

# Cool facts about bats!

Australasian Bat Society

# Bats: Fascinating Creatures of the Night



- **Bats are the only mammals that can fly.** Their wings are modified hands – they have the same arm and hand bones as humans, but with greatly elongated fingers. They have a thin, elastic membrane that stretches between their fingers and is joined to their body and legs.
- **Microbats use a sonar system called echolocation.** They emit ultrasonic pulses of sound, and use the echoes to “see” a clear picture of obstacles to avoid and insects to catch. The echolocation calls of most species of microbat are well outside our hearing range, although we can hear the White-striped Freetail Bat (*Austronomus australis*) which sounds like two coins clinking together about once a second.
- **Flying-foxes don't echolocate.** They use their good eyesight and sense of smell to find their food. They do, however, make a lot of social calls when they interact with each other during the day in the camp and at night while feeding.
- **Microbats eat a LOT!** Flying takes considerable energy. As a result they eat lots, up to three-quarters of their own body weight in insects in a night!
- **Bats are natural aerial acrobats!** While most bats catch insects in their mouths, they can also catch insects in their wing membrane, flick them into the tail membrane, and then grab them with their mouth, all while in flight.



A Gould's Long-eared Bat (*Nyctophilus gouldi*) in flight showing the 'hand-wing.' Photo: Terry Reardon

## Forget all those myths about bats!

Many people don't realise that bats are actually gentle, furry native mammals that are highly beneficial to our Australian ecosystem. Although there is myth and mystery surrounding bats, the reality is much more interesting – bats are actually fascinating creatures!



The very friendly Gould's Wattled Bat (*Chalinolobus gouldii*). Photo: Lindy Lumsden

## Bats: our nocturnal neighbours

- There are approximately 1,200 species of bats around the world, in every environment except the polar regions. All bats in Australia are native species – none of them are introduced.
- There are two kinds of bats: large flying-foxes or fruit-eating bats (often called megabats), and the small insect-eating bats (often called microbats).



An alert Eastern Freetail Bat (*Mormopterus ridei*), and the same species in torpor (looking like it doesn't want to be disturbed!). Photo: Lindy Lumsden

- **Many microbats go into torpor (a mild form of hibernation) during winter.** Because of their small size, microbats have a very high metabolic rate. When they are active, their body temperature is around 40°C, and in flight, their heart rate can be up to an astounding 1000 beats a minute! During winter, when daytime temperatures drop and there are few insects around, microbats reduce their body temperature, sometimes to as low as 10°C. This way, they save energy when food is scarce.



Large Forest Bat with her newborn young. Photo: Robert Bender

- **Bats can fly large distances.** Flying-foxes travel thousands of kilometres to find areas with fruiting or flowering trees, and some cave-roosting microbats migrate hundreds of kilometres to special maternity caves.
- **Bats are amazing mums!** Most females give birth to a single young each year, although some species typically have twins. The young are very large when born – about 30% of the mother's body weight (that's equivalent to a woman giving birth to a 20 kg baby)! The pups are born in early summer when there is plenty of food available to support the mother and her developing young. The mother suckles her pup on milk until it is ready to fly, at 1-2 months of age.



Grey-headed Flying-fox Photo: Vivien Jones

- In Australia, flying-foxes are the bats people are more familiar with because of their large size, and tendency to roost in large camps, often in proximity to people. Flying-foxes feed mainly on nectar, blossom and native fruits.
- Microbats are actually very diverse and abundant, but most people haven't encountered them because these bats are small, nocturnal, use ultrasonic calls inaudible to humans, and are hidden during the day in roosts. Microbats eat a wide variety of insects. They are widespread and common in all environments including forests, farmland and even cities.
- Australia is home to 70 species of microbats and a further 11 species of flying-foxes, blossom and fruit bats, with some species still needing research before they are properly named. Many species of bat can be found in cities, and bats are now one of the most common groups of mammals in places like Melbourne and Sydney.



An adult Little Forest Bat, weighing just 4 grams Photo: Lindy Lumsden

- The largest bats in Australia are the flying-foxes, including the Grey-headed Flying-fox (*Pteropus poliocephalus*) that weighs up to 1 kg and has a wingspan of over a metre. In contrast, most of the microbats are tiny. One of the smallest species is the Little Forest Bat (*Vespadelus vulturnus*) which weighs only 4 g (less than the weight of a 10 cent piece) and would easily fit inside a matchbox!
- Some species are threatened with extinction. In south-eastern Australia, the most critically endangered species is the Southern Bent-wing Bat (*Miniopterus orianae bassanii*), a species that occurs only in caves in south-western Victoria and south-eastern South Australia.

## Looking for more information about bats?

Please see our fact sheets on a range of issues, available for download from: [www.ausbats.org.au](http://www.ausbats.org.au)

We also recommend: Bat Conservation International ([www.batcon.org](http://www.batcon.org)) and

Bat Conservation Trust ([www.bats.org.uk](http://www.bats.org.uk))





## Bats play a vital role in the health of ecosystems

Microbats eat a wide range of insects, including mosquitoes, moths, beetles and bugs, helping to keep their numbers in check. This includes a range of species that are bad agricultural pests.

Flying-foxes play an important role in pollination and seed dispersal of flowering and fruiting trees.

### What do bats need to survive?

- Most of our microbats roost in hollows in large, old trees. Dead trees, and dead limbs on live trees, provide essential roost sites for many species.
- Where tree-hollows are scarce, some microbats can roost in man-made structures, such as buildings.
- Some bats depend on caves for roosting, with female bats being highly selective about which caves they use to give birth. In Victoria, only one cave is used as a maternity site by the critically endangered Southern Bent-wing Bat, and only one for the more common Eastern Bent-wing Bat (*Miniopterus orianae oceanensis*), where up to 100,000 females congregate each year over summer. Eastern Beng-wing Bats fly up to 300 km from their over-wintering sites, including those in and around Melbourne, to reach this maternity cave near Lakes Entrance. A similar congregation occurs with Little Bent-wing Bats (*Miniopterus australis*) at Mt Etna, near Rockhampton in Queensland.
- Bats also need an ample supply of food in suitable foraging areas – for flying-foxes this can be flowering or fruiting trees in bushland areas, parks, gardens, nature strips or in backyards. Good foraging areas for microbats include over water or around trees – especially big trees.



Dead trees are critically important as roost sites for some species. Thirty-six female Lesser Long-eared Bats and their young emerged from the narrow crack on this tree. Photo: Lindy Lumsden



Little Red Flying-fox (*Pteropus scapulatus*) Photo: Vivien Jones

- If you are netting your backyard fruit trees to keep animals out, ensure you use white netting and pull it tightly over a frame. This reduces the risk of flying-foxes getting tangled in the net.
- Where possible, retain all large trees and dead trees, and don't prune dead branches from trees, because these all provide critical roosting sites for bats.
- If you want to provide additional roosting sites for microbats, consider putting up some bat boxes.
- Join a bat roost box monitoring program to learn more about bats and their conservation.



Yellow-bellied Sheathtail Bat. Photo: Terry Reardon

### Fun Fact!

After mating in autumn, female microbats store sperm in their reproductive tract until spring before becoming pregnant.



- Do not disturb bats in mines or caves, especially during winter. Bats spend the winter in torpor, and waking them up causes them to raise their body temperature, which burns up valuable fat reserves that they need to get through the winter!
- If you are responsible for managing disused mines, do not close mines without having them thoroughly inspected to see if bats are using the mine, as evidenced by roosting bats or piles of droppings.
- Keep your cats inside. Domestic cats are now one of the main predators of microbats.
- If you find a sick or injured microbat, use a glove to pick it up and put it in a cloth bag (such as a pillowcase) or a cardboard box with a secure lid and a tea towel for it to hide in, and call your local wildlife rescue organisation. If you find a sick or injured flying-fox, do not attempt to handle it – call for help straight away.



Eastern Bent-wing Bat (*Miniopterus orianae oceanensis*) Photo: A Natural History of Australian Bats – Working the Night Shift

### Myths about bats – true or false?

#### All bats are vampire bats and suck your blood

FALSE! There are only three species of vampire bat and they only occur in Central and South America. Vampire bats consume blood from large mammals such as cattle; they make a small bite on their prey's limbs and lap up the blood as it drips from the cut. Vampire bats have occasionally bitten people (usually someone asleep in a hammock), but when this happens, the vampire bat usually bites the person's toe – not their necks as depicted in movies!

#### Bats are dirty and carry lots of diseases

FALSE! Bats are clean animals that groom themselves regularly. Although bats can naturally be infected with diseases, the vast majority of bats are not likely to harbour a disease. Living near bats is perfectly safe, especially when you take a few simple precautions, such as not handling them.



Vampire bats only occur in Central and South America – there are no vampire bats in Australia.

Photo: Shutterstock/Michael Lynch

#### Bats are blind

FALSE! No bats are blind. Flying-foxes have excellent vision and even microbats, which use echolocation to find their prey, can see quite well.

#### Bats get tangled in your hair

FALSE! Microbats use highly sophisticated echolocation and can detect something as fine as a single human hair, so they are unlikely to get tangled in a whole head of hair! Their flight pattern is very manoeuvrable, so they are excellent at avoiding people.



Eastern Horseshoe Bat. Photo: Eridani Mulder