

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

1992 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 4

STAFF: B W Jones
S Flatman
B C Mumford
J Casey
P A Large
D Eaton
A M Watson
S Warnes
C Stone (Observer, NCC. Second half)

DURATION: 17 March - 14 April (All times G M T).

LOCALITY: South-western Approaches, western English Channel.

AIMS:

1. To carry out a trawl survey of the western Celtic Sea.
2. To sample juvenile fish.
3. To collect Bass samples for maturity studies.
4. To collect samples of 1-group hake for the Instituto Español de Oceanografía, Vigo, for immunogenetic studies.
5. To collect mackerel gonad samples for fecundity studies.
6. To obtain data on stomach contents to fill gaps in the data set collected last year.
7. To obtain data on development rates of megrim eggs.
8. To obtain megrim ovaries for fecundity studies.

NARRATIVE:

CIROLANA sailed from Lowestoft at 2000h on 18 March, sailing having been delayed 24h due to newly installed radio equipment not functioning correctly. The ship made a good passage in fair weather to the Celtic Sea where the trawl survey was commenced on the morning of 20 March. Severe weather conditions prevented any fishing on 22 March. A temporary slight improvement enabled a single station to be worked on 23 March after which work again had to be abandoned and the ship dodged towards shelter in Mounts Bay. With no prospect of an early resumption of fishing on survey stations, the decision was made for the mid-cruise break to be taken early. Four trawl hauls were made off Plymouth in sheltered conditions on 25 and 26 March after which CIROLANA docked in Falmouth on the afternoon of 26 March. Service work on the ship's radio was undertaken in Falmouth and Dr. Stone joined the ship. CIROLANA sailed again at 1830h on 27 March to resume work on the survey grid the following morning. After that work continued

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

1992 RESEARCH VESSEL PROGRAMME

REPORT: RY CIROLANA: CRUISE 4

STAFF:
 B W Jones
 S Flattan
 B C Mansford
 J Casey
 P A Large
 D Eaton
 A M Watson
 S Warren
 C Stone (Observer, NCC, Second half)

DURATION: 17 March - 14 April (All times G.M.T.)

LOCALITY: South-western approaches, western English Channel.

AIMS:

1. To carry out a trawl survey of the western Celtic Sea.
2. To sample juvenile fish.
3. To collect bass samples for maturity studies.
4. To collect samples of 1-group hake for the Instituto Español de Oceanografía, Vigo for immunogenetic studies.
5. To collect mackerel gonad samples for fecundity studies.
6. To obtain data on stomach contents to fill gaps in the data set collected last year.
7. To obtain data on development rates of mermin eggs.
8. To obtain mermin ovaries for fecundity studies.

NARRATIVE:

CIROLANA sailed from Lowestoft at 2000h on 18 March, sailing having been delayed 24h due to newly installed radio equipment not functioning correctly. The ship made a good passage in fair weather to the Celtic Sea where the trawl survey was commenced on the morning of 20 March. Severe weather conditions prevented any fishing on 22 March. A temporary slight improvement enabled a single station to be worked on 23 March after which work again had to be abandoned and the ship dodged towards shelter in Mounts Bay. With no prospect of an early resumption of fishing on survey stations, the decision was made for the mid-cruise break to be taken early. Four trawl hauls were made off Plymouth in sheltered conditions on 25 and 26 March after which CIROLANA docked in Falmouth on the afternoon of 26 March. Service work on the ship's radio was undertaken in Falmouth and Dr. Stone joined the ship. CIROLANA sailed again at 1830h on 27 March to resume work on the survey grid the following morning. After that work continued

Overall catch rates for both mackerel and horse mackerel were about average but were about half the level recorded last year. The distribution of adult mackerel was not typical for this time of year. Normally the highest densities are recorded along the shelf edge with an extension towards the English Channel. This year catches on the shelf edge were lower than usual with the highest densities occurring around the Cornish peninsula. 1-Group mackerel were also most abundant in this area. The highest densities of horse mackerel were observed along the shelf edge and south of Devon as is normal at this time of year.

Aim 2 Juvenile fish were sampled for recruitment studies. Preliminary assessments indicate that 1-group hake are of about average abundance. The survey catch rate was about one fifth of that recorded last year for the very abundant 1990 yearclass. Juvenile horse mackerel were similar in abundance to last year, and the 1991 yearclass appears to be below average. The relative abundance of 1-group mackerel was also about four times that recorded last year.

Aim 3. No bass were caught.

Aim 4. Samples of juvenile hake were preserved frozen for the Instituto Español de Oceanografía, Vigo, for immunogenetic studies.

Aim 5. Mackerel ovaries for fecundity and atresia studies were preserved as requested.

Aim 6. Stomach contents were recorded for a number of predator species to supplement the data obtained last year. A total of 1468 stomachs were examined.

Aim 7. Artificially fertilised eggs of megrim and four-spot megrim were incubated on board over a range of temperatures and development rates were recorded. Eggs and larvae at various development stages were photographed and samples were preserved as reference specimens for egg and larval identification.

Aim 8. Only five megrim ovaries were preserved for fecundity studies as the majority of the mature fish had already spawned.

MISCELLANEOUS:

1. Observations on mackerel indicated that only a very small proportion of the adult females were in a ripe condition and ready to spawn.
2. A number of vertical hauls from 100 m depth were made with a 0.5 m plankton net at positions along the shelf edge to sample any mackerel eggs that may be present.
2. Samples of whiting (35 fish), plaice (14), cod (17) and dab (2) were collected for contaminant studies (A. Franklin):
3. Four monkfish gonads were preserved for reproduction studies (M. Greer-Walker).
4. A photographic record was made of benthos caught at each trawl haul.
5. Samples of herring hearts were preserved for *Ichthyophonus* studies (D. Bucke).
6. Various specimens were preserved for use on fish identification courses (G. Howlett).
7. A sample of mackerel was preserved for parasite studies (K. McKenzie, D.A.F.S.).

8. Scanmar equipment was used on the trawl throughout the cruise to record headline height and door spread. A Scanmar temperature sensor was also used to record bottom temperature during trawl hauls. All the equipment appeared to work satisfactorily.
9. All survey data were input into the new Fish Survey System, as well as the Hewlett Packard data base system, as a field trial of the new system and a separate report has been prepared. No problems were experienced with the Vax hardware. The input system was comprehensively tested and, although no major problems were found, a number of minor errors were identified and a number of suggestions for improvements will be made. There were, however, a number of problems with data processing which limited the extent to which retrieval and output could be tested.

B. W. Jones.
14 April 1992.

SEEN IN DRAFT:

P. Mackay.

P. Mackay
(SEM)

J. French.

J. French
(Master)

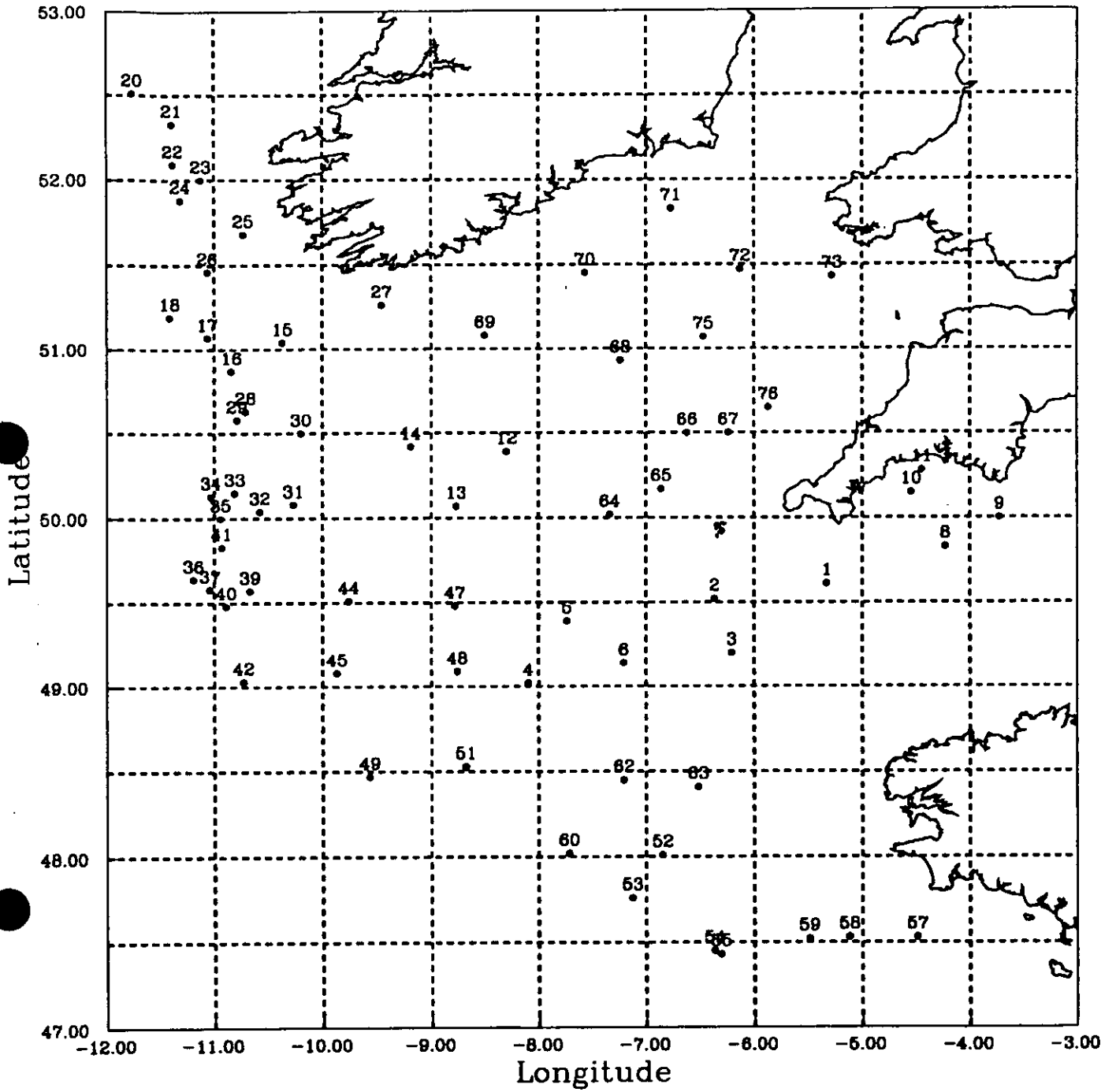
INITIALLED: J. G. S.

J. G. S.

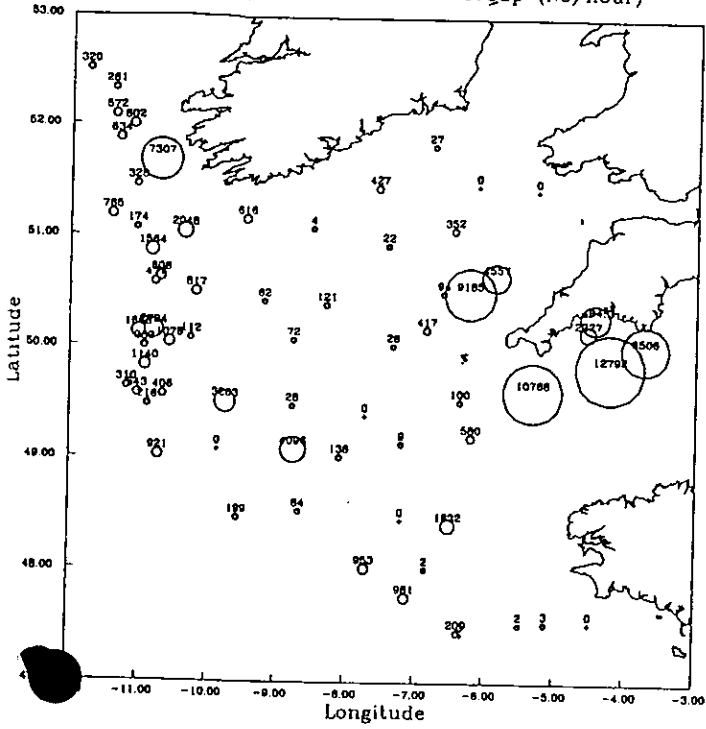
DISTRIBUTION:

Basic list +
B W Jones
S Flatman
B C Mumford
J Casey
P A Large
D Eaton
A M Watson
S Warnes
C Stone (NCC)
Cornwall Sea Fisheries Committee
Devon Sea Fisheries Committee
Isles of Scilly Sea Fisheries Committee
Eire, via Foreign Office
France, via Foreign Office

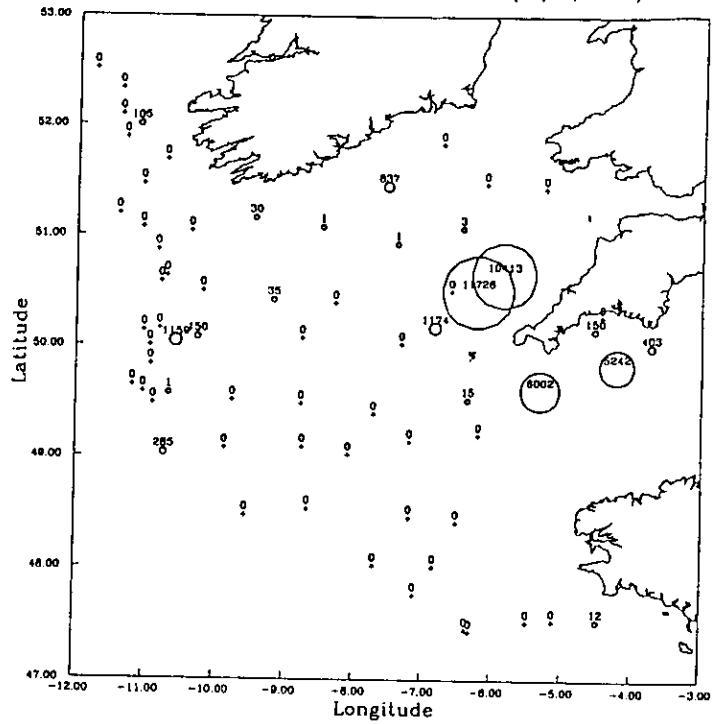
Cirolana 4/92: TRAWL STATIONS



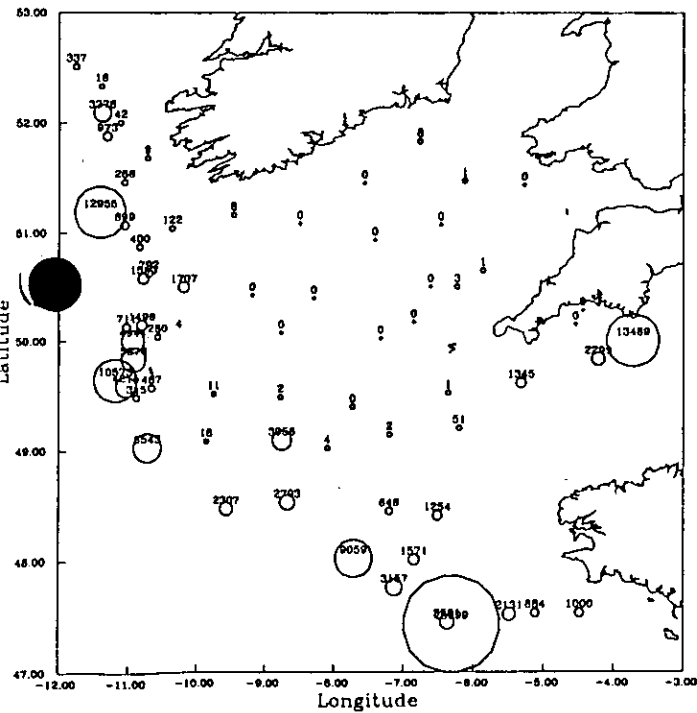
Cirolana 4/92: MACKEREL 2+ Group (No/hour)



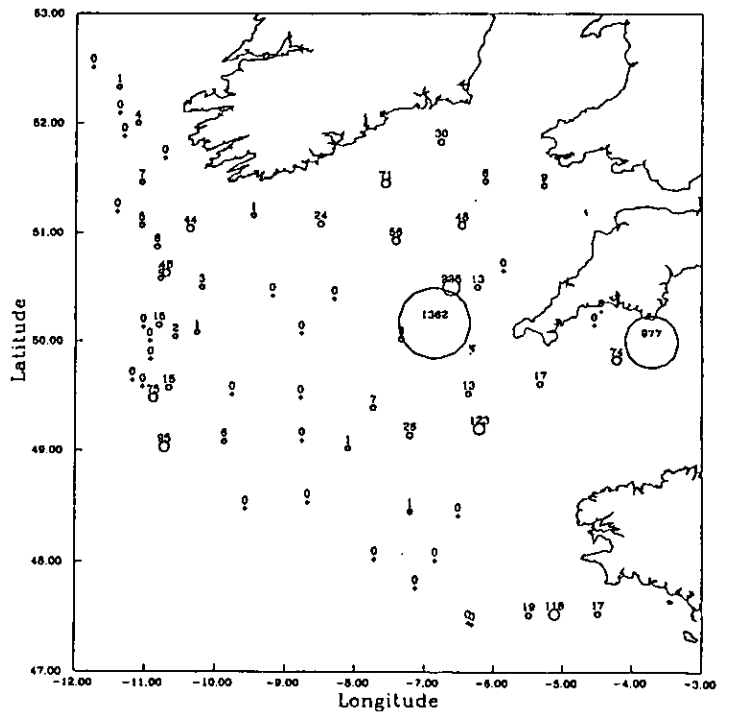
Cirolana 4/92: MACKEREL 1-Group (No/hour)



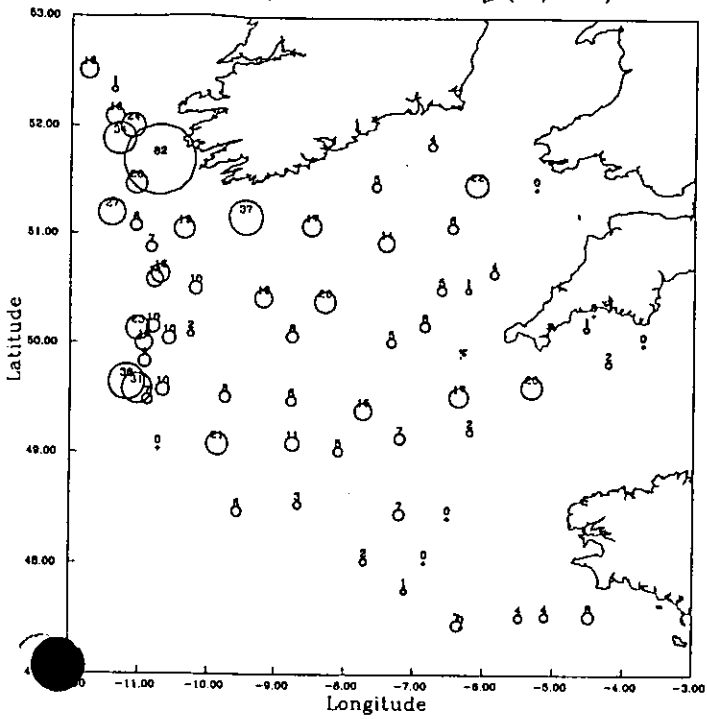
Cirolana 4/92: SCAD 2+ Group (No/hour)



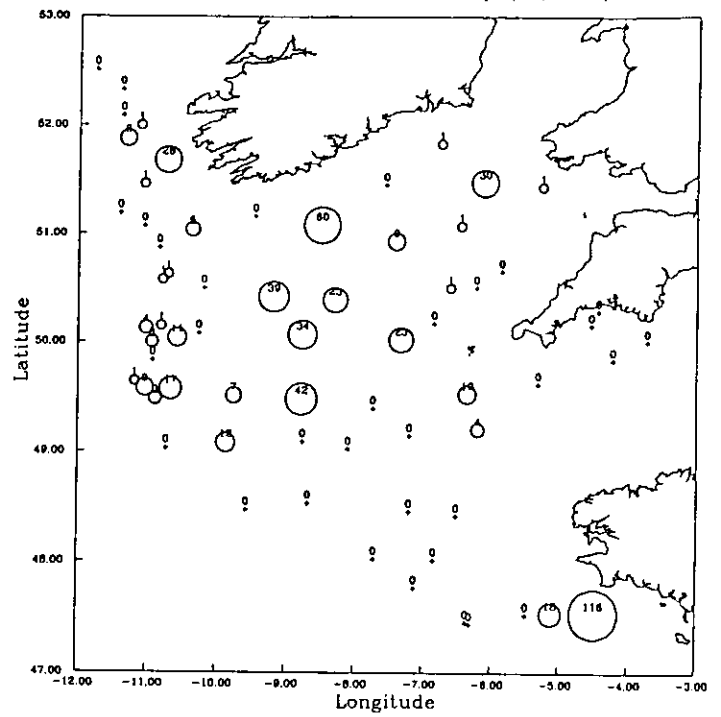
Cirolana 4/92: SCAD 1-Group (No/hour)



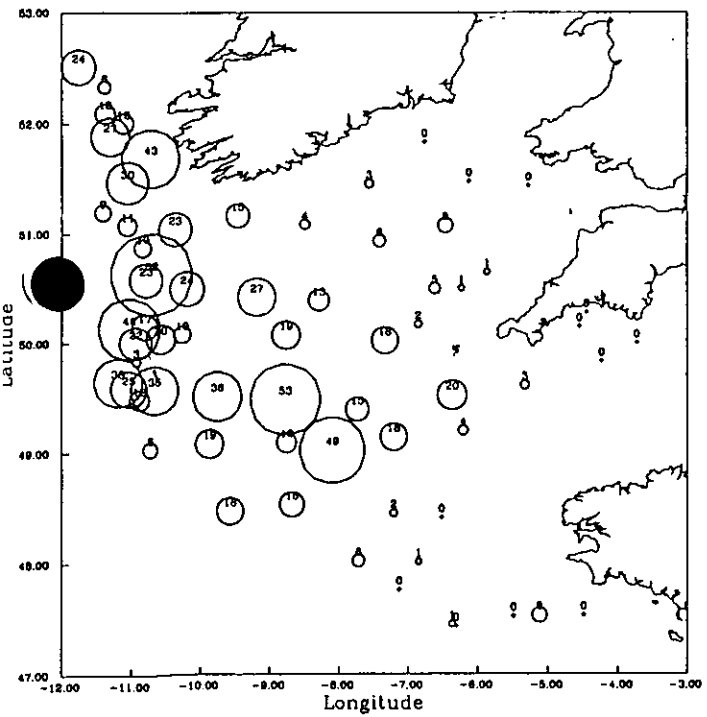
Cirolana 4/92: HAKE 2+ Group (No/hour)



Cirolana 4/92: HAKE 1-Group (No/hour)



Cirolana 4/92: MEGRIM (No/hour, sexes combined)



Cirolana 4/92: COD (No/hour)

