

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

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:

S1312 - Noctule (*Nyctalus noctula*)

IMPORTANT NOTE – PLEASE READ

- The country-level reporting information contained in this document is a contribution to the Article 17 UK report for the habitat/species concerned.
- It has been provided by **Natural Resources Wales** and refers only to the state of the habitat/species in **Wales** - it does not constitute an assessment for the whole of the UK.
- The Article 17 UK Approach document provides details on how this information has been used and, combined with information supplied by other Statutory Nature Conservation Bodies
- The format of the document is closely aligned to that set out by the European Commission for Member State reporting – as a result, some of the fields are not applicable at a country-level and have deliberately been left blank – in addition, the content of most fields is constrained by the EC reporting categories.

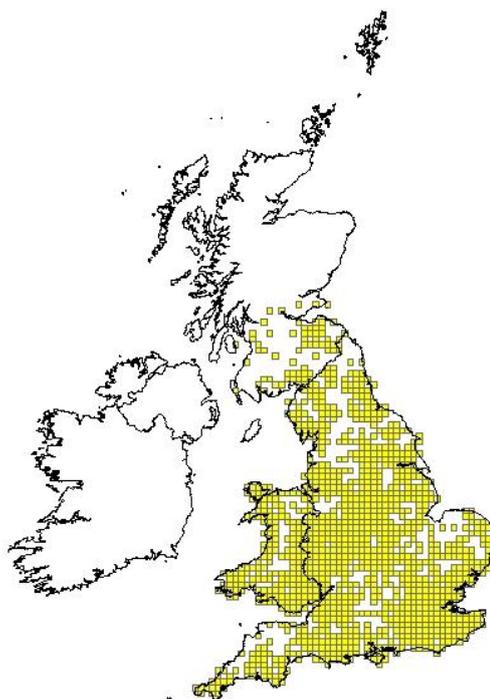
As of 1 April 2013, the Countryside Council for Wales, Environment Agency Wales and Forestry Commission Wales became Natural Resources Wales/Cyfoeth Naturiol Cymru

Reporting format on the 'main results of the surveillance under Article 11' for Annex II, IV & V species

<i>Field name</i>	<i>Brief explanations</i>	
0.2 Species	0.2.1 Species code	S1312
	0.2.2 Species scientific name	<i>Nyctalus noctula</i>
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	Noctule bat

1.1 Maps

1.1.1 Distribution map		Sensitive	False
The noctule is widespread in England and Wales, though absent from the uplands of northern England and Wales.			



1.1.2 Method used - map	Complete survey/Complete survey or a statistically robust estimate
	Although there have been no structured distribution surveys, this species has been reasonably well recorded by local bat groups and during monitoring surveys organised by the National Bat Monitoring Programme. It is a loud echolocator with identifiable call, so very suitable for structured bat detector surveys.
1.1.3 Year or period	1980-2012
	The date range indicated has been selected to reflect current

	range/surface area for the species for the following reasons: There are limitations in the quality of the data available. The largest dataset (Richardson 2000), has data ranging from 1980-1999 but the date of individual records within this dataset is not known. Deviating from this time period would mean having to exclude these records. The greatest level of change affecting populations of this species probably occurred prior to 1980, and so 1980 to the present is likely to reflect current distribution and range.
1.1.4 Additional distribution map	False
1.1.5 Range map	

2.1 Biogeographical region & marine regions	ATL
2.2 Published sources	<p>"BARR, C.J. & GILLESPIE, M.K. 2000 Estimating hedgerow length and pattern characteristics in Great Britain using Countryside Survey data. Journal of Environmental Management, 60, 23-32.</p> <p>BAT CONSERVATION TRUST, 2012. The National Bat Monitoring Programme. Annual Report 2011. Bat Conservation Trust, London. (www.bats.org.uk)</p> <p>BATTERSBY, J (Ed.). 2005. UK Mammals: Species Status and Population Trends. JNCC/Tracking Mammals Partnership.</p> <p>BOYE, P. & DIETZ, M. 20.05. Research Report No 661: Development of good practice guidelines for woodland management for bats. English Nature, Peterborough.</p> <p>CAREY, P.D., WALLIS, S.M., EMMETT, B.E., MASKELL, L.C., MURPHY, J., NORTON, L.R., SIMPSON, I.C., SMART, S.S. 2008. Countryside Survey: UK headline messages from 2007. Centre for Ecology & Hydrology, Wallingford.</p> <p>HARRIS, S., MORRIS, P., WRAY, S. and YALDEN, D. 1995. A review of British Mammals: population estimates and conservation status of British mammals other than cetaceans. JNCC, Peterborough.</p> <p>MACKIE, I.J. & RACEY, P.A. 2008. Noctule <i>Nyctalus noctula</i>. Pp 338-342 In HARRIS, S & YALDEN, D.W. Mammals of the British Isles: Handbook, 4th edition. The Mammal Society, Southampton.799pp.</p> <p>MITCHELL-JONES, T.M.J & CARLIN, C (2009). TIN051 Bats and onshore wind turbines Interim Guidance. 2nd edition, February 2012.</p> <p>http://publications.naturalengland.org.uk/file/490077</p> <p>RICHARDSON, P. 2000. Distribution atlas of bats in Britain and Ireland 1980-1999. Bat Conservation Trust, London."</p>

2.3 Range

2.3.1 Surface area Range		
2.3.2 Method used Surface area of Range	Complete survey/ Complete survey or a statistically robust estimate	
	See Note 1.1.2	
2.3.3 Short-term trend Period	2001-2012	
	See Note 1.1.3	
2.3.4 Short term trend Trend direction	unknown	
	See Note 2.3.10b	
2.3.5 Short-term trend Magnitude	a) Minimum	
	b) Maximum	
2.3.6 Long-term trend Period	1989-2012	
	See Note 1.1.3	
2.3.7 Long-term trend Trend direction	unknown	
	See Notes 1.1.2 and 2.3.10b	
2.3.8 Long-term trend Magnitude Optional	a) Minimum	
	b) Maximum	
2.3.9 Favourable reference range	a) Value in km²	
	b) Operator for FRR	
	c) FRR is unknown (indicated by "true")	False
d) Method used to set FRR		

2.3.10 Reason for change Is the difference between the reported value in 2.3.1 and the previous reporting round mainly due to...	a) Genuine change?	False
	b) Improved knowledge / more accurate data?	True
	There has been increased survey effort due to surveys for developments and more systematic survey methodology using time expansion / frequency division bat detectors and recording of bat calls.	
	c) Use of different method (e.g. "Range tool")?	False

2.4 Population		
2.4.1 Population size estimation (using individuals or agreed exceptions where possible)	a) Unit	number of individuals
	b) Minimum	4750
	The estimates by Harris et al (1995) were based on expert judgement and extrapolation from limited field surveys. The 1995 population estimate for Great Britain (GB) was based on very limited information, extrapolating from known size of <i>Pipistrellus pipistrellus</i> colonies in relation to size of <i>N. noctula</i> colonies following the methods described by Speakman (1991) and taking into account the relative frequency of species in bats submitted for rabies testing. Harris et al's (1995) reliability rating of the estimate was 3, meaning that the error margins around the estimate are thought to be +/- 50%. Although the estimates date from 1995, NBMP data indicate that there is no significant population trend for this species (1997-2012), so there is no justification for updating the estimate.	
	c) Maximum	4750
	See Note 2.4.1b	
2.4.2 Population size estimation (using population unit other than individuals) Optional (<i>if 2.4.1 filled in</i>)	a) Unit	
	b) Minimum	
	c) Maximum	
2.4.3 Additional information on population estimates / conversion Optional	a) Definition of "locality"	
	b) Method to convert data	

	c) Problems encountered to provide population size estimation	
2.4.4 Year or period	1995-	
	See Note 2.4.1b	
2.4.5 Method used Population size	Estimate based on partial data with some extrapolation and/or modelling	
	See Note 2.4.1b	
2.4.6 Short-term trend Period	2001-2012	
	See Notes 2.4.5 and 2.3.10b	
2.4.7 Short-term trend Trend direction	unknown	
	NBMP data indicate that there is no significant population trend for this species at present. It is monitored through the Field Survey and is a loud echolocator with identifiable call, so very suitable for structured bat detector surveys. The main issue is maintaining adequate sampling intensity to show trends at the UK level and increasing the number of sites monitored to provide country level trend data.	
2.4.8 Short-term trend Magnitude	a) Minimum	
	b) Maximum	
	c) Confidence interval	
2.4.9 Short-term trend Method used	Absent data	
	See Note 2.4.7	
2.4.10 Long-term trend – Period	1989-2012	
2.4.11 Long-term trend Trend direction	unknown	
	See Note 2.4.7	
2.4.12 Long-term trend Magnitude Optional	a) Minimum	
	b) Maximum	

	c) Confidence interval	
2.4.13 Long term trend Method used	0	
2.4.14 Favourable reference population	a) Number of individuals/agreed exceptions/other units	
	b) Operator	
	c) FRP is unknown indicated by "true"	False
	d) Method used to set FRP	
2.4.15 Reason for change Is the difference between the value reported at 2.4.1 or 2.4.2 and the previous reporting round mainly due to:	a) Genuine change?	False
	b) Improved knowledge/more accurate data?	True
	See Notes 2.3.10b and 2.4.7	
	c) Use of different method (e.g. "Range tool")?	False

2.5 Habitat for the species**2.5.1 Area estimation****15887**

N. noctula requires a complex mosaic of habitats to support foraging, roosting and commuting behaviour. Boye & Dietz (2005) provide a good overview of this species' habitat requirements. Foraging areas may be in several parts of the landscape, all of which host a high abundance of insect fauna and offer the space needed by the fast flying *N. noctula*.

	<p>Large water bodies, valley pastures and open forests are preferred, but the bats also forage in other habitats, and even above harvested fields and urban street lights. <i>N. noctula</i> bats can easily make foraging flights more than 10 kilometres away from the roost site, up to a maximum of 20 kilometres. However, the main activity of a maternity colony is within a radius of about 2 kilometres from the colony's roost. Summer roosts are predominantly in woodlands and parks. Deciduous and flood forests with a high percentage of old and dead trees are of highest importance. Roosts are mostly in woodpecker holes in broad-leaved trees. Maternity colonies use several roost sites in a network, which means that the individuals often change from one roost to another. Associations of males, which change their roost site on average every second or third day, need at least eight tree holes suitable for roosting per square kilometre of forest. Besides tree holes the bats also roost in bat boxes (flat constructions are preferred) and small spaces behind wall coverings of buildings or in houses. Winter roosts are mainly in forest and park trees, but large hibernation colonies also roost in buildings or rock crevices. Tree holes must provide a lot of space for a large number of bats to be a good hibernaculum for the species.</p> <p>There is thought to be a sufficient amount of habitat in the UK to support a viable population of the species.</p>	
2.5.2 Year or period	2012-	
2.5.3 Method used Habitat for the species	<p>Estimate based on partial data with some extrapolation and/or modelling</p> <p>As a widespread species and common species, it has been assumed that the area of distribution can be used as a proxy for the area of suitable habitat in the absence of other information. The area of distribution was calculated from the area of the filled 10km squares in the distribution map.</p>	
2.5.4 Quality of the habitat	<p>a) Habitat quality</p>	<p>Unknown</p>
	<p>The noctule shows habitat associations with a range of habitats, feeding particularly over broadleaved woodland and pasture.</p> <p>In order to obtain an estimate, 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.</p>	
	<p>b) Assessment method</p>	<p>No or insufficient reliable information available. The area of occupied habitat has been used as a proxy for the area of suitable habitat in the absence of other information.</p>
	<p>As this is a generalist species using a mosaic of habitats, the area of distribution has been used as an estimate of habitat area. As a widespread species occurring throughout Wales, it has been assumed that the area of distribution can be used as a proxy for the area of favourable habitat in the absence of other information. The area of distribution was calculated from the area of the 10km squares in the distribution map.</p>	

2.5.5 Short-term trend Period	2001-2012	
2.5.6 Short-term trend Trend direction	unknown	
2.5.7 Long-term trend Period	1989-2012	
2.5.8 Long-term trend Trend direction	unknown	
2.5.9 Area of suitable habitat for the species	a) Value in km²	15887
	See Note 2.5.4a	
	b) Absence of data indicated as '0'	
2.5.10 Reason for change Is the difference between the value reported at 2.5.1 and the previous reporting round mainly due to	a) Genuine change?	False
	b) Improved knowledge/more accurate data?	True
	See Note 2.3.10b	
	c) Use of different method (e.g. "Range tool")?	False

2.6 Main pressures		
a) Pressure	b) Ranking	c) Pollution qualifier
	H = high importance M = medium importance L = low importance	
A04: grazing	H	
A10: Restructuring agricultural land holding	H	
B02: Forest and Plantation management & use	H	
A07: use of biocides, hormones and chemicals	M	
J02: human induced changes in hydraulic conditions	M	

The noctule is predominantly a tree-roosting species, so would be vulnerable to loss of roost opportunities in dead, dying or damaged trees. Pressures that affect the biomass of flying insects, such as the widespread use of pesticides, deterioration of water quality or the removal of uncultivated land, such as hedgerows or

woodland, could also affect this species.

2.6.1 Method used – Pressures

mainly based on expert judgement and other data

Expert judgement has been used based on studies of the ecology of the species and current and predicted land use changes MACKIE, I.J. & RACEY, P.A. 2008.

2.7 Threats

a) Threat	b) Ranking	c) Pollution qualifier
	H = high importance M = medium importance L = low importance	
A04: grazing	H	
A10: Restructuring agricultural land holding	H	
B02: Forest and Plantation management & use	H	
A07: use of biocides, hormones and chemicals	M	
C03: Renewable abiotic energy use	M	
J03: Other ecosystem modifications	M	
K04: Interspecific floral relations	M	

The noctule is predominantly a tree-roosting species, so would be vulnerable to loss of roost opportunities in dead, dying or damaged trees. It moves frequently, requiring a large number of trees with suitable crevices. (K04) Loss of native broadleaf trees through new pathogens (such as *Chalara fraxinea*) could have a serious long term impact through reduction of resource. Pressures and threats that affect the biomass of flying insects, such as the widespread use of pesticides, deterioration of water quality or the removal of uncultivated land, such as hedgerows or woodland, could also affect this species.

In addition this species is one that is considered to be at high risk from fatalities associated with wind farms from studies in the European Continent and the threat at the population level was also considered to be high, Mitchell-Jones and Carlin, 2009. Current research is considering this, but it is too soon to assess the risk that wind turbines pose to noctule bat populations in the UK.

2.7.1 Method used – Threats

expert opinion

Expert judgement has been used based on studies of the ecology of the species in the UK MACKIE, I.J. & RACEY, P.A. 2008 and on the Continent and current and predicted land use changes.

2.8 Complementary information

2.8.1 Justification of %

thresholds for trends	
2.8.2 Other relevant information	
2.8.3 Trans-boundary assessment	

2.9 Conclusions (*assessment of conservation status at end of reporting period*)

Please refer to the United Kingdom assessment for this species.

3 Natura 2000 coverage & conservation measures - Annex II species (*only applies to species listed under Annex II of the Directive*)

3.1 Population

3.1.1 Population size Estimation of population size included in the SAC network	a) Unit	
	b) Minimum	
	c) Maximum	
3.1.2 Method used		
3.1.3 Trend of population size within the network (short-term trend)		

3.2 Conservation measures

Conservation measures taken (i.e. already being implemented) within the reporting period and provided information about their importance, location and evaluation.

3.2.1 Measure	3.2.2 Type					3.2.3 Ranking H = high importance M = medium importance L = low importance	3.2.4 Location where the measure is PRIMARILY applied			3.2.5 Broad evaluation of the measure					
	a) Legal/statutory	b) Administrative	c) Contractual	d) Recurrent	e) One-off		a) Inside	b) Outside	c) Both inside & outside	a) Maintain	b) Enhance	c) Long term	d) No effect	e) Unknown	f) Not evaluated

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