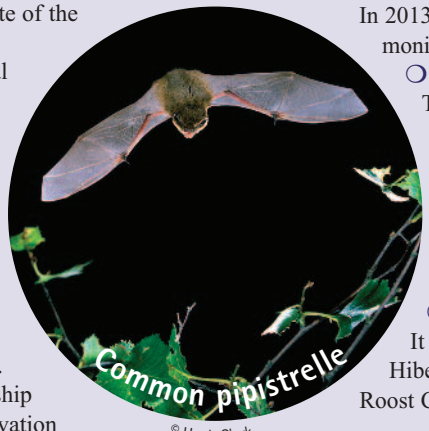
The state of the UK's bats 2014

National Bat Monitoring Programme Population Trends

Introduction

This edition of 'The State of the UK's Bats' summarises results from the National Bat Monitoring Programme (NBMP) up to the end of 2013. The NBMP has been running since 1997, making it the longest running, purpose-built, multi-species monitoring programme for mammals in the UK. The NBMP is a partnership between the Bat Conservation Trust (BCT), Joint Nature Conservation Committee (JNCC), Defra, Natural Resources Wales (NRW) and dedicated volunteers who conduct bat surveys across the country. Natural England also contribute to the programme. Historically, severe declines in bat populations have been reported, and bats have yet to recover from these losses. NBMP data support and inform conservation action and key government biodiversity monitoring and reporting including UK and country biodiversity strategies, the Habitats Directive and the UN EUROBATS agreement. Currently, statistically robust population trends are produced for 11 of the UK's 17 breeding bat species.



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The surveys

NBMP trends are produced using data collected by volunteers from three main survey methods:

- Field and Waterway Surveys using bat detectors
- Hibernation Surveys in the winter
- Roost Counts at summer maternity roosts

As a general rule, trends calculated from the Field and Waterway Survey are considered to be most robust, followed by the Hibernation Survey and then the Roost Counts.

Trends in UK bat species

In 2013, five species showed a statistically significant increase over the period of monitoring in at least one survey:

- **Greater horseshoe bat* (Roost Count)**

The greater horseshoe bat population is considered to be increasing due to the significant increase in the Roost Count and an upward trend from the Hibernation Survey.

- **Lesser horseshoe bat* (Hibernation Survey & Roost Count)**

We conclude that the lesser horseshoe bat population is increasing as clear increases are shown from both surveys.

- **Natterer's bat (Hibernation Survey)**

It is unclear whether the increasing trend seen in Natterer's bat from the Hibernation survey is a real reflection of population increase or other factors as the Roost Count data do not support the increase.

- **Daubenton's bat (Hibernation Survey)**

Daubenton's bat is showing a small but significant increase from the Hibernation Survey and a small, but not significant, increase from the Waterway Survey. Further years of data are required before it is clear whether this species is stable or increasing at the UK level.

- **Common pipistrelle (Field Survey)**

We conclude that the common pipistrelle population is increasing from the upward trend seen in this species in the Field Survey. Although a contrasting significant decline was reported from the Roost Count data, Field Survey data are considered to be more robust.

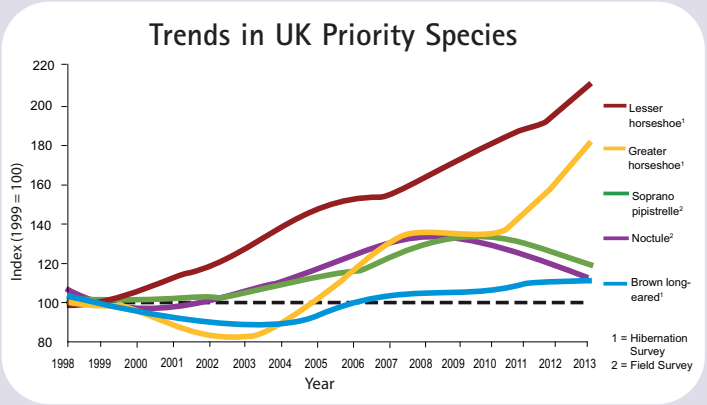
The remaining species for which we have trend information are: whiskered/Brandt's bat, soprano pipistrelle*, noctule*, serotine and brown long-eared bat*; none of these showed significant changes over the monitoring period to 2013.

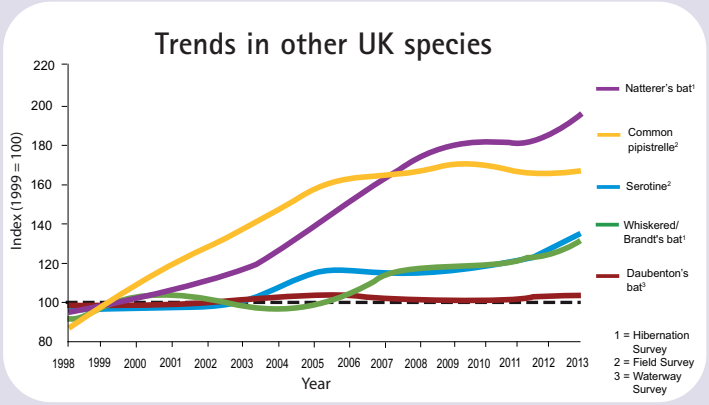
At present, there are insufficient data available for the other six UK breeding bat species (Bechstein's bat*, Alcathoe bat, Leisler's bat, Nathusius' pipistrelle, barbastelle* and grey long-eared bat) to allow estimation of population trends.

Conclusions

Although all the species monitored appear to be either stable or increasing, these positive results should be considered in the context of reported historical severe declines in bat populations, particularly in the second half of the twentieth century. More sustained population increases would be needed to indicate recovery from this extended period of decline.

*Priority species in the UK. Note that priorities for biodiversity are now set at the individual country level.





JNCC
Joint Nature Conservation Committee

Bat Conservation Trust

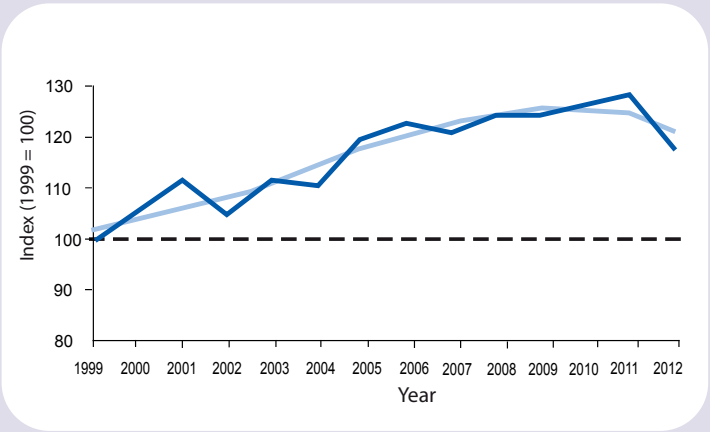
UK long-term bat population trends to 2013 and average annual percentage change

Species	Status	Survey	Trend time period	Sample size 2013	Long-term trend %	Average annual change %
Greater horseshoe bat*	Very rare, largely confined to southwest England and south Wales	Hibernation	1997-2013	148	79.6	4.3
		Roost	1997-2013	29	**108.9**	**5.4**
Lesser horseshoe bat*	Rare, largely confined to southwest England and Wales	**Hibernation**	1997-2013	227	**109.4**	**5.4**
		Roost	1997-2013	256	**60.7**	**3.5**
Whiskered/Brandt's bat	Both species are relatively uncommon but widespread in England and Wales	Hibernation	1997-2013	189	31.4	2.0
Natterer's bat	Common	**Hibernation**	1997-2013	415	**93.6**	**4.8**
		Roost	2000-2013	76	-14.3	-1.4
Daubenton's bat	Common	**Hibernation**	1997-2013	325	**22.7**	**1.5**
		Waterway	1997-2013	821	4.5	0.3
Serotine	Uncommon, largely restricted to south	Field	1998-2013	417	35.2	2.2
		Roost	1997-2013	91	-29.1	-2.4
Noctule*	Uncommon, absent from Northern Ireland	Field	1998-2013	559	11.7	0.8
Common pipistrelle	Common	**Field**	1998-2013	561	**66.0**	**3.7**
		Roost	1997-2013	459	**-54.0**	**-5.4**
Soprano pipistrelle*	Common	Field	1998-2013	563	19.2	1.3
		Roost	1997-2013	357	**-49.4**	**-4.7**
Brown long-eared bat*	Common	Hibernation	1997-2013	365	9.9	0.7
		Roost	2001-2013	143	12.4	1.0
Bechstein's bat*	Very rare	No trend data available; Bechstein's bat Survey provides baseline distribution data				
Leisler's bat	Uncommon in GB although may be under recorded, common in Ireland	Recorded by iBats but more data needed to detect trends				
Nathusius' pipistrelle	Uncommon but widespread, may be under recorded	Recorded by iBats but more data needed to detect trends; Nathusius' pipstrelle survey provides baseline distribution data				
Barbastelle*	Rare	Woodland Survey monitors presence at designated sites				
Grey long-eared bat	Very rare	No trend data available				
Alcathoe bat	Status unconfirmed	Presence in UK confirmed in 2010, distribution unknown				
(Greater mouse-eared bat)	Status unconfirmed	Only one individual known in the UK at present				

* Priority species in the UK. Figures in **bold** are statistically significant trends.

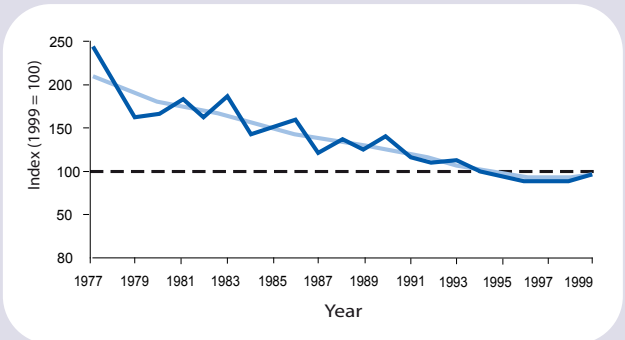
UK bat indicator

NBMP data from selected species are used to produce one of the annual UK Biodiversity Indicators (**jncc.defra.gov.uk/page-4233**), high-level measures which are used to report on progress towards meeting goals and targets for the conservation of biological diversity. Between 1999 and 2012, bat populations have increased by 18 per cent although there was a sharp dip in the index in 2012, possibly reflecting the very poor summer weather that year. This increase, whilst positive, must be seen in the context of previous declines illustrated in the indicator by historical data from pipistrelle roost counts.



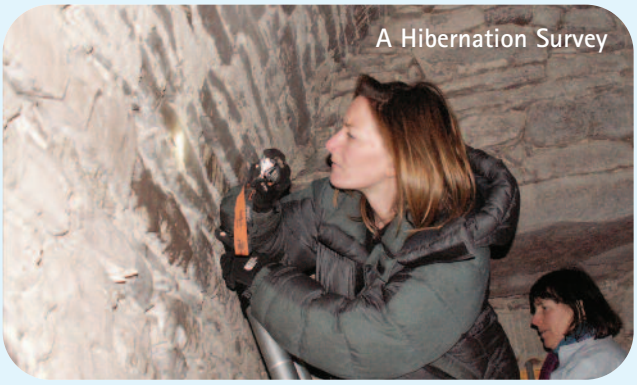
Notes: The indicator is a composite index of eight species: lesser horseshoe bat, Daubenton's bat, Natterer's bat, noctule, serotine, common pipistrelle, soprano pipistrelle and brown long-eared bat. Darker line shows unsmoothed data, paler line shows smoothed trend data.

Source: Bat Conservation Trust



Notes: Estimate for combined (common and soprano) pipistrelle, 1978-1992. Although based on limited data, this places the more recent trends in a longer-term context. Darker line shows unsmoothed data, paler line shows smoothed trend data

Source: Bat Conservation Trust (data from Harris, S., Morris, P., Wray, S., & Yalden, D. (1995). *A review of British mammals: population estimates and conservation status of British mammals other than cetaceans. JNCC, Peterborough.*



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Developing a bat indicator in Europe

In January 2014 the European Environment Agency published a new report on a prototype European-scale indicator of bat population change. This study, coordinated by BCT, is the first to compile data from ten existing monitoring schemes in nine European countries. The indicator, which includes data from the NBMP, combines winter counts from these countries of 16 of the 45 bat species found across Europe. Although the results of this prototype study should be interpreted cautiously at this early stage, it shows that overall, bat numbers increased by more than 40% between 1993 and 2011, after declining for many years. The full report is available at **www.eea. europa.eu/publications/european-bat-population-trends-2013.**

The National Bat Monitoring Programme at Country Level

Following the establishment of devolved governments within the UK, there has been an increased focus on conservation of biodiversity at a country level. A key aim of the NBMP has been to work towards producing bat species trends for individual countries. For the first time in 2013, we produced population trends for 10 species in England and seven species in Wales. We have not yet produced trends for the remaining countries in the UK but we are continuing to work towards improving survey coverage.

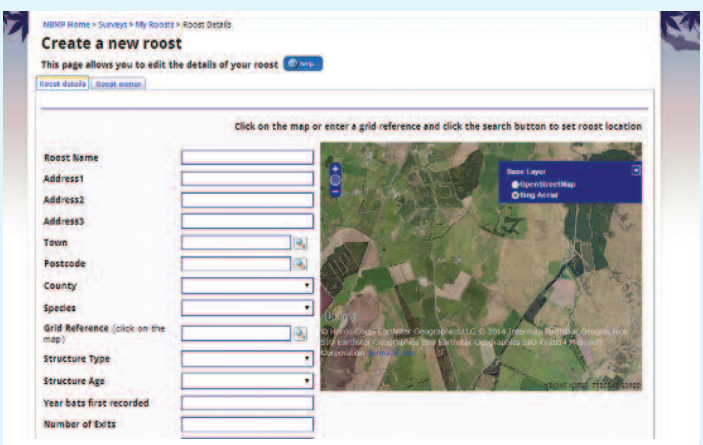
We still need more volunteers to take part in our surveys and help us monitor bat populations in the UK. For more information on the NBMP and how to get involved, visit **nbmp.bats.org.uk**

England

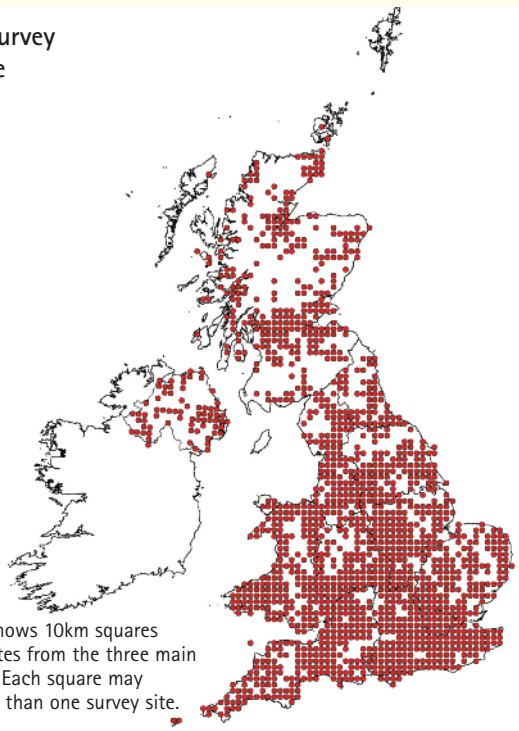
Of the seven species monitored through the Hibernation Survey (greater horseshoe bat, lesser horseshoe bat, Daubenton's bat, Natterer's bat, whiskered/Brandt's bat and brown long-eared bat), all show similar trends in England to those at the UK level with the exception of whiskered/Brandt's bat. This species group shows a significant increasing trend in England compared to a stable trend at the UK level (which represents the trend in England and Wales as whiskered/Brandt's has only been recorded at one Hibernation site in Scotland and up to 2013 there were no data available from any hibernation sites in Northern Ireland). These results should be interpreted cautiously, however, as the trend represents two species which may be subject to different pressures.

Species trends were calculated in England for six of the seven species monitored through the Roost Count (lesser horseshoe bat, Natterer's bat, common pipistrelle, soprano pipistrelle, serotine and brown long-eared bat). There are insufficient data to calculate country level trends from Roost Count data for greater horseshoe bats. All six species show similar trends in England to UK level trends.

Three of the species monitored through the Field Survey (common pipistrelle, soprano pipistrelle and serotine) show similar trends in England as UK level trends from this survey.



NBMP Survey Coverage



Note: Map shows 10km squares containing sites from the three main survey types. Each square may contain more than one survey site.

Wales

Five of the seven species monitored through the Hibernation Survey (lesser horseshoe bat, Natterer's bat, whiskered/Brandt's bat and brown long-eared bat) show similar trends in Wales to UK level trends.

Greater horseshoe bat shows a significant increase in trend in Wales since the base year of 1999, compared to the slight, but not significant increase at the UK level and the relatively stable trend in England. Daubenton's bat shows a significant increase in population trend from both the Hibernation Survey and the Waterway Survey in Wales. This is due to rises in the trends in both surveys in Wales since 2010, in comparison to the UK level where a significant increase is only detected from the Hibernation Survey.

Recent developments in the NBMP

Online recording

Since 2012 we have been developing online data entry systems for our volunteers. This has been a huge task as it has also involved updating the underlying database. We are in the final phase of the work now, however, and by the end of 2014, online data entry will be available for all the core NBMP surveys: Roost Count, Hibernation Survey, Field Survey and Waterway Survey. The new systems will not only improve efficiency within the programme but will also allow volunteers to enter their counts via our website, see their results straight away, download their data and map their sites and transects.

Grey long-eared bat surveillance

We are always striving to improve our knowledge of the distribution of bat species, particularly where information is lacking or patchy. The grey long-eared bat is one of the UK's rarest bat species and is restricted mainly to the southern coast of England and Wales. Recently, research supported by the University of Bristol and BCT culminated in a Conservation Management Plan for this species (available at **bats.org.uk/pages/research.html**). The plan highlights the need to identify and monitor maternity roosts of grey long-eared bats.

The NBMP team carried out a project in 2012 to locate new grey long-eared bat roosts with the aim of expanding our knowledge of the distribution of this species (available at **jncc.defra.gov.uk/page-6316**). We enlisted the help of long-eared bat roost owners within the species' known range and asked them to collect and return droppings from their roosts. Many roost owners and other volunteers kindly participated and the bat droppings they returned were sent off for DNA analysis to identify the species. Grey long-eared bats are very rare, but one new roost site was identified from this project, out of 75 samples from 45 roosts that were tested. We now also have volunteers counting some of the important, known maternity roosts of this species as part of the Roost Count, allowing us to monitor how they are faring in England.


Grey long-eared bat

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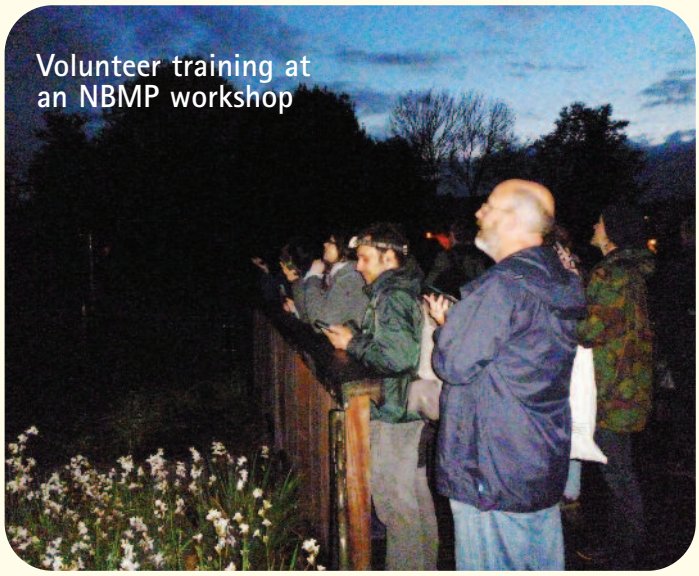
Volunteer training at an NBMP workshop

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The future

Looking ahead, the NBMP will continue to build on its strong foundation of reporting on population change. In the longer-term, aspirations for the programme's improvement and expansion include:

- Continuing to increase survey coverage so that we can improve on our delivery of country level trends and develop bat indicators at a country level.
- Continuing to implement improvements to our training strategy and programme to ensure volunteers have the skills, knowledge and confidence to complete and enjoy participating in the surveys for many years to come.
- Developing the monitoring programme to include new approaches, including expanding our bat detector surveys through the use of new technology to collect data on additional bat species.
- Working to improve our understanding of the drivers of population trends through partnership research projects and bat distribution modelling.

Further reading (available at nbmp.bats.org.uk)

- Walsh *et al*. 2001. *The UK's National Bat Monitoring Programme – Final report 2001*. Bat Conservation Trust, London. DEFRA Publications.
- Bat Conservation Trust. 2014. *National Bat Monitoring Programme Annual Report 2013*.

The National Bat Monitoring Programme is a partnership between the **Bat Conservation Trust** and **JNCC, Defra** and **NRW**. Additional funding is provided by **Natural England**. Bat Conservation Ireland contributes Northern Ireland bat records collated by the Irish Bat Monitoring Programme, which is funded by the National Parks and Wildlife Service of the Department of Arts, Heritage and the Gaeltacht, Republic of Ireland and Northern Ireland Environment Agency. The NBMP is part of the **Tracking Mammals Partnership**.

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Bat Conservation Trust, August 2014