

The State of Britain's Hedgehogs 2018

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people's
trust for
endangered
species

Hedgehogs' unique appearance and proximity in gardens and suburban green spaces place them firmly in the public's affections. They're a wild mammal we can observe close-up and are a symbol of our natural heritage.

In 2015, *The State of Britain's Hedgehogs*¹, by People's Trust for Endangered Species (PTES) and the British Hedgehog Preservation Society (BHPS), outlined the findings of four surveys recording hedgehogs in urban and rural areas, and showed a worrying decline. This new report updates those findings and describes the current status of Britain's hedgehogs a decade after they were made a priority species for conservation.

Where are hedgehogs found?

Hedgehogs are widespread and, in some areas, still common, but their numbers locally can vary a lot. They can be entirely absent in arable areas, but numerous in suburban habitats. Areas in and around towns and villages can be excellent habitats for hedgehogs, and hedgehogs often prefer them over farmland.

Hedgehogs are nocturnal and solitary creatures, so counting numbers in the field is difficult. Only two reliable estimates of the population size exist and both acknowledge a lot of uncertainty in the figures. In 1995², and more recently in 2017³, researchers have suggested a figure of about 1.5 million hedgehogs across England, Scotland and Wales collectively.

Are numbers changing?

In the early 1990s, Dr Pat Morris, at Royal Holloway, University of London (RHUL), recruited volunteers to record hedgehog road casualties as a way of monitoring the population in the wider landscape. Ten years on, PTES relaunched the survey, part-funded by the Joint Nature Conservation Committee and under the guidance of Dr Paul Bright, also at RHUL.

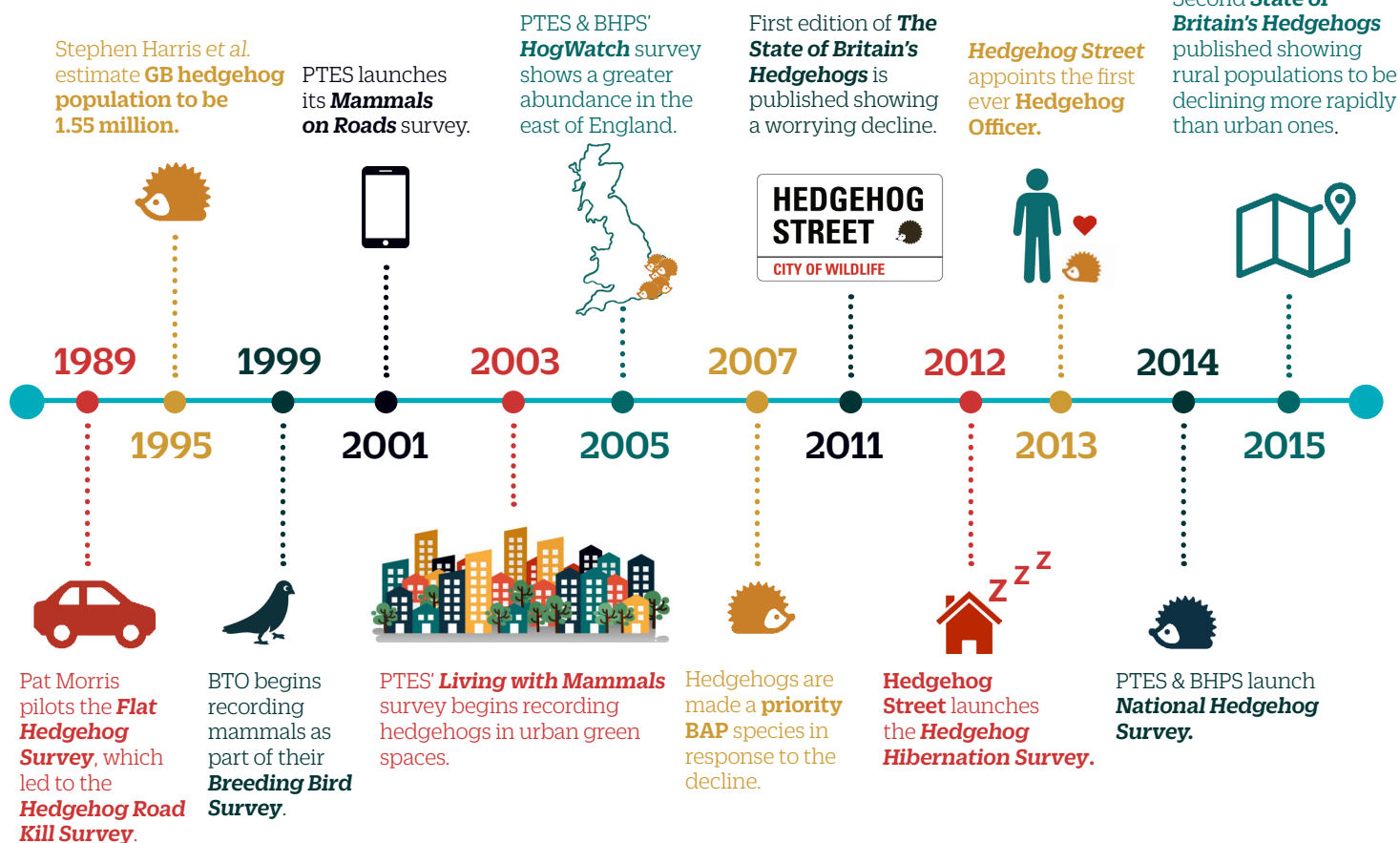
Figure 1. The distribution of hedgehog sightings in PTES and other surveys between 2012 and 2017. Most records are from urban areas, reflecting the distribution of recorders as well as that of hedgehogs. Organisations that kindly provided data are acknowledged on page 4.



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Urban numbers
appear to be
turning around

Understanding the decline



These surveys showed regional differences in counts of hedgehogs and indicated an ongoing decline in the population since Morris' original work.

Other surveys indicated similar findings and in 2007 hedgehogs were made a priority conservation species in Britain under the then UK Biodiversity Action Plan (BAP).

A decade on, how are hedgehogs faring? The most recent analysis, in this report, shows a stark contrast between rural and urban populations. It offers some hope and highlights the need for greater conservation efforts.

Population trends

We analysed three surveys that have regularly collected records of hedgehogs since the early part of the last decade for this report (see 'The data'). All record other species as well. PTES' *Mammals on Roads* survey covers primarily rural areas (outside towns and cities); while the BTO's *Garden BirdWatch* and PTES' *Living with Mammals* are garden-based, or predominantly so, and are more representative of the built environment.

Differences in the way data are collected mean that trends aren't directly comparable, but together they give a good indication of the direction of change and an idea of its size.

Rural populations

Between 2002 (the baseline year) and 2017, counts of hedgehog road casualties recorded in PTES' *Mammals on Roads* survey fell by between a third and a half across Great Britain (Figure 2). Estimating changes in the size of the national population is difficult. Changes in the way the survey is carried out mean that the results should be

Why are hedgehogs scarcer in rural areas?

- ▶ **Intensification of agriculture** – intensive farming methods can reduce the quantity and quality of hedgehog habitat. Studies are underway to identify the types of features in habitats that benefit hedgehogs (recent research is shown in the box on page 4), but two aspects are likely to impact on hedgehogs:

Habitat loss and fragmentation – larger fields and the loss of hedges and copses result in fewer nesting sites and less protection for hedgehogs.

Prey availability – insect larvae and soil invertebrates such as earthworms and slugs make up a large part of hedgehogs' diet but can be scarce in agricultural soils. A recent study in Germany measured the weight of flying insects trapped at around sixty nature reserves and found a decline of more than 75% since 1989⁴. If Britain has seen a similar loss, fewer insect larvae, such as caterpillars and beetle grubs, might have impacted on hedgehogs and other species.

- ▶ **Roadkill** – rural roads often have higher speed limits and reduced lighting meaning drivers are less able to spot wildlife. Nationwide, it's estimated that around 100,000 hedgehogs are killed annually⁵, and it's not known whether this level of mortality is sustainable.
- ▶ **Predation** – in the UK, badgers are the main wild predator of hedgehogs, but foxes can also cause injuries and kill young animals. Badgers and hedgehogs, however, co-exist in many areas and a better understanding of the habitat features that support both is needed.

interpreted with care. Annual estimates vary a lot and more records are needed each year to get a better idea of how the rural population is changing. The trend, which evens out year-to-year differences, has been level over the last few years, but it's still possible that the population has increased over this period or continued to fall. To be more confident, more data are essential. Another survey, the BTO/JNCC/RSPB *Breeding Bird Survey*, also shows a decline across rural areas, in this case, in sightings of live animals.

Hedgehogs are disappearing from our countryside

Urban populations

Across urban sites, a different picture is emerging. While hedgehogs remain widespread (Figure 1), fewer places record them today than did fifteen years ago. This may be changing however and the last few years has seen an increase in the number of hedgehogs where they are still present.

Between 2004 and 2012, the proportion of sites recording hedgehogs in *Living with Mammals* (either from sightings or signs) fell sharply; since then, however, the decline has levelled off (solid line in Figure 3) and average weekly counts of hedgehogs (triangles in Figure 3) show an upturn.

A broadly similar pattern, changing little between 2008 and 2013 and increasing in the last few years, is shown by the proportion of sites recording hedgehogs in the BTO's *Garden BirdWatch* (Figure 4). These records can be difficult to interpret because participants aren't necessarily recording mammals or hedgehogs, but along with *Living with Mammals*, the two surveys suggest an improving situation for hedgehogs in urban areas. Hedgehogs are not disappearing from sites as rapidly as they were fifteen years ago and might even be returning. Where they are found, numbers, too, appear to be growing.

Hedgehogs continue to face pressures in the rural landscape and from urban development, but monitoring numbers, and actions such as *Hedgehog Street* and public efforts to improve garden habitats and connectivity, might be giving them a chance.

The data

Garden BirdWatch (BTO). The GBW has collected mammal records from gardens since 2003. Data submitted online from 2,453 sites between 2007 and 2016 were used for this report.

Mammals on Roads (PTES). Records of hedgehog road casualties (outside urban areas), between 2001 and 2017, were analysed together with route data for journeys between 15 and 500 miles in length.

Living with Mammals (PTES). Data from 1,198 sites in the built environment were analysed, predominantly consisting of gardens (78%). Other types of site include recreational ground, allotments and cemeteries.

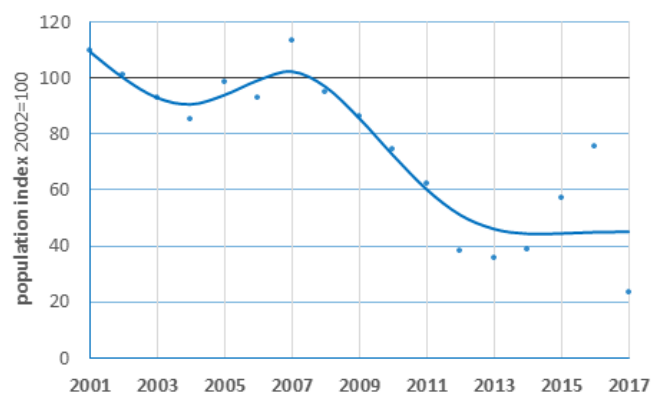


Figure 2. Counts of hedgehog road casualties (for a given distance) in PTES' *Mammals on Roads*. The solid line shows the smoothed trend or underlying change, and the circles, annual estimates. Estimates are expressed relative to that for 2002, which is taken as the baseline year and given a value of '100'. Between 2002 and 2017, the estimated trend fell by half.

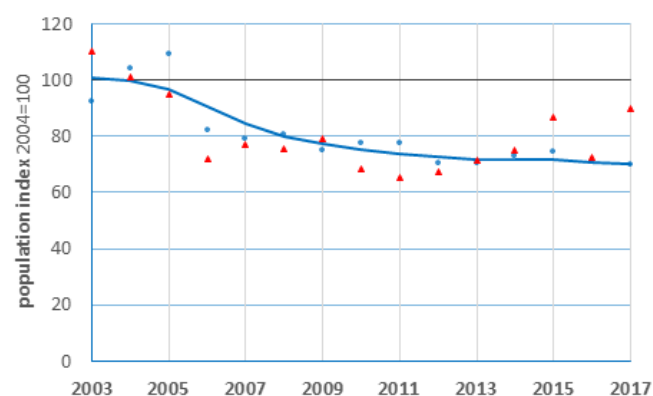


Figure 3. The proportion of sites in PTES' *Living with Mammals* that detected hedgehogs. The solid line shows the smoothed trend, and the circles, annual estimates. Between 2004 (the baseline year) and 2017, the smoothed trend fell by 30%. If, instead of the proportion of sites detecting hedgehogs, the number of animals seen together at one time in a particular week is used as a measure, average counts (red triangles) show an increase since 2014.

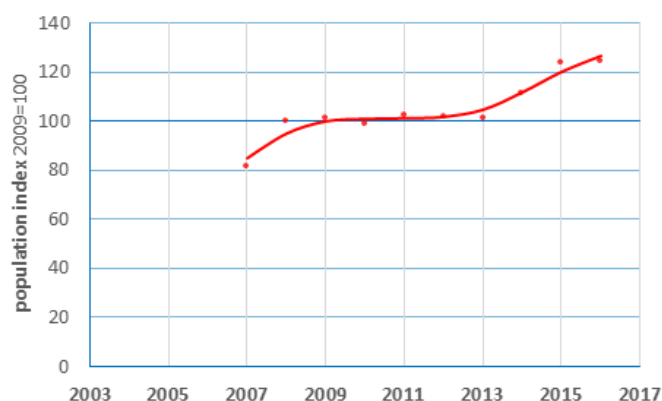


Figure 4. The proportion of sites in the BTO *Garden BirdWatch* survey that detected hedgehogs. The survey primarily records birds; only those that additionally recorded mammals were included in the analysis. The solid line shows the smoothed trend, and the circles, annual estimates. 2009 is taken as the baseline year.

Hedgehog Street

The decline in hedgehogs flags up concerns about the environment that affects us all. Although they have some national and European protection under Schedule 6 of the Wildlife and Countryside Act (WCA) 1981, which prohibits killing and trapping by certain methods, and the Wild Mammals (Protection) Act 1996 and Appendix III of the 'Bern' Convention, they are still at risk. In 2011, PTES and BHPS started the *Hedgehog Street* campaign to reverse this decline by inspiring the British public to help protect hedgehogs. Together we've recruited over 47,000 Hedgehog Champions to help conserve hedgehogs.

British gardens are becoming poorer homes for wildlife with increased paving, decking and reduced plant life. And with more roads and housing developments being built, we're seeing a huge loss of connectivity between green spaces, leaving hedgehogs isolated.

Hedgehog Street is improving urban areas for hedgehogs, with:

- ▶ more gardens and green spaces linked with 'Hedgehog Highways' in fences
- ▶ more wild areas and log piles in gardens for insects and other wildlife
- ▶ more hedgehog houses and feeding stations in gardens

We're inspiring the British public to make their gardens hedgehog-friendly and recruit their neighbours to create *Hedgehog Streets* in their community.

BHPS and PTES are also working with academics to research the reasons for hedgehog decline, as well as lobbying developers and land owners to mitigate for hedgehogs and help create hedgehog-friendly housing. Chris Grayling MP, Secretary of State for Transport, has been appointed as the Species Champion for hedgehogs to help promote their conservation in Parliament. A ten-year strategy is in place for national hedgehog conservation until 2025.

BIG Hedgehog Map

In 2015, *Hedgehog Street* launched the BIG Hedgehog Map, the only real-time map that shows hedgehog distribution UK-wide. It's an online resource to record hedgehog sightings, dead or alive, and maps 'Hedgehog Highways' through gardens. So far over 19,000 hedgehog sightings and over 4500 'Hedgehog Highways' have been mapped, linking over 9000 gardens across the UK.

2017 saw champions taking part in the first ever *Hedgehog Housing Census* which was looking into the different kinds of hedgehog houses and what hedgehogs prefer, with the results to be published in Spring 2018.

Acknowledgements

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Hedgehog natural history

Western European hedgehogs (*Erinaceus europaeus*) occur throughout most of Europe. In Great Britain and Ireland, they are widely distributed but absent from some of the Scottish islands.

In rural areas, hedgehogs live along woodland edges and hedgerows in meadowland and rough pasture. In towns, they make use of gardens and amenity grassland, as well as other green spaces. Between November and the end of March, when food is scarce, hedgehogs hibernate to conserve energy, remaining largely inactive. During the rest of the year, they are mostly nocturnal, moving over areas of 10-50ha during the summer, and 1-2km in a single night.

PTES/BHPS funded research

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