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

Second Report by the United Kingdom under Article 17

on the implementation of the Directive from January 2001 to December 2006

Conservation status assessment for :

S1329: *Plecotus austriacus* - Grey long-eared bat

S1329 *Plecotus austriacus* Grey long-eared bat

Audit trail compiled and edited by JNCC and the Inter-Agency Mammal Working Group

This document is an audit of the data and judgements on conservation status in the UK's report on the implementation of the Habitats Directive (January 2001 to December 2006) for this species. Superscript numbers accompanying the headings below, cross-reference to headings in the corresponding Annex B reporting form. This supporting information should be read in conjunction with the UK approach for species (see 'Assessing Conservation Status: UK Approach').

1. Range Information[2.3]

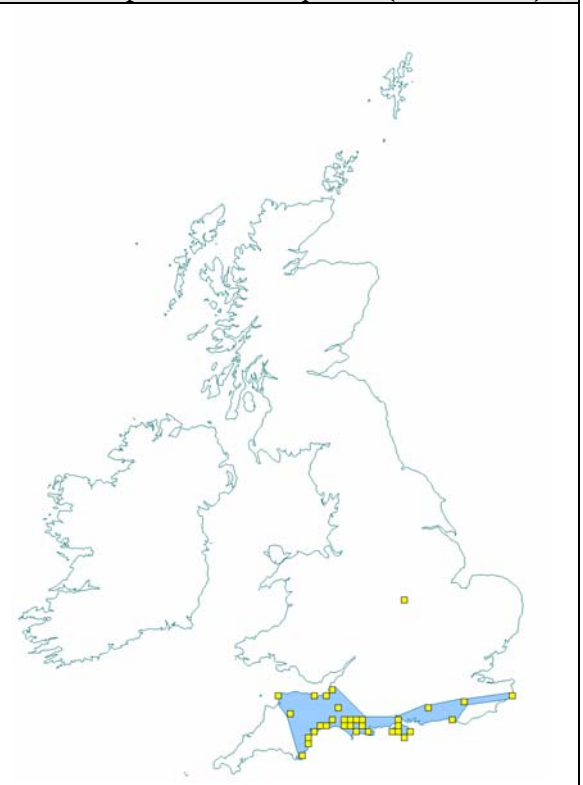
This species is rare in the UK, found only in Devon, Dorset, Hampshire (including the Isle of Wight) and Somerset.

1.1 Surface area of range[2.3.1]

13,702km^2

The above estimate was calculated within Alpha Hull software, using extent of occurrence as a proxy measure for range (see Map 1.1). The value of alpha was set at 45 km to reflect the mobility of this species.

Map 1.1. Current extent of occurrence and occupied 10 km-squares (1980-2005)



Data sources provided in Section 6

1.2 Date of range determination[2.3.2]

1980 – 2006

The date range indicated has been selected to reflect current range/surface area for the species for the following reasons:

- There are limitations in the quality of the data available. The largest dataset used, Distribution atlas of bats in Britain and Ireland (Richardson 2000), has data ranging from 1980-1999 but the year of recording for individual records within this dataset is not known, making it impossible to divide the data into different date ranges. Deviating from this time period would mean having to exclude these records, and since other datasets may not be fully comprehensive in isolation of these, such exclusion would be inappropriate.
- The greatest level of change affecting populations of this species probably occurred prior to 1980, and so 1980 to the present is likely to reflect current distribution and range.
- International treaties and national protective legislation affecting all European bat species came into force from 1980 onwards and is likely to have had an effect on their status.

1.3 Quality of range data[2.3.3]

Poor

Since the early 1980s there has been an increase in the level of survey effort afforded to UK bat species following the increased level of protection in wildlife legislation, such as the Wildlife and Countryside Act 1981 (as amended) and the Conservation (Natural Habitats, &c) Regulations 1994 (and equivalent legislation in Northern Ireland), and a growing interest in wider conservation issues. However, there have been no structured distribution surveys for this species and it is not often encountered because of its rarity. It is morphologically very similar to *Plecotus auritus* and requires an expert to confirm species identity. Data quality is, therefore, assessed as Poor.

1.4 Range trend[2.3.4] & Range trend magnitude[2.3.5]

Stable

There is no information on trends in range for this species during the selected time period, 1980-2006. However, Map 1.2. shows *Plecotus austriacus* historical extent of occurrence (1900-2006), which has been calculated at 14,207km^2 (using Alpha Hull software and an alpha value of 45 km), a -4% change between the current and historic extent of occurrence. This suggests the range has remained stable since historic times.

1.5 Range trend period [2.3.6]

1980 – 2006

The time period selected is considered to reflect the current situation regarding range change for this species and incorporates the time period since the Habitats Directive came into force. Historic information is provided to set the current situation in a historic context.

1.6 Reasons for reported trend in range[2.3.7]

Not applicable

1.7 Favourable reference range[2.7.1]

13,702km^2 (Equal to current)

The favourable reference range value has been derived using 1994 as the baseline and making a judgement on whether the range in 1994 was sufficient to allow the long-term survival of the species, using the decision tree in Note 1 (see 'Assessing Conservation Status: UK Approach') as a guide. Historic and current information on range size and trends have been

used to assess this and, if the 1994 level was not sufficient, then consideration has been given to what would constitute a large enough range.

There has been no apparent change in the range for this species during the time period considered and it is likely that the current estimated range is similar to the natural range. It is therefore appropriate that the current range should be the favourable reference range.

Map 1.2. Historic extent of occurrence and occupied 10 km-squares (1900-2006)

Data sources provided in Section 6

The rationale for including all records in the historic range estimate, and not only those obtained prior to 1980, is that we have assumed a decline over time for this species was more likely than an increase and that where the species occurs currently it would also have occurred historically, but historic recording was not comprehensive enough to provide sufficient information. Data prior to the 1900s has been excluded for the analysis of historic range on the basis that it is unlikely to be numerous or reliable. Historic range has been calculated from the total of the data accumulated over the longer period, is not adjusted for natural fluctuations in range, and could exceed the maximum actual range occupied by the species at any given time during that period.

1.8 Range conclusion[2.8]

Favourable

The range of *P. austriacus* is stable and is the same as the favourable reference range. For these reasons, it is assessed as Favourable.

2. Population of the species[2.4]

2.1 Population estimate[2.4.1]

1000 individuals

The most recent UK pre-breeding population estimate is 1000, all of which are in England (Harris *et al*. 1995).

2.2 Date of population estimate[2.4.2]
1995

2.3 Method of population estimate[2.4.3]
1 = based on expert opinion
The population estimate produced by Harris *et al*. (1995) was based on a subjective estimate of relative abundance, because there were few quantified data on species numbers in relation to habitat associations and patterns of land use.

2.4 Quality of population data[2.4.4]
Poor
The above Great Britain (GB) estimate was not fully supported by quantitative data and was a judgement based on field experience. Harris *et al.*'s reliability rating of the above estimate was three, meaning that "the population estimate was based on a limited amount of data on population densities in different habitat types, or for which the population estimate was obtained by scaling abundance relative to a species for which there was a reasonable population estimate." For this reason quality of data has been assessed as Poor.

2.5 Population trend[2.4.5] & Population trend magnitude[2.4.6]
Unknown
Current population trends are unknown and there are no surveillance schemes collecting data on this species because of its rarity and the difficulty of detecting it and differentiating it from *P. auritus*. *P. austriacus* is generally rare in north-west Europe, but common in southern areas, and is vulnerable to harsh winters. In the cold winter of 1962/1963 one colony in Dorset declined from 22 to four individuals (Stebbings & Griffith 1986). Three colonies in Dorset and one in north-west Devon declined to extinction over 20-30 years (Harris *et al.* 1995).

2.6 Population trend period[2.4.7]
1994 – 2006

2.7 Reasons for reported trend in population[2.4.8]
Not applicable

2.8 Justification of % thresholds for trends[2.4.9]
Not applicable

2.9 Main pressures[2.4.10]
Unknown

2.10 Threats[2.4.11]
151 Removal of hedges and copses
160 General Forestry management
164 Forestry clearance
165 Removal of undergrowth
166 Removal of dead and dying trees
167 Exploitation without replanting

490 Other urbanisation, industrial and similar activities: development, renovation of barns and old buildings, timber treatment
502 routes, autoroutes
624 mountaineering, rock climbing, speliology
803 infilling of ditches, dykes, ponds, pools, marshes or pits
Likely to be similar to *P. auritus*, within its UK range.

2.11 Favourable reference population[2.7.2]

Unknown
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.

There is very little current information to determine a favourable reference population for this species. There is no information on current trends and for this reason the favourable reference population is Unknown.

2.12 Population conclusion[2.8]

Unknown
There is insufficient information to make a robust assessment on population status for this species. The conclusion is, therefore, Unknown.

3. Habitat for the species in the Biogeographic region or sea[2.5]

P. austriacus requires a complex mosaic of habitats to support foraging, roosting and commuting behaviour. Boye & Dietz (2005) provide an overview of this species' habitat requirements.

Foraging areas of the species cover arable land, pasture, uncultivated fields, gardens, orchards, and forest edges. Less frequently the bats forage in towns, barns or other buildings. The species forages in open habitats more frequently than *P. auritus* and has fewer gleaned prey items in its diet. The species also likes to have a source of water nearby maternity roosts.

P. austriacus is only reported using sinanthropic roosts and has adapted very well to using loft spaces of large old buildings such as churches, barns and old houses.

Winter roosts are in caves, mines and cellars, where, animals prefer a temperature around 7°C.

3.1 Surface area of habitat[2.5.2]

Unknown

3.2 Date of estimation[2.5.3]

2006

3.3 Quality of data on habitat area[2.5.4]

Poor

Limited information is available on the habitat requirements of this species and there are no estimates of area of habitat use. Quality of data is therefore taken to be poor.

3.4 Habitat trend[2.5.5]

Unknown

It is unlikely that this species is limited by habitat factors in the UK and its range and distribution are mainly limited by climate. Habitat use is likely to be similar to *P. auritus,* but *P austriacus* has a more varied foraging strategy and utilises open habitats more frequently, thus it is difficult to estimate habitat trends.

3.5 Habitat trend period[2.5.6]

1994-2006

3.6 Reasons for reported trend in habitat[2.5.7]

Not applicable

3.7 Suitable habitat for the species (in km^2)[2.7.3]

Unknown

Since current area of habitat is unknown, it is not possible to suggest an area of suitable habitat.

3.8 Habitat conclusion[2.8]

Unknown

4. Future Prospects[2.6]

Unknown

The future prospects for this species are unknown, because there is so little information on distribution and abundance, both currently and historically. The species may be advantaged by climate change and its range may extend northwards in the future as a result of warmer average annual temperatures. It is probably subject to the same factors as *P. auritus*, within its UK range.

4.1 Future prospects conclusion[2.8]

Unknown

5. Overall Conclusion [2.8]

Unknown

Range for this species is Favourable, but population, habitat and future prospects are all unknown and the overall assessment is, therefore, Unknown.

Table 5.1. Summary of conclusions

Parameter	Judgement	Grounds for Judgement (in accordance with Annex C)	Reliability*
Range	Favourable	Range is stable and not smaller than the favourable reference range	3
Population	Unknown	No or insufficient reliable information available	N/A
Habitat	Unknown	No or insufficient reliable information available	N/A
Future Prospects	Unknown	No or insufficient reliable information available	N/A
Overall Assessment	Unknown	Al Unknown	N/A

*1=High, 2=Moderate, 3=Low

High – Expert opinion is that the concluding judgement accurately reflects the current situation based on a professional understanding of the species. For range, population, and habitat, quality of data used to establish the current estimate has been identified as "good"; data used to inform trends is comprehensive and up to date.

Moderate – A greater understanding of the feature, or the factors affecting it, is required before a confident concluding judgement can be made by experts. For range, population, and habitat, the current estimate and/or trend are based on recent, but incomplete or limited survey data; or alternately, a comprehensive, but outdated (pre-1994) review.

Low – Judgements, and comprising estimates, are based predominately on expert opinion.

N/A – Assessment conclusion is "unknown", on the basis of insufficient reliable information

6. References

BOYE, P. & DIETZ, M. 2005. *Research Report No 661: Development of good practice guidelines for woodland management for bats.* English Nature, Peterborough.

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.

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

STEBBINGS, R.E. & GRIFFITH, F. 1986. *Distribution and status of bats in Europe.* Institute of Terrestrial Ecology, Abbots Ripton.

Map Data Sources

Biological Records Centre - Mammals Database 100m; Natural England - Batsites inventory for Britain (via National Biodiversity Network (NBN) Gateway).

Bat Conservation Trust - Distribution atlas of bats in Britain and Ireland 1980-1999, GB data only.

Bat Conservation Trust - National Bat Monitoring Programme (NBMP) data to 2005 including: Colony survey (1998-2005), Hibernation survey (1997-2005).