

## 2. Protection

The root zone under the tree canopy is important for the health of the tree. Protect this area by;

- excluding livestock from around paddock trees,
- not parking vehicles or storing soil or fill under the canopy and
- avoiding scraping the soil away from under the tree or replacing soil with a non-permeable surface (e.g. concrete).

Keep surrounding trees, plant new trees or encourage natural regeneration to protect and buffer habitat trees from wind and other stresses.

## 3. Recruitment

'Recruitment' trees are those that have the most potential for forming hollows in the near future, even if none are currently present.

Identify 'recruitment' trees and protect these as the next generation of habitat trees for the area.

Investigate ways to promote the natural germination of seeds in the soil to establish new sapling trees – fencing, weed control and burning may assist in some cases.

Other things to consider when creating habitat for wildlife include the importance of understorey plants and habitat on the ground (eg logs, rocks) and availability of water.

Logs in lakes, dams and rivers provide habitat for birds to perch in safety and amphibians, insects and fish to inhabit.

## Creating hollows

Nest-boxes (artificial hollows) can sometimes be used to help conservation efforts. However, they are not a replacement for naturally occurring hollows and can deteriorate rapidly in the wind and weather. The choice of nest-box entrance size and the aspect and height at which the nest-box is placed will mean it is not appropriate for many species. Other concerns include the lack of insulation from hot and cold conditions and the need to periodically clean the box.

Hollow creation and augmentation are newer techniques, using a chainsaw to carve new hollows or modify existing features of a tree into a usable hollow. Carved hollows can be created in live or dead trees, and these have been successfully used in conservation efforts for several threatened species in Tasmanian and Victoria. Some arborists in Tasmania are familiar with these techniques and can offer advice for a particular site or tree.



Photos: Colin Fry



Photo: Bridget Jupe

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# Tree Hollows

## A HOME TO SUIT EVERY NEED

Tree hollows are holes or cavities in tree branches or trunks that many animals rely on for shelter and breeding. Hollows take many years to form – the best hollow-bearing trees are over 150 years old.



Photo: Forest Practices Authority

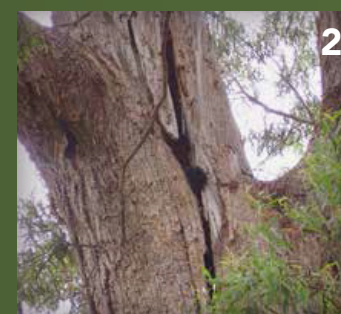
Many animals cannot survive without hollows, yet good hollows are rare. Everyone can help by learning what they are and how to protect them.

## House hunting: what makes a good hollow?

To stay warm, safe and dry, hollows that have an entrance slightly larger than the animal's body size and a deep cavity that provides good shelter are generally preferred. Useful hollows range from an entrance size of less than 2 cm (used by small woodland birds and bats) to over 30 cm (used by owls, possums and ducks).

In Tasmania, over 42 animal species rely on hollows, including five possums, about 29 birds and eight bat species. There are also many insects that make their homes in hollows, including some native bees.

## Hollows come in many shapes and sizes



1. Small round hollows in the trunk [Photo: Dave James]
2. Small or large cracks [Photo: Forest Practices Authority]
3. Burnt out cavities at the base of a tree and old 'chimney' trees [Photo: Bridget Jupe]

4. Large jagged openings in the dead tops of trees [Photo: Bridget Jupe]
5. Broken branch ends [Photo: Forest Practices Authority]
6. Hollows on the ground [Photo: Bridget Jupe]
7. Hollows in branch stubs [Photo: Bridget Jupe]



# How are hollows made?

Hollows are created over very long periods of time through environmental processes. Hollow development starts with damage to the tree. This can be caused by fire, dropping branches, animals or some other physical damage. These areas provide entry points for fungi which leads to decay and further hollowing out. Insects, such as ants, also contribute to the process. Although fire can help create and enlarge hollows, it can also destroy hollow-bearing trees.



Fungi is one of the main drivers for hollow development in Tasmania but it is an extremely slow process. [Photo Rene Raichert]

# How to spot a hollow

Hollows can be found anywhere on a tree, from the base to the small branches near the top. While some animals prefer a certain height above the ground, any hollows may be used.

First step, find a suitable 'habitat' tree. The larger a tree is around the base, the older it is likely to be and the more likely it is to have hollows. A tree with a trunk circumference at least 220cm at chest height is a good place to



Photo: Dave James

start, although some smaller trees may contain small hollows. Look for dead wood and old branch stubs in the canopy, as hollows often form where a branch has broken off. The more dead branches and the bigger they are, the more likely the tree is to have a hollow.

Look carefully, hollows can be hidden by vegetation, or they may be facing upwards and so cannot be seen from the ground. More than half of the hollows occurring in an area may be missed when looking from the ground; just because you don't see a hollow doesn't mean there isn't one there.

As trees age their form changes and with this their potential for developing hollows and providing other habitat. A mature tree can have many habitat values including good foraging material (food), protection from predators, shelter from the elements, and good breeding habitat in the form of nest sites and hollows.



1 Small saplings form part of the understorey. New growth can provide forage for browsing mammals.



2 A mature tree has a large healthy canopy, foraging habitat for nectar and insect feeders, shelter and roosting sites.



3 An over-mature tree begins to senesce (drop branches) and provides more complex habitat.



4 Dead trees/stags often contain hollows. They are essential for raptors and pouncing birds and provide habitat for insects. These trees however will not last in the long term.

Photos: Forest Practices Authority

# FEATURES OF A HOLLOW-BEARING HABITAT TREE

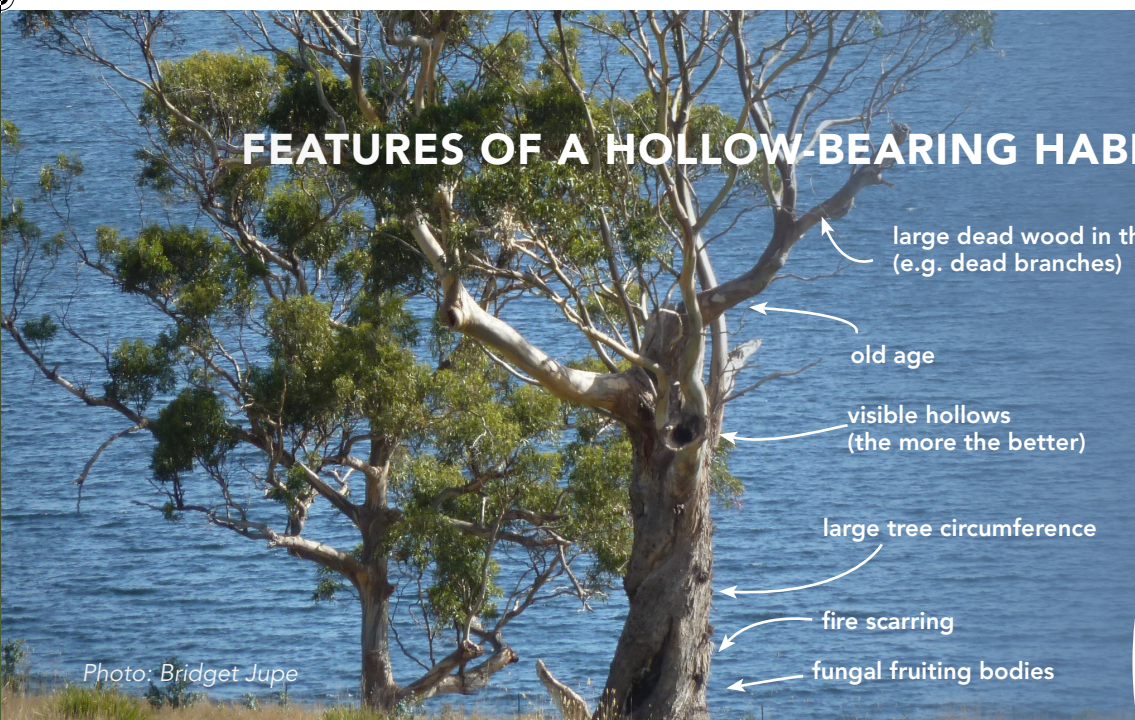


Photo: Bridget Jupe

Research suggests that there are more species using hollows in the drier forests of eastern Tasmania than in the wetter forests to the west. This means that the areas where more people live, collect firewood and go on holiday are also more important for hollow dwelling animals.

# Managing for hollows in the landscape

Because tree hollows take such a long time to form, it is important to think about how the availability of hollows will change in our landscape over time. Some old hollow-bearing trees will fall over, be lost in bushfire or be removed for development. Making sure there are trees to replace them is essential. Remember, removing a hollow-bearing tree is removing 100+ years of investment in time which may be impossible to replace.

# Three principles for good hollow management:

## 1. Retention (keep the tree)

Large, old trees with decay are not necessarily 'dangerous'. Interestingly, the way trees respond to decay can actually increase their safety factors around these 'defects'. Seeking professional advice is a great way to get a true assessment of the risk posed by a tree. If there are problems, in most cases there are ways to make the tree safer. Options might include removing dead wood, reducing the weight in some branches, cabling branches together and thinning the canopy. Ask an arborist to find out more about your options so that your tree can stay in the landscape in a safer way.

Fell smaller trees for firewood instead of older, larger trees. This will reduce the risk of accidentally felling a hollow-bearing tree. Cut wood green and store until it is dry. 'Stags' (dead standing trees) and logs on the ground are very important; avoiding these is a more responsible way to harvest firewood.



Cabling branches [Photo: Bridget Jupe]



Felling smaller trees for firewood [Photo: Forest Practices Authority]