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:

S1323 - Bechstein's bat (*Myotis bechsteinii*)

IMPORTANT NOTE – PLEASE READ

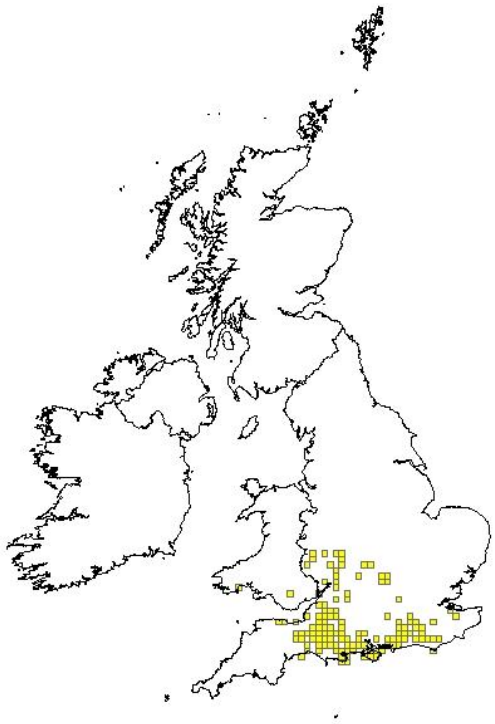
- The country-level reporting information contained in this document is a contribution to the Article 17 UK report for the habitat/species concerned.
- It has been provided by **Natural Resources Wales** and refers only to the state of the habitat/species in **Wales** - it does not constitute an assessment 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

Field name	*Brief explanations*	
0.2 Species	**0.2.1 Species code**	**S1323**
	0.2.2 Species scientific name	***Myotis bechsteinii***
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	**Bechstein's bat**

1.1 Maps			
1.1.1 Distribution map		**Sensitive**	**False**



1.1.2 Method used - map	**Estimate based on expert opinion with no or minimal sampling**
	There are only 2 recent records of Myotis bechsteinii in the hand in Wales in the chosen reporting period. Both were males, so the species is not confirmed as breeding or resident in Wales. It has been confirmed as breeding in the English border counties so it seems likely that it is resident in Wales. Quiet echolocation calls mean this species cannot be monitored with bat detectors. Roosts are difficult to detect. Surveys with lures and netting have successfully located new populations in England but are resource intensive. Further specifically targeted survey effort is required to determine the status and distribution of the species in Wales.

1.1.3 Year or period	**2000-2012**
	See also 1.1.2. Bechstein's bat is a rare species found only in central southern England with a few records in parts of south Wales. The known distribution has been significantly improved by a 4-year project (2007-2012) to locate colonies of this species using a lure/trap method in woodlands identified as suitable for the species (Miller, 2012). This project generated many additional high-quality records and the mapped distribution is probably now close to the actual current distribution of the species in England. Some predicitive modelling was undertaken for Wales, but the associated field surveys have not been undertaken. The 2 recent Welsh records were obtained through trapping surveys aimed at locating B. barbastellus (Zeale, M.R.K., 2009, and Davison, 2012, licence records submitted to CCW HQ). The few pre 2000 records for Wales have not been included as these were not records of bats in the hand and there has been no subsequent supporting evidence of presence of the species at the locations.
1.1.4 Additional distribution map	**False**
1.1.5 Range map	

2.1 Biogeographical region & marine regions	**ATL**
2.2 Published sources	**"BOYE, P. & DIETZ, M. 2005. Research Report No 661: Development of good practice guidelines for woodland management for bats. English Nature, Peterborough.** **GREENAWAY, F. & HILL, D.A. 2004. Woodland management advice for Bechstein's and barbastelle bat. English Nature Research Reports. 658.** **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.** **HILL, D. A, & GREENAWAY, F. 2005. Effectiveness of an acoustic lure for surveying bats in British woodlands. Mammal Review 35(1): 116-122.** **MILLER, H. 2012. Bechstein's bat survey: final report September 2007-September 2011. Bat Conservation Trust, London.** **SCHOFIELD. H.W. & GREENAWAY, F. 2008 Bechstein's bat Myotis bechsteinii. Pp 328-331 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 expert opinion with no or minimal sampling**	
	See also Notes 1.1.2 and 1.1.3. Bechstein's bat is a rare and poorly-recorded species. A recent project has greatly improved our knowledge of the range of the species (Miller, 2012) in England, but there is no current information for Wales. The data collected for England is insuffucient to allow an estimation of trend.	
2.3.3 Short-term trend Period	**2001-2012**	
2.3.4 Short term trend Trend direction	**unknown**	
2.3.5 Short-term trend Magnitude	**a) Minimum**	
	b) Maximum	
2.3.6 Long-term trend Period	**1989-2012**	
2.3.7 Long-term trend Trend direction	**unknown**	
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**
	Insufficient information to comment on change.	
	b) Improved knowledge/more accurate data?	**False**
	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	
	Harris et al gave a population estimate of 1,000 M. bechsteinii for England with unknown status for Wales. Bechstein's bat is a rare species, with few data on which to base a population estimate. The estimate given by Harris et al (1995) is based partly on the view that a population of less than 1000 would be unlikely to maintain itself in the long term. An improving understanding of habitat associations may allow for an improved estimate in the future.	
	c) Maximum	
	Harris et al gave a population estimate of 1,000 M. bechsteinii for England with unknown status for Wales. Bechstein's bat is a rare species, with few data on which to base a population estimate. The estimate given by Harris et al (1995) is based partly on the view that a population of less than 1000 would be unlikely to maintain itself in the long term. An improving understanding of habitat associations may allow for an improved estimate in the future.	
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	
2.4.4 Year or period	**2007-2012**	
2.4.5 Method used Population size	**Absent data** There is insufficient information to apply a method for estimating population size in Wales. See Notes 1.1.2 and 1.1.3	
2.4.6 Short-term trend Period	**2001-2012**	
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** See Note 2.4.5	
2.4.10 Long-term trend – Period	**1989-2001**	
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**	
	b) Operator	
	c) FRP is unknown indicated by "true"	**True**
	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**
	Insufficient information to assess any change.	
	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	**0**
	There is no specific information relating to the species in Wales and it has not yet been confirmed as breeding in Wales. M. bechsteinii requires a complex mosaic of habitats to support foraging, roosting and commuting behaviour. The favoured habitat for maternity colonies is unevenly aged, ancient or semi-natural deciduous woodland with a high number of oaks in the species mix and a dense mixed species understorey. A minimum of 40-50 hectares of woodland is required to maintain an average maternity colony and very large continuous areas of high forest are less favoured than slightly fragmented structurally

	diverse woodlands. Small streams that have at least some water in the summer are an important requirement for most woodlands with maternity colonies, as is connectivity of woodland patches by hedgerows (Greenaway & Hill, 2004). Orchards with old trees also provide good foraging habitat, where they exist (Boye & Dietz 2005). The size of individual home ranges differs in relation to habitat quality: In optimal areas a home range might be smaller than 3 hectares (old oak forests or oak and beech forests), at other places its size is 15-30 hectares. However, in coniferous forests home ranges of more than 100 hectares have been recorded. Females of a maternity colony seem to use individual foraging areas exclusively for several years. Home ranges of neighbouring colonies are separated. The species shows a comparatively small range of movement around the summer roost, sometimes less than 1 kilometre. Main foraging areas are usually at distances of 500-1,500 metres from the roost, but can be nearly 4km and tend to be smaller in continuous woodlands than fragmented forests (Boye & Dietz 2005). Most summer roosts are in woodpecker holes, sometimes behind loose bark or in tree crevices. Maternity colonies also use bat boxes and move roost sites frequently throughout the season. Roosts are found at a height of 0.5-18 metres. An excellent woodland would provide in excess of a dozen large available roosts within the forage woodland and many other smaller holes (Greenaway & Hill, 2004) In winter the species usually roosts singly in underground hibernation sites (caves, mines, cellars) Most of the population may hibernate in tree holes or behind loose bark, but this is not proven. Usually distances between summer and winter roosts are quite small but can be as much as 39 km. 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	**2000-2012**	
	We have reviewed distribution information for the period of 2000-2012 however there is a lack of sufficient information to determine habitat area values for Wales. See also Note 1.1.3.	
2.5.3 Method used Habitat for the species	**Absent data**	
	Recent survey and research has improved our understanding of the habitat requirements of this species .There is no specific information relating to the species in Wales and it has not yet been confirmed as breeding in Wales. Data for England do not exist to allow the calculation of habitat area. See Note 2.5.2	
2.5.4 Quality of the habitat	**a) Habitat quality**	**Unknown**
	See Note 2.5.2	
	b) Assessment method	**N/A**
2.5.5 Short-term trend Period	**2001-2012**	
2.5.6 Short-term trend Trend direction	**unknown**	
2.5.7 Long-term trend	**1989-2012**	

Period		
2.5.8 Long-term trend Trend direction	**unknown**	
2.5.9 Area of suitable habitat for the species	**a) Value in km²**	**0**
	See Note 2.5.2	
	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**
	Insufficient information to assess any change in Wales.	
	b) Improved knowledge/more accurate data?	**False**
	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	
B07: Forestry activities not referred to above	H	
A07: use of biocides, hormones and chemicals	M	

M. bechsteinii is strongly associated with woodland, both for roosting and foraging, though it also uses underground places for hibernation. Specialist habitat requirements, low population density and slow population growth are likely to have made this species particularly vulnerable to factors such as: loss and fragmentation of ancient deciduous woodland habitat; the loss, destruction and disturbance of roosts in trees and underground sites; and the reduction in numbers of insect prey, due to habitat simplification and factors such as fertiliser use and intensive grazing.	
2.6.1 Method used – Pressures	**mainly based on expert judgement and other data**
	Pressures and threats have been identified based on knowledge of the species ecology in England and on the Continent. It is assumed that the same or similar pressures and threats would apply to the species if

	resident in Wales.

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	
B07: Forestry activities not referred to above	H	
A07: use of biocides, hormones and chemicals	M	
K04: Interspecific floral relations	M	

See also Note 2.6. This species is reliant on tree roosts and moves roosts 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.	
2.7.1 Method used – Threats	**expert opinion**
	See Note 2.6.1

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**	**number of individuals**
	b) Minimum	
	There is insufficient information about this species to determine its status in Wales and hence no basis for estimating the proportion present in SACs. See also Note 2.4.5.	
	c) Maximum	
	See Note 3.1.1.b	
3.1.2 Method used	**Absent data**	
3.1.3 Trend of population size within the network (short-term trend)	**unknown**	

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

1.3: No measure known/ impossible to carry out specific measures	Y	Y	Y	Y	Y	H			Y					Y	Y

There is no information about the presence of this species in SACs in Wales or on its status. There are no actions currently being undertaken specifically for this species. Actions to benefit other bat species such as habitat management to increase insect abundance would benefit the species, but there is insufficient information to assess success. Should breeding roosts be discovered, these would be subject to legal measures, but this is hypothetical at present and has therefore not been included. See Notes 2.5.1 and 2.5.3.