

When this was taken into account together with the likelihood of sighting different species at different times of the day, there was a clear relationship between recorder effort and the number of mammal sightings for at least some of the species recorded. Recorder effort was correlated with maximum number of sightings for hedgehog, fox, grey squirrel, badger, bats, mice, and cats. It was not correlated with sightings of roe deer, muntjac, rabbits, voles, brown rats and shrews. The reasons for these differences are as yet unclear, but we hope to be able to estimate regional abundance of different species much more accurately by taking the recording effort into consideration.

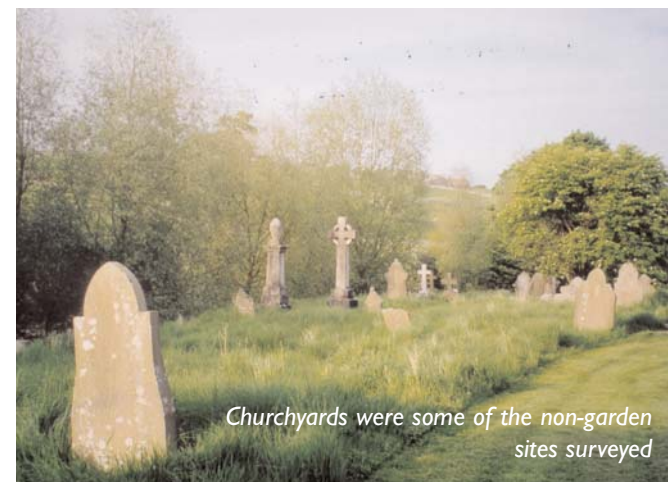


A muntjac in a surveyor's garden

Whilst this is only an overview of the preliminary results and the full analysis is yet to be completed, it is already looking very promising for subsequent years. Also, the results of this initial survey and the lessons learned will enable us to improve the design of subsequent years' surveys in order to achieve the best possible returns from the hard work put in by you, the volunteers. As with any new survey there were some minor teething problems. A number of people for example went beyond the call of duty and surveyed more than one site. Whilst this provides additional records that we can still include it also makes the analysis problematic and it is much better if records are only collected from one type of site. Also, a number of returns this year could not be marked on the map in Figure 1 because the postcode or grid reference was missing or could not be recognised. These are still important records and have been included in the remainder of the analysis. The design of next year's form will hopefully iron-out some of these hitches.

The importance of future surveys

Whilst the majority of mammal records were of common species such as grey squirrel and fox, gardens and the wider built environment are clearly important for some protected species such as bats and at least one species which appears to be declining in the wider countryside, the hedgehog. We have recently witnessed in the case of the water vole how a previously very common and widespread species can become highly threatened in a comparatively short time period and with little obvious warning. By continuing to monitor the presence and relative abundance of "common" species in built-up areas we should be able to detect any worrying national declines before it is too late.



Churchyards were some of the non-garden sites surveyed

Many thanks!

Finally, we are greatly indebted to the many volunteers who kindly contributed to this survey. We hope to recruit more volunteers each year but the experience of those who took part this year will be particularly valuable in future years.

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Living with Mammals Survey Update

Living with Mammals Survey

December 2003

Where you surveyed

In this, the first year of the survey, a total of 870 forms were returned. Greater London was the county with most returns, representing 14% of the total. However, there was a good geographic spread with the location of survey sites stretching from the Isles of Orkney to Truro in Cornwall. Of the 22 government regions in England, Wales and Scotland, 19 were represented along with two records from Northern Ireland. Of the total number of returns, 792 (90%) were positive, that is they recorded the presence of at least one wild mammal species (Figure 1).

Of the sites where wild mammals were recorded, 452 (57%) were from a combination of mammal sightings and field signs, 172 (22%) were from sightings only and 168 (21%) were recorded from signs only. The fact that a relatively high proportion of records were from signs only is particularly encouraging. Whilst this often requires a greater degree of expertise it is an important way of recording species such as moles that are rarely, if ever, seen.

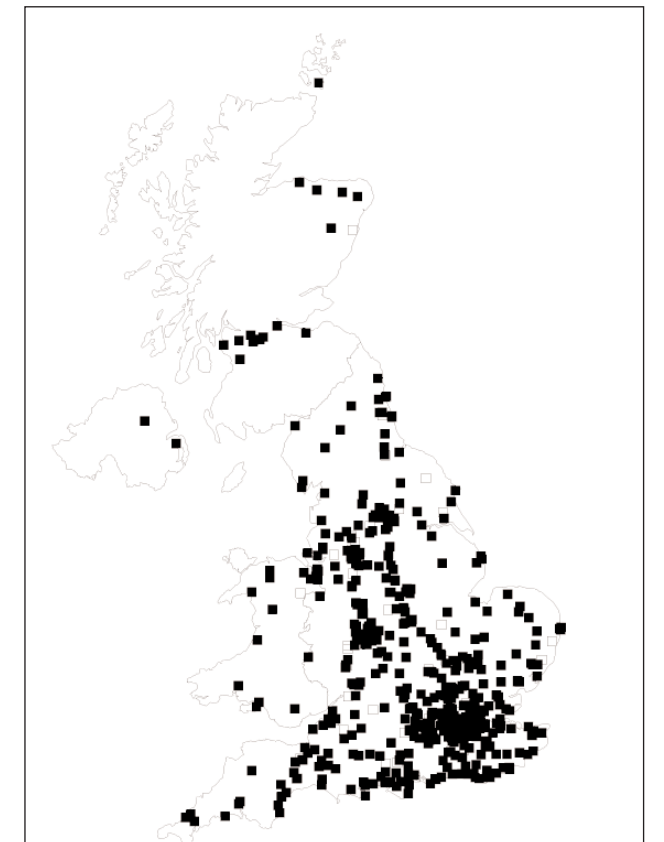


Figure 1. Distribution of positive (solid squares) and negative (open squares) wild mammal records on built land from the Living with Mammals 2003 Survey.

Mammals recorded

A total of 24 species of wild mammal or groups of species (e.g. bats) were recorded. Records of domestic and feral cats were also made to determine if their presence might affect that of wild mammals. Grey squirrels were the most commonly recorded species, closely followed by domestic/feral cats and then foxes (Figure 2). Many of the species recorded are legally protected, including bats, shrews and badgers. There were also records of species of high conservation concern, including water vole, brown hare, red squirrel and hazel dormouse (grouped together in the scarce species category).

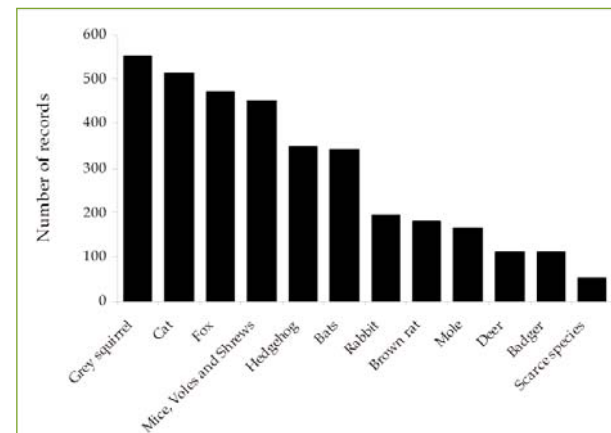
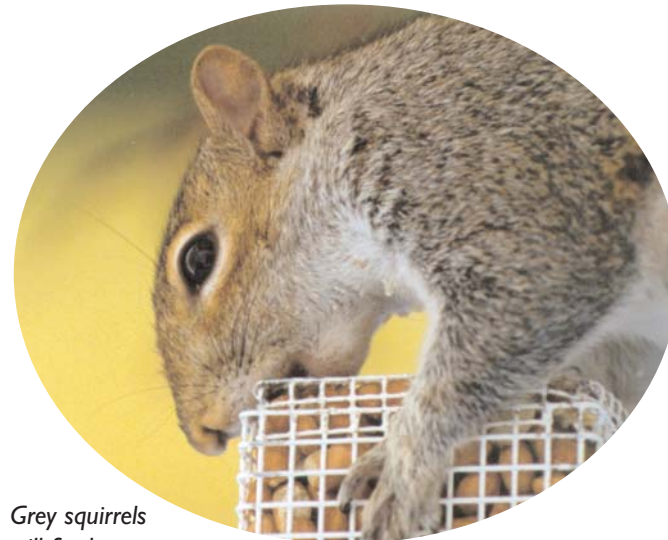


Figure 2. Number of different species and groups of species recorded.



One of the study sites in Cheshire
Photo courtesy of H. Brammer



Grey squirrels will feed on acorns, beechmast, flowers, nuts and insects – as well as an opportune bird feeder! Photo courtesy of Mrs Holloway

Types of site surveyed

Gardens were, not surprisingly, the main type of site in which mammals were recorded (Figure 3). However, records were submitted from all of the following areas near buildings: parks, commons, wasteland, churchyards, playing fields, golf courses, allotments, railway embankments and riversides. The *Living with Mammals* survey is unique in that it is the first national mammal survey to cover the built environment outside of people’s gardens. Encouragingly, a significant number of records were from such areas. Thirty percent of the total sites surveyed included a non-garden site, although a third of these were multiple category sites e.g. garden and railway embankment. Strictly speaking, surveys should only be conducted at a single type of site, but we thought it was important to make as much use of these additional records as we could, so they have been included here.

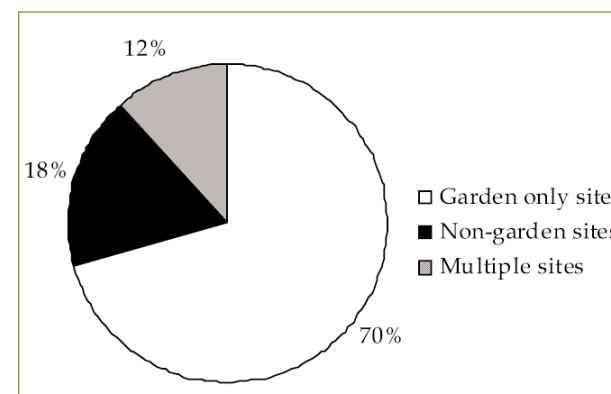


Figure 3. Percentage of mammal records in different categories of site.

The type of site was found to be important in determining the number of species recorded. Not surprisingly perhaps, more species were recorded by observers who had surveyed more than one site or at sites which fell into multiple categories, but these must be analysed separately. Interestingly, multiple sites apart, the highest number of species were recorded from wasteland or derelict land, more than double the average number recorded in parks and village greens (Figure 4).

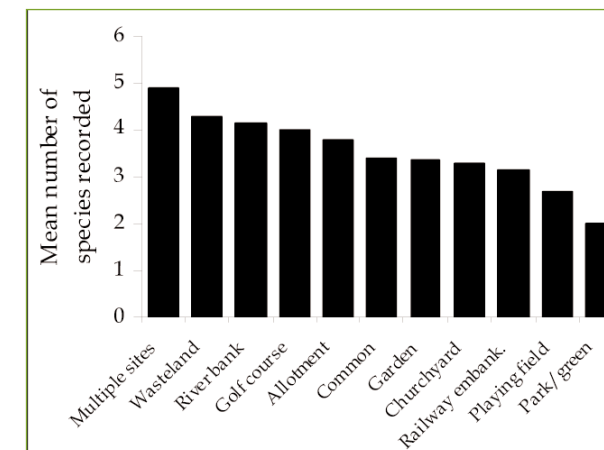


Figure 4. Average number of species recorded at each category of site type.

Although only eleven of the sites surveyed fell into this category, this highlights the potential importance of these unprotected areas to a wide range of mammal species.

Site features

A higher number of species were recorded at older sites (pre-1900s) than newer ones. Some features within sites were also important. Significantly fewer species were recorded at sites consisting mostly of concrete or gravel, and significantly more species were recorded at sites with a high percentage of wild untended areas. More mammal species were also recorded by people who regularly put out food for mammals. The nature of the surrounding area was also found to be important. Sites within 100 m of pasture had a higher number of species than sites that were further away. These results reveal some general trends which we may be able to elucidate further



Foxes have been quick to adapt to cities and urban areas
Photo courtesy of Mrs Holloway

once more analysis has been conducted for each of the mammal species recorded. It is likely that other features not mentioned above will be important for some species and not for others.

Measuring recording effort

Another unique feature of *Living with Mammals* is the recording of observer effort. Most mammals are seen much less frequently than many bird species, being most active during the night or at dusk and dawn. Because mammal sightings are therefore often rare and opportunistic it is important to record how much time was spent looking and at what time of the day. Much more effort was put in during the day – reflecting the period when humans are most active (Figure 5).

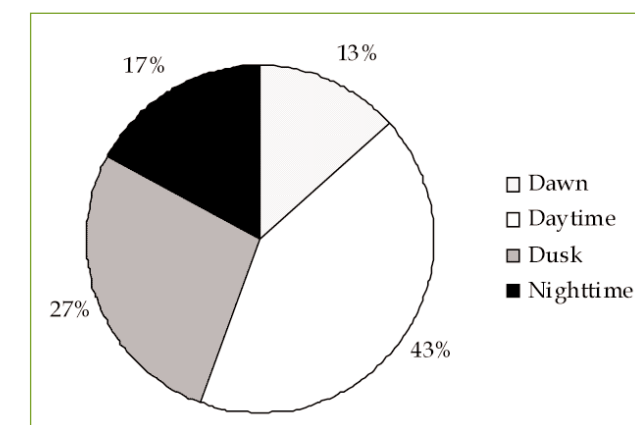


Figure 5. Percentage of time recorders spent observing at different times of the day.