

R1/12

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FRV *Scotia*

Cruise 0701S

REPORT

10 April - 1 May 2001

Personnel

D Reid (In charge, 10/4-20/4)
I Gibb (In charge, 21/4-1/5)
D Beare
C Davis
R Watret
F Burns

Half Landing: Falmouth 20 April 2001

Objectives:

1. To carry out mackerel egg survey (ICES Triennial Survey), on the western shelf edge.
2. To collect fish samples, by trawling, for atresia and maturity assessment.

Out-turn Days per Project: MF01t - 22 days.

Narrative

Scotia sailed from Aberdeen at 1230 hours on 10 April and proceeded to the first sampling station at 60 15.00N, 02 45.00W. Survey stations at 30'E/W intervals, on transects separated by one degree of latitude, were conducted successfully until the half landing in Falmouth on 20 April where D Reid left the vessel. Following the half landing *Scotia* resumed sampling at 49 15.00N, 06 45.00W and continued to sample northwards, on alternate rows of latitude to those covered during the first half. Sampling was completed at 2000 hours on 29 April and the ship headed for Aberdeen.

Results

A total of 165 plankton stations (see Fig. 1), and 12 calibration stations were collected during the cruise with the Gulf III. All samples were sorted for fish eggs during the survey. Due to unfavourable weather conditions at the end of the survey all but 25 egg samples were identified and staged at sea for mackerel and horse mackerel. Highest densities of mackerel eggs were recorded close to the 200 m contour between 56 45.00N and 51 45.00N, with the main horse mackerel concentrations being south of 52 15.00N. The distributions of mackerel and horse mackerel eggs at stage 1 and all stages are shown in Figures 2 to 5. The distribution of all fish eggs are shown in Figure 6. The distribution of stage 1 mackerel eggs was much further north than has been seen on recent surveys, however, full conclusions must wait for the assimilation of the full survey database.

Egg production results from this survey will be included in the international database for further analysis.

A total of eight tows were carried out using the PT 160 and two with the BT137 to collect mackerel ovaries for fecundity and atresia studies. Information on length, total weight, liver weight and age was also collected from each sample.

Sea surface temperature and salinity were collected continuously using the onboard thermosalinograph while profile information on temperature and salinity were recorded at each station using a Seabird 19 CTD. Figure 7 shows the temperature recorded at 20 m from the CTD profiles. The general picture was as expected, warmer in the south and off the shelf. Figure 8 shows the differences between the temperature on this survey and the last mackerel egg survey carried out in the same season. In general it was cooler in 2001, but with a warmer area to the south west.

I M Gibb / D G Reid
25 May 2001

Seen in draft: R Walton, OIC

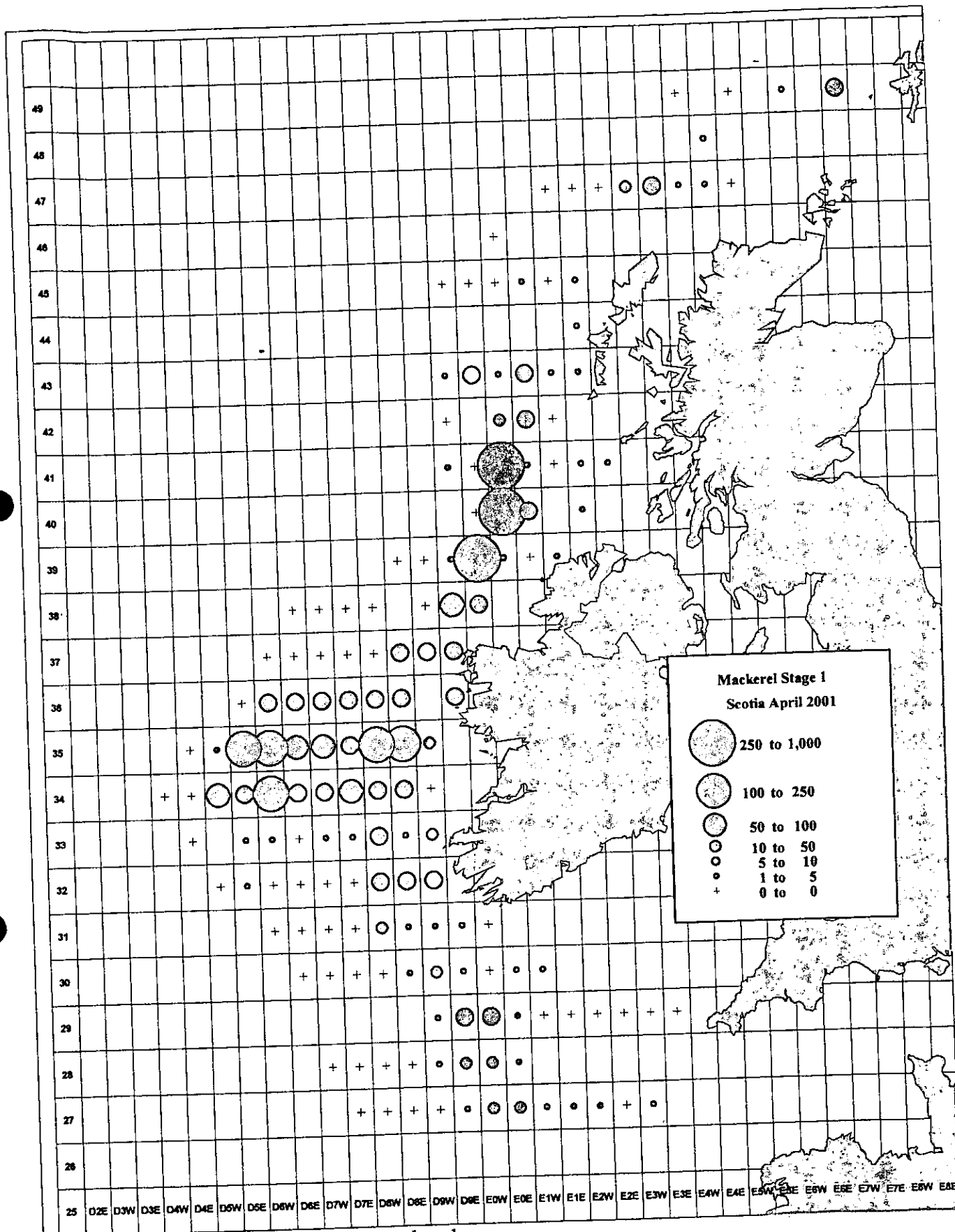


Figure 2 Distribution of stage 1 mackerel eggs

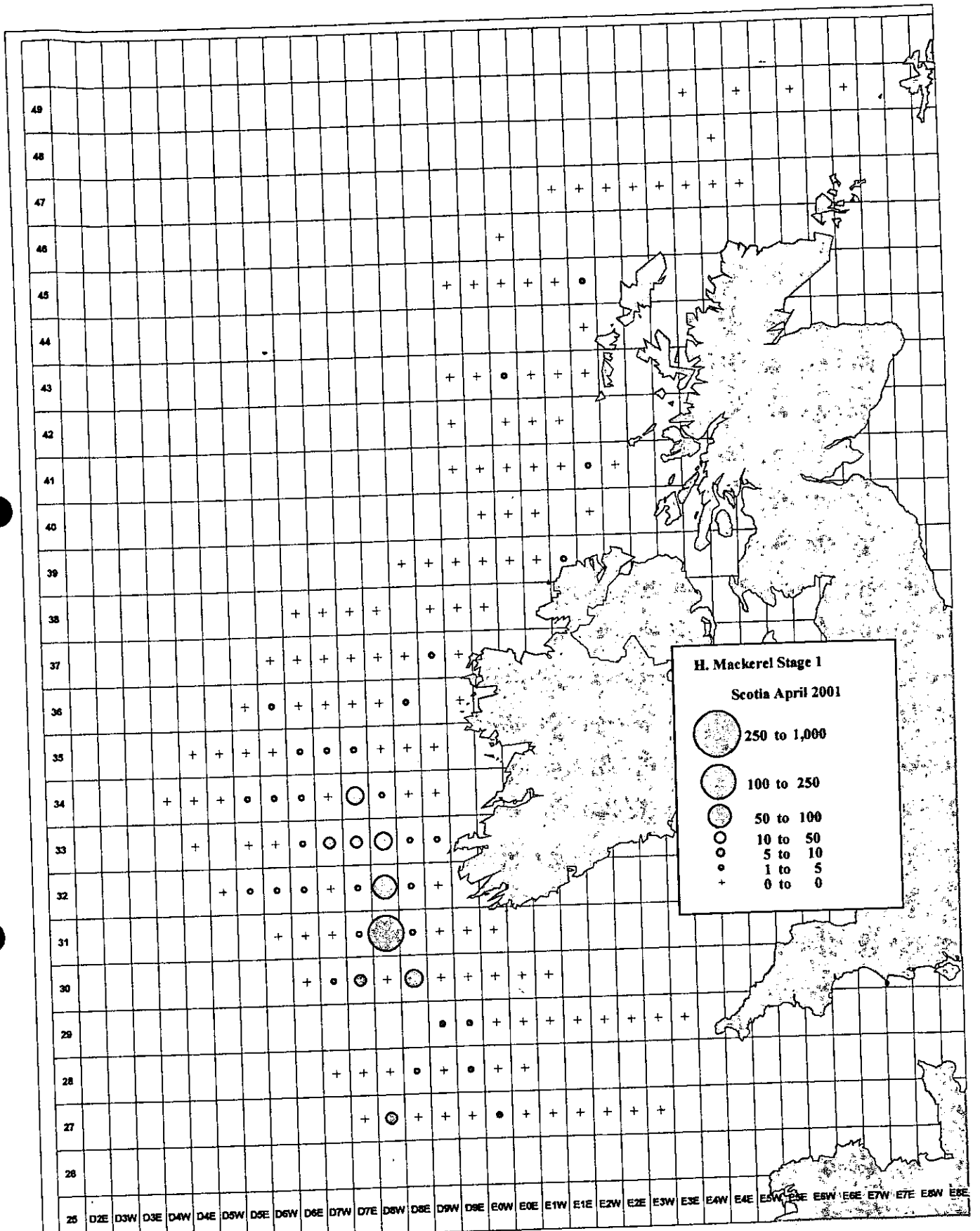


Figure 3. Distribution of stage 1 horse mackerel eggs

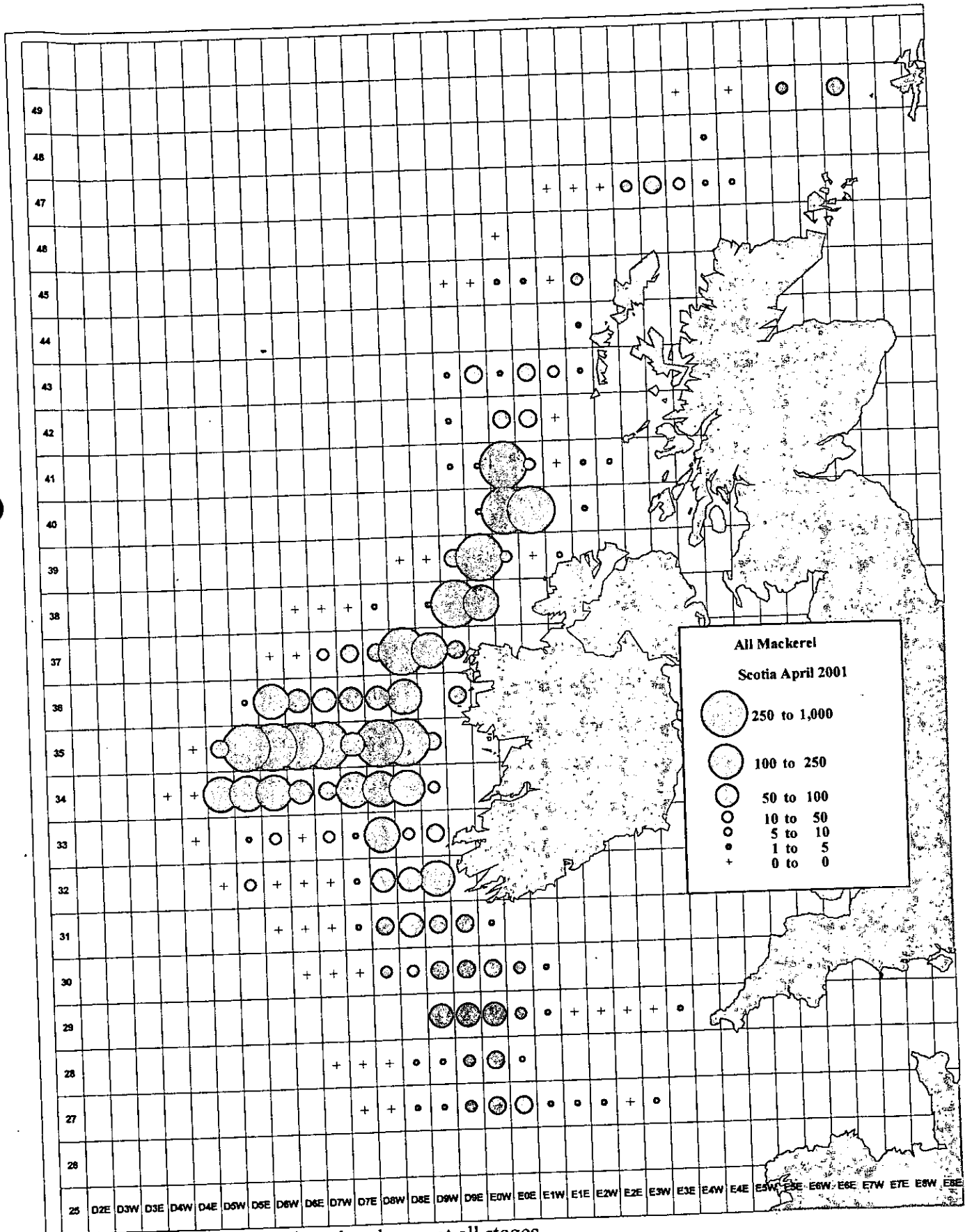


Figure 4. Distribution of mackerel eggs at all stages

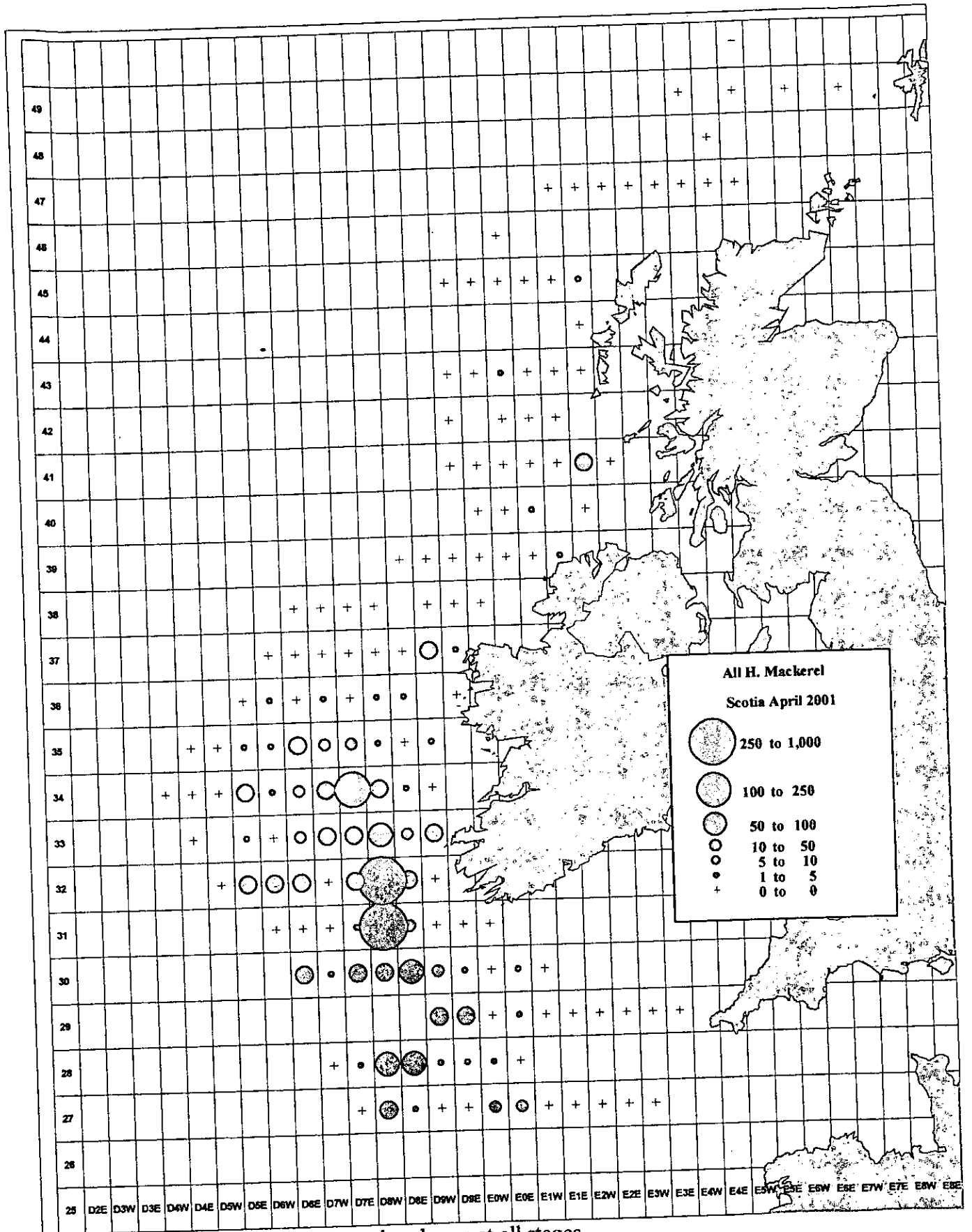


Figure 5. Distribution of horse mackerel eggs at all stages

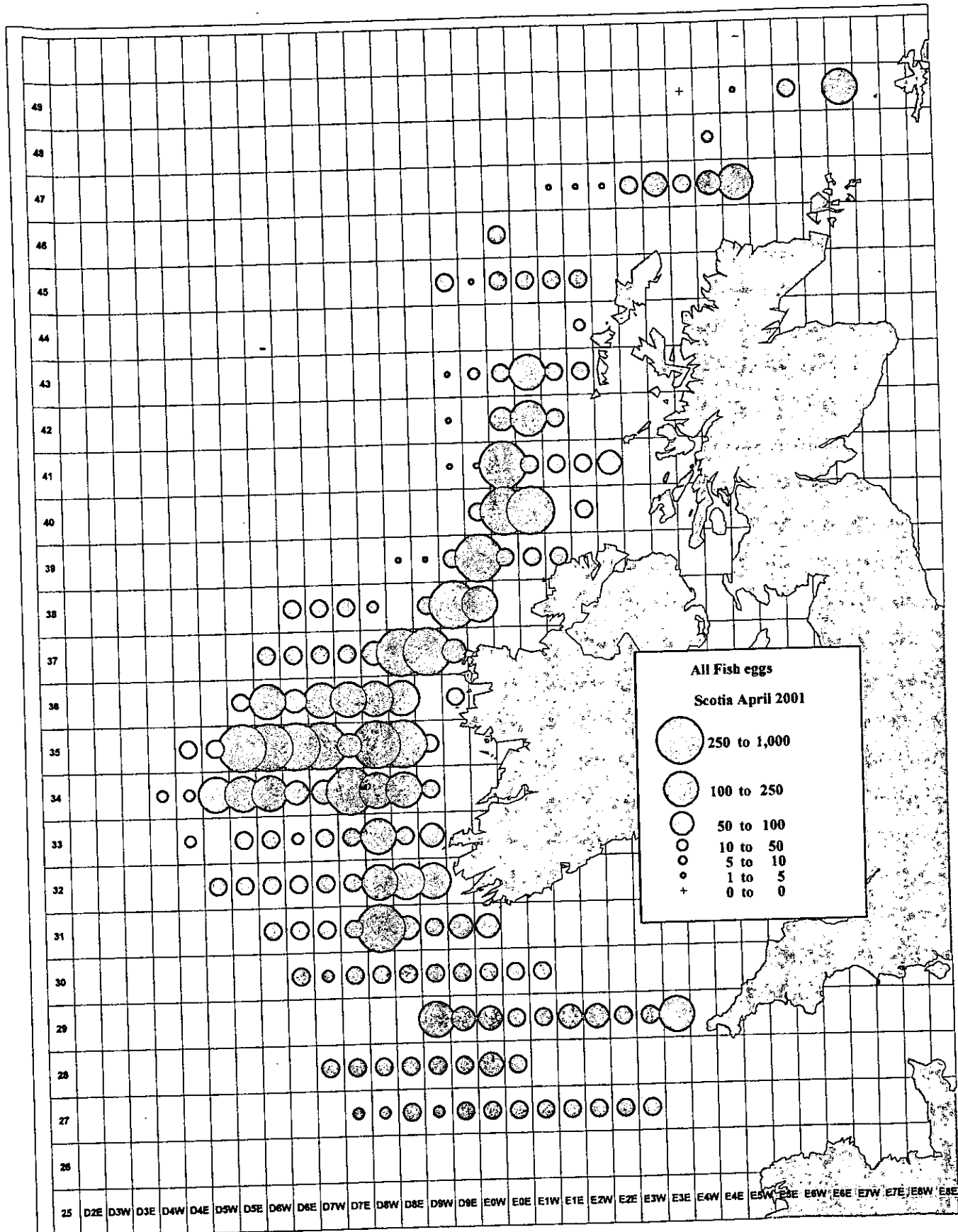


Figure 6. Distribution of all fish eggs

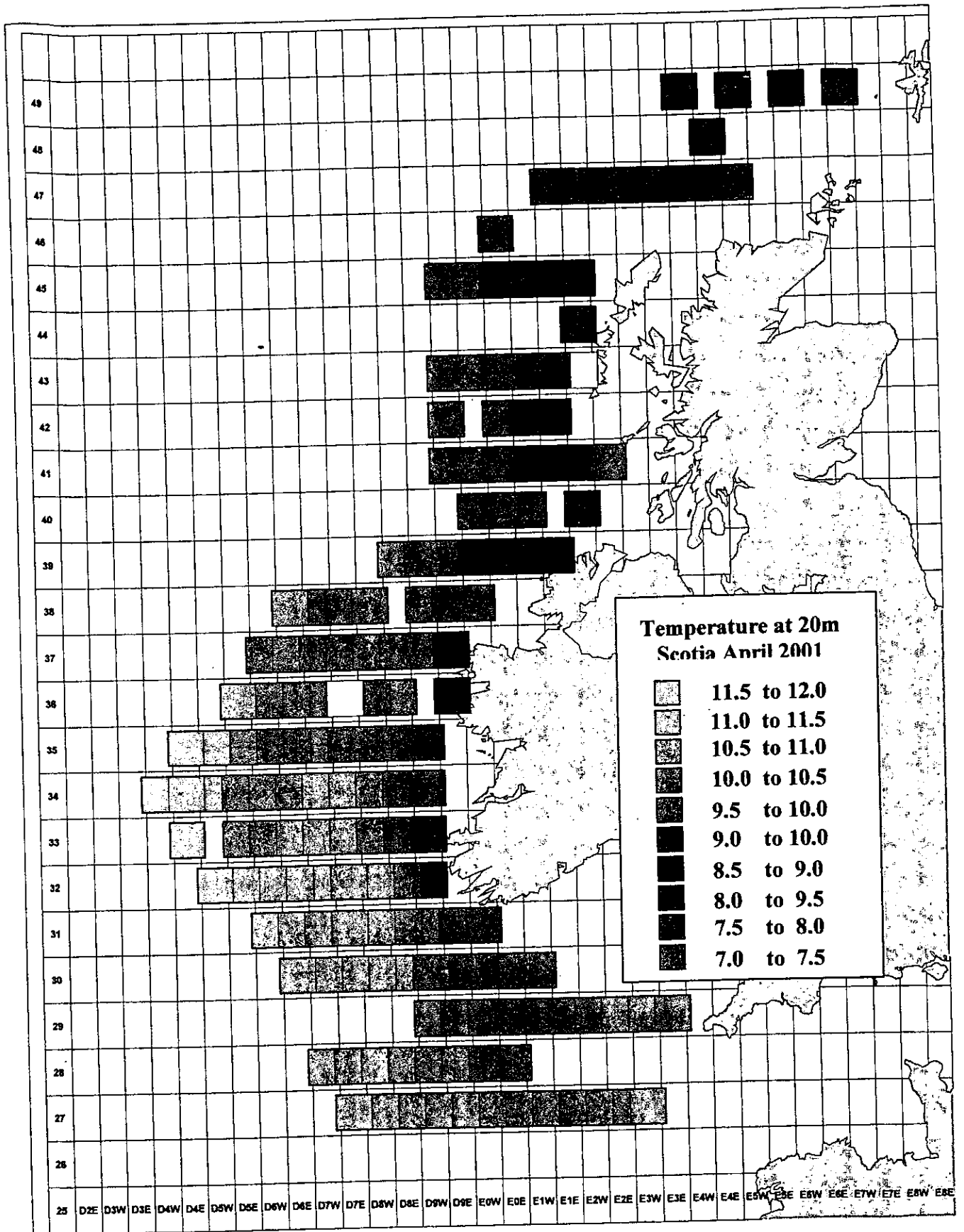


Figure 7. Temperature at 20m

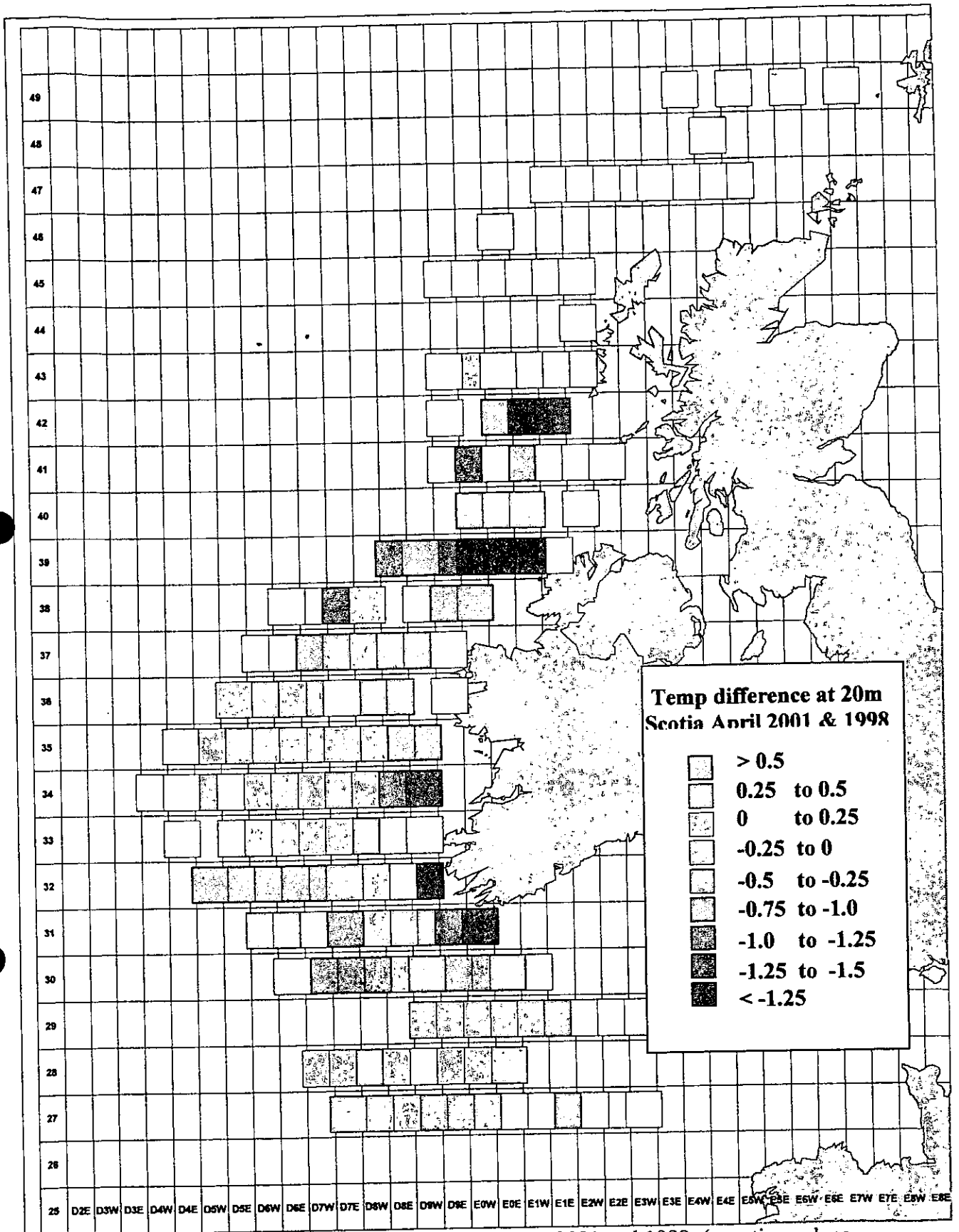


Figure 8. Temperature difference at 20 m between 2001 and 1998. (negative values represents colder values in 2001.)