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:

S1330 - Whiskered bat (*Myotis mystacinus*)

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.

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NATIONAL LEVEL

1. General information

1.1 Member State	**UK (Northern Ireland information only)**
1.2 Species code	**1330**
1.3 Species scientific name	**Myotis mystacinus**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Whiskered 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?	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.
Russ, J.M. & Montgomery, W.I. (2002). Habitat association of bats in Northern Ireland: implications for conservation. Biological Conservation. 108: 49-58.
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. S. M., Buckley D., Bekaert M., Lundy M. G., Gager, Y., Scott D. D.,

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Prodohl, P. A., Montgomery, I., Marnell, F., Teeling, E. (In Press, Acta Chiropterlogica) The status of the cryptic species, Myotis mystacinus (Whiskered bat) and Myotis brandtii (Brandt's bat) in Ireland.
Buckley, D.J., Lundy, M.G., Boston, E.S.M., Scott, D.D., Gager, Y., Prodohl, P., Marnell, F., Montgomery, W.I., Teeling E.C. (2012). The spatial ecology of the whiskered bat (Myotis mystacinus) at the western extreme of its range provides evidence of regional adaptation. Mammalian Biology, In press.
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
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.

5. Range

5.1 Surface area (km²)		
5.2 Short-term trend Period		
5.3 Short-term trend Direction	Uncertain (u)	
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	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	15
6.3 Type of estimate	Best estimate	

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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	Best estimate	
6.6 Population size Method used	Based mainly on extrapolation from a limited amount of data	
6.7 Short-term trend Period	2007-2018	
6.8 Short-term trend Direction	Uncertain (u)	
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		

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)?	
7.2 Sufficiency of area and quality of occupied habitat Method used	Insufficient or no data available	
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		

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7.9 Additional information

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Conversion from one type of agricultural land use to another (excluding drainage and burning) (A02)	M
Use of other pest control methods in agriculture (excluding tillage) (A23)	M
Logging without replanting or natural regrowth (B05)	M
Removal of old trees (excluding dead or dying trees) (B08)	H
Clear-cutting, removal of all trees (B09)	H
Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (E01)	M
Conversion from other land uses to housing, settlement or recreational areas (excluding drainage and modification of coastline, estuary and coastal conditions) (F01)	H
Sports, tourism and leisure activities (F07)	M
Construction or modification (e.g. of housing and settlements) in existing urban or recreational areas (F02)	M
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
Use of other pest control methods in agriculture (excluding tillage) (A23)	M
Logging without replanting or natural regrowth (B05)	M
Removal of old trees (excluding dead or dying trees) (B08)	H
Clear-cutting, removal of all trees (B09)	H
Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (E01)	M
Conversion from other land uses to housing, settlement or recreational areas (excluding drainage and modification of coastline, estuary and coastal conditions) (F01)	H
Sports, tourism and leisure activities (F07)	M
Construction or modification (e.g. of housing and settlements) in existing urban or recreational areas (F02)	M
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

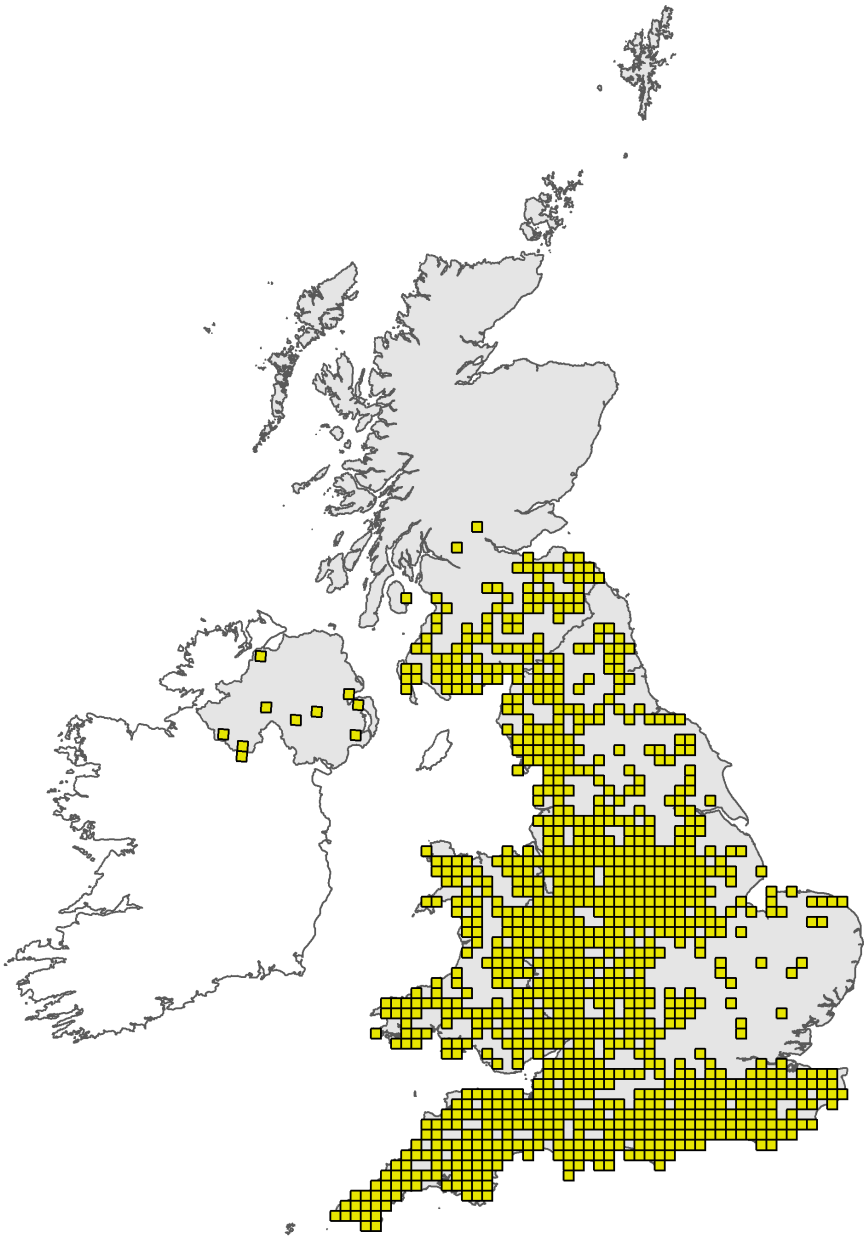

Figure 1: UK distribution map for S1330 - Whiskered bat (*Myotis mystacinus*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

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 S1330 - Whiskered bat (*Myotis mystacinus*). 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 applying a bespoke range mapping tool for Article 17 reporting (produced by JNCC) to the 10km grid square distribution map presented in Figure 1. The alpha value for this species was 45km. For further details see the 2019 Article 17 UK Approach document.

Explanatory Notes

Species name: Myotis mystacinus (1330) Region code: ATL

Field label	Note
5.3 Short term trend; Direction	The whiskered bat is one of the most rarely recorded bat species Ireland. This is partly due to the difficulty of separating the Myotis species using ultrasound detectors and their tendency to roost in small numbers. There is no systematic monitoring of this species in Northern Ireland and currently a large number of gaps in the known distribution. As a results, it is not possible to make an assessment of trend for this species - reported as uncertain.
5.5 Short term trend; Method used	The whiskered bat is one of the most rarely recorded bat species Ireland. This is partly due to the difficulty of separating the Myotis species using ultrasound detectors and their tendency to roost in small numbers. There is no systematic monitoring of this species in Northern Ireland and currently a large number of gaps in the known distribution. Records have been collected since 1985 by the NIBG, BCT and BCI. It is likely that there a number of additional incidental records from sources that have not been added to these databases. The omission of these records may influence the interpretation of the overall distribution of the species within this report.
5.11 Change and reason for change in surface area of range	We have stated that there has been 'no' change in the surface area of this species' range because there is insufficient monitoring data available to determine whether an actual change in range surface area has occurred within this reporting period.
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. This estimate was based on a number of assumptions that are as yet untested and should be treated with caution.
6.6 Population size; Method used	This species is one of the most rarely recorded species on the island of Ireland. It may well be under-recorded and there is currently no systematic monitoring scheme in place in Northern Ireland to monitor this species' populations. The records used in this report are collected by NI Bat Group, Bat Conservation Trust and Bat Conservation Ireland are available upon request, from databases managed by CEDaR, NI Bat Group, Bat Conservation Ireland and the National Biodiversity Data Centre. It is thought there may be additional incidental records from sources that have not been added to these databases. The absence of these records clearly affect our understanding the species' distribution and population size in NI.
6.8 Short term trend; Direction	There is currently no good distributional or population size estimate for this species and no method to monitor changes to populations. The short-term trend direction for the population has been reported as 'uncertain' because there is insufficient monitoring data available to accurately interpret population trends. We cannot infer any directional population trend between this period and the last with confidence, due to the quality and amount of data available to us for all reporting periods.
6.16 Change and reason for change in population size	We have stated that there has been 'no' genuine change in population size because there is insufficient monitoring data available to determine whether an actual change in population size has occurred within this reporting period.

7.1 Sufficiency of area and quality of occupied habitat	Lundy et al. (2011) found that the species had 'highly contrasting habitat associations' throughout their global range. On the island of Ireland, their habitat model (based on radio-tracking of the species) showed that whiskered bats have positive habitat associations with riparian mixed woodlands. The species presence is positively related to woodland cover and small areas of pasture. Their range, according to the model, seems to be restricted mostly to southern and eastern areas of Ireland. Regarding roosts, they are known to favour various woodland habitats and to avoid bog and natural grassland habitats in roost selection.
7.4 Short term trend; Direction	There is little information other than that mentioned above from Lundy et al. (2011), on habitat associations of the species available. Given that there have been no systematic surveys carried out across whiskered bat sites in all of the possible habitats to assess their condition in relation to whiskered 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	The whiskered bat forages in parks, meadows, over flowing water, woodland and gardens. Pressures and threats therefore largely similar to other bat species (e.g. changes in agriculture, forestry, development, etc), but with some differences - i.e. A02: Conversion from one type of agricultural land use to another (excluding drainage and burning); A23: Use of other pest control methods in agriculture (excluding tillage); B05: Logging without replanting or natural regrowth; B08: Removal of old trees (excluding dead or dying trees); B09: Clear-cutting, removal of all trees; E01: Roads, paths railroads and related infrastructure (e.g. bridges, viaducts, tunnels); F01: Conversion from other land uses to housing, settlement or recreational areas (excluding drainage and modification of coastline, estuary and coastal conditions); F07: Sports, tourism and leisure activities; F02: Construction or modification (of e.g. housing and settlements) in existing urban or recreational areas; and J01: Mixed source pollution to surface and ground waters (limnic and terrestrial)
10.1 Future prospects of parameters	The future prospects for range, population and habitat for species have been reported as 'unknown' because there is insufficient monitoring data available to accurately interpret trends. It is impossible to infer any directional range trend between this period and the last, due to the quality and amount of data available.