

Wildlife Profiles: Bats

By Henry Stanier

What?

Bats are mammals of the order *Chiroptera* (hand-wing), which is most appropriate as they really do fly with the fingers of their hands, and are one of the few vertebrates able to truly fly. They have also developed echolocation, a means of navigating in the dark by listening to the echoes of sounds they produce themselves. These calls are often at frequencies we cannot hear, hence the need for bat detectors. Add these adaptations to the ability to hibernate during the winter and you end up with a unique group of animals which have fascinated naturalists and scientists for years, and pose some important conservation issues for us to consider.

Bats vary greatly in size and weight. They can have a wingspan between 20-40cm, with head and body length of 3.5-5cm, and weighing between 3-40g. They are also unusually long-lived, with a lifespan of up to 30 years.



Pipistrelle bat. Photo by Henry Stanier

The diet of bats mainly consists of invertebrates, ranging from spiders and beetles to moths and flies. Some species are particularly specialised, such as Daubenton's Bat, which is thought to take small fish as well. Their predators include owls and cats, and when in hibernation, rats and weasels. One of the most important factors in their survival, is surviving the winter hibernation, a time when they can be easily disturbed, which can lead to death by starvation.

Where?

There are 18 species of bat in the UK, 17 of which breed here. Of these 12 are known to exist in Bedfordshire, Cambridgeshire and Northamptonshire. A thirteenth species, Alcathe Whiskered Bat, may well be in the area as well but it is a cryptic species, not easy to distinguish in the hand, let alone with a detector.

Some species are woodland edge specialists and as the woodland habitats in the UK have been progressively reduced and fragmented, they have increased in number; Pipistrelle bats for example. Woodland species are far less common than on the continent, where large blocks of habitat still exist, though these too are threatened. Other species, such as Daubenton's Bat our 'water bat', are normally found in close proximity to rivers and lakes, while species such as the Barbastelle are closely associated with remnants of ancient woodland linkage, such as the Rockingham Forest and West Cambridge Hundreds.

As bats must drink, especially the females when producing milk for their young, calm, open water is one of the best places to seek them out. In addition to drinking, many aquatic insects including midges and mosquitoes are fed upon by bats and so rivers, lakes and ponds are ideal 'watering holes' and feeding sites for many species of bat.

Many species have a south-westerly bias in their distribution in this country (a common feature amongst our wildlife), some species only being found in the south and in Wales, such as horseshoe bats. This means that in some cases the three counties mark the limit of distribution (northwards) for some species, particularly in the case of breeding, such as the Serotine, a warmth loving bat. For information on individual species see 'Introduction to local bats' on our website).

When?

Bats are nocturnal, with many of their activities taking place between dusk and dawn. That does not mean that you will never see a bat during the day. During periods of hunger they can be seen foraging during the daytime. In hot weather bats can be seen in the entrance, or even outside a roost, trying to keep cool. Noctules have been seen exhibiting this behaviour. They can often be heard calling in the evening, from the entrance of deserted woodpecker holes they have taken over.

A year in the life of a bat includes hibernation between November and March, and then increased activity including feeding, rearing young and then courtship and mating, from April to October. Breeding males live alone, whilst females are well known for living together in maternity roosts, where they give birth and care for their pups, usually one per female. These maternity roosts can be made up of just a few individuals, as is the case with the Barbastelle. Pipistrelle maternity roosts can comprise hundreds of bats and watching them emerge at the start of evening can be spectacular.

Some species of bat emerge from their roosts earlier in the evening than others. Generally speaking, Noctule bats are earliest. Once upon a time it was not unusual to see this species feeding high up in the early evening amongst the swallows and martins, as it is a fast, high-flying species; but this sight, like the bat is now an increasingly rare one. As the evening progresses the emergence of Noctules is followed by Pipistrelles and then *Myotis* bats, a genus which includes Daubenton's, Natterer's and Whiskered Bat.



Daubenton's Bat in hibernation. Photo by Henry Stanier

Why we are interested in them?

Habitat fragmentation, roost disturbance and loss, as well as the decline in the availability of food has impacted heavily on bat populations, resulting in the need for legal protection of bats and their roosts. Some bat species have become extinct in the three counties, the populations of others are declining and becoming rare, a condition which is not their natural state.

Keeping our big wetlands under surveillance using bats will allow us to assess the value of these important conservation features but also progress ideas for monitoring the landscape.

As part of a wider approach to monitoring, woodland linkage within our Living Landscape is being investigated using bats. Individual Living Landscape projects target areas where it is important to reverse the trend of habitat fragmentation and enhance and maintain an ecologically viable mosaic of habitats for both wildlife and people, with nature reserves which are basically bigger, more linked up and so better. Bats will benefit from this approach providing them with suitable feeding habitats closer to their roosts and so by monitoring their behaviour we will be able to monitor our success of the Living Landscape projects.



Brown Long-eared Bat is a woodland species. Photo by Henry Stanier

Where can I learn more?

- Altringham, J.D. (2003) British Bats, New Naturalist series. HarperCollins. Good overview of British bats.
- Dietz, C. & von Helversen, O. & Nill, D. (2009) Bats of Britain, Europe and Northwest Africa. A & C Black Publishers Ltd. Essential reading and reference book for those who are really into their bats.
- Jones, K. & Walsh, A. (2006) A Guide to British Bats, 3rd Ed. Field Studies Council. Useful folding chart.
- Richardson, P. W. (2000) Bats. Whittet Books. London. An entertaining and very informative book.

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