

Conservation Research Africa’s Bat Advice document for the public



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Wildlife Assistance Helpline

Conservation Research Africa have started a **Freephone Wildlife Assistance Helpline** offering advice and site visits to Malawian residents who are having problems with wildlife around their homes; specifically bats and carnivores.

If you can't find the solution you're looking for below, or you want more information or a site visit, please call our free Helpline number: **5152**

General bat biology

WHAT IS A BAT -

- Bats are mammals like humans, rodents and carnivores.
- Like other mammals they have hair or fur on their bodies and are warm-blooded.
- However, bats are the only mammals that can fly.
- A bat's wing has very similar bones to the hand and arm of a human, with skin stretched between the very long finger bones and the body to form the wing membrane.
- Bats are generally small, most weighing less than 100 grams
- Very few predators specialise on bats - The main bat predators are owls, hawks, and falcons, and snakes.

BAT BIODIVERSITY –

- Over 1,300 species of bats in the world
- 20% of all mammals
- Second largest order of mammals after rodents
- There is higher species diversity in the tropics like Africa
- There are an estimated 64 species that occur in Malawi

BAT LIFE CYCLE –

- Female bats give birth to generally one or two babies, usually only once per year
- Many species will give birth just before the rainy season when climate and food resources are optimal.
- Some species will breed anytime of the year
- The care and feeding of young bats is exclusively the responsibility of the female. From a very young age, baby bats produce vocalisations that can be recognised by the mother.

- Females of smaller species generally leave their young in the nursery roost while they forage, while larger bats may carry them on feeding flights.
- For their size, bats are relatively long-lived mammals, some species have been recorded as living at least 30 years

ROOSTING BEHAVIOUR –

Types of roosts

- Bats move around different roosts according to their needs (hibernation, mating, rearing young)
- Benefits for bats by roosting together:
- Social interactions, protection from weather and predators, conserving energy and keeping their temperature stable
- Bats occupy a variety of different roost structures throughout the year

Foliage roosting bats

- Variety of trees and understorey plants used, including vines, dead & live trees.
- Some in dense canopies, some select open vegetation
- Females with young tend to roost higher in canopy
- These species often have cryptic markings or bright pelage for camouflage with the leaves & fruits
- They might move roosts within 1-10 days
- Many have evolved specialised thumbs & feet for foliage roosting
- Sucker pads to cling to furled leaves

Crevice-dwelling bats

- Using many structures: tree cracks, under bark, in wall cavities, behind pictures, signs, tiles, chimneys.
- Often in built structures including old & modern houses, bridges, barns and churches
- As natural roost sites are destroyed or disturbed by humans, bats are increasingly relying on man-made structures

Common Bat Enquiries

1.A. INJURED / GROUNDED / BAT ON WALL

Bats will sometimes be found on the ground or a wall. There are a few possible reasons:

1. Injured – the bat has an injury that prevents it from flying such as a broken wing. This could either have occurred by a mistake whilst flying or by an attempted predation by a cat, hawk, other bat or human
2. Dehydrated/ill – Sick bats will occasionally be found grounded. This could either be from dehydration or an illness if there is no obvious physical injury.
3. Young or baby bat – Especially during the wet season when many bats are born, baby bats could either drop off the mother as she is flying (females of many species will carry their young when they are foraging and the young are still small), or young bats still new to flying could make flying errors and ground themselves.
4. Hunting – Some bat species will perch or crawl over vertical surfaces such as building walls or trees when either they are about to start feeding or whilst they are feeding – although a lot of species will hunt insects in flight, others will wait on a surface for insects to fly past. Also, bats that eat fruit will sometimes take their fruit to a location where they will then consume it.

1.B. BAT FLYING IN HOUSE, GARDEN OR OFFICE

Bats flying around the garden are likely to be either hunting insects (sometimes attracted to outside lights which attract insects) or feeding on fruit from fruiting trees. The other possibility is that they have a roost nearby.

Bats that feed on insects use echolocation to locate insects from as small as mosquitos to larger moths and flying beetles. They will often fly around an area catching them out of the air, and so can seem like they are flying around your head if you are standing near a good feeding ground.

Bats that are flying around inside a building – house or office – have likely entered accidentally and will not want to stay. However they could also be using the building for roosting, and either want to leave the roost or re-enter after feeding. This could either be a roost used during the day where they sleep from dusk until dawn, or for some bats it could be a night perch where they will rest periodically during the night between feeding bouts.

1.C. BATS ROOSTING IN HOUSE OR OFFICE – SMELL/NOISE

Different bat species choose different sites to roost. Some species roost in crevices, which can be found in natural locations like under the bark of trees, but also found in man-made structures such as gaps in walls or roofs. They will chose somewhere with direct access to the outside, and some roosts will only have a very small entry/exit gap.

Roosts in Malawi can as few as one or two bats or as many as a few hundreds, however most roosts found in buildings are likely to be fewer.

Bats don't cause damage as they are not rodents – they do not chew on electrical cables, wood or brick, and they do not use nesting material or eat inside the roost. They also don't multiply rapidly – most species will only give birth to one baby a year.

The most common issue with bats roosting in buildings is the noise they make, and the smell and mess from their droppings. Bat droppings do not contain ammonia like rodent droppings and so will not damage timber, and most species that roost in buildings eat insects which means their droppings are dry and do not rot or stain.

Insectivorous bats consume vast numbers of insects including biting insects like mosquitos. Having bats roosting in your house could reduce the number of these biting insects around your house.

Bats found in trees during the day have chosen that tree for their roost, and numbers could be a few, or up to a few hundred. Bats roost together for safety and for warmth in colder climates or during the colder times of the year. The roost is an important location for the bats to interact and communicate with each other, which is why some roosts are noisy.

When fruit bats are stressed or frightened, they make a lot more noise. Colonies tend to be noisiest when they are disturbed by people and least noisy when left alone.

Fruit bat roosts do tend to smell but not because of dirtiness but because males have scent glands that they use to communicate with each another and attract females.

1.D. BAT BITES AND DISEASES

Research has revealed that more than 60% of emerging infectious diseases are zoonotic, and that like other wildlife, are a potential source of human disease. Over the last decade, increased surveillance and improved techniques for disease detection have implicated bats as likely reservoirs and vectors for a lengthening list of pathogens that can affect humans and domestic animals. For more information, please visit the Bats and Human Contact on the Bat Conservation International's webpage: www.batcon.org/resources/for-specific-issues/bats-human-contact

Rabies:

Rabies is a preventable viral disease of mammals most often transmitted through the bite of a rabid animal. A rabies-like virus called lyssaviruses has been found to infect bats in Africa, and the effects extremely similar to rabies.

An exposure to rabies or lyssaviruses most commonly occurs when a person is bitten by a rabid animal. It can also be transmitted when the saliva from a rabid animal comes in contact with a person's mouth, eyes, nose, or a fresh wound.

A very low number of bats have been found to carry rabies in Southern Africa. However nearly all cases of rabies transmission to humans comes from dog bites.

When a person is exposed to rabies, timely administration of a vaccine known as post-exposure prophylaxis (PEP) can prevent infection. Once a person becomes infected and symptoms begin to occur, rabies is almost always fatal.

Since rabies is transmitted by the bite of an infectious bat or by its saliva entering a wound or mucous membrane, there is no risk to people if they do not approach or handle a bat. As long as you don't handle bats, you do not need to worry about bats and rabies. There is no transmission via bat urine or faeces.

There are two forms of rabies: dumb and furious. The dumb form is far more common in bats, whereas the rabies that generally affects dogs is furious rabies. Furious rabies demonstrates the stereotypical rabid animal that is vicious and will attack without provocation. Dumb rabies usually invokes a lack of fear of humans and it is a rapidly progressing paralysis that lasts three to five days before death. Wild animals normally avoid human contact so if a wild animal like a bat does not seem cautious when you approach it, it may be rabid.

Bats are not aggressive, although like any wild animal, they may bite to defend themselves if handled, particularly if injured and in pain. A bat that appears to be baring its teeth is actually 'scanning' you with its unique method of echolocation - building up a picture of its environment by using a type of sonar, which is mostly inaudible to humans.

However, even injured bats could still administer a bite. If you do need to handle a grounded or injured bat, always wear thick gloves to avoid getting bitten, or pick it up gently with a thick cloth.

A bat bite is usually a sharp pain like a needle, and even if it breaks the skin it could be hard to see. Wash the wound immediately with soap and water for at least five minutes. Additional cleansing of the wound site with an alcohol base or other disinfectant (e.g. iodine solution) is also recommended.

There is an effective treatment available from the doctor for those exposed to rabies; this must be administered as soon as possible after exposure.

Ebola

The infectious strain of Ebola causing the epidemic in West Africa appears to be Zaire ebolavirus. Infectious disease experts believe that fruit bats may be a natural reservoir for Ebola and can infect other animals, including humans, livestock and primates, through their droppings or half-eaten fruit, or from direct exposure to the blood or other bodily fluids of diseased bats. Whether fruit bats carrying Zaire ebolavirus made the 2,000-mile flight to West Africa is not known.

Some scientists believe the thriving underground importation of primates and bushmeat from Central Africa may be a more likely route of transmission. Those handling or eating killed bats, gorillas, chimpanzees, bonobos and other primates put themselves at risk of contracting such diseases.

1.E. BATS IN GARDEN OR EATING FRUIT FROM GARDEN

Fruit bats are bats that do not use echolocation and do not hunt insects; they eat ripe fruit from trees. Most bats prefer to carry fruit away from the tree before eating, apparently to avoid predators. They cross cleared areas and sometimes travel up to 50 km or more in a single night.

Fruit damage is also inflicted by a range of other pests including birds, fruit flies, rats so damage without seeing the culprit may not always be bats.

Fruit bats often eat fruits that ripen either too soon, or too late to be found by pickers, or those that are simply missed so crops that are picked green are seldom damaged by them.

Over-ripe fruits become breeding grounds for insects and fungi that can be far more serious pests than bats. If the local fruit bats are killed off, these fruits will no longer be eaten. This gives insect pests plenty of food and places to breed. Fruit bats also clean up by eating over-ripe fruits in the wild. These fruits would otherwise rot on the ground and provide more breeding ground for fungus and insect pests.

Fruit bats control insects in another way. Up to 25% of a fruit bat's diet has been shown to be insects on the fruit, so they are helping to protect the very fruits that they damage. Bats also pollinate fruit trees, both on farms and in the wild.

In one study done in Western Africa, up to 95 percent of forest regrowth on cleared land came from seeds dropped by bats.

Myths and truths about bats

BATS WILL NOT TRY TO BITE

Bats are shy animals and do not want interactions with humans. When they are in flight they are either catching flying insects or flying to roosting or feeding trees. Bats may bite if touched, so this should be avoided.

BATS ARE NOT DIRTY AND DO NOT ALL CARRY DISEASES

Bats are clean animals, they spend an enormous amount of time grooming their fur. There are very few diseases that can be caught from bat faeces or urine, and they would need to be ingested. Aside from this, there is only a risk of diseases by being bitten by a bat, or by eating one.

VERY FEW BATS CARRY RABIES

Very few bats will have rabies, and those that do will generally become ill and die before coming into contact with humans. They are capable of catching the disease just like any other mammal but the disease is not prevalent and you are at much more risk from rabid dogs. Rabies is transmitted through a

bite or a scratch from an infected bat. It is not spread through urine or faeces. Therefore you are at no risk if you do not handle bats.

BATS ARE NOT FLYING MICE

Bats are mammals but they are not flying mice; they are very distantly related to rodents, as distant as we are. They will not chew on cables, wires or wood.

Common Problems with bats and how to resolve them

Problem

"I HAVE FOUND A BAT ON THE GROUND/INJURED BAT/BAT ON THE WALL"

Resolution

A bat on the wall is normal and should be left alone. However bats will sometimes be found on the ground. Bats do not want to spend time around humans, so if you find a bat on the ground there are a few possible reasons.

- Injured – the bat has an injury that prevents it from flying such as a broken wing.
- Dehydrated/ill – Sick bats will occasionally be found grounded. This could either be from dehydration or an illness if there is no obvious physical injury.
- Young or baby bat – Especially during the wet season when many bats are born, baby bats could either drop off the mother as she is flying or young bats still new to flying could make flying errors and ground themselves.
- Hunting – Some bat species will perch or crawl over vertical surfaces such as building walls or trees when either they are about to start feeding or whilst they are feeding – although a lot of species will hunt insects in flight, others will wait on a surface for insects to fly past. Also, bats that eat fruit will sometimes take their fruit to a location where they will then consume it.

Don't touch the bat and don't let dogs or children near it because of the risk of the bat biting in self-defence. ABC request that you do not kill or further injure the bat - bats will not try to attack humans unless they feel threatened by being picked up.

If the bat is on the ground or in an exposed position outdoors, try to pick the bat up using a glove or a tea-towel and place it on a tree above head-height. Handle the bat gently as the wings are delicate, and

try to ensure that the wings are pressed to their sides and not able to flap free as they could damage them easily.

Bats will generally only fly after dusk, but they are good climbers and will climb up a tree to be safe until night falls. If the bat will not grip the tree it could be dehydrated or injured. Place the bat inside a cardboard box, put a loosely crumpled tea towel/soft cloth for the bat to hide under/cling to and a small, shallow container (e.g. a plastic milk bottle top) with only a few drops of water. Not enough for the bat to drown in. Put the box somewhere quiet and dark at room temperature and check later. If the bat is seemingly healthy, release it: place the box on its side somewhere about 2 metres from the ground or remove the bat (as before, with gloves) and place on a tree trunk. If the bat does not move, call our Helpline number at the top of this document.

If the bat is young, it is likely to have been dropped by its mother whilst she was flying, or made an error in flight if it has only just started flying alone. Baby bats use vocalisations to communicate with their mother, and so there is a good chance that the mother will return to collect the baby.

If the bat is in a safe place and not at risk from dogs or other animals (i.e. off the ground) leave the bat alone and return periodically (every 30 minutes) to check if the mother returns for it.

If the bat is on the ground and at risk from animals or being stepped on, use a glove or tea-towel to carefully pick up the bat and place it on a high wall that is open above for the mother to fly down, within the same area that you found it.

Problem

"THERE IS A BAT FLYING AROUND MY HOUSE, HOW CAN I GET IT OUT/WILL IT ATTACK ME?"

Resolution

ABC request that you do not kill or further injure the bat - bats will not try to attack humans unless they feel threatened by being picked up.

If the bat is flying around during dawn/dusk or at night, it is possible that it entered the building to hunt insects.

If the bat is flying around during the day, it could either have gotten itself trapped inside the house since the night, or it has been roosting in the house during the day.

If the bat flies into the house on a regular basis, there could be a roost or the bat could be using a part of the building for a night perch in-between feeding bouts. If the occurrence is a once-off, it is likely that the bat entered the building for hunting insects.

Having a bat fly around inside your house means they are probably eating flying insects that you consider a pest, like moths and mosquitos!

However a bat trapped inside a building will continue to fly around trying to find an escape route. Although bats have excellent flight navigation and do not want to be near humans, in a stressful

situation there is a chance that the bat will get close to humans or collide with them. Although a bat will not attack a human, there is the risk it will bite if grabbed at or picked up.

Firstly, open doors and windows to allow the bat to find its own way out, and switch off the lights to discourage insects which could have attracted the bat inside. If possible, leave the room to reduce the stress for the bat, and ensure children and dogs are not inside.

Allow at least 30 minutes for the bat to find its way out. If after 2 hours the bat shows no sign of leaving or has stopped to rest on a surface, it could be looking for a roost site or it could be ill. If you are not content to let the bat find its own way out during the night then please call our Helpline number at the top of this document.

To prevent bats entering again, determine where the bat may have entered the building and endeavour to block up gaps or keep windows closed after dusk. Outside lighting can attract bats because of the insects it attracts, so keeping windows closed near to outside lights will reduce the likelihood of the bat accidentally entering the house.

Problem

"THERE ARE BATS IN MY LOFT/ROOF/WALLS CAUSING SMELL AND NOISE AND I WANT TO REMOVE THEM"

Resolution

ABC advocates living alongside bats and reducing the impact they have on house owners rather than removing roosts. However we also want to encourage people to call the Helpline rather than pest control, so our team also carry out roost removals, ethically.

All genuine roost reports are entitled to receive a roost visit from ABC staff.

This could involve:

- Blocking off inside entrances so the bats can only enter from the outside
- Placing netting to prevent droppings reaching the floor
- Blocking or closing gaps on the inside of the building to reduce the level of noise
- Having ABC staff visitations to clean up droppings mess and keep a count on the roost

If you are adamant you want the roost removed, ABC can arrange for ethical removal of the bats and assist in blocking up the gaps to ensure bats do not re-enter.

Problem

"THERE ARE BATS IN MY GARDEN EATING FRUIT FROM THE TREES/MAKING A MESS"

Resolution

Have the bats been seen eating from the tree? Look for whole or partial fruits dropped on the ground beyond the tree's canopy. Inspect partially eaten fruits marked by distinctive scrapings from sets of large canine and tiny front teeth. Under the tree will have balls of fruit pulp and wet droppings. These are all unique indicators of bats rather than other animals like rats or birds.

Ways to prevent bats from eating fruit:

- Pick fruits a day or two early before they mature completely. Fruit-eating bats prefer their meals ripe or overly ripe.
- Hang distracting objects from and near your fruiting plants - anything highly visible that moves easily or makes noise (shiny objects are especially effective).
- Having dogs stationed around fruit trees should deter bats.