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

2019-2024

Conservation status assessment for the species:

S1322 - Natterer's bat

(*Myotis nattereri*)

Wales

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

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

This document should be cited as:

Natural Resources Wales and JNCC. (2026). Conservation status assessment for the species: S1322 Natterer's bat (*Myotis nattereri*).

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: Natterer's bat
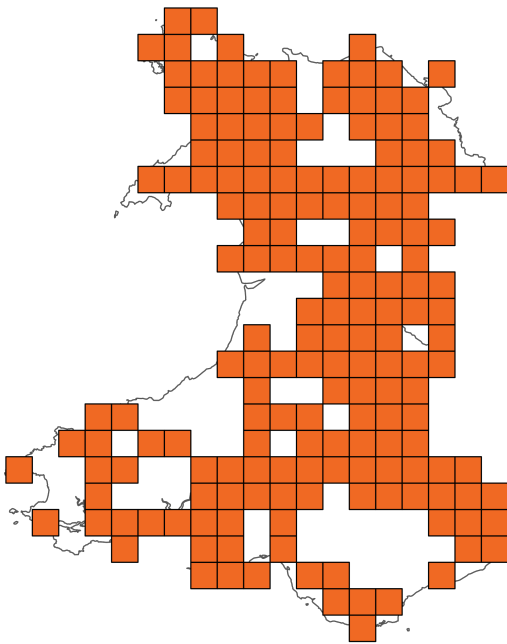
Distribution Map	Range Map

Figure 1: Wales distribution and range map for S1322 - Natterer's bat (*Myotis nattereri*). 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 S1322 - Natterer's bat (*Myotis nattereri*). 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	S1322
1.3 Species scientific name	*Myotis nattereri*
1.4 Alternative species scientific name	
1.5 Common name	Natterer's bat
Annex(es)	IV

2. Maps

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

2.5 Additional information

No additional information

3. Information related to Annex V Species

3.1 Is the species taken in the wild / exploited?

3.2 What measures have been taken?

a) Regulations regarding access to property

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

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

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

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)	20,664.34
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	Based mainly on expert opinion with very limited 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 (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	Use of different method

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	1,900
c) Maximum	332,000

d) Best single value	52,300
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	293
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	2017-2022
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	Complete survey or a statistically robust estimate
6.11 Long-term trend; Period	1999-2023
6.12 Long-term trend; Direction	Increasing
6.13 Long-term trend; Magnitude	

a) Minimum	28.8
b) Maximum	152
c) Confidence interval	95
d) Rate of decrease	
6.14 Long-term trend; Method used	Complete survey or a statistically robust estimate

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	No
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	Based mainly on expert opinion with very limited data
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)
PA15: Use of other pest control methods in agriculture (excluding tillage)	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)
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)
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)
PF05: Sports, tourism and leisure activities	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
MA02: Restore small landscape features on agricultural land	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)
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)
MF03: Reduce impact of outdoor sports, leisure and recreational activities (incl. restoration of habitats)	Medium (M)
MF10: Other measures related to residential, commercial, industrial and recreational infrastructures, operations and activities	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

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.

Bat Conservation Trust. 2018. The State of the UK's Bats 2017. Bat Conservation Trust, London. Available at http://www.bats.org.uk/pages/results_and_reports.html

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

Battersby J. (Ed.). 2005. UK Mammals: Species Status and Population Trends. JNCC/Tracking Mammals Partnership.

Boughey KL, Lake IR, Haysom KA, Dolman PM. 2011. Effects of landscape-scale broadleaved woodland configuration and extent on roost location for six bat species across the UK. Biological Conservation, 144, 2300-2310.

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

Briggs P. 2000. A Study of Barn Conversions in Hertfordshire. Commissioned by Hertfordshire BRC and Hertfordshire County Council.

Carey PD, Wallis SM, Emmett BE, Maskell LC, Murphy J, Norton LR, Simpson IC, Smart SS. 2008. Countryside Survey: UK headline messages from 2007. Centre for Ecology & Hydrology, Wallingford.

Dietz C, Helversen OV, Nill D. 2009. Bats of Britain, Europe & Northwest Africa. A & C Black Publishers Ltd., London.

Dietz C, Keifer A. 2016. Bats of Britain and Europe. London, Bloomsbury.

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, 311-323.

Glover AM, Altringham JD. 2008. Cave selection and use by swarming bat species. Biological Conservation, 141(6), 1493-1504.

Harris, S., Morris, P., Wray, S. & Yalden, D. 1995. A review of British Mammals: population estimates and conservation status of British mammals other than cetaceans. JNCC, Peterborough.

Hope PR, Jones G. 2012. Warming up for dinner: torpor and arousal in hibernating Natterer's bats (Myotis nattereri) studied by radio telemetry. J Comp Physiol B, 182(4), 569-578.

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.

Mitchell-Jones AJ. 2004. Bat Mitigation Guidelines. English Nature, Peterborough.

Mitchell-Jones TMJ, Carlin C. 2009. TIN051 Bats and onshore wind turbines Interim Guidance. 2nd edition, February 2012. http://publications.naturalengland.org.uk/file/490077

Mitchell-Jones T. 2010. Bats in houses–the conservation challenge. Species Management: Challenges and Solutions for the 21st Century. (Eds JJ Baxter and CA Galbraith.) pp, 365-378.

Mortimer G. 2006. Foraging, roosting and survival of Natterer's bats, Myotis nattereri, in a commercial coniferous plantation. PhD, University of St Andrews.

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: S1322 – Natterer's Bat (Myotis nattereri)

Parsons KN, Jones G. 2003. Dispersion and habitat use by Myotis daubentonii and Myotis nattereri during the swarming season: implications for conservation. Animal Conservation, 6(4), 283-290.

Parsons KN, Jones G, Davidson-Watts I, Greenaway F. 2003. Swarming of bats at underground sites in Britain— implications for conservation,Biological Conservation 111(1): 63-70.

Plummer KE, Hale JD, O'Callaghan MJ, Sadler JP, Siriwardena GM. 2016. Investigating the impact of street lighting changes on garden moth communities. Journal of Urban Ecology, 2

Richardson P. 2000. Distribution atlas of bats in Britain and Ireland 1980-1999. Bat Conservation Trust, London.

Rivers NM, Butlin RK, Altringham JD. 2005. Genetic population structure of Natterer's bats explained by mating at swarming sites and philopatry. Mol Ecol, 14(14), 4299-4312.

Shiel CB, McAney CM, Fairley JS. 1991. Analysis of the diet of Natterer's bat Myotis nattereri and the common long-eared bat Plecotus auritus in the West of Ireland. Journal of Zoology, 223(2), 299-305.

Siemers BM, Schnitzler H -U. 2000. Natterer's Bat (Myotis nattereri Kuhl, 1818) Hawks for Prey Close to Vegetation Using Echolocation Signals of Very Broad Bandwidth. Behavioral Ecology and Sociobiology, 47(6), 400-412

Siemers BM, Swift SM. 2006. Differences in sensory ecology contribute to resource partitioning in the bats Myotis bechsteinii and Myotis nattereri (Chiroptera: Vespertilionidae). Behavioral Ecology and Sociobiology, 59(3), 373-380

Smith PG, Rivers NM. 2008. Natterer's bat Myotis nattereri. Pp 323-328. In: Harris, S & Yalden, D.W. Mammals of the British Isles: Handbook, 4th edition. The Mammal Society, Southampton.799pp.

Smith PG. 2001. Habitat preference, range use and roosting ecology of Natterer's bats (Myotis nattereri) in a grassland-woodland landscape. PhD, University of Aberdeen

Smith PG, Racey PA. 2005. The itinerant Natterer: physical and thermal characteristics of summer roosts of Myotis nattereri (Mammalia: Chiroptera). Journal of Zoology, 266(2), 171-180.

Smith PG, Racey PA. 2008. Natterer's bats prefer foraging in broad-leaved woodlands and river corridors. Journal of Zoology, 275(3), 314-322.

Speakman JR. 1991. The impact of predation by birds on bat populations in the British Isles. Mammal Review, 21, 123-142.

Swift S, Racey PA. 2002. Gleaning as a foraging strategy in Natterer's bat Myotis nattereri. Behavioral Ecology and Sociobiology, 52(5), 408-416.

Swift SM. 1997. Roosting and foraging behaviour of Natterer's bats (Myotis nattereri) close to the northern border of their distribution. Journal of Zoology, 242, 375-384.

Zeale MR, Bennitt E, Newson SE, Packman C, Browne WJ, Harris S, Jones G, Stone E. 2016. Mitigating the Impact of Bats in Historic Churches: The Response of Natterer's Bats Myotis nattereri to Artificial Roosts and Deterrence. PLoS One, 11(1), e0146782.

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.
2.4: Distribution map; Method used	Natterer's bat is widespread in the UK and has been recorded throughout Wales. Although there have been no structured distribution surveys, it has been reasonably well recorded by local bat groups and during hibernation monitoring surveys organised by the National Bat Monitoring Programme. The distribution map is believed to be a good representation of the actual distribution of the species.
5.3: Short-term trend; Direction	Myotis nattereri is a widely distributed species, commonly recorded in areas associated with trees, including broadleaf woodland, tree lined river corridors, parkland and hedgerow trees adjacent to pasture. Gaps in range in Wales are likely due to a lack of records and the methodology rather than true absence. The short-term range trend is considered stable for this species.
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 20,611 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 20,664 km2. This very small increase in range is likely mainly due to a change in methodology rather than a genuine change in range.

Although there have been no structured distribution surveys, it has been reasonably well recorded by local bat groups and during monitoring surveys organised by the National Bat Monitoring Programme and the increased use of advanced / full spectrum bat detectors combined with increased survey effort due to surveys for development is likely to have resulted in increased detector records of this species.

6.2: Population size	Based on Mathews et al. 2018 methodology:

Unit = Individuals

Minimum = 1,900

Maximum = 332,000

Best Single Value: 52,300

There is no update of this estimate from the previous Article 17 reporting round.

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 habitats within the range excluding montane habitats since these are unlikely to provide suitable locations for roosts. Because of the landscape-wide movements of bats and their dependency on a matrix of habitats and roosting locations, it is not currently possible to make more refined estimates of the area of suitable habitat to be used for population calculations.

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 (Mixed Habitats)

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 plausible range of the estimated population size for Natterer's bats is extremely wide. This is partly because of uncertainty about roost density.
	Alternative population sizes were also calculated based on woodland data only where higher densities have been reported however mixed habitat calculations are felt to be more reflective of Wales as a whole and due to uncertainty regarding density estimates for woodland where data is based on bat box monitoring data. Narrative may need to cover NRW internal population unit and conversion method.
6.6: Population size; Method used	The reported figure in 6.2 is based mainly on extrapolation from a limited amount of data.
	The reported figure in 6.5 is based on occupied 1km grid squares and is therefore reliant on existing records.
6.7: Short-term trend; Period	Based on Bat Conservation Trust (2024) NBMP short-term period of 5 years.
6.8: Short-term trend; Direction	The NBMP coordinates long-term hibernation studies in Wales to give trend data for the species.
	The NBMP (BCT, 2020) data shows over the last five years (2017 - 2022) the smoothed survey index has increased by 13.4% (95% CI -9.6% to 24.2%), however this change is not statistically significant and is reported as stable.
6.12: Long-term trend; Direction	The NBMP coordinates long-term hibernation studies in Wales to give trend data for the species.
	The NBMP (BCT, 2020) data shows Between 1999 and 2023 the smoothed survey index has increased significantly by 106.6% (95% CI 28.8% to 152%).
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.
7.1: Sufficiency of area and quality of occupied habitat	Occupied habitat area
	20,600 km2. Habitable area as given by Mathews et al. 2018 has been used as a proxy for occupied habitat and is considered sufficient. 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.
	Occupied habitat quality
	Whilst we do not have a reliable measure of the quality of the occupied habitat, the population trend is stable and the species continues to be widespread across a mosaic of habitats. It is therefore assumed that quality is sufficient to support a viable population of the species and maintain FCS.
	M. nattereri requires a complex mosaic of habitats to support foraging, roosting and commuting behaviour. The species is commonly associated with trees, particularly broad-leaved woodland, but also tree-lined river corridors, parkland and hedgerows adjacent to pasture (Parsons & Jones, 2003; Smith & Racey, 2008; Zeale et al, 2016). They have also been observed along roadsides (Swift, 1997) and using mature Corsican pine plantations in Scotland (Mortimer, 2006). During the spring, most foraging activity is in open habitats such as orchards, fields and pastures with hedgerows and trees, or near water bodies. However, in summer, foraging activity moves more to woodlands, including dense coniferous forests (Boye & Dietz, 2005). Maternity roosts are located in trees, bat boxes and buildings (predominantly barns, churches and old dwelling houses) and tend to be located close to woodland habitats (Smith & Racey, 2005; Boughey et al., 2011). Underground sites, including tunnels, caves and ice-houses are used for hibernation though the extent of use of trees is unclear

(Dietz & Keifer, 2016; Smith, 2001).

In order to obtain an estimate of actual occupied habitat, it would be necessary to first identify all of the foraging and roosting habitat located within the current range boundary; determine whether or not each of these features were being used and subsequently calculate the combined area of all currently used habitats. This process would require very detailed habitat information at a fine scale across the UK. We do not currently have this level of information. However the population trend is increasing and the species is widespread, using a mosaic of habitats; it is therefore assumed that quality is sufficient to support a viable population of the species and maintain FCS.

7.2: Sufficiency of area and quality of occupied habitat; Methods used	Habitable area was defined as all habitats within the range excluding montane habitats since these are unlikely to provide suitable locations for roosts. Because of the landscape-wide movements of bats and their dependency on a matrix of habitats and roosting locations, it is not currently possible to make more refined estimates of the area of suitable habitat within the range. The habitable area within the range is estimated to be 20,600km2.
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).

Pressures mostly affecting roosts:

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, PF02: Construction or modification (e.g. of housing and settlements) in existing built-up areas, PF05 - Sports, tourism and leisure activities, PB02: Conversion from one type of forestry land use to another: The species is vulnerable to loss of roosts through development, renovation or conversion of buildings, impacts and loss of tree roosts and to disturbance at (underground) hibernation |

and swarming sites. Although roosts are strictly protected, a small number of licences permitting exclusion or roost destruction are issued every year. In addition, changes in building practices to improve energy efficiency mean that new buildings may offer fewer roosting opportunities (Mitchell-Jones, 2010).

Pressures mostly affecting commuting and foraging:

PA04: Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.), PE01: Roads, paths railroads and related infrastructure, PA15: Use of other pest control methods in agriculture (excluding tillage), PA02: Conversion from one type of agricultural land use to another (excluding drainage and burning), PB17: Use of plant protection chemicals in forestry, PK01: Mixed source pollution to surface and ground waters (limnic and terrestrial): Natterer's bats forage within broadleaf woodland, tree lined river corridors, parkland and hedgerow trees adjacent to pasture. Agricultural and forestry practices that remove, modify or fragment these habitats, or affect the biomass of suitable insect prey (including changes to water quality and use of avermectins (Swift, 1997)) could negatively affect populations. The negative impact of transport infrastructure; along with artificial night lighting potentially impacting on commuting routes and prey availability (Zeale et al, 2016; Plummer et al, 2016) are further pressures.

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.

ME01: Reduce impact of transport operation and infrastructure:

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.

MB04: Adapt/manage reforestation and forest regeneration, MB06: Stop forest management and exploitation practices, MF01: Managing the impacts of converting land for construction and development of infrastructure, MA02: Restore small landscape features on agricultural land, MB05: Adapt/change forest management and exploitation practices:

Natterer's bats forage within broadleaf woodland, tree lined river corridors, parkland and hedgerow trees adjacent to pasture. Environmental land management schemes in the agricultural and forestry sectors are now widely used to ensure these habitats in the vicinity of roosts are well-managed and provide appropriate insect food at the correct time of year.

MF10: Other measures related to residential, commercial, industrial and recreational infrastructures, operations and activities:

Planning at landscape scale is required to conserve commuting routes and foraging areas.

MF03: Reduce impact of outdoor sports, leisure and recreational activities (incl. restoration of habitats):

Impacts of recreation (caving) on swarming and hibernation sites need to be limited.

| 10.1: Future trends and prospects of parameters | Future prospects of range |

The future prospects of range for this species is considered to be overall stable in Wales. M. nattereri range is widespread through Wales; no specific short-term drivers for expansion or contraction have been identified and therefore there is no reason to assume that range will vary significantly within the next 12 years unless population

crashes occur.

Future prospects of population

The future prospects of population for this species is considered to be Overall Stable in Wales. The NBMP (BCT, 2020) data shows a stable short-term trend direction for the population of M. nattereri in Wales. Longer term the smoothed index has significantly increased 106.6% above the 1999 base year value. There is no reason to assume this trend will significantly change to decrease within the next 12 years.

Future prospects of habitat of the species

The future prospects of habitat of the species is considered to be overall stable in Wales. We do not have a reliable measure of the quality of the occupied habitat, however M. nattereri is widespread and uses a mosaic of habitats and there are no specific identified drivers of change across these habitats. There is therefore no reason to assume that the current reported trend 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 stable; (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.