



Hollows, habitat and nest boxes: design and installation tips from Miles Geldard

These notes were compiled by Tanya Loos at a Connecting Country nest box workshop with Miles Geldard in autumn 2018. They are not a comprehensive 'how-to' guide on building a nest box, but a few tips from Miles' extensive experience in nest box building. Miles' nest boxes are available for purchase at www.wildlifeneestboxes.com.au

All animals need to meet their basic needs of something to eat and somewhere to live. Australia's fauna is particularly reliant on hollows for shelter and breeding - possums, gliders, bats, kookaburras, parrots, treecreepers, reptiles such as geckos and even frogs need hollows.

Hollows are a highly limited resource in today's Box Ironbark forests. The sheer scale of clearing and removal of large old trees for timber in our region is almost unbelievable. Trees were logged for railway sleepers, mine shaft infrastructure, baker's ovens, boilers, heating and construction. Only 15% of the Box Ironbark forests remain and virtually no old growth patches were left.

Hollows may begin to form in any aged tree, even relatively young trees if the conditions are right. In some countries, woodpeckers create hollows in trees. Here in Australia, the bark needs to be damaged in some way – either by wind, lightning, fire or removal by animals (such as galahs) so that termite or fungal activity may begin to create a hollow. In Box Ironbark forests, termites do most of the hollow formation, whereas in wet forests it is fungi. Galahs and other parrots love to chew bark. Are they ecosystem engineers creating hollows for the future, or just larrikins sharpening their bills?

Miles has gathered scientific papers on our local hollow-using fauna, and reviewed fauna habitat needs and preferences. He's considering internal hollow dimensions, size of entrance, tree type, location on tree and orientation. He uses this information in designing and installing nest boxes.

Nest box design

Entrance

Although animals will use a range of hollow entrance sizes, for nest boxes it is best to choose the smallest entrance size. They really like to squeeze through entrances. Small entrances provide better protection from predators and a cosy internal environment in the hollow or nest box.

If the animal flies (e.g., birds and bats), the entrance is placed at front of the nest box. If the animal crawls up a tree (e.g., phascogales and gliders), the entrance is at the back or side.

Although some pardalote nest boxes have a tube entrance, Miles has had better success without the tube attachment.

Materials

Miles uses CD grade pine ply that is 19 mm thick. CD grade pine is relatively cheap, accessible and sustainable, and has roughness for small feet to grip onto. Miles avoids using marine ply as generally it is sourced from Indonesian rainforests, and Miles 'quite likes orangutans!'

Wall thickness (19 mm) is important - too thick makes the box too heavy and too thin doesn't provide enough insulation, meaning the animal can overheat in summer and freeze in winter.

There is no need for wire or graduations inside the box, except for micro bat boxes. Micro bats like a piece of old denim or woollen blanket to cling inside the box. Old carpet is an option but might contain toxic materials.

The pine ply is adequately protected by a couple of coats of external acrylic house paint. Even hardwood boxes need painting. The colour does not matter, but bear in mind some colours are very hard to see in the bush when you want to find and check the nest box! Boxes need repainting every 10 to 15 years.

Miles's boxes have a hinged lid, with the hinge placed on the side, not the back of the nest box. The bottom of the box is recessed so water will drip out.

Deterring bees

Nestboxes can provide a home for unwanted species including feral honey bees, which then deter native animals. Miles noticed that feral bee hives never occurred in burnt out hollow trees. Discussion with beekeepers confirmed that bees avoid charred wood.

Bees will attach their comb to the lid of a nest box. If the underside of the lid is burnt with a blowtorch, the bees seem to avoid the nest box. Miles says to char the lid until small squares form in the burnt wood and it's a bit crumbly.

Microbar boxes do not need this treatment as they are too small to attract bees.

Nest box installation

Nestboxes must be carefully located to maximise their success as animal homes. It is essential to check there are no existing hollows in the tree before you install a nest box, to avoid disturbing or displacing any animals already using the tree. Climbing animals may prefer trees with rough bark, such as box trees.

Height and orientation

Placing boxes approximately 3 m above ground level is ideal. Nest boxes should be high enough to be out of harm's way (e.g., safe from foxes), but not so high you cannot check the box or carry out maintenance and monitoring. Always keep safety in mind and be careful when using ladders!

Orientation facing southeast is best, as this means the box is shaded by the trunk when summer sun is at its hottest.

A large six inch nail is nailed into the tree at an angle and the box positioned so that it is hooked onto the nail. This technique does minimal damage to the tree and allows it to continue growing.

Timing

Nest boxes can be installed any time, but the best time is autumn, particularly March before the weather cools down.

Autumn is also a good time for checking and maintaining nest boxes, as breeding period is over.

Number of boxes

Miles suggests installing as many nest boxes as you can manage to install and maintain. Many hollow-dependant animals use multiple nesting sites located across their home range.

Recommended reading

'Wildlife of the Box-Ironbark Country' by Chris Tzaros, published in 2005 by CSIRO Publishing.