

**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:

S1314 - Daubenton's bat (*Myotis daubentonii*)

NORTHERN IRELAND

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 (Northern Ireland information only)
1.2 Species code	1314
1.3 Species scientific name	<i>Myotis daubentonii</i>
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Daubenton's bat

2. Maps

2.1 Sensitive species	No
2.2 Year or period	1994-2018
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?	<table> <tr> <td>a) regulations regarding access to property</td><td>No</td></tr> <tr> <td>b) temporary or local prohibition of the taking of specimens in the wild and exploitation</td><td>No</td></tr> <tr> <td>c) regulation of the periods and/or methods of taking specimens</td><td>No</td></tr> <tr> <td>d) application of hunting and fishing rules which take account of the conservation of such populations</td><td>No</td></tr> <tr> <td>e) establishment of a system of licences for taking specimens or of quotas</td><td>No</td></tr> <tr> <td>f) regulation of the purchase, sale, offering for sale, keeping for sale or transport for sale of specimens</td><td>No</td></tr> <tr> <td>g) breeding in captivity of animal species as well as artificial propagation of plant species</td><td>No</td></tr> <tr> <td>h) other measures</td><td>No</td></tr> </table>	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

Lundy, M. & Montgomery, I. (2010) Summer habitat associations of bats between riparian landscapes and within riparian areas, *European Journal of Wildlife Research*, 56(3): 385-394.

Lundy, M.G., Aughney, T., Montgomery, W.I., and Roche, N. (2011). Landscape conservation for Irish bats & species: specific roosting characteristics. Bat Conservation Ireland. Unpublished.

Lundy, M.G., Buckley, D.J., Boston, E.S.M., Scott, D.D., Prodohl, P.A., Marnell, F., Teeling, E.C., Montgomery, W.I., (2012) Behavioural context of multi-scale species distribution models assessed by radio-tracking. *Basic Appl. Ecol.*, <http://dx.doi.org/10.1016/j.baae.2011.1012.1003>.

Hutson, A.M., Mickleburgh, S.P., and Racey, P.A. (comp.). (2001). Microchiropteran bats: global status survey and conservation action plan. IUCN/SSC Chiroptera Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK. x + 258 pp.

Hutson, A.M., Mickleburgh, S.P. & Racey, P.A. (comp.). (2001) Global Status Survey and Conservation Action Plan Microchiropteran Bats, The Nature Conservation Bureau Ltd, ISBN: 2-8317-0595-9, <http://www.uni-giessen.de/faculties/f08/departments/tsz/mammalian-ecology-group/downloads/iucn-microchiroptera>

Russ, J.M. (1999). The Microchiroptera of Northern Ireland: community composition, habitat associations and ultrasound. Unpublished Ph.D thesis. The Queen's University of Belfast.

Boston, E. (2016) A report on Article 17 reporting for Northern Ireland on the eight bat species listed in annex IV of the UK Habitats Directive, unpublished report compiled for CEDaR

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Mathews, F., Richardson, S., Lintott, P., and Hosken, D. 2016. Understanding the Risk to European Protected Species (bats) at Onshore Wind Turbine Sites to inform Risk Management. University of Exeter. Report to DEFRA.

Aughney, T., Roche, N., & Langton, S. (2016) Irish Bat Monitoring Schemes: Annual Report for 2015. www.batconservationireland.org.

Aughney, T., Langton S. and Roche, N. (2009) All Ireland Daubenton's Bat Waterway Monitoring Scheme 2006-2008. Irish Wildlife Manuals No. 42. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.

5. Range

5.1 Surface area (km ²)	
5.2 Short-term trend Period	
5.3 Short-term trend Direction	Stable (0)
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 (km ²) b) Operator c) Unknown d) Method
5.11 Change and reason for change in surface area of range	No change The change is mainly due to:
5.12 Additional information	

6. Population

6.1 Year or period	1994-2018
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 161
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 24000
6.5 Type of estimate	Minimum

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6.6 Population size Method used	Complete survey or a statistically robust estimate
6.7 Short-term trend Period	2007-2018
6.8 Short-term trend Direction	Increasing (+)
6.9 Short-term trend Magnitude	a) Minimum b) Maximum c) Confidence interval
6.10 Short-term trend Method used	Complete survey or a statistically robust estimate
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	Genuine change The change is mainly due to: Genuine change
6.17 Additional information	

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)? b) Is there a sufficiently large area of occupied AND unoccupied habitat of suitable quality (to maintain the species at FCS)?	Yes
7.2 Sufficiency of area and quality of occupied habitat Method used	Based mainly on extrapolation from a limited amount of data	
7.3 Short-term trend Period	2007-2018	
7.4 Short-term trend Direction	Uncertain (u)	
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
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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)	H
Use of other pest control methods in agriculture (excluding tillage) (A23)	M
Conversion to other types of forests including monocultures (B02)	M
Logging without replanting or natural regrowth (B05)	H
Removal of old trees (excluding dead or dying trees) (B08)	M
Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (E01)	H
Construction or modification (e.g. of housing and settlements) in existing urban or recreational areas (F02)	M
Residential or recreational activities and structures generating noise, light, heat or other forms of pollution (F24)	H
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	H

Threat	Ranking
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)	H
Use of other pest control methods in agriculture (excluding tillage) (A23)	M
Conversion to other types of forests including monocultures (B02)	M
Logging without replanting or natural regrowth (B05)	H
Removal of old trees (excluding dead or dying trees) (B08)	M
Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (E01)	H
Construction or modification (e.g. of housing and settlements) in existing urban or recreational areas (F02)	M
Residential or recreational activities and structures generating noise, light, heat or other forms of pollution (F24)	H
Mixed source pollution to surface and ground waters (limnic and terrestrial) (J01)	H

8.2 Sources of information

8.3 Additional information

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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

Medium-term results (within the next two reporting periods, 2019-2030)

9.5 List of main conservation measures

9.6 Additional information

10. Future prospects

10.1 Future prospects of parameters

- a) Range
- b) Population
- c) Habitat of the species

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

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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

Distribution Map

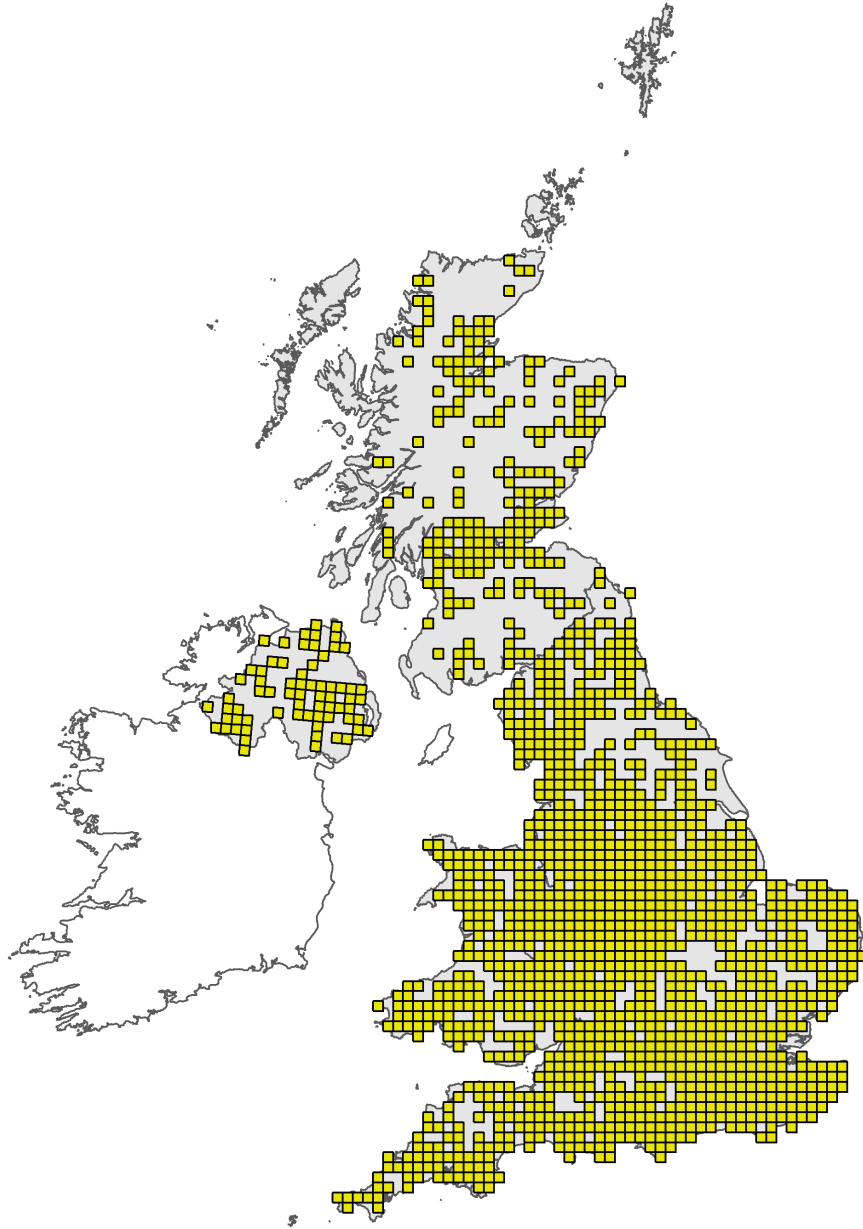


Figure 1: UK distribution map for S1314 - Daubenton's bat (*Myotis daubentonii*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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

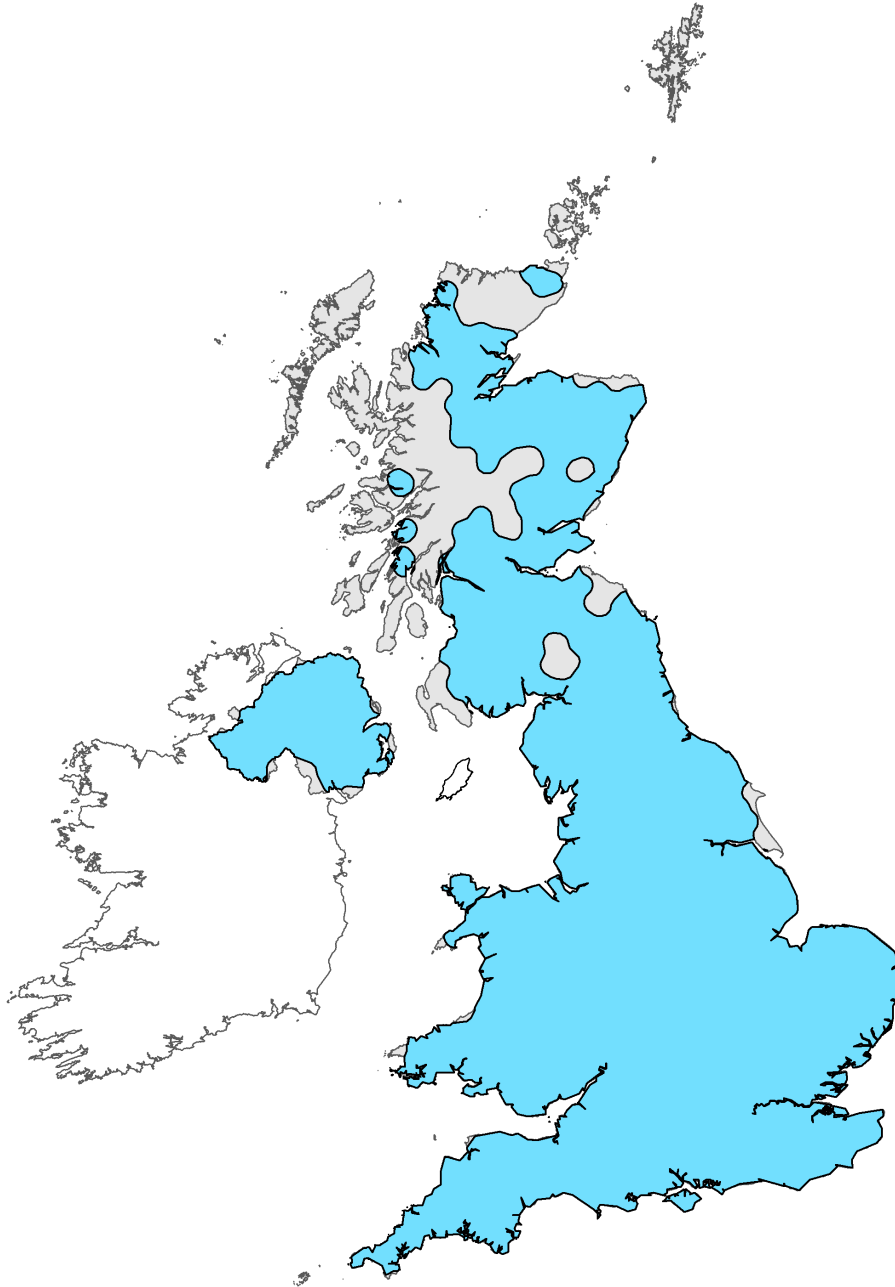


Figure 2: UK range map for S1314 - Daubenton's bat (*Myotis daubentonii*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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: *Myotis daubentonii* (1314) Region code: ATL

Field label	Note
5.3 Short term trend; Direction	Short term trend in range assessed as stable - comparatively good distributional data available for Daubenton's Bat (see 5.5)
5.5 Short term trend; Method used	Distributional data is available for this species from ongoing record collection from as early as 1985 by the NIBG, BCT and BCI. Annual distributional data has also been collected for this species since 2006 with the implementation of the All-Ireland Daubenton's Bat Waterway Survey monitoring scheme (Aughney et al. 2012), which makes a population estimate possible. It is likely that there a number of additional incidental records that have not been added to the species recording databases.
6.1 Year or Period	Due to inconsistent recording, population estimates (1x1km squares presence) for all bat species have been based upon available data from the period 1994-2018.
6.5 Type of estimate	Based upon estimate used in 2013 Report. Since all Daubenton's bat roosts are not known it is not possible to count the population based on a complete census. Therefore, the population of mature (volant) individuals has been estimated using data from the Republic of Ireland from All-Ireland Daubenton's Bat Waterway Monitoring Scheme dataset. This population estimate is calculated based on the estimated detection range for echolocating Daubenton's bats (20+20m in each direction along a waterway) and the approximate length of waterway across Northern Ireland. The length of waterways is divided by the approximate detectable length (40m in total) and multiplied by the probability of detecting a Daubenton's bat in any given moment in time (2007-2012) on any given evening, from the All-Ireland Daubenton's Bat Waterway Monitoring Scheme, Northern Irish data. This population estimate (24,000) uses a number of assumptions which may be only approximately correct and it could be improved with more detailed information on size and shape of detectable areas, improved knowledge of the extent of Daubenton's bat use of lakes, and more detailed information on stream classification in Northern Ireland. However, it may be considered a starting point from which to refine future estimates. See Roche et al. (2013) for further details. Recent review of Annex 4 bat species in NI (Boston, E., 2016) suggests that this figure should be treated as a minimum estimate.
6.6 Population size; Method used	Distributional data is available for this species from ongoing record collection from as early as 1985 by the NIBG, BCT and BCI. Annual distributional data has also been collected for this species since 2006 with the implementation of the All-Ireland Daubenton's Bat Waterway Survey monitoring scheme (Aughney et al. 2012), which makes a population estimate possible. The records used in this report are collected by NI Bat Group, Bat Conservation Trust and Bat Conservation Ireland are available from databases managed by CEDaR, NI Bat Group, Bat Conservation Ireland and the National Biodiversity Data Centre. It is likely that there are a number of additional incidental records that have not been added to these databases.
6.16 Change and reason for change in population size	Data from the All-Ireland Waterway Survey suggests that this species is increasing here at an average annual rate 3.5%.
7.4 Short term trend; Direction	Daubenton's bats can occupy a variety of habitats. There is little information on habitat associations of the species available. Given that there have been no systematic surveys carried out across Daubenton's bat sites in all of the possible habitats to assess their condition in relation to Daubenton's bat requirements, we cannot infer any directional trend between this period and the last for 'habitat for the species' with confidence. Therefore the short-term trend direction for the habitat for the species has been reported as 'uncertain'.

8.1 Characterisation of pressures/ threats	<p>Daubenton's bat is found foraging at ponds, lakes, streams and also small brooks, usually over relatively slow moving, calm water. They can also be found at the top of riparian treelines (beside rivers). Although associated with water, Daubenton's bat can also be found for about a third of the time in other habitats. Threats and Pressures largely related to factors that may impact upon the habitats that the species uses for feeding, roosting, hibernating etc., such as agriculture, forestry/woodland management, development and construction, water pollution, etc - i.e 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.); A23: Use of other pest control methods in agriculture (excluding tillage); B02: Conversion to other types of forests including monocultures; B05: Logging without replanting or natural regrowth; B08: Removal of old trees (excluding dead or dying trees); E01: Roads, paths railroads and related infrastructure (e.g. bridges, viaducts, tunnels); F02: Construction or modification (of e.g. housing and settlements) in existing urban or recreational areas; F24: Residential or recreational activities and structures generating noise, light, heat or other forms of pollution; J01: Mixed source pollution to surface and ground waters (limnic and terrestrial).</p>
10.1 Future prospects of parameters	<p>The future prospects for the habitat for the species have been reported as 'unknown' because there is insufficient monitoring data available to accurately interpret habitat trends. We cannot infer any directional trends in the habitat for the species between this period and the last with confidence, due to the quality and amount of data available to us for all reporting periods.</p>