

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

2019-2024

Conservation status assessment for the species:

S1303 - Lesser horseshoe bat

(Rhinolophus hipposideros)

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>

This report was produced by JNCC in collaboration with Natural England.

This document should be cited as:

Natural England and JNCC. (2026). Conservation status assessment for the species: S1303 Lesser horseshoe bat (*Rhinolophus hipposideros*).

This resource is published by Natural England under the [Open Government Licence v3.0](#) for public sector information. You are encouraged to use and reuse information subject to certain conditions. Note that some images, maps or tables may not be copyright Natural England; please check sources for conditions of re-use. © Natural England 2026.

The views and recommendations presented in this resource do not necessarily reflect the views and policies of JNCC.

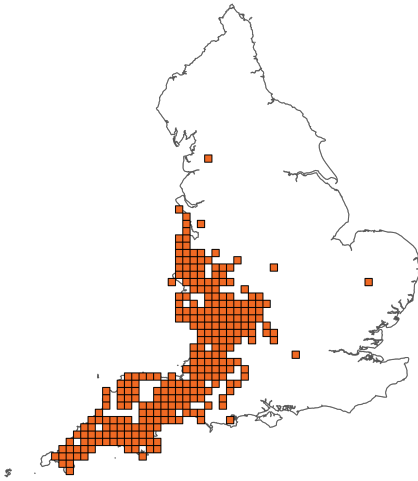
Important note - Please read

- 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: Lesser horseshoe bat

Distribution Map



Range Map

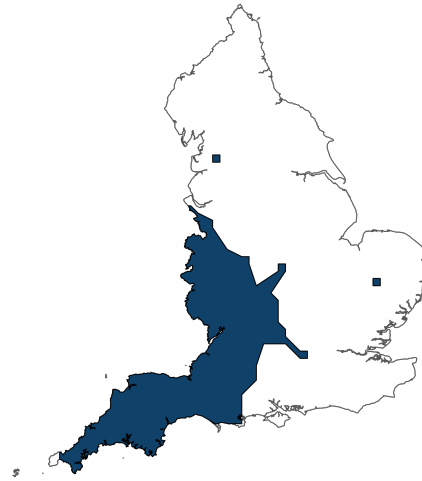


Figure 1: England distribution and range map for S1303 - Lesser horseshoe bat (*Rhinolophus hipposideros*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas 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 S1303 - Lesser horseshoe bat (*Rhinolophus hipposideros*). 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)

Unfavourable-inadequate (U1)

Breakdown of Overall Conservation Status

Range (see section 5)

Favourable (FV)

Population (see section 6)

Unfavourable-inadequate (U1)

Habitat for the species (see section 7)

Favourable (FV)

Future prospects (see section 10)

Favourable (FV)

List of Sections

National Level	5
1. General information	5
2. Maps	5
3. Information related to Annex V Species	5
Biogeographical Level	7
4. Biogeographical and marine regions	7
5. Range	7
6. Population	8
7. Habitat for the species	11
8. Main pressures	12
9. Conservation measures	13
10. Future prospects	14
11. Conclusions	14
12. UK National Site Network (pSCIs, SCIs, SACs) coverage for Annex II species	15
13. Complementary information	16
14. References	17
Biogeographical and marine regions	17
Main pressures	18
15. Explanatory Notes	19

National Level

1. General information

1.1 Country	England
1.2 Species code	S1303
1.3 Species scientific name	<i>Rhinolophus hipposideros</i>
1.4 Alternative species scientific name	
1.5 Common name	Lesser horseshoe bat
Annex(es)	II, 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

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

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

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

Other measures

Other measures description

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

a) Unit

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) Minimum	-	-	-	-	-	-
c) Maximum	-	-	-	-	-	-
d) Unknown	-	-	-	-	-	-

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 (km²) 35,271.01

5.2 Short-term trend; Period 2013-2024

5.3 Short-term trend; Direction Unknown

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

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

a) Area (km ²)	33,552
b) Pre-defined increment	
c) Unknown	No
d) Method used	Model-based approach
e) Quality of information	moderate

5.11 Change and reason for change in surface area of range

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

5.12 Additional information

No additional information

6. Population

6.1 Year or period 1995-2024

6.2 Population size (in reporting unit)

a) Unit	number of individuals
b) Minimum	13,900
c) Maximum	27,700
d) Best single value	19,400

6.3 Type of estimate	95% confidence interval
6.4 Quality of extrapolation to reporting unit	high
6.5 Additional population size (using population unit other than reporting unit)	
a) Unit	
b) Minimum	
c) Maximum	
d) Best single value	
e) Type of estimate	
6.6 Population size; Method used	Complete survey or a statistically robust estimate
6.7 Short-term trend; Period	2013-2024
6.8 Short-term trend; Direction	Stable
6.9 Short-term trend; Magnitude	
a) Estimated minimum	
b) Estimated maximum	
c) Pre-defined range	
d) Unknown	
e) Type of estimate	
f) Rate of decrease	
6.10 Short-term trend; Method used	Based mainly on extrapolation from a limited amount of data
6.11 Long-term trend; Period	1999-2024
6.12 Long-term trend; Direction	Increasing
6.13 Long-term trend; Magnitude	
a) Minimum	

b) Maximum

c) Confidence interval

d) Rate of decrease

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

6.15 Favourable Reference Population (FRP)

ai) Population size

aii) Unit

b) Pre-defined increment Current population is between 5% and 25% smaller than the FRP

c) Unknown No

d) Method used Expert opinion

e) Quality of information low

6.16 Change and reason for change in population size

a) Change No

b) Genuine change

c) Improved knowledge or more accurate data

d) Different method

e) No information

f) Other reason

g) Main reason

6.17 Additional information

Although no population level assessment has been conducted since Mathews et al 2018, the stable population reported here is based on trend information from the following: Bat Conservation Trust. 2025. The National Bat Monitoring Programme. Annual Report 2024. Bat Conservation Trust, London. Available at (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)
PA05: Abandonment of management/use of grasslands and other agricultural and agroforestry systems (e.g. cessation of grazing, mowing or traditional farming)	Ongoing and likely to be in the future	High (H)
PA10: Livestock farming (without grazing)	Ongoing and likely to be in the future	Medium (M)
PB02: Conversion from one type of forestry land use to another	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	Medium (M)
PC01: Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell)	Ongoing and likely to be in the future	High (H)
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	Medium (M)
PF05: Sports, tourism and leisure activities	Ongoing and likely to be in the future	Medium (M)
PM06: Other natural catastrophes	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

a) Are measures needed?	Yes
b) Indicate the status of measures	Measures identified and taken
9.2 Main purpose of the measures taken	Maintain the current range, population and/or habitat for the species
9.3 Location of the measures taken	Both inside and outside National Site Network
9.4 Response to measures	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
MA02: Restore small landscape features on agricultural land	Medium (M)
MA05: Adapt mowing, grazing and other equivalent agricultural activities (e.g. burning)	High (H)
MA09: Manage the use of natural and synthetic fertilisers as well as chemicals in agricultural for plant and animal production	High (H)
MB05: Adapt/change forest management and exploitation practices	High (H)
ME01: Reduce impact of transport operation and infrastructure	High (H)
ME05: Manage/reduce/eliminate noise, light and other forms of pollution from transport	Medium (M)
MF01: Managing the impacts of converting land for construction and development of infrastructure	Medium (M)
MF03: Reduce impact of outdoor sports, leisure and recreational activities (incl. restoration of habitats)	Medium (M)

MS03: Restoration of habitat of species from the directives	High (H)
MA13: Manage agricultural drainage and water abstraction (incl. the restoration of drained or hydrologically altered 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	Good
cii) Habitat for the species	Good

10.2 Additional information

Although no population level assessment has been conducted since Mathews et al (2018), the population increase projected here is based on ongoing trends from the following: Bat Conservation Trust (2025). The National Bat Monitoring Programme. Annual Report 2024. Bat Conservation Trust, London. Available at (www.bats.org.uk/pages/nbmp_annual_report.html)

11. Conclusions

11.1 Range	Favourable (FV)
11.2 Population	Unfavourable-inadequate (U1)
11.3 Habitat for the species	Favourable (FV)
11.4 Future prospects	Favourable (FV)

11.5 Overall assessment of Conservation Status Unfavourable-inadequate (U1)

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 number of individuals

b) Minimum

c) Maximum

d) Best single value

12.2 Type of estimate

12.3 Population size inside the network; Method used Insufficient or no data available

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

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

Insufficient or no data available

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

Unknown

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

Insufficient or no data available

12.8 Additional information

Although the species is monitored within the UK National Site Network (where it occurs) through the National Bat Monitoring Programme (NBMP) Hibernation and Roost Count surveys, the focus is on providing both UK and national population trends. No comparison is made between protected and non-protected sites.

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

Bat Conservation Trust (2018). The State of the UK's Bats 2017. Bat Conservation Trust, London. Available at <https://www.bats.org.uk/our-work/national-bat-monitoring-programme/reports/the-state-of-the-uks-bats>

Bat Conservation Trust (2025). The National Bat Monitoring Programme. Annual Report 2024. Bat Conservation Trust, London. Available at <https://www.bats.org.uk/our-work/national-bat-monitoring-programme/reports/nbmp-annual-report>

Billington G, Rawlinson MD (2006). Report on horseshoe bat flight lines and feeding areas. CCW Science Report No. 75. CCW, Bangor

Boye P, Dietz M. 2005. Research Report No 661: Development of good practice guidelines for woodland management for bats. English Nature, Peterborough.

Downs, N. C., Cresswell, W. J., Reason, P., Wells, D., Sutton, G, Williams, L., & Wray, S. (2016a) Activity patterns and use of night roosts by lesser horseshoe bats *Rhinolophus hipposideros* (Borkhausen, 1797). *Acta Chiropterologica*. Vol 18(1): 223-237.

Downs, N. C., Cresswell, W. J., Reason, P., Wells, D., Sutton, G., & Wray, S. (2016b) Sex specific habitat preferences of foraging and commuting lesser horseshoe bats *Rhinolophus hipposideros* (Borkhausen, 1797) in lowland England. *Acta Chiropterologica*. Vol 18(2): 451-465.

Fensome AG, Mathews F. (2016). Roads and bats: a meta-analysis and review of the evidence on vehicle collisions and barrier effects. *Mammal Review*, 46(4), 311-323.

Forestry Commission (2017). Forestry Statistics 2017. Forest Research. Edinburgh.

Forestry Commission (2016). Preliminary estimates of the changes in canopy cover in British woodlands between 2006 and 2015. National Forest Inventory, Edinburgh.

Knight T, Jones G. (2009). Importance of night roosts for bat conservation: roosting behaviour of lesser horseshoe bat *Rhinolophus hipposideros*. *Endangered Species Research*. Vol. 8: 79-86. www.int-res.com

Mathews F, Kubasiewicz LM, Gurnell J, Harrower C, McDonald RA, Shore RF. 2018. A review of the population and conservation status of British Mammals. A report by The Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage.

McCracken DI (1993). The potential for avermectins to affect wildlife. *Vet Parasitol*, 48 (1-4), 273-280

Ransome, R.D. (1989). Population changes of Greater horseshoe bats studied near Bristol over the past twenty-six years. *Biological Journal of the Linnean Society*, 38, 71-82.

Ransome, R.D. (1996). The management of feeding areas for greater horseshoe bats. *English Nature Research Report No. 174*. English Nature.

Schofield HW. (1984). The ecology and conservation biology of *Rhinolophus hipposideros*, the lesser horseshoe bat. PhD, University of Aberdeen.

Schofield HW, McAney K (2008). Lesser horseshoe bat *Rhinolophus hipposideros*. Pp. 306-310 in Harris S & Yalden DW. *Mammals of the British Isles: Handbook*, 4th edition. The Mammal Society, Southampton. 799pp.

Zarzoso-Lacoste D, Jan PL, Lehnen L, Girard T, Besnard AL, Peuchmaille SJ, Petit EJ (2017). Combining non invasive genetics and a new mammalian sex-linked marker provides new tools to investigate population size, structure and individual behaviour: An application to bats.'

Main pressures

8.2 Sources of information

No sources of information

15. Explanatory Notes

Field label	Note
1.5: Common name	<p>R.hipposideros has a restricted distribution in Great Britain with populations found across south-west, southern and western England and the majority of Wales. R. hipposideros bats have specific roosting requirements, favouring undisturbed sites with large entrances that permit uninterrupted flight into the roost. Old buildings, particularly those with slate roofs tend to be used in the summer and underground sites including caves, quarries and cellars are used in the winter. Night roosts appear fundamental to the conservation of the species (Schofield, 1984, Knight and Jones, 2009, Downs et al., 2016a). R. hipposideros bats forage largely in broadleaved woodland, wooded riparian corridors and mature treelines and hedgerows (Mathews et al, 2018). With the effects of climate change producing warmer and drier springs the species is likely to continue to increase in population size and range. Protection of roost sites and changes in agricultural patterns under agri environment schemes are also responsible for positive shifts for the species. Linear infrastructure and associated lighting, changes in land use/management, unsympathetic development of buildings resulting in roost loss and roost degradation remain risks to the species long term.</p>
2.3: Distribution map	<p>The species has been subject to a high level of recording; coordinated monitoring of summer roosts in Wales and England has taken place since 1993 and 1998 respectively. Structured monitoring of some hibernation sites started in 1997, though some sites have been monitored on an ad hoc basis for many years. The distribution map is considered to accurately reflect the current distribution of the species and data quality is considered good.</p>
5.3: Short-term trend; Direction	<p>The species range is similar to that reported by Mathews et al, 2018, which in turn is similar to previous estimates. There does appear to be increasing numbers of records of hibernating individuals in the north of England and the Midlands. Increased survey effort and long term monitoring</p>

schemes combined with improved technology through improved acoustic detectors has increased our knowledge of the species range.

6.1: Year or Period

Range is based on presence data collected between 1995-2024. Areas that contain very isolated records may not have been included in the distribution. The range map has been produced following the same methodology that was used in 2007 and 2013 whereby a 45km alpha hull value has been used for all species with a starting range unit of individual 10km squares. In 2018 range was taken from Mathews et al (2018), whereby 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 smooting to the hull and to ensure that the hull covered the areas recorded rather than intersecting them. That process led to the production of much finer detailed maps being produced. However, this approach to mapping was not an option for this reporting round (2018-2024).

6.3: Type of estimate

Two main sources of error were identified in Mathews et al, (2018) with the estimates. The first source of potential error relates to estimates being derived from observed numbers of bats at 260 maternity sites; it's likely that there are other, unrecorded colonies leading to an under-estimation of population size. The second source of error relates to there being little information being available on the sex ratio within maternity colonies pre-breeding. The overall estimate is based on a single expert opinion of 70% of the colony being female, with other experts indicating that they had no additional directly measured data. Unpublished data from recent research conducted using genotyping at 6 roosts in the Republic of Ireland indicate that the proportion of adult males within a colony varies from 7% to 72% (median 37%) (Mathews et al 2018 - Harrington & O'Reilly pers com). This

means that the median proportion of females would be expected to be 63% (range 28% to 93%). If applicable in GB, this would reduce the estimated size of the population. Recent genotyping work at 19 colonies in northern France also indicates the presence of significant numbers of adult males within pre-breeding colonies but here the median value was 25.8% with only 5 sites having values greater than the expert opinion used here (Zarzoso-Lacoste et al., 2017). It is notable that one of these was a large colony with >200 individuals, which implies that it is not just small or suboptimal colonies that may have large proportions of males. Given the large effect on the total population size, further research is needed to examine this issue in GB. It is possible that maternity colonies within habitats that provide a higher density of insect prey can support a greater percentage of males (Ransome, pers. comm.). In Mathews et al., (2018), it has been assumed that there are equal numbers of male and female bats in the population overall, given the lack of any contrary evidence in the literature.

6.8: Short-term trend;
Direction

Results from the National Bat Monitoring Programme annual report 2024 (Bat Conservation Trust 2025) have shown a 0.2% increase in roost count data for England between 2018-2023 (not statistically significant). Over the same time period, the hibernation survey showed a 13.4% decrease. At this time, the lesser horseshoe bat population appears to be stable in England.

7.1: Sufficiency of area
and quality of occupied
habitat

The habitable area (35,271km²) has been defined as all of the habitat within the range excluding montane habitat since this is unlikely to include suitable locations for maternity roosts. The area of habitat available for the species is considered to be sufficient and is allowing for range expansion, however, the quality of the habitat remains largely unknown, though agri-environment schemes are known to be responsible for the positive shifts seen with this species. *R. hipposideros* 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. Woodlands

play a predominant role as foraging habitats for the species, especially in spring when *R. hipposideros* almost exclusively forages there. Foraging areas are close to summer roosts (distances up to 4.2 kilometres) and the animals spend about half their activity time within a radius of 600 metres. Summer roosts are usually situated close to woodland or a park. If this is not the case a system of continuous linear elements, such as hedges or walls, provide guidance to the bats when flying to their foraging areas. Undisturbed hibernation sites in underground caves, mines or cellars must be available at a maximum distance of 30 kilometres from the summer roosts. Night roosts are important in extending the foraging area available to a colony and occasionally it may be advantageous for bats to remain in these satellite roosts during the day to conserve energy levels rather than return to the maternity roost in the same night. These night roosts appear to be particularly important during pregnancy and lactation (Schofield, 1984, Billington and Rawlinson 2006, Knight and Jones, 2009).

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

As this is a generalist species using a mosaic of habitats, the area of distribution is used as an estimate of habitat area and is assumed to be sufficient given the longer-term population increase and range of the species. However, a detailed analysis of all of the suitable habitat available for the species, where all of the foraging and roosting habitat has been located within the current boundary and assessed as to whether it has been used has not taken place. This process would require very detailed habitat information at a fine scale across the UK and we do not currently have this level of information.

7.4: Short-term trend; Direction

The trend would appear to be relatively stable as the previous Article 17 report for this species calculated the habitat for the species at 33,552km². The two estimates appear to be broadly in line with each other with the latest estimate being 35,271km². It is assumed that this species which can occupy a mosaic of habitat types could be present throughout the entire area, except for montane areas.

8.1: Characterisation of pressures

Abandonment of pastoral systems and lack of grazing, particularly of cattle grazing (Ransome, 1996) compounded by use of anthelmintics (McCracken, 1993). Dung beetles form a key component of the species diet. Increasing urbanisation results in loss of foraging habitat, severance of commuting routes and isolation of colonies. *R. hipposideros* commute and forage along linear features, over wet grassland and in woodland. Agricultural and forestry practices that remove or simplify these habitats, or affect the biomass of insect prey could negatively affect populations. Demolition and conversion of buildings results in loss of roost sites. This species requires large open roof spaces with large access points which are easily lost when converted. Although roosts are strictly protected, *R. hipposideros* has quite specific summer roosting requirements that are not provided by most modern buildings. In addition, changes in building practices to improve energy efficiency mean that new buildings may offer fewer roosting opportunities. Roost sites are often in old agricultural buildings or large rural dwellings subject to deterioration or to conversion to alternative use. There is good understanding of the roosting conditions and habitat required for the species (Schofield 2008). However mitigation for developments affecting roosts and habitat is not always undertaken as proposed compromising its likelihood of success. These pressures also act via construction of new, and widening/realignment of existing linear infrastructure projects. The species is low flying and likely to be vulnerable to mortality through direct collision with vehicles (Fensome & Mathews, 2016). Lighting from urbanisation and infrastructure can sever commuting routes, impact foraging areas and delay emergence times. Use of underground sites for recreational purposes (e.g. caving, adventure trips, coasteering) cause disturbance to hibernating bats affecting their ability to survive the winter, or causing them to abandon sites. Modern mineral extraction methods are unlikely to create suitable mines and galleries for future occupation. Loss/reduction in value of woodland habitat. Regarding natural catastrophes, long-

term research has shown that the greatest threat to populations is mass starvation in late cold springs (Ransome, 1989). The impact of these is being ameliorated by providing good quality habitat close to hibernation sites. The rate of demolition and conversion of buildings resulting in loss of roost sites is unlikely to decrease. Mine collapse and flooding and reopening of mines can all threaten the species. Abandonment of pastoral systems and lack of grazing, particularly of cattle grazing compounded by use of anthelmintics is likely to remain a threat along with demolition and conversion of buildings (resulting in loss of roost sites), loss of foraging habitat, severance of commuting routes, isolation of colonies, and construction of new (and widening/realignment of existing) linear infrastructure projects. The use of underground sites for recreational purposes and mineral extraction activities will continue. The loss/reduction in value of woodland habitat will also continue.

9.5: List of main conservation measures

Legal and administrative measures continue to be required to ensure that the protection provided by the legislation is effective and that protected habitats for the species are managed appropriately. Road design, construction and operation need to take into account the likely impact on bats, e.g. in relation to the provision of safe crossing structures and the loss of and severance of bat habitat and lighting. *R. hipposideros* requires a complex mosaic of habitats to support foraging, roosting and commuting behaviour. Woodlands and semi or unimproved wet pasture bounded by hedgerows have been shown to be important foraging habitats for the species. Foraging areas are close to summer roosts (distances up to 4.2 kilometres) and the animals spend about half of their activity time within a radius of 600 metres. Roost sites are often in buildings that are subject to deterioration or to conversion to alternative use. There is good understanding of the roosting conditions and habitat required for the species (Schofield 2008). However, mitigation for developments affecting roosts and habitat is not always undertaken as proposed compromising its likelihood of success. Planning at

	<p>landscape scale is required to conserve commuting routes and foraging areas along with effective management of habitats through agri-environmental schemes and sympathetic forest management plans.</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 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>
5.11: Change and reason for change in surface area of range	<p>The English range stated by Mathews et al (2018) is 33,500 square kilometres. The JNCC provided current range is 33,552 square kilometres, which is deemed similar enough to constitute 'no change'.</p>
6.2: Population size	<p>These estimates (based on Mathews et al., 2018) are the same as the last reporting round (2019) due to a lack of updated data analysis.</p>

6.15: Favourable Reference Population (FRP)	The operator '5-25% smaller' was used based on there being known historic records (e.g. Roudsea NNR in Cumbria) with no known current presence, supporting the contention that there has been some historic population loss. The extent of historic decline is unknown.
6.12: Long-term trend; Direction	Based on Bat Conservation Trust (2025)
6.17: Additional information	Although no population level assessment has been conducted since Mathews et al 2018, the population increase reported here is based on trend information from the following: Bat Conservation Trust. 2025. The National Bat Monitoring Programme. Annual Report 2024. Bat Conservation Trust, London. Available at (www.bats.org.uk/pages/nbmp_annual_report.html)
10.1: Future trends and prospects of parameters	Based on Bat Conservation Trust (2025)
10.2: Additional information	Although no population level assessment has been conducted since Mathews et al (2018), the population increase projected here is based on ongoing trends from the following: Bat Conservation Trust (2025). The National Bat Monitoring Programme. Annual Report 2024. Bat Conservation Trust, London. Available at (www.bats.org.uk/pages/nbmp_annual_report.html)
11.1: Range	This is classified as 'favourable' as the current range is larger than the Favourable Reference Range based on Mathews et al., (2018).
11.2: Population	This is classified as 'unfavourable-inadequate' as the current population is less than the favourable reference population.
11.3: Habitat for the species	Habitat for the species is classified as 'favourable' as it is believed there is sufficient quantity and quality of habitat to sustain a viable population.
11.4: Future prospects	This is classified as 'favourable' as species pressures are significant, but not currently a threat to long-term population viability.

11.5: Overall
assessment of
Conservation Status

This is classified as 'unfavourable-inadequate' as the answers for 11.1 - 11.4 contain 'one or more unfavourable-inadequate, but no unfavourable-bad'.

11.6: Overall trend in
Conservation Status

This is classified as 'stable' due to the short-term population trend being stable, and range and habitat stable.