

Landcare UpHunter

Summer 2019

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Going Batty For Bats

When considering species that are vital to our environment, bees dominate common opinion. Without these buzzing pollinators in our local area and wider world, ecosystems as we know them would collapse in moments. However, a multitude of species hold similar roles, some of which don't often receive the publicity they deserve. Of all these misunderstood creatures, bats are amongst some of the most overlooked on our planet.

Across the world there are over 1,200 species of bats, the only flying mammals in the world and approximately 90 of these species are found in and are native to Australia!

Fruit eating bats are referred to as megabats or flying foxes and are the bats that most people are familiar with. They are large in size and often seen scattered throughout a late afternoon sky, returning to roost in large groups (referred to as colonies or camps).

Flying foxes are the nocturnal bees of the forest, pollinating flowers and spreading seeds of fruiting trees as they seek out their fruit-filled dinners. Many tree species could not exist without them. Their diet includes certain eucalypts, melaleuca, banksia and lilly pillly.

However, while these flying foxes are what people often recognise to be Australian bats, they are greatly outcompeted in number by our often unseen and unheard microbats.

A growing number of some 70 species of microbats call our country home. To most humans they are masters of disguise. Most microbats are small enough to fit inside a matchbox and while they are calling incessantly (using echolocation to discern their environment and find food), these calls are usually inaudible to the human ear.

Despite being some of the most common mammal groups to be found in urban areas, they are often unheard of and so too are their vital roles within Australian ecosystems.

Bats make up a fifth of the worlds population of mammals. Unlike the infamous Vampire bat (*Desmodus rotundus*), there are only three out of approximately 1,200 species of bats worldwide that feed on blood, all of which are restricted to the American continent.

Flying foxes can have a wingspan of up to 1 metre but our tiny, often unseen microbats a wingspan of only up to 20 centimetres. They mostly sleep in tree hollows or caves and cannot stand on their hind legs, only hang by their feet or thumbs. They can spend 7 hours in foraging and airborne feeding, some travelling up to 15km in search of food mostly constituting 40% of their body weight.

In Australia, insects form the great majority of microbat diets like grubs, beetles, weevils, flying termites and mosquitoes. Exceptions include the Southern myotis (*Myotis macropus*) that feeds on both freshwater insects and small freshwater fish. All use echolocation, some to catch larger insects while flying, others to catch smaller insects sitting on leaves, a foraging strategy known as gleaning.

Each individual bat needs to consume an astonishing number of insects per night to sustain the energetic costs of flying, some even consuming up to 50% of their body weight. As a result, microbats have been described as having huge potential in insect control, both stopping diseases spread by biting insects like mosquitoes, as well as relieving pressure on agricultural industries by reducing great numbers of insect pests. They are able to catch larger insects with their tail or wings and carry them back to their roost.

In studies overseas, colonies of Mexican free-tailed bats have been found to consume several tonnes of moths every single night. During the Winter months when food is scarce, lowering their body temperature and mini-hibernation are other survival mechanisms.

Some vineyards in South Australia have installed microbat roost boxes to encourage microbats and decrease their use of pesticides. However, the scale to which microbats can assist human services like agriculture is still greatly understudied, especially in Australia.

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Left: Long-eared bat
(*Nyctophilus Geoffrey*)

Right: Southern Myotis—also known as Large-footed Myotis
(*Myotis Macropus*)

Photos:
S. Verdasco



Scavenger Hunt

Going on a Scavenger Hunt is a great way to learn more about nature and have fun at the same time, whether your search is in a National Park, a local park, in your garden, on-farm or around your neighbourhood. You might want to do this by yourself or with your family and friends. Maybe you can suggest to your teacher at school or at your Cub/Scout or other group that they organise a Scavenger Hunt. Then you can all share with each other what you have learnt. Taking photos of your discoveries is good too.

Leaf



Native plant seed



Feather



Native flower



Dead bug



Lichen or Moss



Piece of bark



Small stone



Weed



A Weed seed head



Mushroom or Fungi



Berry



Scavenger Hunt—send us your photos

What are the different colours, textures and shapes of plants, feathers, insects etc. that you observed on your Scavenger Hunt? What did you learn about your world, its animals, insects, birds, plants—whether your Hunt was at home, at school or elsewhere?

We would love to share your knowledge and experience with our readers in a future edition of the Landcare UpHunter newsletter.

Send us some photos (in compressed form) with written information about your Scavenger Hunt to landcareuphunter@gmail.com

You can call Ruth on 0407 232 539 if you need more information.

Going Batty For Bats cont'd

The Inland broad-nosed bat (*Scotorepens balstoni*), Southern Myotis (*Myotis macropus*) and the Long-eared bat (*Nyctophilus geoffroyi*) are just three of our microbats that are known to inhabit the Upper Hunter area but being small you often don't see them.

Despite the potential microbats have to offer for our society, half of the microbats found in Australia are threatened. This can be attributed to a large range of processes associated with the reduction of food, shelter and survivability across our landscape.

To describe just a single issue, some bats including of the *Nyctophilus* species (often called the long-eared microbats) avoid lights entirely. They prefer to forage in complete darkness, avoiding open areas and forest edges. In contrast, as can often be observed on a nightly basis, many insects are drawn towards lights and therefore away from the small dark areas of forest that many microbats are confined to, particularly in urban areas. Facing limited insect prey abundance, while being pressured by increased competition with other bats and reduced food availability means that many species are being excluded from urban forests entirely.

There are some simple but practical ways that we can ensure healthy populations of microbats and not an overabundance of pest insects. For example, conserving local trees and keeping and ensuring any lopping is minimal. Or to make our skies darker have lights on sensors or timers and install bulbs close to the ground so that light spillage into nearby forest areas is also minimised.

For such a small mammal, microbats can have very long lives and can live for decades. One even recorded as living for 41 years!

We can also reduce the amount of pesticides used around our homes and other areas as consuming pesticide riddled insects for decades is often fatal. In addition, we can work to prevent the removal of trees and reduce tree pruning to a minimum as small hollows, cracks and branches can be home to large numbers of microbats, especially in their breeding and hibernating seasons (early Summer and Winter respectively). It is through small steps like these that we as community members can play our part in helping threatened microbat species, so that they too can play their important role in our ecosystems and agricultural production.

Sabrina Velasco

Photo by Leroy Gonsalves of an Inland Broad-nosed bat (*Scotorepens balstoni*) with pup. The adult measures some 50mm. from head to tail and has a wingspan of some 278mm. It has small eyes and slender ears with males usually sized slightly smaller than females.

Mating occurs before Winter with females birthing one or two pups born by early Summer. Young pups are able to fly and hunt for their own food well within two months of their birth.

They fly over woodland and water to search and catch insect prey food, like mosquitoes. Roosting in tree hollows, at times they share their homes with groups of other microbats. Living in semi-arid or arid areas and not usually found east of the Great Dividing Range.



Resources & Funding

The Veggie Club—from the Veggie Lady. A website providing an online monthly newsletter: Articles, recipes, planting & harvesting guides, what to grow & when, forum & more, Iphone & Ipad apps. Link in at www.theveggielady.com or call 4648 2174.

World's largest urban farm to open on a Paris rooftop—The Guardian article on the Agropolis company's urban farm expected to open Spring of 2020. This sustainable production organic farm will sit atop a six-storey building in Paris. Covering 14,000 square metres, it is expected to grow over 30 different plant species, with 1,000kg of fruit and vegetables in peak season, supplying locals with fresh produce all year. Go to www.theguardian.com/cities/2019/aug/13/worlds-largest-urban-farm-to-open-on-a-paris-rooftop.

Protecting Our Hollows—Fire & Restoration (Hotspot's Fire Project) article linking with a four-page fact sheet on the importance and value of hollows as habitat for native wildlife. A guide on the value of hollows in trees, how they relate to healthy ecosystems, native fauna reliant on them and how land managers can assist in protecting them. Covers good procedures for prescribed burns. You can download the guide at <http://hotspotsfireproject.org.au/fact-sheets>.

Visible Farmer—the Visible Farmer Project (Documentary Australia Foundation) provides an online series looking at the women behind Australia's food and fibre industry and the vital, innovative role they play, from outback stations to urban market gardens. There are 15 short films that were initially released in August 2019, with more coming online each month. Go to visiblefarmer.com.

Four Friends of Fire video—Fire & Restoration article linking to the Hamish Clarke produced educational video on four factors that affect the creation of large wildfires. You will meet "Wes" (weather), "Phil" (fuel), "Iggy" (ignition) and "Des" (dryness) and learn how they all interact. To view just go to <https://scienceatthelocal.wordpress.com/2019/04/12/making-friends-with-the-friends-of-fire>.

Funding

Organics Infrastructure Fund—NSW Environment Protection Authority (NSW EPA) has various grants available each year to Local Councils, business, industry, community groups etc. For example, Waste Less, Recycle More grants up to \$300k to develop new markets or expand existing markets for compost; Love Food, Hate Waste Education or Litter Reduction projects. Includes case studies from the past. To find out more just go to <https://www.epa.nsw.gov.au/working-together/grants/organics-infrastructure-fund>.

The Archibull Prize—Art4Agriculture (Picture You in Agriculture) is an innovative hands-on program for schools where students research an agricultural industry and express their findings through artwork—specifically a life-size fibreglass cow (provided to participating schools). Students are matched with a Young Farming Champion who can assist them to understand the challenges facing farmers in feeding, clothing and powering our community through agriculture and sustainability. Expressions of Interest from schools close on March 12th with the successful applicants advised in early April. For general information and guidelines go to archibullprize.com.au or you can Telephone: Lynne Strong on 0407 740 446 or Email: lynnestrong@pyia.com.au for more details.

Events for your Diary

Landcare UpHunter stall—farming, environment, Landcare, education resources, plants/herbs. Visit us at: Events will recommence in Autumn. Details will be in next newsletter.

Other Events:

Clean Up Australia Day—March 1st from 9.00 to 11.00am. For event locations in the Shire & to RSVP go to www.upperhunter.nsw.gov.au

Grants Writing Workshop—March 5th at 6.00pm, Upper Hunter Shire Council, Liverpool St, Scone. Email jbakewell@upperhunter.nsw.gov.au to register or call Jacqui 6540 1172

NSW Farmers Association—meet March 16th at 6pm, Scone RSL, Guernsey St, Scone. Email Mick at collinsm@nswfarmers.org.au

Myths About Mistletoe & Woodland Birds Habitat Workshop—April 4th from 8.45am to 12.30pm at Merriwa Settlement Hall. To register call Catherine on 0427 578 937

Pasture Nutrition Workshop/Field Day—late April at Merriwa. Date TBC. Call Kim on 0418 570 743

Gundy Farmers Dinner—6.30pm on the first Friday of every month at the Linga Longa Inn, Riley St, Gundy.

Merriwa Landcare Group. Contact Jenny Lee on 0429 337 557

Murrurundi Landcare Group just Email Sandy@boyscreek.com.au

Pages River Warriors Working Bee Wilson Memorial Oval, Murrurundi 1st & 3rd Sunday monthly (morning) Email Sandy@boyscreek.com.au

Landcare UpHunter & Scone Landcare—refer details below

Being Bush Friendly—at home

Whether you live in one of our Shire's main towns or in a village, or you live in a more rural locality, being Bush Friendly around your home is really important for native wildlife.

We have home gardens, streetscapes, local parks, National Parks, reserves and plenty of rural land and waterways where we can see and enjoy the significant variety of native flora and fauna that exists in our local landscape. We are fortunate to have such a variance in land formation, from the mountainous Barrington Tops area in the east, to the plains of the Merriwa Plateau in the west and the wide variety of landscapes in-between.

Your garden can provide food and shelter for a variety of native species from tiny lizards, beneficial insects and finches to larger birds and animal species. In providing a positive environment you also affect the health and welfare of surrounding gardens and bushland. Creating a Native Friendly Garden and maintaining it benefits you and your neighbours.



Plants in Your Environment

When you choose plants for your garden consider whether they are a good food source for native species; is their root structure sound and will it help reduce soil erosion; will they spread into adjoining bushland; are they 'water-wise' or need lots of water supply.

If developing a Native Friendly Garden for the first time have larger plants/trees at the back, then medium sized, then smaller ones at the front—the website habitatnetwork.org has easy-to-look-at downloadable plans. Scone Landcare also has a Native Tree Guide outlining a variety of local species, their size, suitable soil types, weather conditions etc.

Reducing Fire Hazards

By working to reduce fire hazards in your garden you are supporting organisations like NSW Rural Fire Service and Fire and Rescue NSW in protecting homes and landscapes.

Keep your garden free from waste and maintain it well; regularly clean the gutters around your house and other buildings; store or dispose of flammable or dangerous substances correctly; ensure when you lop a tree or have grass clippings they are not stored behind buildings; or put a Static Water Supply (SWS) sticker on your letterbox if you own a pool.

Water Conservation

Stormwater and garden runoff can have significant environmental effects on bushland and neighbouring land. Reducing soil erosion, rubbish and weed growth are important.

If you haven't already got one, you can install roof runoff tanks and use stored water in your garden; select plants that require minimal watering; use mulch and compost. Mulch reduces water evaporation by up to 80%, compost gives nutrients to plants and gardens.

Water your garden when the day is cooler (usually morning or evening) not in the heat.

Pesticide & Fertiliser Use

Fertilisers and pesticides can be toxic to our native species, to your pets, the soil, plants and to humans. Make sure you know of the when, how, what to using them—safety first.

Encourage natural pest catchers like Blue Tongue Lizards, Geckos, beneficial insects to your garden to reduce snails, slugs and unwanted bugs. It saves on your 'hip pocket' too!

Over fertilising of plants increases weed growth in your garden and nearby bushland. Use slow release fertilisers, mulch if possible and have lots of earthworms in your soil.

Nature & Pets

Lots of us have pets at home that share our environment with a range of natives species.

Keeping your cats indoors as much as possible can assist in minimising native bird loss. Cleaning up your dog and cat droppings in the garden (or when walking your dog) and disposing of it responsibly helps to stop contaminants leaching into land and waterways.

We can all be Bush Friendly, achieving good outcomes for native flora, fauna and for us.

Ruth Hardy



Landcare UpHunter is hosted by
Scone Landcare Inc.

*Opinions & views expressed in this newsletter
are not necessarily those of Scone Landcare Inc
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Landcare UpHunter

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Visit us at www.landcare.nsw.gov.au/groups/scone-landcare-group