

Expansion of Australian reserves for fairy possums might be at expense of other species

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Expansion of Australian reserves for fairy possums might be at expense of other species. Credit: David Lindenmayer

Current nature reserves are not very suitable for the critically endangered Critically Endangered Leadbeater's Possum, but expansion of nature reserves might come at the expense of other Australian forest species, according to a study published January 25, 2017 in the open-access journal *PLOS ONE* by Chris Taylor and Natasha Cadenhead from the University of Melbourne, Australia, and colleagues.

The effectiveness of protected areas such as [nature reserves](#) in supporting a species depends on how much the species already uses, or potentially could use, the habitat. It is therefore key to assess a reserve's suitability for any given species. The authors of the present study examined the suitability of forest reserves in Victoria, Australia for conservation of the Critically Endangered Leadbeater's Possum, *Gymnobelideus leadbeateri*. They modelled relationships between environmental factors in the

forest and where possums occurred to assign habitat suitability values, expressed as a percentage of the optimal habitat for the species, to both the current reserve system and possible expanded systems. The authors also considered how expansion of the reserve might affect three other forest-dependent species, two other marsupials and an owl species.

The researchers found that the current reserve system had a habitat suitability value of just 29.6 percent, whilst expanded systems had higher values, between 33.7 percent and 61.5 percent. However, they predicted that expansion of the current reserves to prioritize benefits for Leadbeater's possum would likely occur at the expense of other forest-dependent species, because their [habitat](#) requirements are quite different. A much larger reserve system would be needed to adequately protect all key species in this system. The study illustrates the importance of evaluating reserve [expansion](#) options in terms of trade-offs between the needs of key [species](#).

More information: Taylor C, Cadenhead N, Lindenmayer DB, Wintle BA (2017) Improving the Design of a Conservation Reserve for a Critically Endangered Species. *PLoS ONE* 12(1): e0169629. [DOI: 10.1371/journal.pone.0169629](https://doi.org/10.1371/journal.pone.0169629)

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