Does the loss of tree hollows contribute to the decline of arboreal mammals in northern Australia?

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The drivers of northern Australian mammal decline remain highly uncertain, but one of the main hypotheses is habitat simplification. Of the nine mammal species that have declined markedly in northern Australia, six are arboreal (including semi-arboreal and scansorial) and typically use tree hollows as daytime shelter. These species have contracted to the wetter, coastal parts of their range, where large trees happen to be most abundant. Given evidence that tree hollows are a critical limiting resource for a range of arboreal fauna in southern Australia and historical declines in the abundance of hollow-bearing trees have severely impacted populations of these species, we investigated the drivers of tree-hollow availability in the tropical savannas of northern Australia and assessed nestbox use as a potential conservation management tool. Cyclones, termites and intense fires selectively destroy large, hollow-bearing trees in tropical savanna woodlands. In a coastal refuge where mammal assemblages are still fairly intact, 41% of all nestboxes deployed were used within a one year period by threatened arboreal species, indicating the viability of nestboxes in arboreal mammal conservation efforts. The rate of nestbox use was significantly correlated with the abundance of tree hollows in the surrounding landscape. Managing fire regimes to minimise the loss of large, hollow-bearing trees at both local and landscape scales is critical to reversing arboreal mammal declines. Augmenting natural den sites with artifical nestboxes may be an effective way of boosting local populations of arboreal mammals.

12th International Mammalogical Congress Perth, Western Australia 9th -14th July 2017

ABSTRACT BOOK