

Nest Boxes: Creating homes for urban wildlife

Importance of Hollows

Australia is home to over 350 species of land animals that depend on the hollows that form in old growth eucalyptus trees for shelter or reproduction. Hollows are formed through loss of limb, insect activity (like termites), decay and weathering. Suitable hollows take a minimum of 80-100 years and for larger animals it could be 150-250 years for a suitable hollow to form.

Some of the many animals in Australia that rely on tree hollows include parrots, owls, kingfishers, ducks, possums, gliders, micro bats and even many reptiles, frogs and invertebrates.

Within urban areas hollow bearing trees are found on public land (national parks, water ways, beach foreshore and streets) and on private land (front and back yards).

Many hollow dependent species are in decline due to the widespread loss of hollow bearing trees. In urban areas hollows are removed for urban development (new houses, roads and factories) and for public safety reasons. Even if these trees are replanted, up to 100 years or more may pass before they begin to form hollows suitable for use by wildlife.

If hollow dependent species are to continue to survive in urban and rural areas, urgent action is required to protect hollow bearing trees wherever possible. Nest boxes are needed in areas where hollows have already been lost.



What are Nest Boxes?

Nest boxes act as an artificial hollow that provide opportunities for hollow dependent fauna to survive in areas where their natural breeding habitat has been destroyed. Nest boxes are most useful in areas where hollows are lacking and other aspects of habitat are sufficient, such as food and water supply.

Nest boxes allow close observations of the fascinating behaviour displayed by wildlife during nesting period. The welfare of the animals using the nest boxes must be a priority so they should either be observed from a distance or viewed via a webcab to minimise disturbance. It is a very rewarding experience to have animals move in and breed in an area where habitat has been lost.

A great deal is yet to be learnt about the behaviour and physiology of our hollow dependent species within urban areas. So nest boxes also have an important role to play in the future research of this topic.



Bats

Bats are the only group of mammals that are specifically adapted for flight. There are two types of bats: the micro bats and the mega bats. The micro bats (also known as insectivorous bats), are small to medium-sized bats, weighing from 3g to 150g with wingspans of around 25cm. The mega bats (also known as fruit bats) weigh up to a kilogram and some have wingspans over one metre.

There are approximately 70 species of bats in Australia, with 43 species identified as being locally or nationally threatened. Thirty-five of these threatened species are micro bats¹.

Micro Bats

Micro bats are nocturnal (active at night) and roost (sleep and rest) during the day. Tree hollows and under bark are their preferred roosting locations, though they have been found in dark places like tunnels, rooftops and under bridges.

They rely on echolocation to find their way and to locate insects at night. Echolocation is a technique used by bats to 'see' their environment through sound. The bats create a pulse of high-pitched sounds, which are normally at frequencies beyond the range of human hearing. The sound waves are created in the bat's voice box, and are emitted from the mouth or the nostrils. The 'echo' that comes back to the bat can tell it how far away the object is, as its size and if it's moving. Echolocation allows them to sense their environment, avoid flying into objects, and find their prey.

Micro bats are a natural form of pest control as they eat up to half their body weight in insects (especially mosquitoes) each night.

Monitoring results over the past decade have identified that micro bats use the nest boxes are temporary roosting sites during different seasons. Juvenile males have been recorded as the most frequent users and could be using the nest boxes and tubes to move across the landscape.

The two most common micro bats that have been recorded in our nest boxes are:

Gould's Wattled Bat *Chalinolobus gouldii* (pictured)

Gould's Wattled Bats are the most common species recorded in our nest boxes and tubes and can roost together in colonies of around 30 bats, sometimes smaller and other times larger. Gould's Wattled Bat feed on a variety of insects, including scarab beetles, caterpillars, crickets and moths, depending on the time of year.

White-striped Freetail Bat *Tadarida australis*

White-striped Freetail Bats feed on flying insects above the tree canopy. They fly quickly and eat their prey as they fly. Those with good hearing can sometimes hear their call (tick, tick, tick).



¹ Source: <https://www.ehp.qld.gov.au/wildlife/animals-az/micro-bats/>

Other micro bats within Melbourne include:

- Chocolate Wattled Bat
- Eastern Freetail Bat
- Common Bent-wing Bat
- Lesser Long-eared Bat
- Inland Broad-nosed Bat
- Large Forest Bat
- Little Forest Bat
- Southern Freetail Bat
- Gould's Long-eared Bat
- Southern Myotis
- Eastern Broad-nose Bat
- Southern Forest Bat

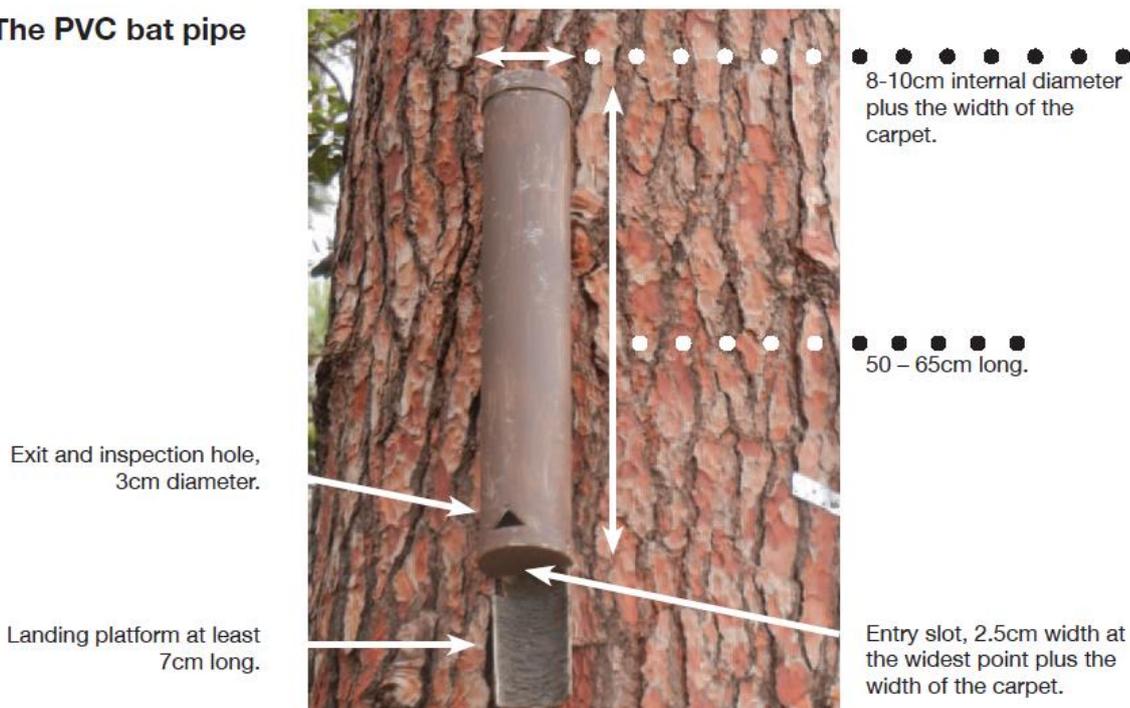
PVC Micro Bat Pipe

The PVC micro bat pipe/ nest box design has been researched, developed and refined over the past decade by Gio Fitzpatrick (pictured), the EcoCentre's Youth Wildlife Ambassador who commenced his habitat restoration journey aged 11.

His nest box designs have a focus on reusing waste materials and are suitable for school students to construct.



The PVC bat pipe



Installation

The PVC micro bat nest box is best placed on a vertical trunk, but micro bats will also happily use it on a post or the wall of a building. Micro bats need a warm and easily accessible roost site so place nest box below the base of any branches, preferable with no trees or other obstacles within 5 metres beside or in front of the nest box. The nest box should receive full sun. If it is installed on a tree with understorey, the nest box should sit at least 3m above the shrub layer as bats require some space to swoop down when they exit the nest box.



Suggested nest box heights above ground:

- Gould's Wattled Bat 2-6m
- White-striped Freetail Bat 5-10m

The closer the nest box is to a source of fresh water the higher the chance of success.

The tree species on which the nest box is installed does not seem to detract the micro bat from using the nest box.

Further reading

- The Nestbox book by Gould League
- Nest boxes for wildlife life by Alan and Stacey Franks

“Gio, your nest-box program sounds a most valuable enterprise.

Congratulations on having taken it so far already.”

Sir David Attenborough August 18, 2012