



Urban battler

The grey-headed flying-fox is facing increasing threats and an uncertain future.

STORY AND PHOTOGRAPHY BY DOUG GIMESY

AS THE SUN dips below the far horizon, a small crowd – gathered on a hill to view the sunset silhouette the Melbourne skyline – starts drifting away. If only they’d waited another 15 minutes they’d have witnessed an even greater spectacle than just another sunset over a big city – the daily exodus of up to 50,000 grey-headed flying-foxes from their urban sanctuary to Melbourne’s suburbs and beyond.



“I don’t think most people appreciate how lucky we are to have this right on our doorstep, just 5km from the city,” says Stephen Brend, the Parks Victoria ranger responsible for the flying-foxes at Yarra Bend Park. “What an incredible spectacle it is to witness flying mammals, some with wingspans of more than a metre, crossing a major city at night. I’ve worked all over the world and seen the animal migrations in Africa, but this fly-out is certainly one of my favourite wildlife experiences – and it’s so easily accessible.” ▶

A tendon-locking mechanism in the toes means that flying-foxes use very little energy while hanging at rest.



On hot days, flying-foxes will 'belly-dip' (above) on rivers and streams, allowing them to cool down and also capture water on their fur, which they will lap up thirstily. The thumb of this young flying-fox (below) had to be amputated after the bone was damaged when electrocuted on a powerline. Thumbs are used for climbing and inversion.



Thousands of flying-foxes may be seen on summer nights over Melbourne as these megabats head out from day-time roosts to forage.

Also known as a fruit bat, the grey-headed flying-fox is a megabat and one of four mainland flying-fox species found in Australia. The others are the black flying-fox, spectacled flying-fox and little red flying-fox.

Apart from an obvious size disparity, flying-foxes differ in many ways from smaller microbat species. "Most smaller bats tend to roost in dark places such as caves, mines, tree hollows and under bark, and rely on echolocation to navigate and find food – usually insects," explains Dr Justin Welbergen, animal ecologist at the Hawkesbury Institute for the Environment, Sydney, and president of the Australasian Bat Society. "Many of the smaller species don't travel long distances in search of food but rather go into torpor when supplies are low.

"Flying-foxes, on the other hand, roost among the branches of tall trees, possess keen eyesight and a powerful sense of smell, and travel epic distances in search of ephemeral sources of nectar, pollen and fruit." But where do those heading out en masse nightly across Melbourne go?

Like many of the human residents of the southern capital, when the sun goes down the city's flying-foxes head out for dinner – in their case hoping for a meal of pollen and nectar from flowering eucalypts, banksias and melaleucas, as well as rainforest fruits. These native plants, however, aren't as plentiful as they once were, so flying-foxes have been turning to introduced fruits commonly found in suburban gardens to avoid starvation.

Whether they're dining on native or exotic food, it's when flying-foxes drop in for dinner that most people get their first close-up encounter with these amazing flying mammals.

Intelligent and highly social, flying-foxes tend to congregate in large roosts called camps during the day. Although generally used intermittently, some flying-fox camps have been established for more than 100 years – longer than some Australian cities. These gatherings are not only important for social interactions, but are also a place for them to rest and provide a refuge during the significant phases of their annual life cycle, such as mating, giving birth and raising their young. Grey-headed flying-foxes can live for up to 20 years in the wild, although seven years is the average, and typically give birth to just one pup per year, usually between September and December.

AS WELL AS BEING an incredible visual spectacle, the nightly excursions play a vital role in maintaining the health of our native forests. These nocturnal journeys,

These flying mammals are our most effective long-distance native pollinators and seed dispersers.

which cover on average about 20km a night, are an important mechanism for the dispersal of pollen and seeds. In this way, they contribute to the reproductive and evolutionary processes of forest plant communities.

In fact, these flying mammals are some of our most effective long-distance native pollinators and seed dispersers.

"Grey-headed flying-foxes are vital for the health of Australian ecosystems," explains Australian Museum ecologist Dr Anja Divljan. "As they feed, thousands of pollen grains collect on their fur and many small seeds collect in their gut. Coupled with their ability to fly long distances each night, this means they provide a great mechanism for cross-pollinating plants and dispersing seeds over large areas. They really are the great night gardeners of our ecosystems."

This spread of pollen and seeds isn't limited to areas around established camps. Because the trees on which flying-foxes rely for food flower at different times in different parts of the land, local nectar and pollen supplies generally aren't stable enough for a colony to remain in the same place all year. And so, as winter approaches in Victoria, many grey-headed flying-foxes leave the safety of their Melbourne camp and move up the east coast in search of large flowering events to help them get through the colder months. There are records of grey-headed flying-foxes travelling between Melbourne and Sydney – about 720km – in just two nights.



Extreme heat throughout the 2018–19 summer killed thousands of flying-foxes.

Dropping like flying-foxes

Record temperatures spell disaster for flying-fox populations.

FLYING-FOX COLONIES across Australia have been devastated by record heatwaves this summer. In far north Queensland, about 23,000 (one-third of the Australian population) spectacled flying-foxes, listed as vulnerable, dropped from their roosts when temperatures soared to 42.6°C.

Volunteer carers who collected the dead animals and took orphaned young into care say it's the first time the species has suffered mass deaths. Spectacled flying-fox colonies have never experienced such a heat stress event before because they are located in the tropics, where temperatures are high on average, but not that extreme.

Meanwhile, in Adelaide and Victoria between 4000 and 6000 grey-headed flying-foxes died from hyperthermia in similar events.

This summer's deaths are not an isolated occurrence, however. In 2009 the heat that precipitated Victoria's Black Saturday bushfires killed more than 5000 flying foxes; in the first weeks of 2013's 'Angry Summer' more than 10,000 died; and at least 45,500 dropped dead on just one extremely hot day in south-eastern Queensland in January 2014, according to Justin.

"Heat-related die-offs also occur in other wildlife, including koalas, Carnaby's black-cockatoos, budgerigars, zebra finches, bumblebees and butterflies, although such events are generally difficult to document," Justin says.

"Because flying-foxes live in conspicuous colonies, it's comparatively easy to determine the impacts of extreme heat events on the species as a whole. As such, flying-foxes are excellent 'bioindicators', or 'canaries in the coalmine', of die-offs in species that have more cryptic or solitary lifestyles. The impacts of extreme heat events on flying-foxes provide a disturbing window into the future of Australia's wildlife in a warming climate."

ELIZABETH GINIS

▼ **Wildlife carer Bev Brown**, who runs Black Rock Animal Shelter, feeds a rescued grey-headed flying-fox pup. These highly intelligent flying mammals will recognise their carers and call to them when they see them coming.



“The way we’re heading, we may lose this species in the next 100 years.”

“Camps are more like backpacker hostels than stable households, housing a constantly changing clientele that comes to visit local attractions,” Justin says. “Camps are connected into large networks through which flying-foxes move in response to changes in local food resources.” As a result, flying-fox numbers in a camp can vary significantly during the year; Melbourne’s grey-headed flying-fox population can swell to nearly 50,000 in summer, but drop to just 2000–5000 in winter.

LEAVING THE SAFETY of their urban home in search of food can be extremely dangerous for these flying nomads. Natural predators include large birds of prey such as the powerful owl, big snakes and goannas. Fruit-tree netting, barbed wire, powerlines and heat stress also exact a horrid toll.

No-one appreciates the impact these obstacles can have more than Bev Brown, who was recently awarded a Medal of the Order of Australia for decades of work rescuing and caring for urban grey-headed flying-foxes.

“I don’t think people realise how devastating powerlines, inappropriate fruit-tree netting and barbed wire can be to these little mammals,” she says. “I’ve rescued more than 500 grey-headed flying-foxes in the past 15 years, and I’ll never get used to seeing one tear its wings as it desperately tries to untangle itself from someone’s backyard fruit-tree netting, or hopelessly tries to chew its way through barbed wire. I’ve even seen an entangled mum try to chew its wing off in a desperate attempt to escape and get back to its pup in the camp.

“It’s just heartbreaking and what’s really frustrating is that much of this trauma is preventable,” she continues. “If people just did a few simple things, such as use appropriate fruit-tree netting or paint the top line of any barbed wire in a bright colour so the flying-foxes can see it, it would make a huge difference.”

Melbourne flying-fox viewing calendar



SUMMER In late summer, up to 50,000 may roost along the river and you may see them dipping their bellies while in full flight to cool down and grab a drink. New mums carry young on early season feeding flights. Later, they’ll be left in ‘crèche’ trees, to explore nearby flowering trees as they practice flying.



AUTUMN Mating season. In late autumn, thousands begin to migrate northwards in search of plants in flower.



WINTER The colony is at its smallest, dropping below 10 per cent of its peak. It’s unclear why some choose to stay; they may enjoy the lack of competition when foraging.



SPRING Most females arrive ready to give birth to a single pup, which they will feed for four or five months. About 80 per cent of births are in October, making spring a great time to see pups in the Melbourne colony.

But barbed wire, fruit-tree netting and powerlines aren’t the only threats. Habitat destruction, shooting in orchards, camp disturbances and increasing heat waves have all had an impact. Seeing up to 50,000 fruit bats fly overhead may lead people to think the species is doing just fine, but that isn’t the case.

Although Australia’s total east coast population is estimated to number 320,000–435,000, it’s thought this is just a fraction of what it once was. As a result of this population decline and continued threats, the grey-headed flying-fox is currently listed as vulnerable.

Of course, this decline not only affects them directly, but also forests. “The way we’re heading, we may lose this species in the next 100 years,” Anja warns. “If our aim is to preserve our native forests and unique Australian ecosystems for generations to come, we also have to reverse the decline of these magnificent night gardeners.”

Lawrence Pope, president of the Friends of Bats and Bushcare, which provides volunteers at the Yarra Bend Park camp, agrees. “There is a lot we can and should do to help the grey-headed flying-fox,” he says. “If we take care of the forests, we will also help take care of the bats, and of course if we help take care of the bats, they will then help us take care of the forests.”

So, the next time a flying friend visits your garden, rather than objecting to its nocturnal chatter, or its nibbling on your fruit, consider ways to make it more welcome so it’ll come back in the future.

And, if you happen to be watching a glorious sunset over Melbourne’s skyline from somewhere near Yarra Bend Park, be sure to hang around for a while afterwards. You’ll likely witness something much more spectacular, as the sky fills with tens of thousands of flying mammals heading out for dinner and providing a vital service to our native forests.