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:

S1331 - Leisler's bat (*Nyctalus leisleri*)

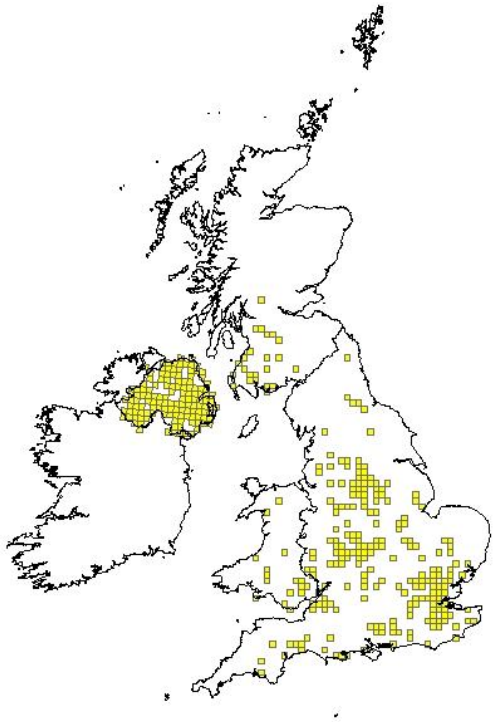
IMPORTANT NOTE – PLEASE READ

- 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 **Scottish Natural Heritage** and refers only to the state of the habitat/species in **Scotland** - 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.

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

Field name	*Brief explanations*	
0.2 Species	**0.2.1 Species code**	**S1331**
	0.2.2 Species scientific name	***Nyctalus leisleri***
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	**Leisler's bat**

1.1 Maps			
1.1.1 Distribution map		**Sensitive**	**False**
	Historically, this is a poorly-recorded species, though the widespread use of broadband bat detectors has significantly increased the number of records and extended the known distribution. Leisler's bat is considered migratory in Europe and transient individuals have been widely recorded. Scotland: Resident populations appear to be confined to the south-west (Dumfries & Galloway and Ayrshire), though transients have been recorded more widely. England: Widely distributed through central and southern England, rarer in the north and the south-west. Wales: Rare throughout Wales, though with a concentration of records in the south-east.		



1.1.2 Method used - map	**Estimate based on partial data with some extrapolation and/or**

	modelling
	NBN data
1.1.3 Year or period	**2000-2012**
1.1.4 Additional distribution map	**False**
1.1.5 Range map	

2.1 Biogeographical region & marine regions	**ATL**
2.2 Published sources	**"ALTRINGHAM, J.D. 2003. British Bats. HarperCollins, New Naturalist Library No. 93.** **BAT CONSERVATION TRUST, 2012. The National Bat Monitoring Programme. Annual Report 2011. Bat Conservation Trust, London. (www.bats.org.uk)** **BATTERSBY, J (Ed.). 2005. UK Mammals: Species Status and Population Trends. JNCC/Tracking Mammals Partnership http://jncc.defra.gov.uk/page-3311.** **BOYE, P. & DIETZ, M. 2005. Research Report No 661: Development of good practice guidelines for woodland management for bats. English Nature, Peterborough http://publications.naturalengland.org.uk/publication/65012.** **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 http://jncc.defra.gov.uk/page-2759.** **MITCHELL-JONES, T.J. 2010. Bats in houses – the conservation challenge. Pp 365-378 in Species Management: challenges and solutions for the 21st century. BAXTER, J.M. & GALBRAITH, C.A. TSO Scotland, Edinburgh.** **RICHARDSON, P. (2000) Distribution atlas of bats in Britain and Ireland 1980-1999. Bat Conservation Trust, London.** **RUSS, J.M. (1999) The Microchiroptera of Northern Ireland: community composition, habitat associations and ultrasound. Unpublished PhD thesis. Queen's University, Belfast.** **SHIEL, C.B., JONES, G & WATERS, D. 2008. Leisler's bat Nyctalus leisleri. Pages 334-338 In HARRIS, S & YALDEN, D.W. Mammals of the British Isles: Handbook, 4th edition. The Mammal Society, Southampton. 799pp."**
	ALTRINGHAM, J.D. 2003. British Bats. HarperCollins, New Naturalist Library No. 93. BAT CONSERVATION TRUST, 2012. The National Bat Monitoring Programme. Annual Report 2011. Bat Conservation Trust, London. (www.bats.org.uk) BATTERSBY, J (Ed.). 2005. UK Mammals: Species Status and Population Trends. JNCC/Tracking Mammals Partnership http://jncc.defra.gov.uk/page-3311. BOYE, P. & DIETZ, M. 2005. Research Report No 661: Development of good practice guidelines for woodland management for bats. English

	Nature, Peterborough http://publications.naturalengland.org.uk/publication/65012. 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 http://jncc.defra.gov.uk/page-2759. MITCHELL-JONES, T.J. 2010. Bats in houses – the conservation challenge. Pp 365-378 in Species Management: challenges and solutions for the 21st century. BAXTER, J.M. & GALBRAITH, C.A. TSO Scotland, Edinburgh. RICHARDSON, P. (2000) Distribution atlas of bats in Britain and Ireland 1980-1999. Bat Conservation Trust, London. RUSS, J.M. (1999) The Microchiroptera of Northern Ireland: community composition, habitat associations and ultrasound. Unpublished PhD thesis. Queen's University, Belfast. SHIEL, C.B., JONES, G & WATERS, D. 2008. Leisler's bat Nyctalus leisleri. Pages 334-338 In HARRIS, S & YALDEN, D.W. Mammals of the British Isles: Handbook, 4th edition. The Mammal Society, Southampton. 799pp.

2.3 Range		
2.3.1 Surface area Range		
2.3.2 Method used Surface area of Range	**Estimate based on partial data with some extrapolation and/or modelling**	
2.3.3 Short-term trend Period	**2000-2012**	
2.3.4 Short term trend Trend direction	**increase**	
2.3.5 Short-term trend Magnitude	**a) Minimum**	
	NBN data. RICHARDSON, P. (2000) Distribution atlas of bats in Britain and Ireland 1980-1999. Bat Conservation Trust, London. UK Article 17 report, 2007 http://jncc.defra.gov.uk/page-4060 The range of the species has increased, compared with 2000 (Richardson, 2000) and 2007 (UK Article 17 report). This is believed to be the result of increased bat-detector survey efforts, particularly as part of the National Bat Monitoring Programme, though the possibility of actual range extension cannot be ruled out.	
	b) Maximum	
2.3.6 Long-term trend Period		
2.3.7 Long-term trend	**unknown**	

Trend direction		
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")	**True**
	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**
	The range of the species has increased, compared with 2000 (Richardson, 2000) and 2007 (UK Article 17 report). This is believed to be the result of increased bat-detector survey efforts, particularly as part of the National Bat Monitoring Programme, though the possibility of actual range extension cannot be ruled out.	
	c) Use of different method (e.g. "Range tool")?	**True**

2.4 Population		
2.4.1 Population size estimation (using individuals or agreed	**a) Unit**	**number of individuals**
	b) Minimum	**250**

exceptions where possible)	Scotland: >250	
	c) Maximum	
	The recent discovery of breeding colonies in south-west Scotland confirm that the estimate of 250 individuals is too low, however no data are available to update these estimates.	
2.4.2 Population size estimation (using population unit other than individuals) Optional *(if 2.4.1 filled in)*	**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	**The recent discovery of breeding colonies in south-west Scotland confirm that the estimate of 250 individuals is too low, however no data are available to update these estimates.**
	The recent discovery of breeding colonies in south-west Scotland confirm that the estimate of 250 individuals is too low, however no data are available to update these estimates. No clear habitat associations, so no way of calculating a density in different habitats.	
2.4.4 Year or period	**1995-1995**	
2.4.5 Method used Population size	**Estimate based on expert opinion with no or minimal sampling**	
	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 http://jncc.defra.gov.uk/page-2759. The estimate by Harris et al (1995) was based largely on expert opinion, taking into account the ratio of Leisler's roosts to pipistrelle roosts or the ratio of Leisler's bats to serotines. The estimate was considered to have poor reliability. The recent discovery of breeding colonies in south-west Scotland confirm that the estimate of 250 individuals is too low, however no data are available to update these estimates. The estimated population of 0 for Wales is clearly also too low, now that the presence of the species has been confirmed.	
2.4.6 Short-term trend Period		
2.4.7 Short-term trend Trend direction	**unknown**	
2.4.8 Short-term trend Magnitude		

	a) Minimum	
	b) Maximum	
	c) Confidence interval	
2.4.9 Short-term trend Method used	**Absent data**	
	BAT CONSERVATION TRUST, 2012. The National Bat Monitoring Programme. Annual Report 2011. Bat Conservation Trust, London. (www.bats.org.uk) Although Leisler's bat is included in the National Bat Monitoring scheme, too few data are currently available to permit the calculation of a trend.	
2.4.10 Long-term trend – Period		
2.4.11 Long-term trend Trend direction	**unknown**	
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**	**250**
	Scotland: >250	
	b) Operator	**more than**

	c) FRP is unknown indicated by "true"	**True**
	d) Method used to set FRP	**The recent discovery of breeding colonies in south-west Scotland confirm that the estimate of 250 individuals is too low, however no data are available to update these estimates.**
	There is no information on population trends for this species, but the species is fairly widespread, and the indications are that this species was viable in 1994. The current population estimate is considered to represent population size in 1994 and can be set as the favourable reference population. The recent discovery of breeding colonies in south-west Scotland confirm that the estimate of 250 individuals is too low, however no data are available to update these estimates.	
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?	**False**
	c) Use of different method (e.g. "Range tool")?	**False**

2.5 Habitat for the species	
2.5.1 Area estimation	**2149**
	N. leisleri forages in woodland, pasture and riparian habitats and along woodland margins, even close to major roads and around street lights (Shiel et al, 2008). It has been seen foraging over beaches and sand dunes. The average home range area can approach 18 square km and foraging flights can be up to 13 km from the roost. N. leisleri is not as dependent on tree roosts as N. noctula and uses a wide range of buildings, particularly as maternity sites. Little is known about hibernation sites, but the species probably utilises tree holes like N. noctula. It is unknown whether the amount of habitat in the UK is sufficient to support a viable population of the species.
2.5.2 Year or period	**2012-2012**

2.5.3 Method used Habitat for the species	**Estimate based on expert opinion with no or minimal sampling**	
2.5.4 Quality of the habitat	**a) Habitat quality**	**Unknown**
	b) Assessment method	**No or insufficient reliable information available**
	No or insufficient reliable information available SHIEL, C.B., JONES, G & WATERS, D. Pages 334-338 In HARRIS, S & YALDEN, D.W. Mammals of the British Isles: Handbook, 4th edition. The Mammal Society, Southampton. 799pp. Leisler's bat shows no clear habitat associations. 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. As this is a generalist species, using a mosaic of habitats, the area of distribution is used as an estimate of habitat area. This is calculated from the number of filled 10km squares in the distribution map.	
2.5.5 Short-term trend Period	**2000-2012**	
2.5.6 Short-term trend Trend direction	**increase**	
	NBN distribution data, 2012 (used in this report). The area of distribution is used as a surrogate for habitat (see 2.5.4 audit) Scotland: The known range of the species has increased significantly. This is considered to be due to increased recording effort.	
2.5.7 Long-term trend Period		
2.5.8 Long-term trend Trend direction	**unknown**	
2.5.9 Area of suitable habitat for the species	**a) Value in km²**	**2149**
	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**
	Better recording	

	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	
A10: Restructuring agricultural land holding	H	
B02: Forest and Plantation management & use	H	
E06: Other urbanisation, industrial and similar activities	H	
A04: grazing	M	
A07: use of biocides, hormones and chemicals	M	O
J02: human induced changes in hydraulic conditions	M	

Leisler's bat is primarily a tree-roosting species, so would be vulnerable to loss of roost opportunities in dead, dying or damaged trees. The species also utilises buildings as maternity sites, so could be vulnerable to roost loss through the demolition or alteration of buildings or changes to construction methods (Mitchell-Jones, 2010). Pressures that affect the biomass of flying insects, such as the widespread use of pesticides, could also affect this species. Bats generally follow linear features for navigation and hunt along such features as woodland edges, though Leisler's bat is less closely associated with linear features than many other species. Nevertheless, the loss of these features might be expected to impact on the species.

2.6.1 Method used – Pressures	**based only on expert judgements**

2.7 Threats		
a) Threat	**b) Ranking**	**c) Pollution qualifier**
	H = high importance M = medium importance L = low importance	
A10: Restructuring agricultural land holding	H	
B02: Forest and Plantation management & use	H	
E06: Other urbanisation, industrial and similar activities	H	

A04: grazing	M	
A07: use of biocides, hormones and chemicals	M	O
C03: Renewable abiotic energy use	M	
J02: human induced changes in hydraulic conditions	M	

Leisler's bat is primarily a tree-roosting species, so would be vulnerable to loss of roost opportunities in dead, dying or damaged trees. The species also utilises buildings as maternity sites, so could be vulnerable to roost loss through the demolition or alteration of buildings or changes to construction methods (Mitchell-Jones, 2010). Pressures that affect the biomass of flying insects, such as the widespread use of pesticides, could also affect this species. Bats generally follow linear features for navigation and hunt along such features as woodland edges, though Leisler's bat is less closely associated with linear features than many other species. Nevertheless, the loss of these features might be expected to impact on the species. This species is considered to be at high risk from onshore wind turbines, though specific data are lacking.

2.7.1 Method used – Threats	**expert opinion**
	NATURAL ENGLAND. 2012. Bats and Onshore wind Turbines: Interim Guidance. Natural England Technical Information Note TIN51, Natural England, Sheffield http://publications.naturalengland.org.uk/publication/35010

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