ENGLISH NATURE

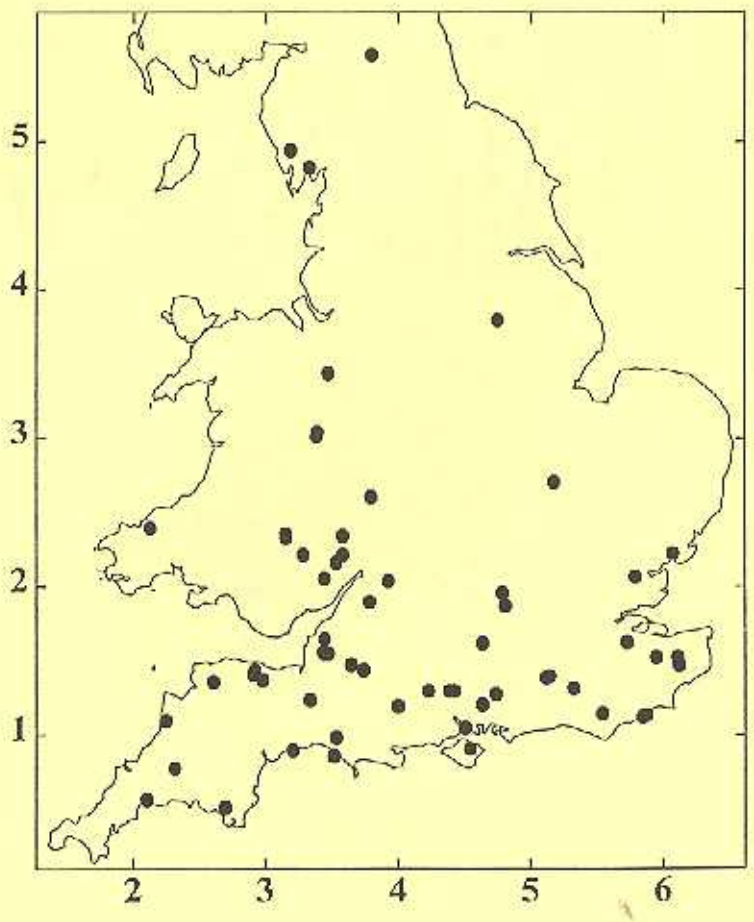
The Dormouse Monitor

Newsletter of the National Dormouse Monitoring Programme Report for 1997

Thank you to all those who sent in their record sheets promptly at the end of the recording season and to those who returned the questionnaire about site details that we sent out in May 1998. It makes it very much easier to keep track of the data and to enter it into the database if you, the recorders can keep to time. At this end we are in the process of putting our house in order by bringing the database up to date and this newsletter marks the beginning of what we hope will be more continuity of management. Before 1997 several different people were employed to enter the data, leading to variation from year to year in how the job was done. From the end of 1997, Mary Morris has been organising the data. She will begin to bring earlier records into line and continue to manage the database in the future. This should provide not only greater continuity but help us to more easily make comparisons between years and sites in a standard way. However, we are severely constrained by costs, and although this remains one of the very few nationwide mammal monitoring schemes, we rely very much on the help of volunteers in the field and cannot extend the data analyses beyond what can be afforded at present.

When English Nature made it a condition of their licences to handle dormice that licence holders should send their results to the National Dormouse Monitoring Programme (NDMP), the numbers of recorders and sites increased considerably. As of September 1998 we have 69 recorders on the database between them monitoring 5570 boxes at 77 sites, whose distribution is shown on the map (fig.1). This expansion has greatly increased the diversity of sites being monitored. The number of boxes at each site ranged from several with only 10-20 boxes, up to 354 at Briddlesford on the Isle

Figure 1. The distribution of sites at which dormice are recorded for the National Dormouse Monitoring Programme.



The National Dormouse Monitoring Programme is supported by English Nature and based at Royal Holloway, University of London. The 'Dormouse Monitor' is compiled by Mary Morris

Royal Holloway University of London

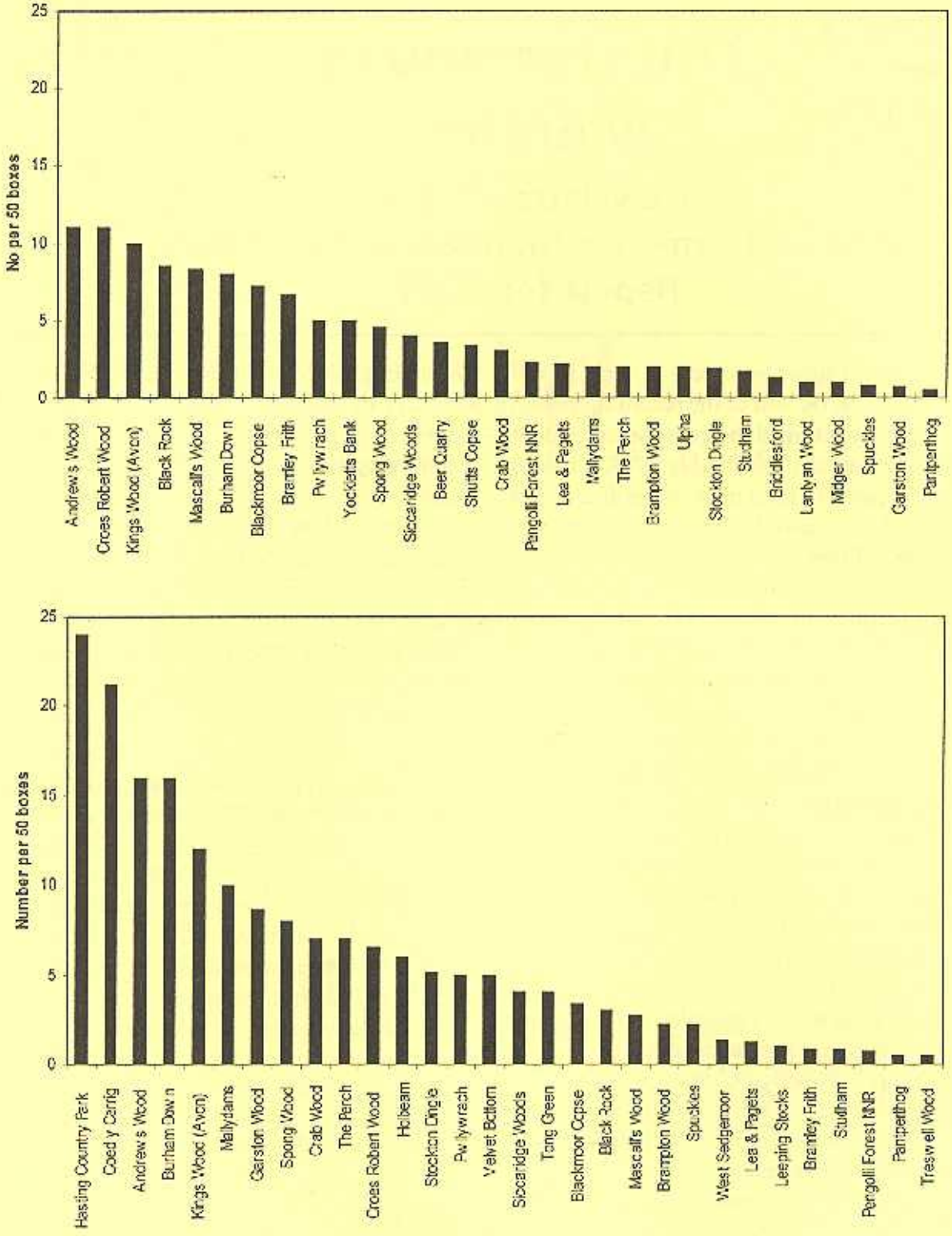


Figure 2. Numbers of dormice recorded per 50 boxes at different sites in 1997: Top - dormice weighing more than 9g in June (i.e. overwintered); Bottom - dormice weighing more than 7g in October (i.e. adults and well grown juveniles.

of Wight. Sites also varied, from extensive blocks of woodland to those composed of a number of patches of woodland linked by hedges and scrub, and some isolated patches of varying size. Only Frank Kirkby, faithfully monitoring nearly 50 boxes every month at Old Traveller's Rest in Cumbria, found absolutely no dormice at all in 1997. But please don't give up Frank - one blank year doesn't mean there are no dormice there, and anyway it is essential to keep tabs on this population, one of only four sites known in the whole of northern England.

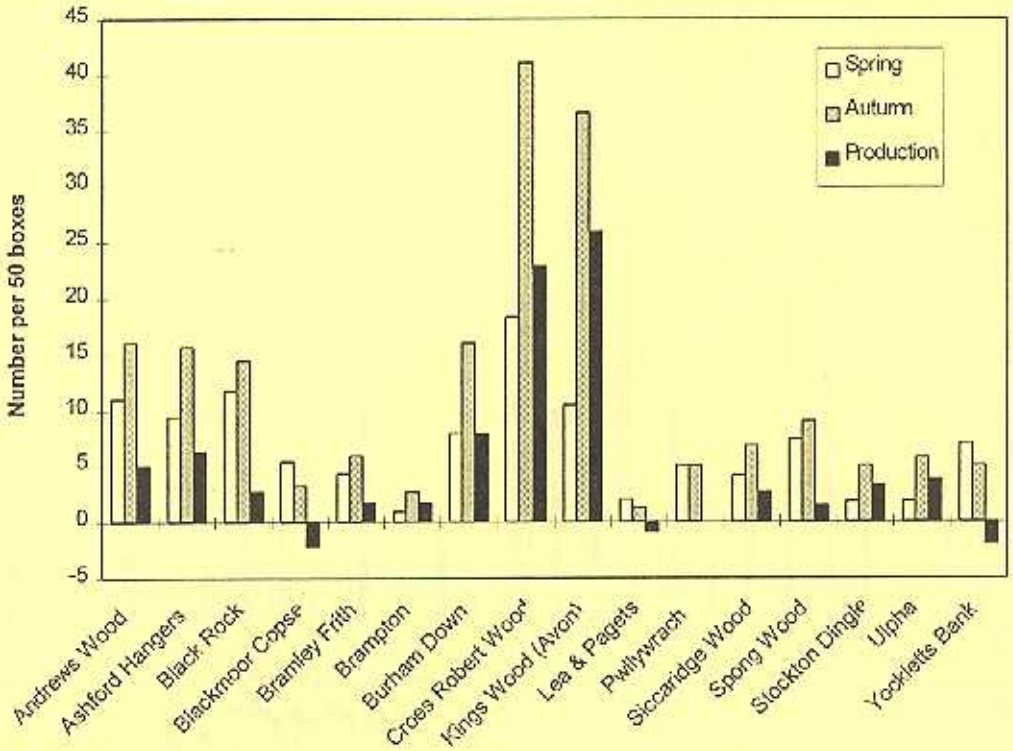


Figure 3. Numbers of dormice recorded per 50 boxes in those woods with 5 or more records in June 1997. Production is calculated as the highest autumn (September or October) number minus the highest spring (May or June) number.

As we said in the preamble to the site questionnaire sent out earlier this summer, for strict monitoring of dormouse numbers we can only use sites where at least 50 boxes are monitored regularly, preferably on a monthly basis, from May to October each year. Other sites can nevertheless give us valuable information on distribution, body weights and litter sizes. We hope that you will see from what follows in this newsletter the kind of analysis to which the information you gather can contribute.

Numbers of dormice at different sites

The total number of individual dormice reported to the NDMP in 1997 was 1881.

In order to compare numbers of dormice recorded at different sites it is necessary to have some sort of standard measure which takes account of varying numbers of nest boxes. From the beginning of the NDMP, we divided the number of dormice recorded at any one time by the number of boxes to create an index of abundance: dormice per fifty boxes. Using this standard, numbers can be compared at a range of sites in spring (May-June) and autumn (October) 1997.

The sites included on the first two bar charts are those which had at least 50 boxes from which there were 5 or more records of adult dormice in spring. Very early born litters were excluded by counting only dormice weighing more than 9g. For the autumn chart, dormice less than 7g were excluded since these were very unlikely to survive the winter. Andrews Wood in Devon and Kings Wood in Avon are among the top five in both charts. Elaine Hurrell, who monitors Andrews Wood with Gordon Waterhouse and Tom Maddock, wrote that their

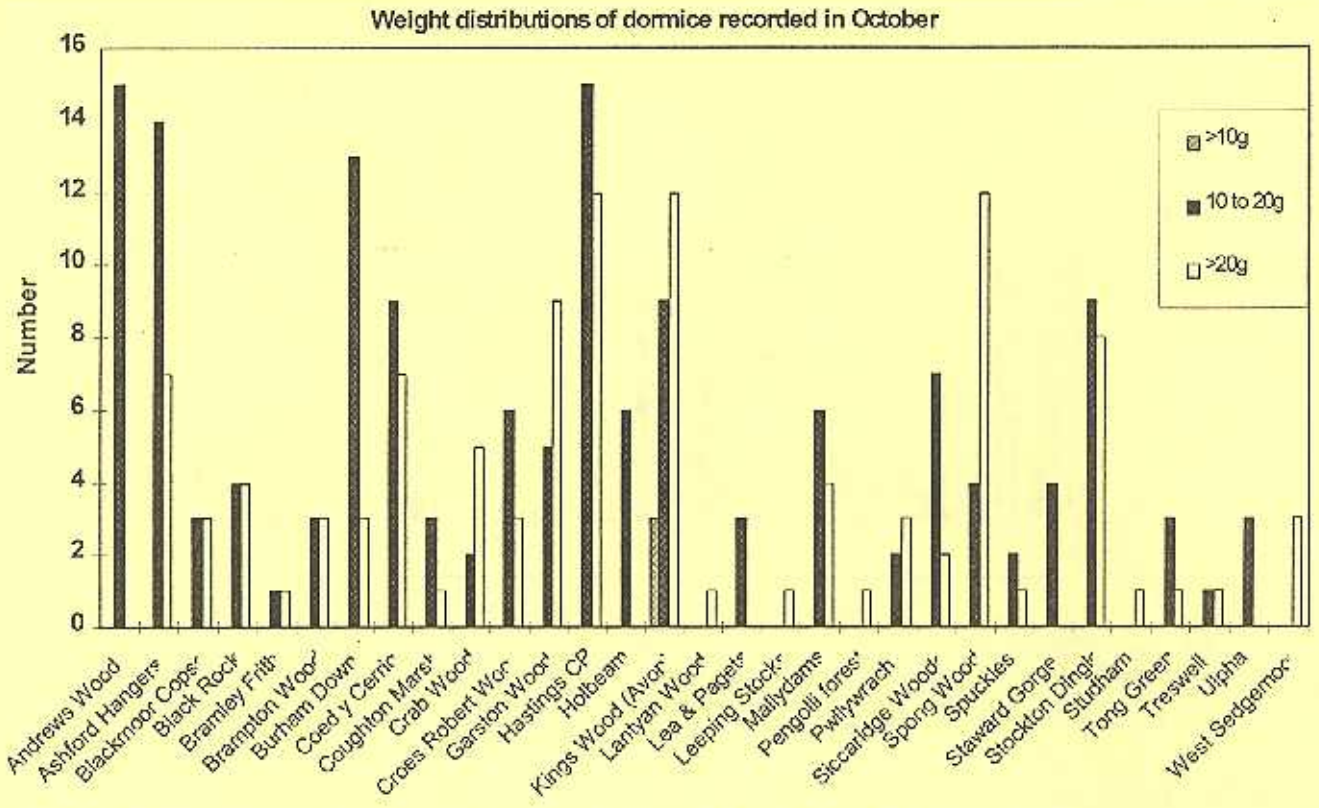


Figure 4. The numbers of dormice of different sizes recrded in October 1997 at different sites.

October 1997 check recorded the largest number of dormice since they started there five years ago. This is contrary to the experience of Ron Evenden, who monitors Lantyan Wood in Cornwall, He commented that he didn't usually find dormice in July-August and a maximum occurred inOctober. But in 1997, they were present in July and August, with a maximum in September.

Croes Robert Wood in Gwent, which is new to the NDMP, had the largest number of dormice in spring, but was not monitored in October, so is missing from the second chart. Hastings Country Park, which had the largest number of records in October, only joined the scheme in July 1997 when boxes were put up for the first time. The dormice obviously welcomed the new boxes and it will be interesting to see if the high numbers continue.

Production of young

Because not all sites had records for both June and October we calculated production for as many as possible by taking the highest number per 50 boxes recorded in May or June as the spring number and subtracted this from the highest number recorded in September or October. This gives an approximate measure of how many dormice were produced at that site last summer. This is shown in Fig. 3, (with sites in alphabetical rather than rank order). This time Croes Robert and Kings Wood stand out clearly as having not only the highest numbers per 50 boxes in the autumn but also the greatest difference (production) from spring to autumn. No other site for which we were able to calculate this figure comes anywhere near those two very productive sites. However, care is needed in interpretation where the sites have nest boxes set out in different patterns.

At Croes Robert the boxes (68 of them) are arranged in small groups in what was judged to be good dormouse habitat and it might be thought that this may be why the score for that site is high. But, at Kings Wood the hundred boxes are arranged in two long lines along one side of the wood in a very systematic manner which, being objective, would seem preferable. But the similarly high scores at these two sites might be due to selection of 'good' areas. In fact, for objective monitoring, nest boxes should be arranged as far as possible in a square or rectangle with, say five rows of ten or similar.

In contrast to these apparently highly productive sites, three others seem to have had more dormice

at the beginning of the season than at the end, ie the production was negative! This is a reminder that we need to know much more about other factors such as immigration and emigration from monitored areas and also the effects of climate and weather on different sites.

Dormouse weights

The information collected by volunteers for the NDMP on dormouse weights is very valuable for a number of reasons.

Weight is of particular significance in the autumn because a dormouse which goes into hibernation without enough fat will not survive the winter. Figure 4 divides the number of dormice recorded and weighed in October into three groups. There were quite a lot of animals weighing more than 20g at many sites but the majority were still between 10 and 20g. We think that, to survive the winter, a dormouse must weigh at least 15g when it starts hibernation. Since both the onset and duration of hibernation are very unpredictable in Britain's maritime climate, 20g does not provide a very generous safety margin. Only Spong Wood (Kent) and Garston Wood (Wiltshire) recorded more than one dormouse heavier than 30g in October but Croes Robert (Gwent), which is missing from the October records, recorded 14 dormice weighing more than 30g as early as September (one at more than 40g on September 24th). The record was a 43g dormouse among seven weighing over 30g at Black Rock (Somerset), also in September.

The weights of the young dormice can be used to estimate their age and thus when they were born. This is important for understanding how weather and food availability affect dormouse populations. Some recorders are reluctant to weigh baby dormice. However, it has been established that it does no harm (the mother does not eat or desert them for example), so long as you handle them carefully. If they are very small, weigh them all together, count them and calculate the average weight. We would like to get more weights of young dormice from as many places as possible please. Fig. 4 shows that there were young dormice weighing less than 10g in October. Given luck and good feeding and weather conditions, they may

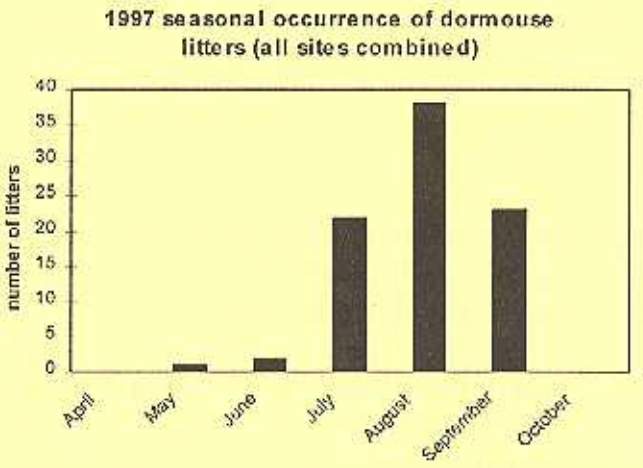


Figure 5. Numbers of dormouse litters recorded each month in 1997 at 26 different sites.

reach the size needed to survive winter. October weights are not necessarily the final weight attained each year.

Timing of breeding

Those recorders who manage to check their boxes each month (rather than the minimum May-June and October checks requested) provide useful data about the timing of reproduction. In order to get as near as possible to the date of birth we have included in Fig. 5 only those litters which were too small to be weighed, ie very young. This gives us data from 26 sites. More litters were recorded in July, August and September 1997 than in any other month. Out of the total of 86 litters included, there were very few born in May and June and none in

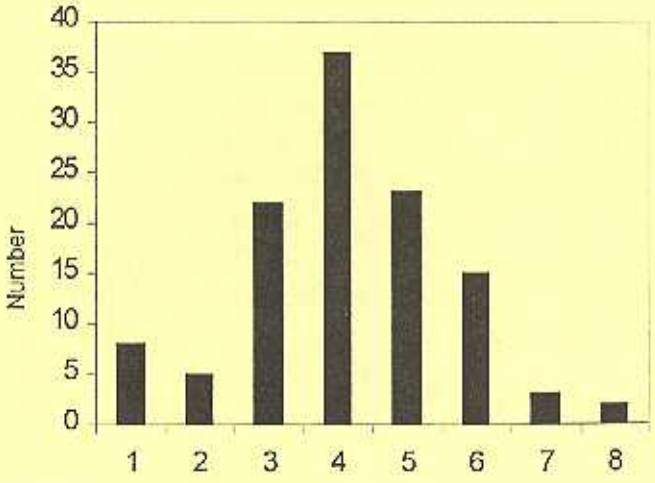


Figure 6. Numbers of dormouse litters (vertical axis) containing different numbers of young (along the bottom axis) during 1997 (n = 115 litters).

October; the very small dormice at Kings Wood mentioned above were probably born in September.

Litter sizes

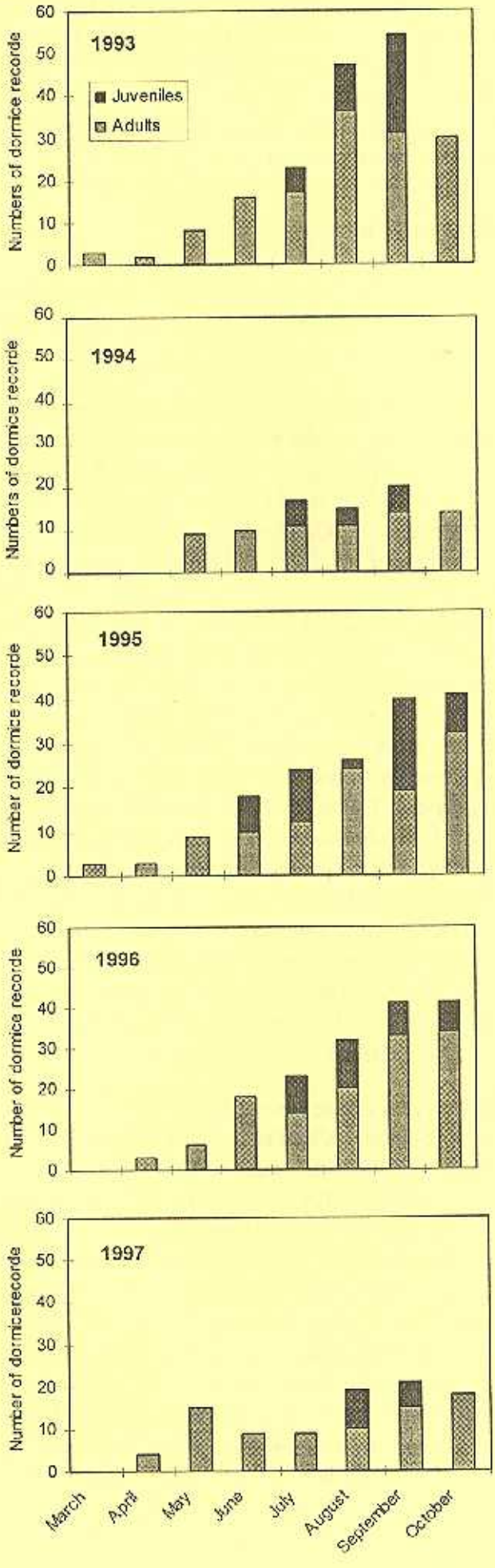
It is very rare to be able to estimate litter sizes for elusive animals like the dormouse. This is why nest boxes are so valuable. The data obtained by the NDMP is almost unique. We do not have comparable information even for some of Britain's commonest small mammals. In order to create Fig.6 we took all the records of more than one animal in a box. Those weighing more than 12g were discounted as 'adults', including the mother who was present with her young.

The most frequent litter size is four, with litters of three and five being common. The largest litter recorded in 1997 was of eight young, at Burham Down (Kent) and Brampton (Cambridgeshire). At the former, the young weighed 5g and had their eyes closed, at Brampton they were larger (6.5g) with eyes open. Data from successive monthly captures of the same litters suggest that there is very low mortality before weaning (again the sort of information that is lacking for other small mammals in Britain). This is confirmed by calculating the average litter size at different weights. Smallest babies average 4.39 per litter, much the same as in larger (and therefore older) babies. Sadly, five litters were dead when found.

Year to year variation

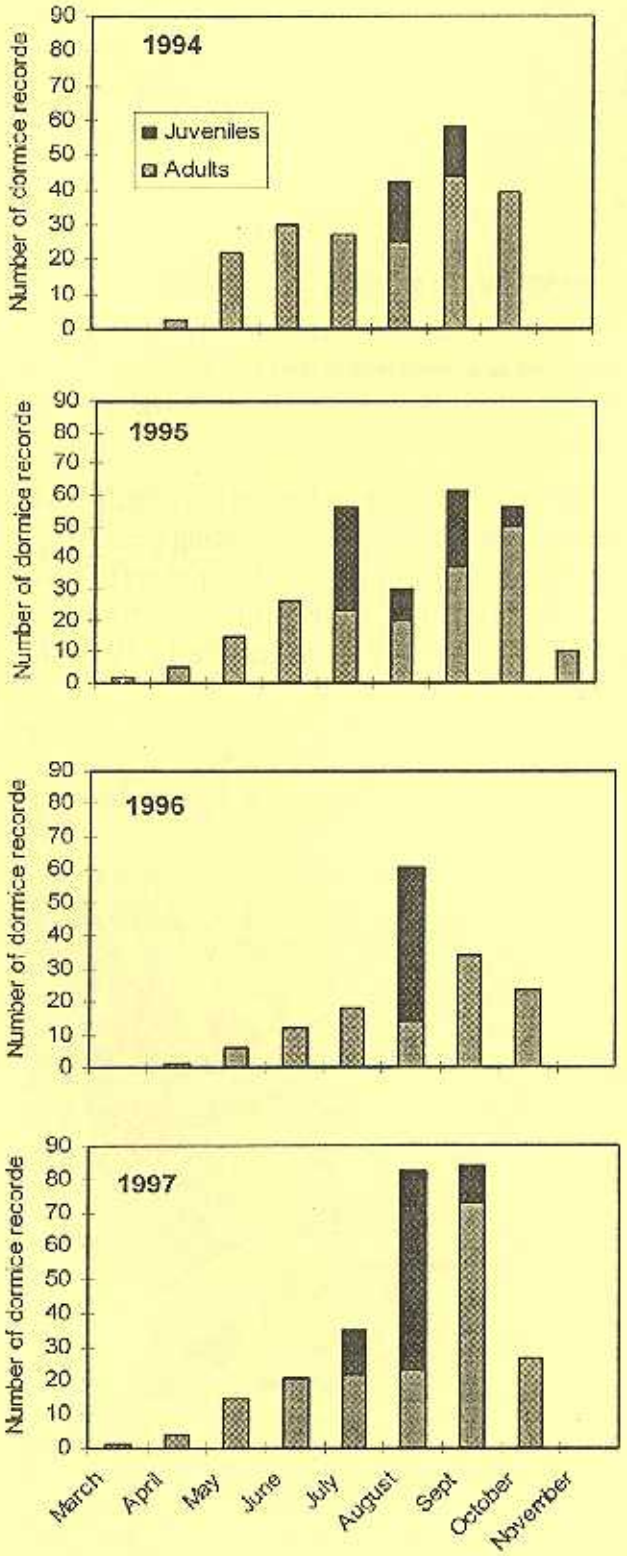
The British climate is highly variable from year to year, and dormice are very affected by seasonal variations in temperature and development of the vegetation. So, in order to understand what controls their population changes, we need to collect data over many years. The variations are well shown by Fig. 7, which illustrates data from two sites that have been monitored in detail for several years.

At Spong Wood in Kent 100 boxes have been monitored since 1993. Numbers of adults (>7g) and juveniles (<7g) recorded each month from March to October show just how variable the numbers are from year to year. The total number of dormice recorded in 1997 was much lower than in 1993,



but does that mean the population is declining? Numbers were equally low in 1994 but were higher in 1995 and 1996. It is difficult to discern any trend and this makes decision making about management of the wood very difficult. The coppice is now much older and taller than it was when monitoring started and the question is asked - is this why numbers were low in 1997? Should they start to re-coppice? It will be interesting to see the records for 1998. There is also no clear annual trend at Kings Wood in Avon. Numbers tend to be higher and dormice are frequently recorded quite early in the season. In a year such as 1995 litters were recorded from July through to October; in 1996 there were a large number of litters in August and none at any other time which is quite different from the pattern at Spong that year.

Figure 7. Numbers of dormice recorded per 50 boxes in (left - p6) Spong Wood (Kent) and (below) Kings Wood (Avon) over the last few years. Note that the scale on the left hand axis is different for the two woods.



A more direct comparison between the two sites can be made if we use the same standardisation as before - numbers per 50 boxes and the difference between numbers in spring (the highest of May or

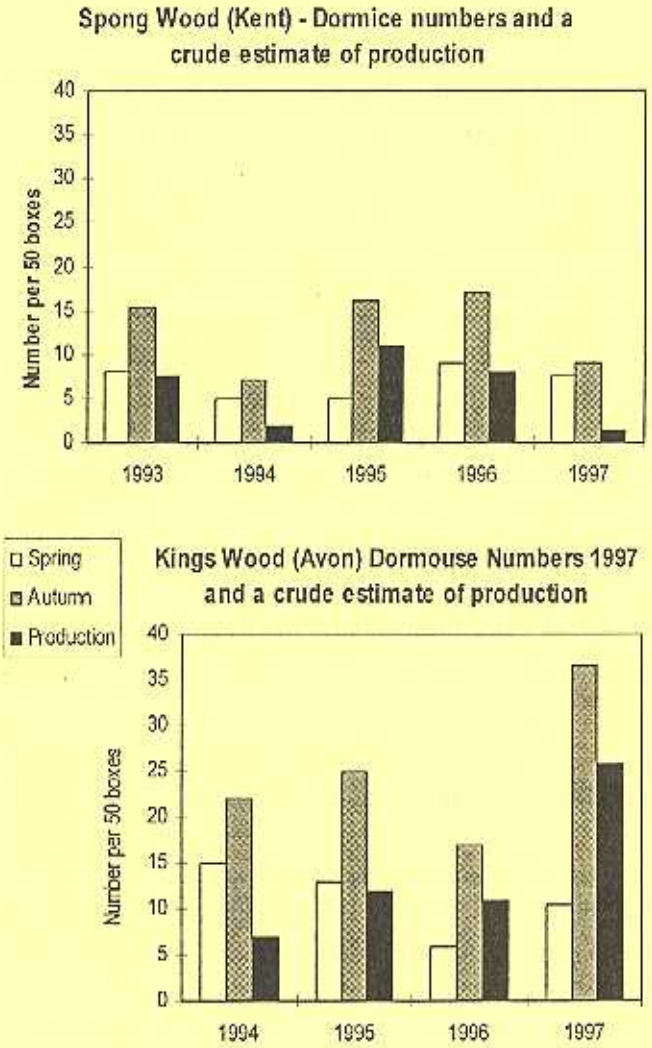


Figure 8. A comparison of numbers and production of dormice in Spong Wood (Kent) and Kings Wood (Avon). Production was estimated by subtracting spring numbers (the highest of May or June) per 50 boxes from autumn numbers (the highest of September or October) per 50 boxes.

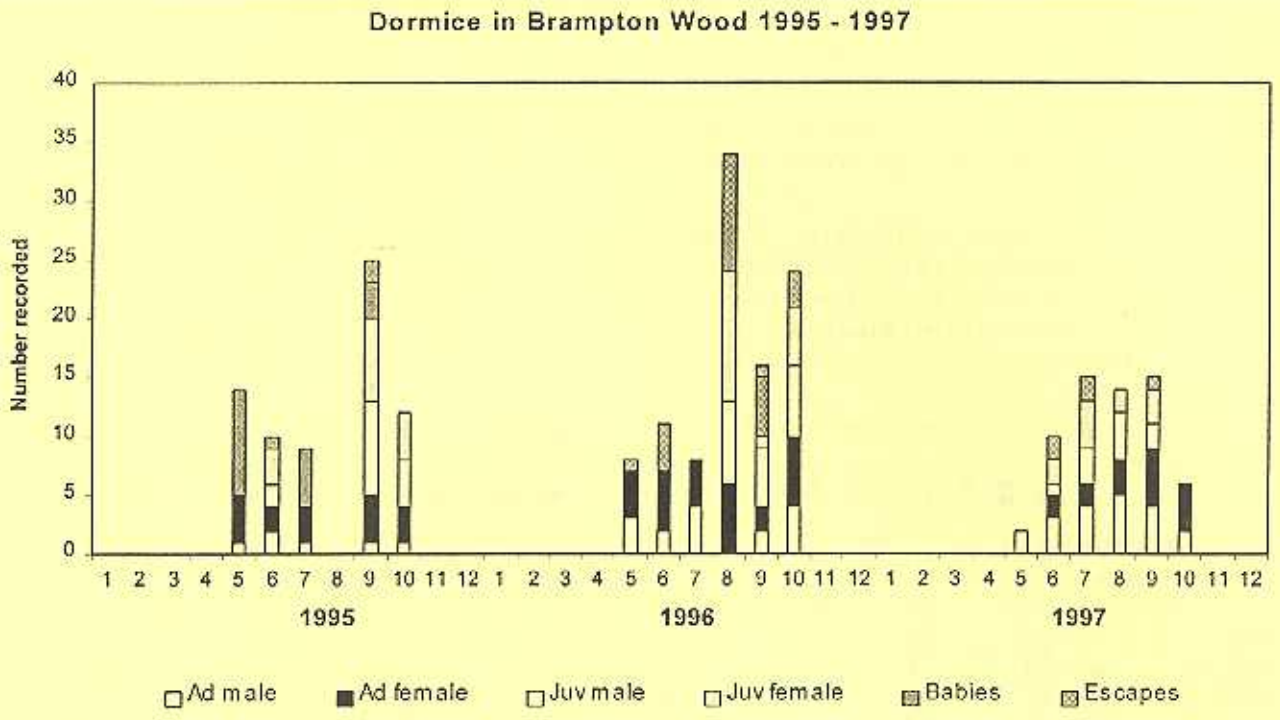


Figure 9. Monitoring of the first dormouse population to be reintroduced to a wood where they had not been recorded for many years but were known to have occurred previously in that county. The reintrduction took place in 1993 and was reinforced in 1994.

June) and autumn (the highest of September or October) to indicate production per 50 boxes. The results of this comparison show just how much higher the numbers are at Kings Wood than at Spong and how much more productive the population was there, particularly in1997. However, differences may again be due to different layout of nest boxes at the two sites. Perhaps these annual variations are due to weather conditions as well, but this cannot be analysed separately without a longer series of data, hence the need to continue the NDMP, and the value of the data collected by NDMP volunteers from all over the country.

Dormouse Reintroductions

As you will know we have organised the reintroduction of dormice to a number of sites over the last few years. One aim of the Species Recovery Plan for the dormouse includes reintroducing this species to counties where it is known to have become extinct in the last 100 years. Three years of records from the very first reintroduction site are illustrated in Figure 9 which was supplied by Tony Mitchell-Jones of English Nature who monitors Brampton Wood (Cambridgeshire) with the help of Jo Thomas and volunteers from the Wildlife Trust. This reintroduction has clearly been a success. The Cheshire one is looking promising, but the release in Nottinghamshire appears to have failed. Meanwhile, new reintroductions to Warwickshire and Buckinghamshire in 1998 are faring well.