



UK priority species pages – Version 2

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SPECIES PAGES FOR 2007 UK BAP PRIORITY SPECIES

(see endnotes for an explanation of the various components of this compilation).

Rhinolophus hipposideros (Bechstein, 1800)

Lesser Horseshoe Bat

1 General information

Level 1	Terrestrial mammals
Level 2	terrestrial mammal
On 1997 UK BAP list	Species Action Plan

2 UK BAP criteriaⁱ

1. International threat	2. International responsibility (2a) + moderate decline in UK (2b)	3. Marked decline in the UK	4. Other important factor(s)
False	False	False	True

3 Evidence for Criteriaⁱⁱ

Criterion 1	
Criterion 2a	
Criterion 2b	
Criterion 3	
Criterion 4	Factors that caused original decline still operate, population is not yet at a favourable level and is likely to suffer without continued conservation action.

4 Distribution by Country

England	Scotland	Wales	Northern Ireland	International Waters
Y	N	Y	N	

5 Distribution Information

Distribution data source	Stage 1 information
Distribution data notes	NB there is scope for partnership work with the Republic of Ireland. Recommend that action for this species in Northern Ireland should be coordinated not only through the UK species action plan but with reference to the All Ireland Action Plan for bats that we understand is currently being drafted.
number of sites (where	

less than or equal to 10)	
Units used for number of sites	

6 Actions identified by expertsⁱⁱⁱ

Action number	Action text	Reporting category
1	<p>LAND USE POLICY</p> <p>Ensure the needs of the lesser horseshoe bat (LHB) are considered in woodland, planning and agri-environment policy to protect roosts (in buildings and underground sites) and create or retain suitable habitat and landscape features for the LHB throughout its range.</p>	Wider "landscape" action
2	<p>SITE DESIGNATION, ROOST PROTECTION, MANAGEMENT AND MONITORING</p> <p>Continue to protect and monitor designated sites and other known roosts through provision of records to appropriate authorities and maintenance of the National Bat Monitoring Programme (NBMP). (Currently UK and country level trends are available for LHB, but further effort required to produce higher resolution information which could also support more regional conservation efforts). The ability to detect trends at country level could be improved by enhanced funding & volunteer engagement of the NBMP.</p> <p>Designate new sites for LHB. Ensure a landscape approach is taken to the conservation of the LHB by ensuring that roost sites and surrounding habitat are increased (especially woodland foraging habitat, old hedgerows and tree lines) and managed appropriately for the species needs (including improvement of connectivity).</p> <p>Ensure all known roosts are protected via implementing legislation and policy. This should include surveys to identify new roosts and, the provision of appropriate advice in relation to proposed work and development (via the volunteer network and education initiatives as well as the private consultancy sector). Appropriate mitigation must be implemented where required with subsequent monitoring of compliance and effectiveness.</p>	Wider "landscape" action
3	<p>FURTHER HABITAT BASED ACTION</p> <p>Priority habitats (see list) and other important habitats (see comments section) used for foraging and commuting close to important roosts</p>	Priority habitat action

	<p>(including maternity, hibernation, mating and other important ‘transitory roosts’) should be expanded and improved to maximise production of the insects preyed upon by this species.</p> <p>(It is of note that LHB is a mosaic species utilising many habitats, many of which are not UK BAP habitats. It will be important to ensure that non-BAP habitats, which are important to LHB, are managed and protected as appropriate, see comments section about a buildings and underground BAP).</p>	
4	<p>RESEARCH</p> <p>Appropriate research to assist with the understanding of what priority habitats (and other habitats) are used by LHB. The research should aim inter alia to provide Habitat Groups with suggestions for targets to increase the area and condition of habitats important for populations of LHB in the UK and consider the conservation of this species at the landscape level. This research could contribute to future success criteria for the species.</p>	Species-specific research
5	<p>OTHER MANAGEMENT AND MONITORING</p> <p>Ensure the management of sites is appropriate to species needs and consider the importance of a landscape approach to the conservation of LHB. Implement cross-sector conservation actions to promote the conservation of the species and provide solutions to issues such as habitat fragmentation. e.g. the adoption of the Batscapes concept. Improve the connectivity and occurrence/condition of important habitats around roosts.</p> <p>Monitoring should continue of both designated and non-designated sites.</p>	Species-specific research

7 Signpost to Priority Habitat^{iv}

Priority Habitat Name
Boundary features: Hedgerows
Woodlnd (broad lvd): Lowland Mixed Deciduous Woodland
Woodlnd (broad lvd): Wood-Pasture & Parkland

8 Additional information from specialists^v

Attribute	Value
NBN current scientific name	Rhinolophus hipposideros
NBN common name	Lesser Horseshoe Bat
classification level 1	Terrestrial mammals
classification level 2	terrestrial mammal
Latest UK Population/extent Estimate	14000 (E: 7000. W: 7000)
Units of measurement	Individuals
Start date (year)	1997
Starting estimate	100
End date (year)	2004
Ending estimate	145.2
Proportion left	1.452
decline	45% increase
over observed years	7
decline over 25 years	279% increase
Crit2 satisfied Yes/No/ Unknown	no
Crit3 satisfied Yes/No/ Unknown	no
Confidence in assesment crit 3	medium
Comments on UK decline and confidence in assessment	The most extreme estimates indicate a decline of up to 90% since 1950 over its European range. Contraction has occurred most in the north of its range. In the UK populations may have decreased due to loss of hibernacula and summer roosts.
Factor	Factors that caused original decline still operate, population is not yet at a favourable level and is likely to suffer without continued conservation action.
Crit4 satisfied (Yes/ No/ Unknown)	yes
Confidence in assesment crit 4	high
1st source	NBMP Annual Report 2004

9 Additional information for species listed under the Habitats Directive^{vi}

Attribute	Value
Conclusions - overall assessment	(FV) - Favourable
Conclusions - range	(FV) - Favourable
Conclusions - population	(FV) - Favourable
Conclusions - habitat	(XX) - Unknown
Conclusions - future prospects	(FV) - Favourable
Published sources and/or websites	<p>BAT CONSERVATION TRUST. 2006. The National Bat Monitoring Programme Annual Report 2005. Available to download from Bat Conservation Trust website (www.bats.org.uk) and Tracking Mammals Partnership website (www.trackingmammals.org).</p> <p>BATTERSBY, J (Ed.) & TRACKING MAMMALS PARTNERSHIP. 2005. UK Mammals: Species Status and Population Trends. JNCC/Tracking Mammals Partnership.</p> <p>BILLINGTON G. & RAWLINSON, M.D. 2006. A review of horseshoe bats flight lines and feeding areas. CCW Science Report No. 755. CCW, Bangor.</p> <p>BOYE, P. & DIETZ, M. 2005. Research Report No 661: Development of good practice guidelines for woodland management for bats. English Nature.</p> <p>CATHERINE BICKMORE ASSOCIATES 2003 Review of work carried out on trunk road network in Wales for bats. Report prepared for the Welsh Assembly Government Transport Directorate and countryside Council for Wales.</p> <p>HAINES-YOUNG, R.H., BARR, C.J., BLACK, H.I.J., BRIGGS, D.J., BUNCE, R.G.H., CLARKE, R.T., COOPER, A., DAWSON, F.H., FIRBANK, L.G., FULLER, R.M., FURSE, M.T., GILLESPIE, M.K., HILL, R., HORNUNG, M., HOWARD, D.C.,</p>

	<p>McCANN, T., MORECROFT, M.D., PETIT, S., SIER, A.R.J., SMART, S.M., SMITH, G.M., STOTT, A.P., STUART, R.C. & WATKINS, J.W. 2000. Accounting for nature: assessing habitats in the UK countryside. Countryside Survey 2000. DETR, HMSO, London.</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>MATTHEWS, J.E. & HALLIWELL, E.C. (in prep). Lesser Horseshoe Bat summer roost surveillance, 29 May to 17 June, 2002 - 2006. CCW Staff Science Report No.06/9/1, CCW, Bangor.</p> <p>RICHARDSON, P. 2000 Distribution atlas of bats in Britain and Ireland 1980-1999. Bat Conservation Trust, London.</p> <p>RUSS, J.M. 1999 The Microchiroptera of Northern Ireland: community composition, habitat associations and ultrasound. Unpublished PhD thesis. Queen's University, Belfast.</p> <p>SCHOFIELD, H.W. 1996 The ecology and conservation biology of Rhinolophus hipposideros, the lesser horseshoe bat. Unpublished PhD thesis. University of Aberdeen.</p> <p>Map Data Sources</p> <p>Biological Records Centre - Mammals Database 100m; Natural England - Batsites inventory for Britain; Devon Biodiversity Records Centre - Devon incidental species records (1950-2002) (via NBN Gateway)</p> <p>Bat Conservation Trust National Bat Monitoring Programme Colony Survey (1998-2005), Hibernation survey (1997-2005)</p>
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	Bat Conservation Trust - Distribution atlas of bats in Britain and Ireland 1980-1999. GB data only.
surface area of range in km2	58483
surface area of range in km2 EU	58483
Date of range determination	1990-2006
Quality of data concerning range	Moderate
Range trend	Stable (=)
Range trend magnitude (%)	Not applicable
Range trend period	1990-2006
Range trend reasons 0 - Unknown	False
Range trend reasons 1 - Improved knowledge/more accurate data	True
Range trend reasons 2 - Climate change	True
Range trend reasons 3 - Direct human influence	True
Range trend reasons 4 - Indirect anthropo or zoogenic influence	False
Range trend reasons 5 - Natural processes	False
Range trend reasons 6 - Other (specify)	False
Population_min	18000
Population_min EU	18000
Population_max	18000
Population_max EU	18000
Population units	Individuals
Population date	2002
Population method	2 - Extrapolation from surveys of part of the population
Population quality	Moderate
Population trend	Increasing (+)
Population magnitude (%)	46-53
Population period	1997-2005
Pop trend reasons 0 - Unknown	False
Pop trend reasons 1 - Improved knowledge/more accurate data	False
Pop trend reasons 2 - Climate change	False
Pop trend reasons 3 - Direct human influence	True
Pop trend reasons 4 - Indirect anthropo or zoogenic influence	False
Pop trend reasons 5 - Natural processes	True
Pop trend reasons 6 - Other (specify)	False
Surface area of the habitat in km2	Unknown

Date of area estimation	05/2007
Quality of data on habitat area	Poor
Habitat trend	Unknown (X)
Habitat trend period	1990-1998
Hab trend reasons 0 Unknown	False
Hab trend reasons 1 Improved knowledge	False
Hab trend reasons 2 Climate change	False
Hab trend reasons 3 Direct human influence	False
Hab trend reasons 4 Indirect anthropo or zoogenic influence	False
Hab trend reasons 5 Natural processes	False
Hab trend reasons 6 Other (specify)	False
Reasons for reported trend in Hab specify	Not applicable
Justification of % thresholds for trends	The recent increase of 5.6% – 6.3% annually since 1998 is greater than the specified threshold and no justification is required.
Future prospects	Good prospects_Species expected to survive and prosper
Favourable reference range	58483
Favourable reference range EU	58483
Favourable reference population	14000
Habitat name	<p><I>R. hipposideros</I> 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.</p> <p>Woodlands play a predominant role as foraging habitats for the species, especially in spring when <I>R. hipposideros</I> almost exclusively forages there. Foraging areas are close to summer roosts (distances up to 4.2 kilometres) and the animals spend about half of their activity time within a radius of 600 metres. The high importance of semi or unimproved wet pasture bounded by hedgerows has been found in the main foraging areas of one of the largest European colonies at Glynllifon in Gwynedd (Billington & Rawlinson 2006).</p> <p>Summer roosts are usually situated close to</p>

	<p>woodland or a park. If this is not the case a system of continuous linear landscape elements, such as hedges or walls, provide guidance to the bats when flying to their foraging areas.</p> <p>Undisturbed hibernation sites in underground caves, mines or cellars must be available at a maximum distance of 30 kilometres from the summer roosts.</p> <p>Night roosts are important in extending the foraging area available to a colony and occasionally it may be advantageous for bats to remain in these satellite roosts during the day to conserve energy levels rather than return to the maternity roost that same night (Billington and Rawlinson 2006).</p>
Other relevant information	See audit trail documents for further information.

10 Species designations^{vii}

Abbreviation	Reporting Category	Designation	Designation description	Year	Source	Comment
HabReg:Sch2	The Conservation of Habitats and Species Regulations 2010	Schedule 2	Schedule 2: European protected species of animals.	1994	The Conservation of Habitats and Species Regulations 2010	
Bern:A2	Bern Convention	Appendix 2	Special protection (‘appropriate and necessary legislative and administrative measures’) for the animal taxa listed, including: all forms of deliberate capture and keeping and deliberate killing; the deliberate damage to or destruction of breeding or resting sites; the deliberate disturbance of wild fauna, particularly during the period of breeding, rearing and hibernation, insofar as disturbance would be significant in relation to the objectives of this Convention; the deliberate destruction or taking of eggs from the wild or keeping these eggs even if empty; the possession of and internal trade in these animals, alive or	1979	Bern Convention	

			dead, including stuffed animals and any readily recognisable part or derivative thereof, where this would contribute to the effectiveness of the provisions of this article.			
CMS_Bonn:A2	Convention on Migratory Species	Bonn Appendix 2	Migratory species having an unfavourable conservation status for which Range States are encouraged to conclude international agreements for their benefit.	1985	Bonn Convention	Geographic constraint=Only European populations.
CMS_EUROBATS:A1	Convention on Migratory Species	EUROBATS Annex I	Protection and enhancement of species populations through legislation, education, conservation measures and international co-operation.	2000	Agreement on the Conservation of Populations of European Bats (EUROBATS)	
HabDir:A2*	Habitats Directive	Annex 2 - non-priority species	Animal and plant species of Community interest (i.e. endangered, vulnerable, rare or endemic in the European Community) whose conservation requires the designation of special areas of conservation. Note that the contents of this annex have been updated in April 2003 following the Treaty of Accession.	1992	Habitats Directive	
HabDir:A4	Habitats Directive	Annex 4	Animal and plant species of Community interest (i.e. endangered, vulnerable, rare or	1992	Habitats Directive	

			endemic in the European Community) in need of strict protection. They are protected from killing, disturbance or the destruction of them or their habitat. Note that the contents of this annex have been updated in April 2003 following the Treaty of Accession.			
England NERC S.41	Biodiversity Lists - England	England NERC S.41	Species “of principal importance for the purpose of conserving biodiversity” covered under section 41 (England) of the NERC Act (2006) and therefore need to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity.	2008	Natural Environment and Rural Communities Act 2006 - Species of Principal Importance in England (section 41) and Wales (section 42)	Geographic constraint=Listing is for England only
Wales NERC S.42	Biodiversity Lists - Wales	Wales NERC S.42	Species “of principal importance for the purpose of conserving biodiversity” covered under Section 42 (Wales) of the NERC Act (2006) and therefore need to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity.	2009	Natural Environment and Rural Communities Act 2006 - Species of Principal Importance in England (section 41) and Wales (section 42)	Geographic constraint=Listing is for Wales only

					42)	
BAP:2007	Biodiversity Action Plan UK list of priority species	Priority Species	The UK List of Priority Species and Habitats contains 1150 species and 65 habitats that have been listed as priorities for conservation action under the UK Biodiversity Action Plan (UK BAP).	2007	UK list of Priority Habitats and Species	status on former BAP list: Species Action Plan
WACA:Sch5_sect9.4b	Wildlife and Countryside Act 1981	Schedule 5 Section 9.4b	Section 9.4 Animals which are protected from intentional disturbance while occupying a structure or place used for shelter or protection.	1981	Wildlife and Countryside Act Schedules 1,5 and 8 (protected birds, animals and plants)	Geographic constraint=Designation does not apply in Scotland since 15/02/2007.
WACA:Sch5Sect9.4c	Wildlife and Countryside Act 1981	Schedule 5 Section 9.4c	Animals which are protected from their access to any structure or place which they use for shelter or protection being obstructed.	2007	Wildlife and Countryside Act Schedules 1,5 and 8 (protected birds, animals and plants)	Geographic constraint=Does not apply to Scotland
WACA:Sch5_sect9.5a	Wildlife and Countryside Act 1981	Schedule 5 Section 9.5a	Section 9.5 Animals which are protected from being sold, offered for sale or being held or transported for sale either live or dead, whole or part.	1981	Wildlife and Countryside Act Schedules 1,5 and 8 (protected birds, animals and plants)	Geographic constraint=Designation does not apply in Scotland since 15/02/2007.
WACA:Sch5_sect9.5b	Wildlife and Countryside Act 1981	Schedule 5 Section 9.5b	Section 9.5 Animals which are protected from being published or advertised as being for sale.	1981	Wildlife and Countryside Act Schedules 1,5 and 8 (protected birds, animals and plants)	Geographic constraint=Designation does not apply in Scotland since 15/02/2007.

UK BAP 2008 reporting^{viii}

(nb this only applies to species on the original 1997 UK BAP priority species list)

11 General status

Country	Attribute	Value
UK		
	Date	2008
	Status unknown	No
	Value	50000
	Units	Individuals
	Accuracy	Best guess
	Adequate data	No but likely by 2011
	Data on NBN	Some
	Refer to LBAP data	No
	Data source / comments	This figure is a best guess (pers. comm. Schofield 2008). The rationale for this figure is based on an approximate doubling of the latest statistically valid figure for Wales due to the fact that the total area of the range in England and Wales being roughly equal. The most recent statistically robust figure for Wales is 28,000, a doubling of this figure would give a figure of 56,000 as this is very approximate it is suggested that the total figure for the UK is likely to be estimated as around 50,000.
	Edits made by reporting group	
Wales		
	Date	2008
	Status unknown	No
	Value	28000
	Units	Individuals
	Accuracy	Partial survey
	Adequate data	No but likely by 2011

	Data on NBN	Some
	Refer to LBAP data	No
	Data source / comments	The figure of 28000 is considered to be statistically valid (2008 pers comm. Jean Matthews) and is quoted within Matthews, J. E. & Halliwell, E. C. (2008) Lesser Horseshoe Bat Summer Roost Surveillance 20 May to 17 June 2003 - 2007 CCW Staff Scient Report No. 06/9/1
	Edits made by reporting group	
England		
	Status unknown	Yes
	Adequate data	No but likely by 2011
	Data on NBN	Some
	Refer to LBAP data	No
	Data source / comments	We do not have an individual figure for England, the UK figure stated above is very approximate, based on rationale explained above.
	Edits made by reporting group	

8 Trends

Country	Attribute	Value
UK		
	Date	2007
	Status unknown	No
	Trend	Increasing
	Accuracy	Sample or full survey
	Adequate data	Yes
	Data on NBN	Some
	Refer to LBAP data	No
	Data source /	National Bat Monitoring Programme Annual Report 2007 (2008). Bat Conservation Trust/Joint

	comments	Nature Conservation Committee. Trend from hibernation survey shows a statistically significant increase of 41% since 1999. Trend from colony counts shows a statistically significant increase of 49.2% since 1999. Significant upward trends from both surveys strongly suggests that the population is increasing. This may be due to success of targeted actions under the SAP, but the recent run of mild winters might also have contributed by increasing overwintering survival.
Wales		
	Date	2007
	Status unknown	No
	Trend	Increasing
	Accuracy	Sample or full survey
	Adequate data	Yes
	Data on NBN	Yes
	Refer to LBAP data	No
	Data source / comments	National Bat Monitoring Programme Annual Report 2007. (2008). Bat Conservation Trust/Joint Nature Conservation Committee. Trend from CCW colony count data shows a statistically significant increase of 41.4% since 1999.
	Edits made by reporting group	
England		
	Date	2007
	Status unknown	No
	Trend	Increasing
	Accuracy	Sample or full survey
	Adequate data	Yes
	Data on NBN	Some
	Refer to LBAP data	No
	Data source / comments	National Bat Monitoring Programme Annual Report 2007. (2008). Bat Conservation Trust/Joint Nature Conservation Committee. Trend from colony count shows a statistically significant increase of 82.1% since 1999.

	Edits made by reporting group	
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9 Successes

Success text	Success category 1	Success category 2	England	NI	Scotland	Wales	Edits by reporting group
Provision of advice to Welsh Assembly Government on targeting “species packages” for greater and lesser horseshoe bats for the Tir Gofal Stewardship Scheme in Wales	Funding and incentives	Agricultural schemes - delivering wildlife gains	No	No	No	Yes	
Establishment of the Wales wide ‘Landscapes for Lessers’ project (currently run by BCT and CCW) with the aim of ensuring a holistic and landscape approach to the conservation of this species is taken throughout Wales	Action plan process	Steering group established	No	No	No	Yes	

<p>“Batscapes” – for people and bats. This three year project from 2003 and 2006 was focused on the neighbouring administrative areas of Bath and North East Somerset and South Gloucestershire. The area was chosen because it is a national strong hold for both greater and lesser horseshoe bats. The aim of the project was to achieve real conservation benefits for both species of horseshoe bats (that occur in the UK) as well as ensuring all parts of the community were involved with horseshoe bat conservation. The project identified a number of new horseshoe roosts, increased the number of volunteer recorders / bat wardens in the area and successfully engaged, educated and involved local communities in horseshoe bat conservation with significant conservation benefits. This should help secure and increase future numbers of this species in this area. The study was principally funded by the Heritage Lottery Fund with match funding from English Nature, the Duchy of Cornwall, Bath and North East Somerset Council and South Gloucestershire council.</p>	<p>Communication</p>	<p>Raised awareness / profile among general public</p>	<p>Yes</p>	<p>No</p>	<p>No</p>	<p>No</p>	
<p>BCT’s bats and the built environment project commenced in 2007 and has enabled bat conservation issues to be taken to a range of building industry experts including architects, the Building Research Establishment and the Institution of Lighting engineers. A best practice guide on bats and lighting has been jointly produced by the Institute of Lighting Engineers (ILE) and BCT as well as number of articles on bats in the built environment in industry periodicals. More recently in 2008 the officer has chaired the Biodiversity Task force of the UK’s Green Building Council which aims to produce best practice guidance for incorporating biodiversity into new developments with associated targets</p>	<p>Partnership</p>	<p>Business involvement</p>	<p>Yes</p>	<p>No</p>	<p>No</p>	<p>Yes</p>	
<p>The important findings of Tessa Knight’s research into habitat selection by this species at Bristol University on the use of landscape features and habitats by the lesser horseshoe bat that will improve conservation action of this species</p>	<p>Research, survey and information</p>	<p>Autecology - improved knowledge</p>	<p>Yes</p>	<p>No</p>	<p>No</p>	<p>Yes</p>	

Production of 'the lesser horseshoe bat conservation handbook' published by the Vincent Wildlife Trust. Guidance has also been produced for identification / management of horseshoe flight lines and foraging areas in Wales (by CCW) through a literature review	Communication	Best practice guidance	Yes	No	No	Yes	
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10 Threats

Threat category 1	Threat category 2	England	NI	Scotland	Wales	Edits made by reporting group
Habitat loss / degradation - agriculture	Inappropriate grazing (due to timing or livestock type)	Yes	No	No	Yes	
Habitat loss / degradation - infrastructure development	Transport infrastructure	Yes	No	No	Yes	
Human disturbance	Other recreation / tourism	Yes	No	No	Yes	
Human disturbance	Interference / displacement	Yes	No	No	Yes	
Habitat loss / degradation - woodlands/forestry	Inappropriate timing of forestry rotation	Yes	No	No	Yes	

Habitat loss / degradation - woodlands/forestry	Felling / loss of trees (general)	Yes	No	No	Yes	
Habitat loss / degradation - management practice	Scrub clearance	Yes	No	No	Yes	
Pollution - freshwater	Agricultural (nutrient enrichment)	Yes	No	No	Yes	
Habitat loss / degradation - infrastructure development	Restoration works on old buildings / walls	Yes	No	No	Yes	
Habitat loss / degradation - infrastructure development	Infilling (e.g. of lakes / ponds / quarries)	Yes	No	No	Yes	
Habitat loss / degradation - infrastructure development	Housing infrastructure	Yes	No	No	Yes	
Habitat loss / degradation - agriculture	Intensive grassland management	Yes	No	No	Yes	

Pollution - land	Agricultural (other agro-chemicals)	Yes	No	No	Yes	
Habitat loss / degradation - agriculture	Conversion to arable	Yes	No	No	Yes	
Global warming	Climate change	Yes	No	No	Yes	
Accidental mortality	Road kills	Yes	No	No	Yes	
Habitat loss / degradation - agriculture	Loss of hedgerows	Yes	No	No	Yes	

15 Constraints

Rank	Constraint category 1	Constraint category 2	Constraint summary	England	NI	Scotland	Wales	Solution category	Solution summary
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2	Communication	Land managers / owners - lack of advice	There is a lack of knowledge among planners relating to the conservation of the lesser horseshoe and other bats.	Yes	No	No	Yes	Communication/publicity	Improvement of communication to planners is needed so they understand the law protecting bats and proactively re-create lesser horseshoe roosts as part of developments. Ensure wildlife law is part of planners initial training and Continuing Professional Development.
2	Funding and incentives	Staff resources - insufficient	There is a lack of ecologists within local government to raise the need to consider potential impacts to bats as part of planning applications	Yes	No	No	Yes	Funding, resources and incentive schemes	Government to prioritise funds to ensure all local governments have ecologists that can advise on ecological issues within planning in line with requirements of the biodiversity duty under the NERC Act.
2	Research, survey and information	Habitat creation/restoration techniques poorly understood	Work to determine how effective mitigation proposed for roost loss actually is in practice.	Yes	No	No	Yes	Research	This is an area for priority research

2	Research, survey and information	Habitat creation/restoration techniques poorly understood	Work to determine how effective mitigation proposed for roost loss actually is in practice.	Yes	No	No	Yes	Research	This is an area for priority research
2	Species and habitat management	Habitat creation / restoration - not achieved	Lack of connectivity between woodland patches is likely to constrain the expansion of this species' range.	Yes	No	No	Yes	Funding, resources and incentive schemes	Promote creation of landscape connections for this species through implementation of landscape scale projects for this species on the ground (e.g. the landscapes for lesser project in Wales)
3	Research, survey and information	Data audit/review - required	Work to determine if the recent increase in the range of this species is real or due to more thorough surveys	Yes	No	No	Yes	Survey/monitoring	Further work in the area is required.

3	Funding and incentives	Other	There is a constraint to the implementation of appropriate specified mitigation for bats as part of householder redevelopment if the householders are unable to afford the required works. This can be a costly undertaking and there is a need to continually review if incentives are required to provide suitable accommodation for bats within residential dwellings.	Yes	No	No	Yes	Funding, resources and incentive schemes	Investigate if means tested financial assistance could be provided where bat roosts are to be affected by building renovations/conversions to ensure a favourable outcome for the lesser horseshoe bat
3	Funding and incentives	Agricultural schemes - not delivering wildlife gains	Lack of a process to precisely target the delivery of agri-environment schemes that would benefit lesser horseshoe bats to areas surrounding major roosts.	Yes	No	No	No	Funding, resources and incentive schemes	Implementation of agri-environment schemes for the lesser horseshoe would help towards achieving the targets for this species

3	Research, survey and information	Autecology - poor knowledge	A number of areas of further work are required on the ecology of this species including: the role of night roosts, effects of artificial lighting and studies into the metapopulation dynamics of this species.	Yes	No	No	Yes	Research	Work is required in these areas to ensure that effective conservation management advice can be provided for this species.
3	Research, survey and information	Data audit/review - required	Work to determine if the recent increase in the range of this species is real or due to more thorough surveys	Yes	No	No	Yes	Research	Further work in the area is required.

3	Policy, legislation and designation	Other	There is a need to ensure that the European Protected Species (EPS) licensing system works efficiently and effectively to enforce the requirements for appropriate and proportionate mitigation for roost loss in line with the spirit of the EU's Habitat Directive. There is a need to ensure the effectiveness of mitigation measures proposed is monitored	Yes	No	No	Yes	Legislation and policies	Guidance / policy to be produced to ensure that the licensing system can be made as efficient as possible with the principal aim of ensuring that favourable conservation status of the species is conserved
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11 State of Knowledge

State of knowledge category	Notes	Edits made by reporting group
Knowledge sufficient to make some impact, but more research needed	THIS SECTION IS TOO LONG AND THE FULL VERSION HAS BEEN EMAILED TO ANT MADDOCK OF JNCC AND JOHN BEDFORD OF NATURAL ENGLAND TO BE INCLUDED IN THE ANALYSIS Recent Studies A number of studies have been undertaken on the lesser horseshoe bat since the last reporting round in 2005. These include: 1) Study by Knight on the use of landscape features and habitats by lesser horseshoe bats at Bristol University, funded by Countryside Council for Wales, Natural England, Forestry	

	<p>Commission & Mammals Trust UK. Key findings included that night roosts were significantly nearer to core foraging areas than maternity roosts and so could be of important conservation value for this species. Bats were noted to travel similar distances in three contrasting landscapes, suggesting that ranges are not bigger or smaller in different landscapes, but that bats are more concentrated in good quality habitats. 2) On-going study by Stone at Bristol University (funded by MTUK, ARUP, BCI, NE, Dulverton Trust, One World Wildlife, CCW and Csa Environmental), studying the effects of lighting on the commuting activity of lesser horseshoe bats. Initial findings have provided the first empirical evidence that high pressure sodium street lights have a significant negative effect on lesser horseshoe bats whilst commuting along hedgerows. 3) Project in Wales (CCW report No. 755 by Billington & Rawlinson in 2006) to establish guidelines for the Countryside Council for Wales (CCW) staff to identify boundaries of bat flight lines and foraging areas of both the lesser and greater horseshoe bats to help in future notifications and extensions of Sites of Special Scientific Interest (SSSIs) and Special Areas of Conservation (SACs). Study funded by CCW. The following were found to be important to the lesser horseshoe bat: •canopy and vegetation cover around maternity roosts (particularly in large woodlands); •well-developed networks of field boundaries such as hedgerows, trees lines, scrub to link ro</p>	
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ENDNOTES

ⁱ An explanation of these criteria is included at Annex 3 of [UK Biodiversity Action Plan: Report on the Species and Habitat Review](#). BRIG (ed. Ant Maddock) 2007. This review was organised in two stages. Stage 1 looked at the scientific evidence for selecting the UK List of Priority Species and Habitats while stage 2 considered the conservation action needed for these species and habitats and provided signposts to the means of implementing action.

ⁱⁱ The information on evidence and the species distribution is as presented on the UK BAP website. Users can download a spreadsheet of the [Stage 1 species evidence](#) from the home page of the UK BAP website.

ⁱⁱⁱ Actions were assigned to each and every priority species by expert groups convened at Stage 2 of the Review process. These were subsequently categorised into “signpost categories”. This information is as shown on the UK BAP website See the link for [categorisation \(signposting\) of UK priority species](#).

^{iv} Where a species action is clearly linked to a BAP priority habitat, the name of the relevant habitat or habitats was identified by the stage 2 expert group.

^v This information has been derived from Stage 1 of the priority species review, and is presented in the “marine”, “terrestrial invertebrates” and “other terrestrial species” sheets within the spreadsheet of the [Stage 1 species evidence](#). The information presented here varies according to the taxonomic group. Please note that some of these data have been written for other Expert Group members and may not be of great value to a wider audience.

^{vi} This is only applicable to Species listed under the Annexes 2 4 and 5 of the Habitats Directive. The information presented here was collated by the UK Government in fulfilment of the requirement under Article 17 of the Habitats Directive. For further information see the [2nd UK Report](#) on the implementation of the Habitats Directive.

^{vii} Information on conservation designations has been extracted from JNCC’s collation of information on [species designations](#). The designations shown in version 2 of these pages are as at December 2010.

^{viii} As part of the 2008 UK BAP reporting round lead partners of national plans were asked to answer a number of specific questions. The data will be analysed and used for the UK and country level reports. All of the responses provided through BARS as part of the 2008 reporting exercise are available to [download](#). Note that in the December 2010 version of these pages (version 2) includes corrections to previously truncated text fields.