Barossa Bushgardens

Place Plants People

BATS

Sometimes when the dark sets in the evenings, there might be a glimpse of a bat or maybe a sound. They are all around us but we hardly ever notice them.

Bats can be found nearly everywhere and live in a wide range of habitats; in trees, mountains, deserts, rock crevices, barns and rooftops.

They are the only mammals capable of sustained flight and some of the most interesting animals this planet has to offer. According to the Australian Museum, over 90 species of bats have been identified in Australia so far.

Microbats are incredibly successful insect killing machines and fruit eating bats are great pollinators.

MICROBAT OR MEGABAT

As the name suggests, microbats (*Microchiroptera*) are much smaller than megabats (*Megachiroptera*). The wingspan for microbats ranges from 15cm to around 25cm and for megabats this can go up to about 1m here in Australia. The Malayan flying fox can have a wingspan of up to 1.8m.

Image: Microbat, Source: thedailytelegraph.com

Image: Megabat, Source: Imago/Bluegreen Pictures

BEHAVIOUR

CAMPS

Flying foxes live in large groups and when visiting Adelaide, the grey-headed flying-fox (*Pteropus poliocephalus*), can be seen in a permanent camp near the Botanic Gardens and Adelaide Zoo. They form a single population with colonies in Queensland, New South Wales, Victoria and South Australia and individuals are known to move interstate and interacting with other colonies.

Under the National Parks and Wildlife Act 1972 they are considered to be vulnerable to extinction. This is due to drought conditions, habitat loss and the effects of climate change which forces them to travel further for food.

Urbanisation and the creation of artificial food and water sources has created new and reliable habitats which explains why they have set up a permanent camp in Adelaide in 2010.

They prefer to feed within 20km of their camp but can travel up to 50km in search for food, which means they are regular visitors to urban houses that have fruit trees and other food sources available.

Their favorite food sources are eucalyptus and banksia blossoms, but they might not be available all year around.

Image: Flying fox camp, Source: Max Manson-Hubers

REPRODUCTION

Some microbat species will travel hundreds of kilometres to special maternity sites, whereas others are more sedentary and may have several breeding sites. Most bats give birth to a single baby but some species, like the Gould's Wattled Bat have twins.

They weigh about 10% of an adult but after only three to four weeks they will look like miniature adults. They start flying at around five to six weeks.

Mega bats have a longer gestation period and the babies rely on their mothers for longer. A high juvenile mortality rate and adult bats only being sexually mature at the age of 2 to 3 years, means they reproduce at a much lower rate than other mammals.

TORPOR

During winter, food can become an issue for microbats and they will hibernate in a state of inactivity. The heart rate will slow and the body temperature drop to as low as 2°C. They eat as much as they can during summer to put on enough reserves as they may loose as much as half their body weight during torpor.

They may not hibernate throughout winter, but rather wake up in between to go for a feed, drink, find roosts or in some species, mate.

Image: Bats in torpor (hibernation), Source: Kim Miller, USGS National Wildlife Health Centre

BEHAVIOUR

ECHOLOCATION

When echolocating, microbats emit pulses of sound that bounce off of anything and the bats can use the echo to determine the distance, texture, size and direction an object is moving.

They do that with extreme accuracy and are therefore very efficient hunters.

The frequency they use ranges from 11kH to 212Kh with most of it being outside of the range humans can hear.

Specialists use devices called Anabat Bat Detectors that record the sounds. They are then compared on to previously recorded frequencies to determine the species of the bat. Every bat species has their own unique frequency and sounds.

Echolocation can also be used to communicate with other bats.

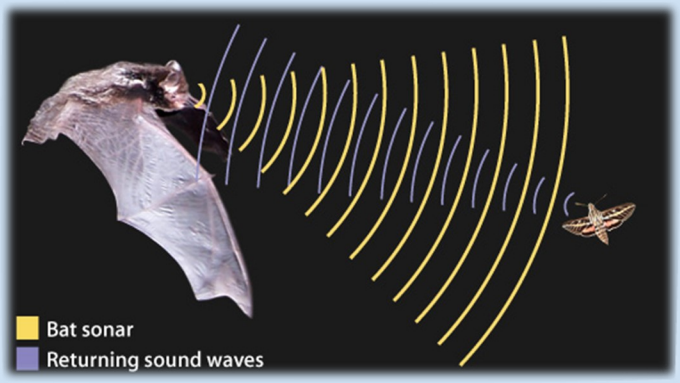


Image: Bat echolocation visualized, Source: askabiologist.asu.edu

COMMUNICATION

Bats that don't use echolocation, use sounds to communicate. Grey-headed flying-foxes for example, can make over 30 different sounds which is used for identification and defence of territories.

Image: Flying fox eating a *Grevillea sp.* flower, Source: Paislie Hadley

DIET

Not all bats use echolocation. Megabats have well-developed eyes and a strong sense of smell that helps them find fruit, blossoms and nectar, whereas most microbats use echolocation to feed on insects and yes, there are a few species that feed exclusively on animal blood. Bat diets are very diverse and can include nectar, pollen, fruit, birds, insects, frogs, lizards and many more, depending on the species.

Interestingly, flying foxes have the fastest known gut transit time of any mammal known. Whatever goes in the top, reappears at the other end after 12 to 34 minutes. They are also very important pollinators and play a vital role in the regeneration of forests.

Micro bats will eat around 50—70% of their body weight in a single night which amounts to as much as 1200 mosquitoes every hour. They are more and more recognized for the control of flying pests in crops which in turn reduces the need of pesticide sprays. However, the use of pesticides can take away the very food source the bats need to survive.

HABITAT

HOW TO BUILD A BAT BOX

Despite popular belief, only some bat species actually live in caves. Most live in trees, under large pieces of bark, in rock crevices and hollows. In urban areas they may even move into roof spaces or barns.

You can help with the provision of habitat by placing a bat box at least 4m off the ground in a position that gets at least some sun during the day.

You will need:

- Softwood, timber plank (untreated) 18mm x 144mm x 1500mm
- 25mm x 6mm woodscrews
- Fine toothed saw
- Screwdriver
- Electric drill
- Drill bit 6mm and countersink
- Tape measure
- Pencil

Step 1:

Measure and mark out your plank; leave the front till last, so you can hold the saw at about 30 degrees from the vertical when cutting to ensure the lid fits snuggly. Cut out the individual pieces and sand the edges.

Step 2:

Use the saw to cut shallow, horizontal grooves in the back section of timber to form a 'bat ladder'. Grooves can also be cut on the inside surfaces of the whole box for the bats to cling onto.

Step 3:

Cut a wedge out of the back section, around 60cmm down from the top edge. This will locate the lid in position. Handle the saw with care, holding the plank firmly and cut away from yourself.

Step 4:

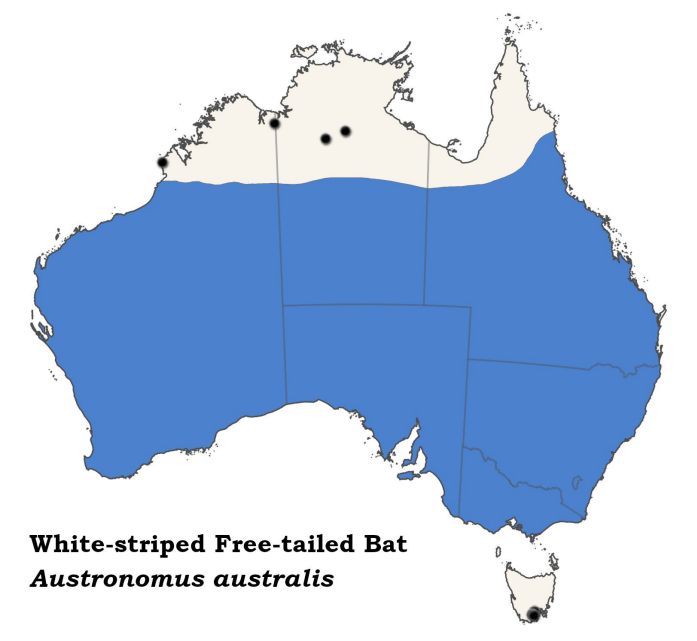
Assemble the box; pre-drilling holes for the screws to prevent the wood splitting. Drill holes at the top and bottom of the back panel to attach the box to its support. Attach the 'holder' to the underside of the roof and slot in place.

Step 5:

For extra weather protection, attach a piece of roof flashing to the top.

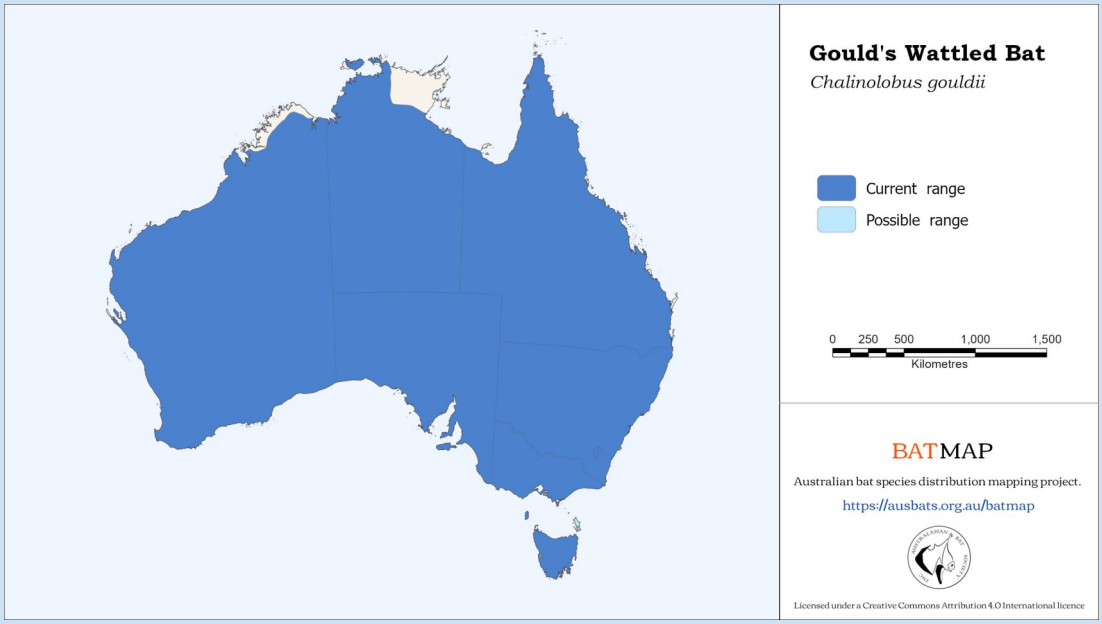
Image: Bat house parts, Source: www.gardenersworld.com/how-to/diy/how-to-make-a-bat-box/

LOCAL BATS



Source: Australasian Bat Society - BatMap.*Austronomus australis* at http://ausbats.org.au/batmap. Accessed 10/02/2022

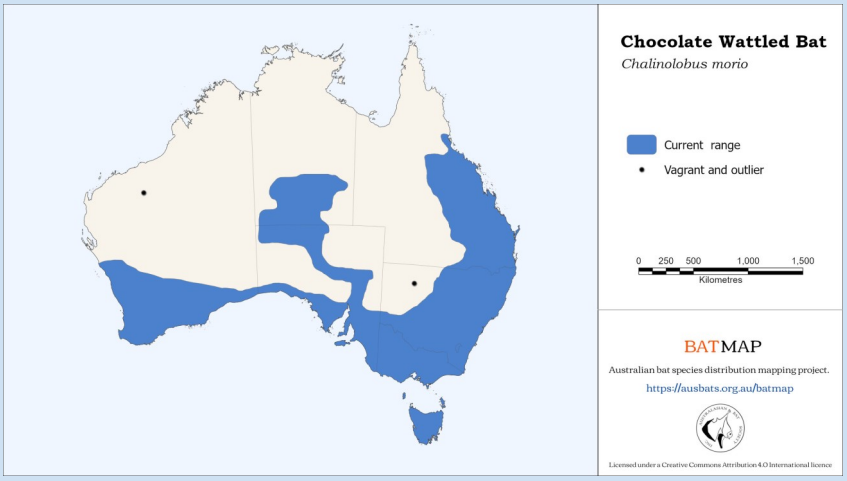
Source: Michael Pennay, www.allaboutbats.org.au/white-striped-freetail-bat/



Source: Australasian Bat Society - BatMap.*Chalinolobus gouldii* at http://ausbats.org.au/batmap. Accessed 10/02/2022

Source: Les Hall, www.allaboutbats.org.au/goulds-wattled-bat/

LOCAL BATS



Source: Australasian Bat Society - BatMap.*Chalinolobus morio* at http://ausbats.org.au/batmap. Accessed 10/02/2022

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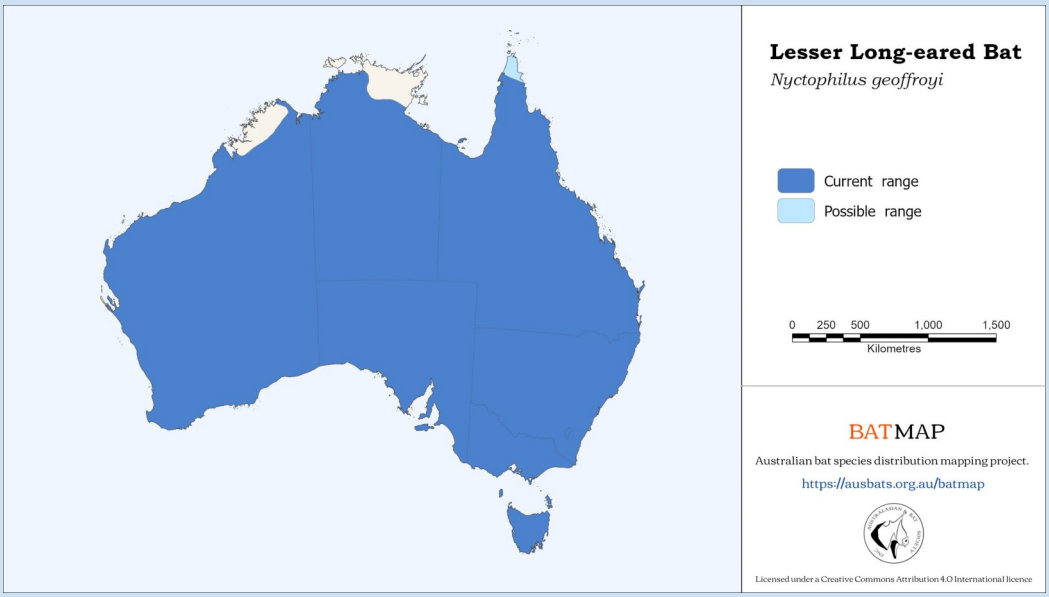

Source: Australasian Bat Society - BatMap.*Nyctophilus geoffroyi* at http://ausbats.org.au/batmap. Accessed 10/02/2022

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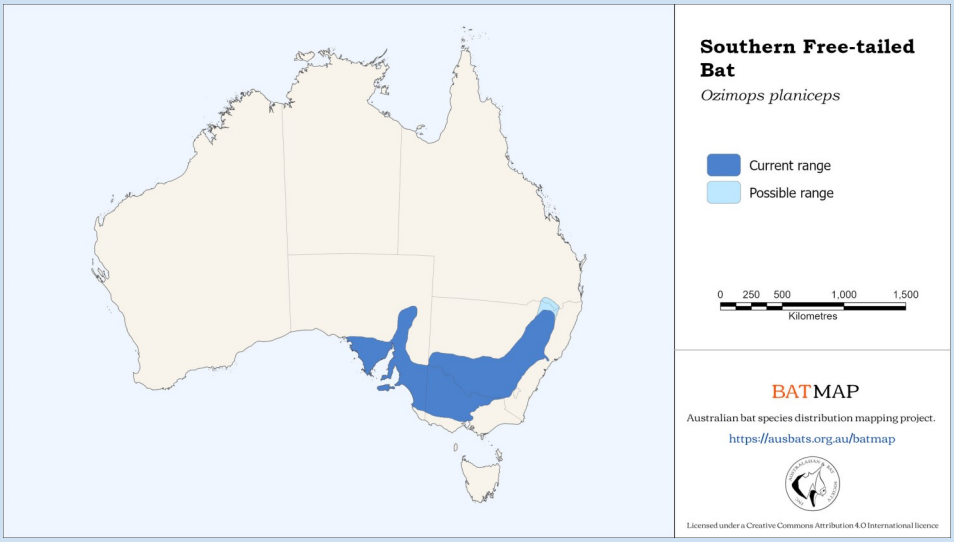
LOCAL BATS



Source: Australasian Bat Society - BatMap.*Ozimops planiceps* at http://ausbats.org.au/batmap. Accessed 10/02/2022

Source: Michael Pennay, www.inaturalist.org/observations/203963

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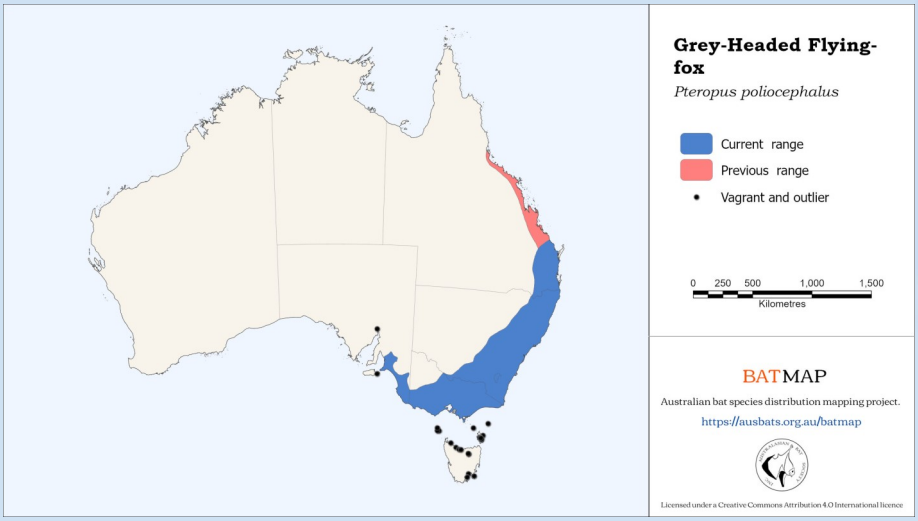
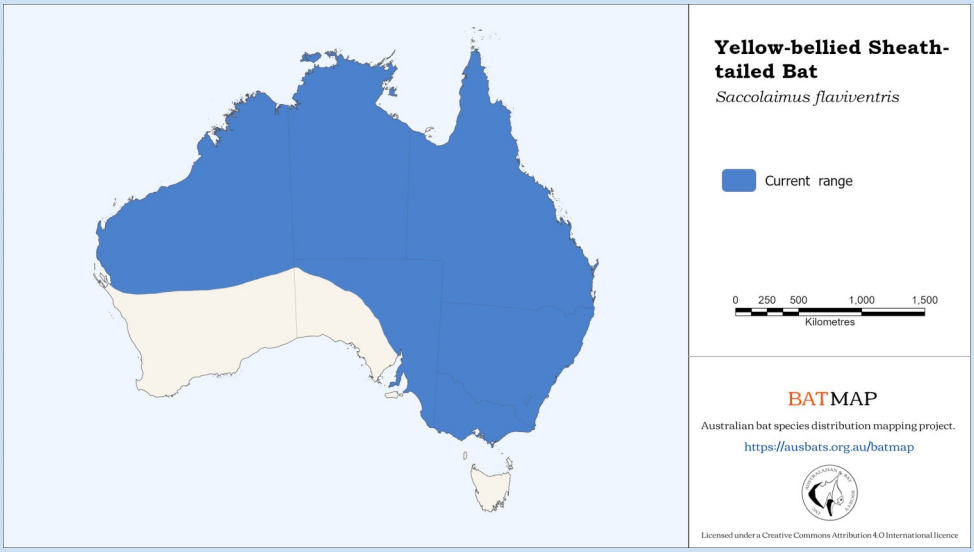


Source: Australasian Bat Society - BatMap.*Pteropus poliocephalus* at http://ausbats.org.au/batmap. Accessed 10/02/2022

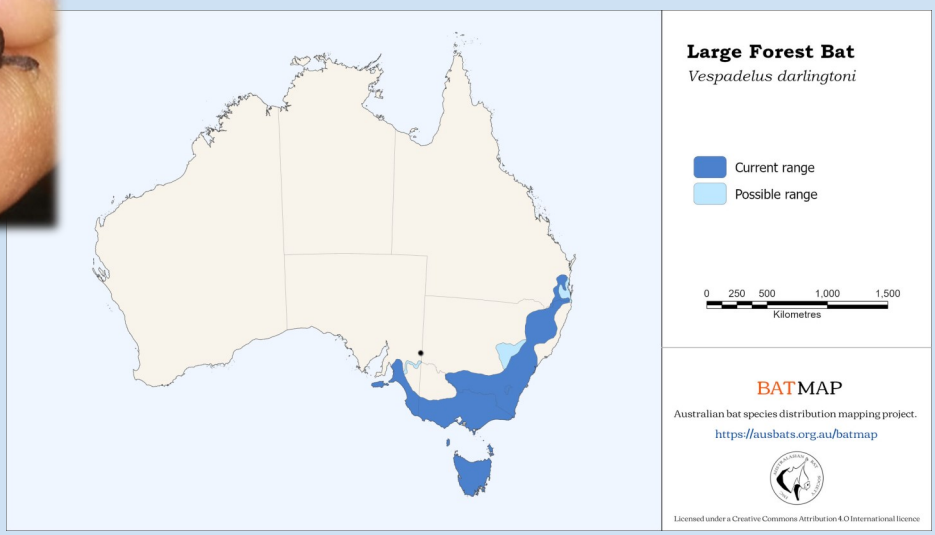
LOCAL BATS



Source: Australasian Bat Society - BatMap. *Saccolaimus flaviventris* at http://ausbats.org.au/batmap. Accessed 10/02/2022

Source: Les Hall, www.allaboutbats.org.au/yellow-bellied-sheath-tail-bat/

Source: Gregory Spearritt, www.allaboutbats.org.au/large-forest-bat/



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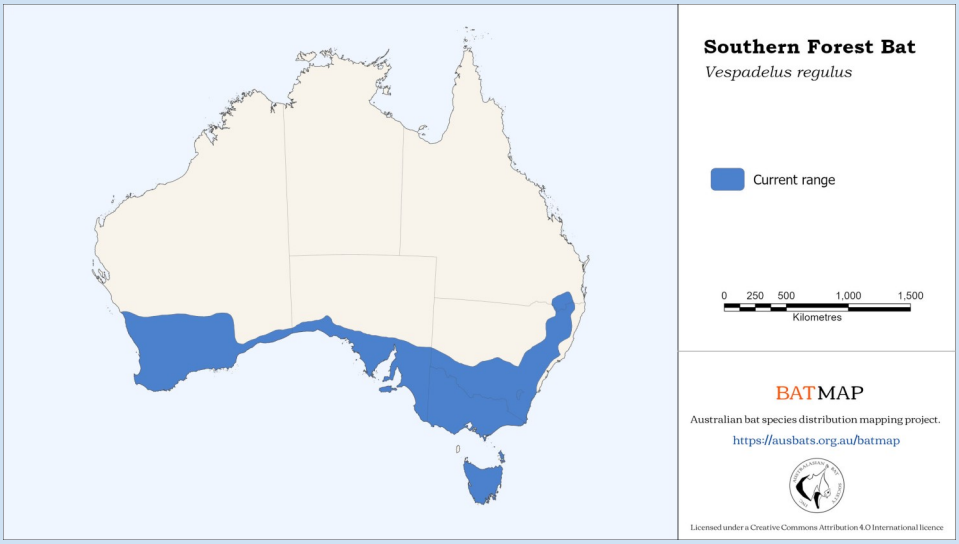
LOCAL BATS



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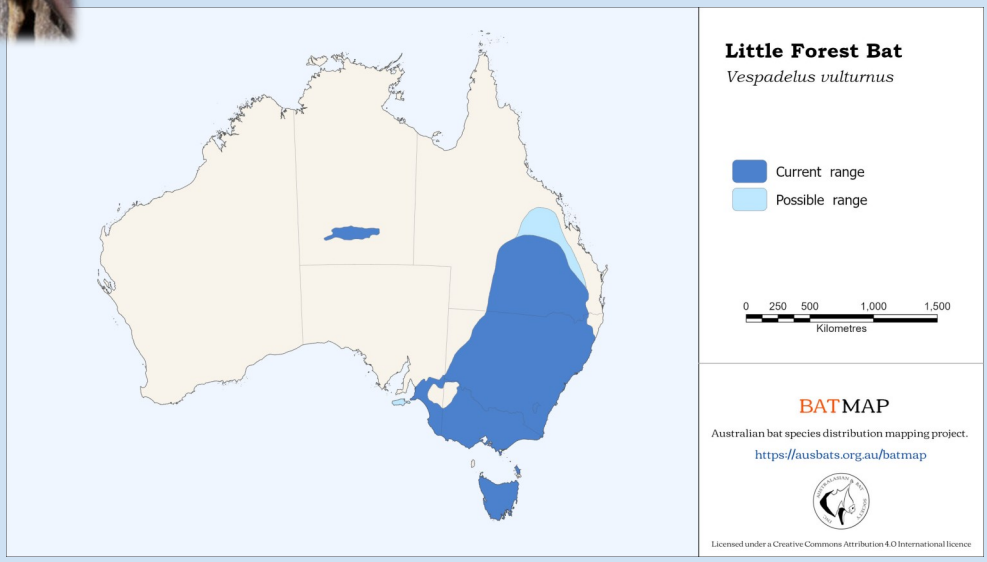
Source: Les Hall, www.allaboutbats.org.au/little-forest-bat/



Source: Australasian Bat Society - BatMap.*Vespadelus vulturnus* at http://ausbats.org.au/batmap. Accessed 10/02/2022

IF YOU FIND A BAT

...In your home

If a bat finds a way inside your house by accident, the best course is to remove everyone from the room the bat is in, turning off lights and ceiling fans and making sure the bat can't go into another room in your house. Then opening the window and removing the screen is mostly enough to help the bat find it's way out.

…That is injured

If you ever find a bat on the ground, the most important thing to do is not to touch it. Keeping any predatory animals, like dogs and cats away will reduce the stress for the bat and also prevent domestic animals and yourself from getting sick.

Bats can carry diseases, like the Australian bat lyssavirus (ABLV). This virus is related to the rabies virus and transmitted by the saliva of infected animals either through bites or scratches, or being exposed to saliva via the eyes, nose, mouth or broken skin.

Even though there have been only few cases of ABLV reported in humans, they all have been fatal. A scratch or bite requires immediate cleaning with soap and water and if possible an anti viral cream or spray should also be applied. Then seek immediate medical attention.

Wildlife rescuers and carers are required to be vaccinated and are trained to handle bats. Leaving it to professionals to rescue and care for injured wildlife is the best and safest option.

Image: A fruit bat entangled in netting, Source: RSPCA SA, www.rspcasa.org.au/warning-birds-trapped-netting/

Image: Rescued bats, Source: Wendy Wimberley, Bat Clinic Advancetown, www.popsci.com/science/article/2011-03/bats-out-hell-rescue-efforts-some-smallest-victims-australias-floods/

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Opening hours:

Monday and Friday by appointment

Tuesday & Thursday

9 am - 4 pm

Wednesday

9 am - 12.30 pm

Government of South Australia

Northern and Yorke Landscape Board

The Barossa Council