

Bats



Sixteen species of bats are known to breed in the UK and eight are resident in Lancashire. These include: brown long-eared; whiskered; Brandt's, Natterer's; Daubenton's and noctule bats. In addition, the pipistrelle, which was formerly thought to be a single species, is now recognised to be two: the 'common pipistrelle', (*Pipistrellus pipistrellus*) and the 'soprano pipistrelle' (*Pipistrellus pygmaeus*). The two species are very similar in appearance but may be distinguished using an electronic bat detector to pick out the different frequencies they use in echolocation.

Details of what is known about the local status and habitat preferences of each species are given in Table 1. The ecology of the different species varies in detail, but all share an annual cycle of activity.

In the autumn adult bats begin to mate. This activity can continue throughout the winter period and into early spring. During the winter bats hibernate in a cool place where they go into a state of 'torpor' to save energy by reducing heart and breathing rates and body temperature.

Adult females congregate to form nursery colonies in late spring. These colonies can include several hundred animals that move regularly during the summer (e.g. pipistrelles), or smaller numbers that remain at one site (e.g. brown long-eared bats and others). Roosts at this time may be in buildings (especially houses), bridges, or trees. Males often roost separately but nearby, as individuals or in small groups.

Each female produces a single baby, usually in June, and it suckles mother's milk until it is weaned at about five weeks old. At three weeks, nearing adult size, they are able to fly out at dusk with the adults and use ultrasonic echolocation to find their insect prey. The breeding roost generally disperses around August. Sexual maturity is usually reached in the second year, and some individual bats have been recorded as living for thirty years.

Main Habitat(s): See Table 1

National Status

Little is known about the status of most species although the available evidence suggests a general decline in populations nationally (1).

The commonest bats are pipistrelles but these are estimated to have declined in numbers by 70% between 1978 and 1993⁽²⁾. 'The pipistrelle' was therefore included on the list of Priority Species in the UK BAP (although subsequently it has been discovered that there are two species of 'pipistrelle').

Bats are European Protected Species by virtue of being listed under Annex IVa to the EU Habitats and Species Directive 1992. Bats and their roosts are protected under UK law by the (Conservation (Natural Habitats & c.) Regulations 1994, which transposes the Habitats and Species Directive into UK legislation. Bats and their roosts are fully protected also under the Wildlife & Countryside Act 1981 (as amended).

Where a European Protected Species will be affected by development then a licence will be required for the development. Licence applications are processed by the DETR in consultation with English Nature.

Regional status

North West England appears to be a stronghold for whiskered and Brandt's bats, both of which are fairly rare in southern England.

Local status

Populations of bats in many parts of Lancashire are comparable in size and importance to some of the best areas in the country.

The valleys of the Lune, Wyre, Hodder, Ribble and their tributaries hold substantial populations of pipistrelles and Daubenton's bats. Many colonies of the latter species roost in bridges over the rivers. There are good numbers of most of the other species also in this area.

Clusters of brown long-eared colonies are known from the Silverdale area, Fylde and West Lancashire.

Whiskered and Brandt's bats are probably more common in the north of the county than in southern Lancashire.

Ponds in the Fylde, mill lodges and reservoirs in eastern Lancashire and other areas provide concentrated feeding areas for many bats.

Table 1 provides a summary of Lancashire's breeding species of bat. Other bat species may occur but breeding has not been proved. For example, a third pipistrelle species (Nathusius' pipistrelle) may visit the county but the only evidence so far comes from unconfirmed bat detector recordings. Leisler's bat, which is similar in appearance to the noctule, is present in Yorkshire and, possibly, in Cumbria. This species, if it occurs in Lancashire, is likely to be found at present only in the eastern fringes of the county in small numbers.

Table 1. Summary of status and main habitats of bats in Lancashire

Species	Local status	Main habitats

		Feeding	Roosting
Noctule	Widespread but uncommon.	Deciduous & mixed woodland, pasture & parkland.	Holes in trees.
Daubenton's	Widespread and common on waterways.	Rivers, streams, lakes and ponds.	Bridges and tunnels.
Natterer's	Widespread but uncommon and elusive - most often found in hibernation.	Rivers, streams, lakes, ponds, deciduous & mixed woodland.	Barns, churches, bridges and tunnels.
Whiskered	Widespread but uncommon.	Deciduous & mixed woodland.	Old houses.
Brandt's	Widespread but uncommon.	Deciduous & mixed woodland.	Old houses.
Brown long-eared	Widespread and reasonably common but only in small colonies.	Deciduous & mixed woodland.	Old houses.
Common pipistrelle (45 kHz)*	Large breeding colonies occur.	Woodland edge habitats, hedgerows and gardens.	Modern houses and built structures.
Soprano pipistrelle (55 kHz)*	Breeding colonies probably occur.	Woodland edge habitats, hedgerows and gardens.	Modern houses and built structures.

* Refers to echolocation frequency in kilohertz

Current factors affecting the species

The decline in numbers of a bat species can be clearly linked to factors such as the loss of key hibernation sites. However, for most species, the evidence is not sufficient to pinpoint exact causes and it is likely that a number of factors are involved.

All British bats feed entirely on insects. In recent decades there has been much greater use than before of insecticides in the countryside and this has reduced the numbers of insect prey generally available to bats during their active season.

As well as favoured roost sites, it has been demonstrated that bat colonies often have particular areas that they fly to in order to feed. As noted in the county guidelines for Biological Heritage Sites: "Successful conservation of bats is dependent not only on the protection of roost sites but also on the identification and protection of their key feeding areas".

A national survey of feeding bats indicated that waterbodies, woodland edges and hedgerows provided important feeding habitats. There is evidence too that bats use linear features like

hedgerows, not only to hunt along, but also as flight lines from roost to feeding areas. A diverse landscape, for these reasons, is likely to be most favourable to bats. A patchwork of different habitats (pastures, woodlands, wetlands) linked by linear features such as river corridors or hedgerows would be the ideal. The removal of hedges, reduction in mixed farming and development in the countryside are among factors that have tended to reduce suitable landscape diversity.

Another important factor in the decline of bats nationally has been the destruction or disturbance of breeding or hibernation roost sites³. The loss of breeding roosts when it occurs can be particularly destructive since there is the potential to lose the majority of a species' population from the area in which it occurs.

Fear and misunderstanding of bats leads some people to deliberately try to exclude them from buildings. The blocking of mines & tunnels for reasons of human safety can lead to the unintentional exclusion of bats from roost sites if care is not taken.

A major cause of bat mortality in the past has been the use of inappropriate timber treatments in loft spaces. Bats are more sensitive than most other mammals to certain insecticides, such as Lindane, that have been used to counteract woodworm.

For tree roosting species, the felling or lopping of old trees may remove actual or potential wintering or breeding roost sites.

Current Action / Mechanisms

The Bat Conservation Trust is the national lead organisation for the pipistrelle and other Priority Species of bat. They have produced an Action Plan for the conservation of all bat species in the UK and have a national network of local groups. There are four local bat groups that are affiliated to the Trust and active in Lancashire.

Members of these local bat groups conduct most of the research and monitoring work that is underway for bats in the county at present. The data that is collected has contributed to several national initiatives: JNCC's Bat Habitat Survey; the National Bat Colony Survey and the National Bat Monitoring Programme. The latter consists of field surveys of feeding bats, roost counts and hibernation site surveys. The first phase of the Programme was funded by the DETR and organised by the Bat Conservation Trust with volunteers conducting surveys.

Local roost records are forwarded to English Nature by bat groups. Local bat groups also conduct one-off surveys in order to comment on development proposals, conduct intensive monitoring at key sites, record injured & dead bats found and contribute to species research (e.g. pipistrelle swarming behaviour studies).

Members of local bat groups also give talks, write articles, lead bat walks, produce local newsletters, leaflets, and press releases.

One aspect of bat conservation on which bat groups can advise is artificial roost creation. The siting of bat boxes in woods, plantations, parks and gardens is one way that people can become involved in bat conservation. It is possible also to create hibernation sites for some species in old ice houses, tunnels, etc. However, all groups agree that artificial roost/hibernation sites should not be seen as an easy alternative to retaining natural sites.

With regard to the legal protection of bats, English Nature provides advice to householders, builders and the general public in any cases where bats or roosts in a dwelling house may be harmed or endangered. Much of this work is now contracted out. The contractor may deal with enquiries directly or ask licensed volunteer 'Bat Wardens' to make site visits.

English Nature controls licensing for handling or disturbing bats for research, education and nature conservation purposes only. The DETR controls licensing for impacts upon bats in connection with development and other operations, unless it is in a dwelling house.

A few local authorities require a bat survey to be carried out before granting planning permission for some types of development (e.g. barn conversions). All applications for conversions in West Lancashire, for example, are sent to the local Bat Group for comment.

Prior to bridge repairs Lancashire County Council requests an inspection of the structure for the presence of bats and seeks advice on how to retain roost sites in such bridges. (It should be noted that bridging works will require a licence from the DETR were bats to be affected).

Objectives, targets and proposed actions for bats in Lancashire

Broad Objective:	A. Survey and monitor bat populations, their distribution and habitat use in Lancashire.			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Establish a centralised bat database to be used to assess progress towards the objectives of this plan.	1. Collate bat data for Lancashire from bat group surveys and set up an efficient data storage and retrieval system for records. (High)	EN, Bat Grps, L'pool Museum	S	RM
	2. Annually transfer data between bat groups, English Nature, Liverpool Museum, and the Bat Conservation Trust. (High)	EN, Bat Grps, L'pool Museum, BCT	O	RM
	3. Produce distribution maps for all species. (Medium)	LCC	M	RM
2. Monitor bat roosts for population trends.	1. Continue to find and record roost locations, bat numbers and identify species present. (High)	Bat Grps, EN, L'pool Museum	O	RM
	2. Annually monitor selected roosts (where known) of each species in order to keep track of population changes. (High)	Bat Grps, EN, L'pool Museum	O	RM
	3. Contribute data from Lancashire to national surveys (e.g. the National Roost Survey). (High)	Bat Grps, EN, L'pool Museum	O	RM

	4. Produce an annual report on population trends from 2003 onwards. (Low)	Bat Grps, EN, L'pool Museum	O	RM
3. Identify key feeding areas in the county by 2004.	1. Design survey methodology and train volunteer surveyors to be able to carry out surveys. (High)	Bat Grps, BCT, WT	M	RM
	2. Co-ordinate systematic surveys. (High)	Bat Grps, WT	M	RM
	3. Collate results in 2004 and map using GIS, relating roost sites to feeding areas and linear features. (High)	Bat Grps, LCC	L	RM
	4. Update bat database accordingly. (High)	Bat Grps, L'pool Mus	L	RM
	5. Consider designating important areas for bats as BHSs by 2005. (High)	LAs, LCC, BHS P/ship	L	SS
4. Undertake specific site surveys.	1. Increase the number of trained surveyors able to carry out surveys. (High)	BCT, Bat Grps, WT, EN, WWT	M	RM
	2. Survey reserves and other areas managed for conservation to establish bat presence/potential (Medium)	Bat Grps, WT, EN, RSPB, LAs, NT	L	RM
	3. Report results annually from 2003 onwards. (Low)	Bat Grps, EN	L	RM
	4. Update bat database accordingly. (Medium)	Bat Grps, L'pool Mus	L	RM
5. Encourage the public to send in informal records.	1. Appeal for information from public, builders, etc. for information about bats. (Medium)	Bat Grps, WT, EN,	M	PR
	2. Introduce and publicise internet-based means of record submission in 2001. (Medium)	WT, Bat Grps, EN	M	PR

	3. Disseminate summary of results (i.e. not about specific sites) of formal surveys through press releases, internet, etc. (Medium)	WT, Bat Grps	O	PR
Broad Objective:	B. Maintain and improve opportunities for bats to roost, feed and hibernate.			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Safeguard all roosts in buildings.	1. Encourage communication between people likely to find roosts (builders, roofers, pest controllers) and EN/DETR. (High)	EN, Bat Groups, LAs, trade bodies	O	PR
	2. Offer an advisory service to householders, developers, builders, timber treatment firms, etc. about any activity likely to affect a bat roost. (High)	EN/DETR, Bat Groups	O	A
	3. Use planning conditions to require surveys for bats prior to development and mitigation measures (where necessary).	LAs	O	P, A
	3. In instances where barn conversions are proposed, distribute information leaflets to all applicants at the earliest possible stage of the planning process. (High)	LAs, EN	M	A
	4. Train staff in relevant legislation and its enforcement and procedures when reacting to incidents involving bats. (High)	LAs, EN, Police	M	A
	5. Incorporate outcomes following provision of advice into bat database (Low)	Bat Grps, EN, L'pool Museum	L	RM

2. Safeguard all roosts in bridges	1. In instances where bridge repairs are proposed, seek expert advice on likely impacts on bats at the planning stage. (High)	LCC, Highways Agency, BW	O	A
	2. Incorporate information on outcomes following provision of advice into the bat database. (Low)	Bat Grps, EN, L'pool Museum	L	RM
3. Safeguard bat roosts in trees.	1. Encourage communication between people likely to find roosts (forestry workers, tree wardens, contractors, council arboricultural officers) and EN. (High)	EN, BCT, Bat Groups, FC, LAs, trade bodies	O	PR
	2. Offer an advisory service to contractors, etc. about works on trees likely to affect a bat roost. (High)	DETR, EN, BCT, Bat Groups	O	A
	3. Incorporate information on outcomes following provision of advice into the bat database. (Low)	Bat Grps, EN, L'pool Museum	L	RM
	4. Train staff in relevant legislation and its enforcement and procedures when reacting to incidents involving bats. (Medium)	LAs, EN, Police	M	A
4. Create new potential roost sites.	1. Promote incorporation of artificial roost sites into barn conversions & other building works. (High)	LAs, developers	O	A, PR
	2. Promote use of bat boxes in parks & other suitable sites. (Medium)	LAs, Bat Grps	M	LM
	3. Attach/incorporate roost sites on canal & road bridges. (High)	LAs, Bat Grps, BW	M	LM
	4. Encourage retention by landowners of old and dead trees suitable as bat roosts. (High)	BHSP, FWAG, MAFF, BCT	O	A, LM

5. Maintain and improve foraging habitats for bats.	1. Liaise with landowners and land managers to maintain/improve foraging habitat for bats. (Medium)	BHSP, FWAG, Bat Grps	O	A
	2. Include bats and their habitats in agri-environmental schemes and agency grants. (Medium)	MAFF; FC, EN	M	P
	3. Promote suitable management of field margins to increase availability of insect prey. (Medium)	MAFF	M	A, LM
6. Create new foraging habitat	1. Promote planting and suitable management of hedgerows to increase linkage between feeding areas. (Medium)	MAFF	O	LM
	2. Incorporate water bodies, new woodland and flight lines for bats into landscape strategies and landscape proposals arising from development. (Medium)	LAs, developers, ELWOOD	O	LM
Broad Objective:	C. Encourage research into aspects of bat ecology relevant to their conservation in Lancashire.			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Establish total number of species in the county.	1. Confirm presence of Nathusius' pipistrelle and/or Leisler's bat in the county. (Low)	Bat Grps	L	RM
2. Identify habitat preferences of closely-related species	1. Gather information on whiskered & Brandt's bats. (Low)	Bat Grps, BCT	L	RM
	2. Gather information on the pipistrelle species. (Low)	Bat Grps, BCT	L	RM
Broad Objective:	D. Promote bats as a group of flagship species in the Lancashire BAP			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type

1. Increase public awareness of bats and their requirements.	1. Maintain and expand the network of local Bat Groups as focus for bat conservation work. (High)	Bat Grps, BCT, WT, EN	O	PR
	2. Organise training days and interpretative walks focusing on bats. (Medium)	Bat Grps, WT, BCT, RSPB, NT	O	PR
	3. Produce and regularly update a bat contacts list. (Medium)	WT, EN, Bat Grps	M	PR
	4. Produce written articles for the local press, conservation group newsletters, trade journals, etc. (Low)	Bat Grps, EN, WT	O	PR

Related Action Plans:

- Broadleaved and mixed woodland HAP
- Rivers & streams HAP.

Contacts: Where people require advice about bats or roosts in their houses or where building work or timber treatment may affect bats in their homes they should contact English Nature's 'Bat Advice Line' on 01704 385735.

References & additional reading:

1. Harris, S. et al. (1995) A review of British mammals: population estimates and conservation status of British Mammals other than cetaceans. JNCC, Peterborough.
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3. Corbet, G.B. & Harris, S. (Eds.) (1991). The Handbook of British Mammals (3rd edition) Blackwell Scientific Publications.
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5. Mitchell-Jones, A.J. (1999). The Bat Workers Manual (2nd Edition) JNCC
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Date: April 2001.