

Vanishing big trees put Australia's urban wildlife in peril

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Across Australia - and the world - the future of large old trees is bleak and yet large trees support many species such as birds and small mammals, says Mr Darren Le Roux, a PhD student at the ARC Centre of Excellence for Environmental Decisions (CEED) and The Australian National University.

As cities lose their large old [trees](#), native wildlife that depends on large trees for food and shelter will also be in jeopardy. This calls for urgent intervention to stop declines, including reducing the potential risks posed by large trees to people and property, he says.

"Studies based in Canberra – the 'Bush Capital' – show that Australia could lose 87 per cent of its hollow-bearing trees in the [urban landscape](#) over the next 300 years. Under the worst case scenario, we could lose all large hollow-bearing trees within the next 115 years."

This is cause for alarm, because iconic urban wildlife such as parrots and kookaburras as well as animals such as bats and some species of possum and insects and even certain plants may follow the decline of big trees, says co-researcher Dr Karen Ikin of CEED and ANU.

Mr Le Roux explains that the loss of old trees, as well as other critical habitat structures, in urban landscapes is largely due to 'tidy-up' practices that are driven by negative public attitudes.

"Large old trees, dead trees and branches, [woody debris](#) and shrubs that

support [native wildlife](#) are often removed because of fears that branches might injure people or damage property, or because structures appear untidy or pose a bushfire risk," he says.

"We are far too quick to remove habitat like large trees without first considering alternative ways to retain these structures that won't risk people's lives and property."

In a recent study, CEED researchers surveyed 55 bird species across Canberra and found that a quarter of all species was recorded only at large trees, which are typically hundreds of years old. These species include hollow-nesters, insect- and nectar-eaters and woodland specialists such as mistletoebirds, honeyeaters and superb parrots.

"This shows that while replacing large trees with smaller ones may be suitable for some wildlife, it still puts a wide range of species at risk of decline," says Dr Ikin.

"Small trees simply don't support habitat features provided only by large trees and which are required by these species to survive over the long-term. For example, it can take more than 200 years for tree hollows to form naturally.

"Small trees also have less peeling bark, dead branches, woody debris, flowers and nectar compared with large established trees. These features may favour anything from fungi and insects to mistletoe, bats, birds and possums. Even ground dwelling animals can benefit from rocks, litter and logs that accumulate under tree canopies."

To reverse the decline of large old trees, native trees need to remain standing for much longer than currently tolerated in urban areas, and more young trees need to be planted now for the future, Mr Le Roux says. "We need many young and medium sized trees in urban areas

because these are the trees that will replace older ones that eventually die in the decades ahead."

Instead of cutting down large old trees or removing logs, landscaping techniques can be used to separate people and public facilities like footpaths, playgrounds and benches, from these so-called 'riskier' structures and ensure the safe retention of vital wildlife habitat.

Surrounding [dead trees](#) with rocks, logs, litter and native shrubs can create effective safety barriers and keep maintenance costs associated with weeding and mowing down, he adds.

"We also need to change public perceptions about big old trees," he says. "Signs displaying the biodiversity values of large old trees and other key resources in public spaces will go a long way to encourage tolerance, dispel misconceptions and create an awareness and appreciation of the importance of these habitat elements.

"Large old trees are an irreplaceable part of our natural heritage. Not only are they important biodiversity 'islands' in the urban landscape, but they also improve air quality, provide shade and are cultural and aesthetic icons of our cities.

"The traditional urban green space is dominated by overly manicured garden-style spaces that do not necessarily benefit wildlife. We should re-think this concept and get a bit messier in our parks by retaining some of the resources that are commonly frowned upon."

"How we manage our trees now will in turn determine what urban wildlife we'll still have in the next few hundred years," says Dr Ikin. "We need to make the right decisions now, because the young trees will take decades to grow, and we're not sure if the animals can survive the long wait."

More information: Le Roux DS, Ikin K, Lindenmayer DB, Manning AD, Gibbons P (2014) "The Future of Large Old Trees in Urban Landscapes." *PLoS ONE* 9(6): e99403. [DOI: 10.1371/journal.pone.0099403](https://doi.org/10.1371/journal.pone.0099403)

Darren S. Le Roux, Karen Ikin, David B. Lindenmayer, Wade Blanchard, Adrian D. Manning, Philip Gibbons, " Reduced availability of habitat structures in urban landscapes: Implications for policy and practice, *Landscape and Urban Planning*," Volume 125, May 2014, Pages 57-64, ISSN 0169-2046, [dx.doi.org/10.1016/j.landurbplan.2014.01.015](https://doi.org/10.1016/j.landurbplan.2014.01.015).

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