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:

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

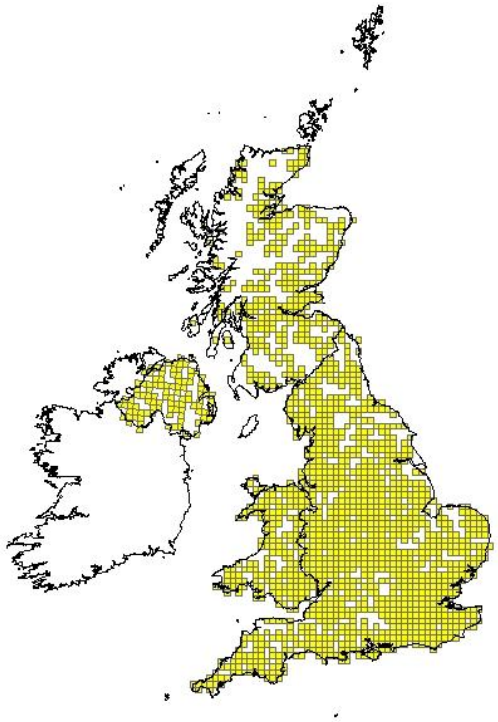
IMPORTANT NOTE – PLEASE READ

- 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 **Northern Ireland Environment Agency** and refers only to the state of the habitat/species in **Northern Ireland** - 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**	**S1314**
	0.2.2 Species scientific name	***Myotis daubentonii***
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	**Daubenton's bat**

1.1 Maps			
1.1.1 Distribution map		**Sensitive**	**False**
	Combined data (2007-2012) from: Bat Conservation Ireland database maintained by Bat Conservation Ireland; Northern Ireland Bat Group database maintained by NIBG; Bat database maintained by CeDAR; National Bat Monitoring Programme maintained by Bat Conservation Trust, UK		



1.1.2 Method used - map	**Estimate based on partial data with some extrapolation and/or modelling**
1.1.3 Year or period	**2007-2012**

1.1.4 Additional distribution map	**True**
	Combined data (all available) from: Bat Conservation Ireland database maintained by Bat Conservation Ireland; Northern Ireland Bat Group database maintained by NIBG; Bat database maintained by CeDAR; National Bat Monitoring Programme maintained by Bat Conservation Trust, UK.
1.1.5 Range map	

2.1 Biogeographical region & marine regions	**ATL**
2.2 Published sources	**"Allen, P., Forsyth, I., Hale, P. & Rogers, S. (2000). Bats in Northern Ireland. Irish Naturalists' Journal. Special Zoological Supplement.** **Anon (2007) The National Monitoring Programme, Annual Report 2006. Bat Conservation Trust, UK.** **Anon (2009) The National Monitoring Programme, Annual Report 2008. Bat Conservation Trust, UK.** **Aughney, T., Carden, R. & Roche, N. (2009) Irish Bat Monitoring and Recording Schemes: Annual Report 2008. Bat Conservation Ireland, www.batconservationireland.org.** **Aughney, T., Langton, S. & Roche, N. (2007) All Ireland Daubenton's Bat Waterway Monitoring Scheme 2006: Irish Bat Monitoring and Recording Schemes. Bat Conservation Ireland, www.batconservationireland.org.** **Aughney, T., Roche, N. and Langton, S. (2010) Irish Bat Monitoring and Recording Schemes: Annual Report 2009. Bat Conservation Ireland, www.batconservationireland.org.** **Aughney, T., Langton, S. and Roche, N. (2012) All Ireland Daubenton's Bat Waterway Monitoring Scheme 2006-2011. Irish Wildlife Manuals, No. 61. National Parks and Wildlife Service, Department of the Arts, Heritage and the Gaeltacht, Ireland.** **Carden R, Aughney T., Kelleher C. and Roche N. (2010). BATLAS Republic of Ireland, Report for 2008-2009. Irish Bat Monitoring Schemes. Bat Conservation Ireland. Unpublished Report.** **Fairley, J. (2001). A Basket of Weasels. Published by the author.** **Harris, S., Morris, P., Wray, S. & Yalden, D. 1995. A review of British mammals: population estimates and conservation status of British mammals other than cetaceans. Joint Nature. Conservation Committee, Peterborough.** **Harris S. & Yalden D. (eds.) (2008). Mammals of the British Isles Handbook, 4th Edition. The Mammal Society, Southampton, England.**

	Hopkirk, A., Aughney T., and Roche, N. (2010). BATLAS Northern Ireland Report for 2009. Irish Bat Monitoring Schemes. Bat Conservation Ireland. Unpublished Report. **Lundy M.G., Montgomery W.I. (2010). Summer habitat associations of bats between riparian landscapes and within riparian areas. European Journal of Wildlife Research 56, 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.** **Marnell, F., Kingston, N. & Looney, D. (2009). Ireland Red List No. 3: Terrestrial Mammals. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government. Dublin, Ireland.** **O'Sullivan, P. (1994). Bats in Ireland. Irish Naturalists' Journal, 24: Special Zoological Supplement.** **Richardson, P. (2000). Distribution atlas of bats in Britain and Ireland, 1980-1999. The Bat Conservation Trust, London.** **Russ, J.M. & Montgomery, W.I. (2002). Habitat association of bats in Northern Ireland: implications for conservation. Biological Conservation. 108: 49-58.** **Russ, J. (2008). Review of ASSI designations for bats in Northern Ireland. Northern Ireland Environment Agencey, Research and Development Series 08/09."**

2.3 Range		
2.3.1 Surface area Range	**8600**	
	Area has been calculated using the number of 2001-2012 10 km sq records available from dataset compiled by Bat Conservation Ireland for this bat species.	
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	**2001-2012**	
2.3.4 Short term trend Trend direction	**stable**	
2.3.5 Short-term trend Magnitude	**a) Minimum**	
	b) Maximum	
2.3.6 Long-term trend	**1989-2012**	

Period		
2.3.7 Long-term trend Trend direction	**stable**	
2.3.8 Long-term trend Magnitude Optional	**a) Minimum**	
	b) Maximum	
2.3.9 Favourable reference range	**a) Value in km²**	**9300**
	We have assumed the Favourable Reference Range is the entire land mass of Northern Ireland for three species (common pipistrelle, soprano pipistrelle and Leisler's bat) because their widespread occurrence leads us to believe there is nowhere that they are unlikely to be present, at least on occasion. For the three species which have relatively few known records and most restricted distributions (Natterer's, whiskered and Nathusius' pipistrelle) we have taken the Favourable Reference Range to be the estimated Core Area of habitat within Northern Ireland as derived from Maximum Entropy Modelling of bat records along with various landcover and other factors (see Lundy et al. 2011 for details). For the two remaining species (brown long-eared and Daubenton's) we estimate the Favourable Reference Range to be the full known distribution (10km squares) from 1989 to 2012 even though this is larger than modelled Core Areas described by Lundy et al. (2011), but does not extend across the entire land mass of Northern Ireland, since these species have more restricted habitat requirements than common pipistrelle and soprano pipistrelle, above.	
	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	**a) Genuine change?**	**False**

mainly due to…	**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**
	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.	
	b) Minimum	**24000**
	c) Maximum	**24000**
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	**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.**
2.4.4 Year or period	**2006-2011**	
2.4.5 Method used Population size	**Estimate based on partial data with some extrapolation and/or modelling**	
2.4.6 Short-term trend Period	**2006-2011**	
2.4.7 Short-term trend Trend direction		
2.4.8 Short-term trend Magnitude	**a) Minimum**	

	b) Maximum	
	c) Confidence interval	
2.4.9 Short-term trend Method used		
2.4.10 Long-term trend – Period		
2.4.11 Long-term trend Trend direction		
2.4.12 Long-term trend Magnitude Optional	**a) Minimum**	
	b) Maximum	
	c) Confidence interval	
2.4.13 Long term trend Method used		
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?	**False**
	c) Use of different method (e.g. "Range tool")?	**False**

2.5 Habitat for the species		
2.5.1 Area estimation	**2769**	
	GIS shapefiles from Lundy et al (2011) provided to NIEA. There is thought to be a sufficient amount of habitat in the UK to support a viable population of the species.	
2.5.2 Year or period	**2000-2009**	
2.5.3 Method used Habitat for the species	**Estimate based on partial data with some extrapolation and/or modelling**	
2.5.4 Quality of the habitat	**a) Habitat quality**	**Good**
	b) Assessment method	**This is calculated from Maximum Entropy modelling of bat records 2000-2009 combined with CORINE landcover, altitude, soil pH, climate and human bias layers (see Lundy et al., 2011)**
2.5.5 Short-term trend Period	**2000-2009**	
2.5.6 Short-term trend Trend direction	**unknown**	
2.5.7 Long-term trend Period		
2.5.8 Long-term trend Trend direction		
2.5.9 Area of suitable habitat	**a) Value in km²**	

for the species		
	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?	**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	
H01: Pollution to surface waters (limnic & terrestrial, marine & brackish)	H	
H06.02:	H	
A02.01:	M	
A10.01:	M	
B02.02:	M	
B02.04:	M	
E01.01:	M	
E06.02:	M	
G05: Other human intrusions and disturbances	M	
G05.06:	M	
J03.02:	M	
E06.01:	L	
G05.08:	L	

G05 refers to pressure from bridge maintenance without mitigation	
2.6.1 Method used – Pressures	**mainly based on expert judgement and other data**

2.7 Threats

a) Threat	b) Ranking	c) Pollution qualifier
	H = high importance M = medium importance L = low importance	
H01: Pollution to surface waters (limnic & terrestrial, marine & brackish)	H	
H06.02:	H	
A02.01:	M	
A10.01:	M	
B02.02:	M	
B02.04:	M	
E01.01:	M	
E06.02:	M	
G05: Other human intrusions and disturbances	M	
G05.06:	M	
G05.08:	M	
J03.02:	M	
E06.01:	L	
G01.04.02:	L	
G01.04.03:	L	
M01: Changes in abiotic conditions	L	

G05 refers to pressure from bridge maintenance without mitigation	
2.7.1 Method used – Threats	**expert opinion**

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	**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	M = medium importance L = low importance	a) Inside	b) Outside	c) Both inside & outside	a) Maintain	b) Enhance	c) Long term	d) No effect	e) Unknown	f) Not evaluated
