PRUNING FOR HABITAT WORKSHOP

HABITAT CREATION

13 September 2010

1. Habitat Trees

Approximately 300+ species of wildlife use tree hollows throughout Australia. Tree hollows are of great importance as they are used as nesting sites, shelters and safe refuges. Hollows can present as a small crack or split to very a large cavity in the tree. (Gibbons & Lindenmayer, 2002).

The Arboricultural Industry has gradually become aware of the importance of a habitat trees as part of an active ecosystem. The creation of artificial habitat hollows in dead, dying or living trees is developing rapidly within our Industry.

This workshop is aimed at habitat awareness and to further develop methods and ideas to create artificial habitat in trees whilst maintaining the trees basic integrity.

When managing large dead trees in the landscape, a current management practice is to reduce the tree to a point where it is unlikely to present a risk to people and infrastructure. These trees are usually dead, dying or declining and are left as habitat stumps. The habitat stump has a high proportion of sound wood (very little decay) which has very little value to wildlife, as there are very few usable hollows.

Natural hollows are formed by the process of failure and decay within a tree. It can take up to 120 -150 years in many tree species for natural hollows to develop (Mackauski 1984, Stoneman et al.1097, Warnington and Lamb1999 in Gibbons & Lindenmayer, 2002).
By developing a range of strategies it is possible to shorten this long term decay process and provide natural looking habitat by creating artificial wildlife hollows.

We have so much to learn about the habitat requirements for many species of birds, reptiles, amphibians, mammals, and insects that utilise habitat in trees. It is hoped that this workshop will stimulate some research to further develop the level of knowledge and methods being used. There is a strong school of thought that trees that can develop habitat hollows are able to sustain better survival in some environments.

Without doubt habitat is a vital factor in the health of the overall urban forest.

List of points that may need to be considered (Some need further research)

- Entrance size. Vital (see attached chart.)
- Aspect. Openings faced away from worst weather.
- Temperature. Warm and ventilated.
- Drainage. Waste drains out of nest.
- Landing platforms. Required by some hollow users.
- Escape ladder for young.
- How many habitat sites in each tree.
- How close can each site be situated.
- Discouraging feral and predator animals.
- Light exclusion for owls and some bats.

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- Height of lip in the hollow.(Kookaburra chickens point their rear over the edge during toilet training)
- Complimentary planting to provide, food, cover and aesthetic screening.
- Retain any natural habitat if possible.
- Can habitat be created in live branches without compromising safety.
- Can a branch collar be developed by constricting sap flow at the collar site?
- Methods of removing branches and leaving ‘natural’ habitat ends.

2. Methods of creating habitat hollows and cavities in standing trees and branches.

2.1 Method 1: Trunk Hollows

This is a procedure to make artificial hollows in habitat stumps on vertical sections.

Identify a tree that can be retained as a habitat stump rather than complete removal. Remove the canopy back to a level that is acceptable to reduce the target area or risk of limb failure. Retain any existing hollows if possible. (See Figure 1 and Figure 2).

Figure 1: Prune tree

Figure 2: Habitat tree

Identify suitable locations for new hollows.

Remove a faceplate approximately 30mm to 50mm thick and lower it to the ground. See Figure 3 and Figure 4.

The size of the face plate removed will determine the size of the artificial hollow.

Figure 3: Cut faceplate

Figure 4: Remove faceplate

Choose the desired entrance hole and carefully drill through the faceplate. Pre drill two holes to attach the faceplate back on to the tree with screws. See Figure 5 and Figure 6

Figure 5: Drill entrance hole

Figure 6: Pre Drill screw holes

Mark out the size of desired cavity with boring cuts. Once you know the desired depth of the cavity, draw a line on the chainsaw bar with a marker pen, so that each boring cut is similar in depth. Carefully use a small chainsaw to carry out a series of horizontal boring cuts. (Rollomatic E Mini with picco micro chain is very good for boring cuts). See Figure 7 and Figure 8

Figure 7: Cavity boring cuts

Figure 8: Horizontal boring cuts

Use a small crow bar and hammer to break out sections and form the cavity. Once this has been done, carefully tidy up the rough interior with the chainsaw. See Figure 9 and Figure 10

Figure 9: Break out cavity sections

Figure 10: Cavity interior

Retrieve the face plate and screw into position.

Figure 11: Place faceplate in position

Figure 12: Secure faceplate to trunk

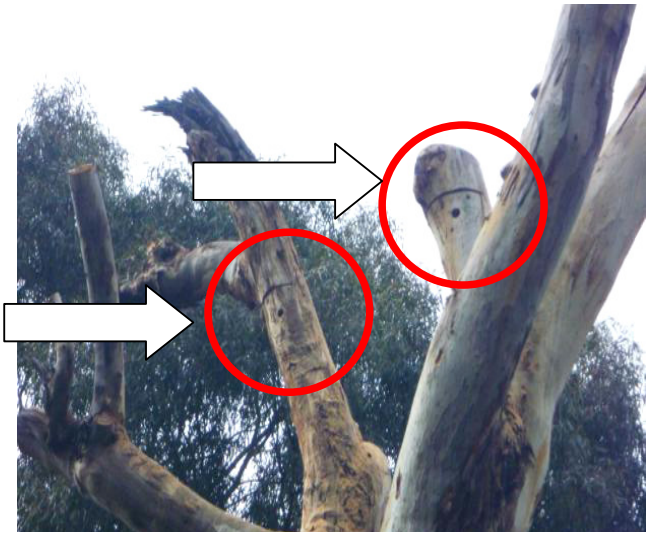

Figure 13: Completed habitat tree with hollows.

Figure 14: Various hole and cavity sizes will determine the different types of wildlife

2.2 Method 2: Branch Hollows

First a suitable branch or stub is selected. Ensure the branch diameter is no less than 150 mm for this method

Figure 15: Select a suitable branch or stub.

Figure 16: Branch diameter no less than 150mm.

Remove the excess length of the branch safely, leaving a stub of at least 300mm in length.

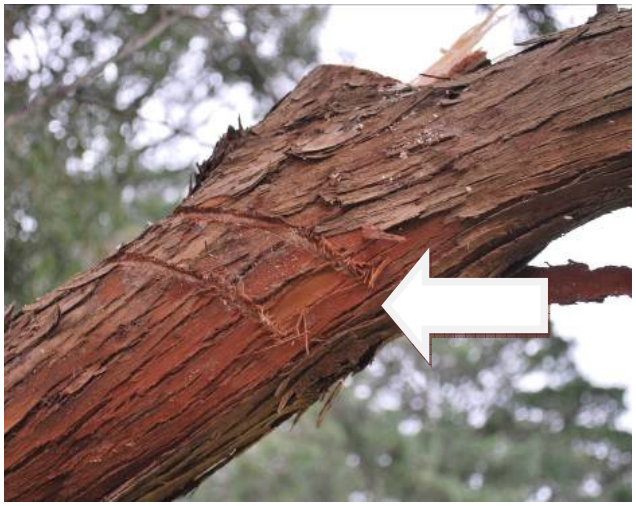

Figure 17: Angled cut then a face plate cut

Figure 18: Create the desired cavity

Cut a sloping section off the end of the stub. Angle the cut at approximately 30 degrees. Cut a face plate off the stub following the same angle. The face plate should be approximately 20mm minimum depth. The face plate should be angled to shed water.

Use a small chainsaw to very CAREFULLY bore into the sloping cut end of the stub. This boring cut should only be undertaken by experienced operators.

Figure 19:Creating the desired cavity

Figure 20: Artificial hollow in use

Remove the core to create a hollow. The hollow can be left open or the face plate re-attached and an entrance hole drilled.

Select a spot for the entrance and use a suitable drill to bore an entrance hole. Entrance holes can be through the face plate, in the side or from the underside. Boring large holes is a little difficult. Reattach the face plate with screws or nails. Drainage holes may also be required.

Figure 20: Drill entrance, and or drainage hole.

Figure 21: Attached faceplate.

Figure 22: Final hollow in use

3. References

Gibbons, P. & Boak, M., 2000, *The Importance of Paddock Trees for Regional Conservation in Agricultural Landscapes*, New South Wales National Parks and Wildlife Service.

Gibbons, P. & Lindemayer, D., 2002, *Tree Hollows and Wildlife Conservation in Australia*, CSIRO Publishing, Collingwood.

Victorian Tree Industry Organisation (VTIO), 2010, Tree habitat sizes, www.vtio.org.au/Content/?s=habitat

Grant J. 1997. *The Nestbox Book,* Gould League Of Victoria Inc.

TREE HABITAT SIZES

	Entrance size:		Nest size approx. within tree trunk:		
Name of bird / possum	**Hole size**	**above ground**	**Width cm**	**Depth cm**	**Height cm**
Cockatoos / Kookaburras	18cm	5m ↑	30	30	100
Pacific Black Duck	12cm	1.5-2m	35	45	35
Galah	12cm	6m	20	20	75
Teal	10cm	1.5-2m	35	35	45
Crimson rosella / Rainbow Lorikeet / Brush Tail Possum	10cm	5m ↑	20	20	55
Barn Owl	10x30cm recta	5m	40	90	40
Grey shrike-thrush	9cm square	2-5m	18	18	25
Yellow-bellied Glider / Great Glider	8cm	8m ↑	30	30	50
Red-rumped parrot / Eastern rosella / Owlet nightjar / Common Ringtail Possum	7cm	5m ↑	15	15	15
Tree-creepers	6cm	5m	15	15	15
Tuan (Brush tail phascogale)	4cm	4m	18	18	50
Eastern & Western Pygmy possum / Feathertail Glider	3cm	1.5m ↑	15	15	45
Sugar Glider / Padalotes	3cm	5m ↑	20	20	50