

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

1988 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 7
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

W G Parnell
A K Steele
T W Boon
A M Watson
D R Eaton
J Dann
R P Flatt
B D Rackham
K R Wink
M Sherlock
C Hood)
B Riches) 11, 12 August only

DURATION

Left Lowestoft 0814h, 11 August
Arrived Lowestoft 0930h, 11 September
All times are Greenwich Mean Time

LOCALITY

North Sea, Skagerrak and Kattegat

AIMS

1. To carry out a groundfish survey of the North Sea using a standard Granton trawl in order to obtain information on:
 - a) Distribution and abundance of all fish species.
 - b) Length and age distributions of commercially important species.
 - c) Distribution of fish in relation to their environment.
 - d) Distribution of macrobenthos.
 - e) Prevalence of disease in dab.
2. To collect fish and water samples for caesium analysis from a grid of stations in the North Sea.
3. To carry out a survey of caesium in sea-water in the Skagerrak, Kattegat and Norwegian Trench.
4. To collect live invertebrates for UEA.
5. To collect approximately 300 live mature specimens of Zoarces viviparus from Gothenburg. (D Woodhead).
6. To collect samples of herring for a parasite tagging project. (K McKenzie, DAFS).
7. To collect live specimens of suberites (Mrs P Fry, Luton).

8. To collect two samples of mackerel ovaries from the NE North Sea for developmental studies (P Witthames).
9. To collect and deep freeze stomachs from cod > 35 cms (P Bromley).
10. To collect fish samples for other projects as required.
11. To run an acoustic survey between trawl stations to monitor near bottom fish traces.

NARRATIVE

CIROLANA sailed from Lowestoft at 0814h 11 August but during the course of compass adjustment, an engine room power failure occurred which caused the vessel to return to port at 1023h.

With the fault rectified, CIROLANA sailed again at 2105h the same evening and proceeded to the 'Winterton Twenties' ground to start the Groundfish survey at 0546h the following day. Acoustic survey equipment, the Scanmar and various pieces of electronic equipment were set up and checked both on and between fishing stations by Mr Hood and Mr Riches before they were put ashore by the Sea rider at Lowestoft at 2048h 12 August. CIROLANA then continued the Groundfish survey, working northwards mainly west of 2°E using the standard Granton trawl except on nine stations around the Shetlands where arctic bobbins were required to work rough ground. CTD casts were made at each trawl station and a continuous record of temperature, salinity and, as far as possible, chlorophyll 'a' was logged at five minute intervals throughout the trip. AEP1 requirements for sampling water for caesium analysis were achieved by sampling at or en route to fishing stations while fish for analysis were taken from selected trawl hauls. At 1441h 27 August a halt was made to the Groundfish survey on the Shelf edge east of the Shetlands, and the survey of radiocaesium in sea water of the Norwegian trench, Skagerrak and Kattegat commenced at 1930h. This continued until CIROLANA docked in Gothenburg at 0706h 31 August. A Scanmar agent visited the ship to inspect a net spread sensor which was giving spurious readings because of low battery capacity. Unfortunately he did not have the facility to replace the battery so the Scanmar was not used for the remainder of the trip. Approximately 500 specimens of Zoarces viviparus were delivered to the ship by a scientist from The National Swedish Environment Protection Board before CIROLANA sailed at 1000h, 1 September to continue the radiocaesium in sea water survey. This was completed by 0530h, 3 September. The remaining stations on the Groundfish survey were then worked in a general southerly direction and completed at 1008h, 10 September. Course was then set for Lowestoft where CIROLANA docked at 0930h, 11 September.

RESULTS

Aim 1. Seventy seven Granton trawl hauls were made, three of which were invalid because of net damage. At each station the catch was sorted by species, weighed and measured. Otoliths were taken from one fish per cm length group for cod, haddock, whiting, saithe, norway pout, lemon sole and gurnard on each station. All data was input to the computer and data summaries produced in the last day of the cruise. Continuous records of temperature and salinity were computer logged throughout the trip but occasionally a software problem on the HP caused overflow readouts. The Turner fluorometers failed early in the trip due to internal water leaks which rendered the electronics useless. Distance towed by the gear was logged throughout the trip. The trawl headline height and spread were also logged until 20 August, but the battery failure in the Scanmar net spread sensor produced so many spurious results that there was no point in

continuing its use. Twenty-one dab samples were examined for disease.

Aim 2. Samples of fish fillets from cod, haddock, whiting, saithe, plaice, herring and mackerel were taken from the catch at selected trawl stations and frozen for return to the laboratory for radiocaesium analysis. At each station and on a grid of selected stations where fish samples were obtained, surface water samples were collected from the ship's clean salt water supply, and 50L samples were processed by filtration through a 0.22µm filter. Radio-caesium was removed from the filtrate by passing the filtered sea water through cartridges containing ammonium molybdophosphate on silica gel (AMP). The cartridges containing the AMP were retained for analysis in the laboratory.

Aim 3. A grid of 48 stations was worked on the survey of radiocaesium in sea water of the Norwegian trench, Skagerrak and Kattegat. At 33 of these stations S.% and T° profiles were made using a CTD mounted on a rosette. These profiles were used to determine the depths at which subsurface samples were taken in 8 x 30L Niskin bottles mounted on the rosette. These water samples were processed for subsequent radiocaesium analysis as described in Aim 2.

Aim 4. A tank of mixed live invertebrates was collected for UEA.

Aim 5. In spite of initial heavy mortality, in excess of 200 live Zoarces viviparus were landed for Dr Woodhead.

Aim 6. Two herring samples from the central and southern North Sea were deep frozen for a parasite tagging project (Dr K McKenzie, DAFS).

Aim 7. Two tanks of live specimens of suberites were collected for Mrs P Fry at Lufon.

Aim 8. Two samples of mackerel ovaries from the NE North Sea were preserved for developmental studies (P Witthames).

Aim 9. Cod stomachs were removed and deep frozen on those trawl stations on which there were more than 15 fish > 35 cms. (Dr P Bromley).

Aim 10. Samples of fish were deep frozen for:-

Dr Johnson	Herring and sprat for biological studies.
Dr Johnson	Miscellaneous for Fish I.D. course.
Dr Bromley	Small gadoids etc for fish food.

Aim 11. The acoustic survey equipment was run between 23 trawl stations, the data being recorded on 120 minute cassette tapes which will be subsequently analysed.

W Parnell
19 October 1988

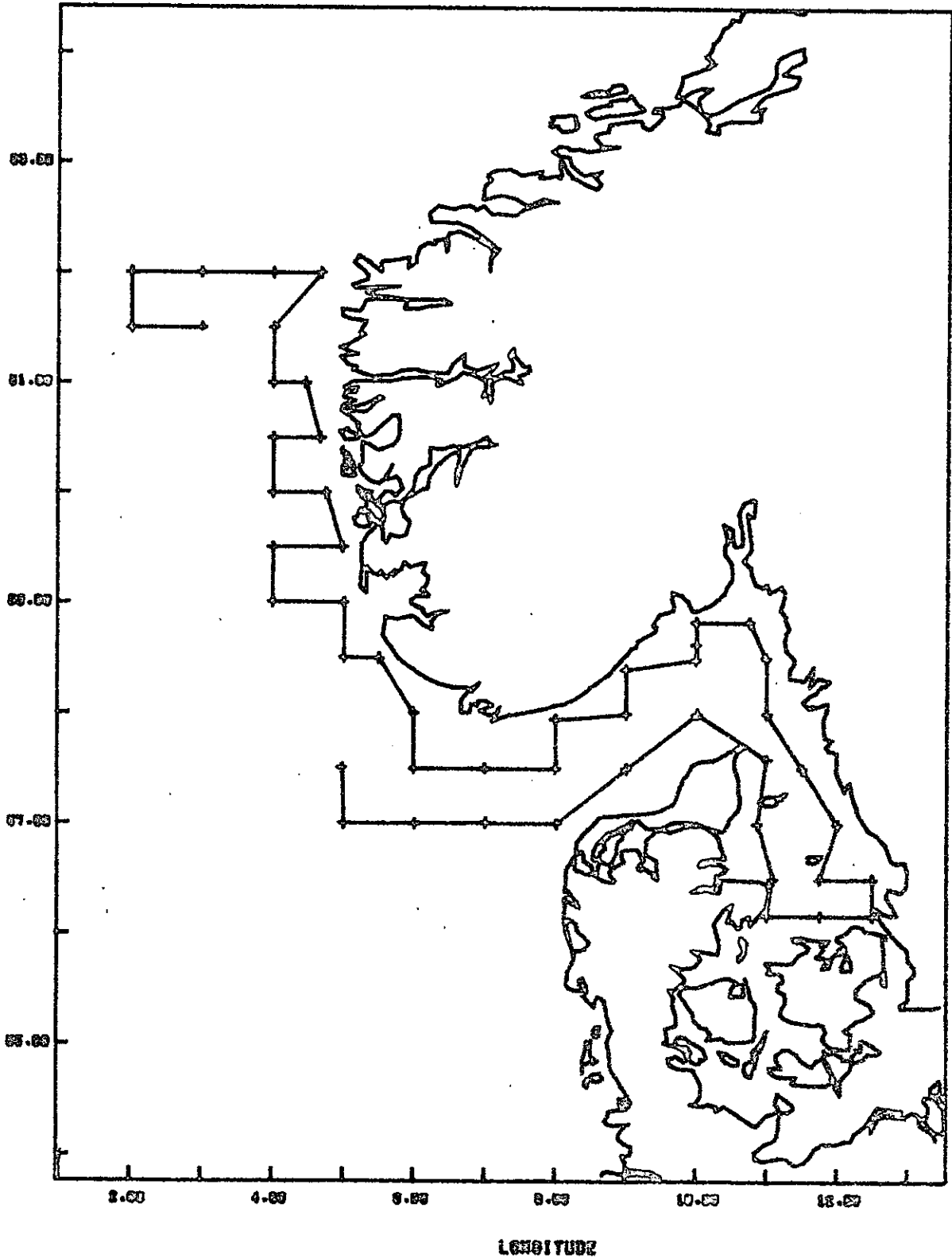
SEEN IN DRAFT: G Sinclair
R C Newrick

INITIALLED: DJG

DISTRIBUTION: Basic List + W G Parnell, A K Steele, T W Boon, A M Watson,
D R Eaton, J Dann, R P Flatt, B D Rackham, K R Wink, M Sherlock
C Hood, B Riches.

CIROLANA 7/88

SHOWING : CARSIUM SURVEY
CRUISE TRACK
STATION POSITION
COASTLINE



CIROLANA 7/88

SHOWING : FISHING SURVEY
CRUISE TRACK
STATION POSITION
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