CENTRE FOR ENVIRONMENT, FISHERIES AND AQUACULTURE SCIENCE
LOWESTOFT LABORATORY, LOWESTOFT, SUFFOLK NR33 OHT

2003 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 2

STAFF:

Part 1	Part 2
S Warnes (SIC)	S Warnes (SIC)
M Boon (2 SIC)	S Flatman (2 SIC)
T Watson	T Watson
D Brown	D Brown
G Burt	G Burt
S Warne	M Easey
M Brown	T Woods
L Greenwood	A Tidd
	S Kupschus

DURATION: Part 1: 4 – 19 March. Part 2: 21 March - 3 April

LOCATION: Celtic Sea, South-Western Approaches, 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.
   c) The distribution of roundfish in areas recently identified by the Southwest industry.
   d) The detailed distribution of spawning cod (*Gadus morhua*) in the NW of ICES Division VIIg (Celtic Sea).
   e) Collect biological data in support of the EU Data Collection Regulation.

2. To sample juvenile fish for recruitment studies.

3. To collect material for fish identification courses.

4. To collect and preserve frozen, all scallops (*Pecten maximus*) that are caught for ageing studies (D. Palmer).

5. To continue the development and testing of electronic data capture equipment.

6. To collect plankton samples in order to estimate onset of mackerel (*Scomber scombrus*) spawning (S. Milligan).

7. To collect hake (*Merluccius merluccius*) maturity and fecundity material (P. Witthames).

8. To obtain length distributions of mackerel within the Mackerel Box (C. Darby).

9. To carry out comparative fishing trials with Celtic Explorer in a variety of depths and on a mix of bottom types.

NARRATIVE:

RV CIROLANA sailed from Lowestoft at 0948h 4 March. The vessel made a good passage through the southern North Sea and eastern English Channel until the afternoon 5 March when one survey station was undertaken in the western Channel using the Portuguese high headline trawl (PHHT) before heading SW to start work on stations in the French sector. The vessel continued working in strong SW winds and swell, the replacement winch not enabling stations over 160m to be undertaken. Opportunities to deploy the ring net were also limited by the weather conditions. The remaining stations in the French sector were completed during 6 – 10 March. CIROLANA then proceeded to start work on the shelf edge on 11 March. Between 12 –14 March stations in the Northwest sector of the grid were completed before switching over to the GOV trawl for comparative work with the Celtic Explorer. This work with the GOV continued until the evening of 16 March when the port brake on the net drum failed during hauling. After overnight repairs the GOV was replaced by the PHHT on 17 March and fishing continued until the evening of 18 March. In addition to 23 standard survey hauls, 9 tows were undertaken with the GOV, 3 experimental tows were undertaken for use on the Quarter 4 survey and the Ring net was successfully deployed at 3 locations. CIROLANA docked in Cork at 0900h on 19 March.
RV CIROLANA sailed from Cork at 1000h 21 March and started work that afternoon off the Irish coast. Cirolana continued working in the Celtic Sea, in fine weather, until 1600h 28 March when 2 members of the scientific staff were put ashore at Newlyn. During this period contact was made both with the CFPO and local vessels to obtain information on cod aggregations in the Trevose area. Work continued in the Trevose and Bristol Channel area until Cirolana made for Newquay in the afternoon of 31 March in order to put ashore one member of the crew before heading to stations west of the Scillies. NW gales made work impossible on 1 April so Cirolana headed for shelter in Mounts Bay and dropped anchor until 0700h 2 April. It was not possible to complete the first station in the area due to static gear and the final tow took place in Start Bay at 1101h. In total a further 25 standard survey hauls and 13 hauls for the Quarter 4 survey were undertaken on the second half of the cruise. Cirolana then commenced passage to Lowestoft docking at 2154h 3 April.

RESULTS:

The Portuguese high headline trawl (PHHT) was deployed on 48 occasions at standard survey positions (Figure 1a); of 3 invalid tows only one was repeated. All other standard survey positions were too deep for the capabilities of the trawl winch in the prevailing weather conditions. A further 16 experimental tows were undertaken for possible use by the Quarter 4 survey (Figure 1b). At each trawl station the total catch was weighed by species and all fish, or an appropriate sample, were measured. Otoliths were taken from selected species over the length range caught, for subsequent age determination. All fish sampling was carried out according to prescribed survey protocols and was input direct to the fishing survey database using the CEFAS electronic data capture system. The system was used to monitor and control otolith sampling levels. The new CEFAS 5 stage maturity key was used to enable the data collected to be used to help meet the CEFAS sampling requirements under the new EU sampling regulation.
Charts showing the distribution and relative abundance of a selection of species, mainly those of commercial interest, are attached (Figures 2, 3). Only standard survey hauls were included in order to make these charts comparable with previous years. These charts include the distribution of haddock (*Melanogrammus aeglefinus*), whiting (*Merlangius merlangus*) and hake (*Merluccius merluccius*), the major roundfish species encountered on this survey.
Catches of cod (*Gadus morhua*) were at a low density all over the Celtic Sea. The major concentrations of mackerel (*Scomber scombrus*) and horse mackerel (*Trachurus trachurus*) were associated with the shelf edge and inside the south-western mackerel box. Megrim (*Lepidorhombus whiffiagonis*) and concentrations of boarfish (*Capros aper*) were distributed along the shelf edge.

2. Data on the distribution and abundance of juveniles of commercially important species were collected. These data will be provided to the appropriate ICES assessment working groups for inclusion in the relevant assessment models.

3. A total of 35 species of fish were frozen for use in Royal Naval Fishery Protection Squadron fish identification courses.

4. The few scallops caught were frozen and returned to CEFAS.

5. The electronic data capture system was used throughout the survey, and no major problems were encountered. Testing of the new Fishing Survey System was undertaken and a report forwarded (R. Ayers).

6. The weather conditions and changes to the work plan caused by the capabilities of the trawl winch limited the deployment of the Ring net to 3 sites (S. Milligan).

7. 11 cod and 75 hake samples were obtained for maturity and fecundity studies (P. Witthames)

8. Length and age samples were obtained from mackerel within the Mackerel Box (C. Darby).

9. A total of 9 tows were undertaken, one being invalid, for comparative work with the new Irish Research Vessel Celtic Explorer (Fig. 1c). A standard rig GOV trawl

using 3 Balmorals in place of the Exocet kite was used by Cirolana and a Baca trawl by Celtic Explorer.

S. Warnes
4 April 2003

SEEN IN DRAFT

R. McCurry (Master)

A. Lincoln (Senior Fishing Mate)

INITIALLED:

Dr R.S. Millner

DISTRIBUTION:

Basic list
Staff on Cruise
Devon SFC)
Cornwall SFC)
South Wales SFC)
Isles of Scilly SFC)
Ireland (via FCO)
France (via FCO)

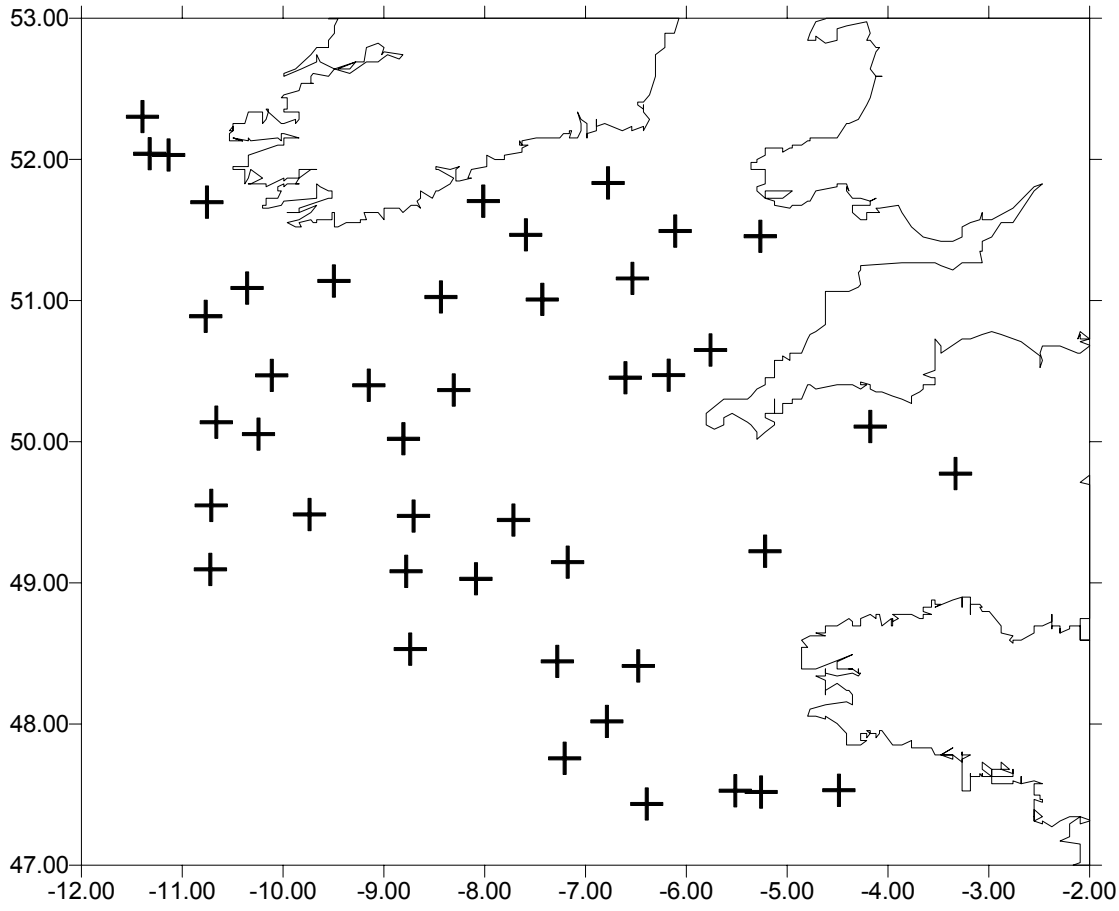


Figure 1a Cirolana 2/03 valid standard PHHT hauls

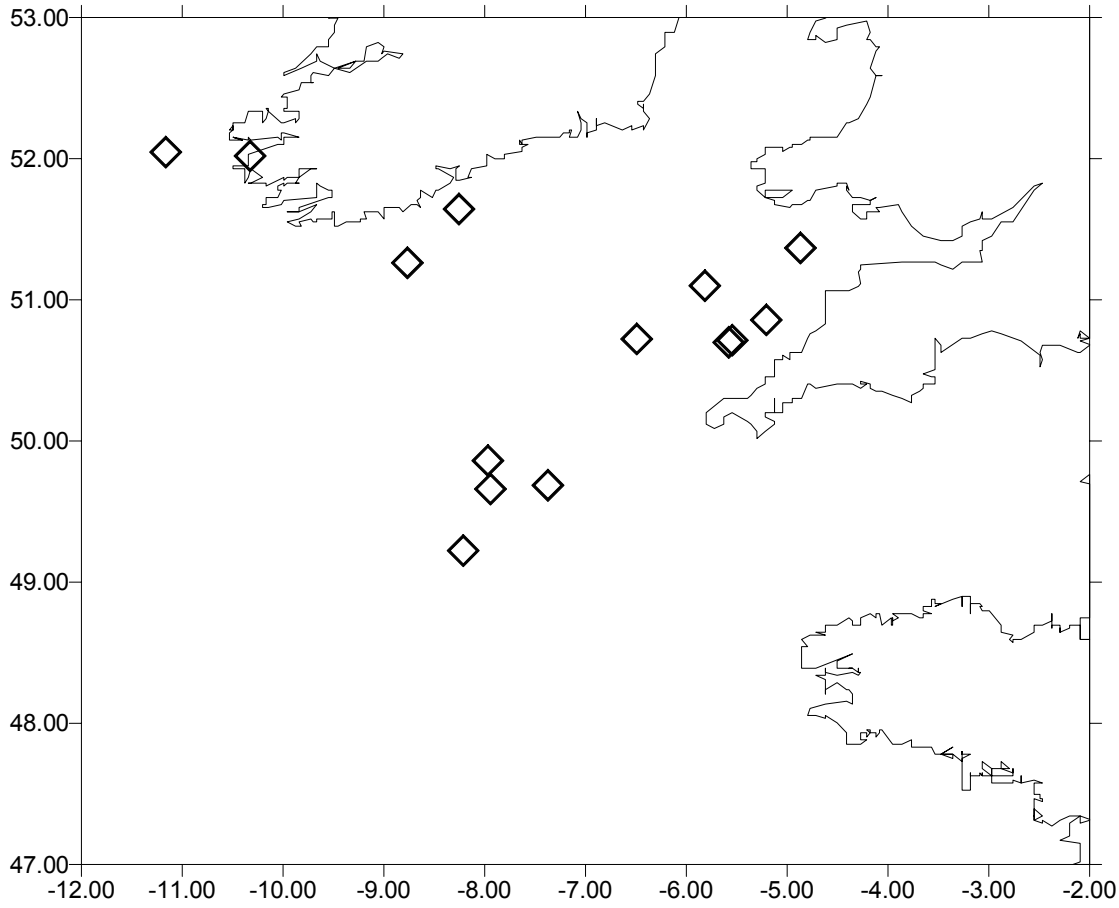


Figure 1b Cirolana 2/03 valid experimental PHHT hauls

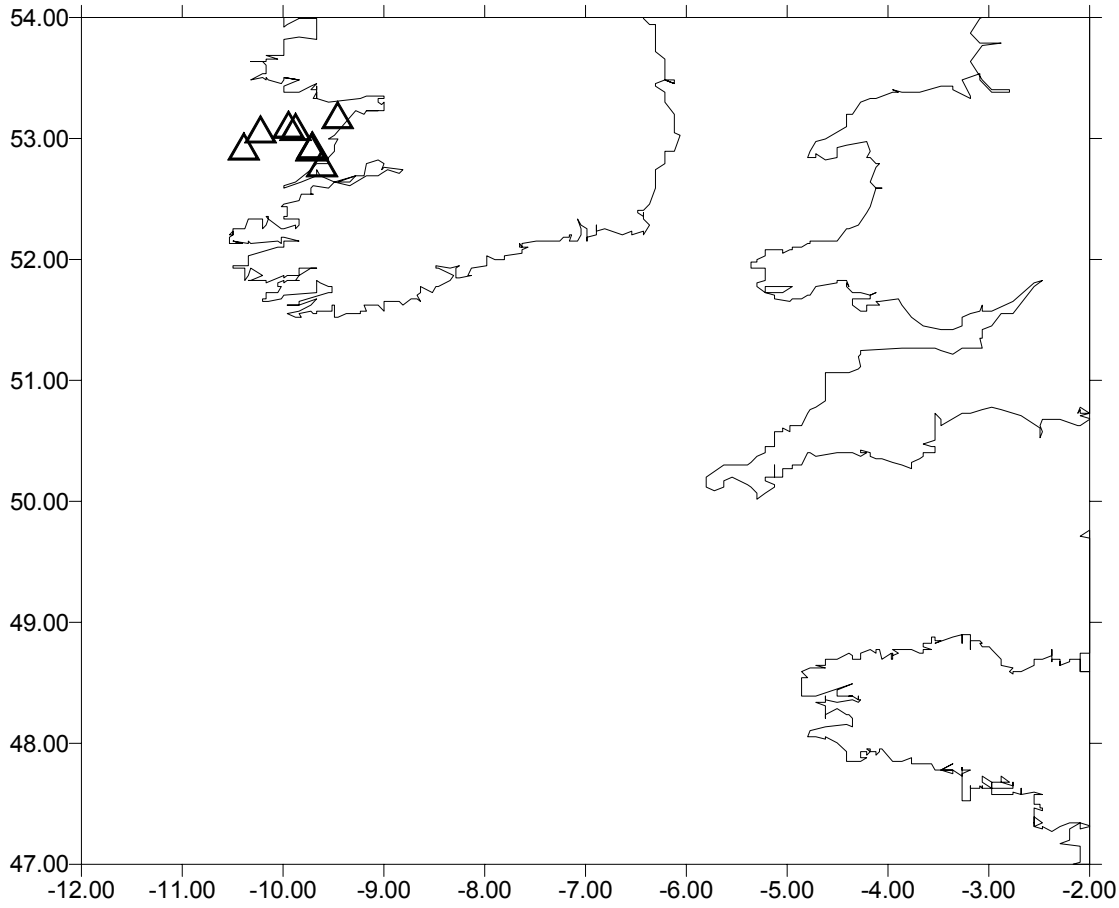
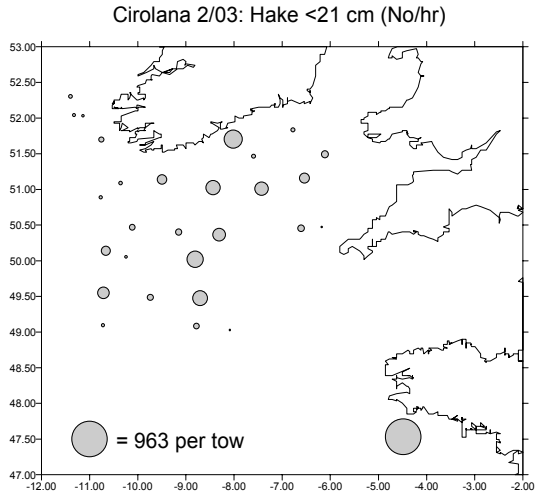
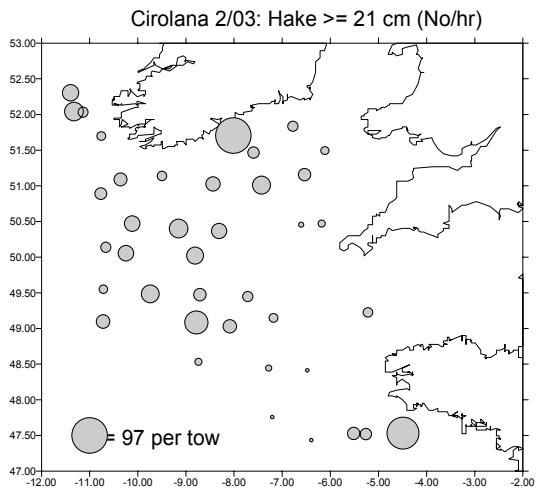
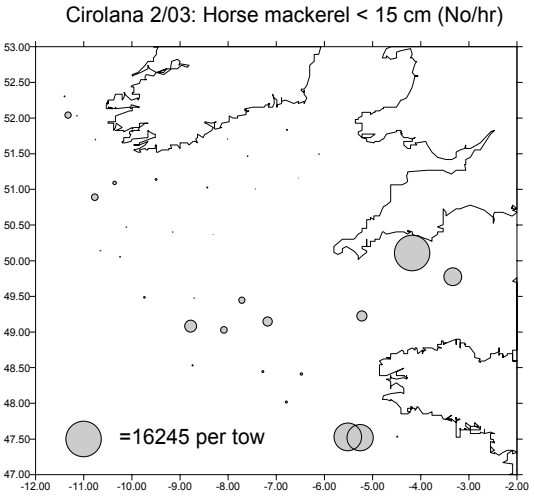
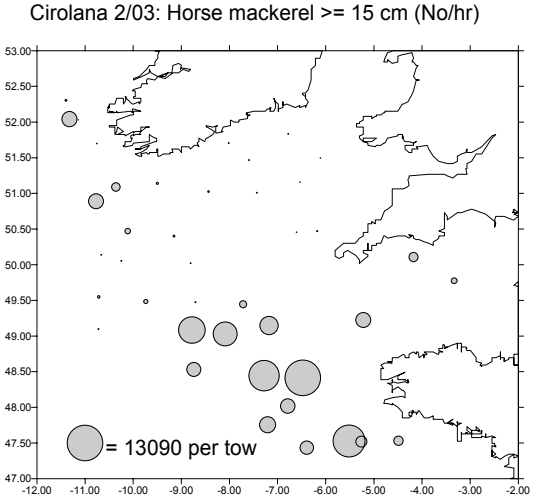


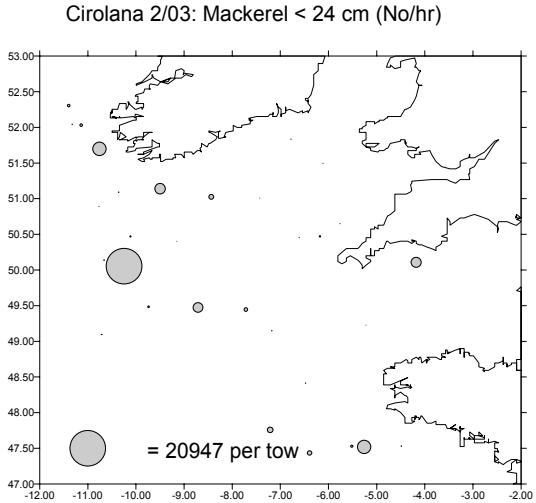
Figure 1c Cirolana 2/03 Comparative GOV hauls


Cirolana 2/03: Hake <21 cm (No/hr)
= 963 per tow


Cirolana 2/03: Hake >= 21 cm (No/hr)
= 97 per tow


Cirolana 2/03: Horse mackerel < 15 cm (No/hr)
=16245 per tow


Cirolana 2/03: Horse mackerel >= 15 cm (No/hr)
= 13090 per tow


Cirolana 2/03: Mackerel < 24 cm (No/hr)
= 20947 per tow

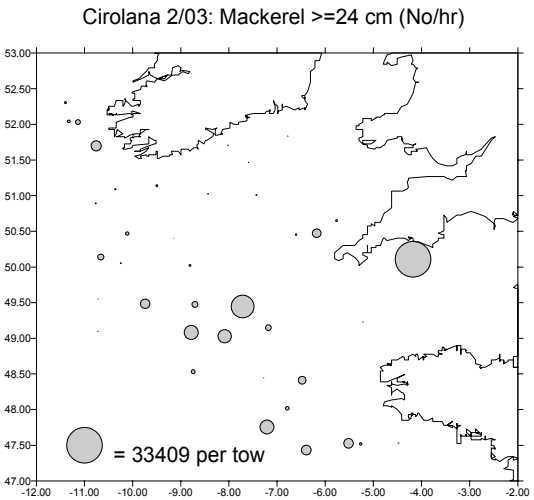
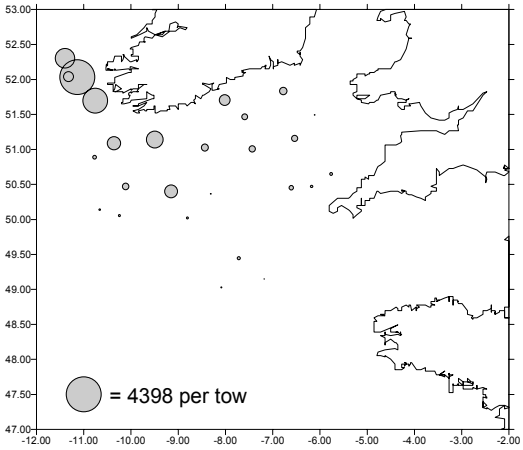
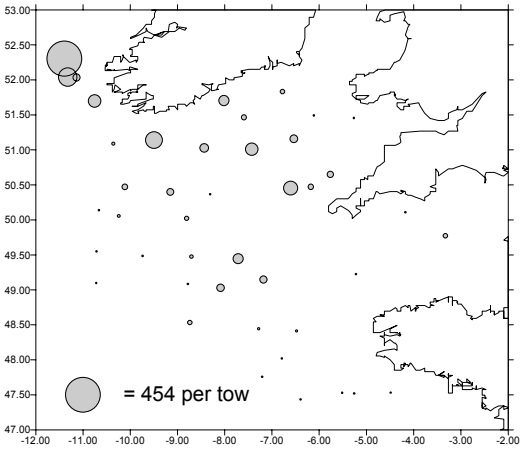

Cirolana 2/03: Mackerel >=24 cm (No/hr)
= 33409 per tow

Figure 2

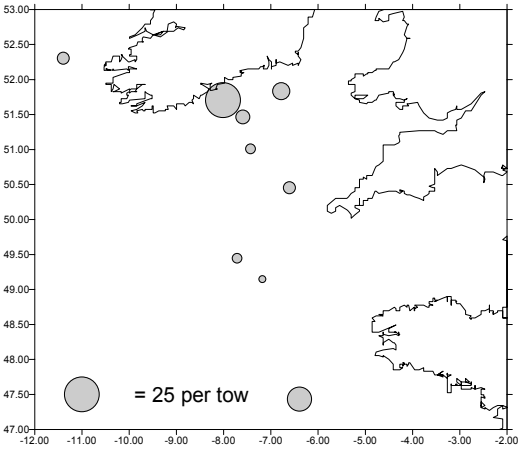
Cirolana 2/03: Haddock <25 cm (No/hr)



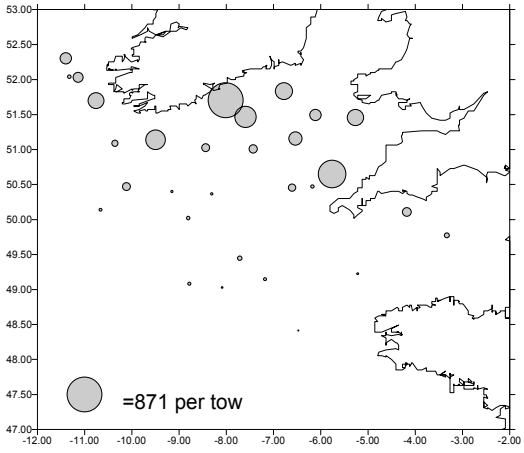
Cirolana 2/03: Haddock >= 25 cm (No/hr)



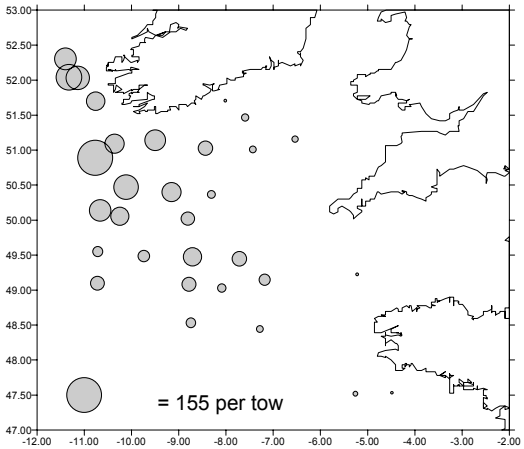
Cirolana 2/03: Cod (No/hr)



Cirolana 2/03: Whiting (No/hr)



Cirolana 2/03: Megrim (No/hr)



Cirolana 2/03: Boarfish (No/hr)

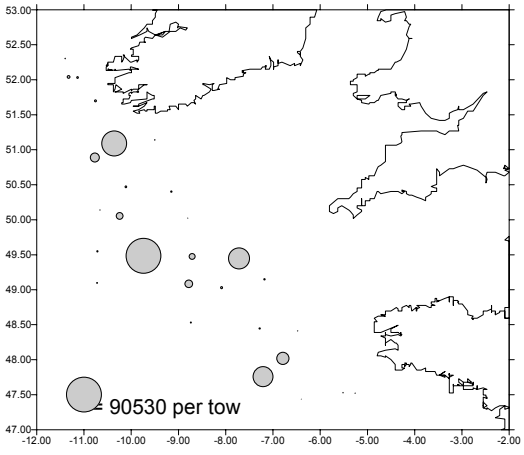


Figure 3