



Bats are the only group of true flying mammals in the world. Like other mammals, they are warm blooded, feed their young milk and are covered in fur.

## How do they fly?

The unique feature of bats is their wings. The bones of their forearms are the same as other mammals, except that they are longer and lighter. An elastic skin stretches over the forearm bones and attaches to the side of the bat's body forming a wing. The length of the bat's forearm is used to help identify different bat species.

## Tasmanian species

There are eight species of bats occurring in Tasmania. All belong to the family of evening bats called Vespertilionidae. Bats in this family are insectivorous and have their tails fully enclosed in a membrane. Fruit bats, like the flying fox, lack tails and eat fruit. They do not generally occur in Tasmania, although occasional vagrants have been recorded on the Bass Strait islands.

## What do they eat?

All Tasmanian bats are insect eaters. They are nocturnal feeders and become active at dusk. Bats are opportunistic feeders and most commonly eat moths, beetles, caterpillars, mosquitos and other flying insects. Tasmanian bats do not feed on fruit or blood. In fact, they help control the numbers of many insects including mosquitos and crop pests. Bats can consume up to half their body weight in insects per night.

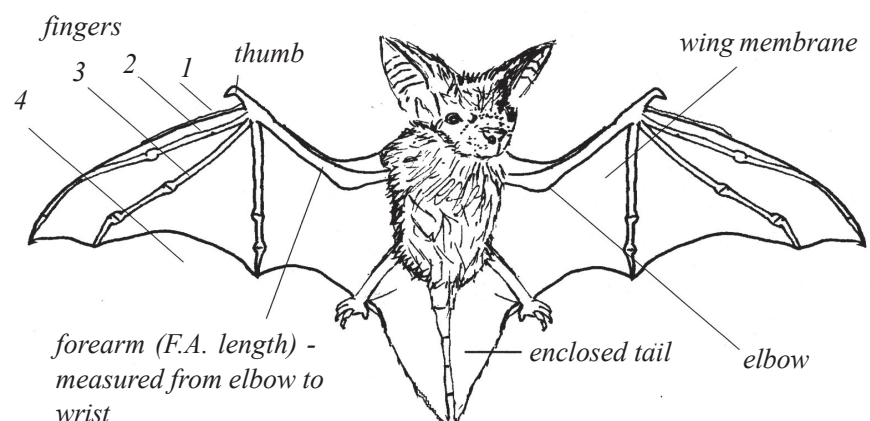
## What is echolocation?

Tasmanian bats use echolocation to find food in the dark. A high pitched sound produced in the bat's larynx directed out through the mouth as a short ultrasonic pulse.

When these pulses strike an object an echo of the

sound returns to the bat. These sound echoes are collected by the bat's forward-facing ears. The echoes enable bats to judge the shape, texture and distance of any object such as a tree, insect or building. Thus they locate objects by echoes (echolocation).

Bats catch insects in flight. Small insects may be taken directly into the bat's mouth, while larger insects are scooped into the bat's wing, transferred to the tail and then eaten later. All of the Tasmanian bat species have their own favored way of insect hunting. Some species forage in the upper canopy, while others will hunt close to or on the ground. Some bats catch insects in mid air, while others seek insects amongst the foliage.



## Where do bats live?

Tasmanian bats do not usually live in caves. Generally, they live in old hollow trees. They roost, upside down, in these hollows during the day. So it is very important to leave suitable bat roosting sites such as old trees and limbs around farms.

Some bats will roost in alternative shelters such as rock crevices or buildings. The lesser long-eared bat is quite urbanised and is often found in the roofs or walls of houses and sheds. This bat's proximity to urban areas, and its method of foraging close to the ground, results in the species being the one most commonly killed by pet cats.

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## Baby bats

Tasmanian bats are born pink and furless, during late spring or early summer. One or two young are born, depending on the species. During birthing, the mother hangs from her roost site by her thumb claws and catches the newborn baby in her tail membrane. A newborn bat's legs are very well developed, allowing them to cling to their mother's fur or the roost site.

Initially, baby bat's wings are poorly developed so most species leave their young clinging upside down to the roost site while the mother forages. Adult bats usually forage for around two hours at a time. The mother bat usually leaves her young in a 'creche' situation whilst she hunts. Known exceptions to this are the young of Goulds wattled bat and the little forest bat. The young bats remain attached to their mother's nipples even during flight.

Bats are born with recurved (bent backwards) teeth which help them cling to their mother. They drink milk directly from their mother's nipples, which are located beneath each armpit. Bats develop quickly and may be fully furred within three weeks. By midsummer most bats have been weaned and are foraging for food themselves.

## Hibernation

Bats hibernate over winter, when insects are scarce. The metabolism slows dramatically during this time and they rely on their stored fat reserves. Bats are very vulnerable to any disturbance while hibernating. If they are awakened, they may use up critical energy reserves.

Similarly, during the day bats go into a torpor which also slows their metabolism and helps them save their energy reserves.

## Synchronising breeding

Male bats only produce sperm in winter, which complicates the breeding process as all bats hibernate over winter. Male bats of some species can store their sperm until it is needed, and other species can delay embryo implantation (the role of the female) in order to synchronise the fertilisation process.

## Status

All of the Tasmanian bats are fully protected species and it is illegal to collect or harm them in any way. They are widespread and occur in a range of forest types. Seven of the eight species occur on mainland Australia. All species appear to be relatively common, although the larger species are probably less abundant (e.g. Goulds wattled bat, Tasmanian long-eared bat and the eastern falsistrelle). The lesser long-eared bat and the eastern falsistrelle are often encountered foraging and roosting in urban areas.

## The bat virus

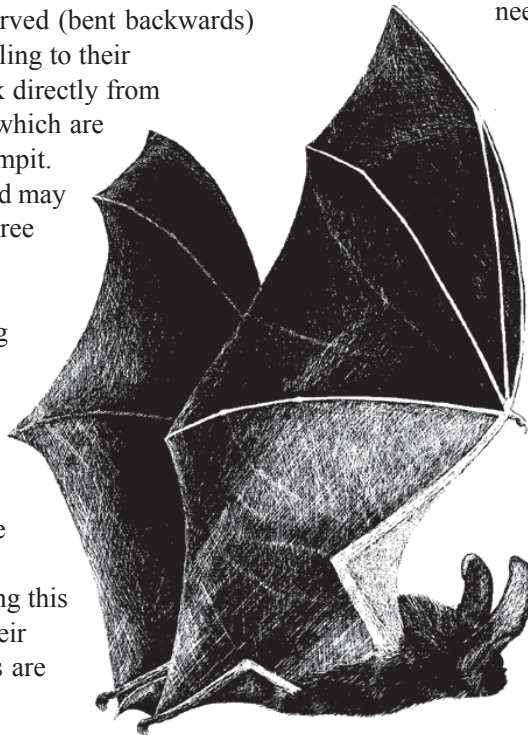
In 1996, a previously undiscovered virus, lyssavirus, was found in Queensland's flying foxes (fruit bats).

Lyssavirus has since been isolated from an insectivorous bat. This has drawn attention to the need for people to exercise caution and proper care when handling bats—even here in Tasmania. It is important that everyone handling bats wears leather gloves.

Lyssavirus is transmitted when open wounds come into contact with infected saliva or blood. It is not transmitted by casual contact or via urine and faeces.

The virus is related to, but distinct from the rabies virus. The distribution of lyssavirus is unknown. Although there are no fruit bats in Tasmania it may be carried by one of the insect-eating species. However these bats are all very small and most species are unlikely to cause a scratch or wound, even when being held.

Tasmanian bats are shy, nocturnal and not aggressive. People only encounter them infrequently—for example when bats become disorientated and cling to curtains or roost in sheds.

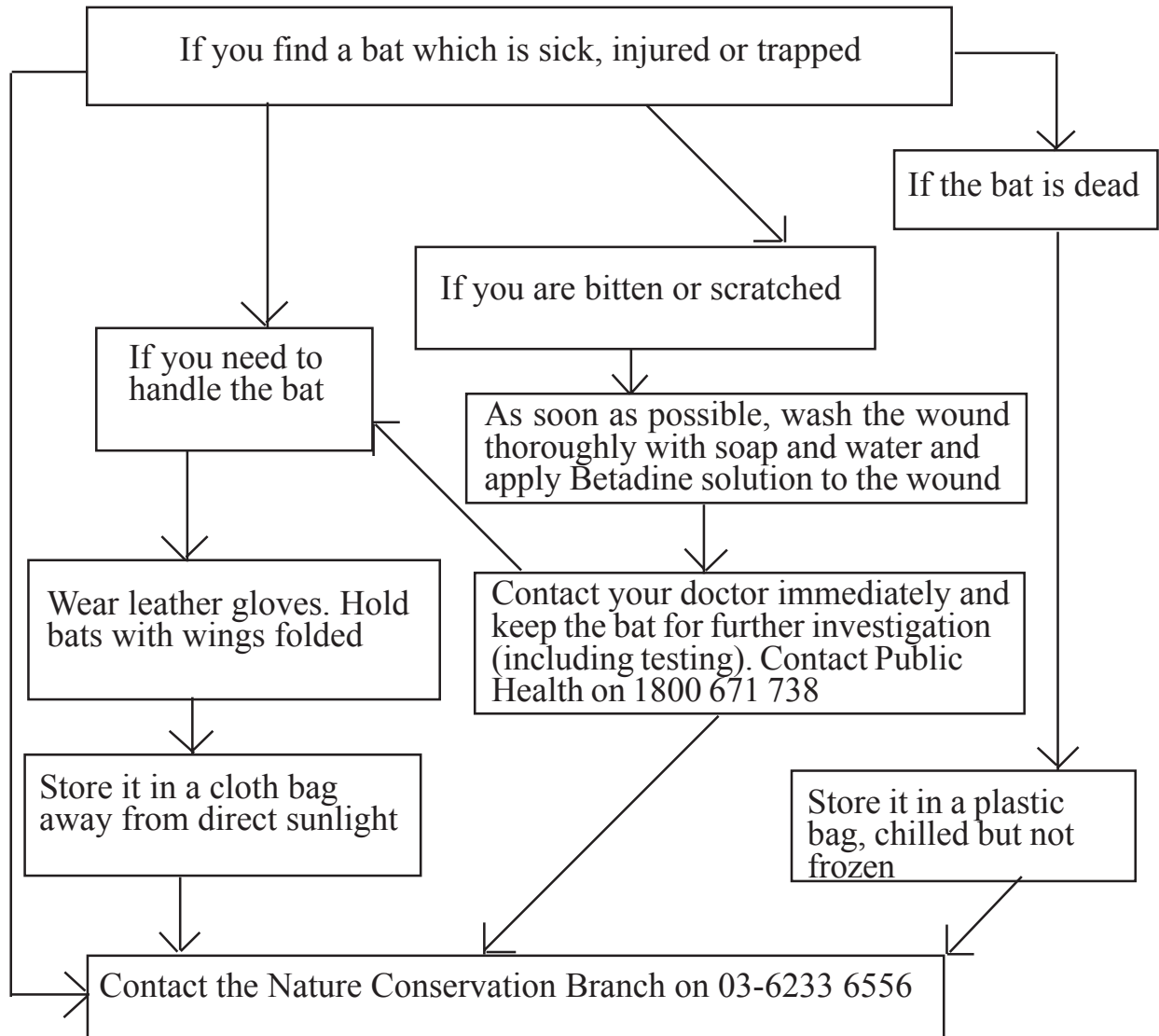


*Lesser long-eared bat*  
Tasmanian Museum and Art Gallery

## If you find a bat

If you find a bat it is important that you handle it correctly. The Parks and Wildlife Service is keen to examine and identify any bats accidentally found, whether live or dead. Follow the instructions below when handling the bat and contact the Parks and Wildlife Service. Remember, all Tasmanian bats are fully protected species and must not be unnecessarily caught or injured.

## BAT EXPOSURE FLOW CHART



### Handling bats

If you must handle a bat then ensure you are wearing leather gloves. Hold the bat with its wings folded. Do not attempt to hold bats by the wing tips as this could result in wing bones being broken. Live bats should be held in cloth bags. The bags should be porous enough to allow air to circulate and be stored in a cool place away from direct sunlight. Only a few individuals should be stored together in the same bag to avoid them suffocating.

### Bat facts

There are two main groups of bats. These are the microchiropteran, or small (micro) bats, and the megachiropteran bats such as the flying foxes. All of the Tasmanian bats are micro bats. Following is a brief description of the eight Tasmanian bat species.

#### Eastern falsistrelle (*Falsistrellus tasmaniensis*)

This is Tasmania's largest bat, with females averaging up to 21 g. In all Tasmanian bats the female is generally larger than the male.

The eastern falsistrelle has reddish brown fur on the back and lighter brown fur on the belly. It used to be named the Tasmanian pipistrelle. It flies quickly, catching mainly beetles from the upper canopy and produces a single young.

Forearm length: 49-50 mm, Body length: 55-70 mm, Weight: 19-21 g.



*Eastern falsistrelle*  
Tasmanian Museum and Art Gallery

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**Southern forest bat (*Vespadelus regulus*)**

A small bat, slightly larger than the little forest bat, distinguished by reddish brown fur on the back and lighter brown fur on the belly. It used to be called the King River eptesicus.

F.A. length: 32-33 mm, Body length: 45-55 mm, Weight: 5-5.5 g.

**Large forest bat (*Vespadelus darlingtoni*)**

The large forest bat is the largest of its genus in Tasmania. These bats have dark grey to dark brown fur all over. They are found in all forest types including rainforest and catch insects from the mid canopy to the understorey. They only produce a single young at a time.

F.A. length: 35 mm, Body length: 40-60 mm, Weight: 6 g.

**Little forest bat (*Vespadelus vulturnis*)**

This is the smallest Tasmanian bat. It produces a single young and roosts in tree hollows. The little forest bat has mid to dark grey fur on its back and dark grey fur with lighter tips on its belly.

F.A. length: 29-30 mm, Body length: 40-50 mm, Weight: 4-4.5 g.

**Chocolate wattled bat '*Chalinolobus morio*'**

This species gets its name from its chocolate brown fur. Its lifestyle is similar to the large forest bat. The chocolate wattled bat has a shorter hibernation period than other species.

F.A. length: 40-41 mm, Body length: 50-60 mm, Weight: 9-10 g.

**Lesser long-eared bat (*Nyctophilus geoffroyi*)**

The long-eared bats are so called because of their long, strongly ribbed ears (up to 25 mm in length), which can be folded back when at rest. These bats have light grey-brown fur on the back and paler fur below. They fly slowly close to the ground, occasionally alighting on low vegetation. They are found in urban areas.

F.A. length: 39-41 mm, Body length: 40-50 mm, Weight: 8-10 g.



*Tasmanian long-eared bat*  
Tasmanian Museum and Art  
Gallery

*Goulds wattled bat*  
Tasmanian Museum and Art Gallery

**Goulds wattled bat (*Chalinolobus gouldii*)**

This bat has dark brown fur on the back and a black head and shoulders with lighter brown fur on the belly. Usually two young are born, remaining attached during flight. They roost in colonies in hollow trees and feed on insects in the upper canopy.

F.A. length: 46 mm, Body length: 56-75 mm, Weight: 14-15 g.

**Tasmanian long-eared bat (*Nyctophilus sp.*)**

This is Tasmania's only endemic bat species. It is larger than the lesser long-eared bat and has ears up to 30 mm in length. It has dark grey-brown fur on the back and slightly lighter fur on the belly. It mainly eats non-flying insects, which it captures from the vegetation. It often flies close to the ground searching for food.

F.A. length: 46 mm, Body length: 60-75 mm, Weight: 13 g.

**Further information**

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Strahan, R. (ed). (1991). *The Australian Museum Complete Book of Australian Mammals*. Cornstalk Publishing, Sydney.

**Contact**

Nature Conservation Branch: DPIWE  
134 Macquarie Street, Hobart 7000.  
Phone: (03) 6233 6556  
Fax: (03) 6233 3477

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**FURTHER INFORMATION**

Head Office: 134 Macquarie Street Hobart TAS 7000  
Phone: 1300 135 513

Internet: [www.parks.tas.gov.au](http://www.parks.tas.gov.au)  
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