European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC)

Fourth Report by the United Kingdom under Article 17

on the implementation of the Directive
from January 2013 to December 2018

Supporting documentation for the
conservation status assessment for the species:

S1317 - Nathusius' pipistrelle (*Pipistrellus nathusii*)

WALES

IMPORTANT NOTE - PLEASE READ

- The information in this document is a country-level contribution to the UK Report on the conservation status of this species, submitted to the European Commission as part of the 2019 UK Reporting under Article 17 of the EU Habitats Directive.
- The 2019 Article 17 UK Approach document provides details on how this supporting information was used to produce the UK Report.
- The UK Report on the conservation status of this species is provided in a separate document.
- The reporting fields and options used are aligned to those set out in the European Commission guidance.
- Explanatory notes (where provided) by the country are included at the end. These provide an audit trail of relevant supporting information.
- 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; (iii) the field was not relevant to this species (section 12 Natura 2000 coverage for Annex II species) and/or (iv) the field was only relevant at UK-level (sections 9 Future prospects and 10 Conclusions).
- For technical reasons, the country-level future trends for Range, Population and Habitat for the species are only available in a separate spreadsheet that contains all the country-level supporting information.
- The country-level reporting information for all habitats and species is also available in spreadsheet format.

Visit the JNCC website, https://jncc.gov.uk/article17, for further information on UK Article 17 reporting.

Report on the main results of the surveillance under Article 11 for Annex II, IV and V species (Annex B)

NATIONAL LEVEL

1. General information

1.1 Member State	**UK (Wales information only)**
1.2 Species code	**1317**
1.3 Species scientific name	**Pipistrellus nathusii**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Nathusius' pipistrelle

2. Maps

2.1 Sensitive species	No
2.2 Year or period	1995-2016
2.3 Distribution map	Yes
2.4 Distribution map Method used	Based mainly on extrapolation from a limited amount of data
2.5 Additional maps	No

3. Information related to Annex V Species (Art. 14)

3.1 Is the species taken in the wild/exploited?		No
3.2 Which of the measures in Art. 14 have been taken?	a) regulations regarding access to property	No
	b) temporary or local prohibition of the taking of specimens in the wild and exploitation	No
	c) regulation of the periods and/or methods of taking specimens	No
	d) application of hunting and fishing rules which take account of the conservation of such populations	No
	e) establishment of a system of licences for taking specimens or of quotas	No
	f) regulation of the purchase, sale, offering for sale, keeping for sale or transport for sale of specimens	No
	g) breeding in captivity of animal species as well as artificial propagation of plant species	No
	h) other measures	No

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

a) Unit

b) Statistics/ quantity taken	Provide statistics/quantity per hunting season or per year (where season is not used) over the reporting period					
	Season/ year 1	Season/ year 2	Season/ year 3	Season/ year 4	Season/ year 5	Season/ year 6
Min. (raw, ie. not rounded)						
Max. (raw, ie. not rounded)						
Unknown	No	No	No	No	No	No

3.4. Hunting bag or quantity taken in the wild Method used

3.5. Additional information

BIOGEOGRAPHICAL LEVEL

4. Biogeographical and marine regions

4.1 Biogeographical or marine region where the species occurs

Atlantic (ATL)

4.2 Sources of information

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
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Dietz C, Helversen OV, Nill D. 2009. Bats of Britain, Europe & Northwest Africa. A & C Black Publishers Ltd., London.
Hutterer R, Ivanova T, Meyer-Cords C, Rodrigues L. 2005. Bat Migrations in Europe: A review of banding data and literature. Federal Agency for Nature Conservation, Bonn.
Lundy M, Montgomery I, Russ J. 2010. Climate change-linked range expansion of Nathusius' pipistrelle bat, Pipistrellus nathusii (Keyserling & Blasius, 1839). J. Biogeogr. 37(12): 2232-2242.
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Richardson P. 2000. Distribution atlas of bats in Britain and Ireland 1980-1999. Bat Conservation Trust, London.
Rodrigues L, Bach L, Dubourg-Savage MJ, Karapandza D, Kovac D, Kervyn T, Dekker J, Kepel A, Bach P, Collins J, Harbusch C, Park K, Micevski B, Minderman J. 2015. Guidelines for consideration of bats in wind farm projects - Revision 2014. EUROBATS Publication Series No. 6. UNEP/EUROBATS Secretariat, Bonn, Germany, 133pp.
Russ J, Briffa M, Montgomery W. 2003. Seasonal patterns in activity and habitat use by bats (Pipistrellus spp. and Nyctalus leisleri) in Northern Ireland, determined using a driven transect. Journal of Zoology 259, 289-299.
Russ JM, Hutson AM, Montgomery WI, Racey PA, Speakman JR. 2001. The status of Nathusius' pipistrelle (Pipistrellus nathusii Keyserling & Blasius, 1839) in the British Isles. Journal of Zoology, 254, 91-100.
Russ JM, Jones G, Racey PA, Hutson AM. 2008. Nathusius' pipistrelle Pipistrellus nathusii. Pp 351-355 In: Harris, S & Yalden, D.W. Mammals of the British Isles: Handbook, 4th edition. The Mammal Society, Southampton.799pp.
Rydell J, Bach L, Dubourg-Savage MJ, Green M, Rodrigues L, Hedenstrom A. 2010. Bat mortality at wind turbines in northwestern Europe. Acta Chiropterologica 12, 261-274.
Speakman JR, Racey PA, Catto CMC, Webb PI, Swift SM, Burnett AM. 1991. Minimum summer populations and densities of bats in N.E. Scotland, near the northern borders of their distributions. Journal of Zoology, 225(2), 327-345.

5. Range

5.1 Surface area (km²)		
5.2 Short-term trend Period		
5.3 Short-term trend Direction	Unknown (x)	
5.4 Short-term trend Magnitude	a) Minimum	b) Maximum
5.5 Short-term trend Method used		
5.6 Long-term trend Period		
5.7 Long-term trend Direction		
5.8 Long-term trend Magnitude	a) Minimum	b) Maximum
5.9 Long-term trend Method used		
5.10 Favourable reference range	a) Area (km²) b) Operator c) Unknown d) Method	
5.11 Change and reason for change in surface area of range	Improved knowledge/more accurate data Use of different method	

	The change is mainly due to:	Use of different method
5.12 Additional information		

6. Population

6.1 Year or period	2016-2017	
6.2 Population size (in reporting unit)	a) Unit	number of map 1x1 km grid cells (grids1x1)
	b) Minimum	
	c) Maximum	
	d) Best single value	
6.3 Type of estimate	Best estimate	
6.4 Additional population size (using population unit other than reporting unit)	a) Unit	number of individuals (i)
	b) Minimum	
	c) Maximum	
	d) Best single value	
6.5 Type of estimate		
6.6 Population size Method used	Insufficient or no data available	
6.7 Short-term trend Period	2007-2018	
6.8 Short-term trend Direction	Unknown (x)	
6.9 Short-term trend Magnitude	a) Minimum	
	b) Maximum	
	c) Confidence interval	
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	
6.14 Long-term trend Method used		
6.15 Favourable reference population (using the unit in 6.2 or 6.4)	a) Population size	
	b) Operator	
	c) Unknown	
	d) Method	
6.16 Change and reason for change in population size	No change	
	The change is mainly due to:	
6.17 Additional information		

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7. Habitat for the species

7.1 Sufficiency of area and quality of occupied habitat	a) Are area and quality of occupied habitat sufficient (to maintain the species at FCS)?	Unknown
	b) Is there a sufficiently large area of occupied AND unoccupied habitat of suitable quality (to maintain the species at FCS)?	Unknown
7.2 Sufficiency of area and quality of occupied habitat Method used	Insufficient or no data available	
7.3 Short-term trend Period	1999-2016	
7.4 Short-term trend Direction	Unknown (x)	
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		

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Wind, wave and tidal power, including infrastructure (D01)	H
Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (E01)	H
Drainage for use as agricultural land (A31)	H
Modification of hydrological flow or physical alteration of water bodies for agriculture (excluding development and operation of dams) (A33)	H
Conversion from one type of agricultural land use to another (excluding drainage and burning) (A02)	M
Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.) (A05)	M
Use of plant protection chemicals in agriculture (A21)	M
Conversion to other types of forests including monocultures (B02)	M
Clear-cutting, removal of all trees (B09)	M

Threat	Ranking
Wind, wave and tidal power, including infrastructure (D01)	H
Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (E01)	H
Drainage for use as agricultural land (A31)	H

Modification of hydrological flow or physical alteration of water bodies for agriculture (excluding development and operation of dams) (A33)	H
Conversion from one type of agricultural land use to another (excluding drainage and burning) (A02)	M
Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.) (A05)	M
Use of plant protection chemicals in agriculture (A21)	M
Conversion to other types of forests including monocultures (B02)	M
Clear-cutting, removal of all trees (B09)	M

8.2 Sources of information

8.3 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 Natura 2000

9.4 Response to the measures: Long-term results (after 2030)

9.5 List of main conservation measures

Prevent conversion of (semi-) natural habitats into forests and of (semi-)natural forests into intensive forest plantation (CB01)
Adapt/change forest management and exploitation practices (CB05)
Adapt/manage renewable energy installation, facilities and operation (CC03)
Reduce impact of transport operation and infrastructure (CE01)
Prevent conversion of natural and semi-natural habitats, and habitats of species into agricultural land (CA01)
Restore small landscape features on agricultural land (CA02)
Manage the use of natural fertilisers and chemicals in agricultural (plant and animal) production (CA09)
Manage drainage and irrigation operations and infrastructures in agriculture (CA15)
Adapt/manage reforestation and forest regeneration (CB04)

9.6 Additional information

10. Future prospects

10.1 Future prospects of parameters

a) Range

b) Population

c) Habitat of the species

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10.2 Additional information

11. Conclusions

11.1. Range

11.2. Population

11.3. Habitat for the species

11.4. Future prospects

11.5 Overall assessment of Conservation Status

11.6 Overall trend in Conservation Status

11.7 Change and reasons for change in conservation status and conservation status trend

a) Overall assessment of conservation status

No change

The change is mainly due to:

b) Overall trend in conservation status

No change

The change is mainly due to:

11.8 Additional information

12. Natura 2000 (pSCIs, SCIs and SACs) coverage for Annex II species

12.1 Population size inside the pSCIs, SCIs and SACs network (on the biogeographical/marine level including all sites where the species is present)

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 Additional information

13. Complementary information

13.1 Justification of % thresholds for trends

13.2 Trans-boundary assessment

13.3 Other relevant Information

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Distribution Map

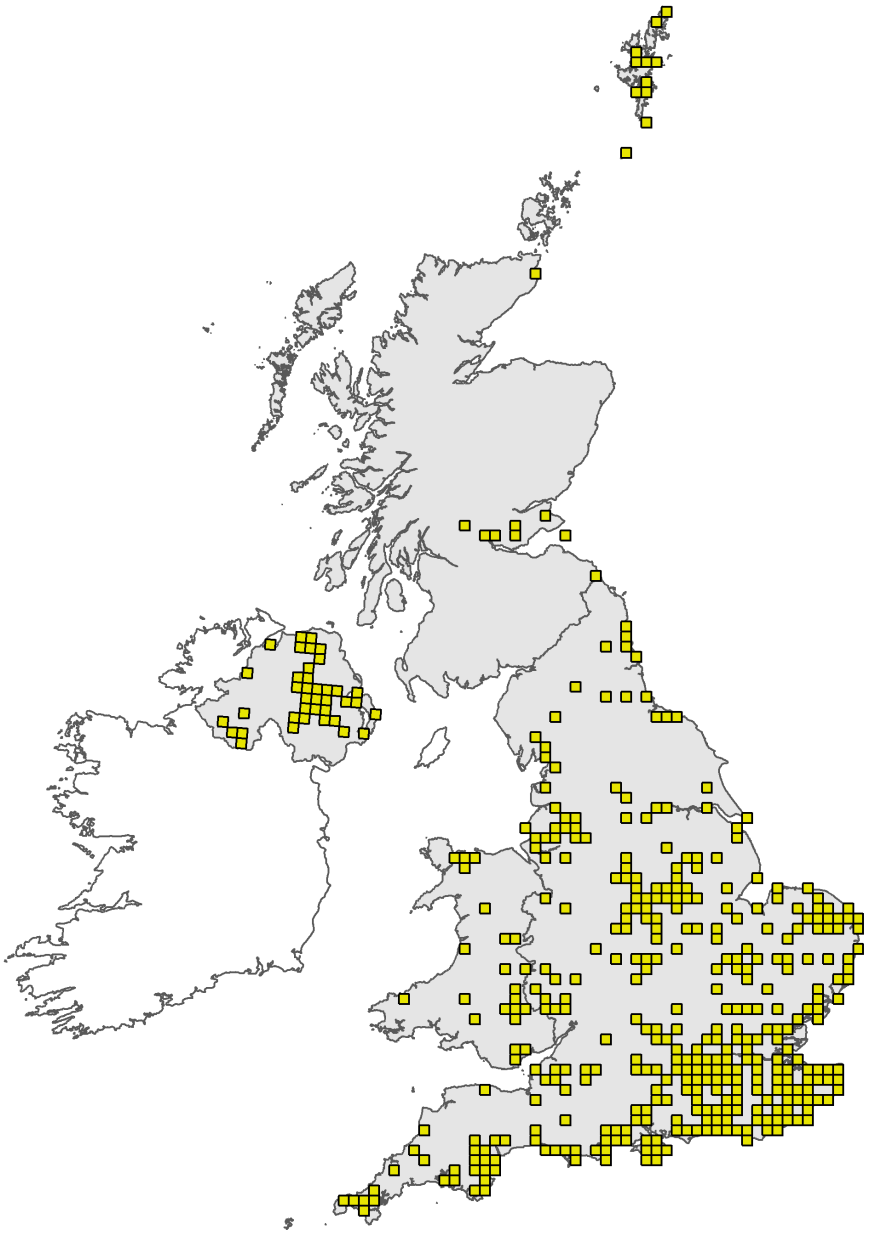

Figure 1: UK distribution map for S1317 - Nathusius' pipistrelle (*Pipistrellus nathusii*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The 10km grid square distribution map is based on available species records within the current reporting period. For further details see the 2019 Article 17 UK Approach document.

Range Map

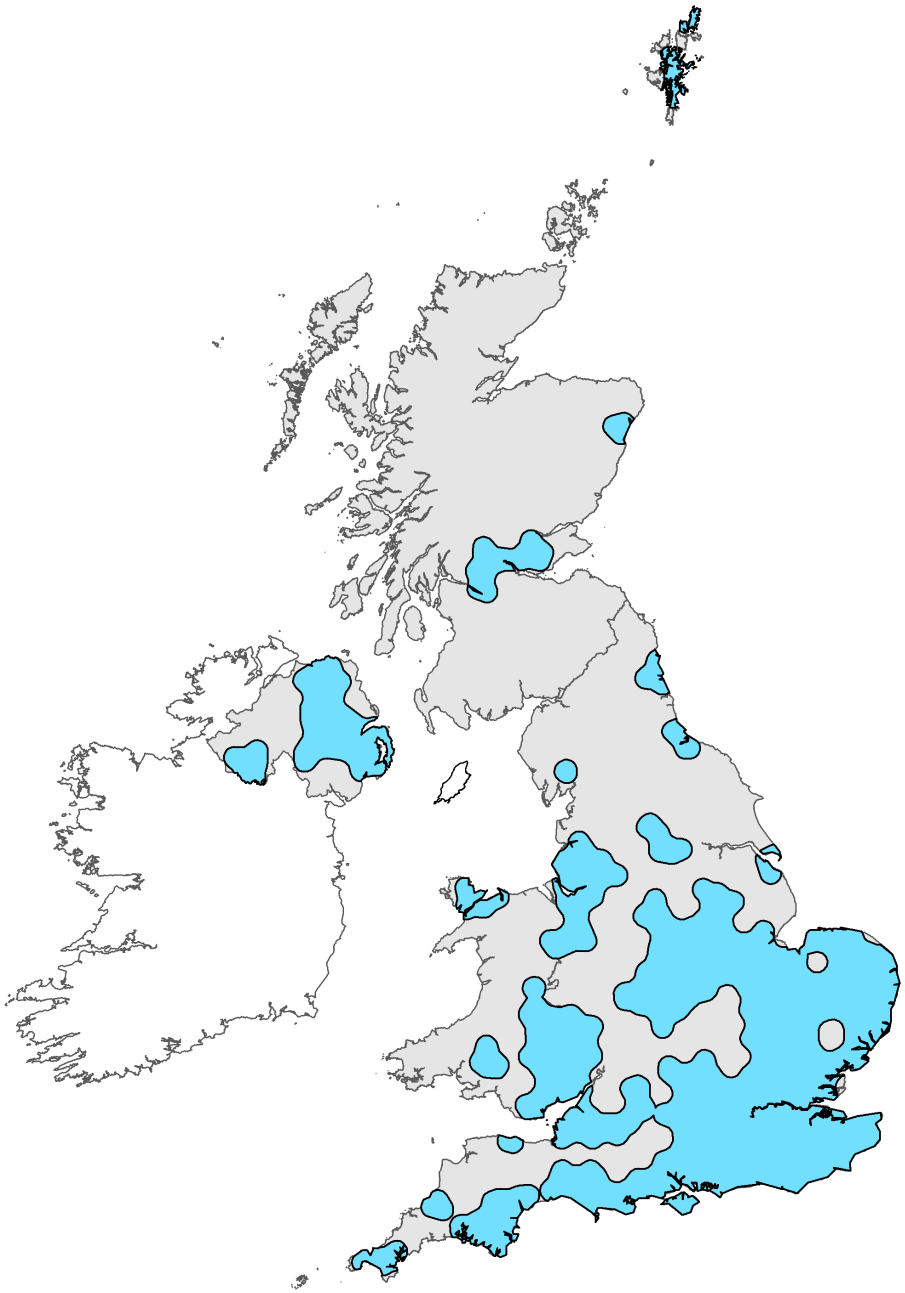

Figure 2: UK range map for S1317 - Nathusius' pipistrelle (*Pipistrellus nathusii*).Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The range map has been produced by The Mammal Society applying a range mapping tool as outlined in Matthews et al. (2018), to the 10km grid square distribution map presented in Figure 1. The alpha value for this species was 20km. For further details see the 2019 Article 17 UK Approach document.

Explanatory Notes

Species name: Pipistrellus nathusii (1317)

Field label	Note
2.2 Year or Period	This time period has been selected as distribution has been calculated using data from Mathews et al. 2018.
2.4 Distribution map; Method used	Distribution map is based on validated records. Prior to 1980 there are very few records of Nathusius' pipistrelle in Britain and until the late 1990s the species was considered a migrant winter visitor (Speakman et al. 1991) when a small number of maternity colonies were found in Northern Ireland and two juveniles were caught in South-East England. While it is clearly a highly migratory species, moving south-westwards from northern continental Europe in autumn (Hutterer et al. 2005) low numbers of maternity roosts are known in Eastern England and Northern Ireland, and thus the UK population consists of both residents and migrants. There are scattered records for the species across Wales, however, no maternity sites have been found in Wales and its status in Wales is unclear. The recent improvements in bat detector technologies have led to an increase in records of the species, along with a heightened profile and species focused projects.

Species name: Pipistrellus nathusii (1317) Region code: ATL

Field label	Note
5.3 Short term trend; Direction	See 5.11
5.11 Change and reason for change in surface area of range	Area of land (including unsuitable habitat) contained within the range is given as 6,921 km2 for Wales (Mathews et al. 2018). Range is based on presence data collected between 1995-2016. Areas that contain very isolated records may not have been included in the area of distribution. The range has been taken from Mathews et al. 2018, whereby an alpha hull value of 20km was drawn around the presence records, which represented the best balance between the inclusion of unoccupied sites (i.e. where records are sparse but close enough for inclusion) and the exclusion of occupied areas due to gaps in the data (i.e. where records exist but are too isolated for inclusion). An additional 10km buffer was added to the final hull polygon to provide smoothing to the hull and to ensure that the hull covered the areas recorded rather than intersecting them. This differs from the approach taken in 2013 and 2007 whereby a 45km alpha hull value was used for all bat species with a starting range unit of individual 10km squares. The new method has led to much finer detail maps being produced underpinned by data gathered at a much finer resolution, leading to the production of a more accurate FRR. Added to which acoustic detectors have changed considerably over the years in both accuracy and sensitivity, which also adds to the production of this value. It is important to note that for this species range represents all records, most of which are acoustic. Given the species great mobility, the range may not correspond with the roost range (Mathews et al. 2018)
6.4 Additional population size	Unit: Individuals Value: Unknown. Mathews et al. 2018 was unable to give an updated population estimate. They state 'There is insufficient information on roosts density or counts to enable an estimate of population size to be derived. No alternative sources of information (e.g. from population genetics) are available for the UK.' The population in the UK is at least partly migratory, though the proportion of residents to migrants is unknown. No maternity roosts are known in Wales and it is not clear if there is a resident population. As there are no data on which to base population estimates for Wales it must be reported as unknown with regard to the unit of 'individuals' as reported in NRW. 2013.

6.8 Short term trend; Direction	No trend data is available for Wales and therefore unknown has been selected. Distribution data on Nathusius' pipistrelle have been collected through the NBMP by the Nathusius' Pipistrelle Survey, a bat detector survey at waterbodies which ran from 2009-2014, and since 2014 by the National Nathusius' Pipistrelle Project (NNPP), however NNPP was within England only. Based on England's improved data it is possible to infer that there is a genuine increase in the number of Nathusius' pipistrelle bats in GB (Mathews et al., 2018), however new data is geographically biased and there is very little data to support a trend within Wales.
6.10 Short term trend; Method used	A reliable trend cannot be drawn for Wales due to insufficient available data.
6.16 Change and reason for change in population size	There is no new information or sufficient data available on which to base a new population estimate for Wales. NRW 2013 did not estimate the population. Based on England's improved data it is possible to infer that there is a genuine increase in the number of Nathusius' pipistrelle bats in GB (Mathews et al. 2018), however new data is geographically biased and there is very little data to support a trend within Wales.
6.17 Additional information	The following information corresponds to section 6.18 in the evidence pack: Is reproduction, mortality and age structure deviating from normal? UNKNOWN
7.1 Sufficiency of area and quality of occupied habitat	a) Are area and quality of occupied habitat sufficient (to maintain the species at FCS)? YES/NO/Unknown Area: 6,920 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. Quality: Unknown. We do not have a reliable measure of the quality of the occupied habitat. Without trend data it is also difficult to infer if habitat is of sufficient quality to maintain FCS. Nathusius' pipistrelle bats are heavily associated with large water bodies. It feeds in riparian habitats, broadleaved and mixed woodland and parkland. Occasionally found in farmland, but nearly always near running or still water. This is a generalist species, using a mosaic of habitats and 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. Overall = Unknown
7.2 Sufficiency of area and quality of occupied habitat; Method used	The habitable area has been taken from 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. The habitable area within the range is noted as 6,920 km2, but it is unlikely that the entirety of this area forms suitable habitat. To obtain a proper estimate of suitable habitat used by the species, it would be necessary to first identify all of the foraging and roosting habitat located within the current range boundary; determine whether or not each of these features were being used; and subsequently calculate the combined area of all currently used habitats. This process would require very detailed habitat information at a fine scale across the UK. We do not currently have this level of information.
7.3 Short term trend; Period	(range information taken from Mathews et al. 2018)
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/ threats	Pressures: D01 - Wind, wave and tidal power, including infrastructure: This is the only species in GB with clear evidence of considerable movement between GB and continental Europe. Within Wales movement between Ireland and mainland UK is also possible. Recent capture and ringing effort has shown movement of the species between SW England and the Netherlands and between Latvia and Estonia and SE England. In addition, records of Nathusius' pipistrelle bat have been made in the English Channel using acoustic detectors installed on passenger ferries (Mathews et al., 2018). Stable isotope analyses of the fur samples collected as part of the Nathusius' Pipistrelle Project have provided evidence that at least part of the British population is derived from the far east of Europe (Barlow et al., 2016). The species is known to be at high risk of collision with wind turbines based on evidence elsewhere in Europe (Rodrigues et al. 2015), though data in GB is lacking as few sites in coastal or other high-risk areas have been monitored and data is also lacking on migratory routes (Mathews et al, 2018). E01 - Roads, paths railroads and related infrastructure (e.g. bridges, viaducts, tunnels), A31 - Drainage for use as agricultural land, A33 - Modification of hydrological flow or physical alternation of water bodies for agriculture (excluding development and operation of dams), A02 - Conversion from one type of agricultural land use to another (excluding drainage and burning), A05 - Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.), A21 - Use of plant protection chemicals in agriculture, B02 - Conversion to other types of forests including monocultures, B09 - Clear-cutting, removal of all trees: Most pressures and threats can generally be divided into those that affect commuting and foraging (including prey availability). The species routinely forages in deciduous mixed woodlands, damp lowland forests, riparian forests but also coniferous forests, park landscapes and often over water bodies (Dietz et al, 2009). Roosting sites in Europe are primarily within trees, though the species adopts bat and bird boxes and can be found within residential buildings. This behaviour would seem to occur in England as well and could be expected in Wales. Linear infrastructure may impact commuting and foraging habitats. Agricultural and forestry practices that remove or simplify these habitats or affect the biomass of insect prey could negatively affect populations. Threats: D01 - Wind, wave and tidal power, including infrastructure: This is the only species in GB with clear evidence of considerable movement between GB and continental Europe. Within Wales movement between Ireland and mainland UK is also possible. Recent capture and ringing effort has shown movement of the species between SW England and the Netherlands and between Latvia and Estonia and SE England. In addition, records of Nathusius' pipistrelle bat have been made in the English Channel using acoustic detectors installed on passenger ferries (Mathews et al, 2018). Stable isotope analyses of the fur samples collected as part of the Nathusius' Pipistrelle Project have provided evidence that at least part of the British population is derived from the far east of Europe (Barlow et al., 2016). The species is known to be at high risk of collision with wind turbines based on evidence elsewhere in Europe (Rodrigues et al. 2015), though data in GB is lacking as few sites in coastal or other high-risk areas have been monitored and data is also lacking on migratory routes (Mathews et al, 2018). Development of wind power will continue into the future. E01 - Roads, paths railroads and related infrastructure (e.g. bridges, viaducts, tunnels), A31 - Drainage for use as agricultural land, A33 - Modification of hydrological flow or physical alternation of water bodies for agriculture (excluding development and operation of dams), A02 - Conversion from one type of agricultural land use to another (excluding drainage and burning), A05 - Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.), A21 - Use of plant protection chemicals in agriculture, B02 - Conversion to other types of forests including monocultures, B09 - Clear-cutting, removal of all trees: Most pressures and threats can generally be divided into those that affect commuting and foraging (including prey availability). The species routinely forages in deciduous mixed woodlands, damp lowland forests, riparian forests but also coniferous forests, park

	landscapes and often over water bodies (Dietz et al, 2009). Roosting sites in Europe are primarily within trees, though the species adopts bat and bird boxes and can be found within residential buildings. This behaviour would seem to occur in England as well and could be expected in Wales. Linear infrastructure may impact commuting and foraging habitats. Agricultural and forestry practices that remove or simplify these habitats or affect the biomass of insect prey could negatively affect populations. All of the above issues are threats that are likely to continue into the future.
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. CC03: Adapt/manage renewable energy installation, facilities and operation Guidance is being developed and will shortly be available from the agencies to help planners, developers and ecological consultants to consider the potential effects of onshore wind energy developments on bats. CB01 - Prevent conversion of (semi-) natural habitats into forests and of (semi-) natural forests into intensive forest plantation, CB05 - Adapt/change forest management and exploitation practices, CE01 - Reduce impact of transport operation and infrastructure, CA01 - Prevent conversion of natural and semi-natural habitats, and habitats of species into agricultural land, CA02 - Restore small landscape features on agricultural land, CA09 - Manage the use of natural fertilisers and chemicals in agricultural (plant and animal) production, CA15 - Manage drainage and irrigation operation and infrastructures in agriculture, CB04 - Adapt/manage reforestation and forest regeneration: The species routinely forages in deciduous mixed woodlands, damp lowland forests, riparian forests but also coniferous forests, park landscapes and often over water bodies (Dietz et al, 2009). Roosting sites in Europe are primarily within trees, though the species adopts bat and bird boxes and can be found within residential buildings. Environmental land management schemes in the agricultural and forestry sectors are now widely used to ensure these habitats are well-managed and provide appropriate insect food at the correct time of year. Planning at landscape scale is required to conserve commuting routes and foraging areas.
10.1 Future prospects of parameters	10.1a Future prospects of -range.The future prospects of range for this species is considered to be unknown in Wales. The species range is fragmented in Wales; this may be due to under recording. Reported range may increase within the next 12 years however this may be the result of better data rather than actual range increase. Lundy et al. 2010 indicated that climate change will be a positive driver of change through alteration of migration routes and summer/wintering grounds however it is unclear if this will be observed within the next 12 years. 10.1b Future prospects of -Population The future prospects of population for this species is considered to be unknown in Wales. There is insufficient data to draw trends for Wales. With additional survey effort further records of the species may be located however the only GB maternity roosts so far located are eastern England and resident population increase is typically driven by maternity roost success. 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. We do not have a reliable measure of the quality of the occupied habitat, however P. nathusii 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 status of habitat will not continue over the next 12 years.