

Report under The Conservation of Habitats and  
Species Regulations 2017 (as amended),  
Regulation 9A

**2019-2024**

Conservation status assessment for the species:

**S1326 - Brown long-eared bat**

***(Plecotus auritus)***

**England**



**For further information please contact:**

Natural England, Foss House, Kings Pool, 1-2 Peasholme Green, York, YO1 7PX.  
<https://www.gov.uk/government/organisations/natural-england>

JNCC, Quay House, 2 East Station Road, Fletton Quays, Peterborough, PE2 8YY.  
<https://jncc.gov.uk>

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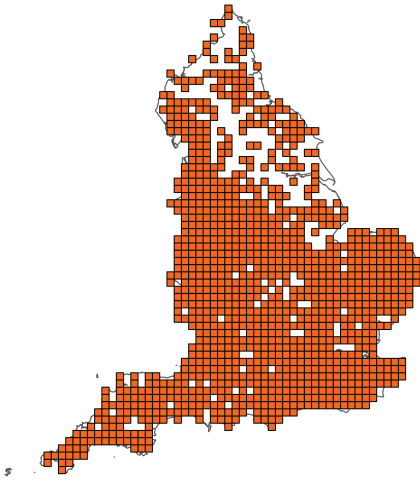
### **Important note - Please read**

- The information in this document represents the England Report under The Conservation of Habitats and Species Regulations 2017 (as amended), Regulation 9A, for the period 2019-2024.
- It is based on supporting information provided by Natural England, which is documented separately.
- The Habitats Regulations reporting 2019-2024 Approach Document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.
- Maps showing the distribution and range of the species are included.
- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the assessments. Further underpinning explanatory notes are available in the related country reports.
- Some of the reporting fields have been left blank because either: (i) there was insufficient information to complete the field; (ii) completion of the field was not obligatory; and/or (iii) the field was not relevant to this species (section 12 National Site Network coverage for Annex II species).

Further details on the approach to the Habitats Regulations Reporting 2019-2024 are available on the [JNCC website](#).

## Assessment Summary: Brown long-eared bat

### Distribution Map



### Range Map



**Figure 1:** England distribution and range map for S1326 - Brown long-eared bat (*Plecotus auritus*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority. The 10km grid square distribution map is based on available species records within the current reporting period.

**Table 1:** Table summarising the conservation status for S1326 - Brown long-eared bat (*Plecotus auritus*). Overall conservation status for species is based on assessments of range, population, habitat for the species, and future prospects.

### Overall Conservation Status (see section 11)

**Unknown (XX)**

### Breakdown of Overall Conservation Status

**Range** (see section 5)

**Favourable (FV)**

**Population** (see section 6)

**Unknown (XX)**

**Habitat for the species** (see section 7)

**Favourable (FV)**

**Future prospects** (see section 10)

**Unknown (XX)**

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## National Level

### 1. General information

1.1 Country	England
1.2 Species code	S1326
1.3 Species scientific name	<i>Plecotus auritus</i>
1.4 Alternative species scientific name	
1.5 Common name	Brown long-eared bat
Annex(es)	IV

### 2. Maps

2.1 Sensitive species	No
2.2 Year or period	1995-2024
2.3 Distribution map	Yes
2.4 Distribution map; Method used	Based mainly on extrapolation from a limited amount of data

#### 2.5 Additional information

No additional information

### 3. Information related to Annex V Species

#### 3.1 Is the species taken in the wild / exploited?

#### 3.2 What measures have been taken?

##### a) Regulations regarding access to property

##### b) Temporary or local prohibition on the taking of specimens in the wild and exploitation

##### c) Regulation of the periods and/or methods of taking specimens

##### d) Application of hunting and fishing rules which take account of the conservation of such populations

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**e) Establishment of a system of licences for taking specimens or of quotas**

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**f) Regulation of the purchase, sale, offering for sale, keeping for sale, or transport for sale of specimens**

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**g) Breeding in captivity of animal species as well as artificial propagation of plant species**

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**Other measures**

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**Other measures description**

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### **3.3: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish)**

#### **a) Unit**

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**Table 2:** Quantity taken from the wild during the reporting period (see 3.3a for units). For species with defined hunting seasons, Season 1 refers to 2018/2019 (autumn 2018 to spring 2019), and Season 6 to 2023/2024. For species without hunting seasons, data are reported by calendar year: Year 1 is 2019, and Year 6 is 2024.

	Season/ year 1	Season/ year 2	Season/ year 3	Season/ year 4	Season/ year 5	Season/ year 6
<b>b) Minimum</b>	-	-	-	-	-	-
<b>c) Maximum</b>	-	-	-	-	-	-
<b>d) Unknown</b>	-	-	-	-	-	-

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#### **3.4: Hunting bag or quantity taken in the wild; Method used**

#### **3.5: Additional information**

No additional information

## Biogeographical Level

### 4. Biogeographical and marine regions

4.1 Biogeographical or marine region where the species occurs ATL

#### 4.2 Sources of information

See section 14 References

### 5. Range

5.1 Surface area (km<sup>2</sup>) 129,330.23

5.2 Short-term trend; Period 1995-2024

5.3 Short-term trend; Direction Stable

5.4 Short-term trend;  
Magnitude

a) Estimated minimum

b) Estimated maximum

c) Pre-defined range

d) Unknown

e) Type of estimate

f) Rate of decrease

5.5 Short-term trend; Method used Based mainly on extrapolation from a limited amount of data

5.6 Long-term trend; Period

5.7 Long-term trend; Direction

5.8 Long-term trend;  
Magnitude

a) Minimum

b) Maximum

c) Rate of decrease

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**5.9 Long-term trend; Method used****5.10 Favourable Reference Range (FRR)**

a) Area (km <sup>2</sup> )	129,683
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b) Pre-defined increment	
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c) Unknown	No
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d) Method used	Model-based approach
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e) Quality of information	moderate
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**5.11 Change and reason for change in surface area of range**

a) Change	No
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b) Genuine change	
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c) Improved knowledge or more accurate data	
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d) Different method	
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e) No information	
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f) Other reason	
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g) Main reason	
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**5.12 Additional information**

No additional information

## 6. Population

6.1 Year or period	1995-2024
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**6.2 Population size (in reporting unit)**

a) Unit	number of individuals
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b) Minimum	33,700
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c) Maximum	1,430,000
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d) Best single value	607,000
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<b>6.3 Type of estimate</b>	95% confidence interval
<b>6.4 Quality of extrapolation to reporting unit</b>	high
<b>6.5 Additional population size (using population unit other than reporting unit)</b>	
a) Unit	
b) Minimum	
c) Maximum	
d) Best single value	
e) Type of estimate	
<b>6.6 Population size; Method used</b>	Complete survey or a statistically robust estimate
<b>6.7 Short-term trend; Period</b>	2017-2022
<b>6.8 Short-term trend; Direction</b>	Stable
<b>6.9 Short-term trend; Magnitude</b>	
a) Estimated minimum	
b) Estimated maximum	
c) Pre-defined range	
d) Unknown	
e) Type of estimate	
f) Rate of decrease	
<b>6.10 Short-term trend; Method used</b>	Complete survey or a statistically robust estimate
<b>6.11 Long-term trend; Period</b>	1995-2024
<b>6.12 Long-term trend; Direction</b>	Stable
<b>6.13 Long-term trend; Magnitude</b>	
a) Minimum	

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**b) Maximum**

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**c) Confidence interval**

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**d) Rate of decrease**

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**6.14 Long-term trend; Method used** Complete survey or a statistically robust estimate used

**6.15 Favourable Reference Population (FRP)**

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**ai) Population size**

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**aii) Unit**

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**b) Pre-defined increment**

---

**c) Unknown** Yes

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**d) Method used**

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**e) Quality of information**

**6.16 Change and reason for change in population size**

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**a) Change** No

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**b) Genuine change**

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**c) Improved knowledge or more accurate data**

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**d) Different method**

---

**e) No information**

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**f) Other reason**

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**g) Main reason**

**6.17 Additional information**

Although no population level assessment has been conducted since Mathews et al 2018, the population stability reported here is based on trend information from the following: Bat Conservation Trust. 2024. The National Bat Monitoring Programme. Annual Report 2023. Bat Conservation Trust, London. Available at ([www.bats.org.uk/pages/nbmp\\_annual\\_report.html](http://www.bats.org.uk/pages/nbmp_annual_report.html))

**6.18 Age structure, mortality and reproduction deviation**      Unknown

## 7. Habitat for the species

### 7.1 Sufficiency of area and quality of occupied habitat (for long-term survival)

**a) Is area of occupied habitat sufficient?**      Yes

**b) Is quality of occupied habitat sufficient?**      Yes

**c) If No or Unknown, is there a sufficiently large area of unoccupied habitat of suitable quality?**

### 7.2 Sufficiency of area and quality of occupied habitat; Method used

**a) Sufficiency of area of occupied habitat; Method used**      Based mainly on extrapolation from a limited amount of data

**b) Sufficiency of quality of occupied habitat; Method used**      Based mainly on extrapolation from a limited amount of data

**7.3 Short-term trend; Period**      2013-2024

**7.4 Short-term trend; Direction**      Unknown

**7.5 Short-term trend; Method used**      Insufficient or no data available

**7.6 Long-term trend; Period**

**7.7 Long-term trend; Direction**

**7.8 Long-term trend; Method used**

### 7.9 Additional information

No additional information

## 8. Main pressures

### 8.1 Characterisation of pressures

**Table 3:** Pressures affecting the species, including timing and importance/impact ranking. Pressures are defined as factors acting currently and/or during the reporting period (2019–2024). Rankings are: High (direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Pressure	Timing	Ranking
PA04: Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.)	Ongoing and likely to be in the future	High (H)
PA02: Conversion from one type of agricultural land use to another (excluding drainage and burning)	Ongoing and likely to be in the future	Medium (M)
PA03: Conversion from mixed farming and agroforestry systems to specialised (e.g. single crop) production	Ongoing and likely to be in the future	Medium (M)
PB05: Logging without replanting or natural regrowth	Ongoing and likely to be in the future	High (H)
PB02: Conversion from one type of forestry land use to another	Ongoing and likely to be in the future	Medium (M)
PB07: Removal of dead and dying trees (including debris)	Ongoing and likely to be in the future	High (H)
PB09: Clear-cutting, removal of all trees	Ongoing and likely to be in the future	Medium (M)
PB14: Forest management reducing old growth forests	Ongoing and likely to be in the future	Medium (M)
PE01: Roads, paths, railroads and related infrastructure	Ongoing and likely to be in the future	High (H)
PF02: Construction or modification (e.g. of housing and settlements) in existing built-up areas	Ongoing and likely to be in the future	High (H)

### 8.2 Sources of information

See section 14 References

### 8.3 Additional information

No additional information

## 9. Conservation measures

### 9.1: Status of measures

<b>a) Are measures needed?</b>	Yes
<b>b) Indicate the status of measures</b>	Measures identified and taken
<b>9.2 Main purpose of the measures taken</b>	Maintain the current range, population and/or habitat for the species
<b>9.3 Location of the measures taken</b>	Both inside and outside National Site Network
<b>9.4 Response to measures</b>	Long-term results (after 2036)

### 9.5 List of main conservation measures

**Table 4:** Key conservation measures addressing current pressures and/or anticipated threats during the next two reporting periods (2025–2036). Measures are ranked by importance/impact: High (direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Conservation measure	Ranking
MB04: Adapt/manage reforestation and forest regeneration	High (H)
ME01: Reduce impact of transport operation and infrastructure	High (H)
MA02: Restore small landscape features on agricultural land	High (H)
MF10: Other measures related to residential, commercial, industrial and recreational infrastructures, operations and activities	High (H)
MB05: Adapt/change forest management and exploitation practices	High (H)
MB06: Stop forest management and exploitation practices	Medium (M)
MA01: Prevent conversion of natural and semi-natural habitats, and habitats of species into agricultural land	High (H)
MF03: Reduce impact of outdoor sports, leisure and recreational activities (incl. restoration of habitats)	Medium (M)

### 9.6 Additional information

No additional information

## 10. Future prospects

### 10.1a Future trends of parameters

ai) Range	Overall stable
bi) Population	Overall stable
ci) Habitat for the species	Overall stable

### 10.1b Future prospects of parameters

aii) Range	Good
bii) Population	Unknown
cii) Habitat for the species	Good

## 10.2 Additional information

Whilst current short and long-term population trends for Brown Long-eared Bat are stable, there is statistically significant evidence of decreases in roost counts at GB scale. England and Scotland both reflect these decreases but individually are not statistically significant. Future prospects for population have taken this into account and been assessed as unknown.

## 11. Conclusions

11.1 Range	Favourable (FV)
11.2 Population	Unknown (XX)
11.3 Habitat for the species	Favourable (FV)
11.4 Future prospects	Unknown (XX)
11.5 Overall assessment of Conservation Status	Unknown (XX)
11.6 Overall trend in Conservation Status	Stable

### 11.7 Change and reason for change in conservation status

This field is not reported as the period 2019-2024 marks the first instance in which conservation status has been assessed at the national level, meaning no comparisons to previous reports can be drawn.

### **11.7 Change and reason for change in conservation status trend**

This field is not reported as the period 2019-2024 marks the first instance in which conservation status has been assessed at the national level, meaning no comparisons to previous reports can be drawn.

### **11.8 Additional information**

No additional information

## **12. UK National Site Network (pSCIs, SCIs, SACs) coverage for Annex II species**

### **12.1 Population size inside the pSCIs, SCIs and SACs network**

a) Unit

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b) Minimum

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c) Maximum

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d) Best single value

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### **12.2 Type of estimate**

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**12.3 Population size inside the network; Method used**

**12.4 Short-term trend of population size within the network; Direction**

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**12.5 Short-term trend of population size within the network; Method used**

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**12.6 Short-term trend of habitat for the species inside the pSCIs, SCIs and SACs network; Direction**

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**12.7 Short-term trend of habitat for the species inside the pSCIs, SCIs and SACs network; Method used**

**12.8 Additional information**

No additional information

## **13. Complementary information**

**13.1 Justification of percentage thresholds for trends**

No justification information

**13.2 Trans-boundary assessment**

No trans-boundary assessment information

**13.2 Other relevant information**

No other relevant information

## 14. References

### Biogeographical and marine regions

#### 4.2 Sources of information

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Swift, S. M. 1998. *Long-eared bats*. T & A D Poyser Natural History

Swift, S., Racey, P., 1983. Resource partitioning in two species of vespertilionid bats (Chiroptera) occupying the same roost. *Journal of Zoology* 200, 249-259.

Veith, M., Beer, N., Kiefer, A., Johannesen, J., Seitz, A., 2004. The role of swarming sites for maintaining gene flow in the brown long-eared bat (*Plecotus auritus*). *Heredity* 93, 342.

## Main pressures

### 8.2 Sources of information

No sources of information

## 15. Explanatory Notes

Field label	Note
1.5: Common name	Plecotus auritus is relatively common and widespread throughout England and often roosts in older buildings, barns, churches and trees. Many records come from householder requests for information or advice. The widespread use of bat detectors and structured surveys for the National Bat Monitoring Programme (NBMP) has increased the number of records in recent years, although it can be difficult to pick up on bat detectors due to its quiet echolocation. Plecotus auritus sonograms can also be difficult (occasionally impossible) to distinguish from those of other species.
2.2: Year or Period	This time period (1995-2024) has been selected as distribution has been partially calculated using data from Mathews et al 2018.
2.3: Distribution map	Range is based on presence data collected between 1995 and 2024. Areas that contain very isolated records may not have been included in the area of distribution.
2.4: Distribution map; Method used	Range is based on presence data collected between 1995 and 2024. Areas that contain very isolated records may not have been included in the area of distribution.
5.3: Short-term trend; Direction	<i>P. auritus</i> is a widely distributed species, found in all wooded landscapes but tree-roosts are critically under-recorded and acoustic surveys are also likely to substantially under-record the species because it has very quiet calls (Russ 2012). There is also potential for the species to be overlooked in open habitats, such as those for wind farms, as its calls are substantially different from those used in more enclosed areas (Mathews et al 2018); and because the calls can also be confused with those of <i>Myotis</i> spp, particularly when heterodyne detectors are used (Russ 2012). Because the species uses open areas such as parks and gardens, as well as woodland, habitable area within the range simply included all habitats except montane, potentially overestimating the true habitable area.

6.1: Year or Period	<p>Presence data was collected between 1995-2024 at 10km resolution or higher, gathered from the NBN gateway, local records centres, individual species experts, national and local monitoring schemes and iRecord for each species for the 'Review of the Population and Conservation Status of British Mammals (Mathews et al, 2018) used to determine population status for the species for this report. However, the population was determined between 2016-2017 and only data that had been verified by the source organisation was included in the distribution maps.</p>
6.2: Population size	<p>These estimates are the same as those reported by Mathews et al., 2018 due to a lack of updated data analysis. Mathews et al (2018) calculated a population size of adult individuals of 607,000 for England with upper and lower confidence intervals of 33,700-1,430,000). There is uncertainty surrounding the population estimates for this species as demonstrated by the relatively wide confidence intervals. Population size was calculated using the median adult density (bats/km<sup>2</sup>) x total habitable area within the range (km<sup>2</sup>) (for full details see Mathews et al 2018). Habitable area was defined as all area within the range excluding montane habitat since this is unlikely to include suitable locations for maternity roosts. There is an absence of data on roost density in trees, so it is difficult to compute a total population estimate. It is considered unlikely that most maternity roosts in Britain are known so it was not possible to make a total count. Although a population estimate of approximately 200,000 individuals was given in Harris et al. (1995) (England 155,000; Scotland 27,500; Wales 17,500), this estimate was graded as having very poor reliability (score 4/5) and was largely derived from expert opinion on the ratio of Brown long-eared to pipistrelle bats (roosts and individuals). Direct comparison is therefore not possible.</p>
6.8: Short-term trend; Direction	<p>The National Bat Monitoring Programme (BCT 2024) England trend from both the hibernation survey and the roost count shows no significant change in the smoothed index since the baseline year (1999 for the hibernation</p>

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survey, 2001 for the roost count). However, there has been a significant decline in roost count at GB scale, that is mirrored in the non-significant trends for England and Scotland. Therefore, whilst the population of brown long-eared bat in England is currently considered to have been stable in the long-term (since 1999) and the short-term (since 2017), there is some uncertainty about future prospects.

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7.1: Sufficiency of area and quality of occupied habitat

*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. The species is commonly associated with trees, particularly broadleaved and mixed woodland, but less structured woodlands (including the edges of coniferous forests), forest edges, bushes and hedges, orchards, parks and gardens are used for foraging (Dietz and Keifer 2016, Entwistle et al. 1996). It is adapted to foraging in cluttered habitats and makes extensive use of sight, passive listening, and short duration echolocation (Anderson and Racey 1991, Anderson and Racey 1993, Eklof and Jones 2003). *P. auritus* gleans approximately half its prey from vegetation, with the remainder being caught in the air (Swift and Racey 1983, Anderson and Racey 1991, Anderson and Racey 1993). The species has highly manoeuvrable flight and gleaning is facilitated by its capability to hover in addition to using slow horizontal flight (Norberg 1976). It has been reported to use linear features such as treelines and large hedgerows to move between roosts and alternative foraging areas (Howard 1995, Murphy et al. 2012). *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. Maternity roosts are located in trees, bat boxes and buildings - predominately barns, churches and dwelling houses with large internal flight spaces, preferably with a source of water nearby (Boyd and Stebbings 1989, Dietz and Keifer 2016). There is a high degree of fidelity to building roosts

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by both sexes (Entwistle et al. 2000; Park et al. 1998), with evidence of natal philopatry, yet colonies do not appear to be inbred (Burland et al 1999; 2001). Swarming sites, and associated genetic exchange, therefore appear particularly critical for Brown long-eared bat conservation (Burland et al. 2001; Furmankiewicz & Altringham 2007; Veith et al. 2004) yet the species forms only a very low proportion of total captures at swarming sites (Glover & Altringham 2008; Parsons et al. 2003). Winter roosts are in caves, mines and cellars, where animals prefer a temperature around 7 oC, and occasionally in tree holes (Boye and Dietz 2005). This species prefers to hibernate in humidity conditions lower than for other species (48.6-78.8%) (Downs and Wells 2021). *P. auritus* flies very frequently during the winter (sometimes daily (Hays et al. 1992) so habitat quality around hibernacula is therefore likely to be very important to their conservation. Individual home ranges are related to habitat structures and prey abundance and vary between one and forty hectares (Boye and Dietz 2005). Individual foraging areas may 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 kilometres from the roost. In England, females in the maternity period have been found to return repeatedly to non-overlapping core foraging areas which averaged 2.1ha (range 0.7-5.4; Murphy et al. 2012). There is thought to be a sufficient amount of habitat in the UK to support a viable population of the species.

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7.2: Sufficiency of area and quality of occupied habitat; Methods used

There is some detailed information on the habitat requirements/limitations of this species, but the total area of suitable habitat is unknown as the species depends on a matrix of habitats in a landscape. To obtain a proper estimate of suitable habitat used by the species, it would be necessary to first identify all of the foraging and roosting habitat located within the current range boundary; determine whether or not each of these features were being used; and subsequently calculate the combined area of all currently used habitats. This process would require

	<p>very detailed habitat information at a fine scale across the UK. We do not currently have this level of information.</p>
7.4: Short-term trend; Direction	<p>There is insufficient data on any change in the level of suitable habitat or any change in the quality of habitat for the species. This is extremely difficult question to answer as this is a generalist species, using a mosaic of habitats across a large area.</p>
8.1: Characterisation of pressures	<p>Pressures can generally be divided into those that affect roosts and those that affect commuting and foraging (including prey availability). Although roosts are strictly protected, a small number of licences permitting exclusion or roost destruction are issued every year. In addition, changes in building practices to improve energy efficiency mean that new buildings may offer fewer roosting opportunities (Mitchell Jones 2010). Brown long eared bats forage within woodland, grassland and wetland habitats. Agricultural and forestry practices that remove, modify or fragment these habitats, or affect the biomass of suitable insect prey could negatively affect populations.</p>
5.10: Favourable Reference Range (FRR)	<p>Favourable reference range is based on presence data collected between 1995-2016 for Mathews et al 2018 (which is still the best source we have). Areas that contain very isolated records may not have been included in the area of distribution. An alpha hull value of 20km was drawn around the presence records, which represented the best balance between the inclusion of unoccupied sites (i.e. where records are sparse but close enough for inclusion) and the exclusion of occupied areas due to gaps in the data (i.e. where records exist but are too isolated for inclusion). An additional 10km buffer was added to the final hull polygon to provide smoothing to the hull and to ensure that the hull covered the areas recorded rather than intersecting them. This differs from the approach taken in 2013 and 2007 whereby a 45km alpha hull value was used for all species with a starting range unit of individual 10km squares. The new method has led to much finer detail maps being produced underpinned by data gathered at a much finer resolution, leading to the production of this</p>

	<p>current FRR. The FRR was not set at an England level in the 2007-2012 Article 17 report, however, it is broadly in line with what would have been set independently for England when set in the UK context. The quality of information is set to moderate (rather than high) due to the lack of population updates since Mathews et al (2018).</p>
<p>5.11: Change and reason for change in surface area of range</p>	<p>The English range stated by Mathews et al (2018) is 129,330.23 square kilometres. The JNCC provided current range (2025) is 129,683 square kilometres (using the same methodology as for 2007 and 2013), which is deemed similar enough to constitute 'no change'.</p>
<p>6.15: Favourable Reference Population (FRP)</p>	<p>It is generally accepted that the species is likely to have suffered a historical decline, but there is a lack of data available on the scale of this decline. Given the wide intervals around the population estimate and the uncertainty around historic trends it has not been possible to set a Favourable Reference Value for population at this time. Further research into historic population declines including novel genetic techniques, regional variations in trends and improved population estimates are required to establish an FRV for population.</p>