

A black and white cockatoo is perched on a hollow tree trunk. The bird is facing right, looking towards the camera. The tree trunk is light-colored and has a large, irregular hole. The background is filled with green leaves and branches, suggesting a forest environment. The text "The role of hollow-bearing trees in NSW forests" is overlaid in white on the upper part of the image.

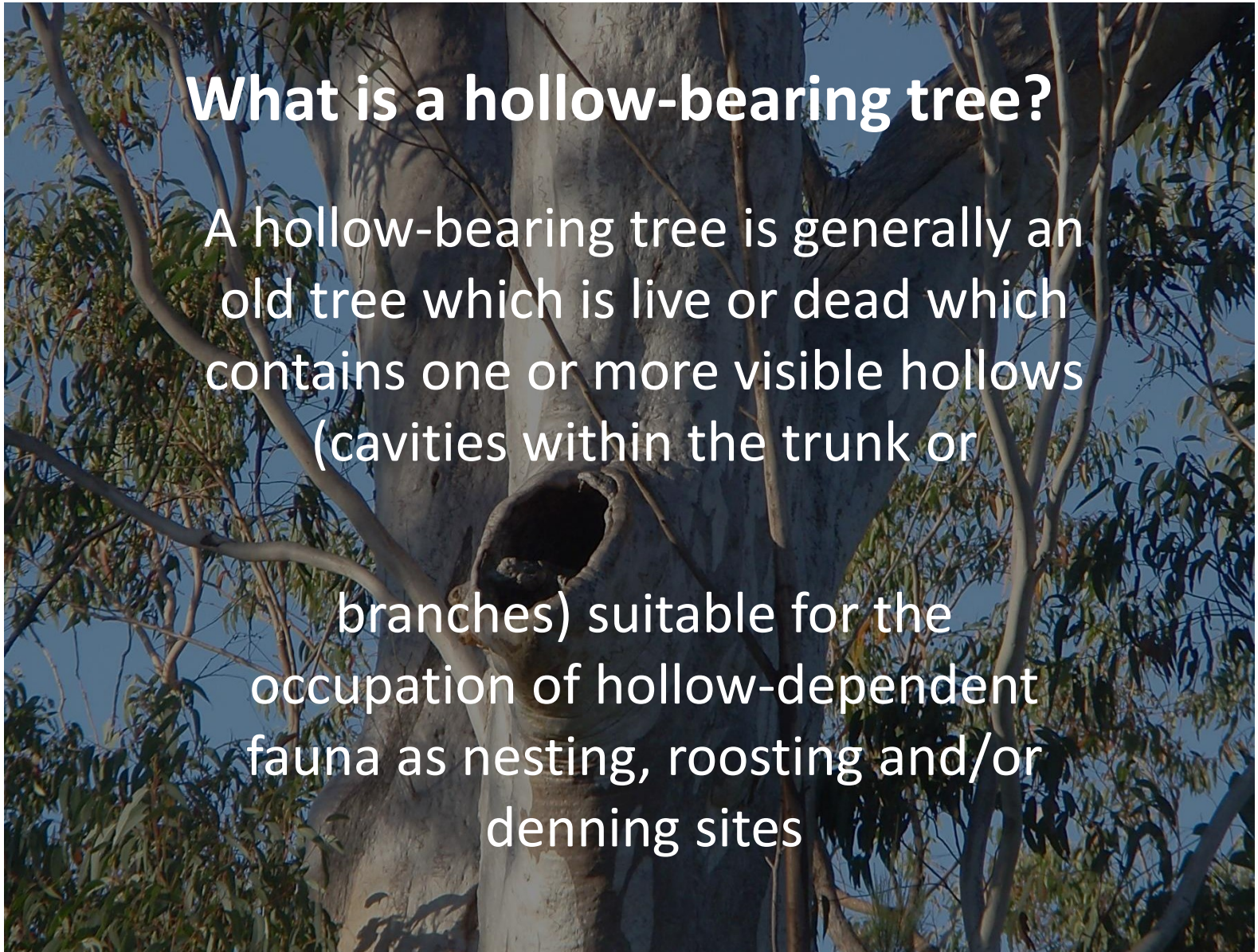
The role of hollow-bearing trees in NSW forests

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What is a hollow-bearing tree?

A hollow-bearing tree is generally an old tree which is live or dead which contains one or more visible hollows (cavities within the trunk or

branches) suitable for the occupation of hollow-dependent fauna as nesting, roosting and/or denning sites



How long does it take to form hollows?

According to the best available science it takes between 100 to greater than 500 years for habitable hollows to form.

Hollows can be formed from:

- Natural events such as wind breakage and lightning strike;
- Decay from fungi at basal injuries caused by fire and other breakages;
- Insect attack from termites and other wood boring insects;
- Physical attack by fauna

How big is a hollow-bearing tree?

The majority of hollow-bearing trees are greater than 80cm diameter at breast height – but can range in size from 40cm to the largest trees in our landscapes



Why are Hollow-bearing trees important?

Hollow-bearing trees provide foraging, shelter, roosting, nesting and breeding resources for a wide range of Australia native and introduced wildlife.



A close-up photograph of a small, brown, furry Eastern Pygmy Possum perched on a golden-brown eucalyptus cone. The possum has dark eyes and a pinkish nose. The background is dark and out of focus, showing green grass and other vegetation.

**Who are some of the fauna
that use hollows?**

Eastern Pygmy Possum



Brush-tailed Phascogale



Brush-tailed Possum



Yellow-bellied Glider



Sugar Glider



Gould's Wattled Bat



Lesser Long-eared Bat



White-striped Freetail Bat



Sooty Owl



Masked Owl



Yellow-tailed Black Cockatoo



Forest Kingfisher

How many animal species use hollows Australia wide?

According to figures published in 2002 more than 17% of Australian native species have been documented as requiring hollows for some part of their life cycle.

More than one species can use a hollow at any given time;

Hollows can be shared by different species at the same time;

Some species can return to the same hollow every year;

Some possums and gliders may have several hollows in different trees they use in their home ranges throughout the year.

Table 1. The number of native species by group that use hollows in Australia

Group	Number of hollow using species	Number of known species	% total in Australia
Birds	114	777	15%
Fauna	49	116	42%
Frogs	38	193	20%
Micro Bats	51	63	81%
Reptiles	79	770	10%
Total	331	1919	17%

Source: Gibbons, P. and Lindemayer, D. (2002)

How many animal species use hollows on the North Coast of NSW?

Table 2. The number of hollow-dependant species by group in North-east NSW

Group	Number of hollow using species North Coast NSW	Number of known hollow using species Australia wide	% total North Coast	**TS
Birds	64	114	56%	16
Fauna	18	49	37%	7
Frogs	11	38	29%	1
Micro Bats	21	51	41%	9
Reptiles	14	79	18%	2
Total	128	331	29%	35
** Threatened Spp. Includes NSW and Federal Listed Vulnerable, Critically Endangered and Extinct				
Source: Smith (1993); Gibbons, P. and Lindemayer, D. (2002)				

Table 3. Estimates for the number of hollows and H-B trees occupied by vertebrate fauna in East Coast Eucalypt forests

Location	Taxa	Number of Hollows/Ha	No. H-B Trees/Ha
Central Vic. ¹	13 Spp. Birds & Mammals	16 to 24	
Gippsland Vic. ²	4 spp. Bird & 5 spp. Mammals	10	
East Gippsland Vic. ³	46 Vertebrate spp.		7 to 14
North East NSW ⁴	2 spp. Possum		3
North East NSW ⁵	70 Vertebrate spp.	18 to 40	6 to 13
South East QLD ⁶	95 Vertebrate spp.	9 to 18	4.5 to 9
Estimated average range of hollows per hectare used by vertebrate fauna: 0.4 - 14 trees/ha			Gibbons & Lindenmayer 2002
Estimates vary from region to region, targeted over full compliment of spp., and habitat (eh woodland, DSF, WSF or combinations thereof), and the composition of faunal spp. - Gibbons & Lindenmayer 2003.			
References - ¹ Calder et al. 1983; ² Menkhorst 1984; ³ Gibbons 1999; ⁴ Mackowski 1984; ⁵ Smith 1994; ⁶ Lamb et al. 1998			

Summary

- Hollows are a crucial habitat component in Australian Native Forests;
- More than 17% of Australian Native Fauna are dependant on hollows for part of their lifecycle;
- Hollows can take hundreds of years to form;
- Hollows come in all shapes and sizes and can be used by multiple tenants;
- Hollow-bearing trees are often over 80cm Diameter at Breast Height (DBH)
- Hollow-bearing trees are under extreme threat from the agricultural, timber, mining and developer industries

What are some of the threats?

1. Broad and small scale clearing for agriculture;
2. Logging and forestry operations;
3. Clearing for mining, industrial and urban development;
4. Too frequent and/or high intensity fire;
5. Climate change resulting from all of the above;
6. No replacement or recruitment of trees that will become the future homes of our unique and wonderful fauna;
7. Deliberate Government policies to remove hollow-bearing trees (eg Isolated tree clearing);
8. Forestry policy that fails to meet minimum hollow dependant threatened species requirements; and
9. Competition from European Honey Bees and other non-native spp.

Old growth hollow-bearing tree illegally logged in Grange SF



Old growth hollow-bearing tree illegally felled on private property



Deliberate use of fire to destroy old growth habitat tree in SF



Deliberate use of fire to destroy old growth habitat tree in SF



Current legislative concerns

Regional Forest Agreement Process

- An increase in the retention from 5 to 8 hollow-bearing trees per hectare (where they exist) in the selective harvesting zone, with total protection/retention in the intensive harvesting zone (if they exist at all).
- Remember the range in studies across the East Coast were 9-40 hollows per/ha and 3-14 hollow bearing trees per/ha

This begs the question – what are they retaining habitat for?

Biodiversity Legislation

Regrowth clearing exemption – eg allowing regrowth from 1990 or 1950 (west of the divide) to be cleared without any assessment.

What then happens at a landscape level when an entire 30 or 70 year cohort of trees is completely eradicated from the landscape, not to mention the hollow dependant spp.?

Questions?

References:

Gibbons, P and Lindenmayer, D., 1997. *Forest Issues 2 – Conserving Hollow-dependant Fauna in Timber-production Forests*. NPWS, Hurstville.

Gibbons, P and Lindenmayer, D., 2002. *Tree Hollows and Wildlife Conservation in Australia*. CSIRO Publishing, Victoria.

Smith, A. P. 1993. *Habitat tree retention in the Wingham Management Area*. A Report to the Department of Planning, Department of Ecosystem Management, University of New England, Armidale, Unpublished.

What should be done?

Encourage Politicians to create real world environmental legislation that is written the same as **CRIMINAL LAW** and **NOT** for the benefit of industry at the expense of communities;

Ensure the legislation has clear and concise aims and objectives, is well defined, is transparent, and does not include exclusions and exemptions that can be used to circumnavigate the intent of the legislation;

Put **suitably qualified and experienced scientists** in charge of developing the legislation, working in partnership with lawyers and exclude industry from drafting the legislation;

Give one organisation the power to implement the legislation; and

Adequately fund and resource all aspects of the assessment, determination and compliance processes.