

INDEXED *AR* 06
MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1987 RESEARCH VESSEL REPORT

REPORT: RV Cirolana: Cruise 7/87

(PROVISIONAL: not to be quoted without prior reference to the author)

STAFF:

W G Parnell SIC
T Boon
K Stokes
Mrs J Hunton
D Bucke (FDL)
C N Humphreys
B D Rackham
Miss D Lay
R P Flatt
M Ntiba (visitor)

DURATION:

Left Lowestoft 0932h 11 August
Arrived Lowestoft 2320h 9 September
All times are Greenwich Mean Time

LOCALITY:

North Sea

AIMS:

1. To carry out a groundfish survey of the North Sea using a standard Granton trawl in order to obtain information on:
 - (i) Distribution and abundance of all fish species
 - (ii) Length and age distributions of commercially important species.
 - (iii) Distribution of fish in relation to their environment.
 - (iv) Distribution of macrobenthos and especially of suberites.
 - (v) Gadoid interactions through collection of stomachs of cod, whiting and saithe for the ICES programme on stomach analysis.
 - (vi) Collection of fish and invertebrates for caesium measurements.
 - (vii) Incidence of fish diseases over the North Sea.
2. Collection of live specimens of suberites living on hermit crabs for Mrs P Fry at Luton.

3. Collect specimens of 0-group gadoids from midwater using an Isaacs Kidd Trawl for comparison with 0-group gadoids taken in the Granton trawl. Project. GAAI gadoid interactions through feeding.
4. Collect water samples for caesium analysis from the pumped water supply and using Niskin bottles.
5. Sample the environment using electronic sensors in the pumped water supply and using the instrument frame for vertical sampling.
6. Sample near bottom plankton using a net mounted on the trawl.
7. All biological data will be entered to the fishing surveys data base using the HP 1000 computer.
8. All electronic instruments will be logged on the HP 1000.
9. Collect fish samples for other projects as required.

Additional aims not in the original programme:

10. To determine the distribution and abundance of Nephrops larvae off the English NE coast.
11. To take a Col commissioned film crew to sea to make a video for CSC aimed at recruiting young graduates into the Civil Service.
12. To collect stomachs of *R. radiata* and *R. clavata* for H. Sparholt (Denmark).
13. To collect live invertebrates for UEA.

NARRATIVE:

CIROLANA sailed from Lowestoft at 0932 h on 11 August and proceeded to Smiths Knoll where the Groundfish survey commenced with a Granton trawl station at 1306 h. A film crew commissioned by the Col to make a video for the CSC and aimed at recruiting young graduates into the Civil Service, filmed both fishing operations and scientific work throughout the remainder of the day before they disembarked by pilot boat off Lowestoft at 1840 h. CIROLANA then proceeded to the Great Silver Pit to continue the survey at 0622 h the following day. Four trawl stations were worked before the survey was stopped in order to commence a plankton survey for Nephrops larvae off the English north-east coast at 0111 h 13 August. This was completed by 1059 h 14 August, and the Groundfish survey was restarted off Sunderland at 1305 h the same day. Stations to the north of the survey area were worked without interruption until 26 August when CIROLANA

docked at Aberdeen at 1030 h to offload miscellaneous items for the DAFS laboratory including an HIAC and stomach samples collected on this and previous surveys. Opportunity was taken to have the Scanmar equipment, which was not functioning correctly, examined by a service engineer. It was found that the non rechargeable batteries in the mini transponder were down, and as a replacement unit was not immediately available, the Scanmar could not be used to determine net spread. The transponder on the headline was also producing spurious readings on headline height even though the batteries were fully charged. As a result the Scanmar was not used on the trawl during the last part of the trip.

CIROLANA sailed from Aberdeen at 1221h 27 August to work the stations to the south of the survey area. The survey was completed at 0921 h 9 September on the Brown Ridges without any interruption due to bad weather throughout the whole trip. CIROLANA docked at Lowestoft at 2220 h 9 September.

RESULTS:

Aim 1.

Eighty four Granton trawl hauls were made, seven of which were invalid. Valid hauls were made on all but one of the Primary Groundfish Stations. At each station the catch was sorted by species and weighed and measured; benthos was weighed and photographed for later identification. Otoliths were taken from cod, haddock, whiting, saithe, norway pout and plaice. All data was input to the computer and data summaries made on the last day of the cruise. Stomachs of cod, saithe and whiting were collected at selected trawl stations while on line sensors were run continuously in sea water pumped via the ship's pump from 3 meters.

The results of the work on fish disease did not reveal any evidence of significant diseases in commercial fish species, and the occasional anomalies were recorded. Prevalence rates of dab skin disease were especially high on stations in the Murray Firth and on the Dogger Bank. Occasional liver tumours were recorded in dabs, but for a more precise evaluation, 500 liver samples were preserved for histological examination. Serum was collected from dab for laboratory studies.

Aim 2.

Twenty-four live specimens of suberites living on hermit crabs were collected for Mrs P Fry at Luton.

Aim 3.

The Isaacs-Kidd trawl was shot on ten occasions in selected areas to sample the scattering layer. The gear was deployed down the ramp with a Scanmar transponder on the spreader bar to indicate depth below the surface. The system worked well enough for a qualitative estimate of what might be present in the water column, but may not be suitable for a quantitative estimate because of difficulties in regulating the net drum winch speed. The gear was towed for only 15 minutes in the scattering layer because of the risk of damage presented by large numbers of jellyfish. Almost without exception the catch consisted of 0-group whiting. (Length range 2-12 cm.)

Aim 4.

Surface water samples were collected at 49 stations for caesium analysis, and Niskin samples of bottom water were collected at 6 stations on a line at approximately 57°N. The 50 litre samples were processed on board ship by passing them through ion-exchange resins.

Fish fillets were collected from the major species ie cod, haddock, whiting, plaice, herring, mackerel and saithe in 12 selected sampling areas depending upon their availability. In all, 39 samples were collected.

Aims 5, 7 & 8.

Already covered in report for Aim 1.

Aim 6.

Near bottom plankton was sampled in a net mounted on the trawl at most stations.

Aim 9.

Samples of fish were frozen for:-

- a) Dr Bromley: for feeding studies.
- b) Dr Johnson: herring samples for age and racial studies.
- c) Mrs Dawson: mackerel samples
- d) Dr Rees: horse mussels
- e) Miss Singh: small crabs
- f) P Walker: Elasmobranchs for University of York.
- g) Dr Johnson: miscellaneous for Fish I.D. course.
- h) Mr Harding: miscellaneous for scale examination.
- i) Mrs Dawson: mackerel ovaries, livers etc from Area 104A.

Aim 10.

A grid of 33 stations was worked with the plankton sampler to determine the distribution and abundance of Nephrops larvae off the NE coast.

Aim 11.

The Col film crew spent nine hours on board CIROLANA on the first day of the cruise and successfully filmed many aspects of the work.

Aim 12.

Stomachs of *R. radiata* were collected from selected stations for H. Sparholt (Denmark).

Aim 13.

A tank of miscellaneous invertebrates was collected for UEA.

W G Parnell
9 September 1987

SEEN IN DRAFT: G Sinclair Master
R C Newrick Fishing Skipper

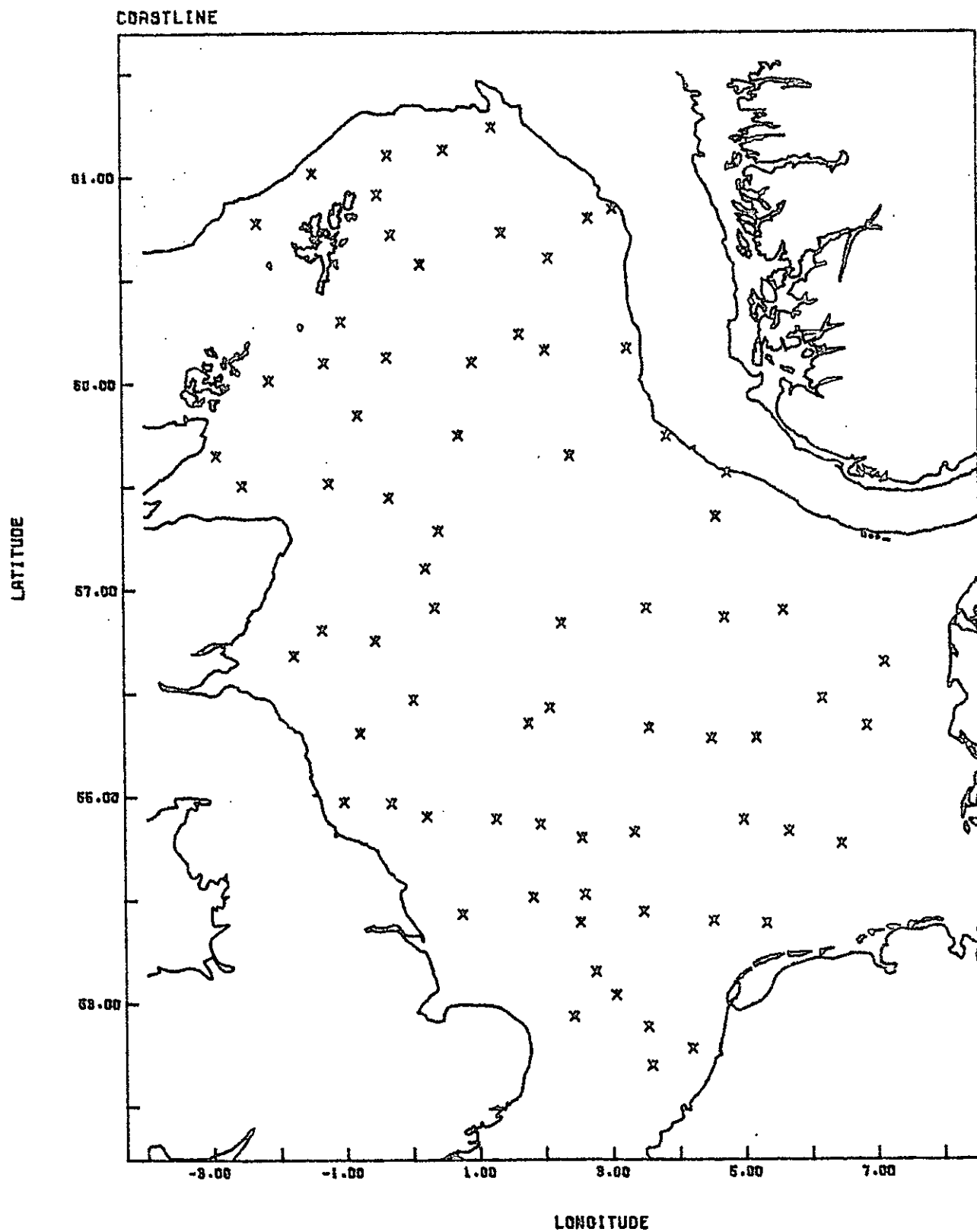
INITIALLED: D J G

DISTRIBUTION:

Basic List +
W G Parnell
T Boon
K Stokes
Mrs J Hunton
D Bucke
C N Humphreys
B D Rackham
Miss D Lay
R P Flatt
M Ntiba

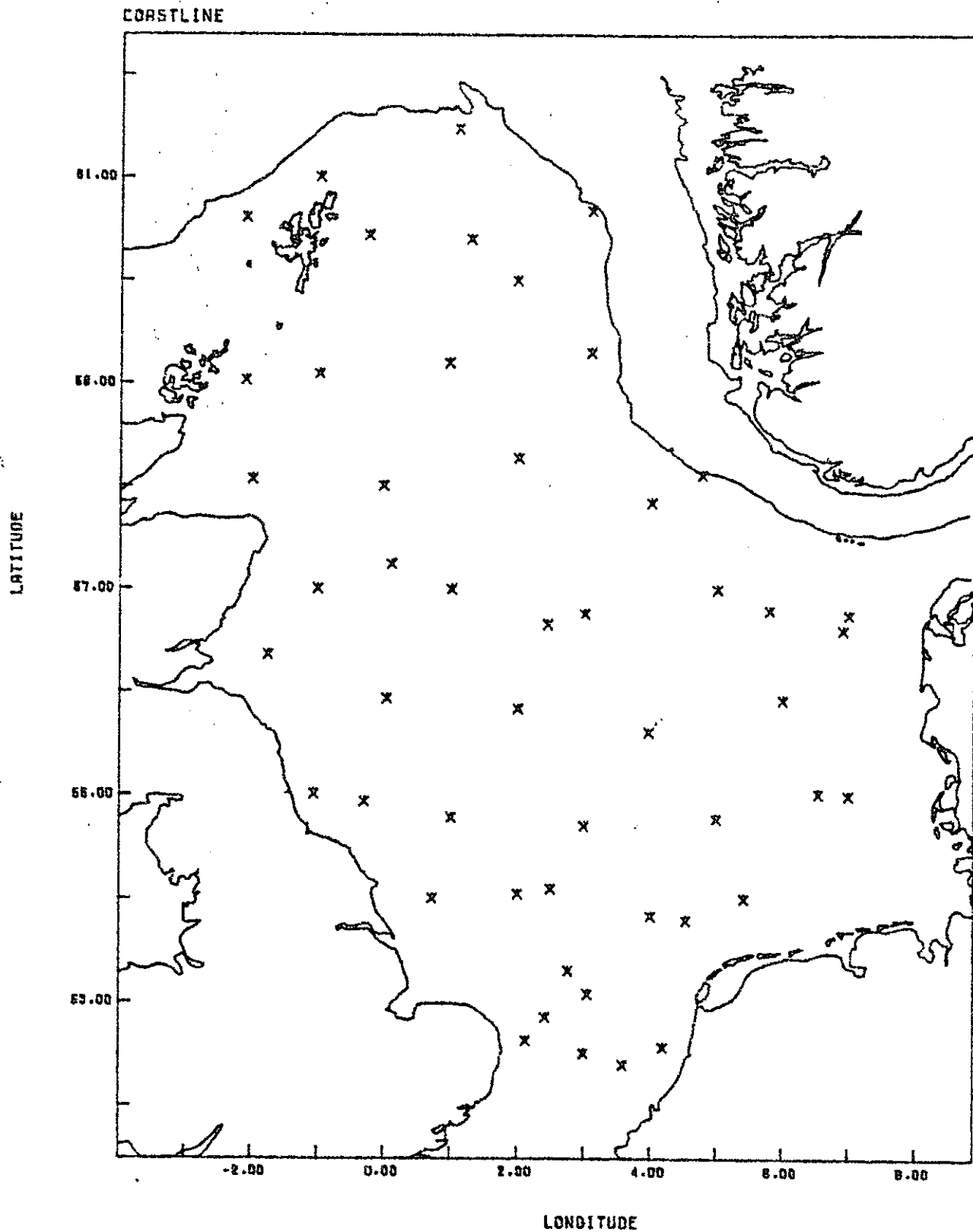
CIROLANA 7/87 CTD STATIONS

SHOWING :



CIROLANA 7/87 WATER STATIONS

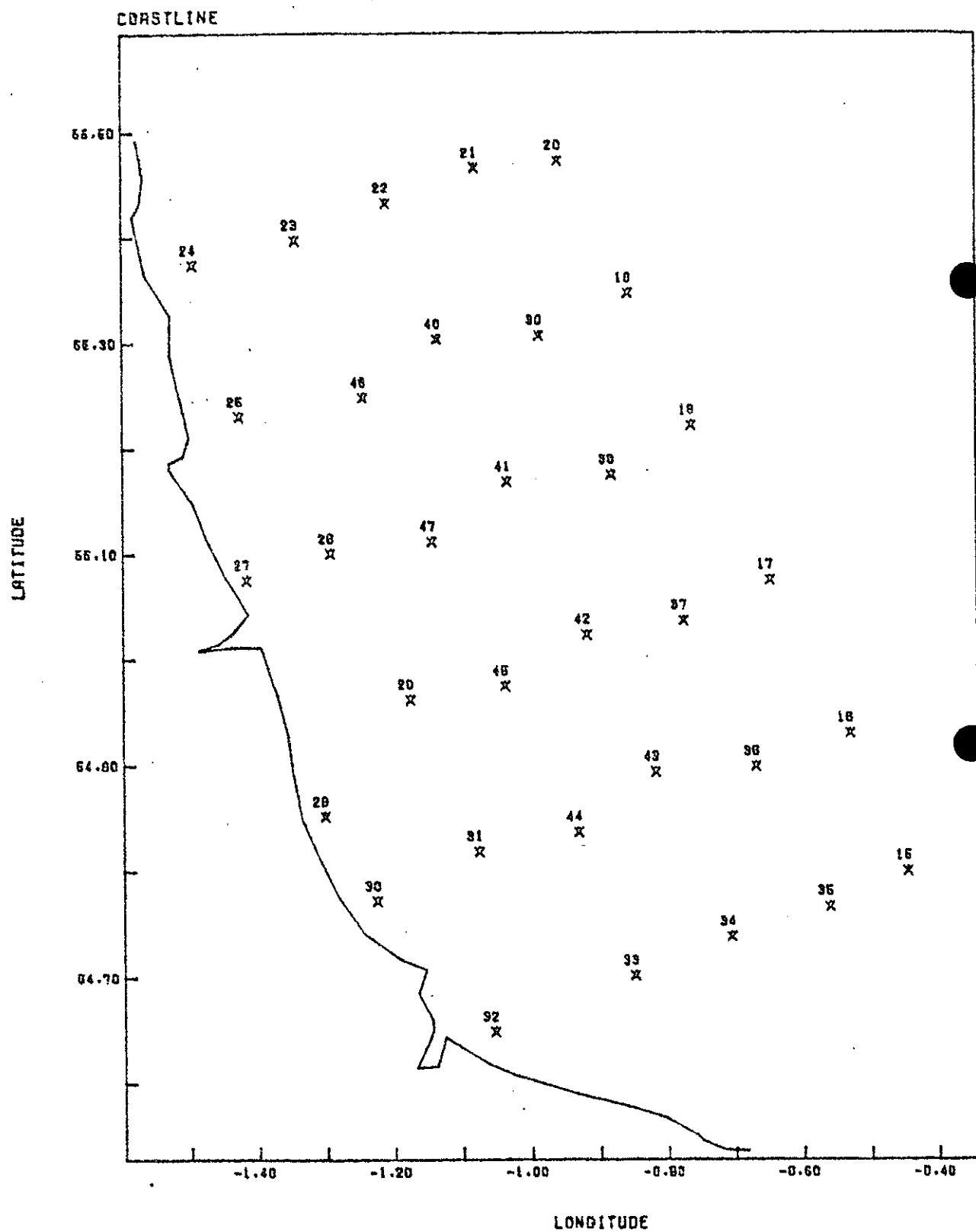
SHOWING :



CIRD 7/87 PLANKTON STATION GRID

SHOWING :

STATION NUMBER



CIROLANA 7/87 GRANTON TRAWLS

SHOWING :
CRUISE TRACK

