MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1996 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES: CRUISE 4

STAFF:
S Flatman
A Child
G J Howlett
S Warnes
M J Boon
T W Boon (part 1)
I D Holmes (part 1)
T Watson (part 2)
P Welsby (part 2)

DURATION: Left Swansea 1615 h 29 February
Arrived Lowestoft 1340h 27 March
(All times are Greenwich Mean Time)

LOCALITY: Celtic Sea and Western Approaches

AIMS:

1. To carry out a trawl survey of the Celtic Sea, to obtain information on:
   a) Distribution, size composition and abundance of all fish species.
   b) Age-length distributions of selected species.
2. To sample juvenile fish for recruitment studies.
3. To collect material for fish identification courses.
4. To collect and preserve frozen all scallops that are caught.
5. To continue the collection of stomach content data begun on earlier cruises.
6. To continue trials and development of electronic data capture equipment.
7. To collect samples of herring for the study of the incidence of Ichthyophonus disease.
8. To monitor the distribution and abundance, and collect samples, of Ommastrephid squids.
9. To collect and preserve frozen samples of cod, whiting, plaice and dab from selected areas to provide data for the QSR of the Celtic Sea (AEP2).

NARRATIVE:

RV CIROLANA as in previous years, was scheduled to carry out this cruise, but a problem with the trawl winch forced a reschedule to CORYSTES.

Scientific staff travelled by road to join CORYSTES at Swansea on 28 February. The vessel left Swansea at 1615h on 29 February, and steamed overnight to the first station position in the northern Celtic Sea. During the period 1 - 11 March, in fine weather, CORYSTES completed all but one of the shelf edge stations north of 49 degrees in

ICES Division VIIj, and all but three of the Division VIIf and VIIg stations. Gale force southerly and south-easterly winds prevented work on 12 - 13 March, and the vessel dodged to a position south of the Scilly Isles. On 14 March weather conditions improved sufficiently to allow two tows to be worked before CORYSTES steamed to Falmouth. The vessel docked at 1840h on 14 March.

Scientific staff changeover, ship's radio survey and re-provisioning took place on 15 March in Falmouth.

CORYSTES sailed at 1000 h on 16 March, proceeded to a position north of the Scillies, and recommenced the trawl survey at 0600 h on 17 March. The remaining stations in ICES Divisions VIIf and VIIg, and in VIIj north of 49 degrees N, were completed in good weather conditions, and the vessel worked southwards. On 19 March, in freshening SE winds, CORYSTES completed two stations in VIIh before sustaining major gear damage on the southernmost station in VIIj. The starboard warp parted without warning ten minutes into the tow, resulting in the loss of the starboard door, 650 m of warp and most of the trawl. CORYSTES had no alternative but to return to Falmouth for replacement warp to be fitted. The vessel docked at 0800 h on 21 March, after an uncomfortable steam during an easterly gale. Repairs were completed by 1800 h, and CORYSTES steamed overnight to rejoin the survey grid off the north-west coast of France. At 1945 h on 23 March, nine of the French sector stations had been completed, and the vessel steamed overnight to the most westerly of the remaining stations in VIIh. During the next two days the remaining survey positions in VIIh were worked, and at 1800 h on 25 March CORYSTES set course for Lowestoft.

RESULTS:

Aim 1. 62 of the 65 standard survey grid stations were successfully completed. A further two stations were attempted but abandoned after gear damage. At each site the Portuguese high headline trawl, fitted with rubber bobbins, 84 headline floats, polyvalent doors, a bunt tickler chain and a codend liner, was towed for 60 minutes. As in previous years, the tickler chain was removed for those stations sited on rough ground. A chart indicating the position of each trawl station is attached. Scanmar equipment was used to monitor headline height, door or wing spread, and bottom temperature. The continuous salinity/temperature monitoring system for surface water was running during the survey, and discrete water samples were collected daily for salinity calibration purposes. A Guildline CTD profiler fitted with a deep water sensor was deployed at the first and last stations on most days, to obtain additional temperature and salinity data by depth. At each CTD station, a Niskin bottle was used to collect water samples from within 10m of the seabed.

All fish species caught were identified, weighed and measured (sub-sampling as necessary), and length-stratified samples of otoliths were taken from selected species:

Species	VIIe	VIIf	VIIg	VIIh	Shallow	Deep	Cruise Total
L. piscatorious							55
L. budegassa							64
Lemon sole	17	39	61	12			129
Megrim					738	512	1250
Plaice		1	132				133
Sole			3				3
Cod							189
Mackerel							402
Herring							45
Hake							686

All individual otolithed fish were sexed, assigned a maturity stage, and weighed. All length and otolith sample data were entered directly at the sampling point into a PC database using the electronic data capture system. Due to a technical problem, these data were not loaded onto the Fishing Survey System during the cruise. Photographs of benthos were taken where appropriate, and major animal groups and species were recorded. A total of 87 fish species were recorded.

Comparisons of the abundance of selected species with those of previous cruises in the time series are not straightforward due to the use of a different vessel this year.

However, for the purpose of this report some provisional comparisons can be drawn. Catches of the main commercial demersal species were generally lower than those observed in 1995, with the exception of plaice and haddock. Plaice were more abundant than in 1995, and haddock were much more abundant this year. Numbers of hake were around half of the level observed in 1995. Non-juvenile mackerel were four times more abundant than last year, but non-juvenile horse mackerel were a little less abundant. Of the other species, the most notable difference between 1995 and 1996 was in Norway pout numbers, three times more abundant in 1996.

Charts showing the distribution of catch numbers of selected species are attached.

Aim 2. Preliminary indications are that 1-group hake are around half as abundant as last year. 1-group cod and whiting also appeared to be less abundant. In contrast, 1-group haddock numbers on this cruise were eight times those observed in 1995. Very few 1-group horse mackerel were encountered, but 1-group mackerel were almost twenty times as abundant as in 1995.

Aim 3. Samples of 60 species were frozen for later use in DFR fish identification training courses.

Aim 4. A total of 28 scallops were collected and frozen.

Aim 5. No supplementary data on stomach contents were recorded.

Aim 6. The electronic data capture equipment was used throughout the cruise. No major problems with the software or hardware were experienced, and the system was easy to use and robust. All length and otolith data were uploaded to PC database at the end of each station, and checked against the species recorded on catch records. Preliminary summaries of numbers of fish were obtained from the ACCESS database, as it was not possible to transfer catch, length and otolith data into the Fishing Survey System.

Aim 7. Two samples of herring were collected and examined for the incidence of Ichthyophonus disease. All fish were clear.

Aim 8. Ommastrephid squids were recorded and measured as part of the routine station sampling and processing. Sixteen samples were collected and frozen (University College Cork, Ireland).

Aim 9. Samples of cod, whiting, plaice and dab were collected and frozen for AEP2.

Supplementary aims:

- Approximately 40 live octopus were collected for R. Williamson (Plymouth University).
- A sample of commercial sized species, from a position south of Milford Haven, was taken and frozen for studies following the SEA EMPRESS oil spill.

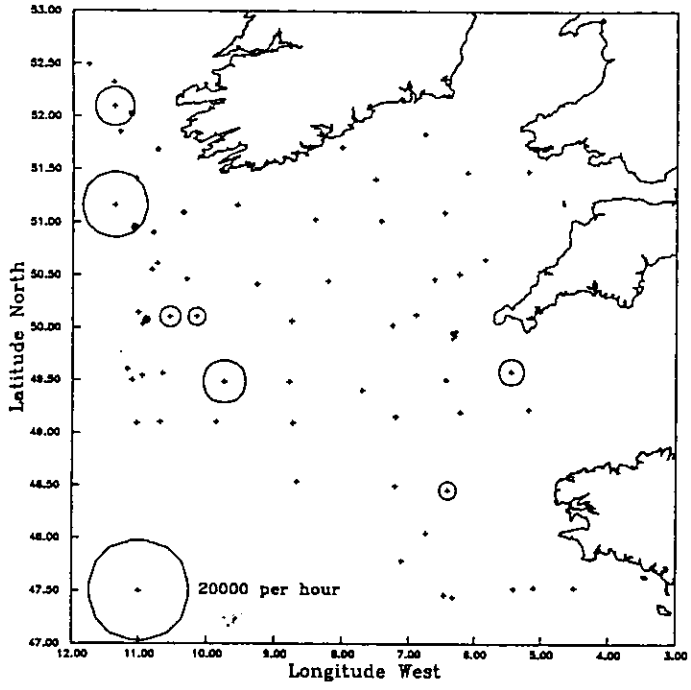
S Flatman (SIC)
26 March 1996

SEEN IN DRAFT: M J Willcock (Master)
R Graham (Senior Fishing Mate)

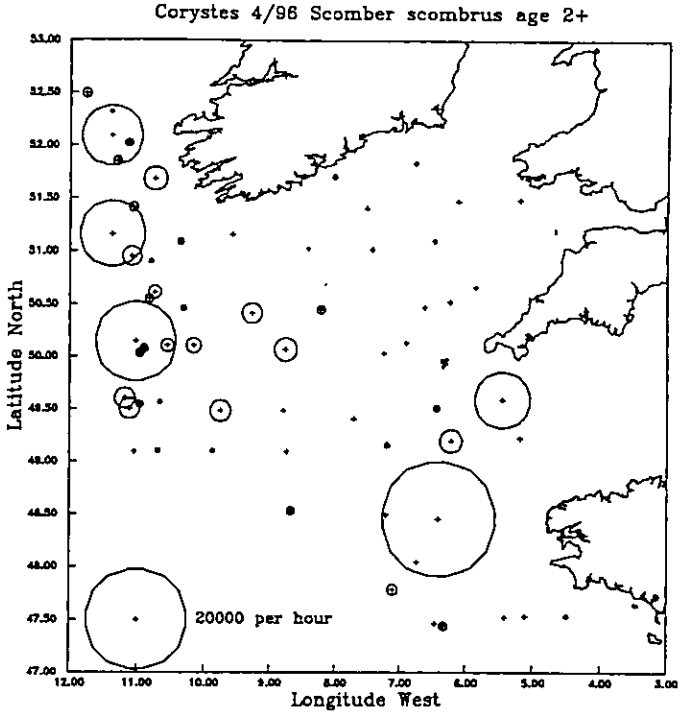
INITIALLED: CTM

DISTRIBUTION:
Basic list +
S Flatman
A R Child
G J Howlett
S Warnes
M J Boon
T W Boon
I D Holmes
T Watson
P Welsby
J H Nichols
J Casey
Devon Sea Fisheries Committee
Cornwall Sea Fisheries Committee
South Wales Sea Fisheries Committee
Isles of Scilly Sea Fisheries Committee
Republic of Ireland, via Foreign Office
France, via Foreign Office

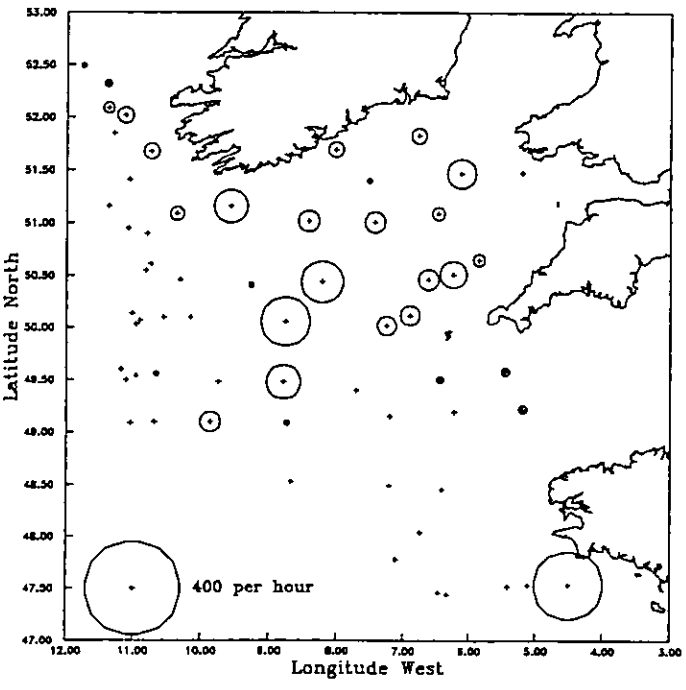
Corystes 4/96 Scomber scombrus age 1



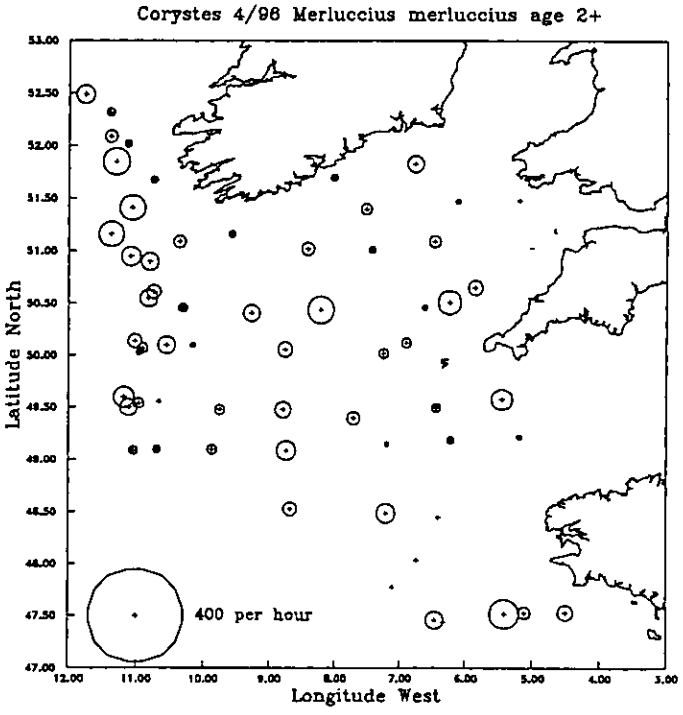
Corystes 4/96 Scomber scombrus age 2+



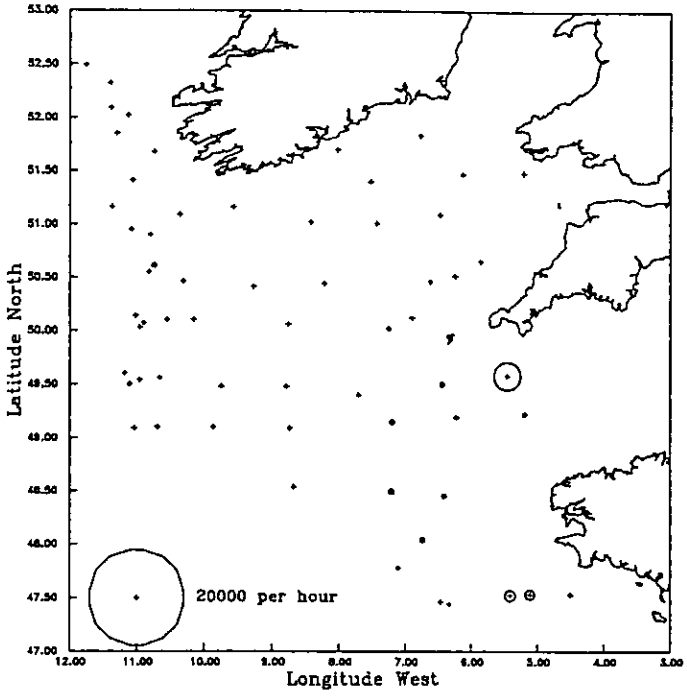
Corystes 4/96 Merluccius merluccius age 1



Corystes 4/96 Merluccius merluccius age 2+



Corystes 4/96 Trachurus trachurus age 1



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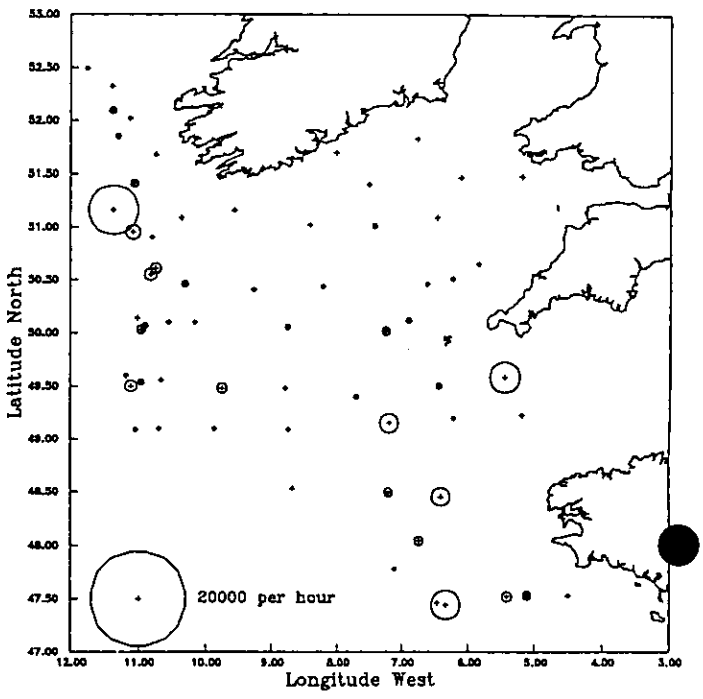

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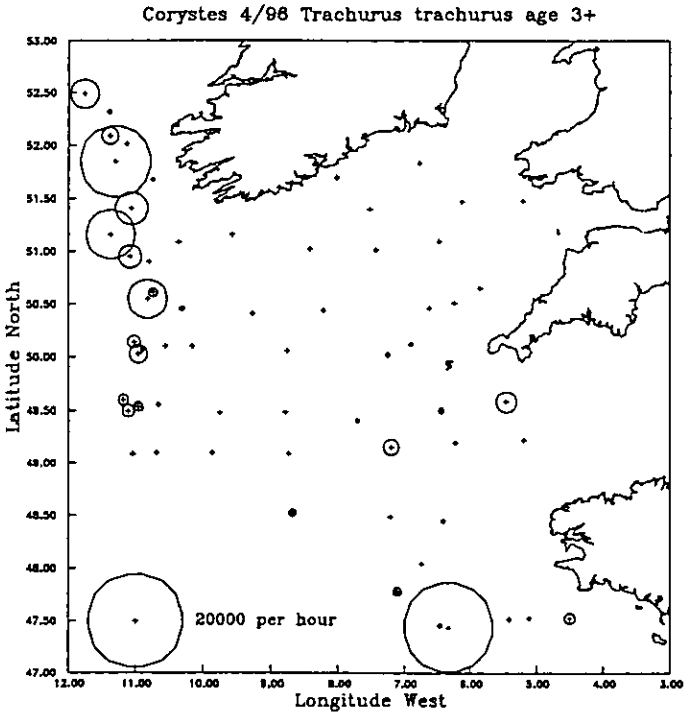
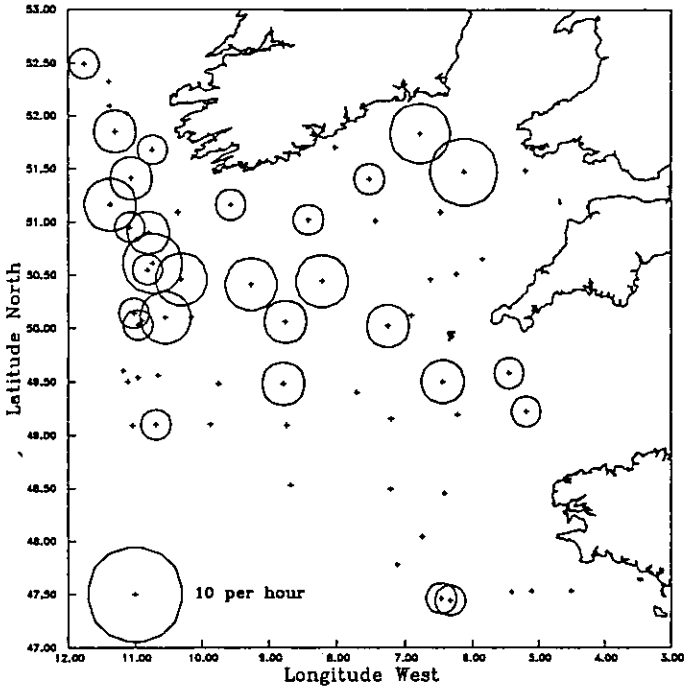


Corystes 4/96 Lophius piscatorius



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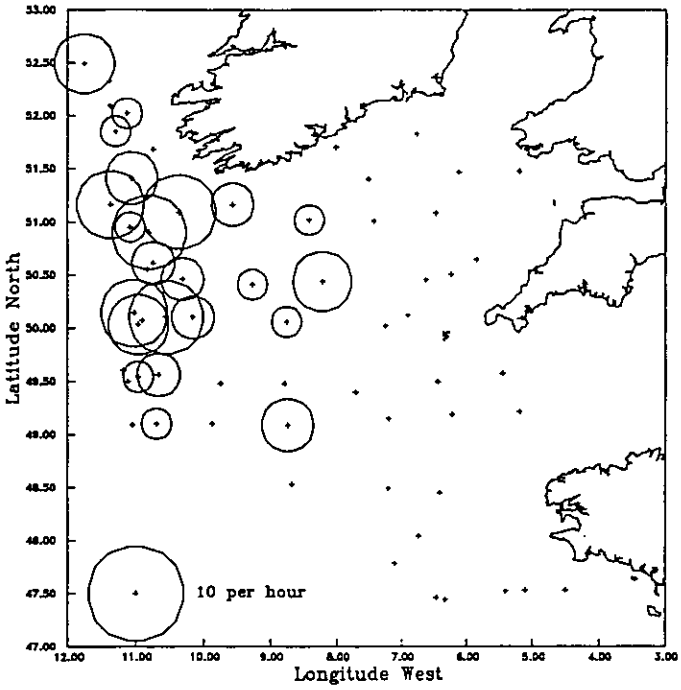

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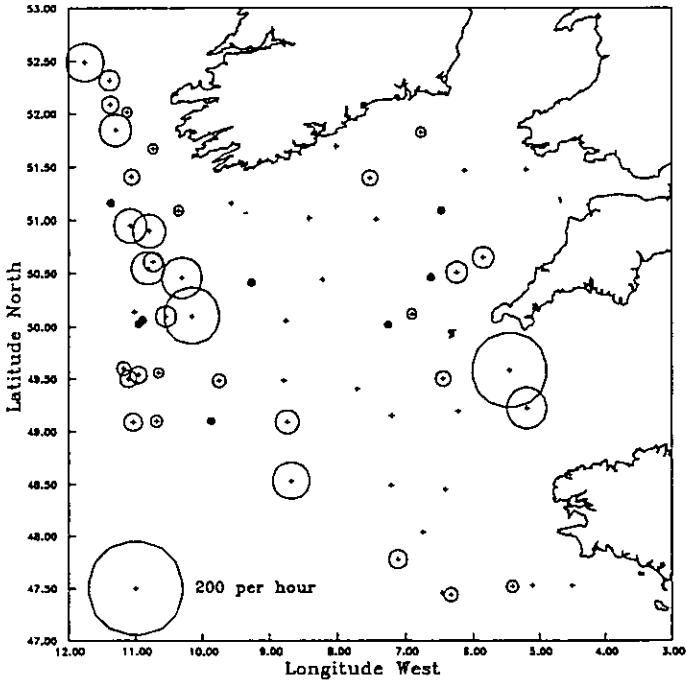

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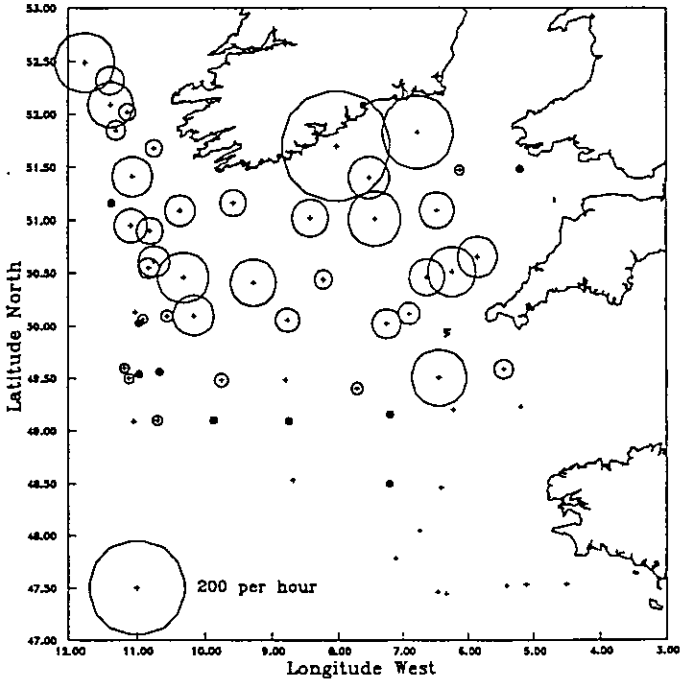
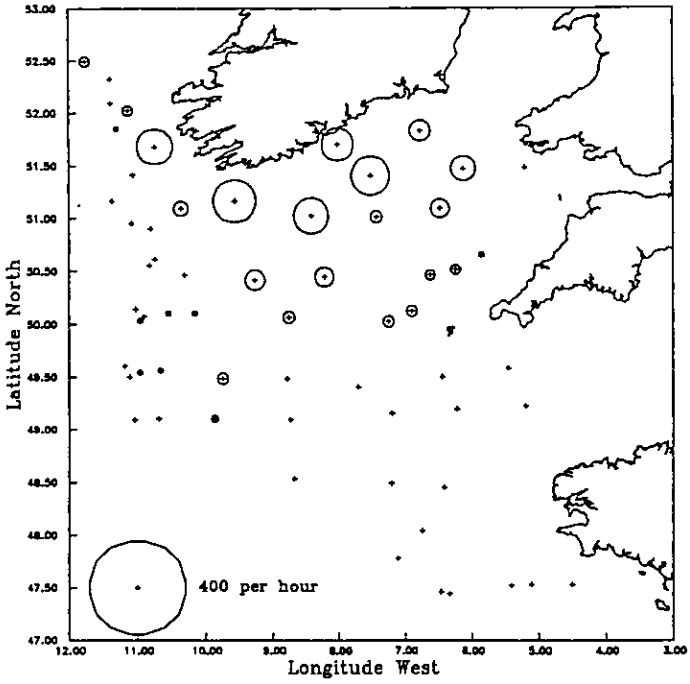
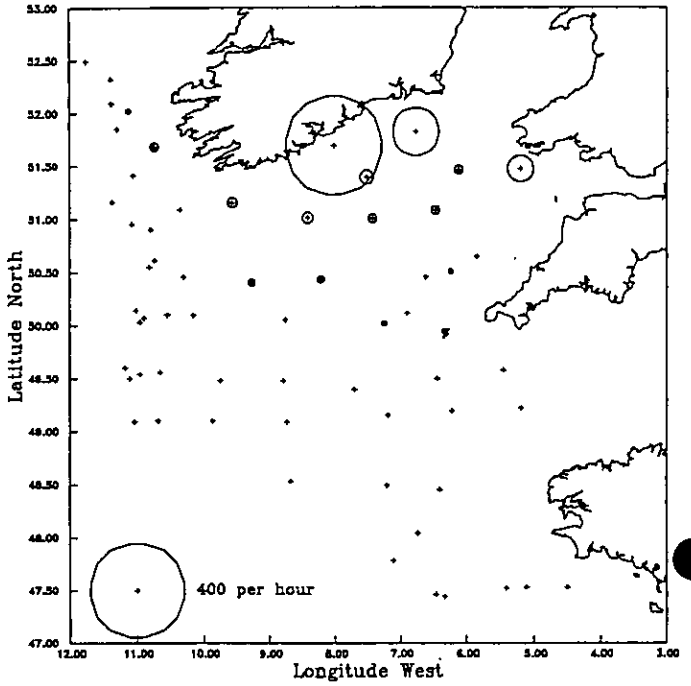


Corystes 4/96 Hippoglossoides platessoides



Corystes 4/96 Pleuronectes platessa



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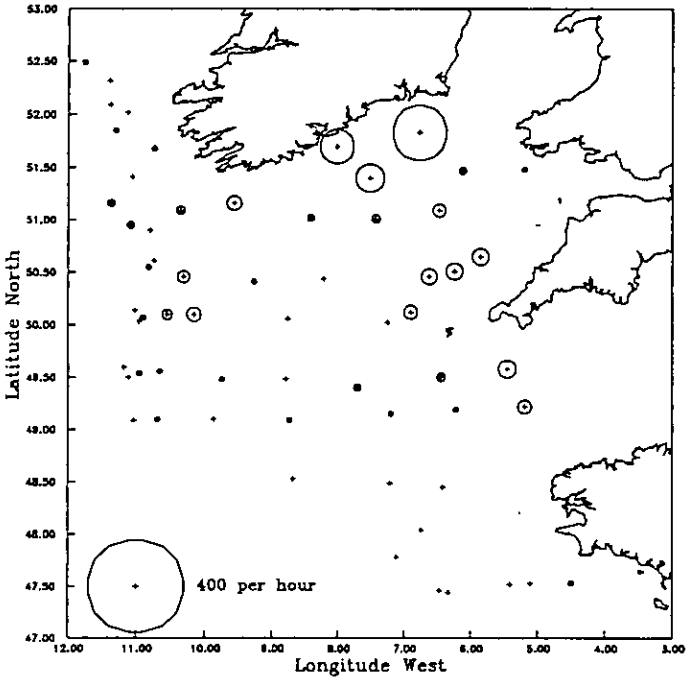

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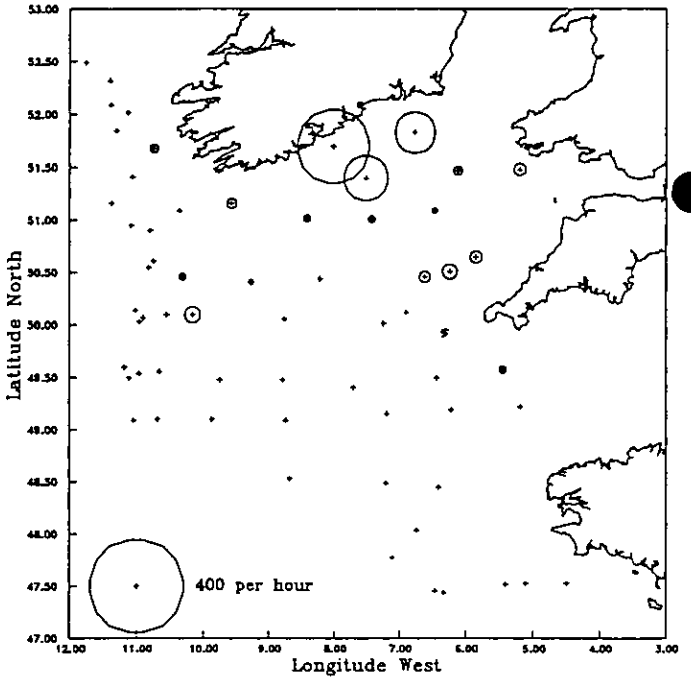
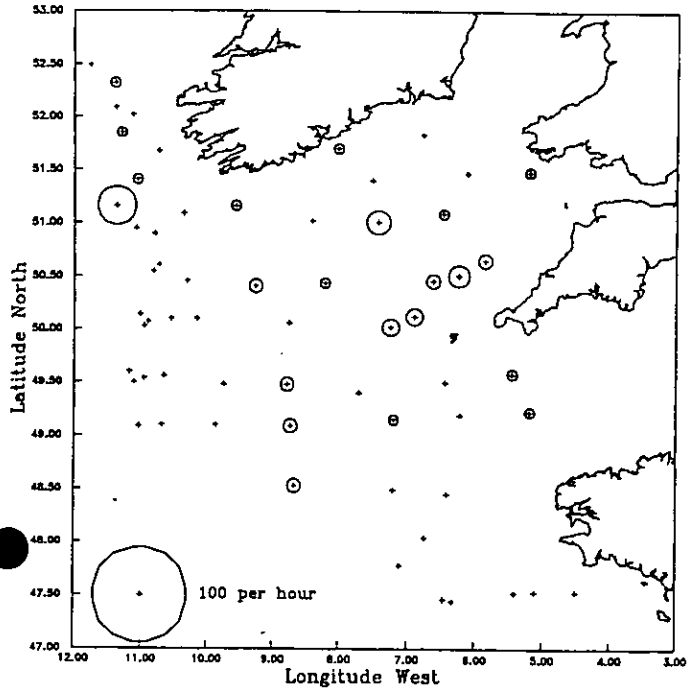


Corystes 4/96 Molva molva



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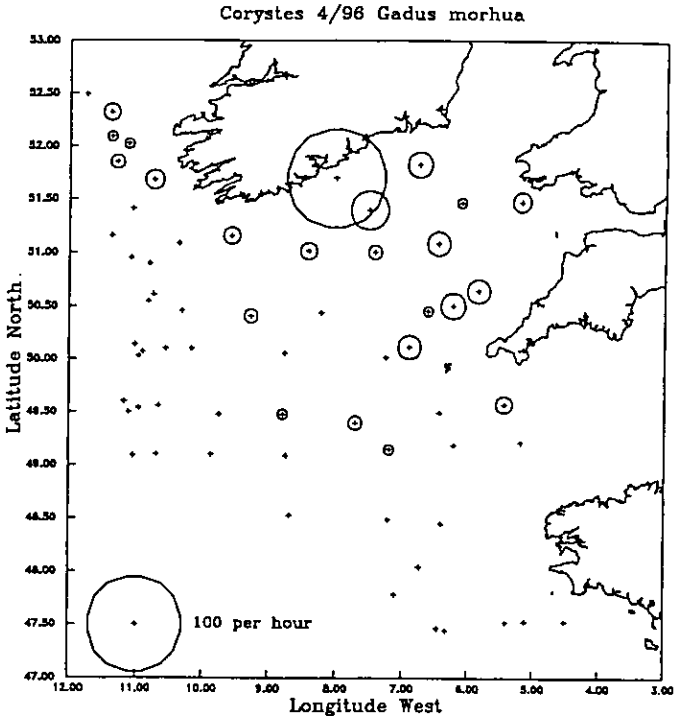
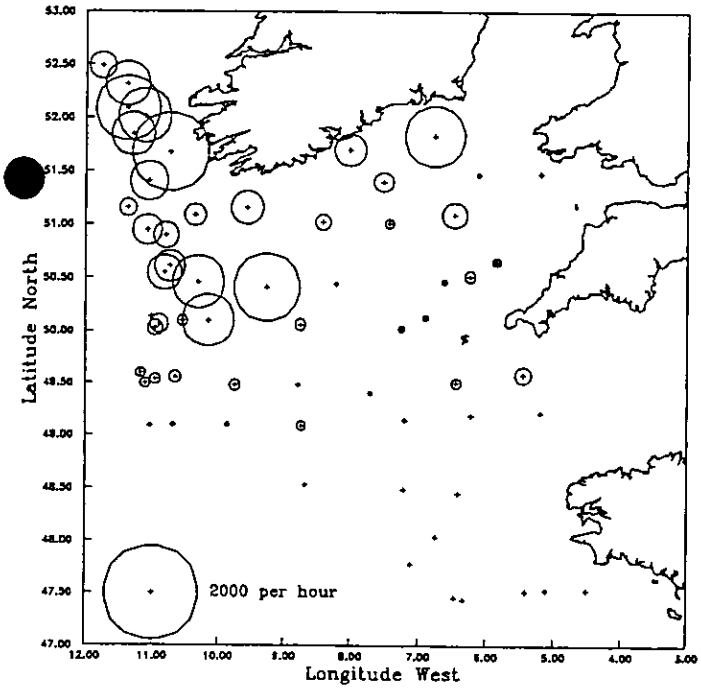


Corystes 4/96 Melanogrammus aeglefinus



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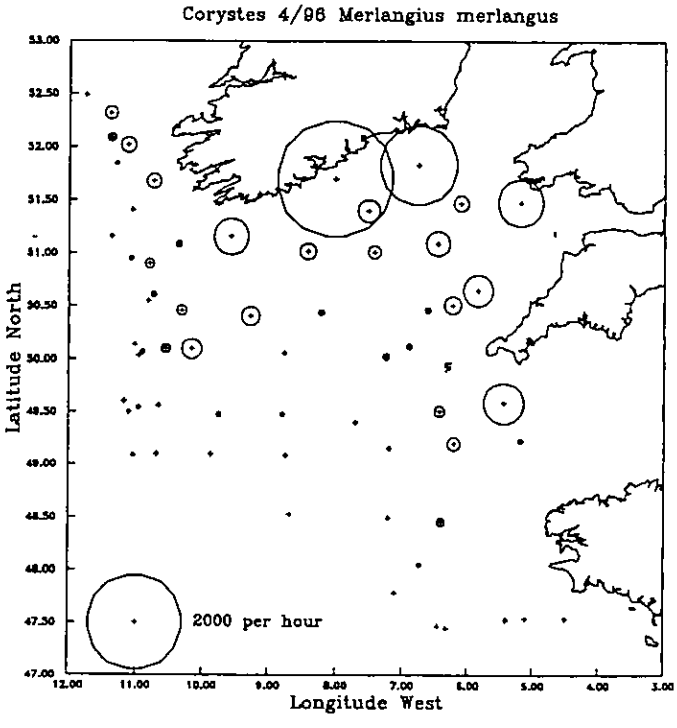
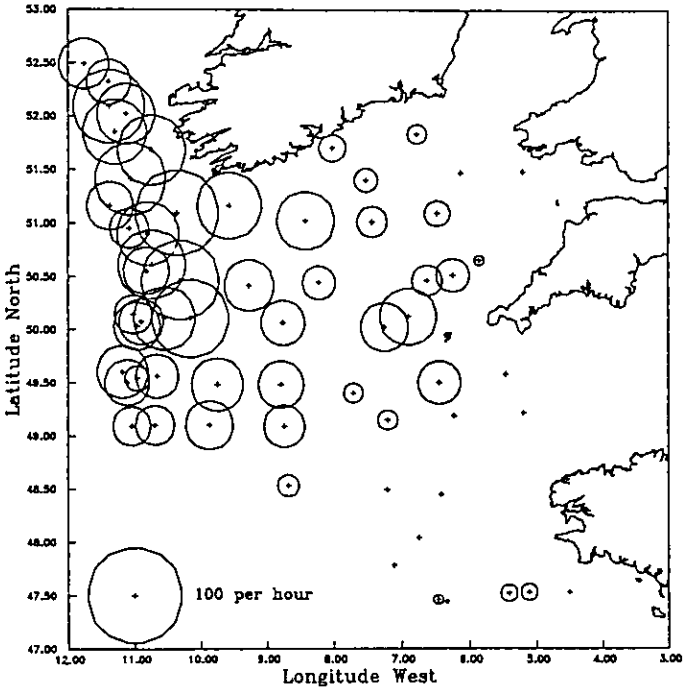


Corystes 4/96 Lepidorhombus whiffiagonis (females)



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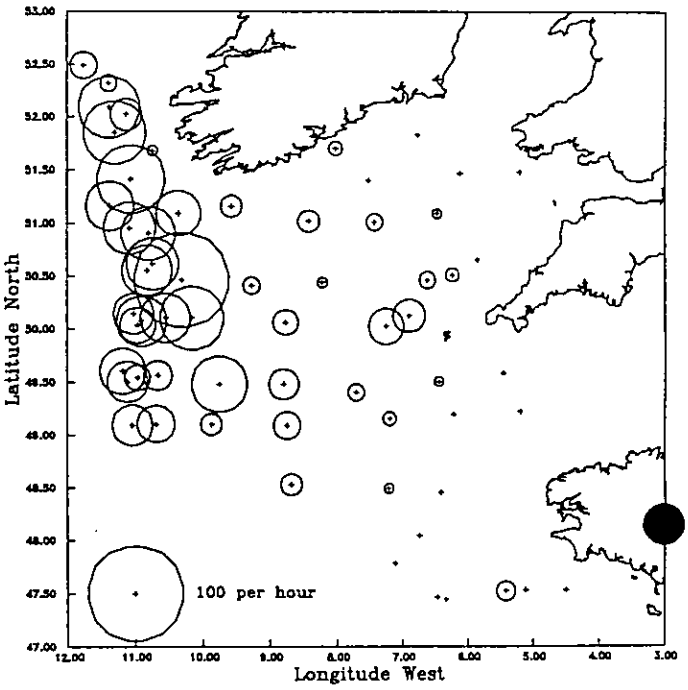

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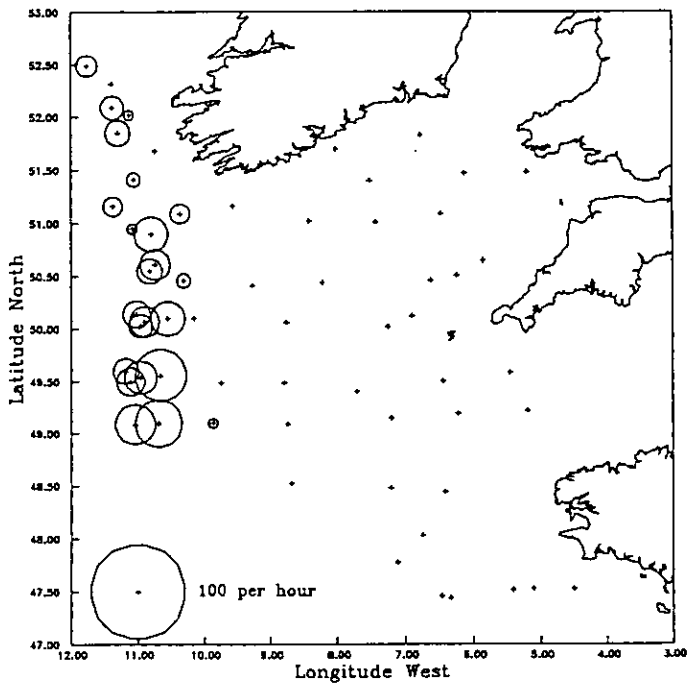
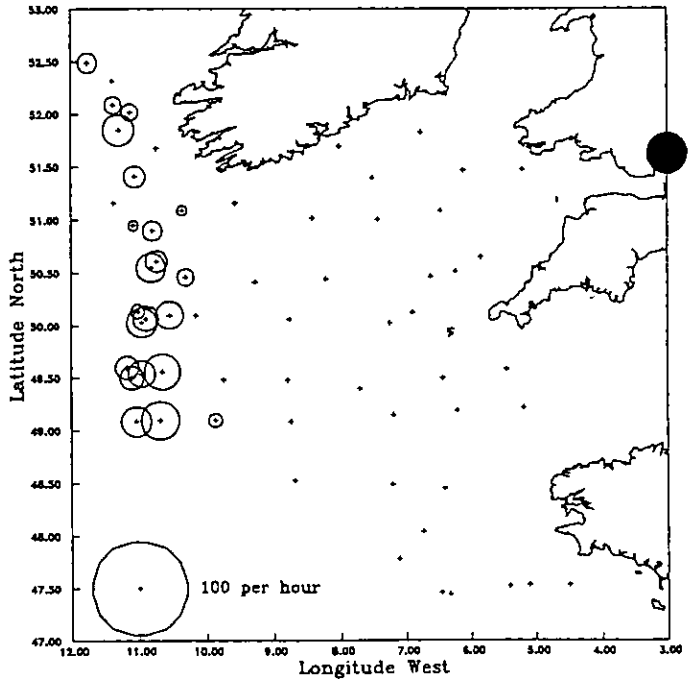
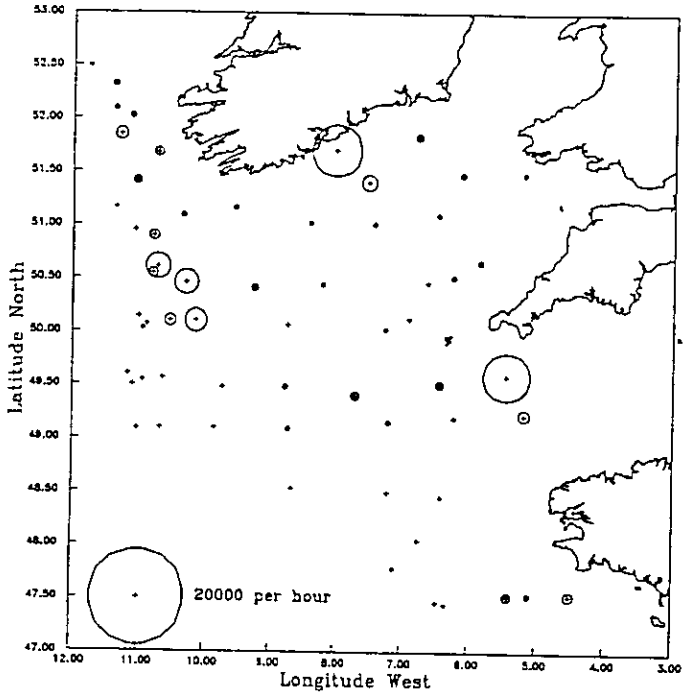


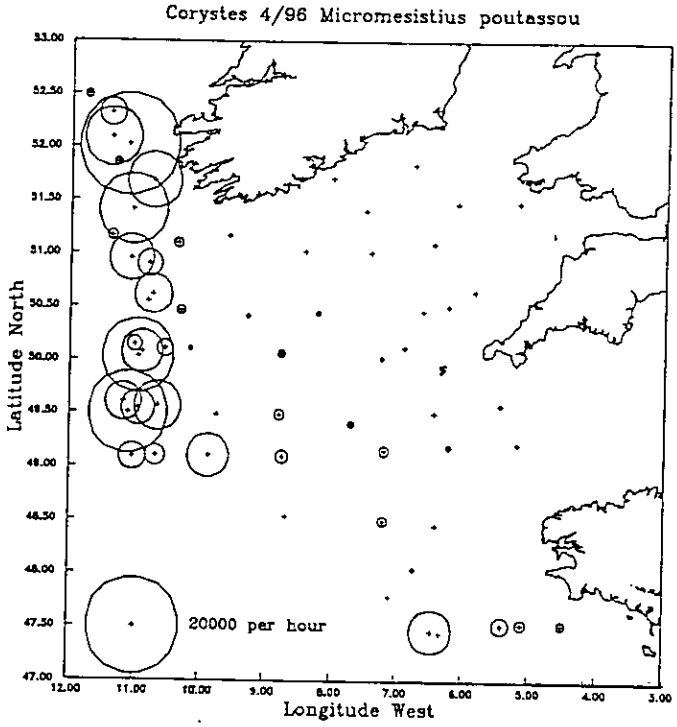
Corystes 4/96 Lepidorhombus boscii (males)



Corystes 4/96 Trisopterus minutus



Corystes 4/96 Micromesistius poutassou



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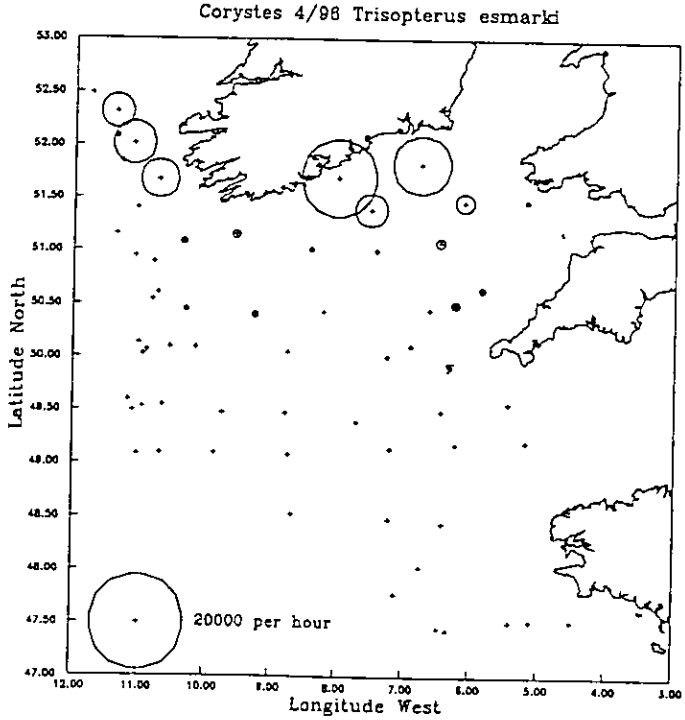

Corystes 4/96 Capros aper