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

2019-2024

Conservation status assessment for the species:

S1308 - Barbastelle

(*Barbastella barbastellus*)

Wales

Cyfoeth Naturiol Cymru
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JNCC

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This report was produced by JNCC in collaboration with Natural Resources Wales.

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Important note - Please read

- The information in this document represents the Wales 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 Resources Wales, 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: Barbastelle

Distribution Map

Range Map

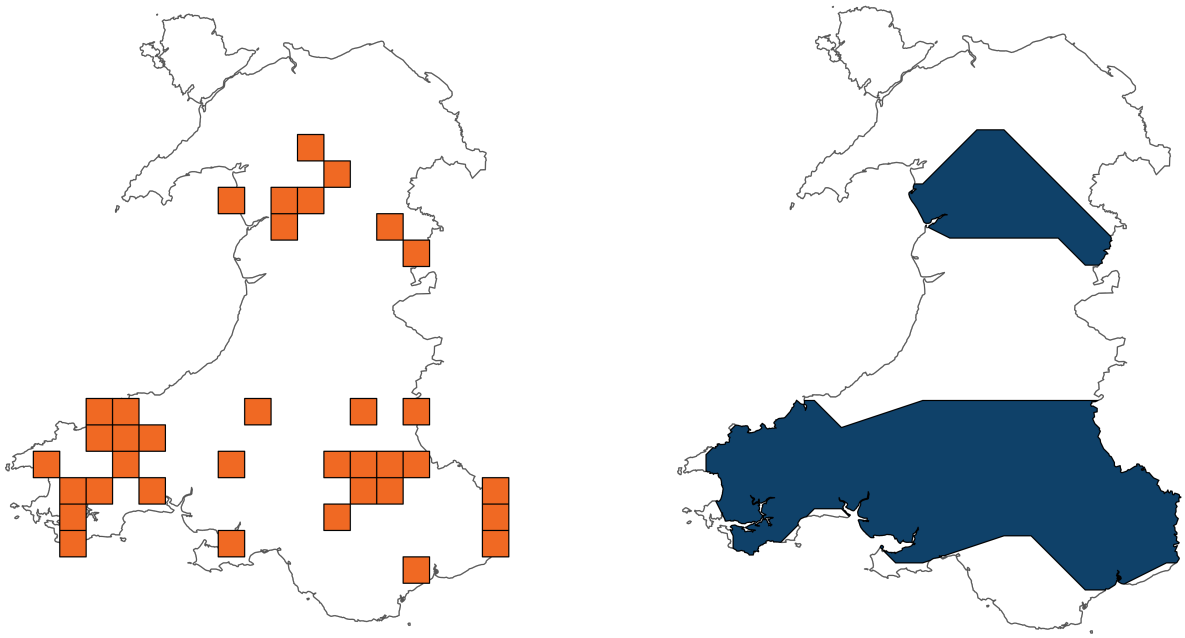

Figure 1: Wales distribution and range map for S1308 - Barbastelle (*Barbastella barbastellus*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority. 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 S1308 - Barbastelle (*Barbastella barbastellus*). 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)	**Unfavourable-inadequate (U1)**
Population (see section 6)	**Unknown (XX)**
Habitat for the species (see section 7)	**Unknown (XX)**
Future prospects (see section 10)	**Unknown (XX)**

List of Sections

National Level

1. General information

1.1 Country	Wales
1.2 Species code	S1308
1.3 Species scientific name	*Barbastella barbastellus*
1.4 Alternative species scientific name	
1.5 Common name	Barbastelle
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)	9,921.98
5.2 Short-term trend; Period	
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	Yes
e) Type of estimate	
f) Rate of decrease	
5.5 Short-term trend; Method used	Insufficient or no data available
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 (km²)	
b) Pre-defined increment	Current range is less than 2% smaller than the FRR
c) Unknown	No
d) Method used	Reference-based approach
e) Quality of information	moderate

5.11 Change and reason for change in surface area of range

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

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	
c) Maximum	

d) Best single value	500
6.3 Type of estimate	Best estimate
6.4 Quality of extrapolation to reporting unit	

6.5 Additional population size (using population unit other than reporting unit)

a) Unit	number of map 1x1 km grid cells
b) Minimum	
c) Maximum	
d) Best single value	42
e) Type of estimate	Best estimate
6.6 Population size; Method used	Based mainly on extrapolation from a limited amount of data
6.7 Short-term trend; Period	2013-2024
6.8 Short-term trend; Direction	Unknown
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	Insufficient or no data available
6.11 Long-term trend; Period	
6.12 Long-term trend; Direction	
6.13 Long-term trend; Magnitude	

a) Minimum	
b) Maximum	
c) Confidence interval	
d) Rate of decrease	
6.14 Long-term trend; Method used	

6.15 Favourable Reference Population (FRP)

ai) Population size	
aii) Unit	
b) Pre-defined increment	
c) Unknown	Yes
d) Method used	
e) Quality of information	

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

No additional information

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?	Unknown
b) Is quality of occupied habitat sufficient?	Unknown
c) If No or Unknown, is there a sufficiently large area of unoccupied habitat of suitable quality?	Unknown

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

a) Sufficiency of area of occupied habitat; Method used	Insufficient or no data available
b) Sufficiency of quality of occupied habitat; Method used	Insufficient or no data available

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
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)
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	Medium (M)
PA22: Drainage for use as agricultural land	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	High (H)
PB05: Logging without replanting or natural regrowth	Ongoing and likely to be in the future	High (H)
PB06: Logging or thinning (excluding clear cutting)	Ongoing and likely to be in the future	High (H)
PB07: Removal of dead and dying trees (including debris)	Ongoing and likely to be in the future	High (H)
PB08: Removal of old trees (excluding dead or dying trees)	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	High (H)
PB16: Application of natural or synthetic fertilisers in forestry	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)
PI02: Other invasive alien species (other than species of Union concern)	Ongoing and likely to be in the future	Medium (M)

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
MA01: Prevent conversion of natural and semi-natural habitats, and habitats of species into agricultural land	High (H)
MA02: Restore small landscape features on agricultural land	Medium (M)
MA13: Manage agricultural drainage and water abstraction (incl. the restoration of drained or hydrologically altered habitats)	High (H)
MB01: Prevent conversion of (semi-) natural habitats into forests and of (semi-) natural forests into intensive forest plantation	High (H)
MB04: Adapt/manage reforestation and forest regeneration	High (H)
MB05: Adapt/change forest management and exploitation practices	High (H)
MB06: Stop forest management and exploitation practices	High (H)
MB09: Manage the use of natural and synthetic fertilisers, liming and pest control in forestry	Medium (M)

9.6 Additional information

No additional information

10. Future prospects

10.1a Future trends of parameters

ai) Range	Unknown
bi) Population	Unknown
ci) Habitat for the species	Unknown

10.1b Future prospects of parameters

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

10.2 Additional information

No additional information

11. Conclusions

11.1 Range	Unfavourable-inadequate (U1)
11.2 Population	Unknown (XX)
11.3 Habitat for the species	Unknown (XX)
11.4 Future prospects	Unknown (XX)
11.5 Overall assessment of Conservation Status	Unfavourable-inadequate (U1)
11.6 Overall trend in Conservation Status	Unknown

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

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

Aderyn, LERC Wales' Biodiversity Information & Reporting Database. Data downloads under NRW licence 2024.

Ancillotto L, Cistrone L, Moscini F, Jones G, Boitani L, Russo D. 2015. The importance of non-forest landscapes for the conservation of forest bats: lessons from barbastelles (Barbastella barbastellus). Biodiversity and Conservation, 24 (1), 171-185.

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Mcleod C, Yeo M, Brown AE, Burn AJ, Hopkins JJ, Way SF. eds. 2002. The Habitats Directive: Selection of Special Areas of Conservation in the UK, 2nd edn. Joint Nature Conservation Committee, Peterborough

Mathews F, Kubasiewicz LM, Gurnell J, Harrower C, McDonald RA, Shore RF. 2018. A review of the population and conservation status of British Mammals.

Natural Resources Wales, 2013. 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: S1308 – Barbastelle bat (Barbastellus barbastellus).

A report by The Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage.

O'Malley KD, Schofield H, Wright PGR, Hargreaves D, Kitching T, Bollo Palacios M, Mathews F. 2023. An acoustic-based method for locating maternity colonies of rare woodland bats. PeerJ 11:e15951 https://doi.org/10.7717/peerj.15951

O'Malley, Kieran. 2024. Developing landscape-scale approaches to conserve the threatened barbastelle bat Barbastella barbastellus. University of Sussex. Thesis. https://hdl.handle.net/10779/uos.24982338.v1

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Main pressures

8.2 Sources of information

No sources of information

15. Explanatory Notes

Field label	Note
2.2: Year or Period	The time period has been selected as distribution has been calculated using data from Mathews et al. 2018, and updated with recent records from Aderyn. The extended time period is not considered problematic as the species is rarely recorded and so collated data provides a clearer picture of range. This is an under recorded species and data quality is considered to be poor.
2.4: Distribution map; Method used	B. barbastellus is a rare species throughout its UK range, with relatively few roosts known. Distribution maps are based on validated records, but the species is likely to be under recorded. The widespread use of bat detectors and sound analysis software is increasing the number of records of the species due to a relatively distinct echolocation call but low contact rates make this resource-intensive. There have been some specific surveys for the species using trapping (e.g. Rush 2020, Zeale, 2011) but others have occurred as a result of surveys associated with developments (particularly road schemes) and it is considered that further intensive surveys would provide better distribution data for the species. Currently records are scattered, but present at low density throughout lowland areas of Wales and England south of a line from the Mersey to the Humber. Specifically targeted survey effort is required to further determine the status and distribution of the species in Wales.
5.3: Short-term trend; Direction	The rarity of the species and a lack of systematic survey leaves its current range and any trend in range poorly understood.
5.11: Change and reason for change in surface area of range	In the 2019 Article 17 report, the area of land (including unsuitable habitat) contained within the range was given as 6,386 km2 (Mathews et al. 2018). Mathews et al. 2018, applied an alpha hull value of 20km 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 this reporting round, and also the 2013 and 2007 reports, whereby a 45km alpha hull value was used for all species with a starting range unit of individual 10km squares. To produce the range maps JNCC were provided with any additional 10km x 10km grid squares where bats roost records were located between 2018 and 2024, along with the 2019 Article 17 report data. No grid squares have been removed as there have not been any widespread surveys that could indicate loss of a species from any area. The resulting updated maps produced by JNCC indicate a range of 9,921 km2. The increase in range indicated is likely mainly due to a change in methodology and some additional records rather than a genuine change in range. The distributions reported in previous Article 17 reports were based on very sparse data compared with the data used for the 2019 report. Whilst, Arnold (1993) suggested that there had been a serious decline in the population, based on the difference in the range of the species inferred from records up to 1959 compared with those from 1960 onwards, the current data indicates that range is similar to all available historical data with the exception that there are no longer any records north of the Humber. Whereas, Arnold (1993) shows positive hectads in S.Yorkshire.
6.2: Population size	The population estimate quoted is taken from Harris et al. 1995 and was based on subjective estimates of relative abundance because there were few density estimates and a paucity of quantified data on bat numbers in relation to habitat associations and patterns of land use. For this

	species the estimate was based on subjective criteria thought to be within the right order of magnitude. Mathews et al. 2018 determined that insufficient data are available to derive a population estimate for the species and therefore there is no update of this estimate from the previous Article 17 reporting round.
6.8: Short-term trend; Direction	The population estimate cannot be updated for this species due to insufficient data for this species as such there is no data available to detect any change in trend so the trend is unknown.
6.16: Change and reason for change in population size	The population figure has remained the same as that recorded in the previous Article 17 reporting period as there is insufficient data to update the population for this species
6.18: Age structure, mortality and reproduction	Whilst there have been studies on aspects of barbastelle bat ecology, current information on all aspects of reproduction, mortality and age structure is not available.
7.1: Sufficiency of area and quality of occupied habitat	The area and quality of habitat for the species has been assessed as unknown as there is insufficient information available for this species to undertake this assessment. Further to this, work in Italy has indicated that barbastelle bats can continue to use formerly forested landscapes long after they have changed to apparently unsuitable habitat, indicating that habitat suitability models based on woodland availability must be used with caution (Ancillotto et al., 2015). Also, in GB there appears to be a preference for old or dead oak, almost any tree with suitable cavities can be used (Zeale, 2011) and elsewhere in Europe, the species preferentially roosts in beech trees (Russo et al, 2004). This further demonstrates that caution must be used before inferring habitat suitability from woodland composition (Mathews et al., 2018). B. barbastellus requires a complex mosaic of habitats, and particularly large areas of mature woodland, to support foraging, roosting and commuting behaviour. Boye & Dietz (2005) provides a good overview of this species' habitat requirements. Foraging areas are predominantly in woodlands or parks, but they can also stretch along forest

	edges, tree rows, hedges, waterways, or field roads with trees. The home range extends up to 8-10 km around the roost. As this is a generalist species, using 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. Most summer roosts are found in narrow crevices in trees or buildings, but the preferred natural roost sites seem to be behind loose bark. Sometimes woodpecker holes are used and the species is frequently found behind window shutters or wall cover (shingles from wood or slate) on houses. On rare occasions the species is observed in bat boxes. During spring and summer, roost sites are changed frequently, sometimes every day, so that the group composition varies continuously. Winter roosts are known in caves, old mines and bunkers. Most of the population probably hibernates in tree crevices and walls of houses. Summer and winter roosts seem to be a maximum of 20 km apart. There is thought to be a sufficient amount of habitat in the UK to support a viable population of the species.
7.2: Sufficiency of area and quality of occupied habitat; Methods used	Although the habitat requirements for this species are fairly well established, ground truthing of the estimated range from Mathews et al. 2018 has not yet been undertaken and the quality of the indicated habitats have not been assessed.
7.4: Short-term trend; Direction	There is insufficient data on any change in the level of suitable habitat or any change in the quality of habitat for the species.
8.1: Characterisation of pressures	PB02: Conversion from one type of forestry land use to another, PB05: Logging without replanting or natural regrowth, PB06: Logging or thinning (excluding clear cutting), PB07: Removal of dead and dying trees (including debris), PB08: Removal of old trees (excluding dead or dying trees), PB09: Clear-cutting, removal of all trees, PB16: Application of natural or synthetic fertilisers in forestry: The barbastelle bat is predominantly a woodland species,

roosting most commonly under loose bark on large old trees. The species appears to have a prefererence for old or dead oak in GB (Zeale et al., 2011). Radiotracking evidence shows that riparian margins and broad-leaved woodland are strongly selected for foraging but unimproved grassland, field margins and hedgerows are also important (Zeale et al., 2012). Forestry operations and preventing the maintenance or development of this resource are likely to have an adverse effect.

PA04: Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.): loss of foraging habitat, severance of commuting routes and isolation of colonies is a pressure on the species. PA02: Conversion from one type of agricultural land use to another (excluding drainage and burning), PA22: Drainage for use as agricultural land:

The barbastelle is a specialist moth feeder (>99% of diet; Sierro & Arlettaz, Zeale, 2011) so it's likely to be adversely affected by agricultural operations, including pesticide use that affect the biomass of suitable prey.

PI02: Other invasive alien species (other than species of Union concern): This pressure best aligns to the recently established I05 category (plant and animal diseases, pathogens and pests) however this category isn't currently available for internal UK reporting purposes. This species is reliant on tree roosts and moves roosts frequently, requiring a large number of trees with suitable crevices. Loss of native broadleaf trees through new pathogens (such as Chalara fraxinea) could have a serious long term impact through reduction of resource.

PE01: Roads, paths, railroads and related infrastructure:

These pressures also act via construction of new, and widening/realignment of existing linear infrastructure

	projects. Road casualities have been reported in continental Europe. Lighting from urbanisation and infrastructure can sever commuting routes, impact foraging areas and delay emergence times.
9.5: List of main conservation measures	MA01: Prevent conversion of natural and semi-natural habitats, and habitats of species into agricultural land, MA13: Manage agricultural drainage and water abstraction (incl. the restoration of drained or hydrologically altered habitats), MB01: Prevent conversion of (semi-) natural habitats into forests and of (semi-) natural forests into intensive forest plantation, MB04: Adapt/manage reforestation and forest regeneration, MB05: Adapt/change forest management and exploitation practices, MB06: Stop forest management and exploitation practices, MB09: Manage the use of natural and synthetic fertilisers, liming and pest control in forestry, MA02: Restore small landscape features on agricultural land: Low population density and slow population growth are likely to have made this species particularly vulnerable to factors such as loss and fragmentation of ancient deciduous woodland habitat; the loss, destruction and disturbance of roosts in buildings, trees and underground sites and the reduction in numbers of insect prey due to habitat simplification and factors such as fertiliser and pesticide use and intensive grazing. The availability of dead and dying trees as roost sites and the lack of wetland for foraging are still major factors likely to affect the species status. Legal and administrative measures continue to be required to ensure that the protection provided by the legislation is effective. However, although some measures have been identified for the species, the list is likely to be incomplete as several knowledge gaps persist for this species and further research is needed to identify further measures and the practical implementation of those measures for this species.

10.1: Future trends and prospects of parameters	The future prospects of range for this species in Wales is currently unknown. The rarity of the species and a lack of systematic survey leaves its current range poorly understood thus predicting future prospects is challenging. Should the species be recorded in new areas in the future it will be difficult to distinguish between recent range increase and simply the discovery of long existing populations outside of the currently predicted range, which is based on modelling of current data. The future prospects of population for this species in Wales is currently unknown. Currnet population is an estimate based on limited data therefore monitoring for population change of such an infrequently encountered bat would be extremely difficult. The future prospects of habitat of the species in Wales is currently unknown. Due to the rarity of the species and and their requirement for high value habitats including deciduous woodland, managing habitats specifically for the species is difficult and habitat may be lost unknowingly.
11.1: Range	Conclusion on Range reached because:(i) the short-term trend direction in Range surface area is unknown; and (ii) the current Range surface area is approximately equal to the Favourable Reference Range.
11.2: Population	Conclusion on Population reached because:(i) the short-term trend direction in Population size is unknown; (ii) the Favourable Reference Population is unknown and iii) reproduction, mortality and age structure does not have data available.
11.3: Habitat for the species	Conclusion on Habitat for the species reached because: (i) it is unknown whether the area of occupied habitat is sufficiently large for long-term survival (ii) it is unknown whether the quality of occupied habitat is suitable for the long-term survival of the species; and iii) it is unknown whether there is a sufficiently large area of occupied and unoccupied habitat of suitable quality for long term survival (iv) the short-term trend in area of habitat is unknown.
11.4: Future prospects	Conclusion on Future prospects reached because: (i) the Future prospects for Range are unknown; (ii) the Future

	prospects for Population are unknown; and (iii) the Future prospects for Habitat for the species are unknown.
11.5: Overall assessment of Conservation Status	Overall assessment of Conservation Status is Unfavourable-inadequate because one of the conclusions is Unfavourable-inadequate.
12.1: Population size inside the pSCIs, SCIs and SACs network	Unknown
6.15: Favourable Reference Population (FRP)	The UK-level FRV for population was developed by JNCC using an audit trail based on the year the FRV was first established and any changes made in subsequent reporting rounds. The audit may draw from any combination of the 2007, 2013, or 2019 Habitats Directive reports and reflects the full rationale used for the 2019 Article 17 reporting. This FRV was reviewed by Welsh experts and considered appropriate for use in Wales based on current population trends and abundance.
5.10: Favourable Reference Range (FRR)	The UK-level FRV for range was developed by JNCC using an audit trail based on the year the FRV was first established and any changes made in subsequent reporting rounds. The audit may draw from any combination of the 2007, 2013, or 2019 Habitats Directive reports and reflects the full rationale used for the 2019 Article 17 reporting. This FRV was reviewed by Welsh experts and considered appropriate for use in Wales based on current distribution and trends.