.9 | 5 45.6 | 48 | 1.33 | 8 | 14.7 |
| 07-Aug-10 | 107 | 21 | 08h.50 | 53 47.5 | 5 41.0 | 53 46.1 | 5 41.1 | 94 | 1.43 | 8 | 14.4 |
| 07-Aug-10 | 104 | 22 | 10h.33 | 53 37.5 | 5 38.9 | 53 38.9 | 5 38.5 | 103 | 1.38 | 6 | 14.8 |
| 07-Aug-10 | 106 | 23 | 12h.34 | 53 37.4 | 5 43.5 | 53 38.8 | 5 43.2 | 82 | 1.38 | 10 | 15.1 |
| 07-Aug-10 | 200 | 24 | 14h.09 | 53 34.6 | 5 52.9 | 53 35.7 | 5 54.2 | 58 | 1.37 | 8 | 15.7 |

Table 2: Details of *Nephrops* catch by station

| TOW | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|
| STATION | 1 | 2 | 35 | 17 | 30 | 15 | 20 | 208 | 209 | 109 | 10 | 7 |
| MALE CL | 24.8 | 24.1 | 27.2 | 27.7 | 31.3 | 24.4 | 26.5 | 26.6 | 28.9 | 29.4 | 24.4 | 27.0 |
| FEMALE CL | 24.5 | 25.2 | 25.1 | 26.3 | 28.2 | 24.7 | 24.8 | 24.5 | 26.1 | 26.7 | 25.0 | 26.7 |
| No per Nm | 3189 | 680 | 350 | 1350 | | 4052 | 1031 | 6628 | 7997 | 3714 | 4327 | 1581 |
| kg per Nm | 33.4 | 8.2 | 5.1 | 18.8 | | 45.4 | 78.7 | 76.6 | 110.9 | 53.1 | 50.2 | 21.5 |
| % female | 53.1 | 66.2 | 72.2 | 67.3 | 65.0 | 63.2 | 61.1 | 64.0 | 74.7 | 73.9 | 65.1 | 73.2 |
| % Hem Males | 0.4 | 1.2 | 0.0 | 0.7 | 0.0 | 1.0 | 1.5 | 0.0 | 0.0 | 1.5 | 5.4 | 0.0 |
| % Hem Females | 0.0 | 0.3 | 0.0 | 0.7 | 0.0 | 0.0 | 1.0 | 1.2 | 0.0 | 0.3 | 0.2 | 0.3 |
| % Hem Overall | 0.2 | 0.6 | 0.0 | 0.7 | 0.0 | 0.4 | 1.2 | 0.7 | 0.0 | 0.6 | 2.1 | 0.2 |

| TOW | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| STATION | 8 | 108 | 210 | 101 | 103 | 105 | 207 | 107 | 107 | 104 | 106 | 200 |
| MALE CL | 26.5 | 28.2 | 26.4 | 27.2 | 24.6 | 25.9 | 29.9 | 0.0 | 24.6 | 24.6 | 24.5 | 29.9 |
| FEMALE CL | 25.6 | 26.5 | 25.5 | 25.6 | 24.8 | 24.6 | 29.5 | 0.0 | 24.8 | 24.9 | 23.1 | 26.6 |
| No per Nm | 3871 | 832 | 2418 | 184 | 5912 | 1636 | 2687 | 0 | 8015 | 2162 | 6779 | 649 |
| kg per Nm | 48.9 | 11.8 | 29.1 | 2.2 | 65.3 | 21.0 | 52.8 | 0.0 | 90.1 | 23.5 | 74.0 | 13.2 |
| % female | 55.9 | 70.5 | 71.9 | 70.8 | 67.5 | 51.7 | 68.3 | 0.0 | 60.9 | 59.2 | 64.1 | 34.5 |
| % Hem. Males | 1.7 | 1.5 | 2.0 | 4.0 | 1.1 | 2.0 | 0.6 | 0.0 | 0.0 | 3.4 | 1.9 | 0.9 |
| % Hem. Female | 0.0 | 0.3 | 1.0 | 0.5 | 0.8 | 2.3 | 0.0 | 0.0 | 0.9 | 0.6 | 1.9 | 0.0 |
| % Hem. Overall | 0.8 | 0.7 | 1.3 | 1.6 | 0.9 | 2.2 | 0.2 | 0.0 | 0.5 | 1.7 | 1.9 | 0.6 |

Table 3: Summary of catches by station (kg)

| Stn | GADOIDS | | | | | PELAGIC | | FLATFISH | | OTHER FLATS | OTHER TELEOSTS | ELASMOBRAINCHS | INVERTEBRATES | | |
|-----|--|------|-----|-------|---------------|---------|---------------|----------|------|-------------|----------------|-----------------|---------------|-------------|---------------|
| | COD | HAD | HKE | WHG | OTHER GADOIDS | HER | OTHER PELAGIC | DAB | PLE | | | SHARKS+DOG FISH | NEP | CEPHALOPODS | OTHER INVERTS |
| 1 | | 40.6 | | 80.4 | 9.1 | 1.1 | | | 0.8 | 5.0 | 3.9 | 2.7 | 52.4 | 1.2 | 265.9 |
| 2 | 0.4 | 19.5 | | 40.5 | 0.6 | 10.2 | 0.7 | 1.5 | 2.2 | 3.0 | 8.1 | 0.6 | 11.6 | 0.2 | 72.5 |
| 7 | 0.0 | 1.9 | | 3.9 | 2.7 | 0.2 | 0.2 | | | 0.2 | 0.1 | | 29.6 | 0.7 | 150.9 |
| 8 | 0.1 | 11.8 | 0.1 | 6.5 | 1.3 | 0.1 | | | 0.1 | 2.6 | 0.3 | 0.6 | 71.8 | 0.7 | 432.4 |
| 10 | | 1.4 | | 34.9 | 8.6 | 8.6 | 0.7 | | | 2.1 | 0.2 | | 74.3 | 1.7 | 448.6 |
| 15 | | 19.8 | | 20.6 | 0.3 | 2.8 | 0.0 | 0.4 | 1.1 | 2.2 | 2.8 | | 62.6 | 0.7 | 377.0 |
| 17 | 0.3 | 8.6 | 0.4 | 28.8 | 0.1 | 6.3 | 1.4 | 1.0 | 2.8 | 2.3 | 6.6 | 0.9 | 24.7 | 2.2 | 175.7 |
| 20 | | 2.7 | | 15.9 | 19.5 | 2.7 | | | | 3.8 | 2.2 | | 117.3 | 0.5 | 705.9 |
| 30 | <i>Very weedy haul - not possible to quantify catch (Nephrops sample only)</i> | | | | | | | | | | | | | | |
| 35 | | 10.3 | 0.6 | 32.8 | 0.1 | 7.5 | 3.8 | 0.3 | 4.6 | 2.2 | 6.4 | | 7.2 | 1.5 | 51.0 |
| 101 | 11.7 | 0.5 | | 2.5 | 5.8 | 0.0 | 0.0 | | | 0.5 | 0.1 | | 3.1 | 1.1 | 25.0 |
| 102 | 0.6 | 1.2 | | 6.7 | 4.7 | 0.2 | | 0.1 | | 2.5 | 0.3 | | 85.6 | 2.2 | 515.1 |
| 103 | | 0.9 | | 2.5 | 1.4 | 1.4 | | 0.4 | | 4.1 | 0.3 | | 27.8 | 1.0 | 140.0 |
| 104 | 1.5 | 7.6 | | 15.0 | 3.4 | 0.3 | 0.0 | 0.3 | 0.1 | 1.0 | 0.1 | 0.2 | 32.5 | 0.0 | 196.2 |
| 105 | 0.9 | 52.5 | | 25.2 | 7.3 | 3.4 | | 1.0 | 2.5 | 4.3 | 7.0 | 21.9 | 74.9 | 1.2 | 529.7 |
| 106 | 3.3 | 4.0 | | 45.6 | 1.4 | 3.7 | | 0.7 | | 0.7 | 1.2 | 1.0 | 102.1 | | 613.6 |
| 107 | 0.1 | 16.7 | | 24.3 | 1.7 | 0.4 | 1.1 | 2.3 | 0.8 | 1.9 | 0.7 | | 128.9 | 3.0 | 908.1 |
| 108 | 0.7 | 4.8 | 0.5 | 33.1 | 1.2 | 0.2 | 0.3 | 0.6 | 0.7 | 3.6 | 4.7 | 1.5 | 16.3 | 6.8 | 115.0 |
| 109 | 3.9 | 0.3 | | 1.6 | 6.7 | 0.1 | | | 0.0 | 3.0 | 2.5 | | 71.7 | 1.6 | 506.1 |
| 200 | 0.1 | 79.1 | | 133.1 | 0.6 | 0.6 | 1.9 | 18.6 | 39.3 | 6.5 | 20.0 | 10.4 | 18.2 | 1.8 | 105.9 |
| 207 | | 17.8 | | 16.4 | | | 0.8 | 12.2 | 38.6 | 0.8 | 16.5 | 2.3 | | | 21.5 |
| 208 | | 3.9 | | 92.3 | 8.7 | 2.0 | | | 0.9 | 3.1 | 12.1 | 1.3 | 110.3 | 2.5 | 666.2 |
| 209 | | | | 1.1 | 10.2 | 0.1 | | | | 0.0 | 4.0 | 0.5 | 159.7 | | 798.7 |
| 210 | 0.1 | 0.3 | | 22.0 | 22.7 | 8.8 | 0.1 | | | 1.6 | 0.4 | 0.0 | 39.8 | 8.2 | 279.7 |

Table 4: Macro benthos catch from 5 minute beam trawl tows (CO31-10)

| SPECIES | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | |
|-------------------------------------|-----|----|----|----|----|----|----|--------|-----|-----|----|-----|-----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|--|
| | 1 | 2 | 35 | 17 | 30 | 15 | 20 | 208 | 209 | 109 | 10 | 7 | 8 | 108 | 210 | 101 | 102 | 103 | 105 | 207 | 107 | 104 | 106 | 200 | |
| <i>Aphrodite</i> | | | | | | | | | | | | | | 6 | | | 1 | 12 | 5 | | | | | | |
| <i>Asterias rubens</i> | | 1 | | 1 | | | 2 | | | | | | | | | | | 2 | 15 | 2 | 1 | | 1 | 16 | |
| <i>Astropecten irregularis</i> | | | | | | | | | | | | | | | | | | 1 | 68 | 2 | | | | | |
| <i>Aquipecten opercularis</i> | | | | | | | | | | | | | | | | | | | 1 | 3 | | | | 2 | |
| <i>Brissopsis</i> | | | | | | | 10 | | 3 | 3 | 2 | 2 | 5 | | 1 | | | | | | 1 | | | 49 | |
| <i>Buccinum undatum</i> | | | | | | | | | | | | | | | | | | 1 | | | | | | | |
| <i>Bonellia viridis</i> | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| <i>Calliostoma zizyphinum</i> | | | | | | | | | | | | | | 10 | | | | | | | | | | | |
| <i>Calocaris macandreae</i> | 110 | 35 | 2 | 6 | | 11 | 59 | | 66 | 168 | 94 | 255 | 153 | | 48 | 199 | 84 | 4 | 12 | | 95 | 71 | 5 | | |
| <i>Callianassa spp</i> | | | | | | | | | | | | | | | | | | 12 | | 1 | | | | | |
| <i>Crangon spp</i> | 2 | 1 | | | | | 1 | | 1 | 1 | 4 | 25 | 4 | | | 5 | 1 | 4 | 138 | | 10 | 13 | 16 | | |
| <i>Dentalium entalis</i> | | | | | | | | | | | | | | | | | | | 101 | | | | | | |
| <i>Dichelopandalus bonneri</i> | 26 | 1 | 1 | | | | 18 | | 1 | | 18 | 14 | 31 | | | 28 | 2 | 5 | | | 5 | 4 | 1 | | |
| <i>Eledone</i> | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| <i>Eupagurus spp</i> | | | | | | | | | | | | | | 2 | | | | 4 | 6 | | | 1 | | | |
| Euphausiids | | | | | | | 2 | | | | | 6 | | | | | | | | | | | | | |
| Glycerids | | 3 | 2 | 3 | | 3 | | | 1 | 6 | | 8 | | | 2 | 3 | | 3 | | 1 | 5 | 1 | | | |
| <i>Goneplax rhomboides</i> | | | 5 | 2 | | | | | | | | | | | | | | 1 | 2 | 2 | | | 1 | 2 | |
| <i>Golfingia elongata</i> | | | | | | | | | | | | | | | | | | 1 | | | | | | | |
| <i>Hyas spp</i> | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| <i>Jaxea nocturna</i> | 5 | 14 | 2 | 6 | | 16 | | | | 5 | | | | | | | | | | | 5 | | | | |
| <i>Liocarcinus depurator</i> | | | | | | | | | | | | | | 2 | | 2 | | 5 | 17 | | | 2 | 3 | 4 | |
| <i>Lepas spp</i> | | | | | | | | | | | | | | | | | | 2 | | | | | 1 | | |
| <i>Macropodia spp</i> | | | | | | | | | | | | | | | | | | | 7 | 2 | | | | | |
| Mud tubes | | | | | | | | | | | | 8 | | | | | | | | | | | 2 | | |
| <i>Nephrops norvegicus</i> | 98 | 15 | 15 | 42 | 0 | 39 | 24 | 20 | 24 | 24 | 20 | 45 | 49 | 2 | 34 | 49 | 90 | 204 | 15 | 3 | 118 | 45 | 33 | 2 | |
| <i>Nereis spp</i> | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| <i>Nephtys spp</i> | | | | | | | | | | | | | | | | | | | | 2 | | | | | |
| <i>Nucula</i> | 14 | 2 | | | | | | | | | 3 | 145 | 2 | 14 | | 84 | | 36 | | | | | | | |
| Nudibranchs | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| <i>Ophiothrix fragilis</i> | | | | | | | | | | | | | | | | | | 1 | | | | | | | |
| <i>Pasiphaea sivado</i> | | | | | | | | | 2 | | | | | | | | | 5 | 4 | | 5 | 24 | | | |
| <i>Pectinaria koreni</i> | | | | | | | | | | | | | | | | | | | | 2 | | | | | |
| <i>Sepioloa spp</i> | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| small pandalids | | | | | | | | | | | | | | | | | | | | | | | 7 | | |
| <i>Tellina spp</i> | | | 17 | 5 | | | | | 7 | | | | | | | | | | | 3 | | | | | |
| Turret shells | | 7 | 2 | 1 | | | | 97,000 | 3 | | | | | 40,932 | | | | 18 | | | | | 7 | 38,035 | |
| <i>Limanda limanda</i> | | | | 1 | | | | | | | | | | | | | | | | | | | | 2 | |
| <i>Callionyrus lyra</i> | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| <i>Rhinonemus cimbricus</i> | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | |
| <i>Lesueurigobius friesii</i> | | 3 | 7 | 2 | | 5 | | | | | | | | | | | | | | | | | | | |
| <i>Hippoglossoides platessoides</i> | | | 5 | 2 | | 11 | | | | | | | 4 | | 6 | | | | | | | | | 8 | |
| <i>Trisopterus esmarkii</i> | | | 2 | | | | | | | | | | 1 | | | | 1 | | | | 1 | | | | |
| <i>Pleuronectes platessa</i> | | | | | | | | | | | | | | | | | | | | | | | | 8 | |
| <i>Agonus cataphractus</i> | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| <i>Arnoglossus laterna</i> | | | | 3 | | | | | | | | | | | | | | | | | | | | | |
| <i>Buglossidium luteum</i> | | | | | | | | | | | | | | | | | | | | | | | | 14 | |
| <i>Microchirus variegatus</i> | | | | | | | 4 | | | | | | | 4 | | | | | | | | | | 4 | |
| <i>Merlangius merlangus</i> | | | 8 | 6 | | 3 | 1 | 1 | | 1 | | 6 | 3 | 2 | 3 | | | | 1 | | 1 | | | 8 | |
| <i>Glyptocephalus cynoglossus</i> | 5 | 6 | 1 | 1 | | 1 | 3 | 3 | | 12 | 4 | 6 | 4 | 10 | 1 | 2 | | | | | 15 | | | | |

Key scientific names of fish:-

| | |
|-------------------------------------|-----------------------|
| <i>Limanda limanda</i> | dab |
| <i>Callionyrus lyra</i> | dragonet |
| <i>Rhinonemus cimbricus</i> | four bearded rockling |
| <i>Lesueurigobius friesii</i> | Fries goby |
| <i>Hippoglossoides platessoides</i> | long rough dab |
| <i>Trisopterus esmarkii</i> | Norway pout |
| <i>Pleuronectes platessa</i> | plaice |
| <i>Agonus cataphractus</i> | pogge |
| <i>Arnoglossus laterna</i> | scaldfish |
| <i>Buglossidium luteum</i> | solenette |
| <i>Microchirus variegatus</i> | thick backed sole |
| <i>Merlangius merlangus</i> | whiting |
| <i>Glyptocephalus cynoglossus</i> | witch |

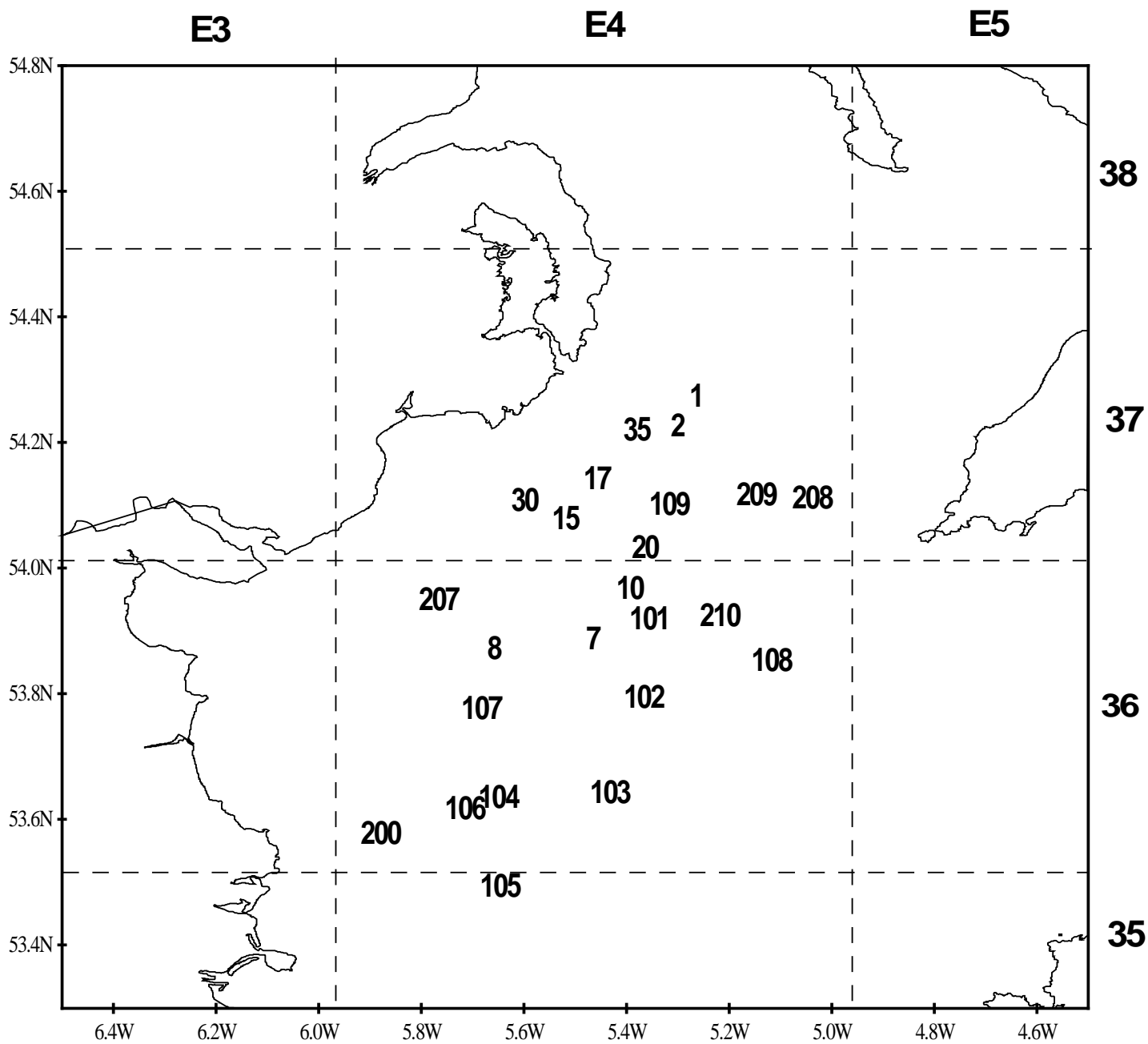


Figure 1: Western Irish Sea Nephrops stations

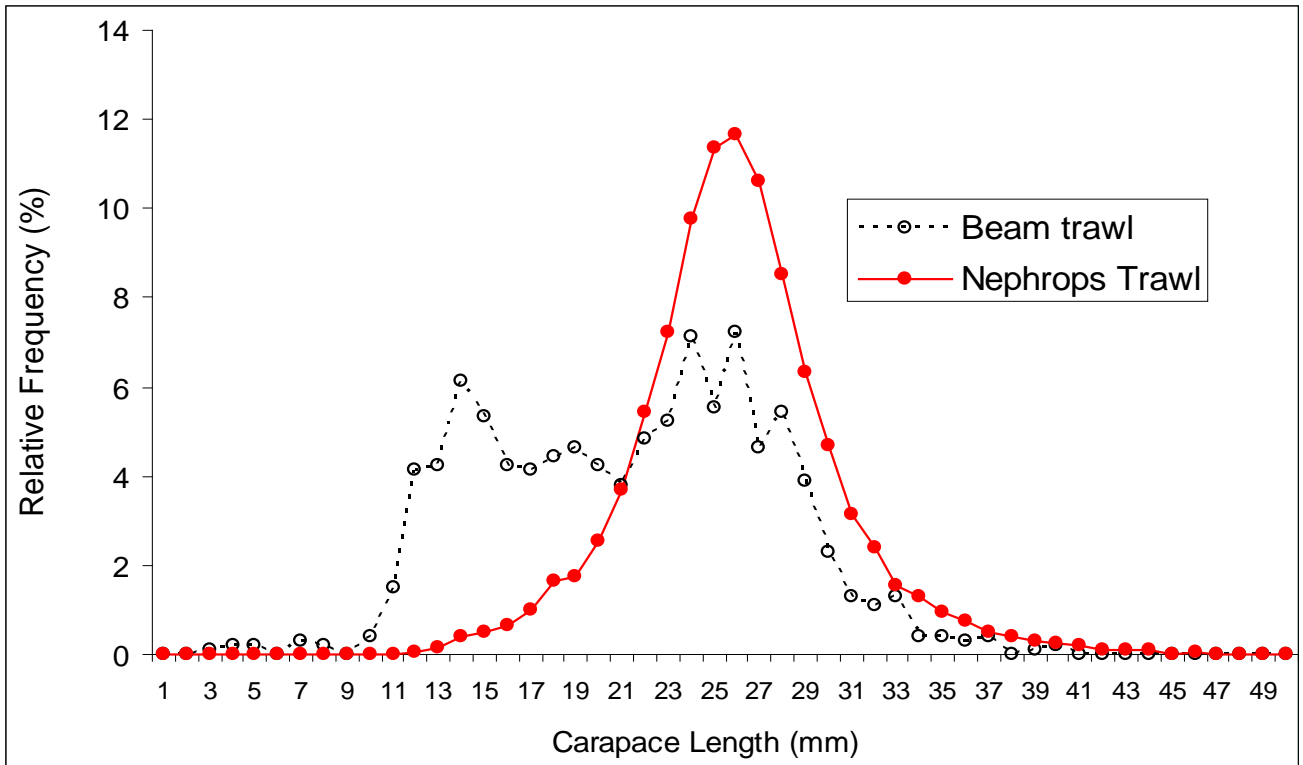


Figure 2: Relative size composition of *Nephrops* captured in beam trawl and *Nephrops* trawl (sexes combined)

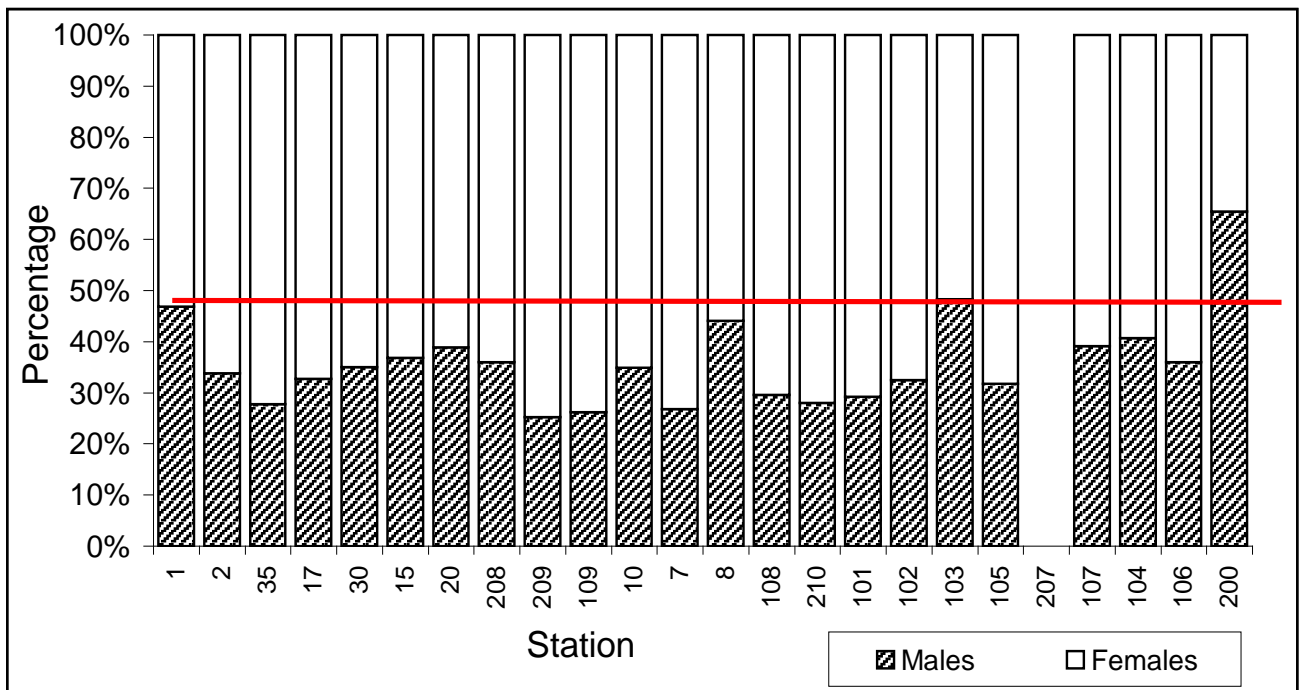


Figure 3: Percentage male and female *Nephrops* in catches. Horizontal line indicates a sex ratio of 0.5. Average for 2010 survey = 64.1% female.

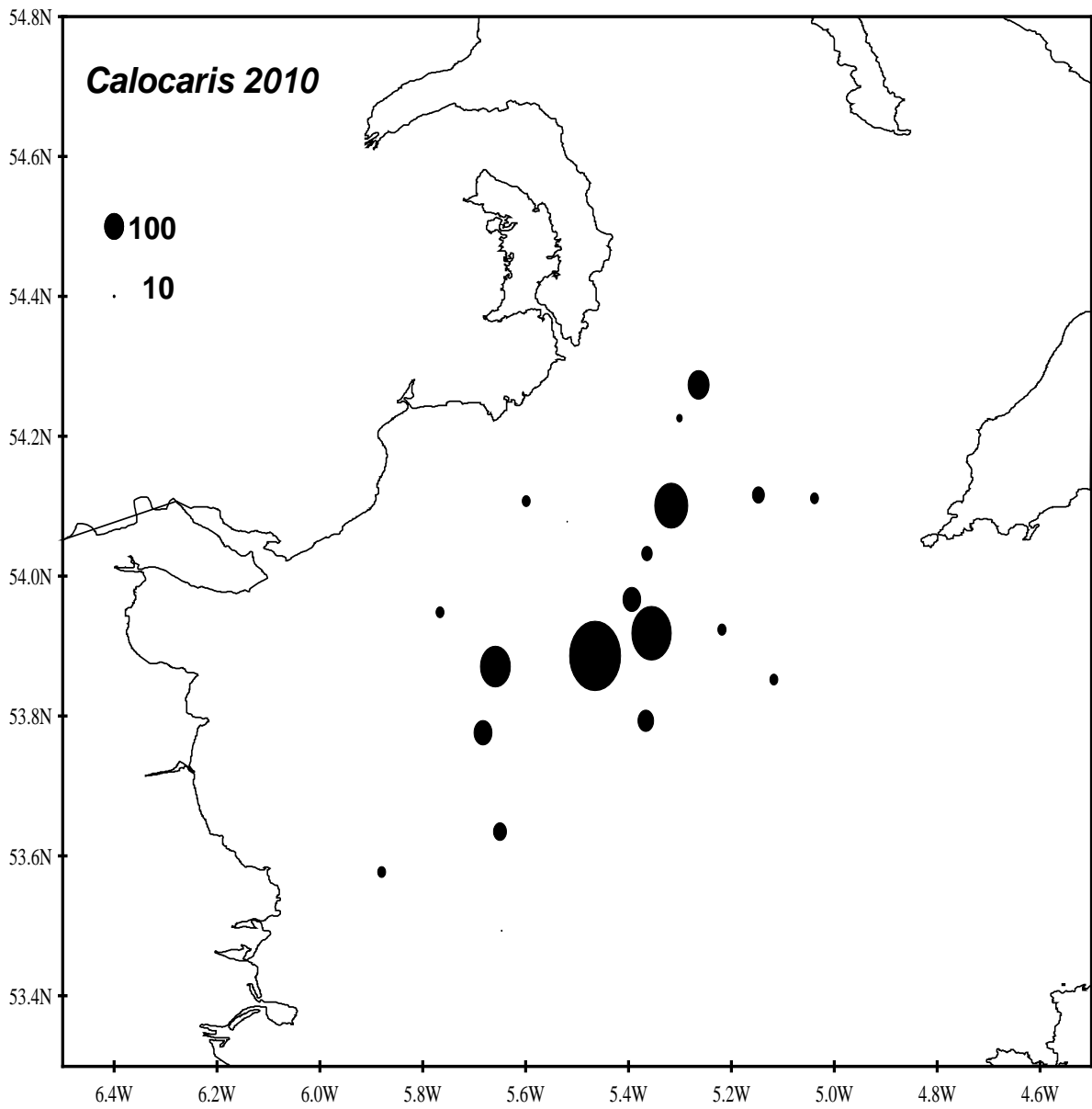


Figure 4: Bubble plot showing abundance of *Calocaris macandreae* caught by beam trawl by station

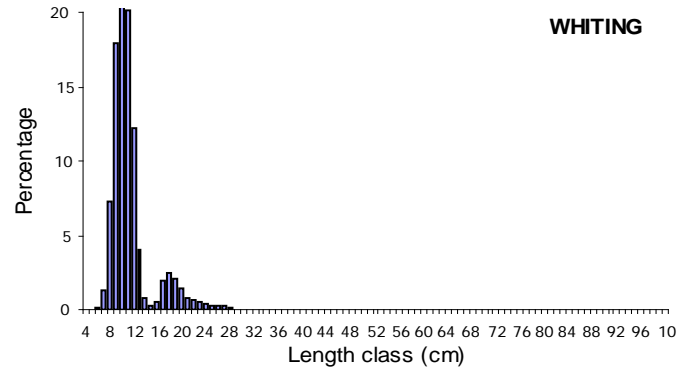
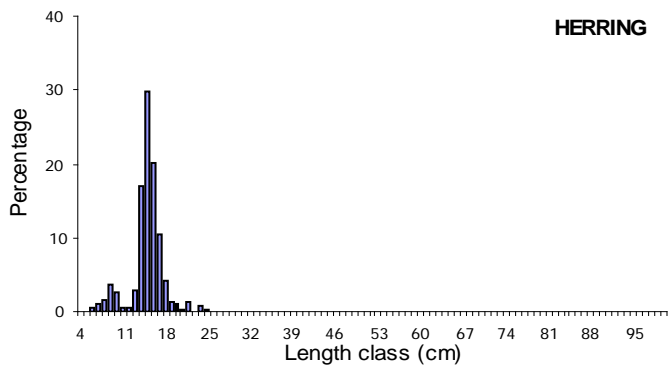
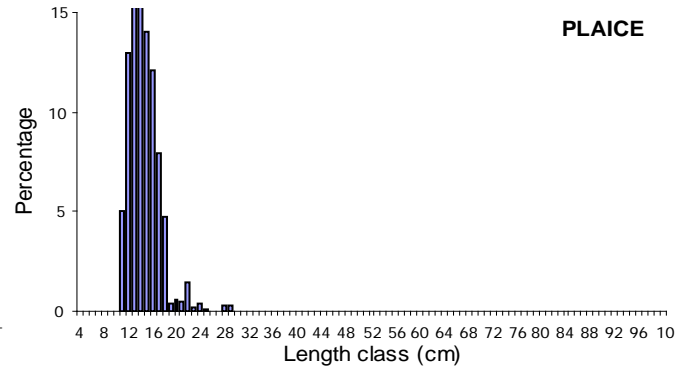
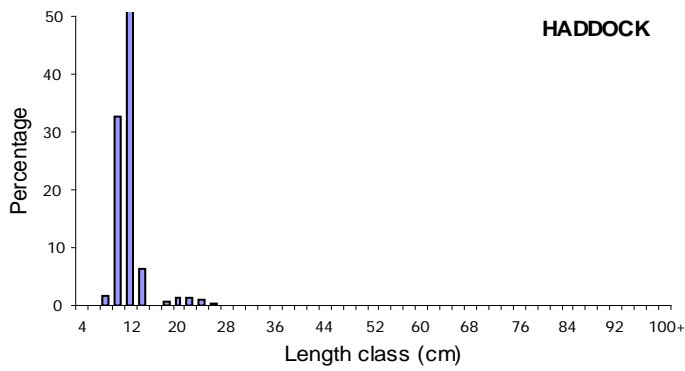
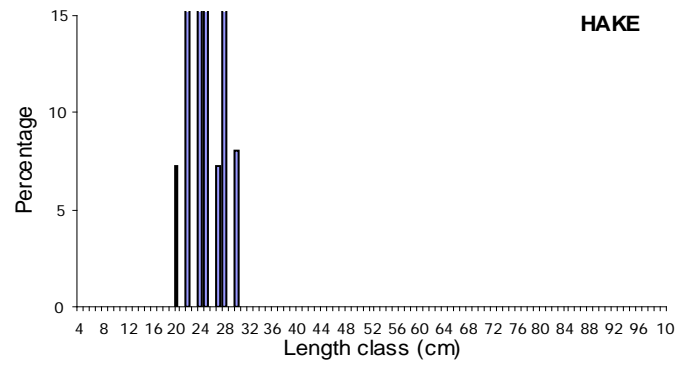
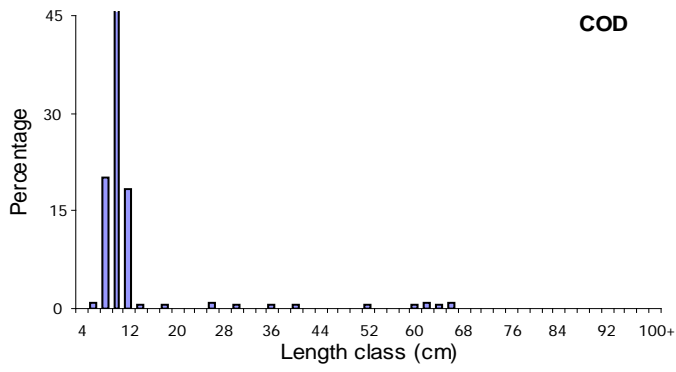


Figure 5: Length frequency of fish for the Western Irish Sea

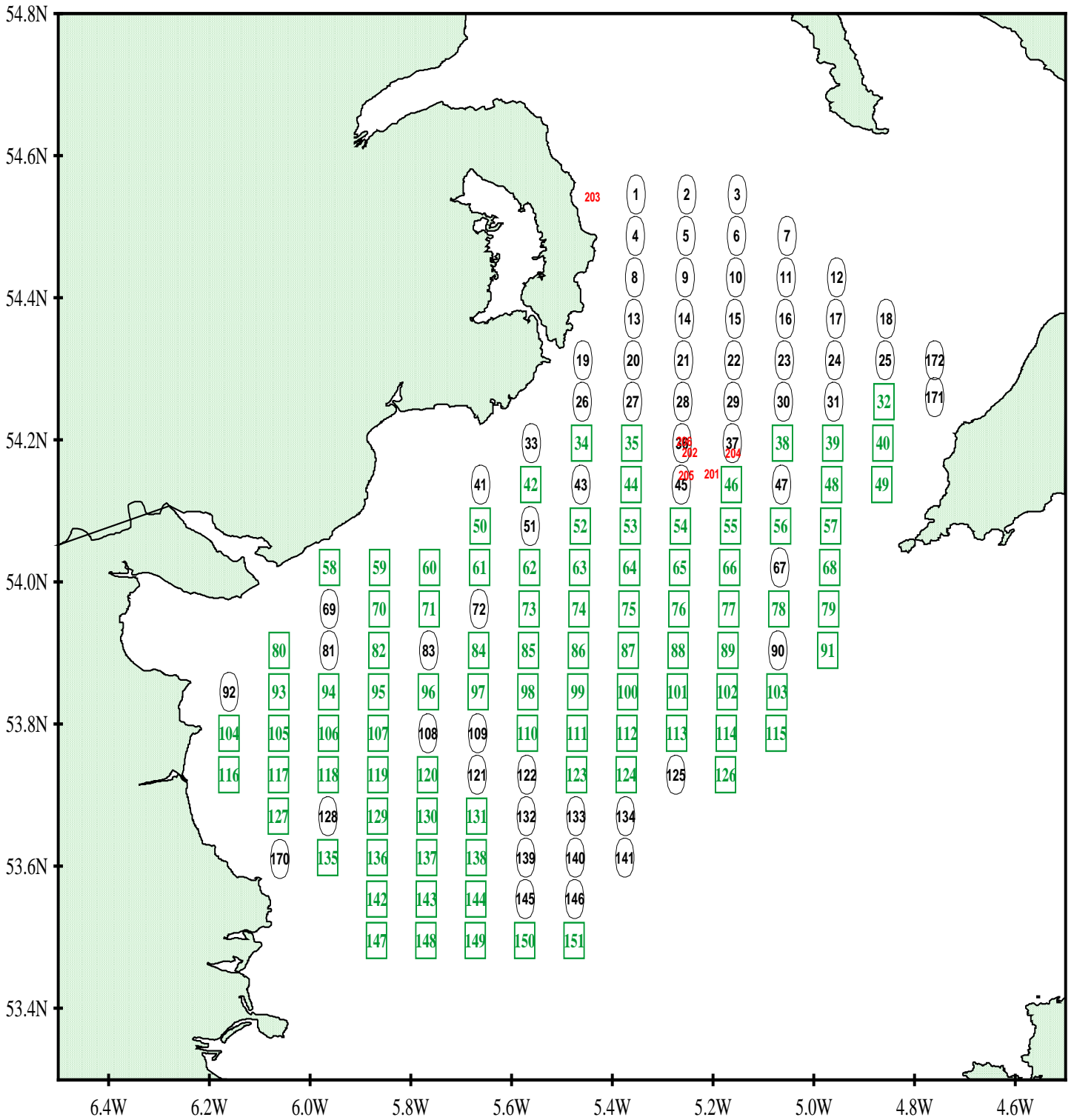


Figure 6: Western Irish Sea UWTW stations.
 Ellipse = Stations sampled by RV Corystes.
 Rectangle = surveyed by RV Celtic Voyager.)
 Stns 201-206 = Coastal zone management stations

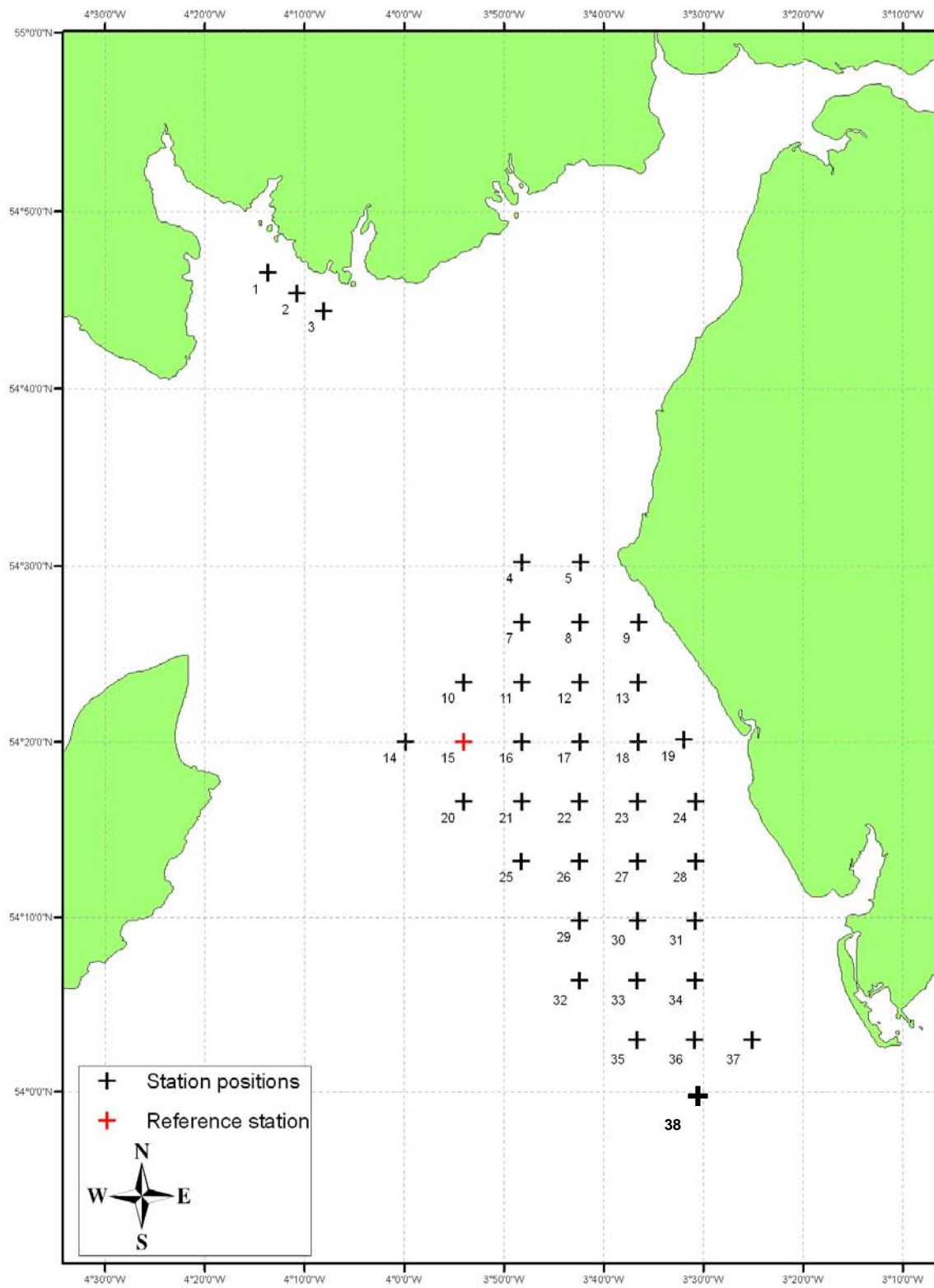


Figure 7: Eastern Irish Sea UWTW stations.