

**CENTRE FOR ENVIRONMENT, FISHERIES AND AQUACULTURE SCIENCE  
LOWESTOFT LABORATORY, LOWESTOFT, SUFFOLK NR33 0HT**

**1999 RESEARCH VESSEL PROGRAMME**

**REPORT: RV CIROLANA: CRUISE 2**

**STAFF:**

**Part 1**

J H Nichols SIC  
S Flatman  
T W Boon  
P A Large  
S Warnes  
T Watson  
I. Holmes  
T Dinmore

**Part 2**

J H Nichols SIC  
S Warnes  
P A. Large  
T Watson  
D Brown  
M Etherton  
T Mead  
A Cook

**DURATION:** Part 1: 1 - 15 March. Part 2: 16 - 30 March

**LOCATION:** Celtic Sea, South-Western Approaches and Western English Channel.

**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 distribution 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 development and testing of electronic data capture equipment.
6. To incubate the eggs of hake, blue whiting and poor cod through to hatching to provide larvae tissue for genetic studies.
7. To monitor the distribution and abundance and to collect data on Ommastrephid squids (University College Cork, Ireland).

8. To monitor the distribution and abundance of whelks and whelk shells with hermit crabs. To freeze all whelks and whelk shells with hermit crabs for analysis at CEFAS, Conwy laboratory.
9. To collect, deep frozen, specimens of selected species of six gilled sharks; to collect egg cases of dogfish attached to hydroids, fixed in 70% ethanol, and egg cases of rays, deep frozen (University of Swansea).
10. To collect samples of cod tissue for DNA analysis as part of a project to examine stock structure around the UK (University of Hull).

#### NARRATIVE:

RV Cirolana sailed from Lowestoft at 0938h 1 March. The vessel stopped off North Lowestoft where a short service was conducted on the foredeck for the committal of the ashes of Bernard Peek, a former crewmember of RV Corella. The committal service was broadcast by VHF radio to relatives watching from North Parade.

RV Cirolana made slow progress down to and through the English Channel heading into strong south-westerly winds. At 1800h 2 March, in deteriorating weather, the vessel sought shelter in Weymouth Bay in order to effect repairs to the stern gate. On the following day a PC monitor screen was picked up from the Weymouth Laboratory to replace one which had been broken during the bad weather. The opportunity was also taken for two scientific staff to receive minor medical treatment on shore. By 2200h 3 March the weather had improved and the vessel left the anchorage and steamed to the first trawling position, off Start Point. The trawl survey began at 0630h 4 March and three stations were completed inside the 'Mackerel Box' by 2000h. The vessel then steamed south-west into the French sector in order to complete all stations south of latitude 48°N before 10 March, as requested by the French authorities. The survey continued in good weather, and without incident, out to the shelf edge at Lat. 50°15'N Long. 11°30'W. Occasional minor delays were experienced for trawl gear or Scanmar problems, which did not affect overall progress or plans. The survey was then progressed eastwards across the Western Approaches. The only major trawl damage, and consequent invalid tow, on the first half of the survey, occurred on the first station on the last day, when the port wing was badly torn. The final survey station of the first half was completed at 2030h on 14 March, 30nml SSE of The Lizard.

RV Cirolana docked, in very poor visibility, in Falmouth at 0915h 15 March to change four members of the scientific staff and two crew. Scientific staff from part 1 left the vessel at 0900h 16 March and staff for part 2 joined at the same time.

RV Cirolana sailed from Falmouth at 1400h 16 March and steamed 15nml to complete the last survey station inside the 'Mackerel Box' by 1700h. The vessel then steamed around Lands End to restart the survey, in very poor visibility, just north of the Cornish peninsula at 0630h on the following day. Of the three stations planned for that day only one was valid, with major gear damage occurring on the first and last hauls of the day. Three hauls were completed working westwards on 18 March. On the first haul on the following day at Lat. 50°06'N Long. 10°10'W a major incident occurred with the Atlas crane mounted on the aft boat deck. Whilst attempting to empty the codend, which contained a catch of 4.1 tonnes of boarfish (*Capros aper*), onto the aft deck for sorting, the main ram of the crane severed and the jib crashed to the deck.

Fortunately nobody was injured and the large catch cushioned the impact to the trawl deck. The whole incident resulted in the loss of about two hours fishing time, i.e. one station less than planned. Three further stations were completed that day before steaming overnight to the most northerly point of the survey at Lat. 52°30'N. Four hauls were carried out on 20 March but by 0500h on the following day the strong westerly winds and large swell made it impossible to work. The vessel remained hove to in the area until 1830h, when it became necessary to steam to Castletownbere, SW Ireland, to disembark one crewmember because of a family bereavement. He was disembarked, off Castletownbere, by local service boat, at 2220h. RV Cirolana then returned to the survey area and restarted the survey at 0600h on the following morning. The eight remaining standard stations along the shelf edge and two deep-water stations were completed before moving eastwards across the Celtic Plateau. During shooting of the trawl on the first haul of the day, at 0630h on 26 March off Linney Head, SW Wales, a large seabed obstruction was encountered. The trawl was damaged beyond repair but the doors, bobbins, port side groundrope and groundchain, and all Scanmar units were retrieved intact. A new trawl was rigged by 1600h and, after a careful survey of the area to identify the rough ground, the station was successfully repeated. Problems were encountered with the new trawl on the following day, because uneven bridles had been delivered to the vessel and wrongly marked. As a result, the first station had to be repeated and the third and final one deployed in the dark. On 28 March two stations were successfully repeated in an area where trawl damage had occurred on deployments on 17 March. The final trawl haul was completed at 1915h, in a strong south-westerly wind, 34nm west of the Scilly Isles. RV Cirolana then began the steam home, using three engines, to arrive in Lowestoft at 0948h on 30 March.

## RESULTS:

Aim 1. Trawling was carried out using a modified Portuguese High Headline Trawl fitted with rubber bobbins, a bunt tickler, 84 headline floats and a codend liner. Standard polyvalent doors were used. The bunt tickler was removed for designated tows in areas of hard trawling ground according to the established practice on this survey. Scanmar sensors were used on every deployment to monitor headline height, door spread and bottom temperature throughout each tow. A chart showing the position of each trawl station is attached. A total of 75 valid trawl stations was completed and a further 12 were declared non-valid for various reasons. Extensive trawl damage occurred on only three stations, none of which had a previous history of major problems. They were all eventually successfully repeated. One standard survey station, and one deep-water tow were not carried out because of lack of time. A CTD profile was taken at each of the trawl stations, or groups of stations, which were close together, resulting in a total of 59 deployments.

At each trawl station the catch of each species was weighed and all fish, or an appropriate sample, were measured. Samples of otoliths were taken, for age determination, where required by sampling protocols. These data were input direct to the computer database using the CEFAS in situ Electronic Data Capture System (EDC).

Charts showing the distribution and relative abundance of a selection of species of commercial interest are attached.

All benthos and crustacea were collected from every haul and identified to the lowest taxon possible. The number of each species and the total weight were recorded on the database. No species new to this survey were noted this year but a number of species previously recorded were not seen. Identification of the benthos was greatly enhanced by the computerised pictorial library available on the deckmaster EDC in the fishroom. This pictorial library will be added to and improved before the next groundfish survey in the North Sea in August.

Aim 2. Data on the distribution and abundance of juvenile hake, anglerfish, megrim, mackerel and horse mackerel were collected. These data will be presented to the appropriate ICES working groups for a full evaluation and input to the stock assessments for these species. The distribution of 1 year old hake was more widespread and appeared to be more abundant than on recent surveys.

Aim 3. Specimens of 66 different fish species were preserved, deep-frozen, for the SFI fish identification courses run at the CEFAS Lowestoft Laboratory.

Aim 4. Only two scallops were caught and both were preserved, deep frozen, and returned to the Laboratory.

Aim 5. No further enhancements were made to the EDC system, which worked perfectly throughout this cruise.

Aim 6. No suitably ripe specimens of hake, blue whiting or poor cod were found and therefore no shipboard incubations could be carried out to provide larvae tissue for genetic studies.

Aim 7. Data on the distribution and abundance of Ommastrephid squids were collected as a routine part of the survey. These data will be made available to the University of Cork, Ireland, as in previous years when they have taken part in the survey.

Aim 8. No live whelks or whelk shells with hermit crabs were recorded.

Aim 9. No elasmobranch material was obtained for the University of Swansea. The one specimen of skate (*Raja batis*) caught on the survey was quickly released live as requested.

Aim 10. Tissue samples were taken from 19 cod for DNA analysis by Dr Bill Hutchinson of Hull University, as part of a project to examine stock structure around the UK.

Additional Aims.

- i) Otoliths from a total of 106 juvenile mackerel (1 group) were taken from the Mackerel Box (61) and west of Ireland (45) for elemental analysis by Dr Martin Bailey at the Marine Laboratory, Aberdeen.
- ii) Three specimens of pollack and one of saithe were photographed and recorded on the digital camera for continuing studies on gadoid morphometrics by Dr A Child.
- iii) A total of seven observations of common dolphins and two of pilot whales, in the vicinity of the vessel, were recorded and details will be sent to Dr PGH Evans for the Cetacean Monitoring Unit of Sea Watch. A record was also made of one dead dolphin at the surface, 50nm south of The Lizard, and one partially decomposed dolphin taken in the trawl off southern Ireland.
- iv) Otoliths were taken from a total of 27 different species of teleosts for staining experiments, educational purposes and as part of a comparison of the growth rates of these species.

J H Nichols

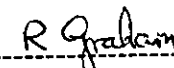
30 March 1999

SEEN IN DRAFT:

P.H. Dathan (Master)

  
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R. Graham (Senior Fishing Mate)

  
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INITIALLED:



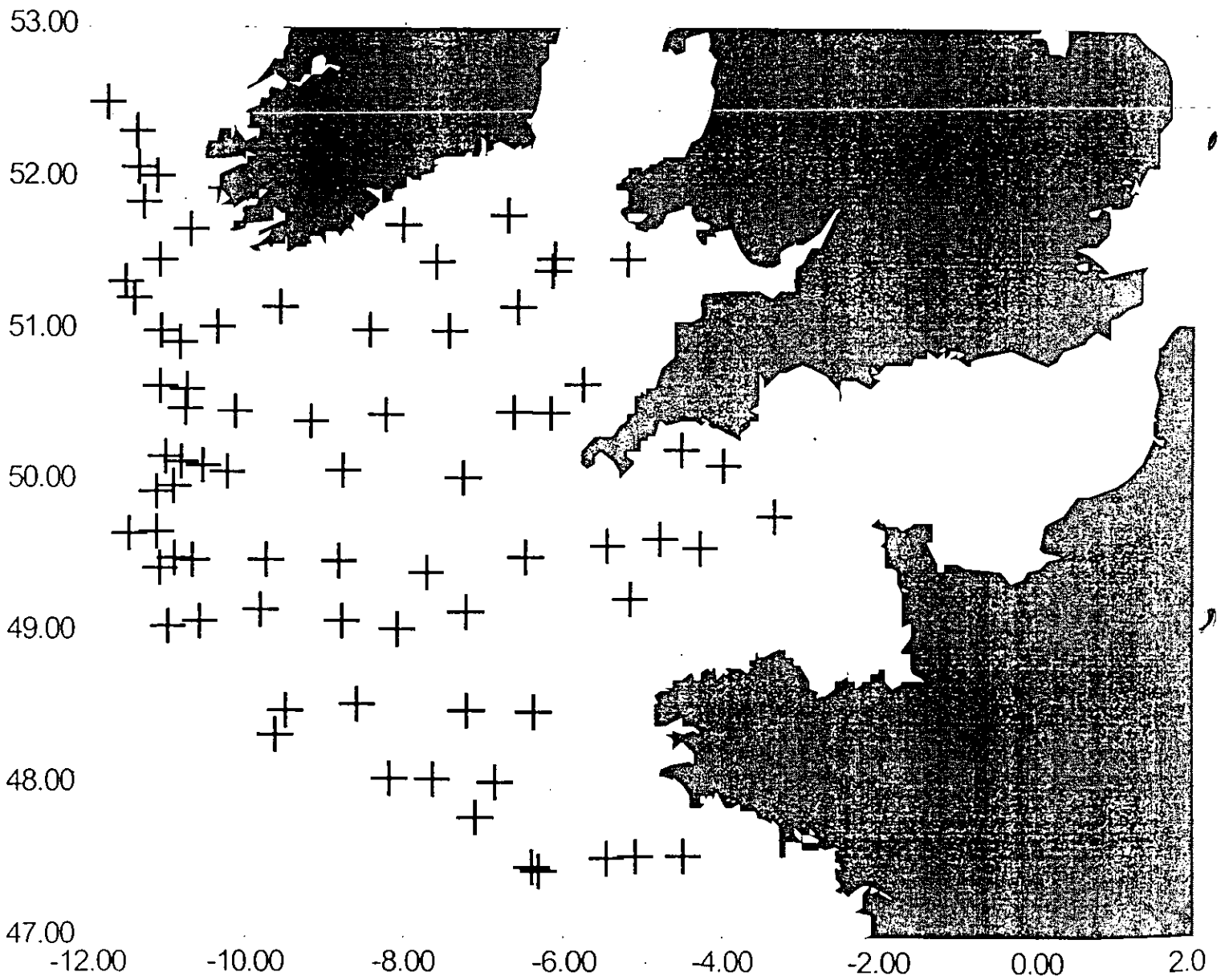
Dr G.P. Arnold (Chairman, FSMG Board)

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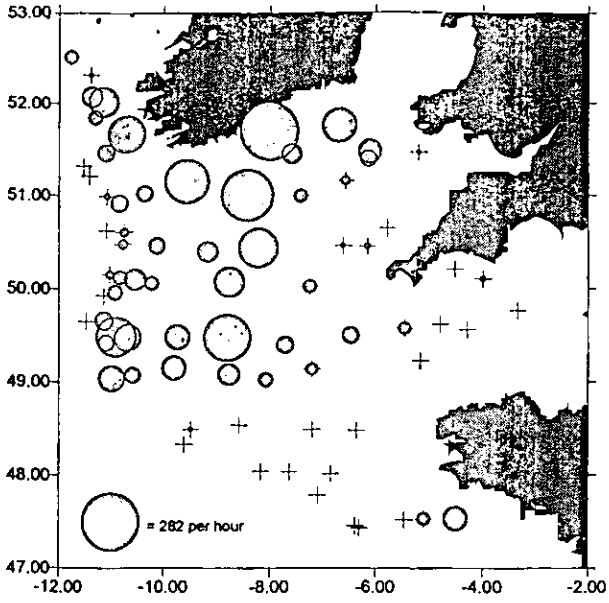
DISTRIBUTION:

- Basic list
- Staff on Cruise
- Devon SFC
- Cornwall SFC
- South Wales SFC
- Isles of Scilly SFC
- FCO (copies for France and Ireland)

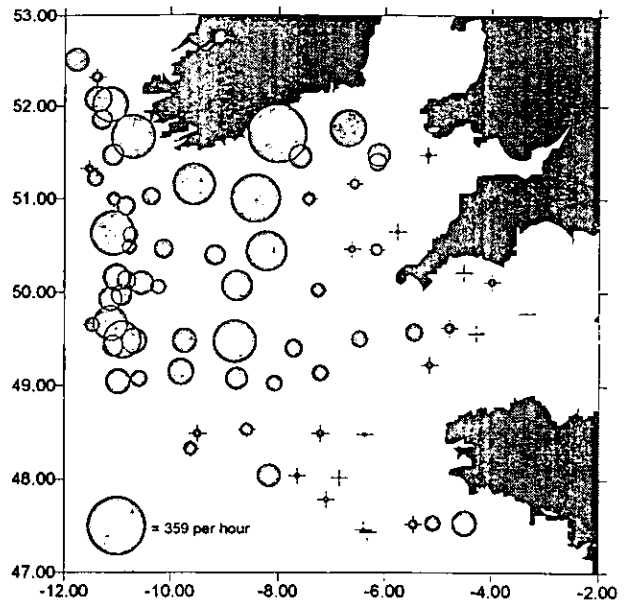
Cirolana 2/99 Valid PHHT tows



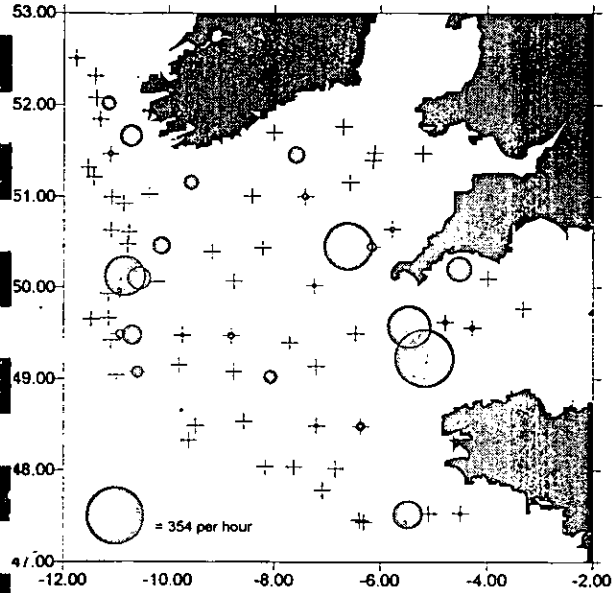
Cirolana 2/99: Hake <21cm (No/h)



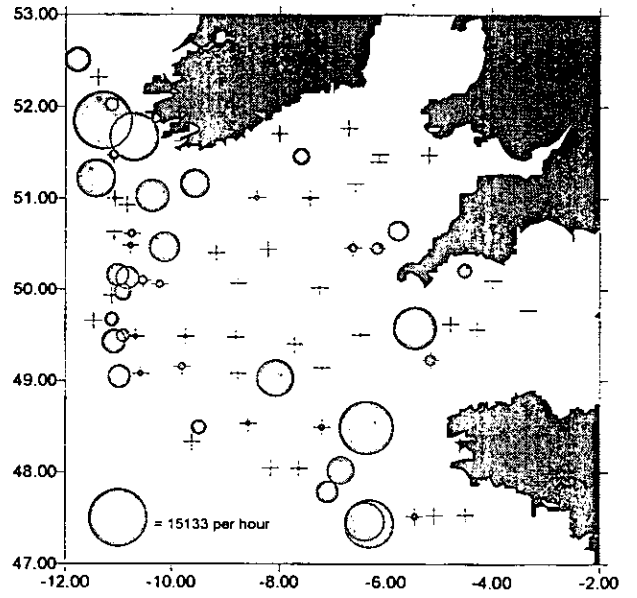
Cirolana 2/99: Hake (No/h)



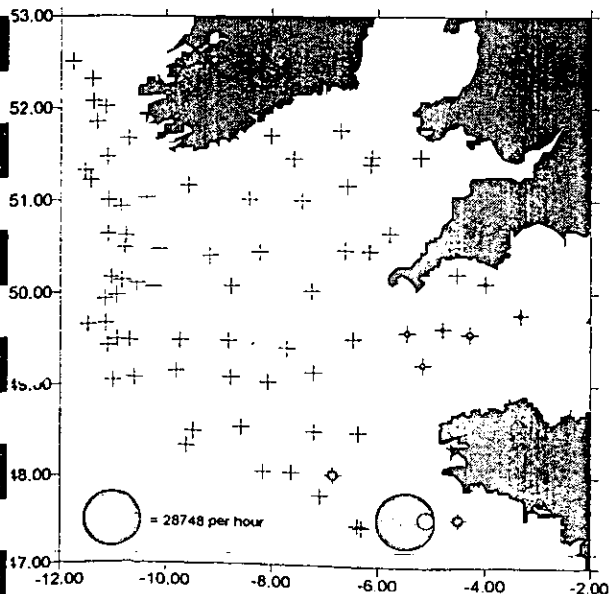
Cirolana 2/99: Mackerel <23cm (No/h)



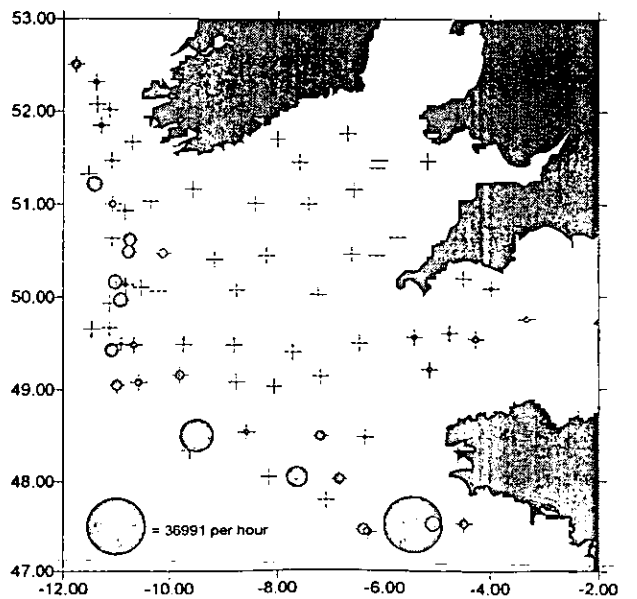
Cirolana 2/99: Mackerel (No/h)



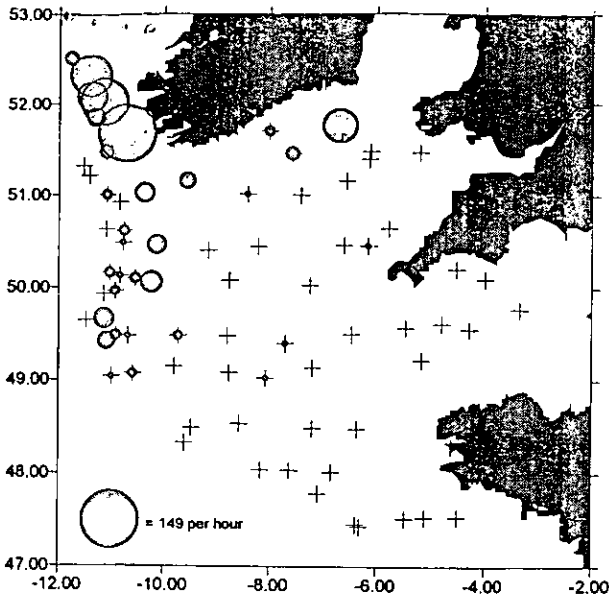
Cirolana 2/99: Horse mackerel <15 cm (No/h)



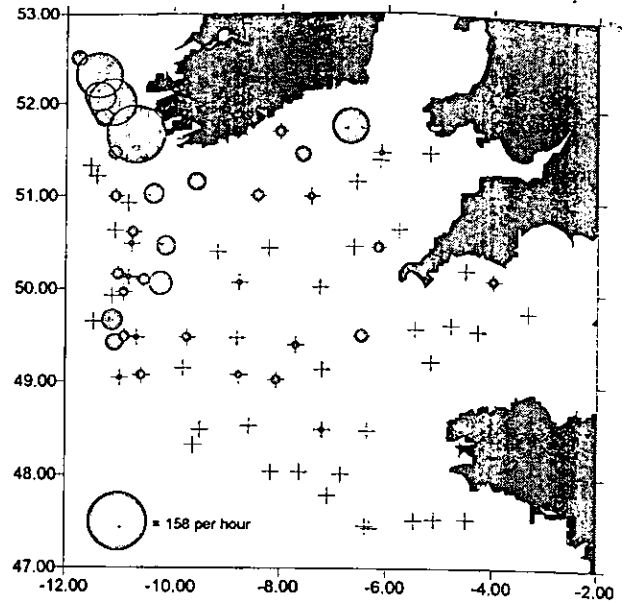
Cirolana 2/99: Horse mackerel (No/h)



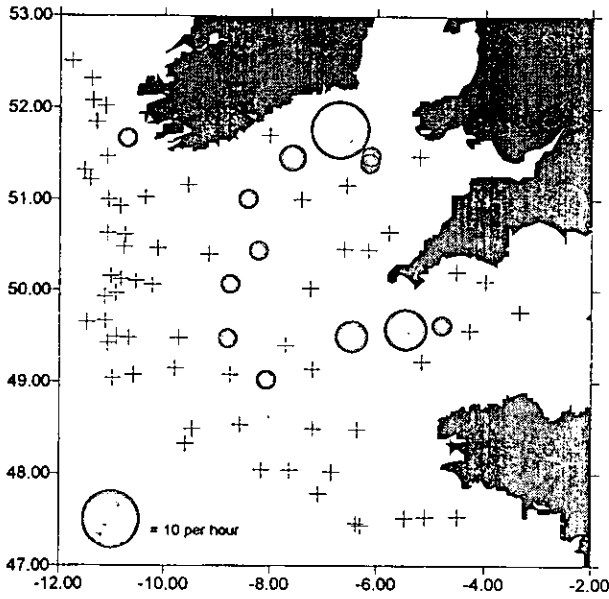
Cirolana 2/99: Haddock <25cm (No/h)



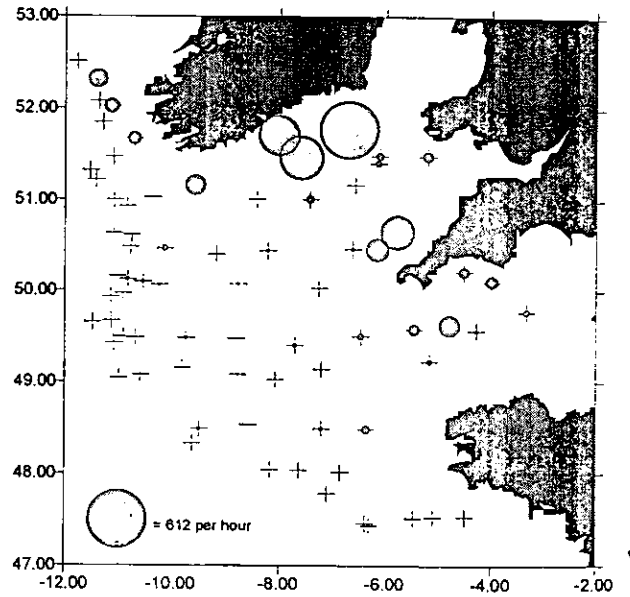
Cirolana 2/99: Haddock (No/h)



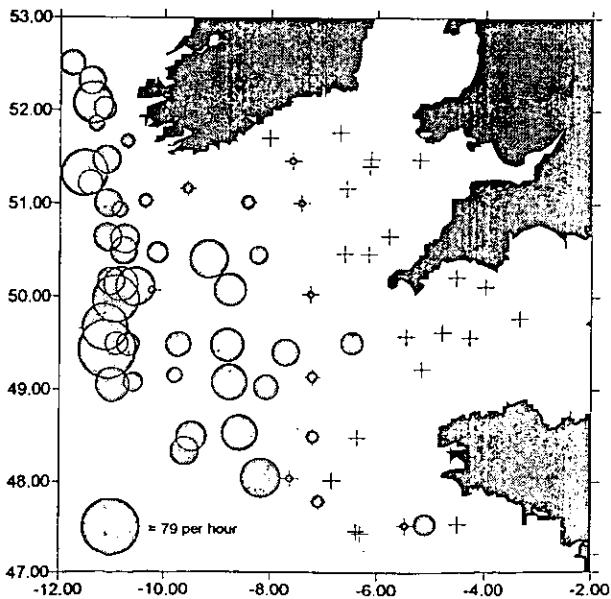
Cirolana 2/99: Cod (No/h)



Cirolana 2/99: Whiting (No/h)



Cirolana 2/99: Megrin (No/h)



Cirolana 2/99: Boarfish (No/h)

