

The State of Britain's Hedgehogs 2015



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species

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Hedgehogs are a unique point of contact with the natural world. Their distinctive appearance and visibility in gardens and urban areas where most of us live, make them a much-loved species.

The *State of Britain's Hedgehogs 2011*¹ was the first attempt to comprehensively review the status of hedgehogs nationally. All of the five surveys analysed in the report, comprising data collected between 1996 and 2010, showed declines, four at a statistically significant level. That analysis concluded, 'at a conservative estimate a quarter of the population [had] been lost' in the first decade of this century.

This report updates the findings from 2011, analysing data from four surveys between 2000 and 2014. **The picture suggests a continuing decline, in both rural and urban landscapes. Since 2000, rural populations have declined by at least a half and urban populations by up to a third in the same period.**

Hedgehogs past

Hedgehogs occur widely, but sparsely, in Britain (see box on page 4) and are scarce or absent in wet and upland areas, such as moorland and mountainsides, and in pine forests. Estimating the size of the population for the whole country is difficult. The most reliable estimate of hedgehog numbers in Great Britain (and the most recent) was made in the 1990s². This estimated a total of 1.55 million hedgehogs in England, Scotland and Wales, although even this has a high level of uncertainty.

For most of the last century, there are few data to gain an idea of absolute numbers or how the population changed. Records of

hedgehogs killed by gamekeepers between 1960 and 1980, suggest a long-term decline. It is only from the 1990s onwards, through the work of Pat Morris, that a clearer picture emerges. Morris recruited

Population in Great Britain in 1995 estimated at 1.55 million. In 2010, less than 1 million?

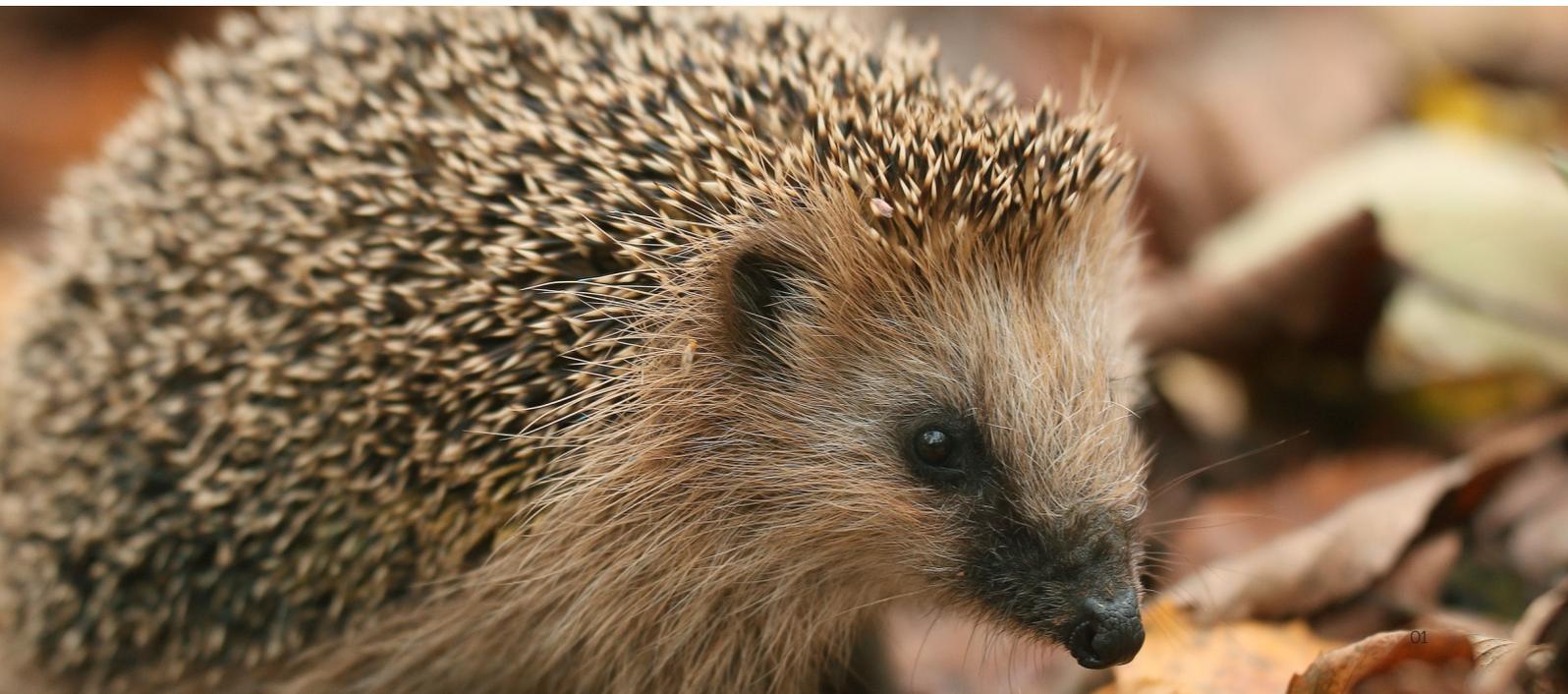
volunteers to record counts of hedgehog casualties along roads to assess how hedgehog numbers were changing in the surrounding landscape. His work, along with an earlier survey in 1952 and the first People's Trust for Endangered

Species (PTES) *Mammals on Roads* survey in 2001, identified regional differences: counts in the South East of England changed little over the fifty-year period, while those in the East, fell by a half between 1991 and 2001.

Preliminary evidence from several surveys was sufficient for hedgehogs to be made a priority conservation species in Britain in 2007.

Hedgehogs in 2015

The State of Britain's Hedgehogs 2011 identified declines of several per cent each year in the decade or so up to 2010. Analyses of more recent data suggest a continuing decline, both in the rural and urban landscape.



Rural populations

Two surveys, BTO's *Breeding Bird Survey* and PTES' *Mammals on Roads* survey (see 'Surveys analysed for this report') cover primarily rural areas. Population trends are shown in Figure 1. **Both show substantial declines of over a half since 2000.**

The *Breeding Bird Survey* began collecting mammal data in 1995, but changes to the recording form in the first few years make these data uncertain. Records between 2000 and 2014 are more reliable and it is only this period that has been considered for this report.

Urban populations

Some species that have declined in farmland areas, such as the song thrush and common frog, are abundant in urban habitats, particularly in domestic gardens, and such areas may also be a refuge for hedgehogs. Records of hedgehogs from urban sites (mostly private gardens) show a mixed picture. The BTO's *Garden BirdWatch* has an upward trend, while PTES' *Living with Mammals* shows a decline, Figure 2, overleaf.

The trend in the former, however, is due largely to the high value of a single point (the estimate for 2014), and the trend should be treated with some caution because of this. From 2008 to 2013, there is little change.

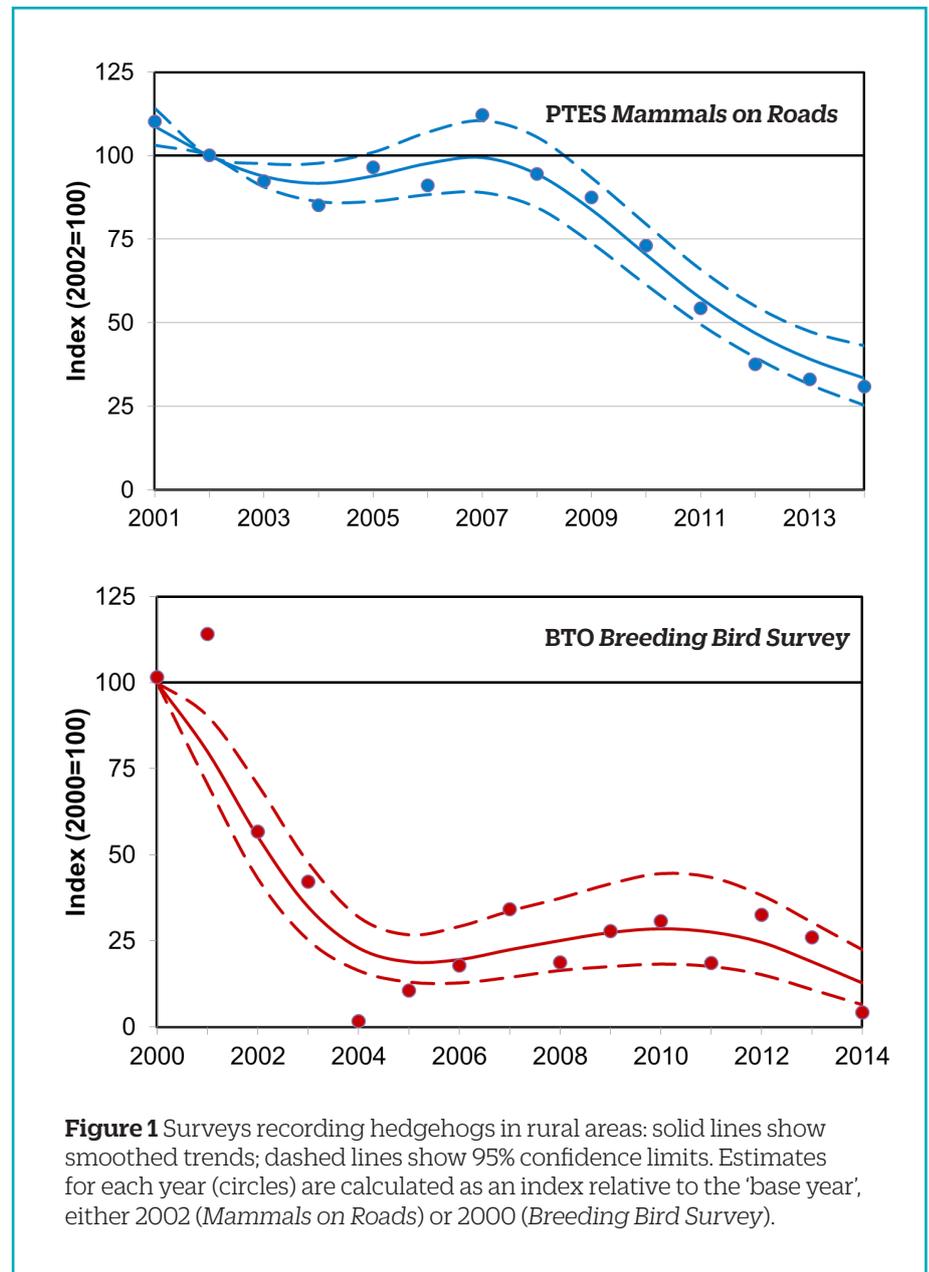
Why are hedgehogs becoming rarer?

The loss of a generalist species that is a good indicator of the abundance of soil invertebrates and of habitat features such as hedges and copses, should be cause for concern about the environmental health of the

countryside. Recent work suggests much arable farmland is poor quality for hedgehogs, with few good foraging or nesting sites. Research into the sorts of habitat features that benefit hedgehogs is currently underway and recent work is shown in the box overleaf.

Although records of badgers increased significantly in *Living*

with Mammals over the same period, there is no indication that, where the two species co-exist, badgers are causing the decrease in hedgehog numbers. Badgers do compete for the same foods as hedgehogs (one badger eats enough to support five hedgehogs) and will also kill and eat hedgehogs. But environmental factors frame their relationship



Three of the four surveys showed statistically significant declines. The proportion of sites recording hedgehogs in the *Garden BirdWatch* increased.

Survey	Data period	Rural/Urban	Mean annual change
<i>Breeding Bird Survey</i>	2000-14	Rural	-13.7%
<i>Mammals on Roads</i>	2001-14	Rural	-9.1%
<i>Garden BirdWatch</i>	2008-14	Urban	3.6%
<i>Living with Mammals</i>	2003-14	Urban	-3.1%

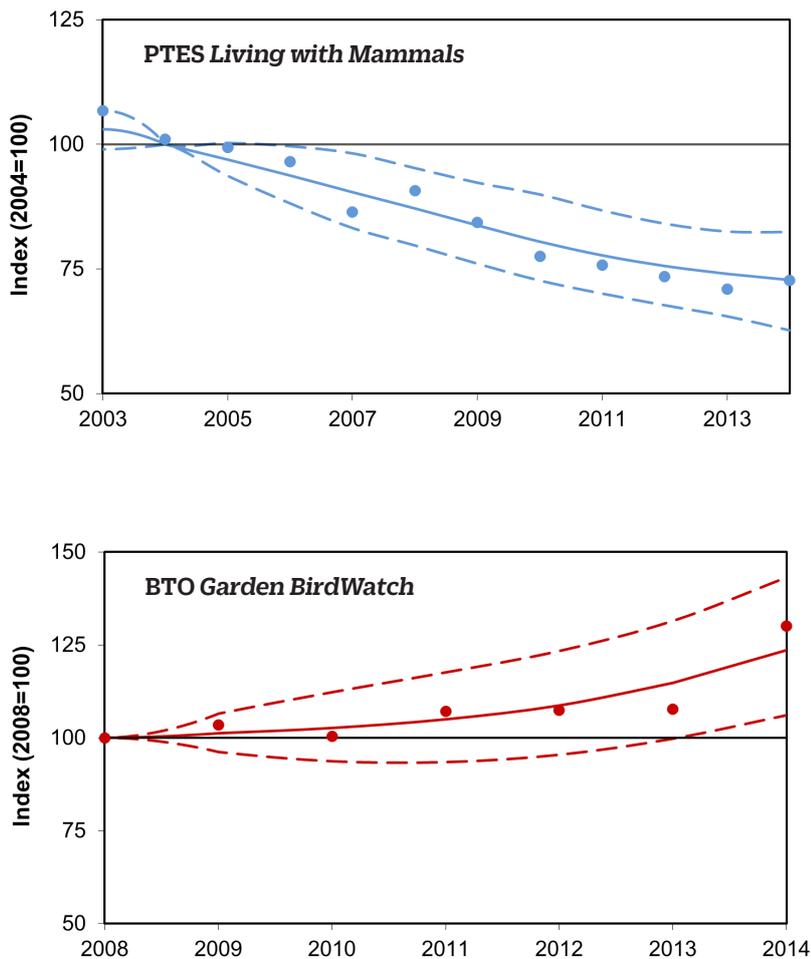


Figure 2 Surveys recording hedgehogs in urban and suburban areas: solid lines show smoothed trends; dashed lines show 95% confidence limits. Estimates for each year (circles) are calculated as an index relative to the 'base year', either 2004 (*Living with Mammals*) or 2008 (*Garden BirdWatch*).

and may be more important in causing the decline than direct predation. **The downward hedgehog trend in *Living with Mammals* is the same whether badgers are present or not.**

Practical help

PTES and the British Hedgehog Preservation Society (BHPS) are collaborating to conserve hedgehogs by commissioning research into the causes of the decline and by taking practical action to help the species. We have put together a ten-year strategy plan for future work.

Hedgehog Street and the BIG Hedgehog Map

The urban environment presents the same sort of problems for hedgehogs as more widespread threats: the loss of habitat (as gardens become smaller or are replaced by hard surfaces); the loss of connectivity between habitat patches (as gardens become less accessible); and increasingly poor quality habitats, with fewer 'wild' areas and features to attract wildlife. The aim of *Hedgehog Street* is to improve urban areas for hedgehogs.

Since its launch in 2011, *Hedgehog Street* has inspired over 36,000 volunteer Hedgehog Champions to create hedgehog-friendly

Surveys analysed for this report

Breeding Bird Survey (BTO/JNCC/RSPB). Hedgehogs have been recorded in the BBS since 1995. Changes to the protocol in following years, however, make comparison between years difficult, so only those data from 2000 onwards were analysed for this report.

Garden BirdWatch (BTO). The GBW has collected mammal records in gardens since 2003. Data submitted online between 2008 and 2014 is reported here from 2,300 sites where hedgehogs were recorded.

Mammals on Roads (PTES). Volunteers record sightings of hedgehog casualties on road journeys in July, August and September each year, excluding roads in urban areas. Over 370,000 miles were analysed.

Living with Mammals (PTES). Sites in the built environment are selected by participants and sightings recorded weekly through April, May and June. 70% of sites were gardens and, over the 12 year period, a total of 6,926 surveys were analysed.



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Protection under national and European legislation

Hedgehogs have some protection under Schedule 6 of the Wildlife and Countryside Act (WCA) 1981, which prohibits killing and trapping by certain methods, the Wild Mammals (Protection) Act 1996 and Appendix III of the 'Bern' Convention.

In 2007, they were made a priority species as part of the former UK Biodiversity Action Plan.

Currently, there are proposals to include hedgehogs on Schedule 9 of the WCA 1981, which would prohibit their release on offshore islands around the British coast.

We thank the British Trust for Ornithology for access to the BBS and GBW data, and Steve Langton for analyses of the datasets.

neighbourhoods, linking up gardens and green spaces. Tangible impacts for hedgehogs in gardens include: 7,243 foraging areas created; 3,929 hedgehog houses installed; 4,776 hazards removed; and 252 events raising awareness at the neighbourhood level.

Champions took part in the *Hibernation Survey* in 2012, 2013 and 2014 to study regional differences in when hedgehogs emerged and the possible effect of climate change on this. The *BIG Hedgehog Map* provides an online resource to record hedgehog sightings, dead or alive, and map 'hedgehog highways' through gardens.

Hedgehog Street is an established online hub, with a target of 100,000 Hedgehog Champions by 2025.

Hedgehog natural history

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

In rural areas, hedgehogs live along woodland edges and hedgerows in meadowland and rough pasture, but are scarce or absent in marshy or upland habitats (such as moorland) and in coniferous woodland. Hedgehogs are 'generalists', feeding on a range of foods—mostly on soil invertebrates (such as beetles, caterpillars, earthworms and slugs) but also on carrion and birds' eggs. In urban areas, they will make use of gardens and amenity grassland, as well as other green spaces. Villages and towns can act as a refuge from pressures in the wider countryside. Hedgehogs tend to ignore arable fields, and recent research has suggested that some will actively make their way to villages.

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. The minimum area of habitat necessary to support a population is about 90ha (over 200 acres).

PTES/BHPS funded research

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