



Mammal Mail

The Newsletter of the Tree-Kangaroo & Mammal Group

Vol. 18 No. 1 May 2018

What's Going On? Don't Miss These Upcoming Events

Thurs, May 3rd: TKMG Committee meeting 5:30pm, Malanda Hotel. Members welcome to attend.

Thurs, June 7th: TKMG Committee meeting 5:30pm, Malanda Hotel, followed at 7:30pm by Jim Thomas of Tenkile Conservation Alliance giving a presentation on 'Tree-kangaroos in the Torricelli's' detailing new challenges facing the tree-kangaroos, other animals and people of the Torricelli Mountain Range in Papua New Guinea.

Thurs, Jul 5th: TKMG Committee meeting 5:30pm, Malanda Hotel. Members welcome to attend.

Thurs, Aug 2nd: TKMG Committee meeting 5:30pm, Malanda Hotel, followed at 7:30pm by Aidan Possemiers who will speak about about how he developed the world's first virtual reality encounter with 'Kimberley' the VR tree-kangaroo.

Thurs, Sept 6th: TKMG Committee meeting 5:30pm, Malanda Hotel. Members welcome to attend.

Thurs, Oct 4th: TKMG Committee meeting 5:30pm, Malanda Hotel, followed by the TKMG Annual General meeting at 7:00pm with a presentation by Jesse Rowlands on spot-tail quolls at Mt Windsor.

'LIVE' at the Malanda Falls Visitor Centre

Kimberley the Virtual Reality Tree-kangaroo Experience

Thanks to a great deal of the hard work and collaboration between TKMG, James Cook University and Malanda Visitor Centre/Tablelands Regional Council, you can now experience a 'virtual' encounter with 'Kimberley' at the Malanda Falls Visitor Centre. Committee member, Dave Hudson first dreamed of and then worked incredibly hard to make the dream of a virtual reality (VR) experience with a Lumholtz's tree-kangaroo come to life. Aiden Possemiers, a PhD student at James Cook University used the latest gaming and virtual reality technology to build 'Kimberley the VR tree-kangaroo' based on the real-life 'Kimberley', a tree-kangaroo rescued as a young joey out of the water at Malanda Falls. 'Kimberley' was raised by Margit Cianelli and now lives in the forest, coming and going as she wants from Lumholtz Lodge. This unique situation of a very habituated (i.e. used to people) yet wild tree-kangaroo made a perfect model for the VR Kimberley. Hundreds of still photos and video clips were provided by Paul McLellan from Wait-a-While Tours, Simon Burchill, Aidan and others which enabled Aidan and the team to digitally create a VR tree-kangaroo that looks and

moves very much like a real, live tree-kangaroo. The final touches on the VR experience are still being worked on to enable 'Kimberley the VR tree-kangaroo' to be an ambassador for her real-life cousins and provide visitors with not only a really amazing virtual reality experience but also inform them about tree-kangaroos and conservation of their environment. Through a collaborative agreement with Tablelands Regional Council/Malanda Falls Visitor Centre and TKMG, the VR Kimberley now has a home at the Malanda Falls Visitor Centre. The VR Tree-kangaroo is provisionally 'on-line' at the Visitor Centre, but please check with the Centre to make arrangement to experience the world's first virtual reality tree-kangaroo.

An official launch for 'Kimberley, the Virtual Tree-kangaroo experience' is being planned for Saturday June 16th-9:30-Noon at the Malanda Falls Visitor Centre. More details will be announced soon.

A LUMHOLTZ REUNION ON THE TABLELANDS

By David Anthony

AN English visitor came face-to-face with his family history on his first trip to the Atherton Tablelands in April.

Robert Lumholtz-Smith of London spent a couple of days at Margit Cianelli's Lumholtz Lodge at Upper Barron outside Atherton enjoying for the first time in his life the playful company of tree kangaroos named after his famous great-great-grand-uncle Carl Lumholtz.

Meeting the wildlife and enjoying Ms Cianelli's hospitality made his visit a memorable experience which he described as a privilege. Mr Lumholtz-Smith's friends Barry and Fiona O'Dwyer of Toowoomba had arranged for the historic visit to take place. The two men are boyhood friends, having grown up together in Rhodesia (now Zimbabwe).



Photo by David Anthony

When Mr Lumholtz-Smith came over to attend a family wedding, Mr O'Dwyer contacted Ms Cianelli to see if they could book a bed and breakfast. She advised him Lumholtz Lodge was closed while renovations were taking place.

"But when I advised her of our visitor, she quickly fixed things to greet Robert," Mr O'Dwyer said.

Mr Lumholtz-Smith is the great-great-grandson of Carl's older brother Ludwig who was born in 1851. "My father, who was Ludwig as well, actually met Carl," he said. "My father was about 10 years old at the time and his recollection was that Carl was a serious man with no sense of humour."

He grew up aware of his famous relation's adventures and work in Australia, Mexico and the United States. "The idea of being related to a famous explorer was exciting," Mr Lumholtz-Smith said. Ms Cianelli said they had a wonderful time. "It was a real privilege to have a human Lumholtz stay," she said.

Two southern scientists visit our Yellow-bellied Gliders

by Dr John Winter

Drs Ross Goldingay and Darren Quin spent 21-25 October 2017 with several TKMG volunteers learning about our Yellow-bellied Glider project activities. Both Ross and Darren were involved in the Nitchaga Yellow-bellied Glider study as part of the Tully-Millstream Hydro-Electric Scheme proposal during 1990 and 1991. Ross supervised the study and stayed in Ravenshoe for a month. Darren undertook the glider trapping and radio-collaring of the gliders and lived in Ravenshoe for 14 months. Ross is at the School of Environmental Science and Management, Southern Cross University, Lismore NSW and has published many papers on the Yellow-bellied Gliders of south-eastern Australia. Darren has a water-bird contract with Birdlife Australia in Victoria and lives in Melbourne.

They were particularly keen to learn what we had done with the gliders in Mt Baldy Forest Reserve as they were interested in a possible collaborative study to assess current glider habitat and numbers following the CSIRO survey of Yellow-bellied Glider sap trees in 1996/97.

On the first day Matt Bradford, who had done much of the 1996/97 surveying, and I met Ross and Darren at CSIRO in the morning. We then headed out to Mt Baldy FR and checked a number of sap trees we had recorded previously. One tree showed good signs of Activity HR-F003 with sap dribbling from fresh cuts and visited by an Eastern Spinebill. Darren found the tail of a Sugar Glider at the base of the tree. This is the first time we have noticed this tree being Active. HR-F002 also showed some sign of activity, a tree where we have previously recorded gliders.

Although rain was a constant hindrance during their stay they spent two days visiting all the trees we had mapped in Baldy and found four new ones. Of interest was tree HR-F029 which they found to be very active. It is the tree Sally Day and I had found in 28 October 2015 and which was very active then. They also managed one night's spotlighting and recorded one Yellow-bellied Glider and one Common Brushtail possum on HR-F003.

Amanda Kaiwi guided them through Tumoulin Forest, first down Ceinwen's Track to show them both den and sap trees in Sawmill Gully. Then down to Cadeby, towards the Conservation Area before they were anxious to leave to spotlight at Baldy.

On their final day myself, Ross and Darren, later joined by Amanda, met with two of the Wabubadda Aboriginal Corporation board members – Desley Mosquito, chairperson, and Shirley Lifu, secretary - Traditional Owners of the forest occupied by the gliders – Herberton Range, Gilbey, Tumoulin, Nitchaga. Unfortunately we were unable to arrange a meeting with Ron Turpin, Wadjanbarra Yadinji, and Gerry Turpin, Mbabaram, Traditional Owners of the Mt Baldy FR area. The bookend of their visit was lunch with Don Franklin in Herberton and I suggested that Don be one of the people Ross use as contact regarding glider matters.

Their visit resulted in positive outcomes for both Ross and our Yellow-bellied Glider program in the Wet Tropics. Ross was surprised how much we had done with the gliders in Mt Baldy forest and Tumoulin forest, the two areas they visited. He emphasised our need to publish our findings so that people elsewhere in Australia would know about our gliders here in the Wet Tropics. For us it was the stimulus of sharing time in the forest with people who have worked with the gliders in southern Australia. We parted agreeing that collaboration in future study programs would be beneficial for the conservation of our Yellow-bellied Glider here in the Wet Tropics.

Speculations on the migration of scent glands in the Yellow-bellied glider (*Petaurus australis*) and *P. australis* –northern sub-species

By Rupert Russell: 'written up as an enquiry, seeking comment from those who know more, and from those who know better.'

The male Yellow-bellied Glider (YBG) has a scent gland right on top of its head, between the ears, on what might be termed the poll. It also has a scent gland on the tail, about 5 cm distal of the cloaca. The male YBG also have a scent gland on the chest, but we won't be discussing that here. Female YBG do not have scent glands on head or tail and young, non-dominant males do not have active glands.

I speculate that the positions of these glands on YBG are related to the distinctive scent exchange procedure which is conducted between animals of each group. The scent exchange proceeds, as follows:

An animal receives scent from the head gland of the dominant male of a group when the recipient is approached from the rear, the male then rubbing the scent gland on top of its head against the underside of the recipient's tail. The action is quite vigorous, the tail of the recipient is usually pushed up quite noticeably by the donor, which may also hold the recipient steady by clasping its hips.

The non-dominant members of a glider group obtain scent on the top of their heads when they rub their heads against the tail gland of the dominant male. When any animal in the group which has obtained scent originating from the tail gland of the male addresses any other member of the group the scent is passed from the head of the initiator to the tail of the recipient.

The scent exchange, which I term "head-to-tail rubbing", is used as a greeting from an animal of lower rank to one of higher rank. Head-to-tail rubbing is also used as appeasement if a lower-rank animal should be slapped by one of higher rank, the lower-rank glider will often go quickly to the rear of the other in order to deliver a scent-exchange address. When a female in the group is sexually attractive to the dominant male, the male will repeatedly perform a head-to-tail scent exchange, as may the female, reciprocating the procedure.

A scent exchange address is commonly seen to occur while the animals are positioned on the vertical trunk of a tree. The recipient usually continues to feed while being addressed, and will almost never walk away from a donor that initiates a head rubbing. This helps to demonstrate that the recipient enjoys this form of contact.

Because these greetings take place on vertical tree trunks, I speculate that the glands seen on YBG have migrated to their present positions from the positions found in other *Petaurus* species. The Sugar glider, (*P. breviceps*), for example, has a prominent scent gland on the forehead, and a pair of glands beside the cloaca, called the paracloacal glands. I believe the positions of the glands on Squirrel Glider (*P. norfolcensis*) and Mahogany Glider (*P. gracilis*) are the same as for *P. breviceps*. I have never observed scent exchange between *P. breviceps*, in the wild. The animals I was observing were so accustomed to being watched that they would even mate while being observed. I speculate that Sugar Gliders perform their scent-exchanges while clustered within their dens, but YBG do so when abroad, at night.

It would be relatively easy for the smaller *Petaurus* camped together in a tree-hollow to head-butt any part of a companion's body, even head to cloaca, within their den, but I speculate that it is more comfortable and secure for the larger YBG to perform head-to-tail rubbing on a tree by having their glands right on top of the head and on the tail. Reaching the cloaca with a gland on the forehead would be awkward for both donor and recipient while positioned on a vertical tree trunk.

Scent exchange is an important group identification and hierarchical procedure, but I won't discuss that subject here, instead I ask anyone reading this if they have ever heard (or read) about gland "migration" in other mammals? The deer family perhaps? The buffalo family? One reader from whom I sought comment this enquiry suggested that the speculation is not too unlikely, considering

whales (as for most mammals) once had their nostrils at the end of the muzzle, but now the nostril (blowhole) is on top of the head.

I also remembered that flat fish like flounder have the eye on what would be the underside of the body move to the topside, so there are two functional eyes capable of stargazing. I read that the larval, free swimming stage of flat fish have an eye on each side of the head, but the eye migrates to the top side when the adult settles to a life on the sea bed.

And if anyone thinks my speculation about gland migration is entirely on the wrong track, I will be happy to be advised. I look forward to receiving any comments. Comments may be sent to:

rj.russell@bigpond.com

Rope ladder fauna overpass at Kenny Road

By Dave Hudson

The installation of a road ladder fauna overpass at Kenny Road, Upper Barron is another long-term project of TKMG that is near completion. The bridge will provide connectivity for a range of arboreal species (in particular lemuroid ring-tail possums) between 2 large revegetation sites on either side of the road. These sites in turn provide connectivity between a large (c1000ha) patch of remnant forest to the north known as the Hypipamee outlier and the Wet Tropics World Heritage Area (Herberton Range) to the south.

The poles were supplied and installed by Ergon back in 2015 when the revegetation was at an early stage. It took a little while then to pull together the funding to complete the project. In 2017 the National Climate Change Adaptation Research Facility (Natural Ecosystems Network) ran a case-study competition for biodiversity projects. TKMG, on behalf of the Southern Atherton Tablelands Revegetation Alliance, submitted an entry and was awarded a \$3,000 prize. This will meet the majority of the costs, with South Endeavour Trust covering the balance.

Biotropica was engaged to facilitate the design and coordinate the installation. Ergon came on board again, providing a truck and crew to install the rope ladder on 18 April. Unfortunately another job came up which required the crew's immediate attention and the monitoring camera could not be installed; this will be done at the next opportunity.

It has been suggested that a spotlight monitoring program of the adjoining revegetated areas should be undertaken to complement the camera monitoring. If there are any members who would like to volunteer to help organize this task please contact Dave Hudson by email

davidhudsonau@gmail.com. Miriam Goosem has offered to assist in the program design.

Thanks again to the wonderful staff at Ergon. Thanks also to Uninet Enclosure Systems for donating rope, Keith Smith for his ongoing support, advice and encouragement, and Tim Hughes of South Endeavour Trust (http://www.southendeavour.com.au/lemuroid_leap.html) for making the whole thing possible.



Field Day 16 June Cloudland Nature Refuge

This will be an opportunity to check out the progress of the 'Kickstart' natural regeneration trial which commenced in 2012 and is winding up this year. The purpose of this experiment was to investigate the potential of various management interventions to stimulate/accelerate the process of converting disused

pasture back to rainforest without intensive tree planting. Project design and implementation were undertaken by Griffith and Queensland Universities and Tablelands Regional Council. TKMG supported the trial via a grant from the Norman Wettenhall Foundation.

The learnings from the trial are now being applied across a further 3 hectares of the property through a Qld Govt Community Sustainability Action Grant secured by TKMG.

The Field Day is being organised by TREAT and commences at 2pm. Cloudland NR is 8.5 km along Seamark Rd. Parking is limited at the property so people are encouraged to car-pool from the beginning of Seamark Rd, just off the Malanda Millaa Road.

<http://www.treat.net.au/publications/WnsApr2018.html>

Mortality in Lumholtz's tree-kangaroo

by Amy Shima

Research on Lumholtz's tree-kangaroo to learn more about the species was one of the goals of the TKMG Community Action Plan (CAP). My PhD project on health and population of Lumholtz's tree-kangaroo has been part of fulfilling this goal. At the April TKMG meeting, I was able to report on some of the work I've been conducting on mortality in Lumholtz's tree-kangaroo. The meeting was well attended and there were some excellent questions after the talk.

One very important point of the talk was that tree-kangaroos can be found not only in areas of intact forest but also in small patches of forest (remnants) and in places where you might not expect to find them (such as in your garden). Tree-kangaroos are very good at exploiting every bit of habitat suitable for them (and where they can find food plants) so finding one in a suburban area does **NOT** mean the animal is 'lost' or sick...it may just be passing through its' home territory, feeding on plants (native or non-native) in a yard or park. Lumholtz's tree-kangaroo are capable of exploiting a wide range of resources, including the ability to successfully consume many non-native plants. The most effective things that a person can do to help tree-kangaroos are:

1. Plant trees, especially those known to be food plants for tree-kangaroos
2. Be responsible dog owners-keep dogs contained at night and on leash when in areas where there may be tree-kangaroos. Even the nicest pet dog may not be able to resist chasing a tree-kangaroo.
3. Be tree-kangaroo aware when driving, especially in areas of limited visibility and known 'black-spots' for tree-kangaroo deaths.

Major findings of the mortality study were that there is a statistically significant bias towards young adult males being the victims of road mortality. We didn't find any statistically significant seasonality to when tree-kangaroos are likely to be killed on the road. That may have been a function of not enough numbers to generate a statistically significant result so, as we continue to collect data on roadkills, that finding may change. While the numbers of tree-kangaroos killed on roads (25-50 per year) is alarming, from the standpoint of the entire population, it is not when one considers that the total population of tree-kangaroos may be 8,000-10,000. With the majority of animals being killed by vehicles are young adult males, the road toll, while a tragedy for the individual animal, is likely not having an impact on the population as a whole. Several areas were identified as 'hazard zones' (aka 'blackspots').

Our findings on road mortality will soon be published in a peer-reviewed journal. We will also be sharing our findings with Queensland Transport and Tablelands Regional Council in an effort to advocate for changes to signage, speed limits and perhaps other tactics that may help reduce the road toll of tree-kangaroos (and make roads safer for humans!).

Dog attacks, either by dingoes/wild dogs or domestic dogs accounted for only a small portion of deaths recorded. The number of tree-kangaroo deaths due to wild dogs/dingoes may be underestimated because of where the deaths occur (often in areas where the few remains would not be found) and the fact that dingoes consume their prey and leave very little evidence (sometimes just a few bones or bits of intestine). The number of deaths or injuries caused by domestic dogs is also likely under-reported due to the social stigma associated with admitting that a pet has killed a tree-kangaroo.

The major 'take-home' point for both vehicular trauma and dog attack are that injuries may not be immediately apparent. An animal may look and even act as though it has sustained only minor damage but the reality is that there may be serious, life-threatening injuries that would only be found during a thorough examination by a veterinarian. In the interest of ensuring that animals do not suffer needlessly and die a painful death from life-threatening (but not immediately apparent) injuries, it is recommended that ALL tree-kangaroos that are rescued and believed to have been hit by a vehicle or attacked by dog(s) be examined by a veterinarian as soon as possible.

Lumholtz's tree-kangaroo are not presently listed as 'endangered' but that doesn't mean we shouldn't care about them and do our best to make sure the population remains at healthy levels by doing whatever we can---planting trees, being responsible pet owners, and being 'wildlife aware' while driving in the area.

Hazard Zone (blackspot)	# LTK deaths 2012 to 2017
Kennedy Hwy: around Hypipamee Crater	7
Kennedy Hwy: near Longlands Gap Rd	7
Kennedy Hwy: near Lumholtz Lodge	6
Kennedy Hwy: Wongabel State Forest	10
East Evelyn Road	10
Palmerston Highway: Malanda-Millaa Millaa	12
Malanda-Lake Barrine Road	7

Volunteer Opportunities

On-going volunteer opportunities: We always welcome members who are willing to spend part of their Yungaburra Market Saturday helping out at the TKMG market stall. Even if you can only stay for a short while, it will help and you'll be doing your part to help TKMG get the message out about tree-kangaroos and other mammals in the Wet Tropics and Atherton Tablelands. For further information, please contact Simon Burchill 0407-091-347 or sbburchill@gmail.com or any of the TKMG Committee members.

Do you have writing, editing and publishing skills? The newsletter editor would welcome assistance from anyone with an interest in writing and editing and in tree-kangaroos and other mammals. It's a big job to get the newsletter out and having someone else to help with the task would be most welcome. If you think you might be interested, please contact Amy (0499-180-961) or tkmgnewsletter@gmail.com.

Do you have computer/internet/website skills? TKMG would love to have a member (or members) step up to help with the website and our Facebook page. Please contact any of the Committee members for more information.

Tree-kangaroo and Mammal Group is a **Community Organization** so, step up and be an **active** member of our community. Volunteer to help us spread the word about our amazing environment and animals that inhabit it.



Mammal Mail

Newsletter of the Tree Kangaroo & Mammal Group, Inc.

Please Post to:

Tree Kangaroo and Mammal Group, Inc. (TKMG)

PO Box 1409, Atherton ,QLD 4883

e-mail: info@tree-kangaroo.net

Website: <http://www.tree-kangaroo.net>

President: Peter Valentine peter.valentine@jcu.edu.au

Vice-President: Amy Shima 0499-180-961

Treasurer: Ruth Whiston 07-4096-6372

Secretary: Simon Burchill 0407-091-347 sbburchill@gmail.com

Newsletter Editor: Amy Shima 0499-180-961 tkmgnewsletter@gmail.com

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