SOMERSET BAT SPECIES ACTION PLAN

Action plan name

Somerset Bats (Group Action Plan) - Typical (*Vespertilionidae*) & Horseshoe (*Rhinolophidae*) species

Background and vision

Although often thought of as flying mice, bats are in fact more closely related to humans. For some people bats have been the subject of misconception, often fuelled by films and fiction, for others they are charismatic. Bats are considered good indicators of the health of the countryside and also of the 'greenness' of an urban environment.

All UK bats are relatively small. The largest, the noctule, has a wingspan of about 40 centimetres, and the smallest, the pipistrelle, has a wingspan of about 20 centimetres.

Bats are nocturnal and emerge from their roosts at dusk to feed. In the UK all bat species feed on insects. A number of feeding sites are needed throughout the year as insect availability changes. They can forage several kilometres away from their roost site and often rely on hedgerows, woodland edge, tree lines, copses and watercourses to reach feeding areas. For successful foraging, bats require:

- Suitable habitat structures;
- High densities of insects; and
- Habitat corridors between roost sites and feeding areas.

Bats roost during the daytime in trees, a variety of buildings and structures, such as pillboxes, and in caves and tunnels.

Generally all roost sites have an integral role in the functioning of a bat colony. Roost sites can vary during the year and between males and females.

Bats are social animals that can live up to thirty years. A mature female may produce one offspring every year or so. During the summer months, female bats form maternity colonies to have their young. These roosts may be in a variety of natural or artificial structures, such as houses, trees or bridges depending on the species, and tend to be the same site every year. Maternity roosts usually disperse in September/October depending on species and weather conditions.

Night roosts are particularly important for some bat species and are used for resting, grooming, eating or sheltering in bad weather. Some bats, especially pregnant females, can extend their foraging range from the maternity roost by using such roosts.

Mating roosts have a vital function and are set up in autumn. In some species a single male holds a roost and females visit to mate. Other species swarm at underground sites or quarries, with females joining males from over a wide area.

Many bats hibernate in a different site from their summer roost sites, some species using caves, tunnels, bridges or mines or alternative tree sites. Some bat species use transitory roosts to gain weight prior to entering their hibernation roost site. However, some bats do use the same roost site all year round. If the weather is warm enough some bats will forage during the winter months.

There are currently 16 species of bat known to breed in the UK of which 15 are regularly recorded in Somerset and 14 are confirmed breeding in the County.

Common Name	Roost site	Habitat Requirements
Greater Horseshoe	Summer - Old buildings, undisturbed buildings with unrestricted access points, caves, disused mines, cellars and tunnels Winter – Underground in caves, mines, tunnels and cellars	Pasture and meadows with broadleaved woodland and scrub. Flight path corridors between roost and feeding areas of woodland edge, large hedgerows, tree lines, vegetated stream banks. Night roosts (These can be open sided barns)
Lesser Horseshoe	Summer – Lofts of old buildings, occasionally unused rooms and warm cellars. Winter –Undisturbed caves, cellars and mines	Woodland, parkland and large hedgerows over 5 metres high, with permanent pasture, also bankside vegetation. Flight path corridors between roost and feeding areas of large continuous hedgerows, tree lines, woodland edge, vegetated stream banks. Night roosts.
Daubenton's	Summer – predominately holes and fissures in trees but also buildings, tunnels and bridges. May use bat and bird boxes. Winter - caves, mines and cellars.	Smooth water sheltered by trees on both banks. Rivers, canals, lakes, reservoirs, also ponds, pools and ditches. Seasonally in broadleaved woodland. Corridors between roost and feeding areas of hedgerows and watercourses.
Whiskered	Summer - Buildings and probably tree holes and crevices. May use bat and bird boxes. Winter - Caves, mines, cellars and tunnels.	Narrow rivers, bankside vegetation, also woodland rides, parks and hedgerows. Corridors between roost and feeding areas of hedgerows, tree lines, woodland edge, vegetated stream banks.
Brandt's	Summer - Buildings and probably tree holes and crevices. May use bat boxes. Winter - Caves, mines, cellars and tunnels.	Woodland – damp areas or close to water. Both broadleaved and coniferous woodland, forest edge and clear felled areas. Corridors between roost and feeding areas of hedgerows and tree lines.

Common Name	Roost site	Habitat Requirements	
Natterer's	Summer - Old buildings, bridges, tree crevices, cattle sheds. May use bat and bird boxes. Winter - Caves, mines, cellars, tunnels and bare rock	Broadleaved and wet woodland. Found along woodland edges, tree lines, inside large hedgerows, over water and around single trees - alongside agricultural land. Corridors between roost and feeding areas of large hedgerows, tree lines, woodland edge, vegetated stream banks. Field borders with mature trees to provide suitable night roosts.	
Bechstein's	Summer - Tree holes and crevices. May use bat boxes. Winter - Caves, mines, cellars and tunnels. Possibly tree holes and crevices.	Mainly deciduous and wet woodland, occasionally parkland. Mature coppice. Corridors between woodland blocks of tree lines and hedgerows. Retention of old trees.	
Common Pipistrelle	Summer - Buildings including houses in semi urban areas, dead and decaying trees with ivy and loose bark. May use bat boxes. Winter - Stone walls, wall cavities, caves, mines, cellars and tunnels.	Bankside habitats (particularly lakes, wide rivers and large ponds), parks, broadleaved woodland, hedgerows, tree lines. Will feed around white street lighting.	Corridors between roost and feeding areas of hedgerows and tree lines but may cross gaps of up to 200 metres.
Soprano Pipistrelle		As Common Pipistrelle but more often lakes and rivers.	
Nathusius' Pipistrelle	Summer - Tree holes and crevices. May use bat and bird boxes. Winter - Tree holes and crevices, buildings.	Large areas of water such as rivers, lakes and reservoirs. Woodland and tree lines. Stone walls used by males for territorial singing.	

Common Name	Roost site	Habitat Requirements
Serotine	Summer - Buildings in rural and semi rural areas. Especially fond of roof spaces with a chimneybreast. May use bat boxes. Winter - Caves, mines, cellars and tunnels. Occasionally in summer roost site.	Unimproved cattle pasture, unimproved grassland such as meadows, parkland, cemeteries, village greens, golf courses, and playing fields. Also woodland edge, hedgerow, tree lines, single trees, and areas of calm water. Night roosts. Will feed around white streetlights and sewage treatment works.
Noctule	Summer - Tree holes, especially woodpecker holes in fungal infected trees. May use bat boxes. Winter - Tree holes, especially woodpecker holes in fungal infected tress, occasionally buildings or rock crevices.	Over open areas such as open water and wetlands. Cattle pasture, open woodland, woodland edge, parks and open farmland near lakes. Mature trees. Dead wood with woodpecker holes. Freshwater habitat with good water quality. Will feed around white street lighting.
Leisler's	Summer - Tree holes, such as woodpecker holes, and crevices. More rarely in buildings or between timbers. May use bat and bird boxes. Winter - Tree holes, such as woodpecker holes, and crevices.	Over open habitats, such as rivers, lakes and ponds, coastal marshes, beaches, pasture and meadow, hedgerows and woodland clearings, above woodland canopies and along woodland edges. Will feed around white street lighting.
Brown Long-eared	Summer – Tree holes, crevices and behind loose bark. Houses, other buildings. May use bat boxes. Winter - Caves, mines and cellars. Tree holes.	Broadleaved woodland. Also wet woodland, small groups of trees, woodland edge, orchards, garden shrubs, bankside vegetation, parkland with scattered trees and coniferous woodland. Corridors between roost and feeding areas of large hedgerows, tree lines, woodland edge, vegetated stream banks.
Grey Long-eared	Summer - Houses, especially lofts, other buildings. Caves and mines used by single males. Winter – Rock crevices, caves, cellars or crevices in stone walls. Occasionally a house martin's nest.	Small open woods, woodland edges, parkland, orchards, gardens, open meadows, orchards and pasture with trees. Corridors between roost and feeding areas of hedgerows, tree lines, woodland edge, vegetated stream banks, fences.

Common Name	Roost site	Habitat Requirements
Barbastelle	Summer - Cracks in trees and branches and spaces under bark, holly understorey. Occasionally buildings. Rarely uses bat boxes. Winter – Crevices in trees and walls of buildings. Caves and old mines.	Wooded river valleys, over water and woodland edges. High overgrown hedgerows, scrub, uncut grassland and heather moorland, saltmarsh, gardens and areas with low lighting. Maintain woodland corridors between roost and feeding areas of hedgerows, watercourses and tree lines.

Plan species and habitats

- Water and Wetlands (including rivers and streams)
- Hedgerows and Hedgerow Trees
- Wood Pasture, Parkland and Veteran Trees
- Woodland
- Calcareous and Neutral Grassland
- Otter (*Lutra lutra*)

Associated species and habitats

- Common Dormouse (*Muscardinus avellanarius*)
- Invertebrates, including species of Neuroptera, Lepidoptera, Trichoptera, Diptera, Hymenoptera and Coleoptera

Species status

- All bat species and their roost sites are protected under the Wildlife and Countryside Act 1981 (as amended). They are also included in Schedule 2 of the Conservation (Natural Habitats, & c.) Regulations 1994 (the 'Habitat Regulations) (amended 2007) which brought into UK law additional protection afforded under European community legislation by Directive 92/43/EEC on the 'Conservation of Natural Habitats and Wild Flora and Fauna' (the 'Habitats Directive') being listed in Annex IV. In addition four species – greater and lesser horseshoe, Bechstein's and barbastelle bats are also listed on Annex II.

- As a signatory to the Bonn Convention (Agreement on the Conservation of Bats in Europe 1999) the UK is also obliged to conserve bat habitats, requiring their identification and the protection from damage or disturbance of important feeding areas.

- Greater and lesser horseshoe, pipistrelle, Bechstein's and barbastelle

bats are listed under Section 74 of the Countryside and Rights of Way Act 2000 and are UK BAP priority species. Soprano pipistrelle (common pipistrelle having been removed), noctule and brown long-eared bat species were added to the UK BAP priority species list in 2007.

- Greater and lesser horseshoe, Bechstein's, serotine, barbastelle and grey long-eared bats are priority species as these species, as these are regarded the species for which Somerset is most important.

- There are five internationally important sites, designated as Special Areas of Conservation (SAC) under the provisions of the Habitat Regulations 1994, in Somerset. Hestercombe House is listed for its lesser horseshoe bat population; North Somerset and Mendip Bats, Mendip Limestone Grasslands and the Mells Valley SACs are listed for their greater horseshoe bat populations; and the Exmoor and Quantock Oakwoods for their populations of barbastelle and Bechstein's bats.

The following table lists the status of bat species present within Somerset. An estimate of the Somerset population for each species is given in the comments column where known.

Common Name	**Scientific Name**	**National Conservation Status**	**Somerset Status**	**Comments**
Greater Horseshoe	*Rhinolophus ferrumequinum*	Very rare and endangered	Local	Somerset has important populations in the Mendips but also occurs elsewhere in the County.
Lesser Horseshoe	*Rhinolophus hipposideros*	Rare and endangered	Local	Significant increase of 45% since 1997. Elsewhere severe declines across Europe. Now mainly limited to the South West and Wales (a European stronghold) in the UK.
Daubenton's	*Myotis daubentonii*	Common	Widespread	27% increase since 1997. However, numbers are probably over estimated and trend is doubtful due to monitoring method. Number of roost sites is very low. There are only three known maternity roost sites in Somerset
Whiskered	*Myotis mystacinus*	Locally distributed	Widespread	Treated as one species for monitoring. Whiskered are widespread but not frequent in Somerset whereas Brandt's are rare in the county.
Brandt's	*Myotis brandtii*	Common in west and north, rare elsewhere	Rare	
Natterer's	*Myotis nattereri*	Fairly Common	Widespread	Has been subject to huge declines across Europe but significant increase of 36% in UK.

Common Name	Scientific Name	National Conservation Status	Somerset Status	Comments
Bechstein's	*Myotis bechsteinii*	Very rare	Rare	Very few records in Somerset.
Common Pipistrelle	*Pipistrellus pipistrellus*	Common	Common	64% increase since 1998 but number of colonies decreasing; by 33% since 1998.
Soprano Pipistrelle	*Pipistrellus pygmaeus*	Common	Common	42% decline since 1998 but data is variable.
Nathusius' Pipistrelle	*Pipistrellus nathusii*	Rare	Very rare	Trend unknown. Although recorded in Somerset no roost site has been identified. They are possibly migratory.
Serotine	*Eptesicus serotinus*	Widespread	Local	Limited to southern England. Declining in the South East of England but appears to be expanding its range into the South West peninsula.
Noctule	*Nyctalus noctula*	Uncommon	Local	Decline of 25% since 1998. Of concern if decline continues. Very few roosts identified in Somerset.
Leisler's	*Nyctalus leisleri*	Scarce	Very rare	No known roost site in Somerset. Recently found in detector recordings of bats in flight at two locations but identification needs confirming.
Brown Long-eared	*Plecotus auritus*	Common	Common	Decline of 24% since 1997. Of concern if decline continues.
Grey Long-eared	*Plecotus austriacus*	Rare	Very rare	Three known roost sites in Somerset.
Barbastelle	*Barbastella barbastellus*	Rare	Very rare	Very rare but probably under recorded. Two known roost sites -breeding colony (+100) at Holnicote and another in Corfe.

Specific impacts/threats

- **Loss of feeding habitat** - habitats, such as woodland, pasture, hedgerows and ponds, supporting bat populations can be lost due to landtake required for development but also through changes in agricultural management or intensification. Impacts may also be caused through hydrological change resulting in loss of wetland or ponds. Both rural and urban streams support insect communities, which are affected by the state of vegetation on the riverbank and within the watercourse. These insects provide a valuable source of food for bats.

- **Loss or alteration of roost site** - the loss of any roost site could also have a significant effect on a bat population as each has an integral role in supporting a colony. Roost sites can be lost due to alterations to old buildings, barn conversions, use of timber treatments, the felling of mature trees, tidying up trees or tree surgery. The conversion of barns to dwelling places has also resulted in major loss of roost sites. Due to their construction, modern buildings are often unsuitable as roost sites.

- **Loss or fragmentation of flight lines -** most bat species are reliant on linear features traditionally used to commute between roost sites and feeding areas. Any severance of these features could cause disruption to commuting patterns and threaten the viability of a colony. As bats fly some distance from their roost site severance could affect bats several kilometres from the development.

- **Installation of street and other artificial lighting -** bat roosts may be disturbed and abandoned following the installation of lighting on streets or individual buildings (e.g. floodlighting of churches). Artificial lighting can also affect the commuting and feeding behaviour of bats. Studies have shown that, although some species of bat swarm and feed around white mercury streetlights, others, such as *Rhinolophus*, *Plecotus* and *Myotis* species, will avoid artificial lighting. Street lighting can therefore cause habitat fragmentation and prevent bats from reaching feeding areas. Street lighting will also draw prey away from feeding areas that would otherwise be available to species averse to artificial lighting and would prevent safe exit from roost sites.

- **Disturbance -** development near roost sites may cause disturbance, such as from increased noise. Disturbance to bat behaviour may also occur during the construction phase of a scheme. Tree roosting bats are particularly sensitive to works a couple of hundred metres from a roost and may result in it being deserted.

- **Road mortality -** bats are affected by road mortality. Lesser Horseshoe and Whiskered bats often fly 0.5-3 metres above road level across 20-40 metre gaps in hedgerows where they have been created by a road scheme. One road scheme in North Wales is reporting the loss of two Lesser Horseshoe bats per night and has resulted in on-going costs of over £1 million in corrective mitigation, which could have been avoided if measures had been included at the design stage.

- **Wind farms and turbines –** a number of dead bats have been found under wind turbines on sites in Europe and in the USA. Turbines, even small individual wind turbines, may also have negative effects on prey

availability and cause disruption or disturbance to feeding habitats and flight lines. Further research is required.

Proposed partners

Bat Conservation Trust (BCT)
Woodland Trust (WT)
National Farmers Union (NFU)
Police Wildlife Officer
Wessex Cave Club (WCC)
Mendip Caving Group (MCG)
Quarry owners
Somerset Hedge Group (SHG)
Wind farm developers

Confirmed partners

Areas of Outstanding Natural Beauty offices (AONB)
District Councils (DC)
Environment Agency (EA)
Exmoor National Park Authority (ENPA)
Farming and Wildlife Advisory Group (FWAG)
Forestry Commission (FC)
National Trust (NT)
Natural England (NE)
Somerset Bat Group (SBG)
Somerset County Council (SCC)
Somerset Environmental Records Centre (SERC)
Somerset Wildlife Trust (SWT)

Current action

- Bat box scheme and monitoring by Somerset Bat Group
- Mendip Hills Living Landscape project
- Econet GIS mapping for all bat species
- Bechstein's and barbastelle monitoring on Exmoor

Target description and target goals

1. Maintain all known existing maternity, swarming, hibernation and other roost sites
   Goal: Monitor existing sites (Monitor at least 5 sites)
2. Provide new roost sites for bats

Goal: Erection of new roost boxes, including those in development schemes (at least 50 boxes)

3. Maintain or increase the size of current bat populations
   Goal: Monitoring of selected bat populations particularly affected by development proposals (at least 4 developments)
4. Maintain or expand current geographical range of bat populations
   Goal: Promote stewardship schemes including habitat enhancement for bats (at least 10 schemes)
5. Increase current knowledge of bats and their habitat use in Somerset
   Goal: Complete surveys and report for Hestercombe House SAC lesser horseshoe colony and for other sites and circulate results to planners
6. Record and make available data on use of the landscape by bats
   Goal: Econet mapping of sensitive bat landscape areas installed on all District and County Council GIS by spring 2008 and Bat Protection Zones included in LDF documents
7. Ensure that local planning authorities take account of the needs of bats in determining planning applications
   Goal: Monitor applications with review of % coverage (100% of requirements for bats)
8. To redress misconceptions about bats and secure their status as culturally valued species
   Goal: At least 2 publications by spring 2008

Key factors

- Engagement with SAP partners
- Appropriate level of funding
- Commitment from SAP partners
- Awareness of district and county council staff in all departments, e.g. forward planning and highways, that bats have strategic or landscape level requirements
- Appropriate involvement of district and county council staff
- Awareness of householders and landowners with bat roosts
- Appropriate engagement of landowners and farmers

SOMERSET GROUPED BATS SPECIES ACTION PLAN					
Management					
Action text	**Lead organisation**	**Action start and end dates**	**Action goals**	**Key partners**	**Funding link to target**
Encourage land management sympathetic to the requirements of bats	FWAG	2008-2012	At least 10 new stewardship schemes that include enhanced habitat management for bats	SCC, NE, SWT, FWAG, NFU, NT, ENPA, AONB offices, Somerset Hedge Group, FC	Funding required Targets 3,4
Encourage sympathetic management of watercourses	EA	2008-2012	100% all watercourses sympathetically managed	FWAG, NFU	No funding required Targets 3,4
Create new woodland, hedgerows and tree lines to link up existing woodland	SWT	2008-2012	At least 50 Ha of new woodland in appropriate locations 2 Km of new hedgerow	FWAG, FC, Woodland Trust, SCC, DCs	Funding required Targets 3,4
Encourage suitable management of urban green spaces	DCs	2008-2012	At least 15 urban green spaces with favourable management for bats	SWT, SCC, SBG, EA	No funding required Targets 2,3,4 Areas of grass uncut, night scented flowers, shrubs and trees, erection of bat boxes. Urban watercourses in favourable management. This action should be

					targeted at sites where benefit is likely
Provide new roost sites for bats	SBG	2008-2012	At least 50 boxes erected and monitored	SWT, SCC, DCs	Funding required Target 2
Undertake actions recommended in the Somerset Highways Species Action Plan for bats	SCC (Highways)	2008-2012	See Somerset Highways SPA	SBG	Funding required Targets 2,3,4 Includes maintaining crossing places, street lighting, 'green bridges/overpasses, planting new hedgerows and erecting or installing bat artificial bat roosts.
Policy and legislation					
Safeguard flight lines and feeding areas through the planning system	DCs SCC	2008-2012	Mapping included in all 5 LDF documents	SERC, SBG, EA	No funding required Targets 5,6 Local Development Framework documents
Ensure that roost sites are protected from adverse development including from increased artificial illumination	DCs SCC	2008-2012	Annual event for all planning officers in district and County councils, and officers in the County Council's property services team including workshops, seminars.	SBG	Funding required Target 1
Ensure that all planning applications potentially affecting bat roosts, foraging habitat and flight	DCs SCC	2008-2012	Monitor planning applications where bats are affected to ensure	SWT, NE, EA	No funding required Targets 1,7

lines have an appropriate survey, and mitigation and enhancement if appropriate, before planning permission is given			favourable outcome for bats At least 100%		
Education and awareness					
Organise training events for District and County Council staff to raise awareness of the requirements of bats in the landscape	SCC	2008-2012	Number of staff trained % At least 80%	DCs, SBG, NE	Funding required Targets 1, 3, 4, 7 Include forward and development control planning officers; countryside and parks officers
Ensure that farmers are aware of the requirements of bats and their role in the ecosystem	FWAG	2008-2012	Number of advice leaflets distributed during farm visits	SBG, BCT, SCC, SWT	Funding required Targets 3, 4, 7
Bats in urban areas	SCC	2008-2012	Distribute at least 1 leaflet, 1 active public awareness campaign and facilitate 1 bat walk per annum	SBG, SWT	Funding required Targets 3, 4, 7 For example, Daubenton's and other species in Taunton and Bridgwater
Bat awareness programme, including dispelling misconceptions	SCC	2008-2012	Produce and distribute at least 1 leaflet, 1 active public awareness campaign and facilitate 1 bat walk per annum	SBG, SWT, NT, Wessex Cave Club, Mendip Caving Group	Funding required Target 7 Linked to Hestercombe House appropriate assessment but other areas should be considered. Similar to BANES 'Batscapes' project

Information and data					
Produce GIS data on bat habitat use	SCC	2008-2012	1 data set available for use by planners and development control officers in all 5 DCs and the County Council and to conservation organisations	SERC, SBG	No funding required Target 6 Part of Somerset Econet project.
Carry out monitoring of bat populations at sites affected by development	DCs SCC	2008-2012	Record of trends in selected bat populations annually and distribute results to County and DCs for monitoring reports	SBG, SERC	Funding required Targets 1, 3 For example, along the River Tone in Taunton and at Hestercombe House
Survey of property owned by the County Council	SCC	2008-on-going	10 properties surveyed annually	SBG	Funding required Targets 1, 3
Rebuilding biodiversity (Nature Map)					
N/A	N/A	N/A	N/A	N/A	N/A
Economy and business					
Encourage businesses to carry out sensitive habitat management	SWT	2008-2012	No of businesses taking up advice At least 5 businesses	Quarry owners, wind farm developers	Funding required Targets 1, 3
Communities, health and well-being					
Organise Bat watching events, e.g. River Tone in	SCC	2008-2012	At least 10 events up to 2011	SBG, NT	Funding required Target 7

Taunton					
Climate change					
Review existing research and evaluate responses of Somerset bat populations	SCC	2008-2012	1 report to Somerset Climate Change Strategy by 2010	SBG; SERC	Funding required Target 5 Alterations to working due to decreased hibernation period
Tourism / access					
Ensure that cavers are aware of access arrangement to caves with bat roosts	Wessex Cave Club	2008-2012	Produce and distribute at least 1 leaflet and 1 active awareness campaign for cavers	Mendip Caving Group SBG	Funding required Target 8

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