

## What's news?

*The Great Leap*  
Elisha Taylor p2-3

*The Miraculous Mahogany Glider*  
Kate Chaplin p4

*Biak Glider*  
Nancy Graham p5

*QGN in Action*  
Karen Brock p6

*About our Contributors* p7

### Farewell Karen Brock

It is with great sadness that we are bidding Karen farewell as she moves to Canberra.

Karen has done a fantastic job at Wildlife Queensland and I would like to thank her for all her hard work especially for our QGN members – and of course, the gliders!

On behalf of everyone at Wildlife Queensland, best wishes to Karen in the next stage in her career.

May your future be teaming with wildlife!

Ewa Meyer  
Projects Manager



Image © Chris McLean

## The great Leap

### How far is too far for our gliders?

It could be safe to assume that a fair number of Queensland residents, particularly in the south-east of the state, have shared a home or at least seen any number of the six amazing Australian nocturnal gliding possums. This is largely due to humans developing areas of land, which have been critical glider habitat for millions of years. All gliders depend on hollow bearing trees for nesting and shelter. The trees themselves are a direct source of food in the form of nectar, pollen, plant exudes, eucalypt leaves (greater glider), seeds and sap and indirect through invertebrates and honey dew. These habitats however need to be robust enough to manage a changing seasonal diet, accommodate the increase in fluctuating extreme weather events while maintaining genetically healthy populations.

Anthropogenic impacts on glider habitat is tolerated and accepted by the wider community. But what some consider a “normal” change to an area can be a massive inhospitable barrier for our gliding friends. The complete removal of habitat for agriculture and urban development has obvious negative effects on glider populations; the clearance of 80% of mahogany glider environment has subsequently caused its addition to Australia’s growing ‘endangered’ list of native fauna.



Image: Sugar glider © Jan Tildon

However, land transformation and development that initially appears to have a small footprint on a habitat, including structures like power lines, railways, fences and roads, can create an impassable barrier for gliders as their habitats becomes fragmented. To ensure our remaining 5 gliding possum species do not end up on a threatened list, it is vital to understand the limits and thresholds associated with the successful movement of individuals from one newly created forest fragment to another. Considerable dissection of habitat can be caused by the construction of roads, which in turn provide access to further development, leading to habitat loss. However, roads themselves prove to be an impossible obstacle for most gliding species and a hazardous leap for others.

The table on the following page represents the approximate width of roads encountered throughout glider habitat. Each road type can vary dramatically, and gliding distances are restricted if there is a lack of tall trees on either side of the road - as distance decreases with height - also bringing glider paths closer to passing trucks and cars. Most species ‘average gliding length falls short of 4 lane highways and to all species, a 6-lane motorway may as well be the Pacific Ocean.

## The great leap

*continued...*

Gliding Distances	2 lane road ~20m		4 lane Highway ~30m		6 lane Motor way ~50m	
	Max	Avg	Max	Avg	Max	Avg
<b>Feathertail glider</b> Average 14m Max – 25m	Y	N	N	N	N	N
<b>Sugar glider</b> Average – 20m Max – 42m	Y	Y	Y	N	Y	N
<b>Squirrel glider</b> Average –21.5m Max – 80m	Y	Y	Y	N	Y	N
<b>Greater glider</b> Average – 25 Max – 100m	Y	Y	Y	N	Y	N
<b>Yellow bellied glider</b> Average – 40m Max – 140m	Y	Y	Y	Y	Y	N

Simple measures can assist gliders to safely cross a road; popular land bridges (or tunnels for other wildlife) not only solve this problem, but assist in connecting fragmented forest for all animals. Alternatively, targeted gliding poles can create enough height to soar across the roads to a reciprocal tree or pole at a fraction of the cost.



Image: 2 lane road in Larapinta including turning lane, median strip and footpath deterring all bar the strongest gliders

Standards as per Department of Main Roads, Road Planning and Design Manual Ch. 4 Queensland government

- 1 lane road** – 3.5m lanes + 3.5 shoulder/stopping/parking bays = >14m
- 2 lane Highway** – 3.5m lanes, + 3.5m stopping lane + 6m centre barrier = >24m
- 3 lane Motor Way** - 3.7m lane locked lanes, 3.5m outside lanes +3.0m shoulder + 1.0m median shoulder + variable median strip = ~ 14.9m + centre barrier+ 14.9m = >31m

**Note: Additional meters added for variations in road widths, footpaths and distance to vegetation line (launch trees)**



Image: 6 lane dual carriageway including merging/turning lanes and median barrier without glider launch trees, in Aspley bisecting habitat

It is our responsibly as a nation to care for the animals which make Australia unique. These simple measures can help combat issues arising to our gliders as a result of their habitat being modified for our needs. Planners and decision makers need to properly identify these barriers and ensure that innovative ways are employed to prevent harming the remaining glider ecosystems from disjointed distributions, pushing these amazing animals over their tipping point. If we change the way we think and relate to our forests, we can avoid fragmenting habitat all together.

Article written by Elisha Taylor

### References

- GOLDINGAY, R. & TAYLOR, B. 2009. Gliding performance and its relevance to gap crossing by the squirrel glider (*Petaurus norfolcensis*). *Australian Journal of Zoology*, 57, 99-104.
- GOLDINGAY, ROSS L. & TAYLOR, BRENDAN D. (2009) Gliding performance and its relevance to gap crossing by the squirrel glider (*Petaurus norfolcensis*). *Australian Journal of Zoology*, 57, 99-104
- JACKSON, STEPHEN M., 2002. Glide angle in the genus *Petaurus* and a review of gliding in mammals. *Mammal Review*, 30, 9-30.
- MCKAY, G. 2008. Greater Glider. In: DYCK, S. & STRAHAN, R. (eds.) *The Mammals of Australia*. 3 ed.: Reed New Holland.
- PERTH ZOO, <http://www.perthzoo.wa.gov.au/animals-plants/australia/nocturnal-house/feathertail-glider/> accessed 10/05/2013
- RUSSELL, R. 1991b. Yellow-bellied Glider. In: STRAHAN, R. (ed.) *The Australian Museum Complete Book of Australian Mammals*. Cornstalk Publishing.
- SUCKLING, G. 1991. Squirrel Glider. In: STRAHAN, R. (ed.) *The Australian Museum Complete Book of Australian Mammals*. Cornstalk Publishing.
- TAYLOR, BRENDAN & GOLDINGAY, ROSS. 2009. Pole Vaulters: Can Gliders Use Poles to Cross Roads?. *Wildlife Australia*, Vol. 46, No. 2, Winter 2009: 24-29.
- VAN DER REE, R. & SUCKLING, G. 2008. Squirrel Glider. In: DYCK, S. & STRAHAN, R. (eds.) *The Mammals of Australia*. 3 ed.: Reed New Holland.
- WILDLIFE QUEENSLAND, [http://www.wildlife.org.au/wildlife/speciesprofile/mammals/glidners/feathertail\\_glider.html](http://www.wildlife.org.au/wildlife/speciesprofile/mammals/glidners/feathertail_glider.html) accessed 8/05/13

# The miraculous mahogany glider

The mahogany glider, *Petaurus gracilis*, is an endangered gliding possum native to a small coastal region in far north Queensland. The glider gets its common name from its mahogany-brown belly and the similarly coloured patagium, or gliding membrane. The patagium is a furry membrane of skin stretching from wrist to ankle, forming a parachute allowing the glider to glide from tree to tree in search of food sources.



Found after Cyclone Larry, Pan had significant barbed wire injuries to her gliding membrane. Image © Daryl Dickson

It is becoming apparent that the mahogany glider, and perhaps our 5 other glider species, possesses an intriguing ability to regenerative properties of damaged patagium; yet to be thoroughly researched and documented. The mahogany glider is known to travel a considerable distance each night, with 1.5 kilometres a typical distance. Many obstacles may be faced on such an adventure, including the often detrimental run in with barbed wire fences. Gliders may become caught on barbed wire, becoming stuck or tearing the membrane, causing impairment. A severely damaged patagium may fail to respond to treatment and antibiotics, as found in the case of the mahogany glider Pan.

To enhance the prospects of recovery, Pan, with her severely damaged patagium, was initially kept in a small carrier box. The next step was to keep her in a larger enclosure allowing room movement, but still providing containment to protect the wound. At four months post-injury, it was found that her patagium had become tighter and the fur had begun to grow back. At six months post-injury, miraculously, the patagium had completely repaired, no scarring was detected, adequate blood supply had returned along with normal elasticity.

Which raises the question whether stitching, the normal solution for tearing of the patagium, is the ideal method. A squirrel glider, presenting a similar injury was initially treated with stitching. This however failed. The squirrel glider was then isolated as the mahogany glider had been, and within three months the squirrel glider was ready for release with the patagium displaying the same regenerative properties, repairing itself. The new methodology therefore utilises long term rehabilitation with minimal intervention with the view to release the once injured animal back into the wild.



Article written by Kate Chaplin, thanks to wildlife artist and carer Daryl Dickson for her assistance with the content.

Pan (left) and her mate Stoney (right) have now been released into the wild. Image © Daryl Dickson

## gliding in Papua

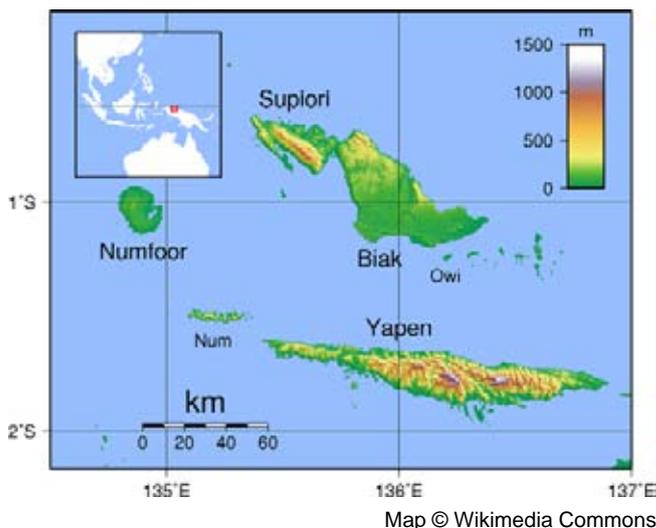
The Biak glider *Petaurus biacensis* is found on the islands of Biak, Supiori (one individual spotted on the island of Owi), in the Papua province of Indonesia. Of medium size, tawny to dark brown in colour, it is often seen around gardens. Though little is known of its diet, it has been observed to enjoy bananas. Females have been sighted with one to two young in their pouches. Almost nothing to date is known of its ecology. It was first recognised to science by F. A. Ulmer, in 1940, as a result of the Denison-Crockett South Pacific Expedition.



The Biak glider is slightly larger than the sugar glider pictured here, with richer chocolaty tones. Image © David Cook

Although the ICUN describes the glider as common, population trends are unknown. Due to its apparent tolerance for habitat disturbance, its occurrence in a protected area, and lack of major threats, ICUN deems it unlikely to be declining at rate which would be cause for concern, as of 2008.

Biak is known mostly for the massacre in 1998, of over 200 independence demonstrators by the Indonesian Military. Since then the population on Biak and its surrounding islets has continued to grow. The forest on the island of Biak has been decimated by logging and subsistence farming. The growing conditions are poor. Although for now logging has become commercially unsound, it remains so only as long as pressure is not placed (by fires or other events) on other logging areas of Indonesia. The island of Biak is a site for transmigration which is likely to put further pressure on available habitat.



The rugged terrain of Supiori Island has kept the forest in better condition than others in the group. This is fortunate, since as well as the Biak glider, the area is home to the largest number of endemic species of birds for the entire region. There are three small protected areas covering 344 km<sup>2</sup>, about 0.12 per cent of the region.

Considering the increasing transmigration and ecological pressure on these islands, along with the incredibly small per cent of the area under protection, the long term viability of the Biak glider may not be certain.

Article written by Nancy Graham

### References

1. Jackson, S. (2012) "Gliding Mammals of the World". CSIRO Publishing: Collingwood, VIC
2. Ulmer, F. A. 1940. Zoological Results of the Denison-Crockett South Pacific Expedition for the Academy of Natural Sciences of Philadelphia, 1937-38. Part VI. A New Race of the New Guinea Short-Headed Flying Phalanger from Biak Island. Notulae Naturae of the Academy of Natural Sciences of Philadelphia, 52:1-3.
3. ICUN Red List "Biak Glider" Leary, T., Wright, D., Hamilton, S., Singadan, R., Menzies, J., Bonaccorso, F., Salas, L., Dickman, C. & Helgen, K. 2008. *Petaurus biacensis*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. accessed on 30/4/2013
4. Barclay, P., (2008) The Biak Massacre <http://www.abc.net.au/radionational/programs/perspective/the-biak-massacre/3197192> accessed 30/3/2013

## QGN in action

### Monitoring results

Throughout May and June, QGN coordinated eight teams of 5-9 members to monitor existing nest boxes within the Flinders Karawatha Corridor.

Over 120 nest boxes were monitored with occupants including squirrel gliders, common brushtail possums, short-eared mountain possums, a snake, ants, bush cockroaches, lorikeets and bees.

Thank you to our dedicated volunteers for helping us to deliver this program!



### Flinders Karawatha Corridor

Following approval from Logan City Council for our proposed installation sites, the process has begun to install QGN's 60 nest boxes.

This project is aimed at enhancing and linking existing glider habitats within the Flinders Karawatha Corridor to improve dispersal and gene flow sustaining our glider populations into the future.

Image: Our nest box platoon, waiting for deployment!

CH1 Manual



CH1 Manual



Images from top: a shy squirrel glider peeking from a leaf nest; the unexpected snake-find; a short-eared mountain possum, other images showed an almost entirely black body.

## Welcome Sarah!

The Queensland Glider Network has the pleasure of hosting Sarah Sargent - a final year University student - for a 4 month industrial placement starting in July. Sarah will be working on our Flinders Karawatha Project focussing on habitat enhancement and nest box monitoring.

We look forward to you joining the team Sarah!



*Growing up in country Queensland I always loved animals and the outdoors. I'm now studying a Bachelor of Environmental Management majoring in Natural Systems and Wildlife at the University of Queensland. I am still passionate about the environment and have a particular interest in the conservation of Australian native wildlife, - and I love getting my hands dirty with field work!*

- Sarah Sargent

Wildlife Preservation Society of Queensland (*Wildlife Queensland* or WPSQ) has many programs and projects—the Queensland Glider Network (QGN) is one of them.

We are a community conservation organisation with a diverse membership drawn together by a common interest in wildlife.

*Wildlife Queensland* has been working to protect Australia's precious and vanishing natural environment since 1962.

If you would like to become a wildlife protector, a subscriber or a volunteer, please contact us:

wpsq@wildlife.org.au  
ph 07 3221 0194

[www.wildlife.org.au](http://www.wildlife.org.au)



Whether you are a conservationist, researcher, carer, or simply interested in gliders, you will find QGN has something to offer you, and in turn, you may have information to share with all of us.

To join QGN (it's free) - download the membership form from [www.wildlife.org.au/qgn/join](http://www.wildlife.org.au/qgn/join)

QGN News is only available electronically.

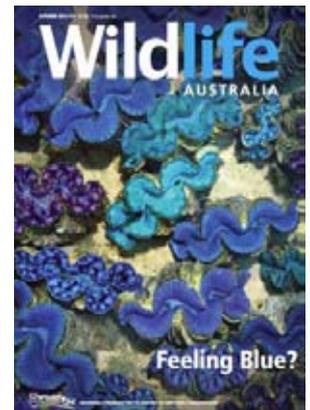
Any opinions by contributors made in this newsletters are accepted in good faith and not necessarily those of the publishers



**Do you have a story to share about spotting a glider?**

Send it to *Glider Tales* along with a picture if you have one and we may publish it on our website. See

[www.wildlife.org.au/projects/glidertales](http://www.wildlife.org.au/projects/glidertales)



[www.wildlife-australia.org](http://www.wildlife-australia.org)

## About our contributors

**Elisha Taylor** is currently completing a Bachelor of Science, majoring in Ecology and Conservation Biology at Gold Coast Griffith University. She enjoys travelling, nature and everything to do with the ocean.



**Kate Chaplin** has a Bachelor of Applied Science (Extended Major in Wildlife Science) and currently works at the QIMR research facility. She strives to keep in touch with and contribute to wildlife conservation through volunteering both locally and overseas including work with cheetahs, elephants and Capuchin monkeys. She hopes to be more involved with local wildlife and the issues that they face.

**Nancy Graham** has been a volunteer with Wildlife Queensland for 7 months. She has an honours degree in Social Science (health). Nancy is interested in glider and frog conservation, regularly completing field and research work with Wildlife Queensland.

