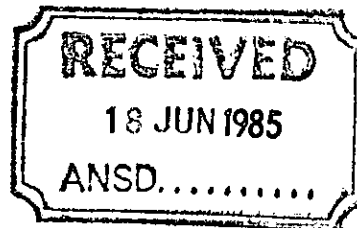


Indexed ✓

86

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



1985 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE : CRUISE 6

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

STAFF:

B M Thompson
D J Symonds
R R Dickson 7-8 May only
E G Shreeve 7-8 May only
C G Brown 8-29 May
D R Eaton
S P Milligan 8-29 May
P Hudson

DURATION:

Left Lowestoft 1042 h 7 May
Arrived Douglas IOM 1512 h 17 May
Left Douglas IOM 0800 h 19 May
Arrived Lowestoft 0525 h 29 May

(All times are Greenwich Mean Time)

LOCALITY:

English Channel
Irish Sea

AIMS:

1. To carry out a sector scanner survey of an area of shingle bank $5\frac{1}{2}$ miles east of the Royal Sovereign.
2. To carry out a plankton survey using the 76cm high speed tow net fitted with the MAFF Guildline Monitoring system, to determine the distribution and abundance of Nephrops norvegicus larvae in the Irish Sea.
3. To study the vertical distribution of Nephrops larvae using a Longhurst Hardy Continuous Plankton recorder.
4. To continuously monitor the temperature and salinity of the surface sea water.
5. To collect water samples for salinity, nitrate, phosphate and silicate analysis.
6. To determine whether berried female Nephrops are found in the areas of high abundance of larvae.

NARRATIVE:

RV CLIONE left Lowestoft at 1042 h on 7 May. A sector scanner survey of the shingle bank area was begun at 0027 h on 8 May at a point 50° 45.0'N 00° 35.5' E and continued until 0749 h on the same day. Scientific staff were exchanged at Newhaven between 1151 h and 1352 h.

Course was set for the Irish Sea but 35 knot winds and a westerly swell necessitated anchorage in Mounts Bay at 1800h on 9 May.

CLIONE resumed steaming at 0747 h on 10 May.

Plankton sampling began at 1014 h on 11 May and continued until 1137 h on 17 May with a short break from 0919 h to 1151 h on 16 May, during which time CLIONE steamed north to rendezvous with MV WESTERDALE off Portpatrick to reclaim a current meter and acoustic release gear.

After the mid-cruise break to renew stores and take on water plankton sampling resumed at 0853 h on 19 May and continued until 1210 h on 20 May when CLIONE anchored off Port Erin IOM to allow cable repairs to be undertaken and to collect mail. When sampling was resumed at 1734 h it was found that the computer data logging system had ceased to function.

A trawl survey of the area between latitudes 53° 45' N and 53° 15' N and longitudes 05° 45' W and 05° 30' W was carried out during the period 0624 h to 1848 h 21 May and 0615 h to 1524 h on 22 May.

Seven plankton stations were sampled between 1950 h on 21 May and 0357 h on 22 May. The Longhurst Hardy Continuous Plankton Recorder on loan from IMER was deployed on 9 occasions over the period 1648 h 22 May to 0815 h 24 May in an attempt to define the vertical distribution of Nephrops larvae.

A 35 knot SSW wind gusting to 50 knots prevented further work and CLIONE steamed to Dulas Bay off the Isle of Anglesey and anchored at 1755h.

It was possible to begin plankton sampling again at 0907 h on 25 May but deteriorating weather conditions forced work to cease and course to be set for Lowestoft at 0437 h on 26 May.

RESULTS:

1. A total of 119 plankton stations were sampled with the high speed tow net on Part One of the cruise, and a further 48 stations on Part Two. See Figs 1 and 2.

There were no major problems with the Guildline CTD system but it became apparent after 61 stations had been worked that the towing cable was showing signs of damage. To prevent further damage to the cable, the large lead weight was removed from the towed body and eventually replaced with one of a smaller size.

Severe clogging of the net occurred at the beginning of the survey and after 13 stations had been worked the 270u mesh net was replaced with one of 480u mesh.

2. The computer data logging system worked well for 141 of the 167 tow net stations.

3. Adverse weather conditions allowed the ship-board analysis of only 45 plankton samples, the results of which are shown on Figs 3 and 4. The highest number of Nephrops larvae was found at a position 53° 18.75 N 05° 37.5' W, due east of Dublin Bay.

4. 11 tows with a Granton trawl in the area of highest numbers of Nephrops larvae (Fig 3) yielded low numbers of adult Nephrops and no berried females, suggesting that the larvae have drifted into the area from elsewhere.

A total of 172 stomachs were taken from small fish (less than 30cm) of the following species for Nephrops larvae predation studies:-

Grey gurnard	Eutrigla gurnardus
Poor cod	Trisopterus minutus
Norway pout	Trisopterus esmarkii
Whiting	Merlangius Merlangus
Cod	Gadus morhua
Haddock	Melanogrammus aeglefinus
Hake	Merluccius merluccius
Herring	Clupea harengus

5. The LHPR was deployed over a 24 hour period at the station on which the highest number of Nephrops larvae was found. Although problems were encountered with ctenophores and medusae clogging the mechanism, it is hoped that analysis of the samples will give some indication of the vertical distribution of Nephrops larvae.

6. Surface temperatures ranged from 7.9°C to 11.1°C (Fig 5).
Surface to Bottom Temperature differences for grid one are shown in Fig 6.

7. 100 sub-surface water samples were taken at selected stations for salinity estimation, 93 samples of sub-surface water were taken for nitrate, nitrite, and phosphate analysis and 93 samples for silicate analysis.

Brenda M Thompson
28 May 1985

INITIALLED: D J G

SEEN IN DRAFT: M Willcock Master
P MacKay SFM

DISTRIBUTION
Basic List +
B M Thompson
D J Symonds
R R Dickson
E G Shreeve
C G Brown
D R Eaton
S P Milligan
P Hudson

CLIONE 6/85

TRACK CHART

GRID ONE

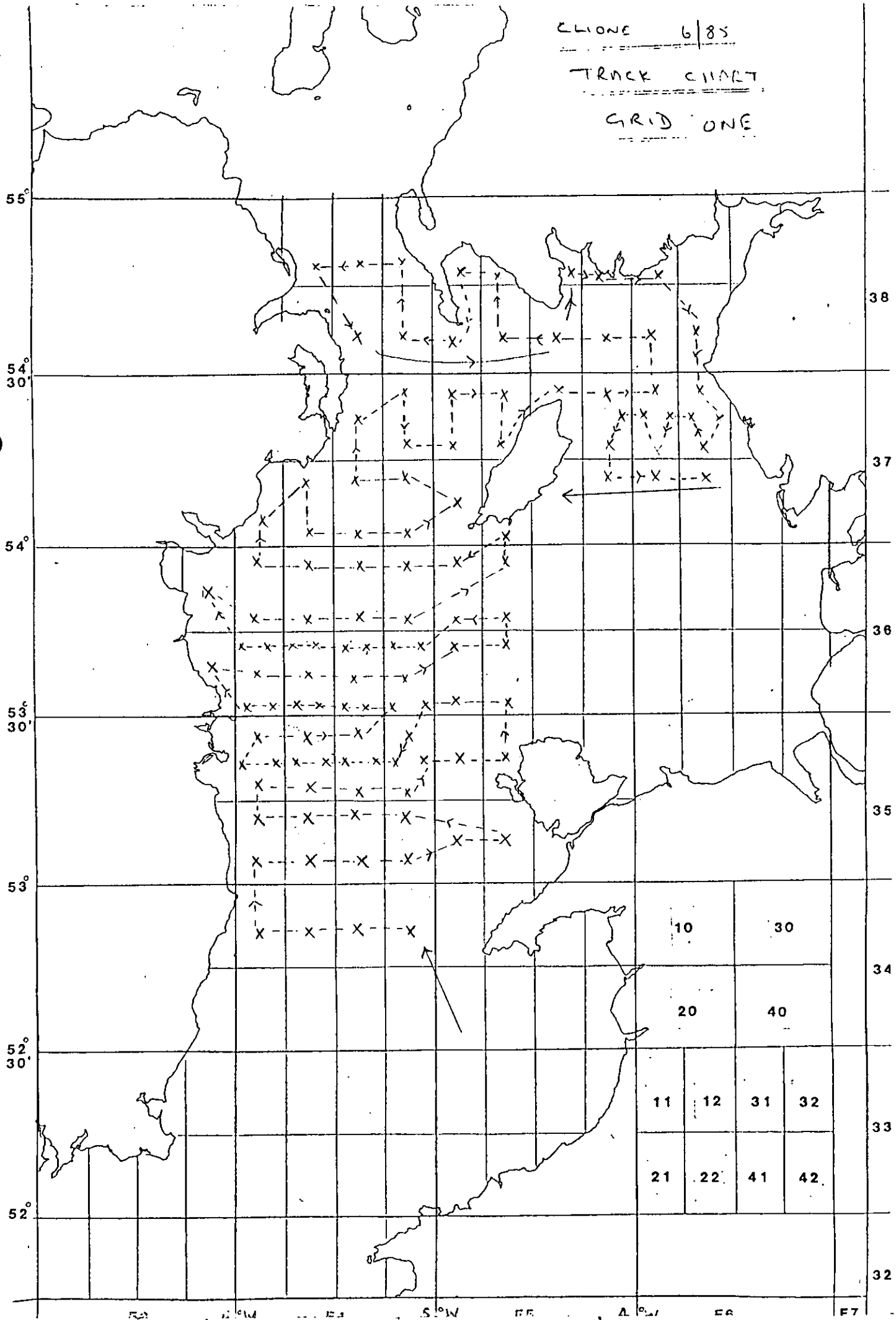


FIG. 2.
 CLIONE 6/85
 TRACK CHART I
 GRID TWO

/// TRAWLING AREA

(X) LILPR STATIONS.

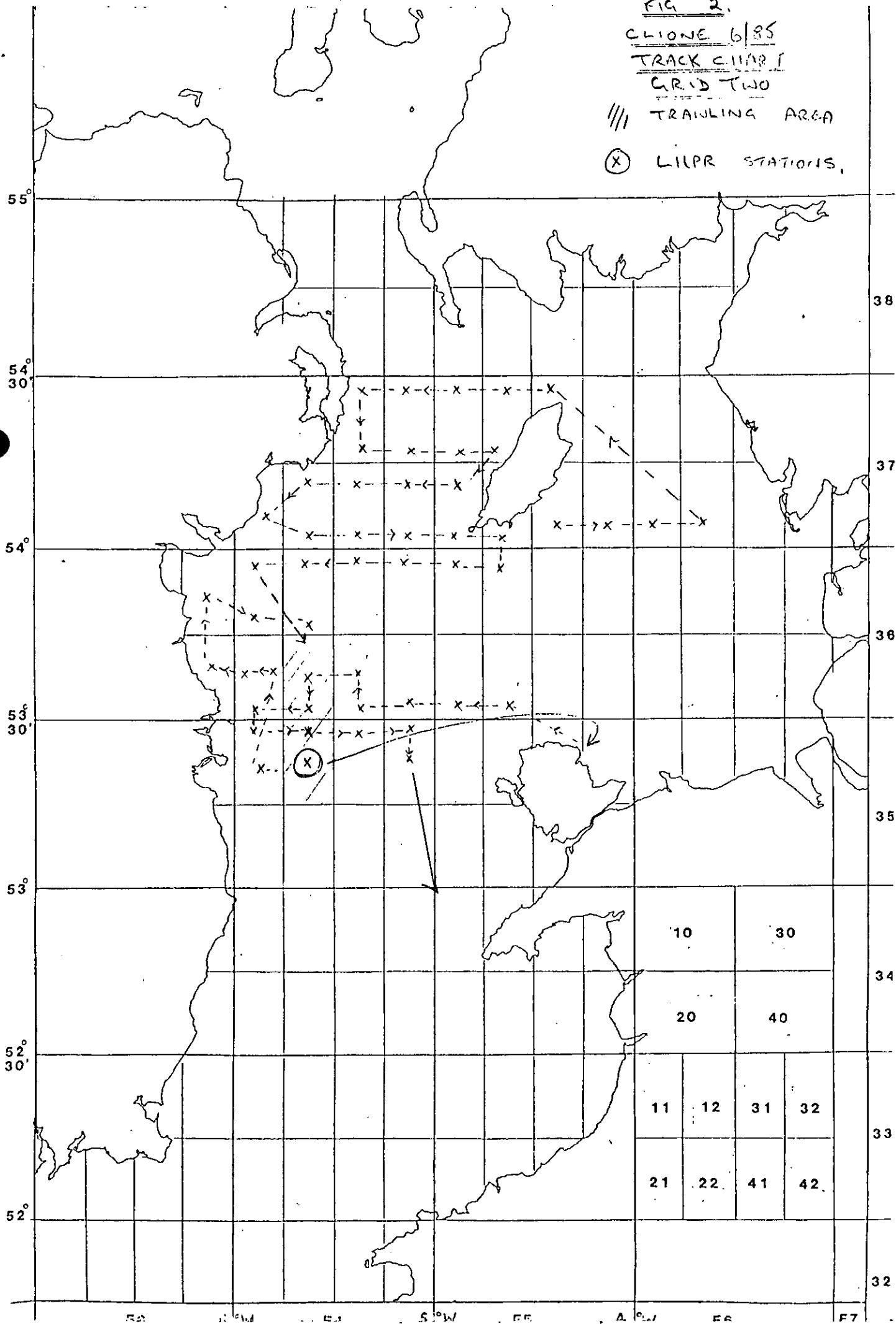


FIG 4

CLIONE 6/85

GRID ONE

STAGE I NEPHROPS LARVAE

PER M²

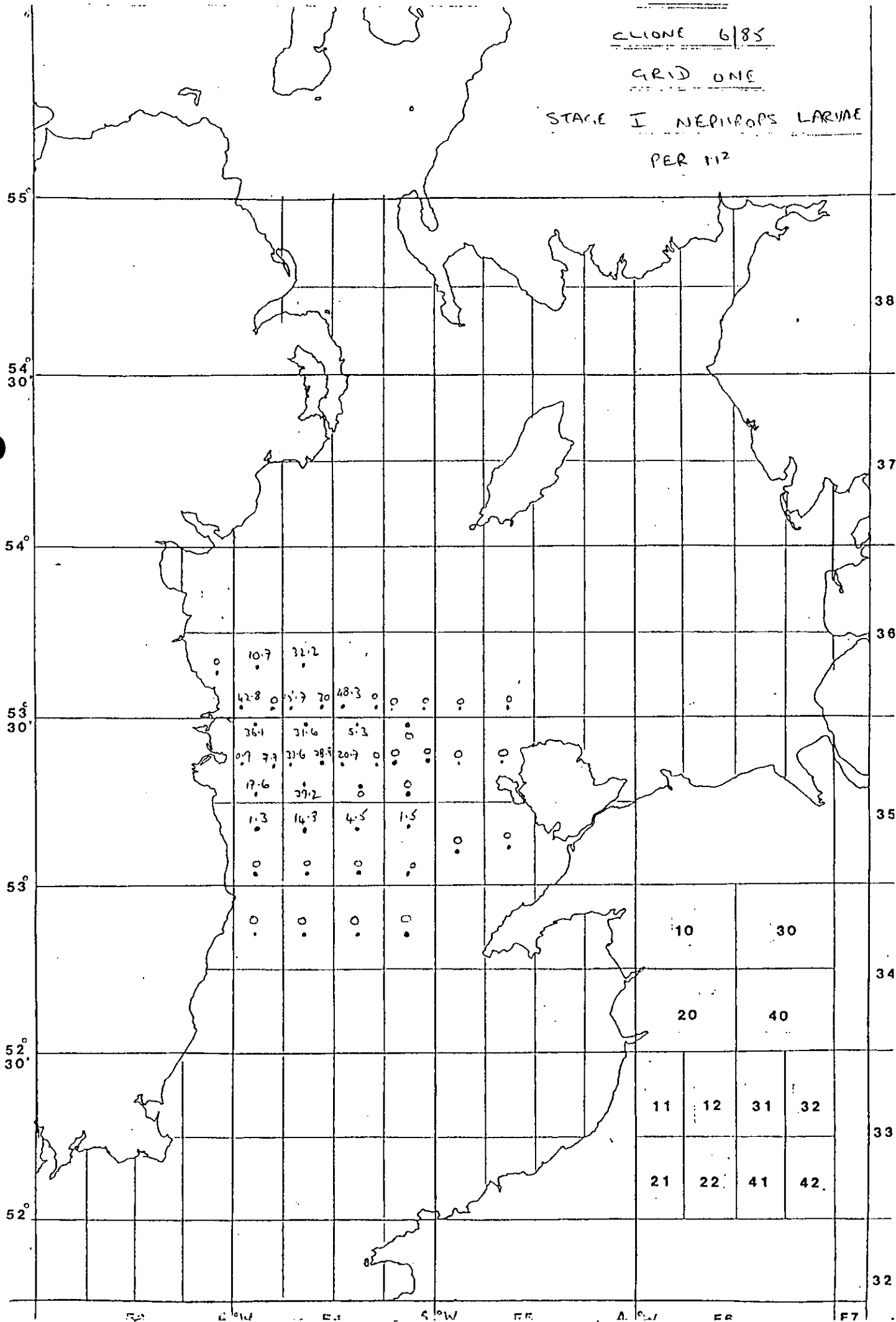


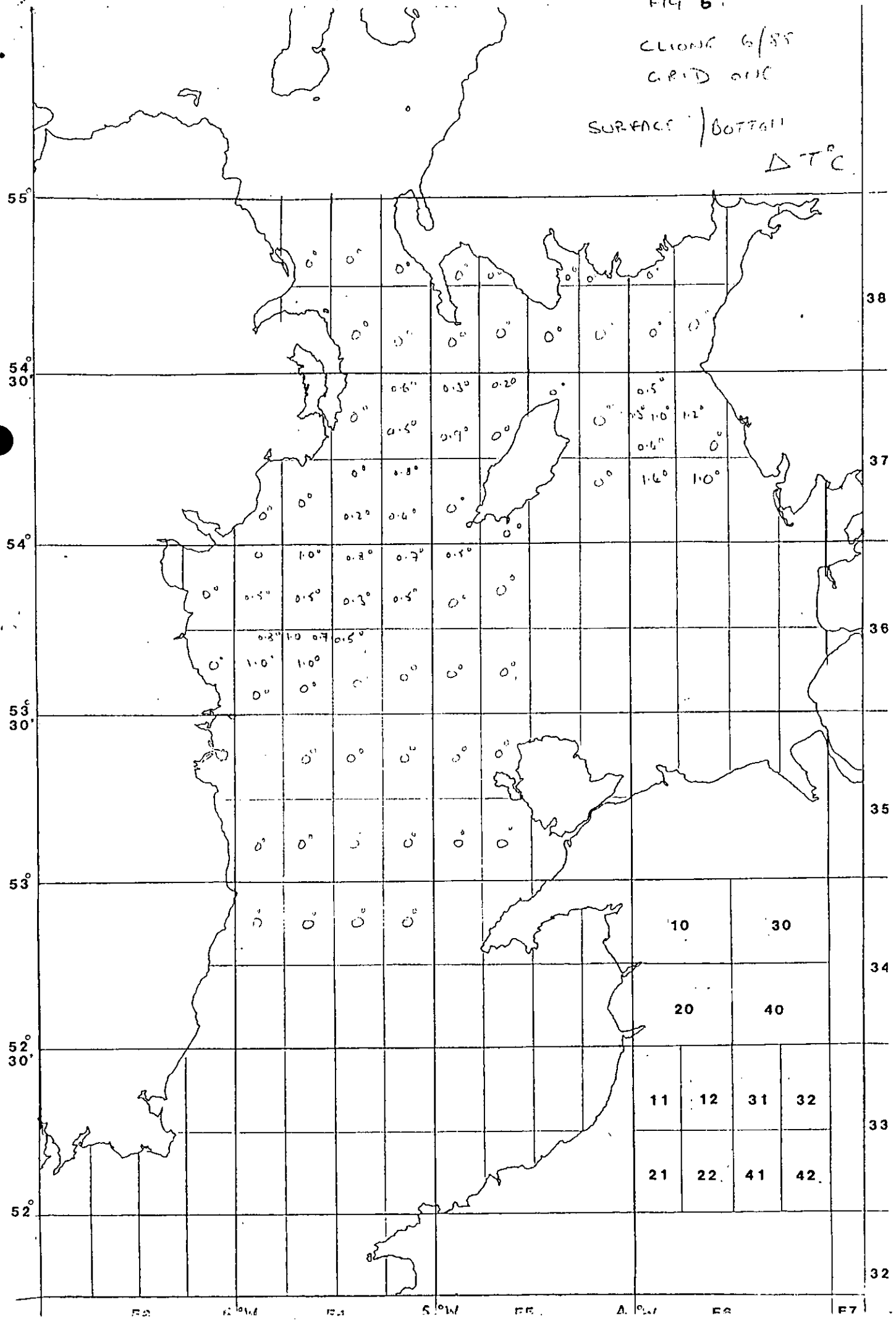
FIG 6.

CLIMATE 6/85

GRID 011C

SURFACE / BOTTOM

$\Delta T^{\circ}C$



15°W 14°W 13°W 12°W 11°W 10°W

38
37
36
35
34
33
32