



Mammal Mail

March 2008

Newsletter of the Tree-Kangaroo & Mammal Group Inc.

T-K shelter poles at risk

During December 2001 four tree-kangaroo poles were erected beside an unnamed tributary of the North Johnstone River east of Malanda in far north Queensland. The poles were erected as part of the Natural Heritage Trust funded Anderson Road Landscape Linkage project between Pearamon Scrub and the Johnstone River Estate. It is well documented that tree-kangaroos travel this route. The Bluewater Cairns Group Pty Ltd has a development proposal before the Tablelands Regional Council for a 118 lot residential estate on the 77 hectares of land where the poles are located. The poles are on the western boundary. There is cause for concern by the statement in 3.4 of the development proposal that *'All existing structures will be removed prior to development'*.

The Lumholtz's tree-kangaroo (*Dendrolagus lumholtzi*) is listed as rare under state legislation. It was also the iconic fauna for the now defunct Eacham Shire, but remains as the iconic fauna for the township of Malanda. The poles are artificial habitat structures. These structures also include platforms, and nest boxes and they have been widely used in the conservation of wild populations, to provide habitat features that are not easily or rapidly restored to a site by natural processes (Kanowski & Tucker 2002). Artificial trees, or shelter poles, aid the dispersal of tree-kangaroos between remnants (Schmidt *et al*, 2000). Shelter poles would provide refuge from dogs and, when installed in a row, would help channel dispersing animals between remnants (*ibid*). Tree-kangaroos are capable of traversing long distances across grassland but they are vulnerable to predation by dogs in open country (Newell 1999).

If this development is approved, conditions should be installed that will ensure the protection of the t-k poles and provide for an extensive native revegetation program along the



TK escape route near Malanda

western creek boundary of the proposal. A native vegetation buffer of minimum width thirty metres (approximately 18 trees wide at 1.75 meter spacing) from the high bank will serve as habitat, restoration of biodiversity and a wildlife corridor. The revegetated zone will be a refuge for wildlife that will be severely impacted upon by the increased urbanisation, dogs and cats. Forested corridors increase the chances of colonisation by providing a path to re-establish populations that have been exterminated in an area (Goosem & Tucker 1995). Corridors may also act as conduits for genetic exchange among small populations, helping to maintain their viability and adaptability (*ibid*). Corridors increase the movement of adults among patches and dispersal of young (*ibid*). Connectivity along the creek north of the proposed estate is enhanced by local landholder revegetation projects. TKMG is currently the sponsor of one of these revegetation projects on member Louisa Crossle's property.

TKMG PUBLIC MEETINGS – SEE BACK PAGE

It must also be a condition that advice on suitable tree species and tree planting should be sought from one of the local native revegetation organisations which are highly qualified and well placed to offer such advice. The tree planting process (site preparation, planting and a minimum of three years maintenance) should also be carried out by one of these organisations to ensure that an appropriate and high standard is maintained.

Background to the proposal

The proposal wishes to reconfigure two lots of land (46 and 9) which under the superseded Town Plan had been zoned rural residential. This was changed in November 2006 to the current zoning of rural. A two year *sunset clause* relating to the change ceases in November 2008. The sunset clause means that the rezoning can be challenged. The developer uses the *Sanctuary Vista* residential development north of the current proposal as a reason to defend the previous rural residential zoning, declaring that rural values are diminished by neighbouring residential encroachment. The Eacham Shire Council was aware of the *Sanctuary Vista* development in 2006 (it being an old application from the 1980's, I believe). The Council obviously used sound judgement and acted under sound advice when it decided to rezone the area to rural. The TRC is advised to defend this decision.

118 residential blocks are proposed over four stages. This adds to the 60 lots already created in the adjoining development, *Sanctuary Vista*.

Dogs and cats: The proposed development will profoundly impact upon tree-kangaroos and other fauna with the introduction of an expected high

number of dogs and cats. There is an opportunity for Council to take a positive step in protecting local wildlife by declaring the estate a dog and cat free zone. High fences are not an answer because arboreal mammals (e.g., tree-kangaroos and possums) that find themselves in a high fenced area can become trapped. Young children and people generally will be safe from dog attacks. If people need a pet, I suggest a chook, budgee or guinea pig.

A submission outlining the above concerns (plus others) was submitted to the Eacham Shire Council by Larry Crook.

References

Kanowski, J., Tucker, N.I.J. (2002) Trial of shelter poles to aid the dispersal of tree-kangaroos on the Atherton Tablelands, north Queensland. *Ecological Management & Restoration, Vol 3 No 2, August 2002.* 137-138.

Schmidt C., Felderhof L., Kanowski J., Stirn B., Wilson R., and Winter J.W. (2000). *Tree-kangaroos on the Atherton Tablelands: Rainforest Fragments as Wildlife Habitat> Information for Shire Councils, Land Managers and the Local Community.* Tree Kangaroo & Mammal Group Inc. Atherton.

Newell G.R., (1999) Home range and habitat use by Lumholtz's tree-kangaroo (*Dendrolagus lumholtzi*) within a rainforest fragment in north Queensland. *Wildlife Research* **26** 129-145.

Goosem S. Tucker N.I.J. (1995) *Repairing the Rainforest. Theory and Practice of Rainforest Re-establishment in North Queensland's Wet Tropics.* Wet Tropics Management Authority 1995

SHELTER POLE PROJECT

by John Kanowski, Rainforest CRC, Environmental Sciences, Griffith University Nathan Qld

(Reprinted from *Mammal Mail* April 2002.
For the full article go to the TKMG web site
newsletter site)

Of all the forest types throughout its range, Lumholtz's tree-kangaroo is most abundant in rainforests on fertile soils on the Atherton Tablelands (complex notophyll and mesophyll rainforest, types 5a, 5b and 1b of Tracey 1982). The trees and vines which grow on these fertile soils typically have highly nutritious foliage, an important determinant of habitat quality for leaf-eating mammals. However, forests on fertile soils have been extensively cleared for agriculture and most of the remnant forests



3 Shelter-Poles in situ

are small. The persistence of tree-kangaroos in small remnants is presumably dependent on the continued dispersal of animals across the landscape – to prevent inbreeding, to recolonise vacant territories, and so on.

Tree-kangaroos are capable of dispersing many kilometres between remnants, but they are vulnerable to attack by dogs and dingoes when crossing open ground. For this reason, corridors of vegetation probably increase the likelihood that tree-kangaroos can disperse successfully between remnants. While considerable effort has gone into planting rainforest corridors between remnants on the tablelands, most of these corridors have been located on steep creek banks. Landholders tend to be less willing to return productive agricultural land to forest and for this reason a number of remnants on the tablelands are likely to remain relatively isolated. The challenge is to find ways of helping tree-kangaroos disperse across cleared land, without significantly reducing the agricultural potential of that land.

The concept of “shelter poles” arose as a possible solution to this challenge. Shelter poles are artificial trees, strategically placed in the landscape to allow dispersing tree-kangaroos to escape from marauding hounds. The idea was raised by the Tree Kangaroo and Mammal Group in its report on the community survey of tree-kangaroos on the tablelands.

The opportunity came to test the practicality of the shelter pole concept on the farm of Mark and Peter Mappas, near Malanda. This farm is one of the case-studies examined by TKMG in the project, *Conservation of remnant rainforest on private property on the Atherton Tablelands*. Mappas’s farm is also the focus of revegetation work carried out under the *Anderson Rd Linkage project*, which was run by Trees for the Evelyn and Atherton Tablelands (TREAT) in conjunction with QPWS Centre for Tropical Restoration. The project aims to restore a corridor of complex mesophyll (type 1b) rainforest along a creek that flows between Peeramom Scrub and the North Johnstone River, a distance of some 2 km. Most of the banks of the creek are very steep and have reverted to regrowth or been replanted with rainforest. However, the lower

reaches of the creek are relatively flat and support pasture, forming a break in the corridor several hundred metres long. This ‘break in the corridor’ was the area chosen to test the poles.

Four shelter poles were erected on the Mappas farm in December 2001 (see pictures). The design used old electricity poles as the uprights, with a simple shelter at the top to allow tree-kangaroos to rest once they’d climbed the poles. The shelters were located 5 m off the ground, well above the reach of dogs. Each shelter consisted of four 100 mm treated-pine rounds, bolted to the pole at an angle and bolted at their ends to 100 x 50 mm rafters. The rafters were covered with shade-mesh to provide some protection from the elements for any tree-kangaroo stranded in the shelter during the day. To help tree-kangaroos negotiate the poles, we roughed up the bottom section of each pole with a chainsaw, added another cross-bar half-way up the pole and draped a length of ship’s rope from the shelter to this cross-bar.

Will they work? Who knows – but that is the point of the exercise. As the shelters are intended to offer refuge to dispersing tree-kangaroos, especially those being pursued by dogs, use of the shelters is likely to be episodic, at best. We plan to periodically monitor use of the shelters by checking for scratches, scat and other sign.

You can see the poles from Anderson Road, between house numbers about 40 to 50, if you look into the valley to the south east.

Further reading

Tree-Kangaroos on the Atherton Tablelands: Rainforest Fragments as Wildlife Habitat. Information for Shire Councils, Land Managers and the Local Community. Tree-Kangaroo and Mammal Group Inc., Atherton. 36pp

Kanowski, J., Felderhof, L., Newell, G., Parker, T., Schmidt, C., Wilson, R. and Winter, J.W. (2001) Community survey of the distribution of Lumholtz’s Tree-kangaroo on the Atherton Tablelands, north-east Queensland. *Pacific Conservation Biology* 7, 79-86.

Photos by John Kanowski

Tree Planting - Saturday April 5th

TKMG is sponsoring a federal government Envirofund revegetation project at Peter and Trixie Tuck’s place (Mathers Rd, Yungaburra - follow the TREAT signs). Volunteers are welcome to come along to help plant the second lot of 2000 trees. Planting commences at 7.30am. Please bring sun (or rain) protection, gloves & water to drink. Trowels are provided and Trixie’s exquisite morning tea will be served after planting.

Enquiries?.....then ring Peter on 40953774. Mathers Rd is left at the bottom of Beech St which is off the main road opposite the Yungaburra primary school.

Conserving the Mabi – Involving Students in Sustainability

Mabi Forest is the extremely endangered (less than 2% remaining) and fragmented semi-evergreen rainforest that exists around Atherton and Yungaburra on the Atherton Tablelands. It is an important habitat for many mammals, including the Lumholtz's tree-kangaroo, Spectacled Flying-fox (*Pteropus conspicillatus*) and the Little Red Flying-fox (*Pteropus scapulatus*). It is also known as Type 5b forest and is Regional Ecosystem 7.8.3 (Complex notophyll vine forest on uplands basalt). *Mabi* is the local Yidinyji name for the tree-kangaroo, also sometimes called *mapi*.

"Conserving the Mabi Forest" is a programme that involves students and teachers in authentic research in this ecosystem. Primary and secondary students will be working together with scientists and community members to generate knowledge directly from their own environment. Activities will include professional development for teachers, students undertaking biological research in the environment and participation in sustainability projects. This project will empower students and teachers with life-long skills and positive attitudes towards science and environmental sustainability. The project's innovations include exposing students to authentic science in a local ecosystem and providing them with the means to communicate their ideas and research to the community.

The partner schools and organizations include Atherton State High, Atherton Primary, Tolga Primary, Terrain, Green Corridor, Tablelands National Parks Volunteers, Tolga Bat Hospital, TREAT (Trees for the Evelyn & Atherton Tablelands) and TKMG.

The course will be conducted in three stages. First the students will learn about the Mabi Forest – what the Mabi forest is, where it is located and who inhabits the forest. During this first phase, students will be involved in rainforest plant identification, field trips to the Mabi and research into mammals, birds and plants in this unique forest.

Secondly, students will learn about the threats facing the Mabi and its inhabitants. The



Spectacled Flying Foxes in Mabi forest at Tolga Scrub

students will conduct ecological field surveys, learn about water quality and the impact humans have had on the forest.

Finally, students will learn about conservation techniques including tree planting, wildlife care, the importance of tree corridors and how humans can lessen their impact.

There will be 120 students (40 secondary and 80 primary) and 6 teachers involved with this project.

The students will be split into 6 groups of 20. These groups will contain a mix of primary and secondary students.

The 6 groups will rotate through planned activities on three Thursday afternoons each month. If groups are scheduled to do field work, Atherton High School laboratory assistants will be able to assist. Activities will run from March till November this year. Activities will include field trips, internet research, guest speakers, report writing and analysing data.

The project has a budget of a smidgin under \$40000 and is led by TKMG vice-president Alan Gillanders in his role as Education Resource Officer with Terrain, a semi-government natural resource management body.

KEEP WILDLIFE SAFE & CATS IN CHECK

The CatBib is a device especially designed to stop cats from killing wildlife, particularly birds. It fits over a collar, worn around the neck, allowing all normal activities but inhibiting hunting.

Trials by Murdoch University in Perth found the CatBib stopped 81% of cats from catching birds, 45% of cats from catching mammals, and 33% of cats from catching reptiles & amphibians.

So if you are a responsible cat owner wanting to curb your cat's predation on the local wildlife, please check out the CatBib website: www.catgoods.com

Frost & Mulching

There is an item of particular interest in the latest (Jan – Mar 2008) TREAT newsletter that deals with frost and mulching. Ex-forester and now environmental consultant Peter Stanton revealed his research on mulching and its effect on newly planted trees.

Peter says, "Early in my career in forestry I worked in forestry plantations in the Brisbane Valley, where frost was a major hazard for young trees. I did a lot of research on how to predict where the most severe frosts would occur. One of the things I noticed early was that trees on bare red soil survived best; those growing in grass or where there was heavy mulch fared the worst. Soil colour was an important factor, with black soils being the coldest, but irrespective of that, on any soil mulched trees were the least likely to survive. I was able to show that the surface of the mulch during the worst frost events could be 2-3 degrees centigrade colder than the surface of bare soil.

The reason for this can be found in the science of physics. On a clear still night most heat loss from the surface of the soil is by radiation to the sky. Heat lost in this way is replaced from deeper in the soil profile by conduction to the surface. Mulch interrupts this process; heat is still

lost by radiation from the surface of the mulch, but as mulch is a very poor conductor it is not replaced. Effectively the mulch provides an insulating blanket which prevents heat transfer from the soil to the mulch surface.

Another point that should be recognized is that the amount of heat lost by radiation from any point on the soil surface is governed by the amount of sky visible from that point. Thus trees near a forest edge are much safer than trees well out in the open. One of the forestry practices that utilized this knowledge was to plant fast growing frost resistant trees, usually *Eucalyptus grandis*, alongside hoop pine seedlings which were slower growing and frost intolerant. This put a protective cover between the hoop pine and the sky. When the hoop pine had grown sufficiently on site, the Eucalypts were removed. A high level of protection of rainforest plantings in frost areas could be achieved by planting *E. grandis* first at, say, 3-4 metre spacings."

The TREAT newsletter lists a number of frost tolerant Tablelands rainforest species.

TREAT (*Trees for the Evelyn & Atherton Tablelands*)
Contact: President, Barbara Lanskey 40914468

New and Improved web site

Web site genius Maria Pesavento has reworked and updated the TKMG website. Check it out!

Apology

In the last issue of Mammal Mail an incorrect photo was printed. It was captioned as a Bennett's Tree Kangaroo. It was not a Bennett's tree kangaroo and neither was the photo taken by Ruth Whiston. It was, in fact, a photo of a Doria's tree-kangaroo (*Dendrolagus dorianus*).

Thankyou

To the **Whistle-stop Café** in Yungaburra for collecting donations on TKMG's behalf.

The TKMG website -
www.tree-kangaroo.net
is maintained on
a volunteer basis by
www.pesavento.biz



Where can I buy that TKMG gear?

Crew & polo T-shirts, brightly coloured kiddies T's and caps, shopping bags, postcards, cards, fridge magnets, posters and TKMG CDs can be purchased from our public meetings and the Yungaburra Markets. And at these outlets you will find:

Ravenshoe & Malanda Falls Visitors Centre - T-shirts, bags, CDs & postcards

Yungaburra Visitors Centre - T-shirts, CDs, bags & postcards

Eacham Medical Centre - shopping bags

Malanda Fairy Shop - T-k toys & shopping bags

CTR/QPWS Interp. Centre - T-shirts

Tree Kangaroo Café - CDs & postcards

For any merchandising queries ring John Grant on 0410810427

Rainforest Food Plants for Lumholtz's Tree-kangaroos

Many members have asked about food plants for tree-kangaroos. Below is a list for the Regional Ecosystem 7.8.2 (Type 1b, complex notophyll to mesophyll vine forest of high rainfall, cloudy uplands on basalt, e.g., the eastern edge of the Atherton Tablelands – Malanda out to Topaz, Tarzali, Millaa. The high country west of the Millaa-Malanda Road is 5a, however many 1b species are also in 5a. A list for 5a and 5b country will be published in forthcoming issues.

It is important that in a planting you mix these species in with other 1b species to ensure bio-diversity. Tree-kangaroos have wide ranging and individual tastes.

Common Name	Botanical Name	Leaf (L), Flower (Fl), Fruit (Fr)
Almond bark	<i>Prunus turneriana</i>	L
Black Bean	<i>Castanospermum australe</i>	L
Brown Bollywood	<i>Lisea leefeana</i>	L, petioles, Fl, Fr (K.C.)
Brown Tamarind	<i>Castanospora alphanthii</i>	L
Brown Tuckeroo	<i>Cupaniopsis flagelliformis</i>	L, Fl (K.C.)
Bumpy Satinash	<i>Syzygium cormiflorum</i>	L, Fl (K.C.)
Celerywood	<i>Polyscias elegans</i>	L
Golden Penda	<i>Xanthostemon chrysanthus</i>	L
Grey Bollywood	<i>Neolitsea dealbata</i>	L, Fl, Fr (K.C.)
Lemon Aspen	<i>Acronychia acidula</i>	L
Macintyres Boxwood	<i>Xanthophyllum octandrum</i>	L
Maple Silkwood	<i>Flindersia pimenteliana</i>	Fl
Milkbush	<i>Neisosperma poweri</i>	L
Milky Pine	<i>Alstonia scholaris</i>	L
Northern Laurel	<i>Cryptocarya hypospodia</i>	L, Fl
Northern Olive	<i>Chionanthus ramiflora</i>	L
Nutmeg	<i>Myristica insipida</i>	L
Pink Poplar	<i>Euroschinus falcata</i>	L
Quandong	<i>Elaeocarpus angustifolius</i>	L, Fr
Red Tulip Oak	<i>Argyrodendron peralatum</i>	L
Rusty laurel	<i>Cryptocarya mackinnoniana</i>	L
Sarsaparilla	<i>Alphitonia petrei</i>	L (new), Fl (K.C.)
Silver Silkwood	<i>Flindersia acuminata</i>	L
Spurwood	<i>Dysoxylum pettigrewianum</i>	L
Tetra Beech	<i>Tetrasynandra luxiflora</i>	L
Umbrella Tree	<i>Schefflera actinophylla</i>	L, Fl (K.C.)
White Hazelwood	<i>Symplocos cochinchinensis</i>	L
Woolly Pear Fruit	<i>Mischocarpus lachnocarpus</i>	L, petiole, Fr (K.C.)
Cockspur Thorn	<i>Maclura cochinchinensis</i>	L
Millaa Vine	<i>Elaeagnus triflora</i>	L, Fl, Fr (K.C.)
Pepper Vine	<i>Piper novae-hollandiae</i>	L
Potato Vine	<i>Faradaya splendida</i>	L
Tree ferns	<i>Cyathea</i>	L
Water Vine, Five-Leaved Grape	<i>Cissus hypoglauca</i>	

(K.C.) – observations by Karen Coombes. (Leaf: generally refers to *new* leaf but can also be established leaf).

Tree-kangaroo profile

Dingiso (*Dendrolagus mbaiso*)

(Flannery, Boeadi and Szalay, 1995)

This animal is my nose.

Bogabau Ba Bolobau, Moni Elder, referring to Dingiso as the Centre of His Being. Pogapa, Sudirman Range, Irian Jaya, 15 June 1994.

DINGISO is a most unusual tree-kangaroo. It is boldly patterned in black and white, and is the only member of its genus that spends most of its time on the ground. As a result, it has an almost comically short tail and long, slender bones. The latter more closely resemble those of terrestrial kangaroos than the thick and stocky bones of other tree-kangaroos, which must be strong enough to endure a leap downward of 20 metres or more.

As Dingiso ages, it develops a saddle of brownish hair around its middle, adding to its striking appearance. It has an exceptionally dense and long coat. This it needs, for it lives at and just below the tree-line, high in the mountains of Irian Jaya. The temperature drops below freezing most nights, while by day cold winds blowing off Irian's tropical glaciers frequently race through its valleys.

Dingiso is unique among tree-kangaroos in possessing remarkable facial markings, which appear to develop with age. There is a white star in the middle of the forehead, and a band of white fur around the base of the muzzle.

The last of the tree-kangaroos to be discovered (being described only in 1995), Dingiso's terrestrial habits and unusual appearance at first confused us as to its relationships. A long and detailed study, however, revealed that it is a close relative of Doria's Tree-kangaroo (*Dendrolagus dorianus*).

The discovery of Dingiso will long remain in my memory. In 1990 I had walked high into the Prinz Wilhelm V Mountain Range in central Irian Jaya. While camping under a rocky overhang at the tree-line, a hunter brought me a single jaw of a tree-kangaroo which he had found lying in a rocky crevasse. Later on I purchased a piece of tree-kangaroo fur that had been fashioned into a war bonnet. Although these relics clearly belonged to a species of tree-kangaroo, I could not identify them more closely. About a year later I received a photograph of a joey which had been taken in Tembagapura. It showed a black and white animal which I could not identify to species.

Then, in May 1994, the chance arose to travel to the Tembagapura area. Within three

weeks of our arrival, Jonas Tinal and his 'Four Million Rupiah Dog' had secured an adult specimen. Finally we had enough material to put a name to the new species and begin investigating its biology.

Dingiso is found only in the high montane forest and subalpine scrubs of the Sudirman Range, Irian Jaya. It is rare in the east, where it is hunted. It remains common in the west because of the protection conferred on it by the Moni people. For many Moni, it is an ancestor which must never be harmed. They say that when they meet it in the forest, it raises its arms above its head, revealing its white belly, and whistles. This they take as a sign of its recognition of their kinship. A similar behaviour (without the whistle) has been reported in male Doria's Tree-kangaroo (*Dendrolagus dorianus*), where it is a superiority display. Male Dingiso may be prompted to use this display to any large mammal that intrudes on their territory, including humans.

As yet, very little is known of Dingiso's biology. Females weigh 8.5-9 kilograms, but a male has never been weighed. It eats leaves, does not appear to be particularly sociable, is almost odourless, and extremely tame. Hunters report tempting it out of a tree with a handful of tasty leaves, or simply slipping a noose around its neck and leading it away.



Extracts from *Tree Kangaroos: A Curious Natural History*, Melbourne: Reed Books Australia.

© Copyright by Timothy Fridtjof Flannery, Roger Martin, Alexandra Szalay. Illustrations Copyright by Peter Schouten, 1996.

Photo: S Humphreys.



Public Meetings

Lake Eacham Hotel
Yungaburra 7.30pm

Thursday May 1st

Sarah Kerr
'Coppery Brush-tail possums'

Thursday July 3rd

Dr Nicky Moore
'The Origin of Mammals'

All welcome - Supper (gold coin donation)



Photo by Steve Parish

Mammal Mail

March 2008



Lumholtz's
TREE-KANGAROO

Drawing by William Cooper

Newsletter of the Tree Kangaroo and Mammal Group Inc.

PO Box 1409, Atherton, Q, 4883

Please post to:

Tree Kangaroo and Mammal Group Inc (TKMG)

E-mail: info@tree-kangaroo.net

Web site: www.tree-kangaroo.net

President: Jack Grant 0410810427
ptiloris@bigpond.com

V. President: Alan Gillanders (07) 4095 2704
alanswildlifetours.com.au

Treasurer/Newsletter: Larry Crook (07) 4096 8243
freebrook@austarnet.com.au

Secretary: Ian Sinclair (07) 4096 6690
iroesinclair@bigpond.com