

Leading members of the public around after dusk looking for bats has proven to be an increasingly popular event and a great way to get communities involved in their local greenspaces. Bat walk leaders need to have a level of experience and knowledge of bats. We recommend that if no-one in your group has this experience then you contact your local bat group, or another organisation that leads walks to see if they could help. Alternatively, BCT runs training courses on organising and leading bat walks.

Things to remember...

1. Planning

Location, appropriate date, access requirements, sunset times and assistants should all be considered when planning a bat walk! Parks with a range of habitats including woodland and water will provide a greater opportunity for finding bats. Bats are most active from April-September with peak activity at sunset, remember this may be late in June and July.

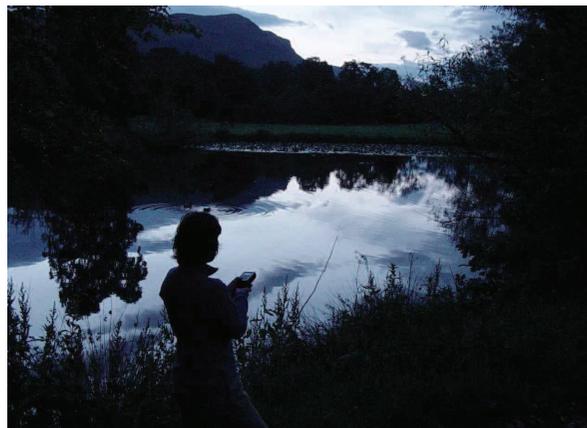
Will you need special access to the park? Is the park safe at night? Make the route you follow as accessible as possible. Bat walks can, and should, be accessible to all members of your community.

Make sure at least one other person will be available to help on the walk. Two of you will generally be ok for a group of 15 people but consider how many might turn up!

2. Promoting and publicity

What is a bat walk? Where and when does it take place? Describe what is involved in promotional material and clearly include the day, date and time (including the likely finishing time). Tell people to wear suitable clothing and footwear for the weather conditions. State some details of the route (rough distance, suitable for wheelchairs/prams).

Advertise as widely as possible. Posters and flyers in the park prior to the date can raise interest. Walks can be promoted on the PBC website.



3. Prior to the walk

Check your route and check the weather! Ensure you have all the appropriate equipment including bat detectors and leaflets. This can also be a good opportunity to promote other activities and the Friends group.

You should plan in advance an introductory talk on: who you are, a brief introduction to bats and their conservation, where you will be going and what you hope to see. Cover any health and safety issues.

4. On the walk

Ensure everyone gets a go with a detector and understands what they are hearing. As you walk, describe the bats that you see/hear, habitat types, roosting, conservation status etc... Try to make sure everyone can hear you and walk at a suitable pace. Share questions that may be asked. Overleaf are some examples of FAQ. Don't worry if you get ones you can't answer! There is a lot we don't know about bats so the best thing is to offer to get back to them with an answer or refer them to the BCT website. Make a record of the bats you see, this will allow you to put together a picture of bat activity in your park over time.

5. After the walk

Check that everyone is accounted for. If possible, take contact details (email often easiest) to provide people with more information on bats, future walks, and the work of the Friends group.



What kinds of animals are bats? Are they furry? Do they lay eggs? Are they flying mice? How long do they live?

Bats are mammals. Like all other mammals, bats have hair or fur on their bodies, they don't lay eggs, they are warm-blooded and their babies feed on their mother's milk for at least a few weeks after birth. Bats are more closely related to humans than to mice. Bats are the only mammals that can fly. Bats can live for up to 30 years.

Do they fly like birds?

No. A bat's wing is shaped completely differently. A bat's wing has very similar bones to the arm and hand of a human, with skin stretched between the very long finger bones and the body to form the wing membrane.

What do bats eat? Do they suck your blood?

All baby bats start life feeding on their mother's milk. Once they are weaned the type of food they eat depends on the species of bat. Different bat species eat different food. However, all adult British bats eat only insects. Three out of over 1000 species of bats drink the blood of other animals such as cattle. These three species live in South America – so there are no vampires in Transylvania! All bats have very big appetites, because flying uses up a lot of energy. The pipistrelle can eat over 3000 insects in a night!



Are bats blind? How do they catch their prey in the dark?

Do bats get tangled in your hair?

Bats are not blind, but at night their ears are more important than their eyes. As they fly they make shouting sounds. The returning echoes give information about anything that is ahead of them, including the size and shape of an insect and which way it is going. This system of finding their prey is called **Echolocation**. Most of these sounds are too high-pitched for humans to hear, but they can be heard on a special instrument called a **bat detector**. They also have good steering – they won't get caught in your hair!

What do bat detectors do?

Bat detectors turn sound we can't hear into sound we can hear. Most people can hear sounds up to 20kHz in frequency/pitch. Bats echolocate at frequencies higher than this so their calls are usually beyond our hearing. Bat detectors help us listen in to sounds we aren't normally aware of. This lets us know bats are flying about even when we can't see them.

Bat sounds

Roost noises	Chatters and chirruping sound between mothers and young in the roost. Audible to our "naked" ears.
Ultra sounds	Sounds above 20kHz, i.e. beyond our hearing.
Echolocation	Using sound to navigate and find food (dolphins do this too).
Feeding buzz	The delightfully rude "raspberry" sound heard as bats home in on an insect.
Social calls	Very short rasping sounds, often heard when there seem to be lots of bats but few insects around.

Bats are not blind; in fact they can see almost as well as humans but to fly around and hunt for insects in the dark, they use a high frequency system called echolocation. This works similarly to sonar. Bats make calls as they fly, and listen to the returning echoes to build up a sonic map of their surroundings. The bat can tell how far away and what something is by how long it takes the sounds to return to them.

Bat Detectors

Bat calls are usually pitched at too high a frequency for humans to hear naturally - but they can be heard by using a bat detector. Individual bat species echolocate within specific frequency ranges that suit their environment and prey types. This means that we can identify many bats simply by listening to their calls with bat detectors.

Heterodyne detectors

These are tuneable - you select the frequency range to listen to. This makes them the best detectors for immediate identification of bats in the field. They work by filtering the inaudible bat sound with an ultrasonic signal from the detector, and producing the audible difference between the two sounds.

Sounds can be recorded and then replayed. They are the cheapest of the detectors and are simple to use, making them ideal for beginners.

Frequency Division and Time Expansion detectors

These detectors are more advanced and detect all frequencies so there is no need to tune into a specific frequency, and you don't miss any bats. Sounds can be recorded and used with sound analysis software. Time expansion allows a very detailed analysis. They are generally mid to high-price but cheaper versions tend not to retain amplitude information.

More information on detectors, prices and suitability can be found at www.bats.org.uk



Surveying

There are many ways to survey for bats and all of them are very useful at providing a picture of local, regional and national trends in bat populations. Surveys are suitable for a range of people from absolutely beginners to those who are more experienced at bat detection.

National Bat Monitoring Programme (NBMP)

The NBMP survey procedures are carefully designed so that anybody can take part in monitoring bats. By being involved you can make a great contribution to bat conservation and be part of the network providing vital information on national population trends. We run different surveys which cater to different levels of experience and knowledge. See overleaf for details of surveys and mapping.



Sunset / Sunrise Survey (Beginner: no detector needed)

There are two parts to this survey and you do not need a bat detector for either. You can also either be involved in the evening or morning survey...or both! The Sunset Survey simply involves spending the evening in your garden and watching out for any bats that fly past. The Sunrise Survey involves going out just before dawn to look for bats swarming before they return to their roost.

Colony Count (Beginner: no detector needed)

Surveyors are asked to count numbers of bats emerging from roosts at sunset on two evenings during the survey period. Surveyors choose their own roosts. Species counted include pipistrelle, Serotine, Natterer's and brown long-eared bat roosts.

Field Survey (Some experience: heterodyne detector)

Surveyors are asked to walk a triangular route in a randomly allocated 1km square on two evenings in July to record noctule, serotine, common pipistrelle and soprano pipistrelle bat activity with a bat detector.

Waterway Survey (Some experience: heterodyne detector)

Surveyors walk a route along a randomly allocated 1km stretch of river or canal on two evenings in August to record Daubenton's bat activity with a bat detector and torch. You need access to a bat detector and a torch.

Woodland Survey

(More experienced: frequency division detector)

Surveyors are asked to walk a 60-70 minute transect in a woodland of their choice. All species are recorded. Continuous recordings are made and these are analysed by BCT staff in order to identify and quantify the species that are present.

Hibernation Survey (Licensed: no detector needed)

In order to take part in hibernation surveys you need to hold a hibernation licence or know of a licensed surveyor who can accompany you.

Local and Park Surveys

You can replicate the methodology used in NBMP surveys, ranging from simply visual sightings of bats to more randomised and accurate detection, to survey your park and over time gather data on your park's bat activity. Additionally, your local council may be interested in this information so make sure you inform them once you start monitoring.

You may be able to include your park within one of the NBMP surveys (e.g. sunset survey, field survey). This means data you gather will not only be useful on a local level but will inform regional and national data collection. To discuss this, contact the NBMP team.

Details of all the surveys and sign up forms can be found at www.bats.org.uk/nbmp

The Great Big Bat Map

As part of the Count Bat project, we have launched the Great Big Bat Map to provide data on bats around London and rest of England. By logging onto the website, the public can record any bats they might have seen flying over their local parks and gardens. This will allow you to see where bats have been spotted in your local area. For more information and to get involved visit:

www.bats.org.uk/batmap

Community events and open days are a great way of getting more people into the park. If people visit once, they are more likely to return again... especially if they have a great day! Other Friends of Parks groups have also found community fun days to be a good way of promoting the Friends groups and getting more people from the local community involved.

Planning and arrangements

Overleaf you will find some examples of bat related activities that have been successful in the past. Always ensure that you have notified the site managers or owners of your plans well in advance of the event! Additionally, local bat groups always like to know about bat events taking place in their local area so do let them know when you are organising something and they may be able to help.

Promotion is a key aspect of running events. There are many different methods including emails; posters in parks, libraries, local schools, surgeries and community halls; door flyers; local radio and, of course, the Park Bat Champions website.

All events and activities should be as accessible as possible for all members of the community. Consideration of access requirements are particularly important for bat walks, slideshows and outdoor activities. Visit www.bats.org.uk/countbat for more information and advice on accessibility.

Funding and Fundraising

Events are a great way of getting some local fundraising underway. There are also a number of grants available to local community groups (some specific to Friends groups) to enable work that develops the involvement of local communities in conservation and improves biodiversity. Contact your local Council for Voluntary Service or the Count Bat team for possible funding streams.



Partnerships and organisations

Working in partnership with other organisations to run events and activities will increase the likelihood of a successful event. It is also an opportunity for local groups and people to come together whilst promoting your park and the importance of looking after your greenspace. Partnerships can be established with a range of organisations including local schools who may become involved in planting days, community groups and national organisations.

- **Greenspace** is a charity working across the UK to promote the economic, social and environmental benefits that parks and greenspaces provide. Greenspaces organises the annual 'Love Parks Week' – an ideal time for Friends groups to celebrate their greenspace.
www.green-space.org.uk
- **BTCV** has over 40 years experience of promoting conservation volunteering across the UK. Involvement is integral to their objectives working with all members of the community to promote conservation and volunteer opportunities.
www.2btcv.org.uk
- There are 47 local **Wildlife Trusts** across the UK. Many wildlife trusts run bat walks and manage local nature areas. Volunteering and community involvement are vital to their work.
www.wildlifetrusts.org

There are numerous other national and local organisations that can be approached for information, advice and partnership work. Your local Council for Voluntary Service may have lists of local organisations. Don't forget there are a wealth of groups on your doorstep including local schools, libraries and community halls.

European Bat Weekend is a celebration of bats held by the Bat Conservation Trust at the end of August each year. It encourages thousands of people to see and hear bats in their natural environment by taking part in a range of events organised by local bat groups, parks, wildlife trusts, countryside rangers and other organisations across the country.

European Bat Weekend (EBW) is a great opportunity to get local people involved in events to promote bat conservation, with the knowledge that other parks around London and the rest of the country will be joining in. Local organisations and bat groups run a range of different events during this time. All events can be uploaded onto the Interactive Map on the BCT website for promotion. This year we would like as many parks as possible to get involved. Below are some suggestions of events that could be run.

Bat walks

EBW is a great time for bat walks! There will be hundreds of volunteers around the country out on walks and surveys so why not get your local community involved. If you do not have a leader with experience, contact your local bat group to see if they have someone to suggest. Alternatively, keep an eye on the Count Bat events page to see if there is any training coming up on leading and organising bat walks.

Build a Bat Box

More information on bat boxes can be found on the Parks and Bats information sheet. Why not offer a stall at EBW for people to sign up to make bat boxes for the park? You may find that a local wood shop is willing to donate off cuts of wood to be used to make the boxes. This saves you money and reduces waste!



Bat Gardening

Why not have a stall with shoots or small plants that attract insects and thus bats? People can purchase these to make their gardens more bat friendly. Alternatively, get the community involved in a bat gardening day. If you have a wildlife area, why not spruce it up with some insect friendly, native plants? Or you could even have a competition to design a bat garden.

Bats for kids

There are loads of different art and craft activities that kids can enjoy. Visit the bats for kids page of the BCT website for templates. This include: bat masks, bat hats and bat kites. Children will really get into this and all you need are a few materials and enough supervisors!



Bat Hunt

Treasure hunt? Nah, go for a Bat Hunt! Place cut out or toy bats around the park and let people go and find them. Encourage them to think about the habitats that bats like and where you might find them. You could even have clues on each bat that will lead the person on to the next bat...and maybe a final prize? Bat cookies are always a favourite...

Chiroptera Park

For one day only, why not make your park into 'Chiroptera Park'! This is a take on Jurassic Park with Chiroptera being the latin name for the order of bats. If you have the volunteers, why not have different stalls and events around the park. These can be a combination of the suggestions above or others that might people may enjoy...bat face painting, quizzes, bat bingo, even a giant bat challenge where children are encouraged to make a bat out of recycled material to be displayed around the park.



Parks and greenspaces are a wonderful place for people and wildlife to come together. Many parks have ideal habitats for bats to feed and roost in. The presence of open space, trees, and often ponds or a stream is beneficial for bats. There are many things that can be done to improve habitats for bats and turn your park into a diverse wildlife haven.

Bats and plants both need insects!

All of Britain's bats eat insects. Flight and echolocation use a lot of energy and so bats will eat vast numbers a night. The common pipistrelle can eat over 3,000 insects in one night! The insect diet depends on the size of the bat and includes midges, mosquitoes, flies, beetles, moths and crane flies. In turn, plants rely on insects for fertilisation. The colour, scent and nectar of flowers act as a form of advertising to insects, allowing pollen to be transferred from plant to plant. Different plants attract different types of insects. The key to successfully attracting wildlife, including bats, is to provide a plentiful and diverse range of plants that will ensure a good supply of insects.

Park Planting Days

A good way to increase the chances of bats feeding in your park, and getting local people involved, is to hold a park planting day. This does depend on current management practices and should be undertaken in consultation with the council. However, most will be glad to have volunteers making their parks a better place! When thinking about bats, try to include plants from the following:

- Flowers that vary not only in colour and scent but also in shape
- Pale flowers that are more easily seen in poor light and thus attract insects at dusk
- Native wild flowers will attract far more species of insect than exotics
- Flowers that bloom throughout the year



Trees, shrubs and hedgerows

These are particularly important for insect larvae and can provide roosting opportunities for bats. Hedges around parks rather than fences are not only more attractive but create a buffer zone for the wildlife within and 'commuter belts' for bats. The following are very likely to attract bats:

- Old trees
- Old woodpecker holes and rot holes
- Dead wood, dying wood and loose bark
- Ivy and other dense climbers such as honeysuckle
- Most species of tree can house bat roosts but oak and beech appear most suitable

Tree management in parks is important for both nature and public health and safety. However, these do not have to be in conflict. Encourage the council to retain dead trees where appropriate and ensure that they check for potential bat roosts if removal is necessary. Dead trees that

have been cut down can be turned into log piles, providing homes for many insects and retaining the nutrients in the decaying wood within the park.



Ponds, lakes and streams

Water provides a wealth of insects and many bat species feed over water for precisely this reason. Species like Daubenton's bats and soprano pipistrelles are unlikely to be found when water is not present. Native marginal plants on pond edges and streams will encourage insects. Even a small marshy area will increase the biodiversity of a park. Why not see about creating a bog garden in your park?!



Bat boxes

Bat boxes are artificial roosts, usually made of wood or woodcrete (a mixture of wood chips and concrete). They are designed to encourage bats into areas where there are few natural roosting sites, such as woodpecker holes in trees. Bat boxes have a useful place in bat conservation, but it should be remembered that bats take to boxes less readily than birds.

Various designs of bat boxes are available commercially but with a few materials and tools you can make your own. Bat box building days raise awareness of bats, get people involved, and save money! Boxes can be cubic, wedge or crevice shaped with narrow entrances at the bottom. They can be attached to trees or buildings using nails or wire. Ensure that nails used on trees are appropriate to allow tree growth and reduce damage to saws or machinery that may be used in the future.

When making bat boxes, it is important to remember that bats do not like drafts. Well-sealed joints are important whilst removable lids should be avoided. All timber used should be rough-sawn to allow bats to climb and should be untreated as bats are very sensitive to chemicals. A special licence is required under law to inspect bat boxes and disturbance without this is illegal. Contact your local bat group and talk to your Parks Officer if you want to be able to monitor your bat boxes.

Bat boxes are most likely to be used if they are located in places where bats are known to feed. Ideally, two or three boxes should be placed facing in different directions to allow a range of roosting temperatures throughout the year. However, a single box has the chance of being used. The important thing is to ensure that there is a clear flight-line to any boxes and that a reasonable amount of sun reaches the box.

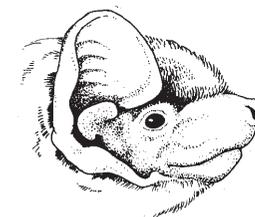
More information on suitable plants about bat boxes can be found at www.bats.org.uk/encouragingbats



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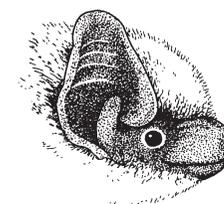
Name	Emergence	Flight characteristics	Echolocation call	Wingspan and weight	Other info
Noctule	Early in the evening just before dark (15 mins before sunset)	Fly high and fast in the open. May be seen swooping down to catch prey. Narrow pointed wings.	Call with a slow repetition rate best heard at 20-25kHz. Sounds like a 'chip-chop'	32 - 45cm; 18 - 40g	One of largest British bats. Favoured roosts are trees. Eats moths, beetles, mayflies, winged ants.
Leisler's bat	Emerge at a similar time to Noctules and often confused with them.	Fly high and fast with shallow dives although may be seen close to the ground along well lit roads and lanes.	Call with a slightly faster repetition rate to the Noctule best heard at 25kHz. Similar call to Noctule although less strident and less frequent 'chops'.	26 - 32cm; 12 - 20g	Similar to the Noctule but smaller and with shaggier fur. Roosts in trees and buildings. Eats flies, moths, caddis flies and beetles.
Common pipistrelle bat	Around sunset	Very manoeuvrable flight with irregular twists and turns. Fly around street lamp height.	Call with a medium repetition rate best heard at 45kHz. Sounds like 'wet slaps'	19 - 25cm; 3 - 8g	Very small with dark brown fur. Often roost in buildings and feed on midges, mosquitoes and other small insects. Most frequently heard bat.
Soprano pipistrelle bat	Around sunset	Very manoeuvrable flight with irregular twists and turns. Fly around street lamp height. More associated with water.	Call with a medium repetition rate best heard at 55kHz. Sounds like 'wet slaps'	19 - 25cm; 3 - 8g	Very small with dark brown fur. Often roost in buildings and feed on midges, mosquitoes and other small insects.
Nathusius' pipistrelle bat	Around sunset	Very manoeuvrable flight with irregular twists and turns. Fly around street lamp height.	Call with a medium repetition rate peaking at 39kHz. Sounds like 'wet slaps'	19 - 25cm; 3 - 8g	Rare species of pipistrelle only differentiated from others in 1997. Little is known about distribution.



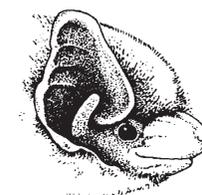
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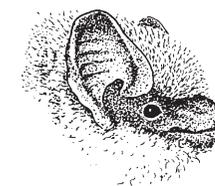
Leisler's



common pipistrelle



soprano pipistrelle



Nathusius' Pipistrelle

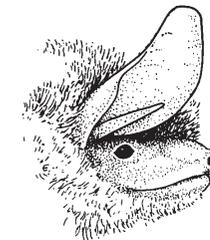
Name	Emergence	Flight characteristics	Echolocation call	Wingspan and weight	Other info
Serotine	Around sunset	Broad wings and a leisurely, manoeuvrable flapping flight. Often flies at tree-top height close to vegetation.	Call with slightly faster repetition rate to the Noctule best heard at 25-30kHz. Irregular call with emphasis often on random beats.	32 - 38cm; 15 - 35g	Larger bat that roosts in buildings. Eats mainly flies and moths at start of summer, moving on to chafers and dung beetles later.
Daubenton's bat	Usually emerge later (40-50 mins after sunset)	Flies fast often over the surface of water. May be seen taking insects from the waters surface with their feet.	Call with a fast repetition rate best heard at 45-50kHz. Sounds like a ball-bearing bouncing/Geiger counter/machine gun.	24 - 27.5cm; 7 - 12g	Medium-sized bat. Roosts in trees, tunnels and bridges. Feeds on flies over lakes, rivers and ponds.
Natterer's bat	Usually emerge late (40-60 mins after sunset)	Fly at slow-medium speed, often low to the ground and may be seen swooping up into the tree canopy. Often associated with woodland.	Very quiet call with fast repetition rate peaking at 50kHz. Irregular call sounds like crumpled cellophane (very similar to Daubenton's bat)	24.5 - 30cm; 7 - 12g	Medium-sized bat with pinkish limbs. Roost in stone building, barns and trees. Feeds on flies, moths and spiders.
Brown long-eared bat	Usually emerge when fully dark (45-65 mins after sunset)	Have a slow, hovering flight often close to trees.	Very quiet call with a very fast repetition rate best heard at 35-50kHz. Difficult to pick up on detectors, may be seen instead.	23 - 28.5cm; 6 - 12g	Medium-sized bat. Roosts in barns, churches and trees. Feeds on moths, beetles, flies, earwigs and spiders. One of the most common species.



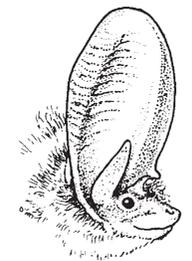
serotine



Daubenton's



Natterer's



brown long-eared

Illustrations by Tom McOwat

Other bat species that have been recorded in London include:

- Grey long-eared bats: very similar to brown long-eared bats but less common
- Brandt's and Whiskered bats: hard to differentiate and only a few records in London. Similar calls to Daubenton's bats although quieter.
- More information on all of the above species can be found on the species factsheets, available to download from BCT website: www.bats.org.uk