# European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC)

Supporting documentation for the Third Report by the United Kingdom under Article 17

on the implementation of the Directive from January 2007 to December 2012
Conservation status assessment for

Species:

S1326 - Brown long-eared bat (*Plecotus auritus*)

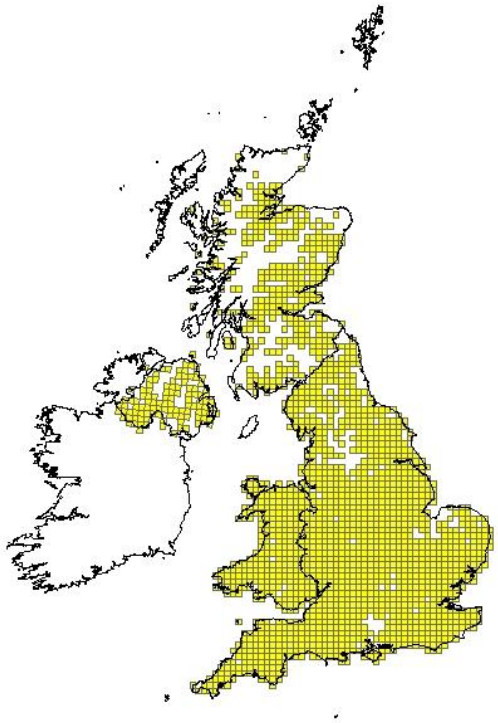
**IMPORTANT NOTE – PLEASE READ**

- The country-level reporting information contained in this document is a contribution to the Article 17 UK report for the habitat/species concerned.
- It has been provided by **Natural England** and refers only to the state of the habitat/species in **England** - it does not constitute an assessment for the whole of the UK.
- The Article 17 UK Approach document provides details on how this information has been used and, combined with information supplied by other Statutory Nature Conservation Bodies
- The format of the document is closely aligned to that set out by the European Commission for Member State reporting – as a result, some of the fields are not applicable at a country-level and have deliberately been left blank – in addition, the content of most fields is constrained by the EC reporting categories.

## Reporting format on the 'main results of the surveillance under Article 11' for Annex II, IV & V species

| *Field name* | *Brief explanations* | |
|---|---|---|
| **0.2 Species** | **0.2.1 Species code** | **S1326** |
| | **0.2.2 Species scientific name** | ***Plecotus auritus*** |
| | **0.2.3 Alternative species scientific name** Optional | |
| | **0.2.4 Common name** Optional | **Brown long-eared bat** |

| **1.1 Maps** | | | |
|---|---|---|---|
| **1.1.1 Distribution map** | | **Sensitive** | **False** |
| | Plecotus auritus is a common and widespread species, found throughout England. Gaps and distribution probably reflecting an absence of survey data rather than an absence of the species, though it may be less common in the uplands of Northern England. | | |



| **1.1.2 Method used - map** | **Estimate based on partial data with some extrapolation and/or modelling** |
|---|---|
| | There have been no structured distribution surveys for this species and records are based on ad-hoc recording in the field, bat roost visits following enquiries to the statutory nature conservation agencies (SNCOs) and data from structured surveillance schemes. However, this species is often found in buildings, so level of recording is likely to be high. The species has also been the subject of several extensive research |

| | |
|---|---|
| | projects (Stebbings, 1966; Entwistle et al., 1996; Swift, 1998).<br><br>This is a widespread species, found throughout England. |
| **1.1.3 Year or period** | **1980-2012** |
| | The date range indicated has been selected to reflect current range/surface area for the species for the following reasons:<br><br>- there are limitations in the quality of the data available. The largest dataset (Richardson, 2000) has data ranging from 1980-1999, but the date of individual records within this dataset is not known. Deviating from this time period would mean having to exclude these records.<br><br>- The greatest level of change affecting populations of this species probably occured prior to 1980, and so 1980 to the present is likely to reflect current distribution and range. |
| **1.1.4 Additional distribution map** | **False** |
| | |
| **1.1.5 Range map** | |
| | |

| | |
|---|---|
| **2.1 Biogeographical region & marine regions** | **ATL** |
| | |
| **2.2 Published sources** | **"BARR, C.J. & GILLESPIE, M.K. 2000. Estimating hedgerow length and pattern characteristics in Great Britain using Countryside Survey data. Journal of Environmental Management, 60, 23-32.**<br><br>**BAT CONSERVATION TRUST. 2006. The National Bat Monitoring Programme Annual Report 2005. Available to download from Bat Conservation Trust website (www.bats.org.uk) and Tracking Mammals Partnership website (www.trackingmammals.org).**<br><br>**BAT CONSERVATION TRUST, 2012. The National Bat Monitoring Programme. Annual Report 2011. Bat Conservation Trust, London. (www.bats.org.uk)**<br><br>**BATTERSBY, J. 1999. A comparison of the roost ecology of the brown long-eared bat Plecotus auritus and the serotine bat Eptesicus serotinus. Unpublished PhD thesis, University of Sussex.**<br><br>**BATTERSBY, J (Ed.). 2005. UK Mammals: Species Status and Population Trends. JNCC/Tracking Mammals Partnership. BOYE, P. & DIETZ, M. 2005. Research Report No 661: Development of good practice guidelines for woodland management for bats. English Nature, Peterborough.**<br><br>**BOYE, P. & DIETZ, M. 2005. Research Report No 661: Development of good practice guidelines for woodland management for bats. English Nature, Peterborough.** |

**BRIGGS, P. 2002 A study of bats in barn conversions in Hertfordshire in 2000. Hertfordshire Biological Records Centre, Hertford.**

**ENTWISTLE, A.C., RACEY, P.A. & SPEAKMAN, J.R. 1996. Habitat exploitation by a gleaning bat, Plecotus auritus. Philosophical Transactions of the Royal Society, London B, 351: 921-931.**

**ENTWISTLE, A.C., RACEY, P.A. & SPEAKMAN, J.R, 1997. Roost selection by the brown long-eared bat Plecotus auritus. Journal of Applied Ecology, 34: 399-408.**

**HAINES-YOUNG, R.H., BARR, C.J., BLACK, H.I.J., BRIGGS, D.J., BUNCE, R.G.H., CLARKE, R.T., COOPER, A., DAWSON, F.H., FIRBANK, L.G., FULLER, R.M., FURSE, M.T., GILLESPIE, M.K., HILL, R., HORNUNG, M., HOWARD, D.C., McCANN, T., MORECROFT, M.D., PETIT, S., SIER, A.R.J., SMART, S.M., SMITH, G.M., STOTT, A.P., STUART, R.C. & WATKINS, J.W. 2000. Accounting for nature: assessing habitats in the UK countryside. Countryside Survey 2000. DETR, HMSO, London.**

**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.**

**MITCHELL-JONES, A.J. 2004. Bat Mitigation Guidelines. English Nature, Peterborough.**

**RICHARDSON, P. 2000. Distribution atlas of bats in Britain and Ireland 1980-1999. Bat Conservation Trust, London.**

**SPEAKMAN, J.R. 1991. The impact of predation by birds on bat populations in the British Isles. Mammal Review, 21, 123-142.**

**SPENCER, J.W. & KIRBY, K.J. 1992 An inventory of ancient woodland for England and Wales. Biological Conservation, 62, 77-93.**

**STEBBINGS, R.E. 1966. A population study of the bats of the genus Plecotus. Journal of Zoology, London, 150, 53-75.**

**SWIFT, S.M. 1998. Long-eared bats. T & A.D. Poyser Ltd, London.**

**Map Data Sources**
**Biological Records Centre - Mammals Database 100m; Environment and Heritage Service - Species Dataset; Natural England - Batsites inventory for Britain (via National Biodiversity Network (NBN) Gateway); Bat Conservation Trust - National Bat Monitoring Programme (NBMP) data to 2005 including: Colony survey (2000 -2005), Hibernation survey (1997- 2005). Bat Conservation Trust - Distribution atlas of bats in Britain and Ireland 1980-1999, GB data only."**

| | |
|---|---|
| | |

| 2.3 Range | | |
|---|---|---|
| **2.3.1 Surface area Range** | | |
| | A widely distributed species, found in all wooded landscapes. | |
| **2.3.2 Method used Surface area of Range** | **Estimate based on partial data with some extrapolation and/or modelling** | |
| | | |
| **2.3.3 Short-term trend Period** | **2001-2012** | |
| | Monitoring of selected maternity colonies has been undertaken since 2001 and monitoring of selected hibernation sites has been undertaken since 1997, as part of the National Bat Monitoring Programme (NBMP). Though, there has not been a full survey of every 10km square within the species range. However, the level of recording is high for this species as its often found in buildings when advice is sought for building renovation or development work. | |
| **2.3.4 Short term trend Trend direction** | **stable** | |
| | The species is widespread across the UK and there are no indications that the range has changed during the specified time period 2001-2012. | |
| **2.3.5 Short-term trend Magnitude** | **a) Minimum** | |
| | | |
| | **b) Maximum** | |
| | | |
| **2.3.6 Long-term trend Period** | | |
| | | |
| **2.3.7 Long-term trend Trend direction** | | |
| | | |
| **2.3.8 Long-term trend Magnitude** Optional | **a) Minimum** | |
| | | |
| | **b) Maximum** | |
| | | |
| **2.3.9 Favourable reference range** | **a) Value in km²** | |
| | | |

| | | |
|---|---|---|
| | **b) Operator for FRR** | |
| | | |
| | **c) FRR is unknown (indicated by "true")** | **False** |
| | | |
| | **d) Method used to set FRR** | |
| | | |
| **2.3.10 Reason for change**<br>Is the difference between the reported value in 2.3.1 and the previous reporting round mainly due to… | **a) Genuine change?** | **False** |
| | | |
| | **b) Improved knowledge/more accurate data?** | **False** |
| | | |
| | **c) Use of different method (e.g. "Range tool")?** | **False** |
| | | |

| **2.4 Population** | | |
|---|---|---|
| **2.4.1 Population size estimation**<br>(using individuals or agreed exceptions where possible) | **a) Unit** | **number of individuals** |
| | | |
| | **b) Minimum** | **155000** |
| | | |
| | **c) Maximum** | **155000** |
| | | |
| **2.4.2 Population size estimation** (using population unit other than individuals)<br>Optional *(if 2.4.1 filled in)* | **a) Unit** | |
| | | |
| | **b) Minimum** | |
| | | |
| | **c) Maximum** | |
| | | |
| **2.4.3 Additional information on population estimates / conversion**<br>Optional | **a) Definition of "locality"** | |
| | | |

| | | |
|---|---|---|
| | **b) Method to convert data** | |
| | | |
| | **c) Problems encountered to provide population size estimation** | |
| | | |
| **2.4.4 Year or period** | **1995-** | |
| | Estimates are from Harris et al., 1995. | |
| **2.4.5 Method used Population size** | **Estimate based on partial data with some extrapolation and/or modelling** | |
| | The population estimate was based on expert judgement and extrapolation from limited field surveys. The 1995 population estimate for Great Britain (GB) was based on very limited information, extrapolating from known size and distribution of Pipistrellus pipistrellus colonies in Scotland following the methods described by Speakman (1991) and Harris et al. (1995).<br><br>National Bat Monitoring Programme data indicates that there has been no significant change in the population index in the period 1997-2012 (Bat Conservation Trust, 2012), so there is no justification for updating the 1995 estimate. | |
| **2.4.6 Short-term trend Period** | **2001-2012** | |
| | | |
| **2.4.7 Short-term trend Trend direction** | **stable** | |
| | | |
| **2.4.8 Short-term trend Magnitude** | **a) Minimum** | |
| | | |
| | **b) Maximum** | |
| | | |
| | **c) Confidence interval** | |
| | | |
| **2.4.9 Short-term trend Method used** | **Estimate based on expert opinion with no or minimal sampling** | |
| | | |
| **2.4.10 Long-term trend – Period** | | |
| | | |
| **2.4.11 Long-term trend Trend direction** | | |
| | | |

| | | |
|---|---|---|
| **2.4.12 Long-term trend Magnitude** Optional | **a) Minimum** | |
| | | |
| | **b) Maximum** | |
| | | |
| | **c) Confidence interval** | |
| | | |
| **2.4.13 Long term trend Method used** | | |
| | | |
| **2.4.14 Favourable reference population** | **a) Number of individuals/agreed exceptions/other units** | |
| | The favourable reference population value has been derived using 1994 as the baseline and making a judgement on whether the population in 1994 was viable in the long-term, using the decision tree in Note 1 (see 'Assessing Conservation Status: UK Approach') as a guide. Historic and current information on population size, distribution and trends have been used in order to assess viability and if the 1994 level was not viable, then consideration has been given to what would constitute a viable population.<br><br>Population trends are currently stable for this species and the species is widespread across England and at a relatively high abundance. The species is, therefore, judged to have been viable in 1994 with the favourable reference value set at the 1994 value. | |
| | **b) Operator** | |
| | | |
| | **c) FRP is unknown indicated by "true"** | **False** |
| | | |
| | **d) Method used to set FRP** | |
| | | |
| **2.4.15 Reason for change** Is the difference between the value reported at 2.4.1 or 2.4.2 and the previous reporting round mainly due to: | **a) Genuine change?** | **False** |
| | | |
| | **b) Improved knowledge/more** | **False** |

| | | |
|---|---|---|
| | **accurate data?** | |
| | | |
| | **c) Use of different method (e.g. "Range tool")?** | **False** |
| | | |

| **2.5 Habitat for the species** | | |
|---|---|---|
| **2.5.1 Area estimation** | **118000** | |
| | P. auritus requires a complex mosaic of habitats to support foraging, roosting and commuting behaviour. Boye & Dietz (2005) provide a good overview of this species' habitat requirements. Deciduous forests with different ages of trees are preferred as foraging habitats, but less structured woodlands (including coniferous forests), forest edges, bushes and hedges, orchards, parks and gardens are used for insect hunting, where this highly manoeuvrable species can glean insects from the foliage. The species also likes to have a source of water near maternity roosts. Individual home ranges are related to habitat structures and prey abundance and vary between one and forty hectares. Individual foraging areas overlap to a minor extent and during foraging flights bats usually stay close to the roost, travelling a maximum distance of about 3 kilometres, with core areas up to 1.5 kiloometres from the roost. P. auritus is a woodland bat that naturally roosts in tree holes, but has adapted very well to using loft spaces of large old buildings such as churches, barns and old houses. The species is also frequently found in bat boxes where they are located in woodland. Colonies move roosts regularly throughout the summer when roosting in woodlands, but tend to be highly philopatric to building roosts. Winter roosts are in caves, mines and cellars, where animals prefer a temperature around 7 degrees C, and occasionally in tree holes.<br><br>There is thought to be a sufficient amount of habitat in the UK to support a viable population of the species. | |
| **2.5.2 Year or period** | **2012-** | |
| | | |
| **2.5.3 Method used Habitat for the species** | **Estimate based on expert opinion with no or minimal sampling** | |
| | | |
| **2.5.4 Quality of the habitat** | **a) Habitat quality** | **Unknown** |
| | | |
| | **b) Assessment method** | **No or insufficient reliable information available to assess the quality of the habitat for this species.**<br><br>**As this is a generalist species, usinig a mosaic of habitats, the area of distribution is used as an estimate of habitat area. This is calculated from the** |

| | | |
|---|---|---|
| | | **number of filled 10km squares in the distribution map.** |
| | | |
| **2.5.5 Short-term trend Period** | **2001-2012** | |
| | | |
| **2.5.6 Short-term trend Trend direction** | **unknown** | |
| | | |
| **2.5.7 Long-term trend Period** | | |
| | | |
| **2.5.8 Long-term trend Trend direction** | | |
| | | |
| **2.5.9 Area of suitable habitat for the species** | **a) Value in km²** | **118000** |
| | The same estimated figure that was used for 2.5.1 has been used for area of suitable habitat. It was agreed with all SNCO specialists that the same figure would be used for generalist species. | |
| | **b) Absence of data indicated as '0'** | |
| | | |
| **2.5.10 Reason for change**<br>Is the difference between the value reported at 2.5.1 and the previous reporting round mainly due to | **a) Genuine change?** | **False** |
| | | |
| | **b) Improved knowledge/more accurate data?** | **False** |
| | | |
| | **c) Use of different method (e.g. "Range tool")?** | **False** |
| | | |

| **2.6 Main pressures** | | |
|---|---|---|
| **a) Pressure** | **b) Ranking** | **c) Pollution qualifier** |
| | H = high importance<br>M = medium importance<br>L = low importance | |
| A10: Restructuring agricultural land holding | H | |
| B02: Forest and Plantation management & use | H | |
| B07: Forestry activities not referred to above | H | |
| G05: Other human intrusions and disturbances | H | |

| | | |
|---|---|---|
| A02: modification of cultivation practices | M | |
| A07: use of biocides, hormones and chemicals | M | |
| D01: Roads, paths and railroads | M | |
| H01: Pollution to surface waters (limnic & terrestrial, marine & brackish) | L | |
| J02: human induced changes in hydraulic conditions | L | |
| | | |

Pressures can generally be divided into those that affect roosts and those that affect commuting and foraging (including prey availability).

Deciduous forests with different tree age classes are preferred as foraging habitats, though this widespread species also forages along hedgerows, woodland edges, within orchards and gradens.

The species can be found roosting in woodlands during the summer, though summer roosts are regularly found within buildings. Winter roosts are generally comprised of a mix of buildings and 'natural roosts' i.e. Caves and trees, where temperature and humidity remain stable.

Agricultural, forestry and building practices that remove or simplify these habitats or negatively affect roost sites could negatively affect P. auritus populations.

| | |
|---|---|
| **2.6.1 Method used – Pressures** | **mainly based on expert judgement and other data** |

| **2.7 Threats** | | |
|---|---|---|
| **a) Threat** | **b) Ranking** | **c) Pollution qualifier** |
| | H = high importance<br>M = medium importance<br>L = low importance | |
| A10: Restructuring agricultural land holding | H | |
| B02: Forest and Plantation management & use | H | |
| B07: Forestry activities not referred to above | H | |
| G05: Other human intrusions and disturbances | H | |
| A02: modification of cultivation practices | M | |
| A07: use of biocides, hormones and chemicals | M | |
| D01: Roads, paths and railroads | M | |

| | | |
|---|---|---|
| H01: Pollution to surface waters (limnic & terrestrial, marine & brackish) | L | |
| J02: human induced changes in hydraulic conditions | L | |
| | | |

Threats can generally be divided into those that affect roosts and those that affect commuting and foraging (including prey availability).

Deciduous forests with different tree age classes are preferred as foraging habitats, though this widespread species also forages along hedgerows, woodland edges, within orchards and gradens.

The species can be found roosting in woodlands during the summer, though summer roosts are regularly found within buildings. Winter roosts are generally comprised of a mix of buildings and 'natural roosts' i.e. Caves and trees, where temperature and humidity remain stable.

Agricultural, forestry and building practices that remove or simplify these habitats or negatively affect roost sites could negatively affect P. auritus populations.

| | |
|---|---|
| **2.7.1 Method used – Threats** | **expert opinion** |

| **2.8 Complementary information** | |
|---|---|
| **2.8.1 Justification of % thresholds for trends** | |
| **2.8.2 Other relevant information** | |
| **2.8.3 Trans-boundary assessment** | |

| **2.9 Conclusions *(assessment of conservation status at end of reporting period)*** |
|---|
| Please refer to the United Kingdom assessment for this species. |

**3 Natura 2000 coverage & conservation measures - Annex II species**
***(only applies to species listed under Annex II of the Directive)***

| **3.1 Population** | | |
|---|---|---|
| **3.1.1 Population size** | **a) Unit** | |

| | | |
|---|---|---|
| Estimation of population size included in the SAC network | | |
| | **b) Minimum** | |
| | | |
| | **c) Maximum** | |
| | | |
| **3.1.2 Method used** | | |
| | | |
| **3.1.3 Trend of population size within the network** (short-term trend) | | |
| | | |

**3.2 Conservation measures**

Conservation measures taken (i.e. already being implemented) within the reporting period and provided information about their importance, location and evaluation.

| **3.2.1 Measure** | **3.2.2 Type** | | | | | **3.2.3 Ranking** H = high importance M = medium importance L = low importance | **3.2.4 Location** where the measure is PRIMARILY applied | | | **3.2.5 Broad evaluation of the measure** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **a) Legal/statutory** | **b) Administrative** | **c) Contractual** | **d) Recurrent** | **e) One-off** | | **a) Inside** | **b) Outside** | **c) Both inside & outside** | **a) Maintain** | **b) Enhance** | **c) Long term** | **d) No effect** | **e) Unknown** | **f) Not evaluated** |
| | | | | | | | | | | | | | | | |