

# Bats of Couran Cove Island Resort

The ability of flight is essentially restricted to birds and insects. However, bats are remarkable placental mammals that evolved as flying animals approximately 60 million years ago and are the only mammals that can truly fly.

Australia is home to 74 species of bats, 52 of which can be found in Queensland. All bat species are nocturnal and are contained in the order *Chiroptera*. This name is derived from the Greek words *kheir* and *pteron* which mean hand and wing respectively. This name originates from the fact that the anatomical structure of their fore wings comprise the same basic parts of the human arm and hand, but in different proportions, allowing them to function as wings (Queensland National Parks & Wildlife Service).



Skeletal structure of the Black Flying Fox (*Pteropus alecto*)

This order of bats is then divided into two suborders:

1. *Megachiroptera* – comprising of the large fruit eating bats such as flying foxes and blossom bats (collectively known as the Megabats).
2. *Microchiroptera* – comprising of the much smaller insectivorous bats (collectively known as the Microbats).

## Megabats

Megabats, including flying foxes, are quite large with wingspans of up to 1.6m, with heads often resembling that of a fox. The megabats are frugivores, meaning that their diet consists

entirely of fruit and nectar - the vegans of the bat world! They possess excellent vision and do not have the ability to 'echo-locate' their food like their close relatives the microbats.

Throughout the day megabats roost in camps or colonies comprising of thousands of individuals. As dusk arrives, these bats can be seen making their daily migration from their camps to their feeding grounds – sometimes flying up to 30km a night in search of such flowering plants as eucalypts and melaleucas. When roosting, these bats hang upside down by a hind foot with the wings wrapped around the body like a blanket. As is the case with all bat species, the foot ligaments allow for no muscle activity whilst hanging. Rather, muscle use is required to let go of branches.



Black Flying Fox

Females give birth to one young per year, this is generally around the October/November period. The young are carried by their mothers from anywhere between three to ten weeks, after which they are left in nursery camps until old enough to make the daily migration to nearby food sources.

One of the more common megabats observed on South Stradbroke Island is the Grey Headed Flying Fox (*Pteropus poliocephalus*). This is certainly one of the well-known species of bats as a result of their tendency to occasionally feed within cultivated fruit crops. However, this species is of crucial importance as a seed disperser and pollinator of many native trees.

### Microbats

Microbats, on the other hand, are relatively small with wingspans of less than 30cm. The only exception being the rare Ghost Bat (*Macroderma gigas*), that is Australia's largest and only carnivorous microbat, with a wingspan of up to one metre.

This group of bats generally possess quite poor eyesight, however, to compensate for this lack of vision they have developed the very complex process of echolocation. Echolocation is somewhat similar to sonar systems. It enables microbats to navigate their environment and locate food – which typically comprises entirely of insects. The process of echolocation functions by analysing high frequency sound signals reflecting off hard objects such as insects. These bats call at such a high frequency that it is usually beyond the human range of hearing. However, bat detectors such as ANABAT, convert these high frequency calls into the range of human hearing.



Ecolocation

Unlike their larger relatives the megabats, these bats do not roost in large sociable groups consisting of thousands of individuals. Within some species, such as the Yellow-Bellied Sheath-tail Bat (*Sacclaimus flaviventris*), a colony may consist of only 10 individuals.

### Health & Disease

There is currently an ongoing debate with regard to certain species of bats as carriers of two types of disease – a group of *paramyxoviruses* and a virus contained in the *lyassvirus* genus. There is still very little known about the transmission and nature of these viruses. However, it is important to understand that the only people at real risk of contracting either of these diseases are wildlife carers and handlers.

### Conservation & Protection

Unfortunately, there are many misconceptions about bats, such as they are all bloodsuckers or crop fruit eaters! This perception of these incredible creatures could not be further from the truth. All bats play an enormously significant role in ecosystems throughout the world. Because all microbats feed on insects, their presence in an area greatly aids in insect population control. In fact, at Couran Cove Island Resort, microbat populations are encouraged in order to assist in mosquito management. Additionally, a recent study in Asia found that two million microbats consumed more than 6000 tonnes of insects per year (Readers Digest). This alone should be a clear indication of their importance. Megabats are just as important for the survival of many native Australian plants. They are integral pollinators for a whole range of native plants, as well as being vital seed dispersers. Conservation authorities, land use planners and farmers need to allow greater consideration to bat populations whenever a natural area of land is to be modified in any way.

### References

- Readers Digest 1997 'Wildlife of Australia'.
- Queensland National Parks & Wildlife Service 'Wildlife Information Sheet – Bats'

*Botanical Illustrations by Louise Sanders®*