

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

1987 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 12
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

D J Symonds
S Flatman
Mrs W A Dawson (1st half)
Mrs M J Boon
S M Stevens
D B Edwards
D J Ballance (Oxford University; 2nd half)

DURATION

Left Lowestoft 1400h 15 September
Arrived Lowestoft 2040h 4 October
All times are Greenwich Mean Time

LOCALITY

Irish Sea, Bristol Channel

AIMS

1. To carry out a survey for 0- and 1-group gadoids in the northwestern Irish Sea using the granton trawl.
2. To carry out a pre-recruit flatfish survey in the eastern Irish Sea using the 3m beam trawl.
3. To investigate the distribution of pre-recruit flatfish in the Bristol Channel using the 3m beam trawl.
4. To investigate the distribution and abundance of yolk sac herring larvae on the spawning grounds east of the Isle of Man.

NARRATIVE

A good passage was made to the Bristol Channel area and the 3m beam trawl station, 35 miles off Trevoise Head, was started at 0829 h on 17 September. Increasing concern was felt for the health of a greaser throughout the day and it was decided to put him ashore at Milford Haven to return to Lowestoft by train; at the same time, medical attention was obtained for one of the deckhands who, although returning to CLIONE, remained off duty for two days.

After leaving Milford Haven, CLIONE steamed through the night and the pre-recruit gadoid survey in the northwestern Irish Sea with the Granton trawl commenced at 0618h on the 18th. The 12 stations were completed in good weather by early afternoon on the 20th with a short break in the work on the 19th to land a deckhand at Peel for hospitalisation.

Before starting the high speed townet grid southwest of the Isle of Man at 1958h on 20 September, the junior fishing mate was put ashore at Douglas to return home to a critically ill wife. Good settled weather prevailed and the

plankton grid was completed by 1141 h on 21 September. The pre-recruit flatfish survey of the eastern Irish Sea with the 3m beam trawl was started immediately and continued, with a short break on the 22nd when shelter was sought in Ramsey Bay from freshening SW winds, until berthing at Douglas, Isle of Man, at 1340h on 25 September for repairs to a damaged beam trawl, water and a change of staff.

On leaving Douglas at 0740h on 27 September the remaining beam trawl stations in the Irish Sea were completed by 0014 h on the 28th when CLIONE proceeded southwards to start the Bristol Channel survey for pre-recruit flatfish at 1028 h on the same day. During the following 3 days the shallower waters of the Bristol Channel were fished. Damage to the gear was frequent, and much time was spent searching for suitable grounds.

A call from the laboratory requesting samples of commercial size plaice from ICES areas 107F and G curtailed the Bristol Channel survey and the last 2 working days were spent in these areas fishing with the Granton trawl. The last haul was completed at 1706 h on 2 October, the gear stowed and CLIONE proceeded to Lowestoft.

RESULTS

Aim 1 The 12 routine stations with the Granton trawl in the northwestern Irish Sea were completed (figure 1). Catches in general were small. Provisional mean numbers of 0- and 1-group cod and whiting in each sampling area are given in the following table:

Sector	Depth zone (m)	Cod		Whiting	
		0-group	1-group	0-group	1-group
NW	0-50	3.0	4.5	1685.8	259.5
NW	50+	0.0	0.5	990.2	207.8
'NE'	50+	0.0	1.5	1461.5	102.8

As usual, catches of pre-recruit cod were low but the numbers of 1-group were sufficient to confirm that the 1986 yearclass is likely to be good. The most important single species by weight and numbers was whiting. Catches of 1-groups were of the order expected for an average yearclass whereas catches of 0-groups were the largest taken in these areas since these surveys began in 1979 indicating that the 1987 yearclass will be strong.

Aim 2 Forty-nine valid 15 minute tows were made with the 3m steel beam trawl fitted with 3 tickler chains (fig 1); 7 tows were not attempted because the substrate was unsuitable for trawling. This gear proved to be very effective at catching pre-recruit flatfish; a total of 1415 plaice and 515 soles were caught and their distributions are shown in Figs 3 and 4. The centres of abundance of both species were off the North Wales coast and Liverpool Bay where shallow water predominates. The importance of water depth in the distribution of pre-recruits is illustrated in the following table:

<u>Depth band</u> (m)	<u>No of stations</u>	<u>No per 15 min</u>	
		<u>Sole</u>	<u>Plaice</u>
0-20	10	31.2	109.4
21-40	31	6.4	10.3
41-60	7	0.7	0.1
61+	1	0.0	0.0
Total	49	10.5	28.9

In addition 30 0-group and 22 1-group cod were caught.

From the results of this survey, a sampling strategy will be devised for use on future routine surveys in this area to estimate yearclass strengths of plaice and sole in the Irish Sea.

Aim 3 The 3m steel beam trawl but with only 1 tickler chain was used to sample the Bristol Channel area (Fig 2). Twenty three valid stations were completed but many of these were considered unsuitable for routine sampling due to a rough bottom. For the same reason, six further tows were invalid and a number of stations were not attempted.

Catches of pre-recruit sole (51 fish) and plaice (74 fish) were small and the majority were taken in the confined shallow waters of Carmarthen Bay. Their distributions with depth are given in the following table:

<u>Depth Band</u> (m)	<u>No of stations</u>	<u>No per 15 min</u>	
		<u>Sole</u>	<u>Plaice</u>
0-20	5	8.6	11.4
21-40	8	1.0	1.8
41-60	4	0.0	0.8
61+	6	0.0	0.0
Total	23	2.2	3.2

Because of the generally unsuitable substrate, restricted shallow areas and low catch rates the future of pre-recruit flatfish surveys in the Bristol Channel using a research vessel is questionable.

Aim 4 Twenty hauls were made with the 53cm high speed townet, fitted with the Guildline CTD package, to investigate the distribution and abundance of yolk sac herring larvae on the spawning grounds, south east of the Isle of Man.

Miscellaneous

1. Despite several problems with the software, all trawl and townet data were input to the computer and a full set of output documents produced before the ship docked.
2. Otoliths of 1039 fish from 10 species were taken for pre-recruit and biological studies and to augment the market sampling programme:

Species	No of otoliths			
	<u>7A</u>	<u>7F</u>	<u>7G</u>	<u>Total</u>
Plaice	163	95	25	283
Sole	134	50	12	196
Cod	33	23	4	60
Whiting	123	51	14	188
Hake	32	43	37	112
Lemon sole	31	7	20	58
L. whiffiagonis	0	0	58	58
Ling	3	0	0	3
L. piscatorius	19	29	19	67
L. budegassa	0	0	1	1
Total	538	298	190	1026

3. Samples of fish were deep frozen for the laboratory's fish Identification course, fish food (P Bromley) and Environmental Archeology Unit, York; anglerfish ovaries were preserved in formalin (M Greer-Walker).
4. The landing due to illness of 3 ship's personnel did not affect the running of the cruise and all credit should be given to the officers and crew whose efforts to make a success of the cruise while short-handed are sincerely and gratefully acknowledged.

D J Symonds
23 October 1987

SEEN IN DRAFT:

INITIALLED: DJG

DISTRIBUTION:

Basic List+

D J Symonds

J G Shepherd

S Flatman

Mrs M J Boon

Mrs W A Dawson

P M Large

D B Edwards

D Ballance

K M Brander

S M Stevens

North Western and North Wales SFC

Cumbria SFC

South Wales SFC

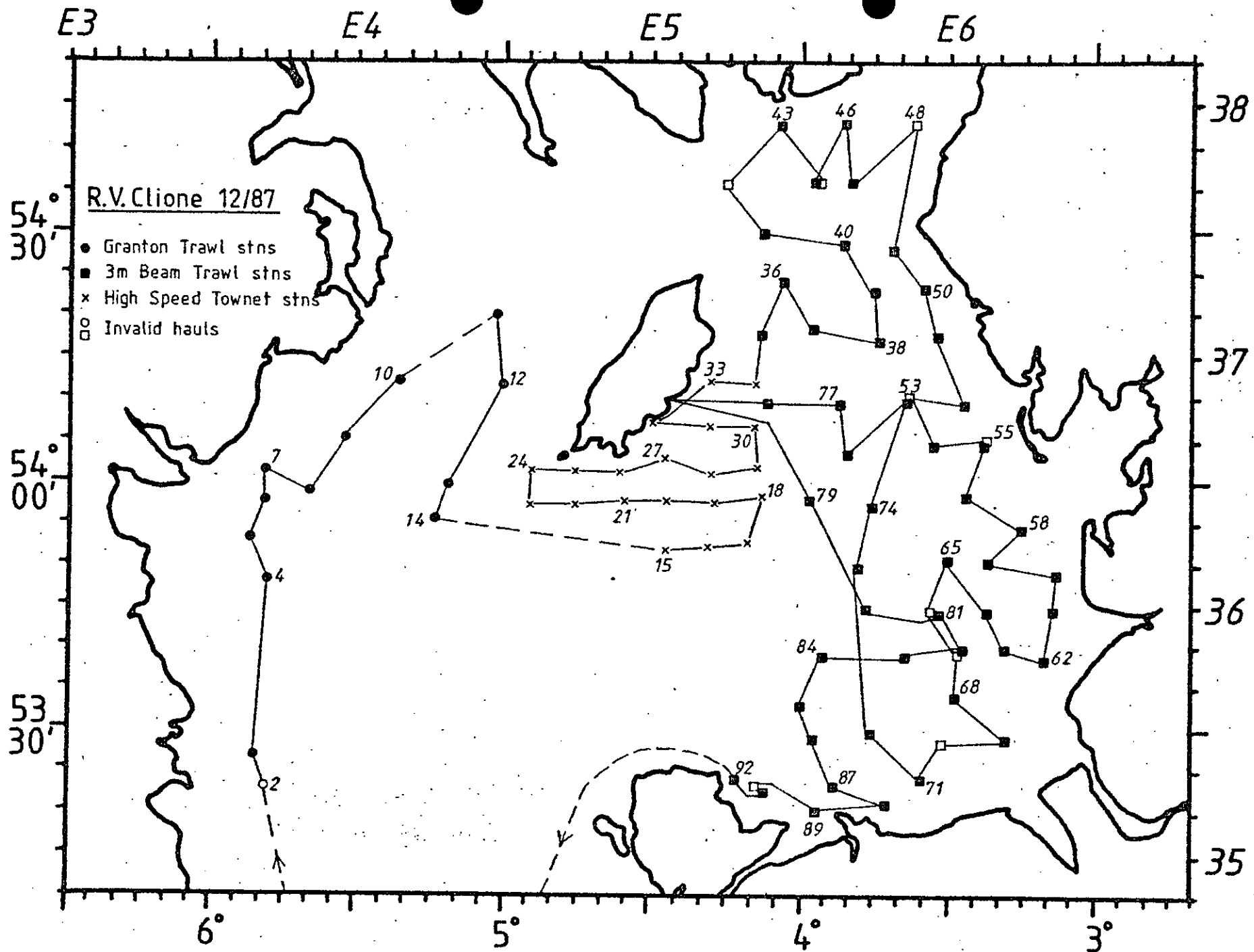


Figure 1

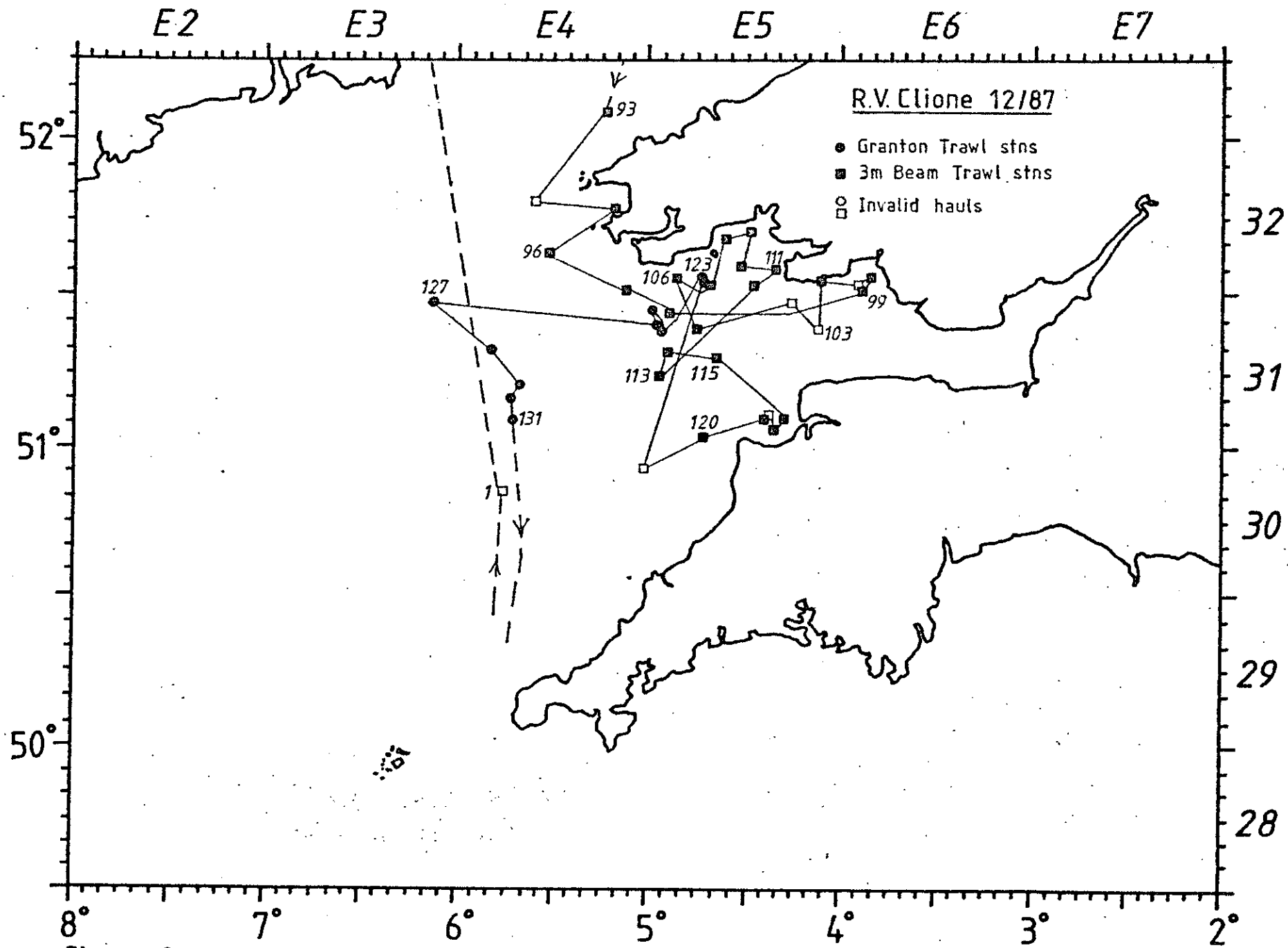


Figure 2

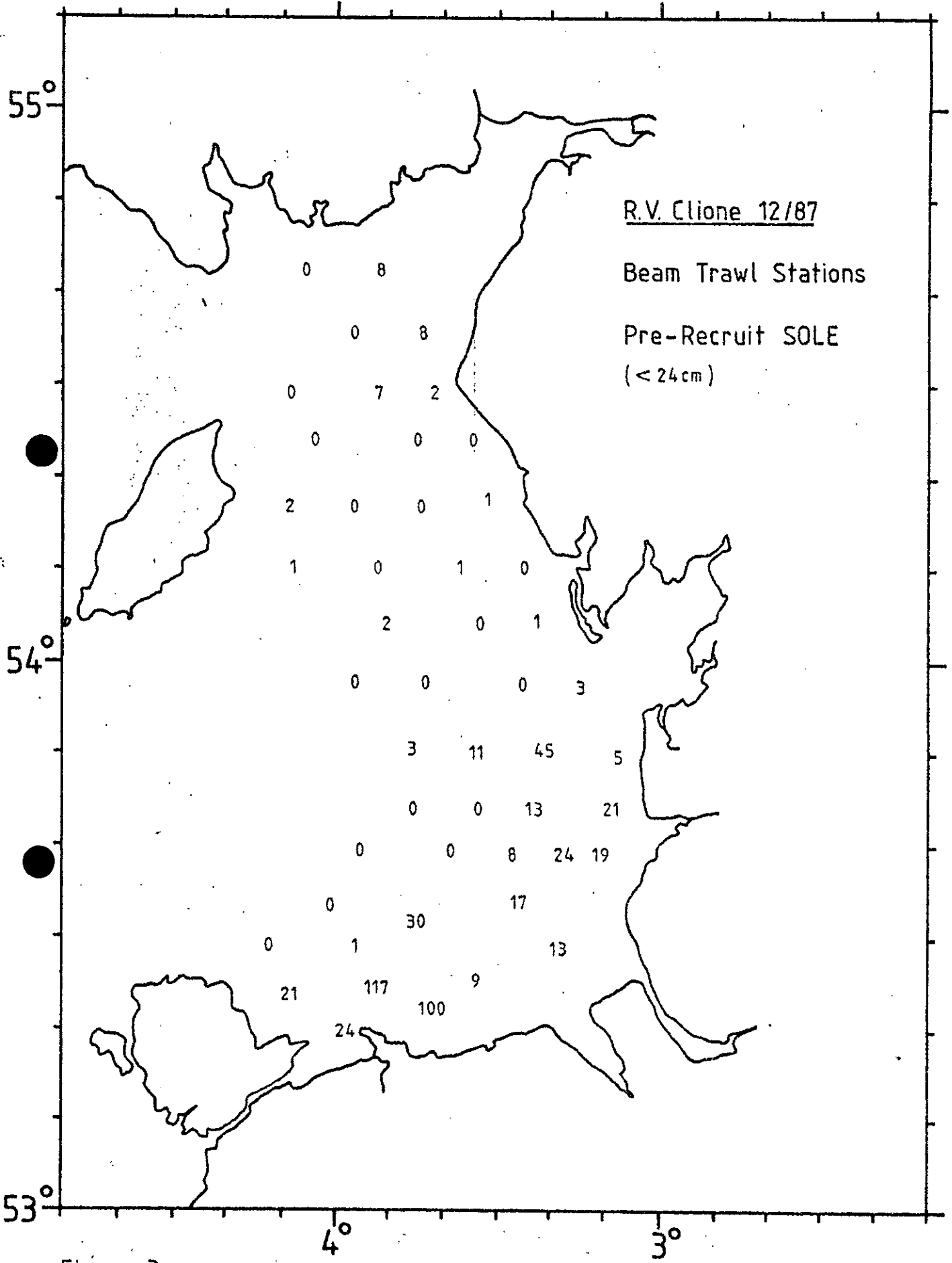


Figure 3

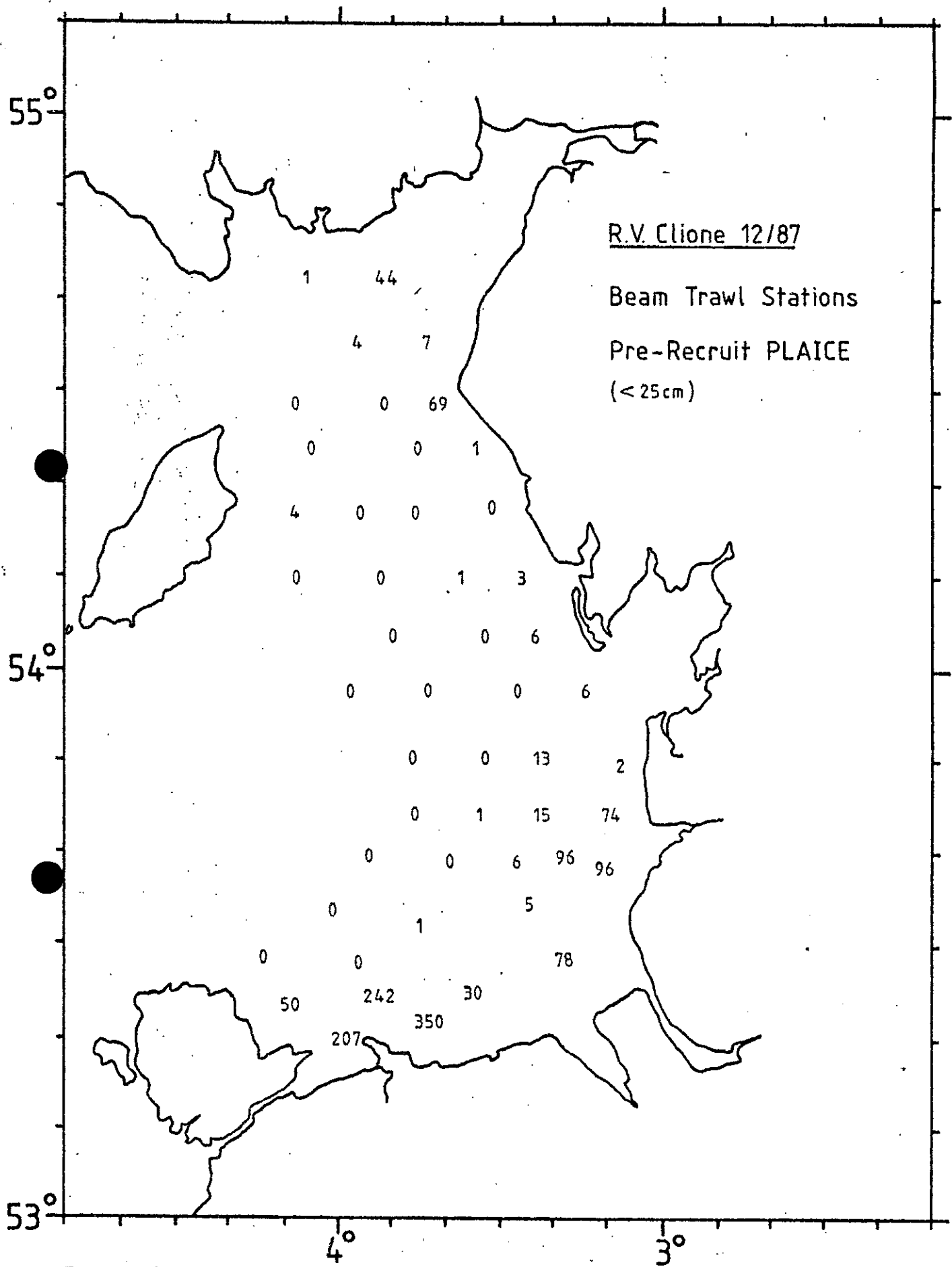


Figure 4