

Microbats in the Sydney Region

Excerpts from a talk given by Glenn Hoye
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Bats often represent over one third of all mammals present in natural forest systems. In many urban areas, bats often account for over half of all native mammal species present. Despite this, we currently know very little about even basic information on micro-chiropteran bats in the Sydney area, including their distributions and which species, if any, have increased or declined in numbers.

The Sydney Basin supports a rich bat fauna of at least 19 species. A further five have not been recorded but may exist based on known distributions. Of the 19 species, four are predominantly cave-roosting, sheltering during the day in caves, mines, tunnels, culverts and stone basements. The remaining 15 species roost during the day in tree hollows, under bark and in buildings.

The only species that has been regularly recorded roosting in buildings within the Sydney area is Gould's Wattled Bat *Chalinolobus gouldii*. One of the few roosts studied is utilised during spring and summer when young are born and raised. They leave in winter for other roosts and it is not known whether these are 'natural' roosts or buildings.

For most of the tree-roosting microbats, preservation of forested areas is the only reliable method of providing adequate daytime roosting resources for these species. Provision of artificial nest boxes in urban areas may augment roosting habitat for some species. Little is currently known, however, of their preferred artificial roost designs. The provision of artificial roosts should not be regarded as an excuse to allow the removal of native forest which provides a necessary range of diurnal roosting requirements for the various species.

Foraging habits and preferred foraging habitats are also little known for all microbat species in the Sydney area. There is rudimentary knowledge of the diets of some species. Bat species have a range of requirements which must be met before they can exist in any given area. Preferred foraging habitat at any time will depend on the emergence times of various insect prey, existing weather conditions, energetic demands imposed on individuals by their reproductive state and the quantity of prey items.

The Large Bent-wing Bat *Miniopterus schreibersii* roosts in man-made structures which include a disused railway tunnel, water reservoir, disused military bunkers, a water diversion tunnel and stormwater drains. Some recently discovered roosts have only been found because of threats to each of them. At one, domestic cats repeatedly caught bats at the entrance to a drain and returned the bodies to their owners.

A number of microbat species are currently only known to any extent, from the edges of the Sydney area which includes relatively large intact areas of bushland eg. Large-eared Pied Bat, Eastern Horse-shoe Bat, Fishing Bat, Eastern Falsistrelle and Eastern Free-tail Bat.

The foremost threat to bat species in the Sydney area is habitat destruction for residential and other development. Inner Sydney has little forest remaining and even these remnants are under threat. Western Sydney still contains sizeable remnants but many of these may also disappear within the next few decades. Other threats to microbat populations include the accumulation of contaminants in the form of lead emissions from motor vehicles, organochlorines and other compounds in wood preservatives, herbicides and pesticides. Motor vehicle impact and cat predation are additional causes of mortality, especially for slow-flying species that forage near the ground eg. Lesser Long-eared Bat *Nyctophilus geoffroyi*.