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Geographical Distribution of the Irish Cattle Population

R.J. Fallon and R. F. Hammond

Introduction

The analysis of the National Disease Control Programme is dependent on having accurate details of herd size distribution, animal category and animal density for each of the 2,848 District Electoral Divisions (DED). The information can be used to assign manpower and employ herd testing schedules which take cognisance of herd size, distribution of dairy and beef cows. The herd distribution data and herd size data can also be used by various agencies to effectively programme activities in regional areas specific to a particular cattle enterprise category or size.

Materials and Methods

The distribution of cows, calves, heifers and bullocks as well as herd size was established for each farm using data supplied for total cattle present on that farm for a full herd test in 1993. Cattle enterprise types were defined as follows: Dairy herds, Beef Cow Herds, Dry Stock Herds, Herds unknown status. Herd definitions are given in Fallon (1995). The base DED map, used to prepare the thematic distribution maps, was adjusted to exclude major areas of non-agricultural land i.e. land over 300 metres altitude, water and boglands. Mountain areas and water were corrected using Bartholomew's CHEST¹ Ireland data and corrections for boglands using CORINE² data.

These adjustments to the DED map allow a more accurate representation of the data applied to actual agricultural land area. Forestry has not been corrected for at this

stage but it is proposed that this will take place in the near future.

Results

The cattle population of some seven million cattle was accommodated in 165,000 herds in 1993. There were considerable regional variations with regard to herd size and distribution of the cattle population. The West (Donegal, Sligo, Leitrim, Roscommon, Galway, Mayo, Clare) has 26% of the cattle population while the Mid South, (Cork, Limerick, Tipperary and Waterford) has 33% of the cattle population. The West had a predominance of small cow herds (Figure 1). Of the 54,600 herds in the country with less than ten cows, 58% were in the West. In contrast, the Mid South had a predominance of large cow herds (Figure 2). Of the 5,500 herds in the country with 60 cows or more, 54% were in the Mid South. Again small herds were associated with the West, with 51% of the 86,000 herds in the country with less than 30 cattle located in this region (Figure 3). Large herds were associated with the Mid South, 38% of the 39,000 herds in the country with more than 60 cattle are to be found in the Mid South (Figure 4). When the distribution of dairy and beef cows is examined, in Figures 5 and 6, it is clear that beef cows predominated in the West; in contrast, dairy cows predominated in the Mid South. Forty three percent of all beef cows were found in the West while the Mid South accounted for 19% of beef cows. Fifty eight percent of all dairy cows were in the mid South, while the West accounted for 11% of the dairy cows. The

¹ Combined Higher Education Software Team

² Correlation of Information on the Environment

contrast between the West and Mid South is summarised in Table 1.

Table 1. Regional differences in cattle herd structure expressed as % of national base. Ireland, 1993.

| | WEST | MID SOUTH |
|----------------------------------|------|-----------|
| % of herds | 50 | 23 |
| % of cattle | 26 | 33 |
| % of tuberculin reactors in 1993 | 22 | 27 |

Discussion

Herd size and the geographic distribution of herds have implications for many agencies servicing the cattle industry. Out of the 165,000 herds, 86,000 have less than 30 cattle and 56,000 of the cow herds have less than 10 cows. Many of these herds are located in the Western half of the country which has hilly regions with a low population density. In addition to the small number of cattle per farm the geographic location makes it difficult to service these farms with respect to disease eradication, headage inspection, artificial

inseminations, private veterinary services and the supply of purchased feed.

The herd size and geographic location may influence the type of cattle enterprise selected for the farm. The small farms in the West operated small beef cow herds while the dairy herds and, in particular, the large dairy herds were located in counties Cork, Limerick, Tipperary, Waterford, Laois and Kilkenny. These counties with a larger farm size, are located in general on good quality land, correlated with larger cow number/herd and the region has a good infrastructure of roads. Not surprisingly much of Ireland's milk processing facilities are also located in these latter counties.

The data presented in Figures 1 - 4, illustrate the divergence in the distribution pattern of cattle farm sizes and confirms the logic of not describing the prevalence of tuberculin reactors in terms of numbers of farms with reactors. The description of numbers of farms with reactors would be seriously confounded with herd size, if the West and Mid South regions were thus compared.

Reference

Fallon, R.J. (1995).
Effect of Cattle Enterprise Type on the Rate of Disclosure of Tuberculin Reactors. Tuberculosis Investigation Unit, University College Dublin, Selected Papers 1994, 20 - 25.

Figure 1. Distribution of the Number of Herds with <10 Cows per DED

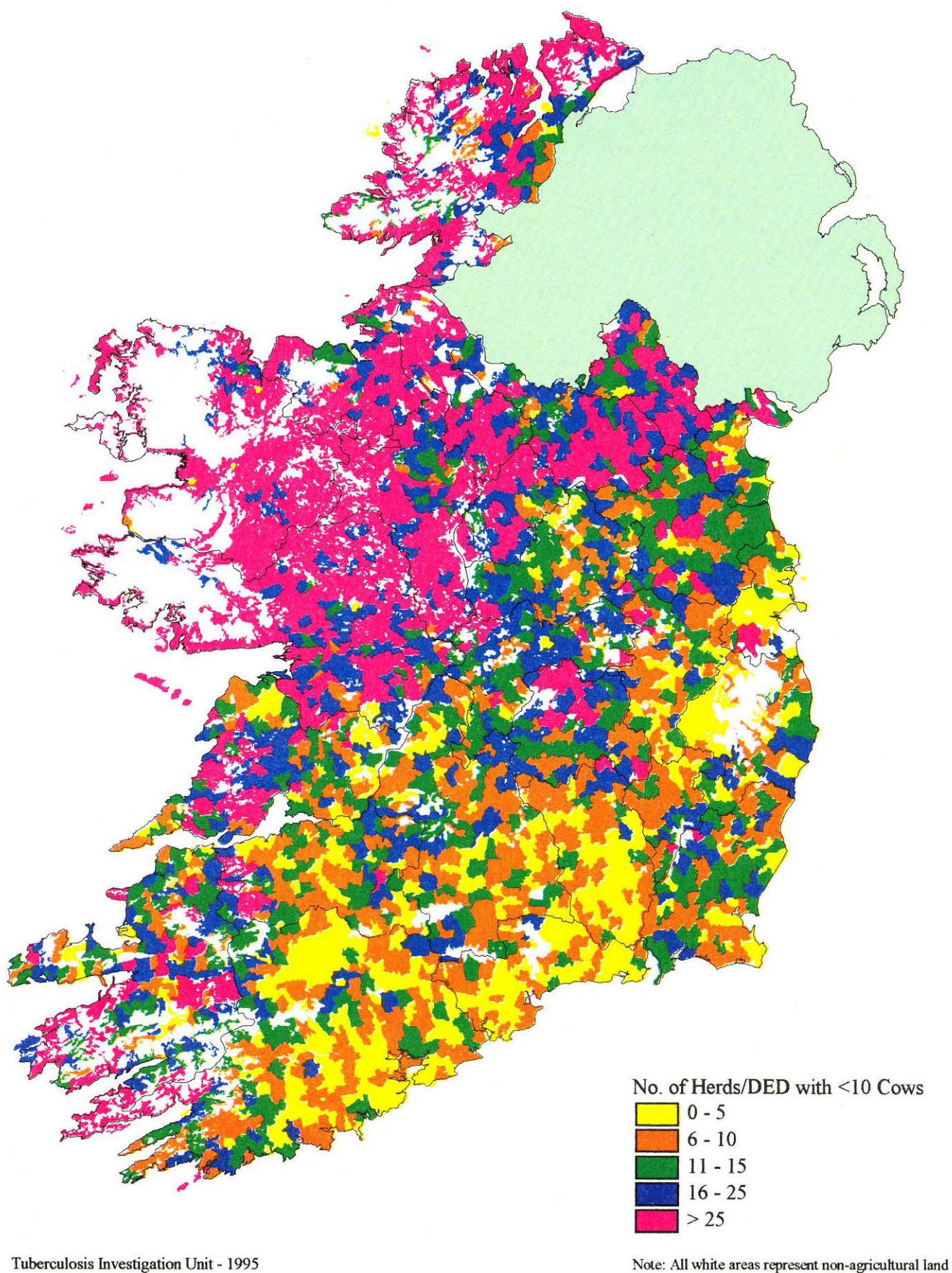
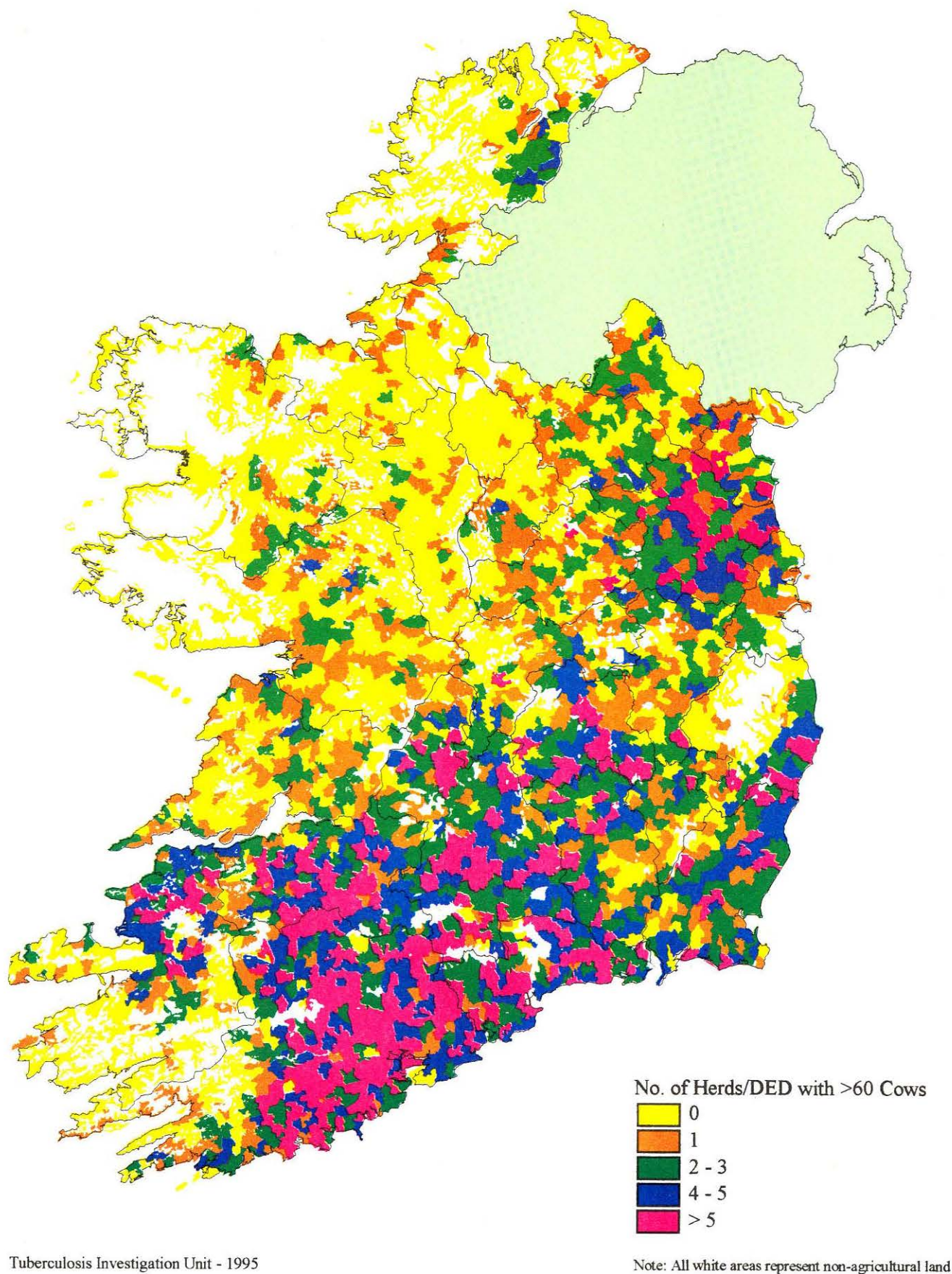


Figure 2. Distribution of the Number of Herds with >60 Cows per DED



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Figure 3. Distribution of the Number of Herds with <30 Cattle per DED

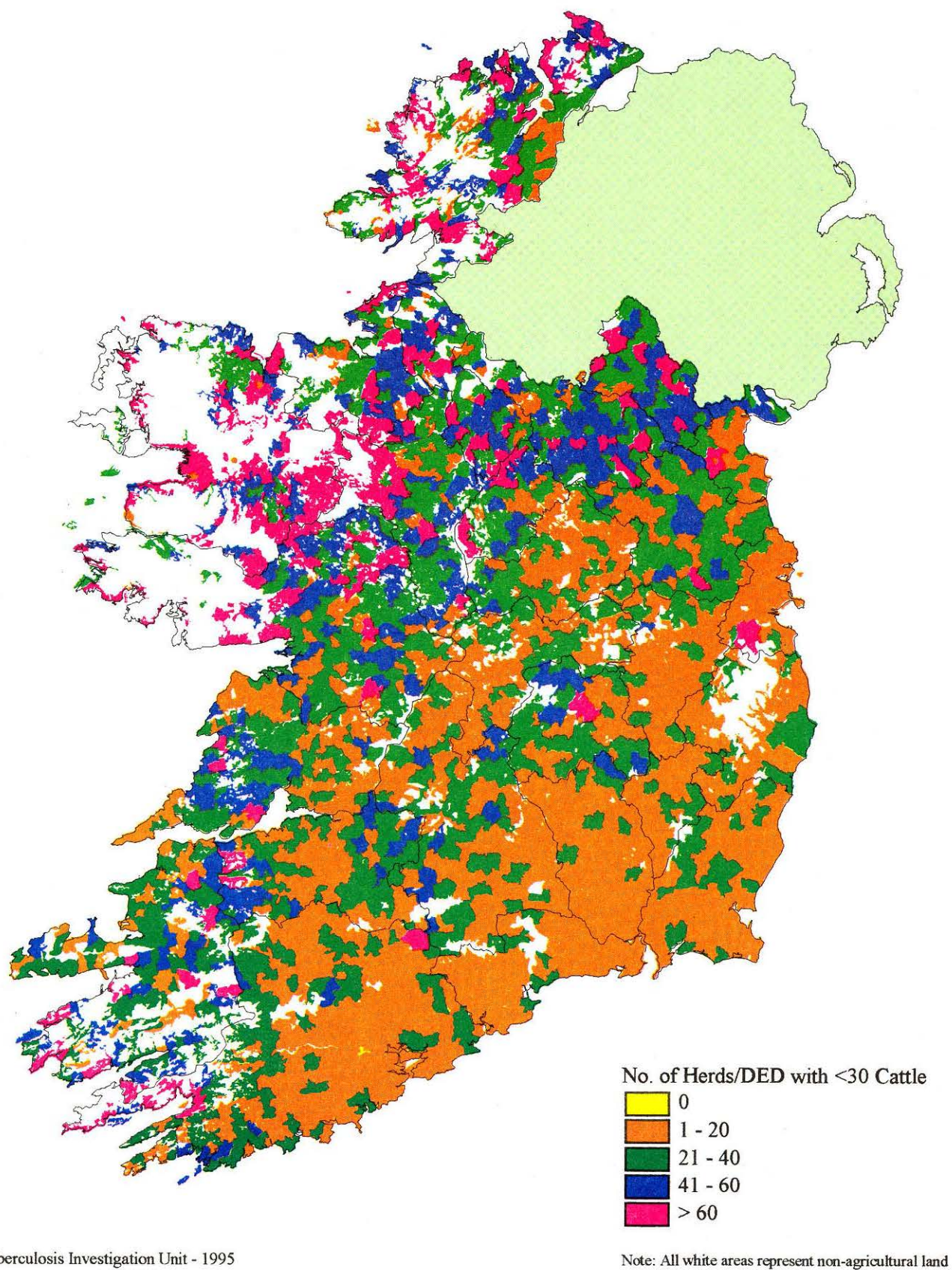


Figure 4. Distribution of the Number of Herds with >60 Cattle per DED

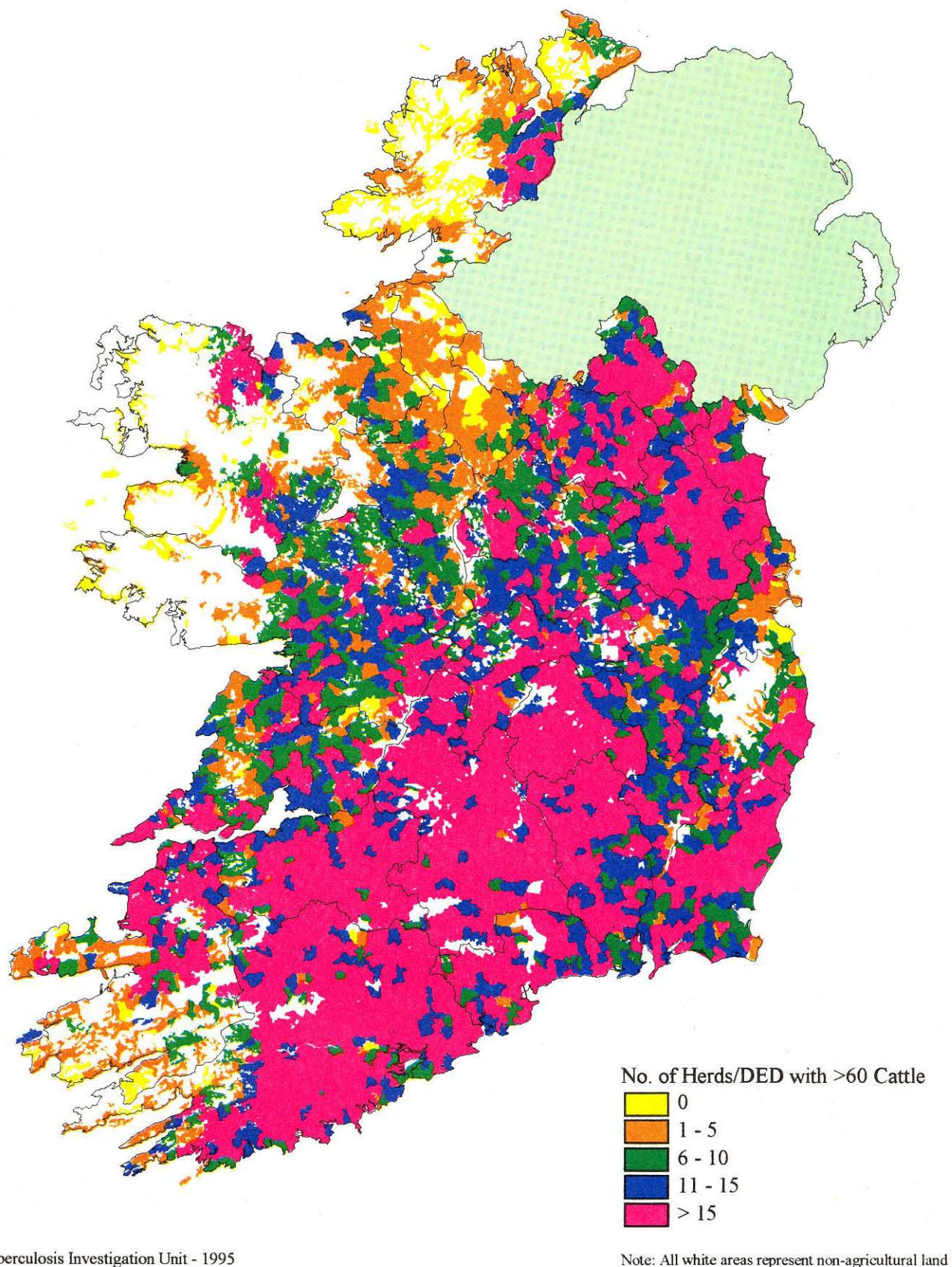


Figure 5. Distribution of the Numbers of Beef Cows per DED

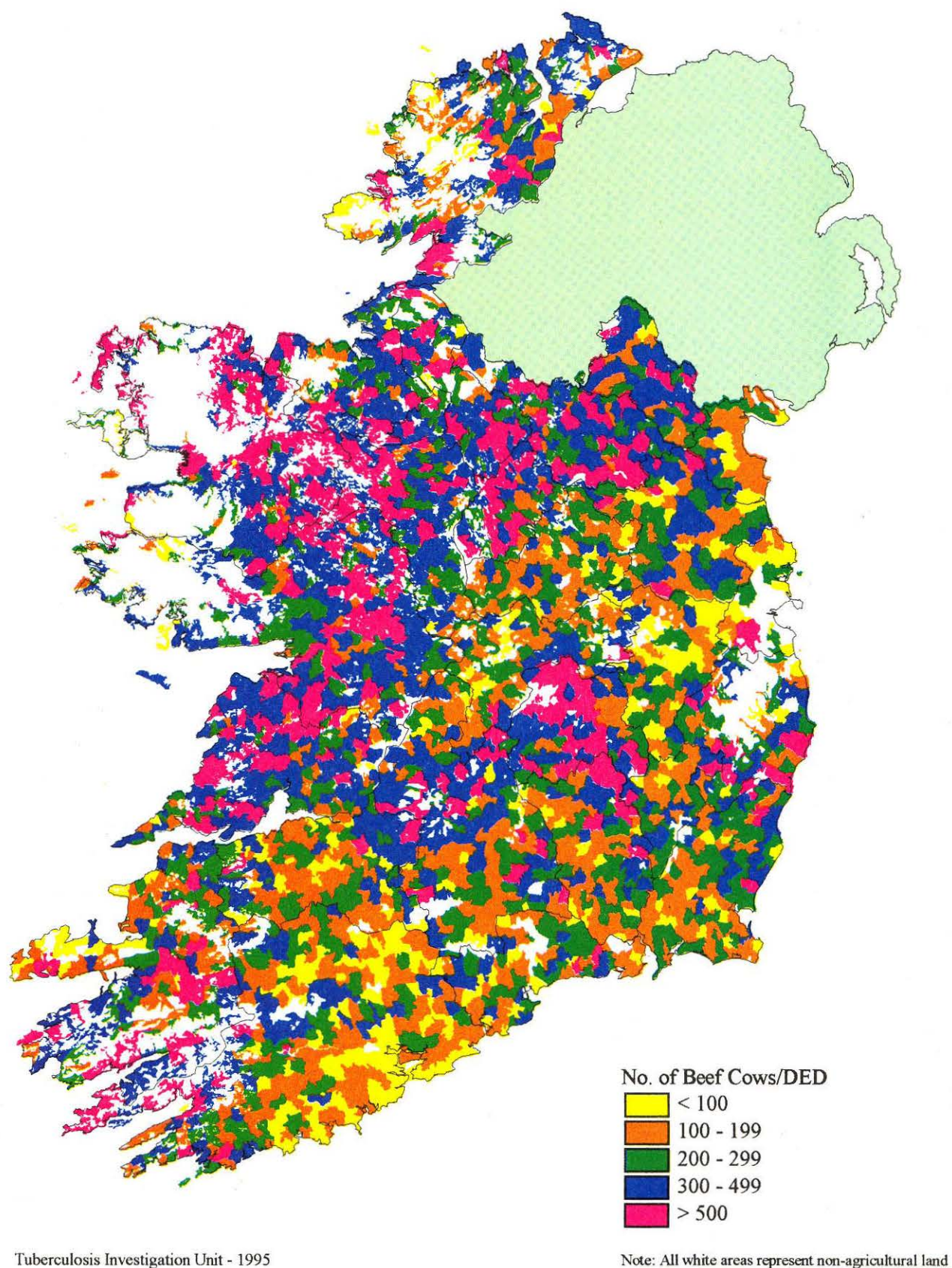
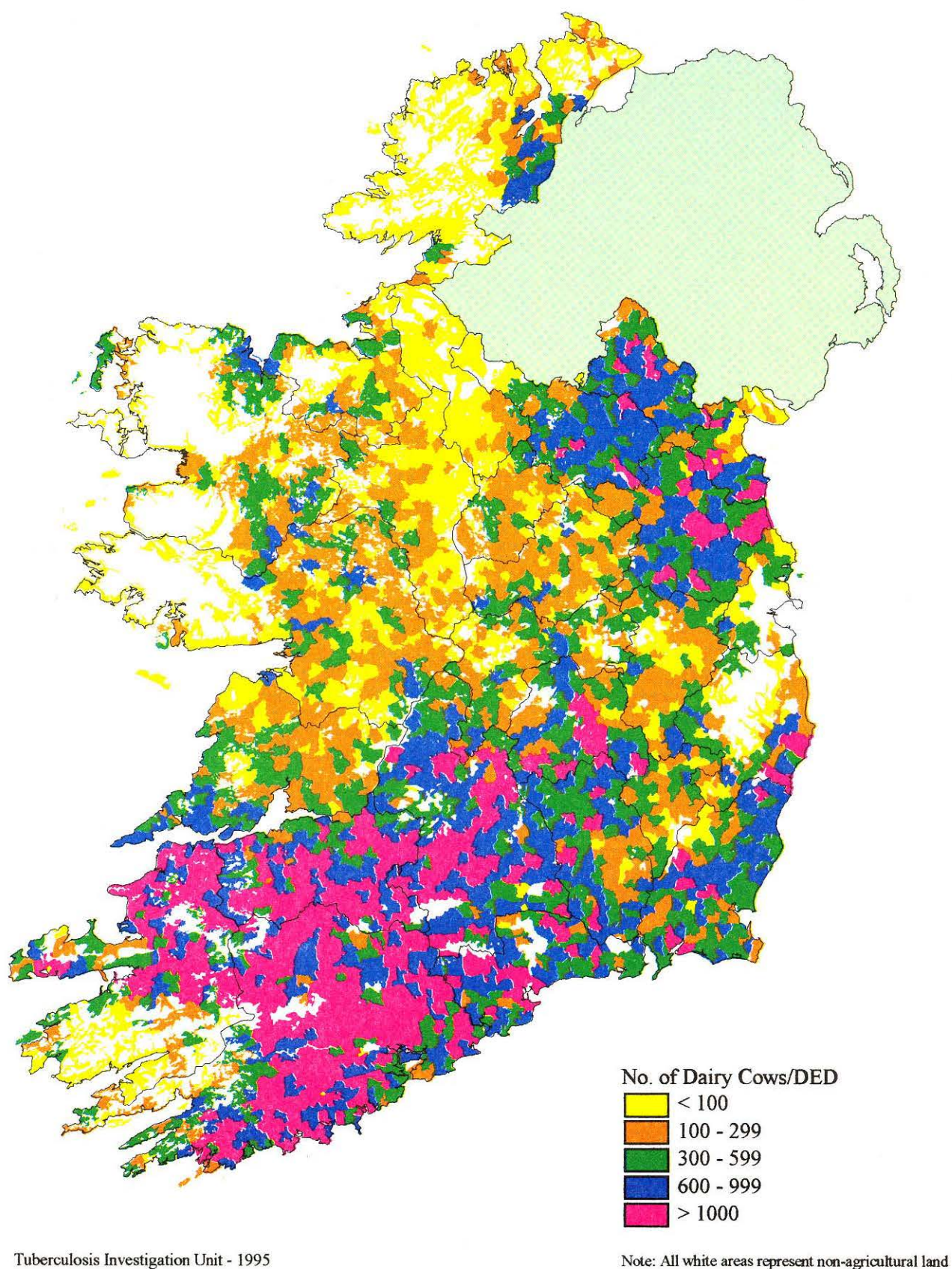


Figure 6. Distribution of the Numbers of Dairy Cows per DED



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Note: All white areas represent non-agricultural land