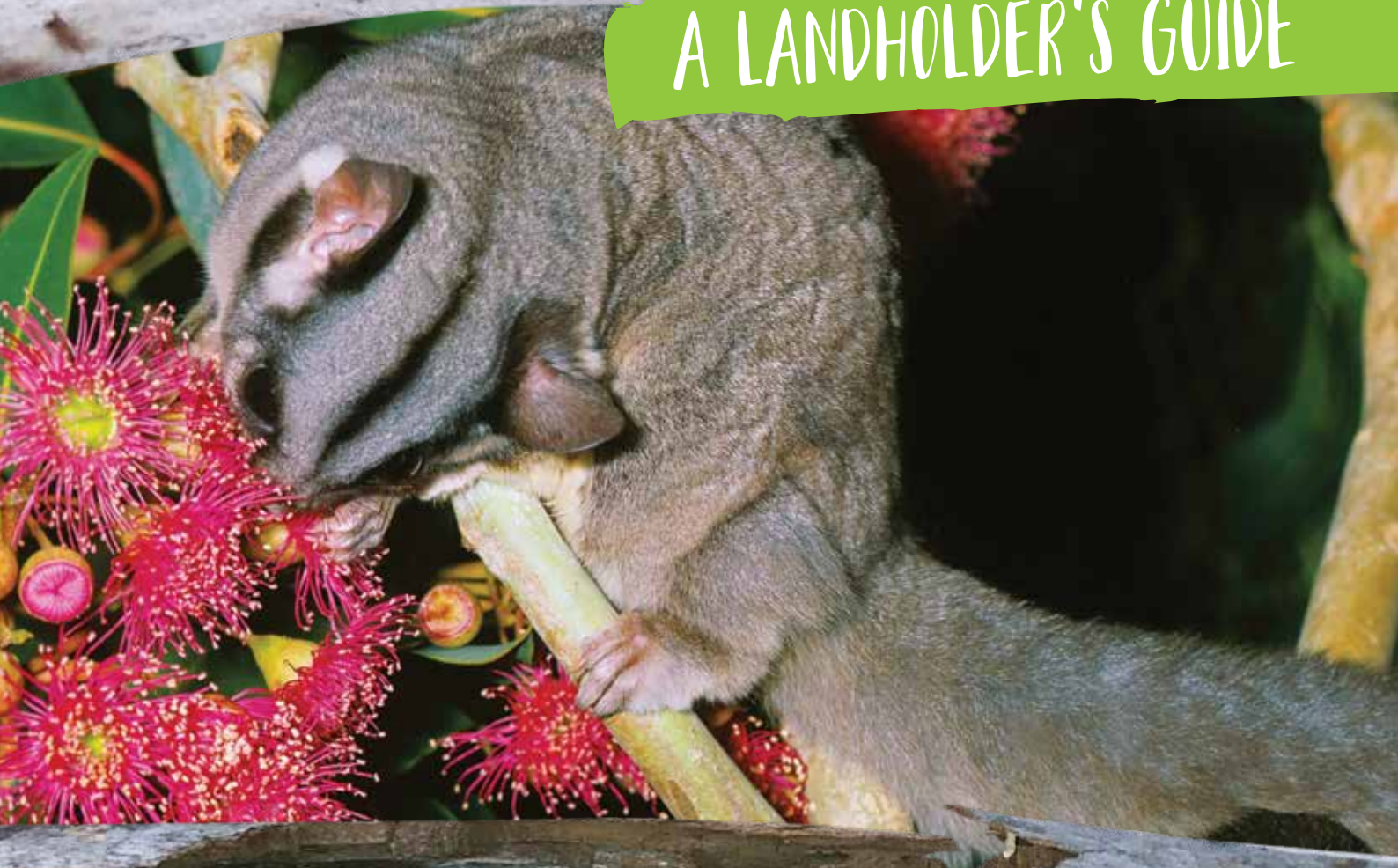


# SAVING LOGAN'S GLIDING MAMMALS

A LANDHOLDER'S GUIDE





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Produced by Queensland Glider Network for  
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## About this guide

Logan City Council's protected green spaces and reserves are home to at least five species of gliding mammals, from tiny feathertail gliders to the much larger greater glider.

This guide is designed to educate residents and landowners about these airborne marsupials and the major threats they face.

It also aims to encourage increased involvement with local conservation groups and Council to improve the long-term outlook for South East Queensland's threatened gliders.

Working with Wildlife Queensland, Logan City Council has engaged in conservation measures including:

- » awareness raising and public education campaigns
- » nest box building workshops,
- » ongoing installation and monitoring of hollows and nest boxes in parks and reserves
- » revegetation and offset projects
- » green corridor creation
- » acquisition of land with high ecological value for gliders, such as 212 ha at Greenbank in February 2021.

Although some gliding species featured in this guide range outside the region or are not considered at risk in Logan at the time of writing, others (particularly the greater glider and yellow-bellied glider) face extreme challenges in the region as the climate changes and the human population swells.

Helping Logan City Council reduce the threats that affect glider populations is paramount to preserving Queensland's biodiversity and to preventing further mammal extinctions.

# GLIDING MAMMALS


## AUSTRALIA'S AERIAL ACROBATS

Gliding, 'parachuting' and volplaning mammals are not unique to Australia. More than 60 mammal species glide, including the flying lemurs of South-East Asia. However, gliding *marsupials* are a distinctly Antipodean fauna, found only in Australia and neighbouring New Guinea.

The airborne squirrels of Asia, Europe, North America, and Africa lead similar lifestyles, but they evolved convergently and are placental mammals, quite unlike Australia's aerial marsupials.

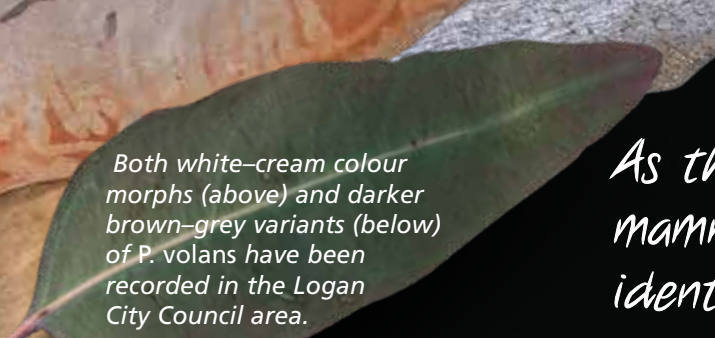


*Australia's gliding mammal species, at least 5 of which dwell in Logan City, possess stretchy membranes called 'patagia' on both sides of the body, which they spread out to glide from tree to tree.*



The central and southern greater glider (*Petauroides volans*) is endangered in Queensland.

# *Petauroides* species GREATER GLIDER



Both white-cream colour morphs (above) and darker brown-grey variants (below) of *P. volans* have been recorded in the Logan City Council area.

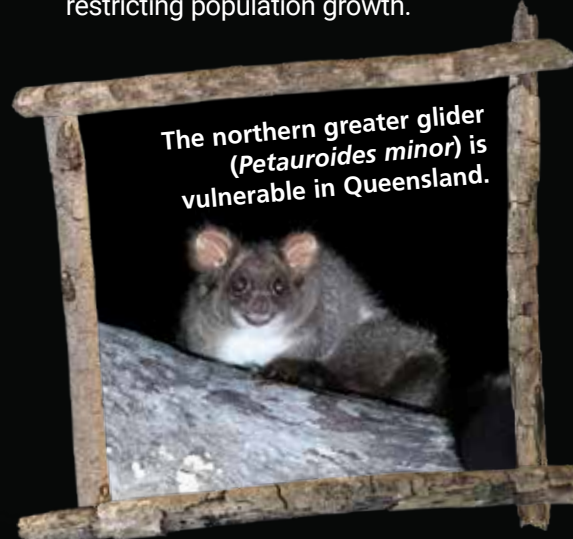
*As the nation's heftiest gliding mammals, greater gliders are easily identified by their size, large fluffy ears and exceptionally long, furry tails.*

*Greater gliders inhabit dry eucalypt forests along the Great Dividing Range from Qld to Victoria. Unlike the smaller 'wrist-winged' petaurid gliders, the greater glider's patagia extend from the ankle on the hindlimb to the elbow on the forelimb and enable glides of up to 100 m.*


In November 2020, researchers sequenced greater glider tissue samples and proposed three distinct species. A year later, in November 2021, changes to the *Nature Conservation Act* recognised just two: the northern greater glider (*P. minor*), and the central and southern greater glider (*P. volans*). Hybridisation occurs where their ranges overlap, but Logan's greater gliders are thought to be *P. volans*.

Like koalas, greater gliders dine on low-nutrient eucalypt leaves and sleep for much of the day. Unlike koalas, they den in hollows, so are usually only visible by spotlight, when their eyeshine gleams white high in gum trees.

The most solitary of gliders, they share dens only in breeding season. Females birth a single joey and may not breed every year, restricting population growth.




The northern greater glider (*Petauroides minor*) is vulnerable in Queensland.



Several colour morphs exist within populations, but the northern greater glider (*P. minor*, right) is the most possum-like, with smaller ears and a shorter grey coat.

All greater glider species are protected and are listed as nationally vulnerable under the EPBC Act.



Yellow-bellied gliders can volplane up to 114 m.



Australia's second-largest glider is endangered in north Queensland and vulnerable in the South East. Its loud shrieks, whirrs and chirrups make acoustic monitoring the best way to find colonies. Working with WPSQ's Yellow-Bellied Glider Project, Council is installing monitors around Logan to detect populations.

*Gregarious and extremely vocal, this species was the first gliding possum to be classified by Europeans and is often heard rather than seen.*

A head-body length averaging 28 cm with a 39–47 cm tail that is often held semi-erect, a black margin to the patagia, a septated pouch, naked black ears and a creamy yellow belly all set this glider apart from any other.

Australia's two subspecies are both renowned nocturnal 'sap-suckers', although they also feed on lerps, honeydew and insects. Only the southern subspecies inhabits Logan. The furrer northern subspecies is commonly known as the 'fluffy glider'.

Noisy family groups of up to 8 individuals gather on flowering acacia, stringybark and bloodwood trees, among others, notching V-shaped incisions into the bark to tap into sap. Males force intruders away from food trees within a 25–120 ha territory and claim favoured eucalypt den trees by rubbing them with glands on the forehead, chest and cloaca.

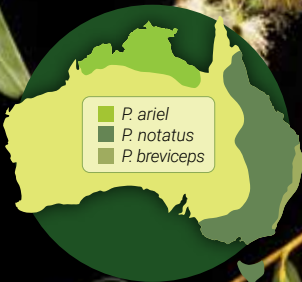
Despite the female's two-part pouch, a single joey is usually born in winter to a monogamous adult pair (although twins are possible).

*Petaurus australis*

YELLOW-BELLIED GLIDER



*Krefft's sugar glider (Petaurus notatus) is distinguished by a darker dorsal stripe, fluffier tail and distribution west of the Great Dividing Range.*



■ P. ariel  
■ P. notatus  
■ P. breviceps

*Considered a single widespread species until 2020, sugar gliders are now known to be three species.*



Coastal sugar gliders (*Petaurus breviceps*) inhabit Logan.

*A thinner tail, often with a white tip (see top), distinguishes sugar gliders from squirrel gliders.*

*In the US, sugar gliders are sold as 'pocket pets' and rare colour variations are prized.*

## *Petaurus species* **SUGAR GLIDERS**

Coastal sugar gliders are common in Logan and in wet or dry eucalypt woodland, coastal melaleuca forest and remnant rainforest east of the Great Dividing Range. Krefft's glider (also called the inland sugar glider) ranges to the west, while the paler savanna sugar glider inhabits the state's far north gulf savanna country and the NT.

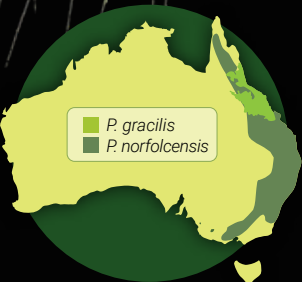
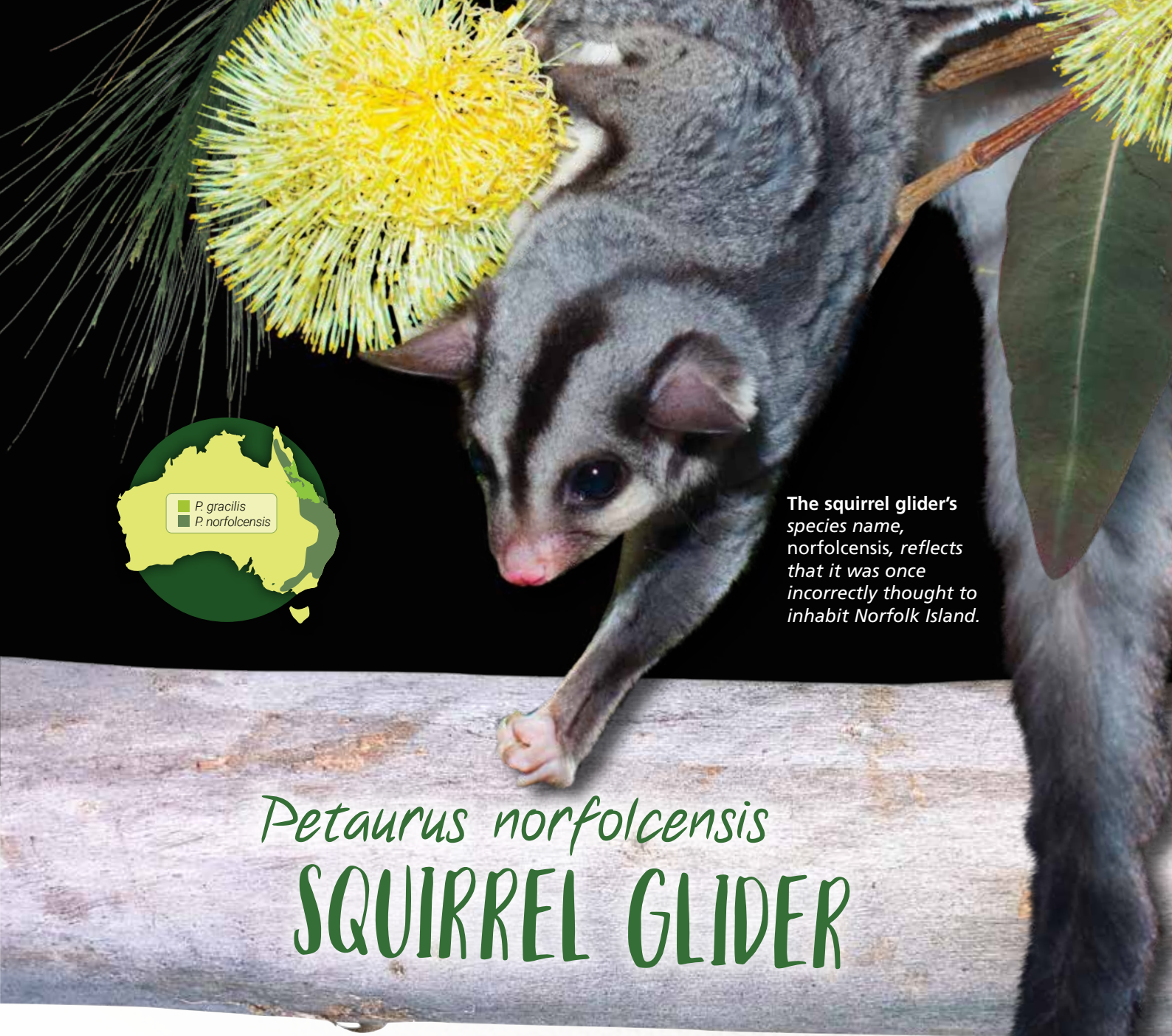
Despite measuring just 25–37 cm from head to tail tip, these minute, nocturnal marsupials are capable of gliding 45–90 m from shared den trees to feeding sites.

Sugar gliders are sociable gliding possums, huddling together by night in family groups of up to 10 members.



Savanna glider (*Petaurus ariel*)

As their name suggests, these gliders enjoy sweet nectar, gum exudate and pollen, but they also readily eat insects. In inclement weather or when food is scarce, they may enter torpor for up to 16 hours. Given their small size and nocturnal habits, these gliders are often preyed upon by cats, foxes and owls.



The squirrel glider's species name, *norfolcensis*, reflects that it was once incorrectly thought to inhabit Norfolk Island.

# *Petaurus norfolcensis* SQUIRREL GLIDER

*Below: The mahogany glider (Petaurus gracilis) is found only in Tropical North Queensland. It was believed to be a subspecies of the squirrel glider for over a century despite its browner pelage and dark dorsal stripe.*



Mahogany glider  
(*Petaurus gracilis*)

Queensland's squirrel gliders prefer wet sclerophyll forests associated with iron-barked eucalypt species. Pollen and nectar comprise much of their diet, although they are also fond of golden wattle seeds, gum sap, lerps and invertebrates.

Almost twice the size of sugar gliders, these gliders are more uniformly blue-grey with a thicker, fluffier tail (especially at the base) that is prehensile and dark-tipped. A distinct dark dorsal stripe and a pointier face with prominent markings also distinguish squirrel gliders from sugar gliders.

Although less gregarious than sugar gliders, squirrel gliders share a bowl-shaped, leaf-lined drey in harems made up of a single male with two females and their juvenile offspring.

Breeding occurs in June/July, and two underdeveloped neonates suckle in the pouch for three months before leaving the familial den at around 10 months of age.



The world's tiniest gliding mammals at just 12 g, feathertail gliders are often mistaken for rodents.



## Acrobates species FEATHERTAIL GLIDERS



Feathertail gliders are highly sociable, feeding collectively and living in groups of up to 20 in dreys made of eucalypt bark, leaves and vegetation.

Australia's two feathertail glider species: the narrow-toed feathertail glider (*Acrobates pygmaeus*) and the broad-toed feathertail glider (*Acrobates frontalis*) can be difficult to tell apart in the field unless the toes and feathery tail margins can be closely examined.

Only the broad-toed feathertail inhabits Logan, but the two species collectively range along Australia's eastern seaboard

from Cape York south to Victoria and South Australia. One feature unique to these two diminutive gliders is a brush-tipped tongue, which they use like a bottlebrush to probe flora for sticky nectar.

Like sugar gliders, these sweet little gliders can drastically reduce their metabolic function to enter torpor in cold weather or to survive post-fire scarcity. Predation by cats, foxes and raptors threatens feathertails.





A sugar glider joey clings to its mother's back as she disembarks from a paw paw tree. Gliders do not 'flap' like birds, so they risk striking fences on their downward trajectory.

**THE PROBLEM**  
Gliders and airborne nocturnal animals such as bats and owls often become ensnared on barbed-wire fences in the dark. Entanglement can shred a glider's patagia and usually results in a slow, cruel death from blood loss, exposure and shock – sadly some trapped animals even try to bite themselves free.

## ENTANGLEMENT IN BARBED WIRE



A mahogany glider snared on wire. Strandings occur when the distance between trees (or glide poles) is too great or when habitat is separated by barbed-wire fenced paddocks.

Stranding deaths on barbed wire are entirely preventable and probably vastly unreported. Recovery Plans for the northern yellow-bellied glider and mahogany glider implicate barbed wire as a threat. Logan City Council has banned razor wire fences and advises landholders to seek alternatives to barbed wire.

Ideally, place fences well away from waterways and plant tall trees on each side for safe passage of fauna. Covering the top rung with poly pipe or white tape can reduce entanglement.

For more information about wildlife-safe fencing, please visit [www.wildlifefriendlyfencing.com](http://www.wildlifefriendlyfencing.com)

**THE SOLUTIONS...**

- » Prefer post and rail fences or plain wire to barbed wire.
- » Replace the top strand near wildlife corridors or ridge-lines with normal wire or cover it with poly pipe.
- » Thread old CDs, which will swivel and reflect the light, along the topmost strands.
- » White electric-fence tape strung above the upper rung will increase visibility.
- » Call Council for guidance.

### Seek Carer Help

Gliders appear cute and cuddly, but they fight and bite tenaciously if cornered or injured. Do not attempt to untangle a stricken glider yourself. Call the **RSPCA on 1300 ANIMAL (1300 264 265)** or **Wildcare on 07 5527 2444**. Both operate 24/7.

# LAND USE CHANGE & LOSS OF TREE HOLLOWES

## THE PROBLEM

All of Australia's gliders shelter and breed in tree hollows, usually within *Eucalyptus*, *Corymbia* or *Angophora* species. However, hollows take 100–200 years to form. Land clearing, development and bushfires have robbed hollow-dependent fauna of shelter, forcing gliders to compete for scarce spaces in which to den and breed.

*Its large size and specialised diet makes the greater glider especially vulnerable to 'homelessness' following cavity loss. Logan City Council has implemented offset planting of eucalypts to increase habitat for greater gliders at Jimboomba, Waterford West, North Maclean and Cedar Vale.*

*Hollows are crucial to the survival of over 400 Australian native species, yet fire, chainsaws and land-clearing can destroy these vital 'home trees' in minutes.*

*A squirrel glider joey safe in a drey.*

*Studies suggest that dead trees comprise some 20%–50% of the large cavities suitable for the yellow-bellied glider and greater glider. But if current fire management practices persist, these dead trees may be depleted in just 50 years.*

Cavities in eucalypts form naturally following lightning strike, wind damage, fire, fungal decay or termite and insect attack, hollowing out over centuries. Sadly, years of unsustainable logging, clearing and development have denuded landscapes of old or dead trees. Where they do remain on

agricultural land, mature gums are often isolated in cleared paddocks. Little recruitment of new hollow-bearing species (e.g. *Corymbia citriodora* and *Eucalyptus racemosa*) to replace these habitat trees means this issue will worsen in time. While not a replacement for natural hollows, nest boxes can provide temporary relief for gliders.



A yellow-bellied glider dining on gum sap. Mature eucalypts not only contain more hollows but also produce greater quantities of flowers, fruit, nectar and seeds and may attract more insects.



### THE SOLUTIONS...

- » Preserve old-growth forest and living or dead hollow trees.
- » Install artificial nest boxes in places where hollows are rare.
- » Remove invasive weeds and contain garden species.
- » Set controlled burns only under permit and obey all restrictions for fires and campfires.
- » Plant scribbly gum, box, blackbutt, tallowwood, manna and river red gum seedlings to replenish hollows.

*Never cut up hollow or dead trees or fallen logs for firewood, garden edging, or wood crafts – our gliders need them.*



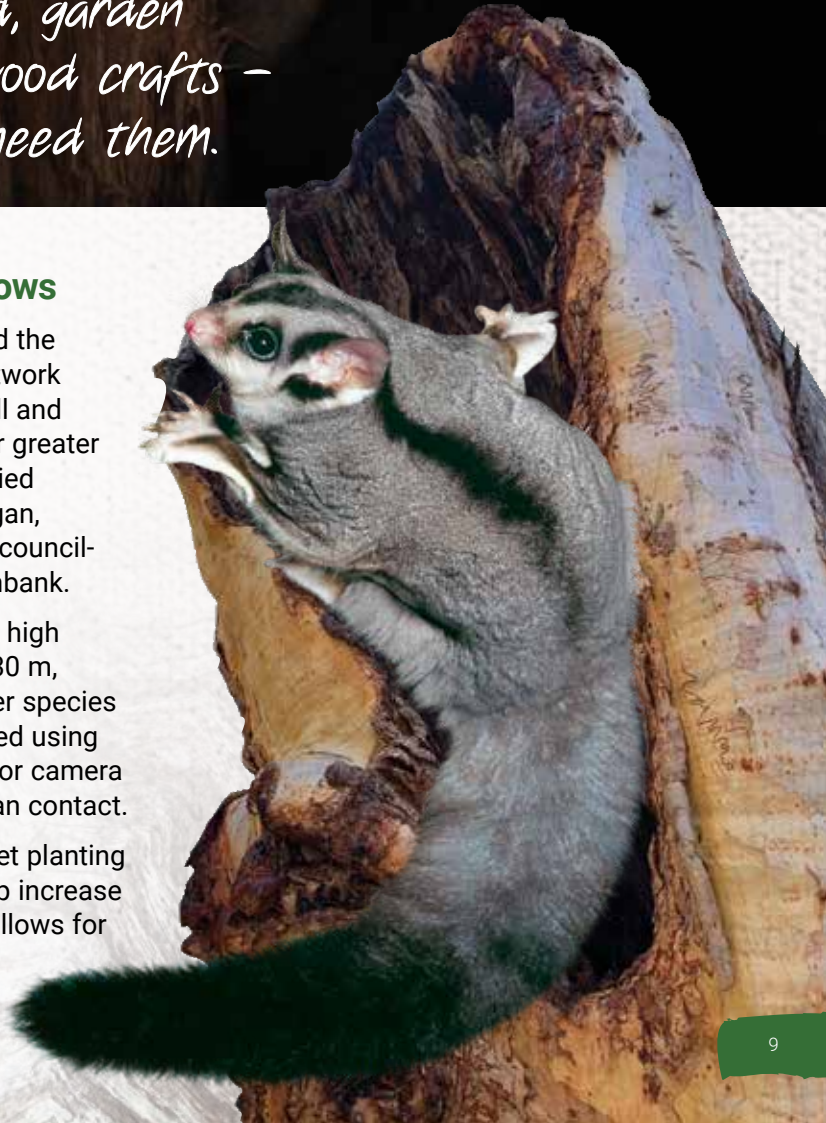
Hollow Log Homes offer a range of boxes suitable for feathertail, sugar and squirrel gliders, as well as larger greater glider and yellow-bellied glider boxes at [www.hollowloghomes.com.au](http://www.hollowloghomes.com.au)

### Helping with hollows

Logan City Council and the Queensland Glider Network work together to install and monitor nest boxes for greater gliders and yellow-bellied gliders throughout Logan, including in 212 ha of council-acquired land at Greenbank.

Nest boxes are placed high in eucalypts (from 3–30 m, depending on the glider species targeted) and monitored using non-invasive acoustic or camera monitors to limit human contact.

Revegetation and offset planting programs will also help increase habitat and provide hollows for gliders into the future.



## THE PROBLEM

Fragmented habitat interspersed with roads, farmland, cities or housing estates separates glider populations, exposing them to human contact, traffic, inbreeding and genetic decline — especially following catastrophic events. While fire is a natural process, altered regimes, a drying climate and more intense blazes also threaten glider survival.

*Greater gliders and yellow-bellied gliders prefer larger tracts of forest or woodland, but feathertail, sugar and squirrel gliders are known to visit native bushland in parks, gardens and backyards.*

# HUMAN CONTACT, WEEDS FRAGMENTATION & FIRE

*Linking up the remaining habitat available in sub-urban areas is a must to arrest the decline of vulnerable and endangered gliding mammals.*

Most of Queensland's glider species are distributed in increasingly urbanised areas, forcing them to coexist with humans and to compete for reduced parcels of coastal lowland, vine thicket and dry and wet eucalypt forest.


### Roads to ruin

When habitat is subdivided by housing estates, ever-widening highways or cleared paddocks, gliders may be unable to glide the distance between nearby eucalypts to find food, shelter or mates, resulting in inbreeding and genetic decline.

Further habitat alteration — whether from intrusive weeds, litter and dumping, or altered fire regimes — usually follows fragmentation, adding to the problem.

### Making a connection

National parks and reserves are valuable habitat, but we have nowhere near enough. Gliders moving from reserves across cleared or urban spaces introduces the threat of traffic and pet attacks. To allow interaction between populations, gliders urgently need corridors that link reserves with farms, parks and gardens.



An orphaned yellow-bellied glider joey in care.

### Glider care

Unless you attend Queensland Glider Network spotlighting events, you'll likely only encounter a glider up close when it is injured. Joeys sometimes tumble off their mothers' backs in storms, and cat

attacks, vehicle strikes and entanglements are common. If you find an injured glider, please call the **RSPCA on 1300 ANIMAL (1300 264 265)** or **Wildcare on 07 5527 2444**. They operate 24 hours a day, 7 days a week.

To make your backyard more wildlife friendly, visit [www.logan.qld.gov.au/wildlife-safe-backyards](http://www.logan.qld.gov.au/wildlife-safe-backyards) or [www.wildlife.org.au/living-with-wildlife](http://www.wildlife.org.au/living-with-wildlife)

Find out more about how to protect native habitats by controlling invasive garden species and removing weeds in Logan at [www.logan.qld.gov.au/weeds-logan](http://www.logan.qld.gov.au/weeds-logan)

### Burn responsibly

Fire is both detrimental to and beneficial for Australian ecosystems. It fosters new growth, reactivates dormant seeds and generates new hollows, but it also takes lives and destroys food sources, shelters and habitats. The 2019–2020 bushfires alone

reduced Queensland's greater glider habitat by 29%. Controlled burns under permit reduce the risk, as do weed reduction, adhering to fire bans and fire preparedness. See [www.qfes.qld.gov.au/safety-education](http://www.qfes.qld.gov.au/safety-education) for more on fire safety.

### THE SOLUTIONS...

- » *Get involved with Council revegetation and planting programs to link landscapes.*
- » *Plant eucalypts and native flora along creek lines, fences and in paddocks.*
- » *Report wild fires, and never toss cigarette butts or leave campfires unattended.*
- » *Keep gutters and gardens clear of dry tinder.*
- » *Join Council's Environmental Conservation Partnerships program or apply for an EnviroGrant.*

### We are a threat

Human activities frequently conflict with the needs of wildlife. To conserve gliding mammals, we must prioritise their needs over our comforts. We must learn to value green spaces – even in our own backyards – not just for our own leisure and recreation, but also as important habitats that are crucial to the survival of at-risk flora and fauna.

## THE PROBLEM

Natural predators of gliders include owls, raptors, kookaburras, dingoes, pythons and quolls, but the introduction of the red fox, domestic dog, and particularly the cat, added new and ever-present threats for gliders. The use of rodenticides, baits or pesticides sprayed on fruit trees or plants may also result in glider deaths.

Many gliders consume insects along with sap, pollen and nectar. To encourage a diversity of glider food sources, avoid using harsh insecticides or herbicides on your property.

## THE SOLUTIONS...

- » Add nest boxes to give gliders a place to hide from predators.
- » Desex and register cats and dogs and confine them, especially at night.
- » Keep dogs on a leash outside and train them to avoid wildlife (visit [www.leaveit.com.au](http://www.leaveit.com.au))
- » Only use wildlife-friendly insecticides/rodenticides.
- » Report feral cats or foxes to Council.

# POISONING & PREDATION

*Dogs, cats (domestic and feral) and foxes represent the most damaging invasive predators for gliding mammals.*

*A 2020 study found that Australia's pet cats kill some 66.9 million native mammals annually.*

*A Queensland Glider Network survey also determined that at least 30% of the gliders taken into care had been attacked by a domestic animal.*

Gliders are a natural food source for other endangered native species, such as quolls. But since the arrival of Europeans, natural predators have decreased while invasive predators have boomed. Reducing that threat means controlling pets and pests such as foxes, cats and wild dogs.

## Go green for gliders

Although fox baits and 1080 poisoning are unlikely to affect greater gliders, yellow-bellied gliders or feathertail gliders, the more omnivorous sugar and squirrel gliders have been known to access baits. They may also occasionally fall victim

to rodenticide, insecticide or herbicide poisoning. Always check the label to ensure any pest control you use is wildlife-friendly and avoid anticoagulants like Ratsak or snail bait, which bioaccumulate in the food chain.

**A powerful owl preys on a greater glider.**

# CONSERVATION PROGRAMS TO HELP GLIDERS

Join the Queensland Glider Network by emailing [glider@wildlife.org.au](mailto:glider@wildlife.org.au)

*Urban expansion poses serious threats to glider populations. Conservation programs that support landholders and nature lovers can help provide practical, hands-on ways for you to get involved in glider preservation efforts.*

## Environmental programs

Logan City Council's Environmental Conservation Partnerships support landowners and primary producers by providing material and financial help to protect the conservation values of their properties.

These free voluntary partnerships include:

- » Habitat Connections
- » Land for Wildlife
- » Voluntary Restoration Agreements
- » Voluntary Conservation Agreements
- » Voluntary Conservation Covenants.

You'll benefit from annual incentives (such as free plants, nest boxes, books, mulch, etc.) and ongoing land management advice regarding habitat restoration, weed management, wildlife and plant identification.

You'll also enjoy free environmental workshops, field days and networking events, and free quarterly newsletters.

To find out more, email [environment@logan.qld.gov.au](mailto:environment@logan.qld.gov.au) or visit [www.logan.qld.gov.au/ecp](http://www.logan.qld.gov.au/ecp)

## Queensland Glider Network

Wildlife Queensland's Queensland Glider Network (QGN) was established in early 2006 to support glider populations by being a state-wide hub for communication, education, data collection, mapping and information exchange.

QGN hopes to raise awareness of gliders and their habitat requirements in all local government areas to improve community knowledge and interest in these fascinating marsupials.

In conjunction with the Yellow-Bellied Glider Project, launched in August 2020, the QGN is making a real difference to the plight of the state's gliding mammal species. Visit [www.wildlife.org.au/queensland-glider-network](http://www.wildlife.org.au/queensland-glider-network) for more.





Wildlife Queensland aims to advocate, protect and conserve Queensland's native terrestrial and marine animals and landscapes by educating and engaging communities, influencing decision-making, advancing solutions and connecting people and wildlife. [www.wildlife.org.au](http://www.wildlife.org.au)

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