THE CENTRE FOR ENVIRONMENT, FISHERIES & AQUACULTURE SCIENCE, LOWESTOFT LABORATORY, LOWESTOFT, SUFFOLK

2006 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES, CRUISE 4/06

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L Clancy (26th July- 3rd August)
A Little (3rd - 8th August)

DURATION: Left Weymouth 2000 h, 26th July
Docked Weymouth 0800 h, 8th August

LOCALITY: North Sea (IVc) and eastern English Channel (VIId).

AIMS:

1. To obtain fisheries independent data on the distribution and abundance of commercial flatfish species.

2. To collect biological data, including maturity and weight at age, of commercial species.

3. To derive age compositions of commercial flatfish for use in stock assessment.

4. To carry out sampling to satisfy the requirements of the EU data regulations.

5. To identify the epibenthos by-catch taken in the 4-metre beam trawl and to quantify 12 species as agreed at the International Beam trawl Study Group.

6. To carry out detailed survey of sole distribution in selected areas of VIId and IVc.

NARRATIVE:
Sailing was initially delayed due to engine problems, and a further 24 hours whilst a fuse for the accommodation lighting was delivered to the ship and fitted. Corystes sailed from Weymouth at 2000h on 26th July and commenced fishing the following morning in Swanage Bay. A total of 9 tows were completed on the 27th July, 2 of which were reduced to 15 minutes as there was fixed gear across the tows. Problems with the engine cooling water system meant the survey had to be carried out using 1 engine; owing to the calm weather this did not hamper the survey's progress. A further 12 tows were worked on the 28th July and 11 on the 29th July in the English sector before the vessel steamed overnight to the Baie de Seine.

The initial tows to the west of the bay contained large quantities of brittle stars and sand and as a consequence 2 positions in close vicinity to these stations, were not fished. A total of 6 tows were reduced to 15 minutes to lessen the problem of getting the net on board due to the weight of sand and brittle stars. In spite of this there was still between 15 and 30 baskets of sand / brittle stars and shell at each location. One tow to the east of the bay resulted in the net being blinded by seaweed and filling up with sand, it was decided to be unsafe to try and get the net on board so the contents were slipped. Fishing in the French sector continued in good weather until the afternoon of the 1st August when the weather deteriorated rapidly causing fishing operations to cease for the day. The following day the remaining stations in the French sector were worked without incident and with the vessel now using both engines. After completing the Eastern Channel stations the vessel proceeded into the North Sea where 2 tows off North Foreland were fished, in marginal weather, before the vessel steamed to a position off Harwich to resume work the following day. On the 3rd August 5 stations were worked before the vessel proceeded to Lowestoft to disembark one of the scientists and pick up a replacement. On reaching Lowestoft it was decided the sea conditions were unsuitable for launching the small boat therefore the vessel steamed northwards and completed a station off Corton. On completion of the station the decision was made to steam south and shelter under the land until conditions improved. In the afternoon a further attempt was made to transfer staff to shore, again the small boat could not be launched due to poor sea conditions, however arrangements were made to use the pilot boat to get the scientist into Lowestoft. The Corystes then sailed south to Southwold where the weather conditions were by this time suitable to embark the replacement staff member; this was achieved at 1730. The vessel remained in the area ready to recommence surveying the following day. A total of 9 stations were worked on the 4th August in the Northern Thames estuary and a further 4 tows were worked in the southern area of the estuary during the morning of the 5th August. Sampling continued on Belgium beam trawl survey positions in the central southern North Sea where 6 tows were completed. A further 9 stations were completed on the 6th August in the Belgian sector. Fishing recommenced on the 7th August off the French coast at the station previously missed for bad weather. The remaining Eastern Channel tows were completed by 1900 h on the 7th August after which the vessel made passage to Weymouth where it docked at 0800 h on the 8th August.

RESULTS:

Aim 1:

A total of 71 out of 75 prime stations were fished in the Eastern Channel. Four stations were dropped, prime 49 because of inaccessibility due to tide state, primes 8 & 12 because of the abundance of brittle stars and shell in area making them impossible to work and prime 25, which was dropped to enable the vessel to get the tide in Weymouth. There was 1 invalid station, prime 4, in the Baie de Seine. In addition 36 tows were carried out in the southern North Sea including 16 of the 16 possible prime stations. A plot of the tows worked is shown in Figure 1.

The catches of sole and plaice in the Channel were higher than in the previous year with the main concentrations of sole being off Boulogne, Dieppe and Rye Bay. (Figure 2). The highest concentration in the English sector equated to 180 fish per hour off Rye and in the French sector to 400 fish per hour south of Boulogne. Most concentrations of sole were located in the vicinity of estuaries. Plaice were also abundant in the same areas and also in significant numbers in the Baie de Seine around Le Havre (Figure 3). The highest concentration was off Boulogne where 314 fish per hour was recorded. Sole were found in high abundance in the

southern North Sea in the coastal region between the Thames and Lowestoft with the highest catch rate per hour of 550 being taken in the southern Thames (Figure 2). Sizes ranged from "0" Gp fish of 4 cm up to specimens of 40 cm with a significant number of 2005-year class fish (based on length) being present in the catches. Plaice catches were significantly lower in the southern North Sea than in the Eastern Channel, however they were widely distributed in the offshore stations in the Belgium sector albeit at low abundance (Figure 3). The biggest concentration of plaice, 108 fish per hour, was found off the Suffolk coast. Sizes again ranged from "0" groups up to specimens of 40+ cm. Other species of note taken were cod, mainly "0" Gp which were distributed from Lowestoft down into the Thames estuary. Concentrations of >90 per hour were recorded at each of these locations, which is unusual for this survey (Figure 4) and dab, which were mainly found in estuarine areas (Figure 5).

Aims 2 - 4: All otolithed fish were measured to the nearest cm, weighed individually, sexed and assigned a maturity based on a four-stage key. All non-commercial fish by-catch from the 4m-beam trawl were identified, weighed and measured. In addition cuttlefish, brown crab, spider crab, velvet swimming crab, lobsters, queen scallops and scallops were measured. A total of 280 specimens of ray, mainly thornback, were biologically sampled.

Otloiths collected from main commercial species

Sector	Sole	Plaice	Dab	Lemon Sole	Brill	Turbot	Flounder	Cod
VIId: English sector	202	356	255	83	18	16	74	0
VIId: French sector	191	576						4
IVc	544	297	237	34	6	2	27	96

Numbers of fish measured per ICES division.

Species	Eastern Channel VIId	Southern North Sea IVc
Sole	1003	1718
Plaice	1383	327
Cod	5	251
Lemon sole	94	69
Dab	1784	503
Raja spp *	166	114
Brown crab	142	40
Spider Crab	696	2
Velvet Swimming Crab	459	646

- Biological samples for sex and maturity taken.

Aim 5: All benthic material collected as by-catch material in the 4m-beam trawl was identified to species level and recorded as observed on all tows. At all but 1 primary site

catches were quantified. An additional full benthic sort was carried out at prime 468 in the Belgian sector.
Sabellaria, Ross coral and Mantis shrimps were recorded for all stations at which they occurred.

Aim 6:
Length data and catch rates of sole in differing areas of the survey were collected for analysis at a later date.

Figure 1 Tow positions

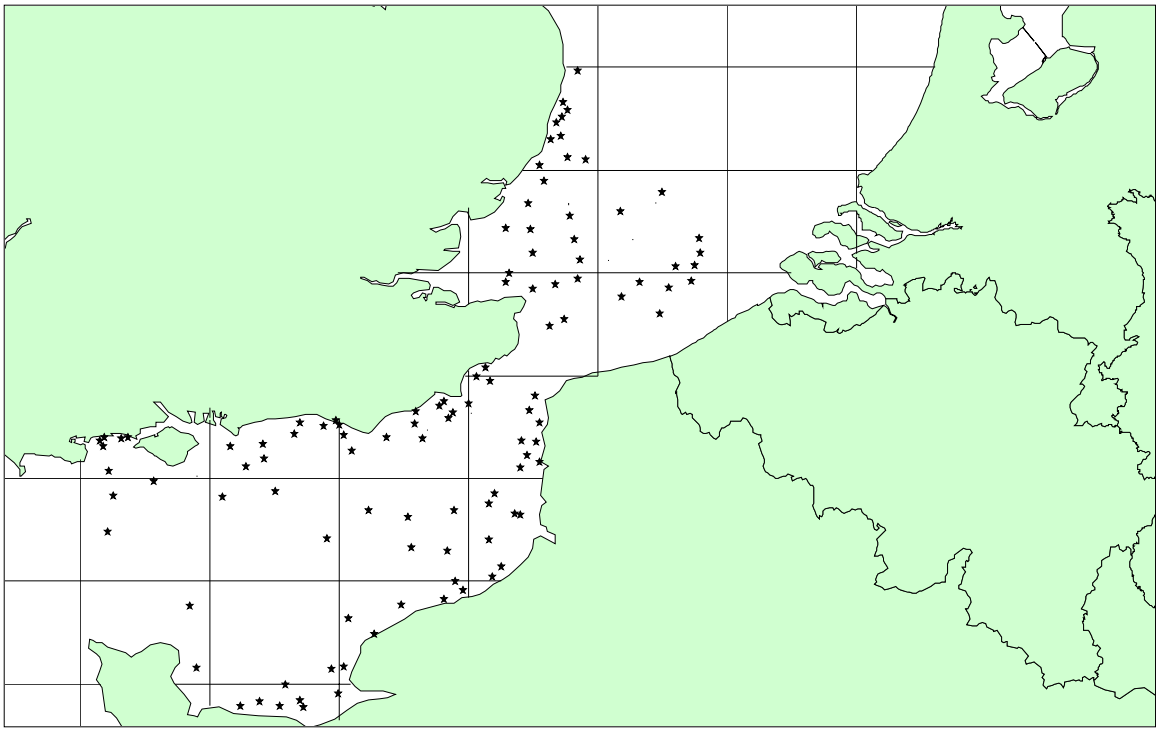


Figure 2 Sole catch numbers per hour

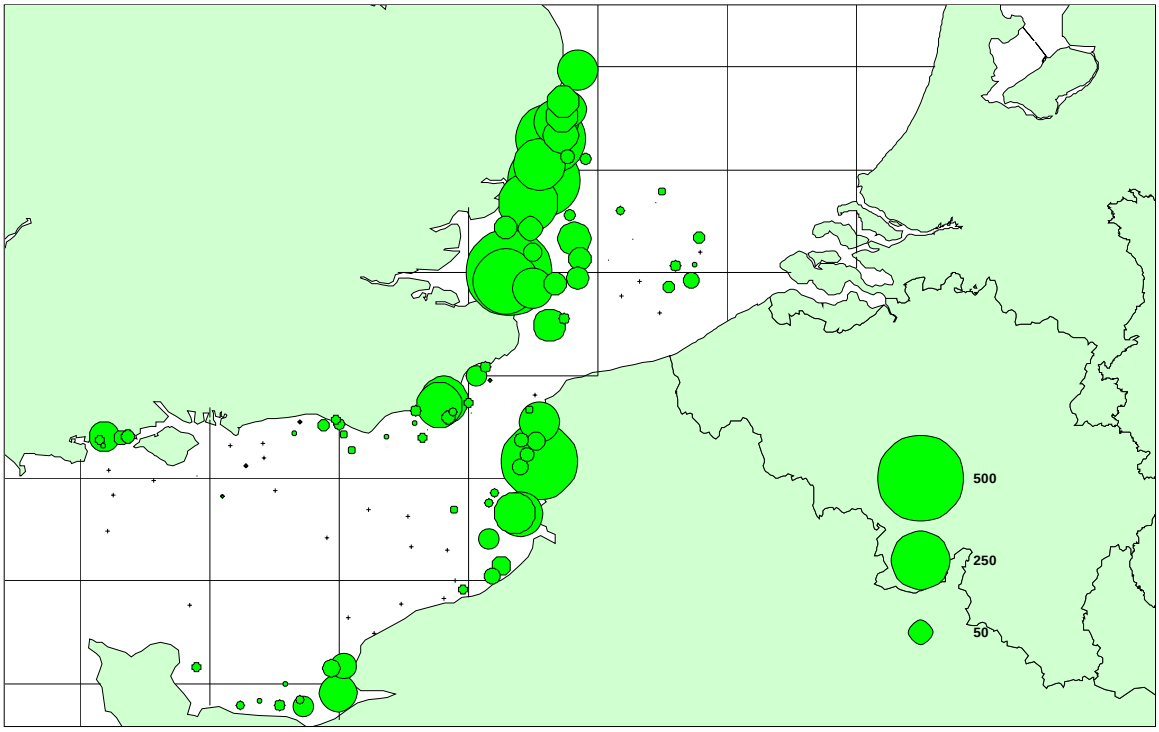


Figure 3 Plaice numbers per hour

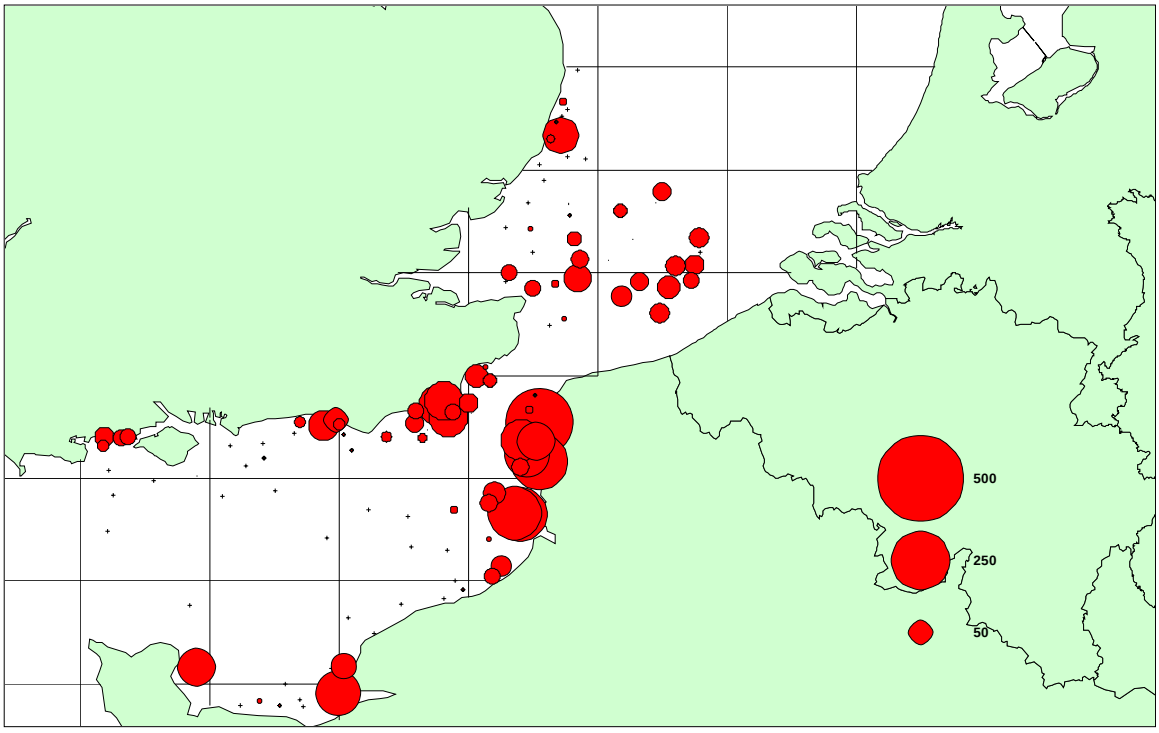


Figure 4 Cod numbers per hour

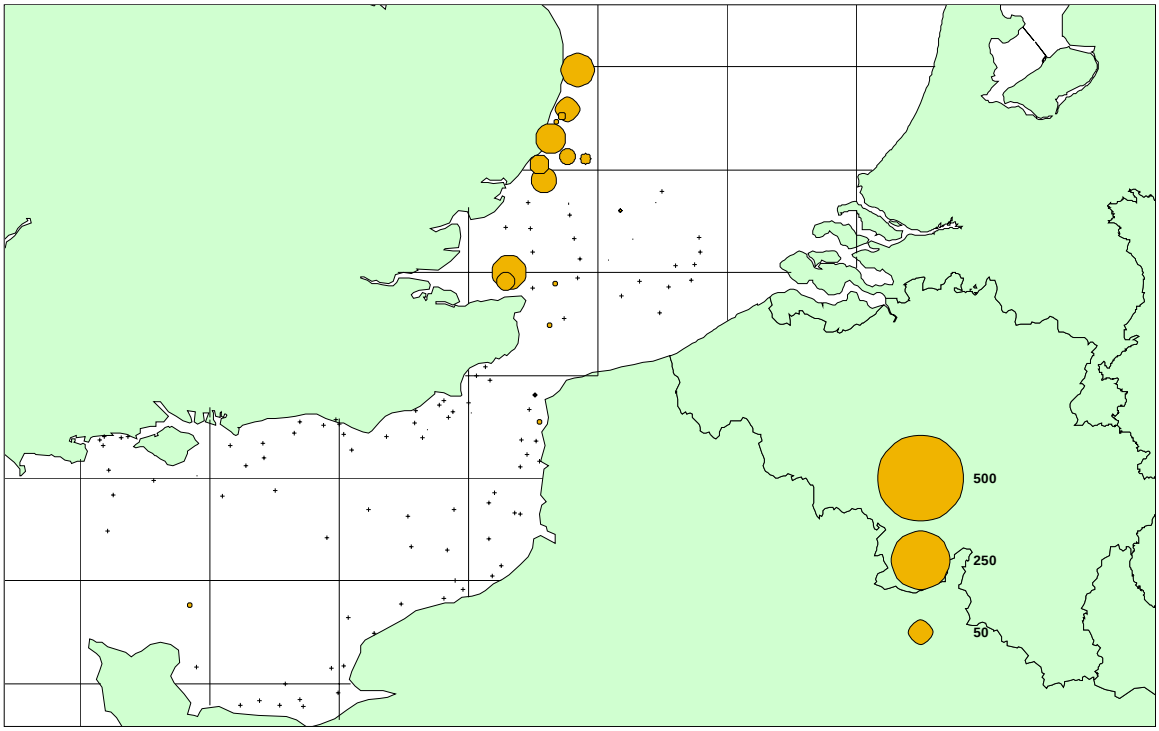


Figure 5 Dab numbers per hour.

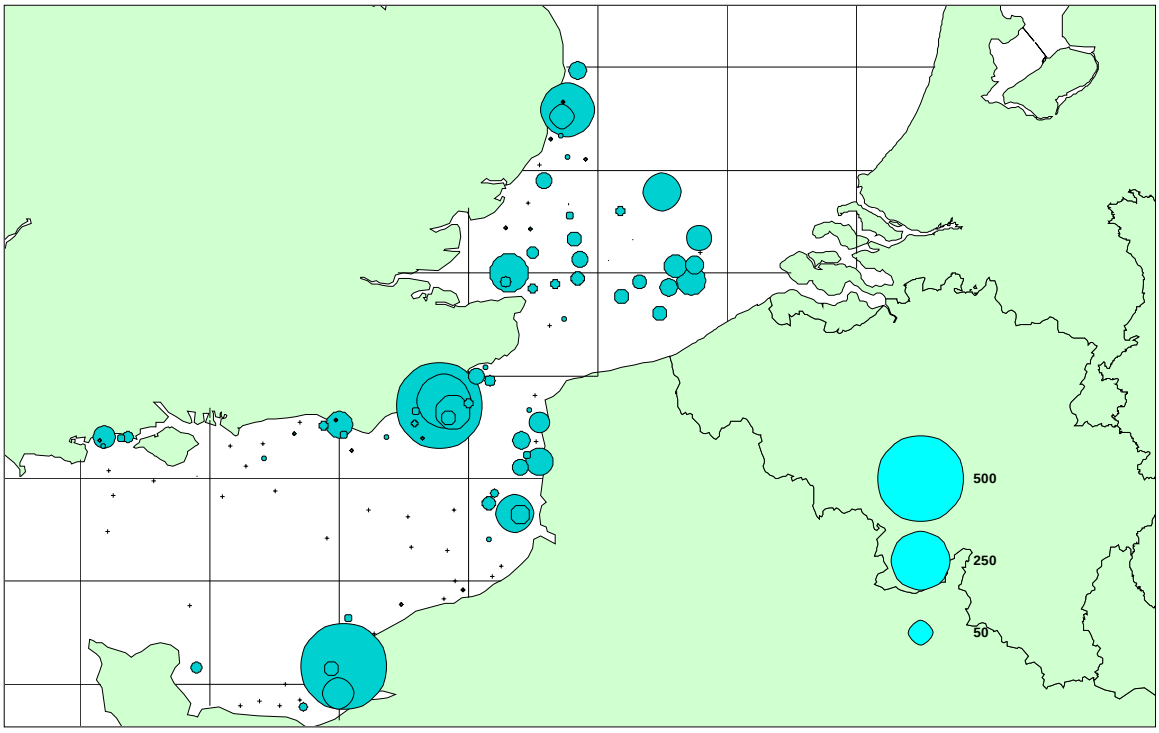


Figure 6 Cuttlefish numbers per hour

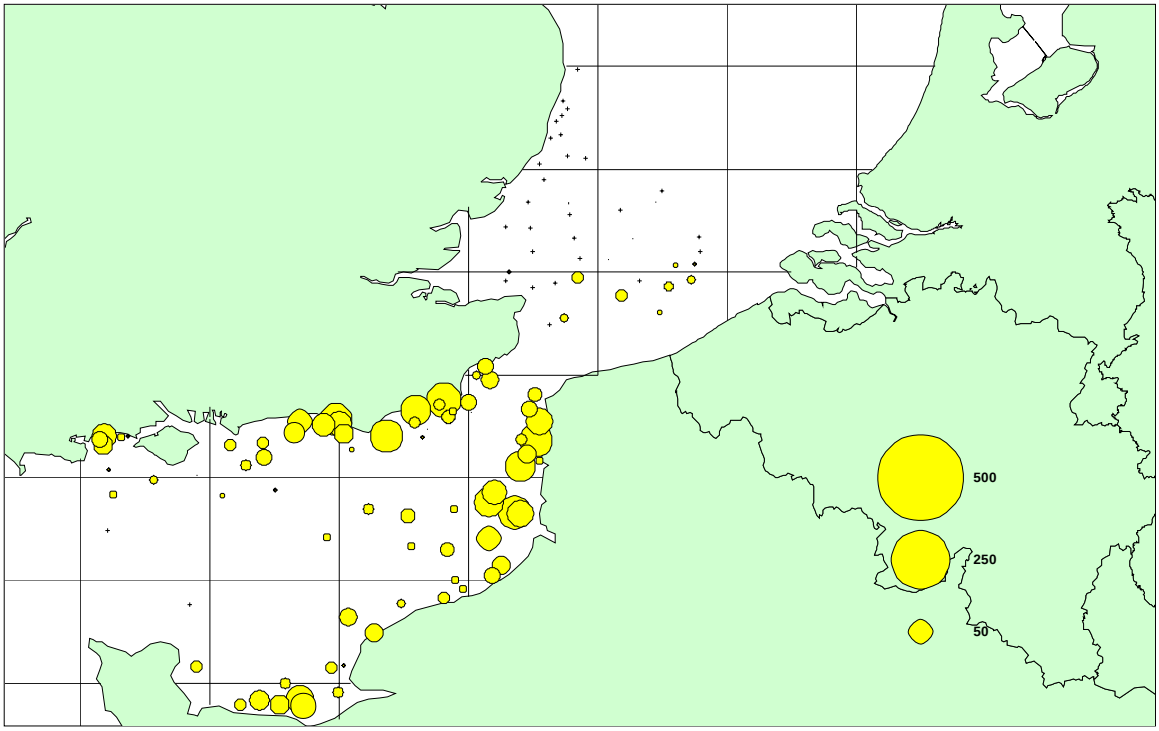


Figure 7 Velvet swimming crabs numbers per hour.

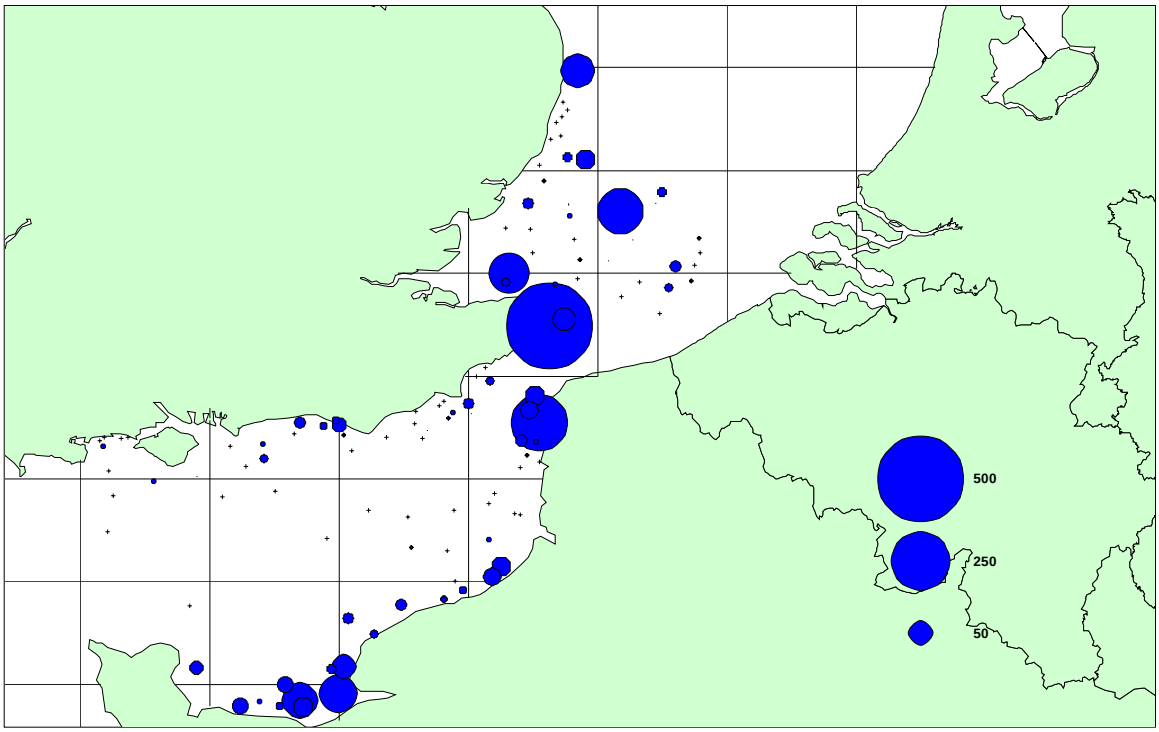


Figure 8 Spider crabs numbers per hour.

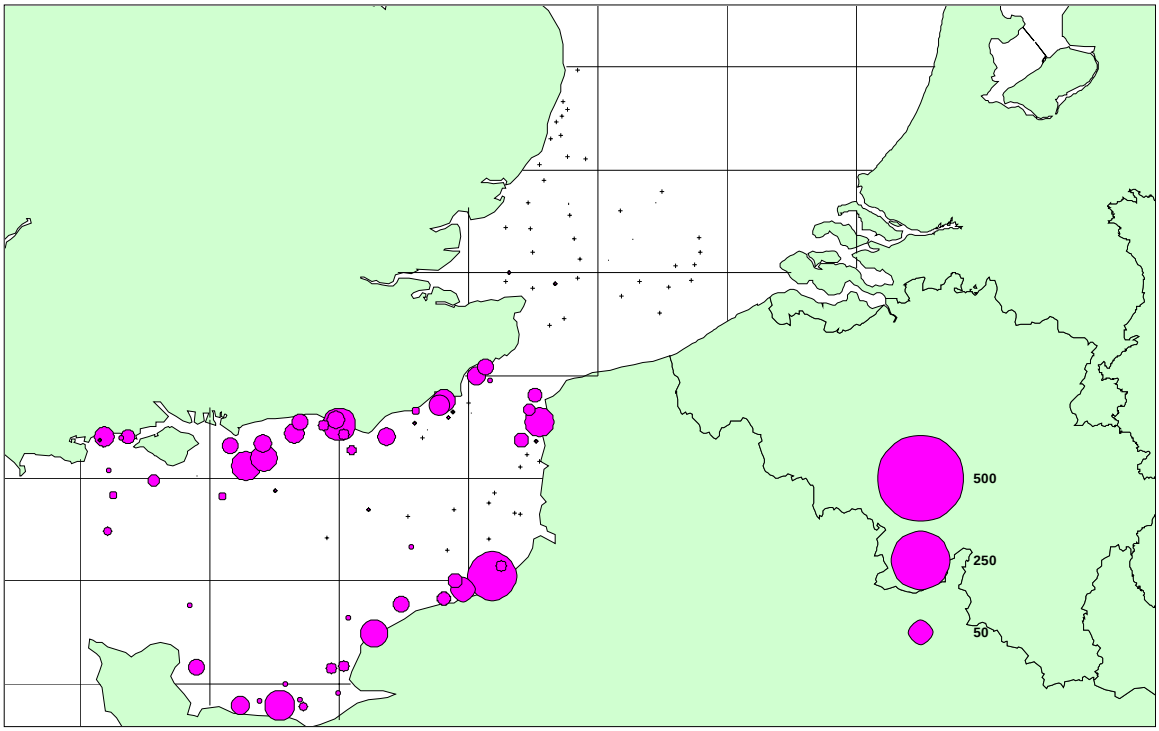
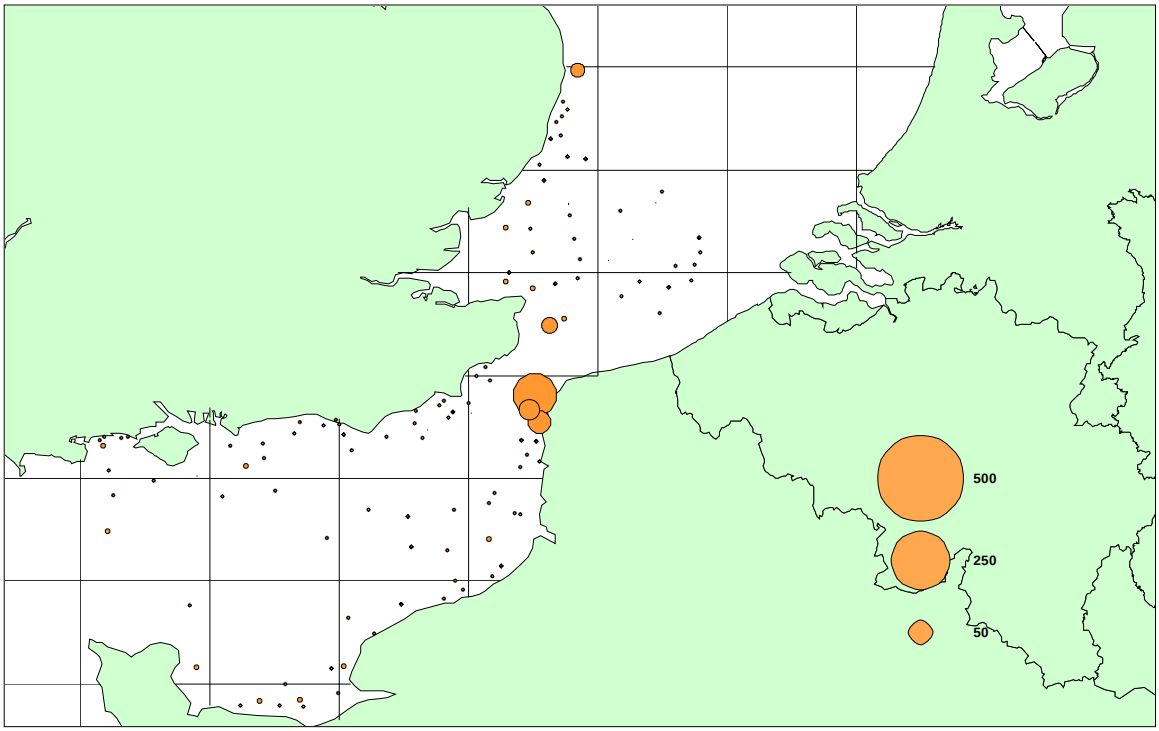


Figure 9 Brown crab numbers per hour.



J Dann 8 August 2006

Seen in draft: (Master) AH
(Senior Fishing Mate) AL
(2IC) GC

Initialled:

Distribution:
Basic list +
Cruise staff
Fishing Skipper Corystes
W Demare, Belgium
Frans v Beek, Netherlands
Joel Vigneau, France
Kent and Essex, Sussex, Southern SFCs
DARD Northern Ireland