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

2019-2024

Conservation status assessment for the species:

S1309 - Common pipistrelle

(*Pipistrellus pipistrellus*)

Wales

Cyfoeth Naturiol Cymru
Natural Resources Wales

JNCC

For further information please contact:

Natural Resources Wales, Welsh Government Offices, Cathays Park, King Edward VII Avenue, Cardiff, CF10 3NQ. https://naturalresources.wales

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 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: Common pipistrelle

Distribution Map

Range Map

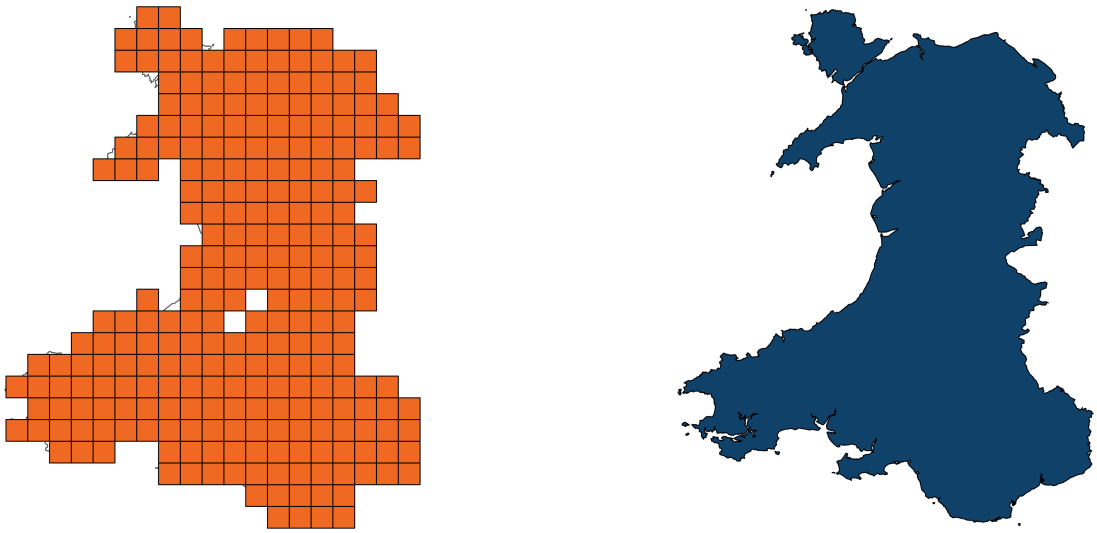

Figure 1: Wales distribution and range map for S1309 - Common pipistrelle (*Pipistrellus pipistrellus*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas 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 S1309 - Common pipistrelle (*Pipistrellus pipistrellus*). 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)

Favourable (FV)

Breakdown of Overall Conservation Status

Range (see section 5)	**Favourable (FV)**
Population (see section 6)	**Favourable (FV)**
Habitat for the species (see section 7)	**Favourable (FV)**
Future prospects (see section 10)	**Favourable (FV)**

List of Sections

National Level

1. General information

1.1 Country	Wales
1.2 Species code	S1309
1.3 Species scientific name	*Pipistrellus pipistrellus*
1.4 Alternative species scientific name	
1.5 Common name	Common pipistrelle
Annex(es)	IV

2. Maps

2.1 Sensitive species	No
2.2 Year or period	1997-2024
2.3 Distribution map	Yes
2.4 Distribution map; Method used	Complete survey or a statistically robust estimate

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)	20,823.02
5.2 Short-term trend; Period	2013-2024
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	Complete survey or a statistically robust estimate
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	No
g) Main reason	Improved knowledge/more accurate data

5.12 Additional information

No additional information

6. Population

6.1 Year or period	2019-2024

6.2 Population size (in reporting unit)

a) Unit	number of individuals
b) Minimum	96,600
c) Maximum	732,000

d) Best single value	297,000
6.3 Type of estimate	95% confidence interval
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	1,832
e) Type of estimate	Minimum
6.6 Population size; Method used	Complete survey or a statistically robust estimate
6.7 Short-term trend; Period	2017-2022
6.8 Short-term trend; Direction	Uncertain
6.9 Short-term trend; Magnitude	
a) Estimated minimum	
b) Estimated maximum	
c) Pre-defined range	Increasing 0 - 12%
d) Unknown	No
e) Type of estimate	Pre-defined range
f) Rate of decrease	
6.10 Short-term trend; Method used	Based mainly on expert opinion with very limited data
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	Current population is less than 5% smaller than the FRP
c) Unknown	No
d) Method used	Reference-based approach
e) Quality of information	moderate

6.16 Change and reason for change in population size

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

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?	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	Complete survey or a statistically robust estimate
b) Sufficiency of quality of occupied habitat; Method used	Based mainly on expert opinion with very limited data

7.3 Short-term trend; Period	2013-2024
7.4 Short-term trend; Direction	Stable
7.5 Short-term trend; Method used	Based mainly on expert opinion with very limited data

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)
PA14: Use of plant protection chemicals in agriculture	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)
PD01: Wind, wave and tidal power (including infrastructure)	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	High (H)
PF12: Residential, commercial and industrial activities and structures generating noise, light, heat or other forms of pollution	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	Medium-term results (within the next two reporting periods, 2025–2036)

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	Medium (M)
MA02: Restore small landscape features on agricultural land	High (H)
MA14: Other measures related to agricultural practices	Medium (M)
MB01: Prevent conversion of (semi-) natural habitats into forests and of (semi-) natural forests into intensive forest plantation	Medium (M)
MB04: Adapt/manage reforestation and forest regeneration	Medium (M)
MC03: Adapt/manage renewable energy installation, facilities and operation (excl. hydropower and abstraction activities)	High (H)
ME01: Reduce impact of transport operation and infrastructure	High (H)
MF01: Managing the impacts of converting land for construction and development of infrastructure	High (H)

MF04: Reduce/eliminate pollution to surface or ground waters from commercial, residential and recreational areas and activities, and from industrial activities and structures	Medium (M)
MF07: Reduce/eliminatepollution (incl. noise, light, heat, soil pollution) from industrial, commercial, residential and recreational areas and activities	High (H)

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

No additional information

11. Conclusions

11.1 Range	Favourable (FV)
11.2 Population	Favourable (FV)
11.3 Habitat for the species	Favourable (FV)
11.4 Future prospects	Favourable (FV)
11.5 Overall assessment of Conservation Status	Favourable (FV)

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	
b) Minimum	
c) Maximum	
d) Best single value	
12.2 Type of estimate	
12.3 Population size inside the network; Method used	
12.4 Short-term trend of population size within the network; Direction	
12.5 Short-term trend of population size within the network; Method used	

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

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

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

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Jones G, Barratt EM. 1999. Vespertilio pipistrellus Schreber, 1774 and V. pygmaeus Leach, 1825 (currently Pipistrellus pipistrellus and P. pygmaeus; Mammalia, Chiroptera): proposed designation of neotypes. Bulletin of Zoological Nomenclature, 56: 182-186.

Jones G, Racey PA. 2008. Common pipistrelle Pipistrellus pipistrellus, Soprano pipistrelle Pipistrellus pygmaeus. Pages 343-351 In Harris, S. & Yalden, D.W. Mammals of the British Isles: Handbook, 4th edition. The Mammal Society, Southampton. 799pp.

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Lintott PR, Bunnefeld N, Park KJ. 2015. Opportunities for improving the foraging potential of urban waterways for bats. Biological Conservation, 191, 224-233.

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Main pressures

8.2 Sources of information

No sources of information

15. Explanatory Notes

Field label	Note
2.4: Distribution map; Method used	P. pipistrellus commonly roosts in houses and many records come from requests for information or advice. The widespread use of bat detectors and structured surveys for the National Bat Monitoring Programme has increased the number of records in recent years. The technological improvements seen in bat detectors and sound analysis of bat calls has probably increased the accuracy of identification to species. P. pipistrellus is widely distributed throughout Wales, with gaps in distribution probably reflecting an absence of survey data rather than an absence of the species or reports of Pipistrelle spp, not confirmed to species.
5.3: Short-term trend; Direction	Although mapping may display small changes in range since the 2019 report (based on Mathews et al. 2018), there is no evidence of a genuine change to range for this widespread species. Any minor expansions are due to surveyor effort/additional data rather than genuine change.
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 20,601 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 20,823 km2. This small increase is a result of additional records collected since the last report, and is not thought to be a genuine change; P. pipistrellus is a widespread species occupying a wide variety of habitat types.
6.2: Population size	Due to the statistically robust methodology used for by Mathews et al. (2018) the unit of individuals is viewed as the best reflection of actual population over 1km x 1km Grid Squares: a) Unit = Individuals b) Minimum = 96,600 c) Maximum = 732,000 d) Best Single Value = 297,000 Mathews et al. 2018 population estimates were derived by first calculating the adult bat density (bats/km2) within poor, average and good habitat and then multiplying this with the total habitable area within their range to give lower, median and upper population estimates. Habitable area was defined as all area within the range excluding montane habitat since this is unlikely to include suitable locations for maternity roosts. Details of calculations are as follows: Adult bat density (bats/km2)

Median density=[(median n. bats/roost†) x (p♀‡) x (n roosts/typical km2 average habitat)]x 2

Lower limit=[(lower plausible n. bats/roost) x (p♀min) x (plausible n. roosts/typical km2 poor habitat)]x 2

Upper limit = [(upper plausible n. bats/roost) x (p♀max) x (plausible n. roosts/typical km2 good habitat)]x 2

† roost is typical maternity roost in the pre-parturition period. n. is number of adults.

‡ p♀: proportion female. p♀min and p♀max are lowest and highest plausible proportions of adult females in typical maternity roost

Population size

Total Adult Population = Median adult density (bats/km2) x total habitable area within range (km2)

Lower Limit=Lower limit adult density (bats/km2) x total habitable area within range (km2)

Upper Limit=Upper limit adult density (bats/km2) x total habitable area within range (km2)

The estimates excluded colonies that contained less than 30 bats in order to ensure that counts did not include individuals in formation roosts that were then counted again at maternity sites. This may have led to some over-estimation of population size; when all roosts were included the bat population density estimate fell by approximately a third. However, most data were derived from NBMP data and here all roosts were included regardless of size since they were part of a longitudinal monitoring programme. Given that the estimated roost size is close to expert

	opinion and published data, it is likely to be a reasonable basis for the calculations.
6.7: Short-term trend; Period	Based on Bat Conservation Trust (2024) NBMP short-term period of 5 years. Bat Conservation Trust, 2024. The National Bat Monitoring Programme Annual Report 2023. Bat Conservation Trust, London. Available at https://www.bats.org.uk/our-work/national-bat-monitoring-programme/reports/nbmp-annual-report
6.8: Short-term trend; Direction	The common pipistrelle National Bat Monitoring Programme trend for Wales is based on the Roost Count index and shows significant decline from the baseline year of monitoring (1999) and over the last five years. However, as Common Pipistrelle switches roosts frequently the Roost Count index is not considered a reliable measure of population change for this species, and therefore a trend cannot be drawn for Wales. The trend for Great Britain is also based on the Field Survey methodology which is considered a reliable measure of population change. Based on Field Surveys, the population of Common Pipistrelle in Great Britain is considered to have increased 91.9% (95% CI 60.7% to 133.2%) in the long-term (since 1999) and to have been stable in the short-term (since 2017) with a statistically non-significant increase of 1.9% (95% CI -5.6% to 9.9%). The GB trend is likely to be reflective of that in Wales. Mathews et al. (2018) notes that consideration must be given to the fact that acoustic detectors used to record bat activity in the field have changed considerably over time and have become much more sensitive. There is also considerable misidentification between the common pipistrelle and soprano pipistrelle especially when using heterodyne detectors and there is also confusion with the Myotis species. The true trend probably lies between the

	percentage trends that has been reported for the two phonic types (common and soprano pipistrelle).
6.9: Short-term trend; Magnitude	A reliable trend cannot be drawn for Wales due to insufficient available data. The GB trend is statistically robust and likely to be reflective of Wales.
6.10: Short-term trend; Method used	A reliable trend cannot be drawn for Wales due to insufficient available data. The GB trend is statistically robust and likely to be reflective of Wales.
6.16: Change and reason for change in population size	The best available population estimate remains unchanged as Mathews et al. 2018 has not been updated, however reported 1km x 1km grid squares have changed due to changes in methodology and surveyor effort between reporting time periods. While Welsh trends cannot be drawn based on NBMP data, GB trends are likely to be reflective of those in Wales and show short-term (since 2017) increase of 1.9% (95% CI -5.6% to 9.9%) although this is not significantly significant and is reported as 'stable'.
7.1: Sufficiency of area and quality of occupied habitat	Habitat area 20,600 km2. Habitable area as given by Mathews et al. 2018 has been used as a proxy for occupied habitat. The habitable area calculation defined all the area within the range as habitable excluding montane habitat since this is unlikely to include suitable locations for maternity roosts. Habitat quality No or insufficient reliable information is available on the quality of the habitable area. However, the species is widespread, using a broad variety of habitats and population trend for the species is not declining and therefore the quality of occupied habitat is likely to be

	sufficient to maintain the species at FCS. P.pipistrellus is an extremely widespread species and is found in almost any habitat type ranging from grasslands to urban and suburban environments. However, the species requires a complex mosaic of habitats to support foraging, roosting and commuting behaviour. Boye & Dietz (2005) and Jones & Racey (2008) provides a good overview of this species' habitat requirements. Although, most maternity colonies are in buildings, forests of any type are used as roosting and foraging areas. Foraging areas are mainly along woodland edge and riparian woodland (Davidson-Watts & Jones 2006; Nicholls & Racey 2006a, 2006b), hedges, foot paths and forest roads, water banks and at street lights. P. pipistrellus frequently forage over pasture and foraging activity is higher where grazing livestock are present (Fuentes-Montemayor et al. 2013). Linear features in a landscape are important elements for orientation either during foraging or in commuting flights. Foraging activity is generally within 2km of the roost. The size of an individual home range is dependent on the abundance of prey insects and may have a total size of more than 50 hectares. The species mainly roosts in settlements and is even present in city centres. Recent evidence shows that there is a strong negative response of P.pipistrellus to urbanisation at a relatively local scale (1km; Lintott et al 2016). However, the reverse association has also been reported (Warren et al. 2000, Glendell & Vaughan 2002, Lintott et al. 2015). In summer the roost sites are predominantly in crevices in buildings, especially between tiles and the underlying roofing felt or behind boards on the gable. Furthermore, individuals and maternity colonies use tree holes, wood crevices and bird or bat boxes as roosts. The species disperses to temporary sites and mating roosts during the autumn post weaning period.
7.2: Sufficiency of area and quality of occupied habitat; Methods used	As a widespread, common species, using a mosaic of habitats, it has been assumed that the area of distribution can be used as a proxy for the area of suitable habitat in the absence of other information. Previously calculated

	from the area of the filled 10 km squares in the distribution map, the estimate given for occupied habitat is now derived from Mathews et al. 2018. supporting data set which is more accurate and gives occupied 1 km squares. The habitable area given by Mathews et al. 2018 is 20,600 km2, which defined all the area within the range as habitable excluding montane habitat since this is unlikely to include suitable locations for maternity roosts , and range calculation utilises 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 10 km 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.
7.4: Short-term trend; Direction	The estimate for the 2019 Article 17 report was 20,600 km2 which is taken form the habitable area given by Mathews et al. 2018, which defined all the area within the range as habitable excluding montane habitat since this is unlikely to include suitable locations for maternity roosts. Whilst range has increased by a small degree due to surveyor effort rather than genuine change, the species is widespread, using a broad variety of habitats and therefore the area and quality of occupied habitat is unlikely to have changed significantly.
8.1: Characterisation of pressures	Pressures can generally be divided into those that affect roosts and those that affect commuting and foraging (including prey availability). PA02 - Conversion from one type of agricultural land use to another (excluding drainage and burning), PA04: Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.), PA14 - Use of plant protection

chemicals in agriculture, PB02: Conversion from one type of forestry land use to another, PB05: Logging without replanting or natural regrowth.

P. pipistrellus forage across a mosaic of habitat types, though they are frequently found foraging over pasture, especially at sites with grazing livestock (Fuentes-Montemayor et al, 2013). Agricultural and forestry practices that remove or simplify these habitats or affect the biomass of insect prey could negatively affect populations.

PD01: Wind, wave and tidal power (including infrastructure) and PE01: Roads, paths, railroads and related infrastructure: This is one of the primary species killed at wind turbine sites and in road collisions. It is unclear whether the scale of casualties is sufficient to impact on local populations, Mathews et al., (2016) and Fensome & Mathews, (2016).

PF02: Construction or modification (e.g. of housing and settlements) in existing built-up areas, PF12: Residential, commercial and industrial activities and structures generating noise, light, heat or other forms of pollution and PF12: Residential, commercial and industrial activities and structures generating noise, light, heat or other forms of pollution: Although, roosts are strictly protected through legislation a variable number of licences are issued every year permitting exclusion, destruction and damage. Changes to building regulations and efforts to make buildings more energy-efficient have tended to reduce their accessibility and thermal suitability for bats. Breathable roofing membranes also pose a threat of entanglement, (Mitchell-Jones, 2010 and Waring et al., 2014).

PA22: Drainage for use as agricultural land & PK01: Mixed source pollution to surface and ground waters (limnic and terrestrial) are considered low pressures and consequently not formally reported in line with JNCC guidance.

9.5: List of main conservation measures	MC03: Adapt/manage renewable energy installation, facilities and operation (excl. hydropower and abstraction activities): Guidance is available to help planners, developers and ecological consultants to consider the potential effects of onshore wind energy developments on bats. Guidance is available for land managers on how to manage their land holdings for bats. Addressing PD01. ME01 - Reduce impact of transport operation and infrastructure: Road design construction and operation need to take into account the likely impact on bats, for example, in relation to the provision of safe crossing structures and the loss and severance of bat habitat and lighting. Addressing PE01. MF07: Reduce/eliminate pollution (incl. noise, light, heat, soil pollution) from industrial, commercial, residential and recreational areas and activities, MF01: Managing the impacts of converting land for construction and development of infrastructure, 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, MF04: Reduce/eliminate pollution to surface or ground waters from commercial, residential and recreational areas and activities, and from industrial activities and structures: Legal and administrative measures continue to be required to ensure that the protection provided by the legislation is effective. If roosts are to be destroyed, damaged or lost due to development, adequate mitigation/compensation methods must be put in place to maintain the favourable conservation status of the species. Addressing PF02, PF12 and PF02. MF04: Reduce/eliminate pollution to surface or ground waters from commercial, residential and recreational areas and activities, and from industrial activities and structures, MA01: Prevent conversion of natural and semi-natural habitats, and habitats of species into agricultural land,

	MA14: Other measures related to agricultural practices, MA02: Restore small landscape features on agricultural land: Agricultural related measures are implimented via agri-environmental schemes. Addressing PA04, PA02, PA14, PK01, PA22.
10.1: Future trends and prospects of parameters	10.1a Future prospects of Range. The future prospects of range for this species is considered to be overall stable in Wales. P. pipistrellus is widely distributed throughout Wales, with gaps in distribution probably reflecting an absence of survey data rather than an absence of the species therefore the future range is likely to remain as overall stable 10.1b Future prospects of Population The future prospects of population for this species is considered to be Overall Stable in Wales. P. pipistrellus is a common species within Wales, although we cannot draw trends for Wales, trend data for GB from the NBMP indicates the species to have been stable in the short-term (since 2017) with a none statistically significant increase of 1.9% (95% CI -5.6% to 9.9%). Future pressures from changes in legislation, planning policy and increasing development will hold unknown challenges for the species in the future. 10.1c Future prospects of Habitat of the species The future prospects of habitat of the species is considered to be overall stable in Wales. P. pipistrellus is widely distributed throughout Wales, currently available habitat is considered sufficient to maintain the species at FCS and there are no specific wide scale threats to the habitat for the species. There is therefore no reason to assume that the current situation will not continue over the next 12 years.

11.1: Range	Conclusion on Range reached because: (i) the short-term trend direction in Range surface area is stable; 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 uncertain; (ii) the current Population size is approximately equal to the Favourable Reference Population; 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) the area of occupied habitat is sufficiently large for the long-term survival of the species (ii) the quality of occupied habitat is suitable for the long-term survival of the species; and (iii) the short-term trend in area of habitat is stable.
11.4: Future prospects	Conclusion on Future prospects reached because: (i) the Future prospects for Range are good; (ii) the Future prospects for Population are good; and (iii) the Future prospects for Habitat for the species are good.
11.5: Overall assessment of Conservation Status	Overall assessment of Conservation Status is Favourable because all of the conclusions are Favourable.
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.