Hollow bearing trees

What is a tree hollow?

Tree hollows are cavities formed in the trunk or branches of a live or dead tree. Such hollows are usually more characteristic of older, mature to over-mature trees but may form in earlier growth stages depending on tree species. Trees with hollows are termed 'hollow bearing trees' or 'habitat trees'.

Hollows usually take a long time to form, and in particular, large hollows may only occur in very large, old trees (100 – 150 years plus in age).

Hollows or cavities in trees are usually formed as a result of wind breakage, lightning strike or fire and/or due to termite, insect or fungal attack.

They may vary in size, both in cavity opening diameter and cavity depth and volume, from small openings of 2 – 6 cm to very large with entrance diameters of 18 – 30 cm or more.

Such diversity caters for the wide range of animal species which utilise tree hollows from small insectivorous bats weighing less than 10 grams to large forest owls such as the Powerful Owl, cockatoos such as the Glossy Black Cockatoo and possums such as the Squirrel Glider, Yellow-bellied Glider and Greater Glider.

Why are tree hollows important?

Trees provide resources for wildlife for foraging, shelter, roosting and nesting. However, trees which contain hollows are particularly important for those species of animals, including many threatened species, which specifically require such hollows for shelter and nesting. These animals are termed 'hollow-dependent' in that they require hollows as a key component of their habitat either on a daily or seasonal basis.

The importance of tree hollows for a range of animal species is well documented with some 179 animal species occurring in forests of NSW that are hollow-dependent. These animals include 46 mammals, 85 birds, 32 reptiles and 16 frogs (Gibbons & Lindenmayer 2002).

Roly Paine

Musk Lorikeet at nest hollow

For these species, the availability of hollow-bearing trees across the landscape is a key limiting factor to their on-going survival. The occurrence of a natural range of hollow sizes, depths, volumes and positions helps to ensure that a diversity of hollows is available to cater for the special ecological requirements of all of these animals.

It is important therefore to maintain older mature to over mature trees, with hollows across the landscape.

Any decrease in the availability and natural diversity of hollows can lead to a significant loss of hollow-dependent animal species diversity and abundance and, in some cases, may result in local extinction of these animals.

For example, where older trees with hollows die out or are removed, animal diversity is drastically reduced. The loss of tree hollows has been listed as a Key Threatening Process (Final Determination) by the NSW Scientific Committee.

Department of Environment & Climate Change NSW

Hollow-bearing tree definition

"A hollow-bearing tree is a dominant or co-dominant living tree, where the trunk or limbs contain hollows, holes or cavities. Such hollows may not always be visible from the ground but may be apparent from the presence of deformities such as protuberances of broken limbs, or where it is apparent the head of the tree has broken off."

Photographs: John Turbill

Hollows may occur in tree branches as well as the trunk. Hollows also include fire scars in the butt of trees and fissures or cracks in the branches or the main trunk.

Retention of hollow bearing trees

The Private Native Forestry Code of Practice requires the retention and protection of a minimum number of hollow bearing trees per hectare dependant on the Broad Forest Type. Retained trees should be a live, dominant or co-dominant (i.e. generally trees with the largest diameter) tree with good crown development and minimal butt damage (i.e. fire scarring). Retained trees should, where possible, represent the range of tree species that occur in the stand in the mature and late mature growth stage. They should also be evenly distributed throughout the area of harvesting operations within the net logging area.

Retained hollow bearing trees should be protected to the greatest extent practicable from butt damage from machinery and directional falling techniques should be used to minimise damage from tree harvesting to the crown and branches. Additionally, it is advisable to protect retained trees from any post harvest fire damage by ensuring that no logging debris is allowed to accumulate around the trunk and damage to the trees surface roots should be minimised by avoiding soil compaction and surface ripping by machinery.

The field marking of hollow bearing trees will help ensure protection of these trees over on-going silvicultural and harvesting activities.

References and Further Reading

- Gibbons, P & Lindenmayer, D (2002), *Tree Hollows and Wildlife Conservation in Australia,* CSIRO.
- For a list of hollow-dependent fauna species refer to Advisory Note 8 *"Old Growth Forests on Private Land"*.
- DECC: www.environment.nsw.gov.au
- NSW Scientific Committee Preliminary Determination - Loss of hollow-bearing trees as key threatening process.
- www.nationalparks.nsw.gov.au/npws.nsf/content/tree_hollows_factsheet.

DECC

Hollow bearing tree - Blackbutt (Eucalyptus pilularis)

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