

Forest Matters



Rainforest CRC Newsletter

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FOREST FEATURES

'Zebra Crossings' for Animals make Popular Science

Award for 'Landmark' Freshwater Fish Research

Book Showcases a Decade of Lessons Learned

FOREST RESEARCH

Catchment to Reef Fieldwork Update

High Ambitions – More Canopy Bridges for the Wet Tropics

STUDENT SPOTLIGHT

Bursary Opportunity Ensures Thrills and Chills

Fresh Science a Valuable Experience

Dietary Selectivity in a Rainforest Possum

COMMUNITY CHEST

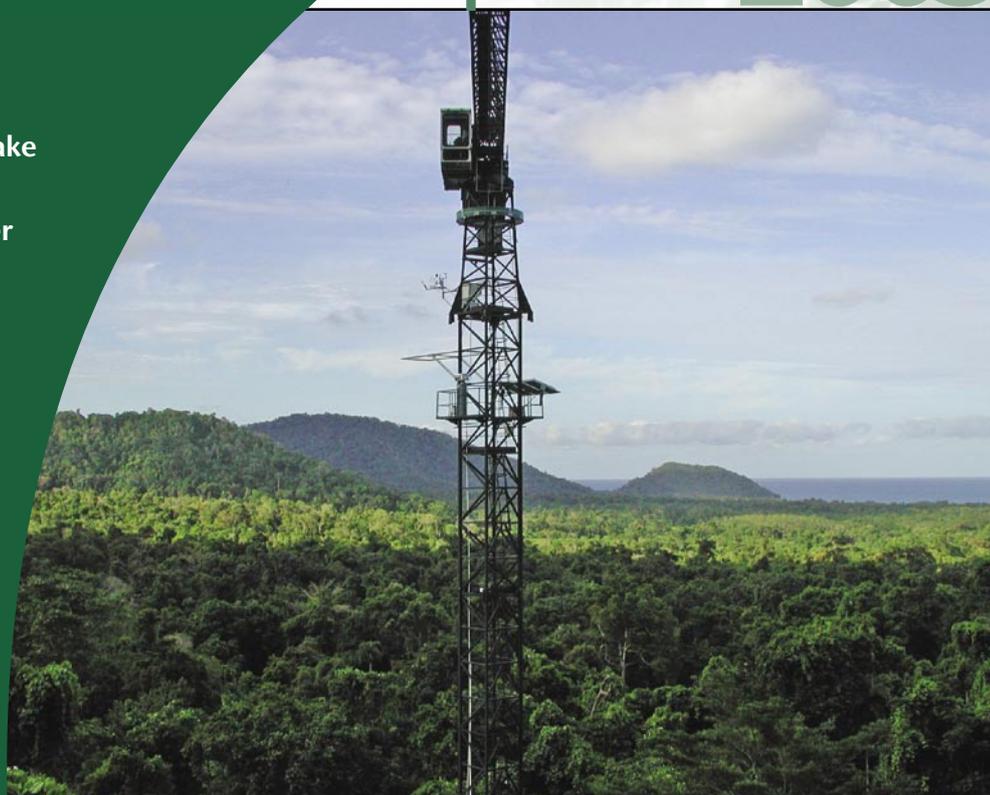
Fears Frogs Will Croak Without Hospital

Correction – Diversity in Kuku-Yalanji Tourism Untangled

Brisbane Hosts International Frugivore and Seed Dispersal Conference

Tree-top Tours for Crane Visitors

November Conference to Explore Tree-kangaroo Conservation



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CONTENTS

FOREST FEATURES

- 'Zebra Crossings' for Animals make Popular Science 2
- Award for 'Landmark' Freshwater Fish Research 3
- Book Showcases a Decade of Lessons Learned 4

FOREST RESEARCH

- Catchment to Reef Fieldwork Update . 4
- High Ambitions – More Canopy Bridges for the Wet Tropics 6

STUDENT SPOTLIGHT

- Bursary Opportunity Ensures Thrills and Chills 7
- Fresh Science* a Valuable Experience . . 8
- Dietary Selectivity in a Rainforest Possum 8

COMMUNITY CHEST

- Fears Frogs Will Croak Without Hospital 9
- Correction – Diversity in Kuku-Yalanji Tourism Untangled 10
- Brisbane Hosts International Frugivore and Seed Dispersal Conference . . . 10
- Tree-top Tours for Crane Visitors . . . 11
- November Conference to Explore Tree-kangaroo Conservation 12

Cover Photos:

(Top) *The Australian Canopy Crane, based at Cape Tribulation (seen in the background). The Facility hosted forty guests at an Open Day on 19 September 2005. See our coverage on page 11 (Image: Birgit Kuehn).*

(Bottom) *Eastern rainbow fish (Melanotaenia splendida splendida). The species is widely distributed along Queensland's eastern coast. These specimens, a male and female, were collected as part of a major field study conducted by researchers of Task 3 of the Catchment to Reef Joint Program (page 4) (Image: Richard Pearson).*

'Zebra Crossings' for Animals make Popular Science

Rainforest CRC researchers Dr Miriam Goosem and Nigel Weston were recent finalists for the 2005 Eureka Awards in Sydney. Their work on the use of overpasses and underpasses to help rainforest animals across roads was selected along with five other finalists for the Australian Museum People's Choice Award. Although unsuccessful on the night, they did us proud in bringing their significant research to the attention of a wide audience including leading scientists and journalists, and most importantly our next generation of scientists.

The annual Eureka Prizes, one of Australia's most prestigious national science awards, saw two Rainforest CRC researchers among the finalists this year. Accompanied by Rainforest CRC Deputy CEO Associate Professor Steve Turton, Miriam Goosem and Nigel Weston flew down to Sydney for the gala award night in August.

Initially entered for the Sherman Eureka Prize for Environmental Research, the team's research on faunal underpasses and overpasses in the Wet Tropics World Heritage Area was selected for the inaugural Eureka Prizes People's Choice Award. The nomination was a well-deserved recognition for the contribution the two Cairns-based researchers have made and continue to make in helping to reduce roadkill within the Wet Tropics. In developing and installing tunnels below and bridges across roads, their work helps ground-dwelling and arboreal native wildlife to safely cross roads in a fragmented landscape.

Other than the twenty-three traditional Eureka Prizes across the scientific disciplines, the new People's Choice Award invited the public, and in particular encouraged science students and their teachers across Australia, to vote for their favourite 'Science Star'. The new award aims to engage the public, especially young people in science. "We wanted people to let us know what



An operational underpass shortly after completion of the East Evelyn upgrade, on the Atherton Tablelands (Image: Jonathon Munro).

really excites them about science", said Frank Howarth, Director of the Australian Museum. In an online-poll, over seven thousand Australians cast their votes, including 4,200 students. The winning research out of the six selected research projects competing for the public's favour was Dr Anthony Hannan's work on the treatment of Huntington's disease, which has the potential to transform the treatment of degenerative brain diseases.

The \$10,000 Sherman prize was won by Dr Rod Fensham and Russell Fairfax from the Queensland Herbarium for their contributions to the science and understanding of the fate of Queensland's native rangelands. Their innovative research and advocacy provided the Queensland Government with the scientific information to create stronger laws on land clearing.



Australian Museum People's Choice Award Finalists Nigel Weston and Dr Miriam Goosem at the award night in Sydney (Image: Steve Turton).



Award for 'Landmark' Freshwater Fish Research

The annual presentation of the Whitley Awards by the Royal Zoological Society of New South Wales recognises publications considered to make landmark contributions toward the understanding and dissemination of zoological knowledge in Australia. The most prestigious of these awards, the Whitley Medal, was this year awarded to Rainforest CRC researchers, Brad Pusey, Mark Kennard and Angela Arthington of Griffith University, for their book *Freshwater Fishes of North-Eastern Australia* (CSIRO Publishing, Collingwood, Victoria). The medal will be shared jointly with Hugh Tyndale-Biscoe for his book *Life of Marsupials*.

The Whitley Medal is the most sought after prize in zoological publishing in Australia and is only presented when a

book is considered to be of exceptional value in relating information on the fauna of the Australasian region. The Whitley Medal was presented to the authors at a ceremony held at the Australian Museum in Sydney on 16 September this year. "We are excited about the recognition," said co-author Brad Pusey. "We hope it raises awareness not only about the book, but also of the current threats to the region's unique fauna and the need for good research and informed management."

Highlighted in the January 2005 edition of *Forest Matters*, the 684 page, hardcover book is the culmination of ten years of research by the team and was officially launched during the *Healthy Country, Healthy Reef* joint conference in Cairns in November 2004 by Senator Ian Macdonald, Minister for Fisheries, Forestry and Conservation.

Freshwater Fishes of North-Eastern Australia is a reference book designed to assist scientific researchers, environmental managers, students, hobbyists and recreational fishers alike by providing them with information on the ecology, biogeography and management of seventy-nine species of native freshwater fish found in North Queensland.

The book includes a key for species identification as well as information on feeding, breeding and movement patterns of freshwater fish. Current threats to fish and their environment have also been identified and management strategies recommended.

The project forms part of the *Catchment to Reef* joint program of the Rainforest CRC and CRC Reef. Copies of the book are available on-line through CSIRO publishing (www.publish.csiro.au).



From left, Mark Kennard, Dave Pollard (recently retired head of New South Wales Fisheries), Brad Pusey, Angela Arthington and Jennifer Griggs (representing CSIRO Publishing) at the award presentation (Image: Moira Pusey).

Book Showcases a Decade of Lessons Learned

When nearly all state-controlled subtropical and tropical rainforests in Queensland and New South Wales were World Heritage listed in 1988, timber extraction from these areas ceased. At the time little was known about the management requirements of most rainforest tree species, but the opportunity to grow native forest timbers in a farm forestry system developed, encouraging research into the commercial growing of Australian rainforest timbers trees.

After more than a decade of work by researchers and land managers, a conference was held at The University of Queensland in June 2003 to present the results of research. The proceedings of this conference have been collated into a peer-reviewed, hard-cover book, *Reforestation in the Tropics and Subtropics of Australia Using Rainforest Tree Species*.

The book was jointly sponsored by the Rainforest CRC and the Joint Venture Agroforestry Program (JVAP), which is a partnership of the Rural Industries Research and Development Corporation (RIRDC), Land and Water Australia and Wood Products R & D Corporation.

This significant publication for the Australian farm forest industry was launched in August this year at the International Union of Forestry Research Organizations (IUFRO) meeting held in Brisbane.

Reforestation in the Tropics and Subtropics of Australia Using Rainforest Tree Species includes a history of rainforest planting schemes, methods of propagation, growth rates, information on pests and diseases as well as the available knowledge on the ecological consequences of plantation design.



Editors of the book were joined by the Federal Minister for Fisheries, Forestry and Conservation, Senator Ian Macdonald and Chair of the Rural Industries Research and Development Corporation, Ms Mary Boydell. From left: Dr David Lamb; PhD candidate Mila Bristow; Mary Boydell; Senator Macdonald and Dr Peter Erskine (Image: Murray Hansen, RIRDC).

The book is now available online, and may be ordered through the RIRDC e-shop (www.rirdc.gov.au/eshop).



Catchment to Reef Fieldwork Update

Researchers from Task 3 of the Catchment to Reef Program spent much of June and July of this year wading through the shallows of Wet Tropics creeks collecting an enormous amount of data that will eventually enable them to describe the region's rivers and streams at a level of detail not yet achieved in northern Queensland.

The Russell and Mulgrave catchments were chosen for the first phase of the creek health study because the creeks in the area are in good condition ecologically with a high level of biodiversity, explained Catchment to Reef Program Leader, Professor Richard Pearson of James Cook University. A high number of endemic species can be found in the two catchments, including the Cairns rainbow fish.

Twelve researchers based at James Cook and Griffith Universities teamed up to measure the geomorphological features of catchments and stream channels, water quality, aquatic macroinvertebrates and plants, fish and riparian vegetation, grasping a rare opportunity to collaborate



Electrofishing was conducted along Behana Creek to establish fish diversity and populations. The method is an efficient capture technique that can be used to obtain reliable estimates of species richness, length-weight relationships and fish condition (Image: Richard Pearson).

with experts in each of these fields and sample a large number of sites simultaneously.

The Little Mulgrave, Behana, Babinda and Woopen Creeks were sampled at one-

kilometre intervals along their lengths, with up to fifteen sites assessed along each waterway. The research team aims to provide an ecological description of Wet Tropics streams that will produce predictive models of the aquatic fauna





The research group collect data at a selected site along Behana Creek, about one hour drive south of Cairns (Image: Richard Pearson).

and flora in the region and estimates of ecological health. This field study will increase our overall understanding of the ecology of these streams, and enable the identification of indicators for monitoring the health of northern Australia's catchments in the future.

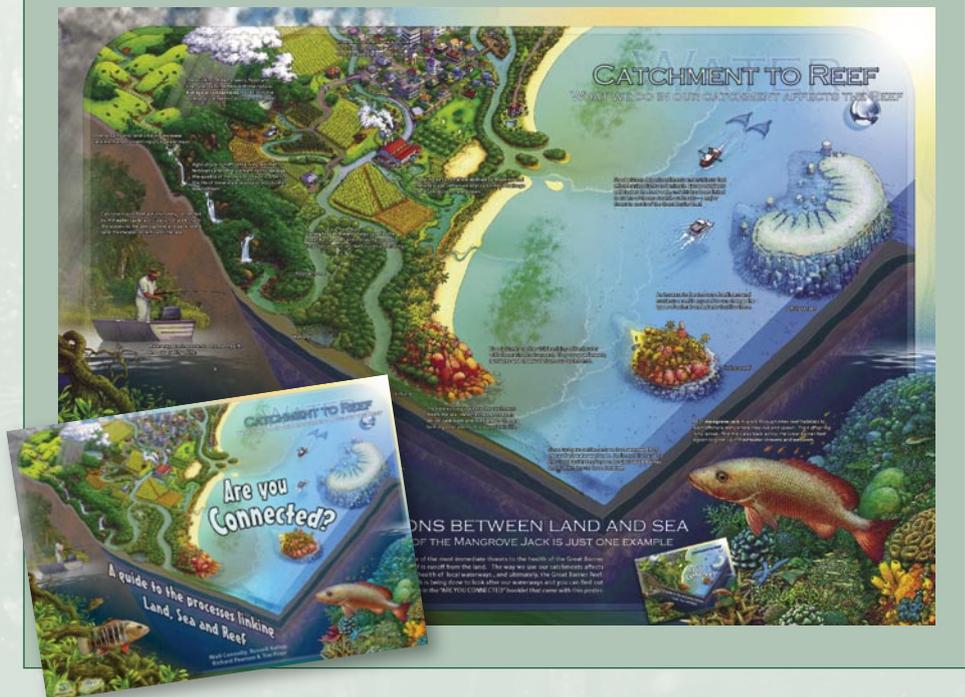
Professor Angela Arthington, who leads Catchment to Reef Tasks 3 and 4, said that through comparison of data from the relatively 'healthy' streams with those that aren't in such a healthy state, the team will have the science to guide monitoring and best practice catchment management.

The research team is working with the local community in order to access study sites on private properties and benefiting from residents' knowledge of the region. Niall Connolly of the Australian Centre for Tropical Freshwater Research praised the assistance received from farmers and the general community, in particular, information about local flood history, changes observed over the years and what species of fish have been caught over time.

The project will continue throughout 2005/2006 and results from this and other tasks of the Catchment to Reef Program will be published as part of a series of reports and an atlas on invertebrates and fish of the Wet Tropics.

Soon to be released as part of the overall communications strategy of the Catchment to Reef Joint Program this poster and accompanying booklet visually shows the connection between land and sea – to protect the Great Barrier Reef, we must also protect and manage the adjacent catchments, their land systems, streams, wetlands and estuaries and the water cycle that sustains them.

The poster and booklet were designed to provide interested members of the public, industry and government with detailed information about how catchments are connected to the Great Barrier Reef. The products also aim to raise awareness about the importance of looking after catchments in order to maintain the health of the Great Barrier Reef. Copies are due to be distributed to the wider community by agencies including the Great Barrier Reef Marine Park Authority and CRC Reef Research Centre. To be placed on the Rainforest CRC's mailing list, please contact Shannon Hogan on (07) 4042 1244.





Left: The original possum bridge design, as developed by DMR and Rainforest CRC, has been adopted in New South Wales at the Pacific Highway upgrade at Karuah, north of Newcastle (Photo: Nigel Weston).

Right: Herbert River ringtail possum and researcher Dr Robyn Wilson eye-to-eye (Photo: Nigel Weston).

High Ambitions – More Canopy Bridges for the Wet Tropics

Canopy bridges will soon become a common sight in the Wet Tropics. A team of Rainforest CRC researchers led by Dr Miriam Goosem is currently working with the Queensland Department of Main Roads (DMR) and Ergon Energy to install another five bridges across the Palmerston Highway between Innisfail and Millaa Millaa, bringing the total number of operative canopy bridges in the region to seven.

The first bridge, designed by Rupert Russell of the Queensland Parks and Wildlife Service, was erected in 1995 across the B Road, part of the Lamb Range network of old logging roads. Rupert used a box-tunnel design to provide initial protection from aerial predators and to encourage vines and creepers to cover the bridge. The design was subsequently promoted by DMR in its *Best Practice*

Manual for the Design, Construction and Maintenance of Roads in the Wet Tropics, which was developed in conjunction with the Rainforest CRC. It has since been adopted in New South Wales as part of the Pacific Highway upgrade at Karuah, north of Newcastle.

Although Rupert's original bridge was fourteen metres long, the actual canopy gap stretched over a distance of only four to five metres. Research by Nigel Weston at this site showed that the target species, the rainforest ringtail possums, preferred to move along the top of the structure, rather than through the middle. Therefore, Nigel installed another bridge replicating the top surface – but twice as long – over the Old Palmerston Highway. Although it took six months before the first crossing was observed (a lone lemuroid ringtail on a cool October night), crossings soon became commonplace with up to thirty

crossings recorded in one night.

As part of the current project, another five bridges are now being installed across the Palmerston Highway, an activity that will be carried out under the inquisitive eye of national television in early October. These bridges will be twice as long again as the Old Palmerston Highway ladder-like bridge (but still well shy of the Pacific Highway box-type models). Four out of the five new structures to be erected will be of the ladder-like design, while one will follow the original box-tunnel design, just to make sure. Furthermore, Dr Robyn Wilson has recently radio-collared some resident ringtail possums and the team is looking forward to monitoring how they adapt to the structures.

We will keep *Forest Matters* readers informed on new developments as they arise, so watch this space.



Left: A Herbert River ringtail possum, crossing along the top of a faunal overpass (Photo: Nigel Weston).

Right: The original bridge design by Rupert Russell (Image: Liz Poon).



Mittuniversitetet, the Mid Sweden University in Östersund, where Nigel attended the ISSRM Conference (Image: Nigel Young).

Bursary Opportunity Ensures Thrills and Chills

Following a successful application for travel funding from the Rainforest CRC, PhD candidate, Nigel Young, packed his woollies and headed off to the 11th International Symposium on Society and Resource Management (ISSRM) in Sweden.

Nigel explained, "I'm currently conducting research into the biophysical impacts and psychosocial experiences associated with visitor use of selected long-distance walking tracks within the Wet Tropics region. I attended the ISSRM Conference to present some preliminary results of my research, and meet many researchers and environmental managers from around the globe who are working in the area of natural resource management."

Held at the Mid Sweden University Campus in Östersund in the north of



Sweden from 16-19 June, the meeting hosted 497 delegates representing 37 different countries. Some 30 Australians, including 5 associated with the Rainforest CRC delivered presentations at the symposium. The meeting was officially opened by His Majesty King Carl XVI Gustav of Sweden who took the opportunity to attend a number of presentations and to mingle with delegates at a function at the Östersund town hall.

"The theme of the symposium was 'from knowledge to management: balancing resource extraction, protection and experiences'. There were nine concurrent sessions on offer, with about four hundred oral presentations. Themed conference sessions were as diverse as the delegates themselves and included everything from investigations of crowding and carrying

capacity, sustainable forest and tourism management, human wildlife interactions, wilderness management, indigenous people and natural resources, outdoor recreation impacts and experiences, urban green space and town planning, hunting behaviour, place attachment, and landscape visualisation and scenic beauty", Nigel said.

However it was not all work and no play – the majority of delegates made time to attend one of several half day 'in conference' field trips. Nigel noted, "Most delegates also attended some of the social functions on offer, including a 'Wines of the World' function where each delegate bought a bottle of wine from their own country for communal consumption. I am reliably informed that the table supporting the Australian contingent of wines was one of the most popular sites to be within the room!"

"I had some difficulty adapting to the continuous daylight that exists in northern Sweden during June (mid-summer), and the conference organisers failed to advise the birds in the trees outside my window that it is not really essential that they sing throughout the entire 24 hour period! Once the meeting concluded, I took the opportunity to join a post-conference hiking tour in the mountains of Jämtland and experienced some of the spectacular scenery that exists within the more remote parts of Sweden."

Preparations are already well advanced for the Twelfth International Symposium on Society and Resource Management, which will be held in Vancouver from 3-8 June 2006.

The snow-capped mountains of Jämtland, where Nigel took part in a post-conference hiking tour (Image: Nigel Young).



Fresh Science a Valuable Experience

PhD candidate Romina Rader was this year chosen to participate in *Fresh Science*, a national program hosted by the State Library of Victoria during Science Week (13-21 August). Romina was one of thirteen participants selected from eighty-nine nominations received from researchers throughout Australia.

For the past eight years *Fresh Science* has presented the most exciting, but least exposed Australian research to the media and the public. *Fresh Science* aims to provide early-career scientists with experience and the skills necessary to deal with the media and the public. It is also an opportunity to provide the media with exciting, previously unreported news stories and to encourage the accurate reporting of scientific work by the media. *Fresh Science* attempts to fuel debate on the role of science in Australian society and to provide role models for the next generation of scientists.

To be eligible, applicants need to be involved in current, peer reviewed, Australian research that has not received

any significant media coverage. Participating researchers develop media releases about their work, participate in interviews and present their work to school students and the public.

Romina's research into Queensland's small rainforest mammals is being conducted at the Australian Canopy Crane Research Facility in the World Heritage listed Daintree rainforest. By trapping canopy mammals, she has found that the 'rare' native prehensile-tailed mouse is in fact common and significant in the Daintree rainforest. She has also found that the rat community has important impacts on some plant species because they can remove the pulp from fruit, increasing the germination rate of the seeds.

By trapping the climbing and tree dwelling mammals of the rainforest canopy, Romina is studying animals previously overlooked by researchers who set small mammal traps only at ground level – a practice that can lead to population underestimation or even to the total exclusion of arboreal mammals from surveys. As part of *Fresh Science*, Romina presented her work on



Romina presented some of her research findings to visitors of the Canopy Crane Open Day (see article on page 11) (Image: Birgit Kuehn).

the prehensile-tailed mouse to a number of forums, but found school children were particularly interested in this cute animal and were also fascinated by the crane driving experiences she has gained at the Australian Canopy Crane.

Romina found the *Fresh Science* experience to be a little challenging at times when called upon to present on-the-spot talks about her research, but nevertheless sees it as a valuable experience, gaining confidence in presenting her work to the public and in dealing with the media.

Dietary Selectivity in a Rainforest Possum



One of ten green possums Katie radio-tracked during her research to establish which tree species are more favoured for leaf consumption by the species (Image: Katie Jones).

What factors influence diet choice in rainforest possums? Will climate change have any effect?

PhD candidate Katie Jones says local temperature increases associated with global warming are expected to elevate

the water requirements of rainforest folivores that may depend on cooler temperatures for survival. Folivores (animals that mainly eat leaves) require moisture for evaporative cooling and for processing plant toxins, but have limited access to water due to the highly toxic effects of plant secondary metabolites (PSMs) ingested as part of a leaf-based diet.

Katie's research focuses on green ringtail possums (*Pseudocheirops archeri*), which appear to prefer to dine on the leaves of individual trees within a favoured species. "My research is testing whether this selectivity is based on an interaction between leaf water and PSM content," Katie said. "My research partner, Sarah Maclagan and I recently completed an eighteen month field component, during which we intensively radio-tracked ten individual possums in the rainforest fragment 'Nasser's Nature Refuge' on

the Atherton Tablelands. We found that four particular tree species were visited more frequently than would be expected if trees were visited at random. Within these species, some individual trees were favoured. This will form the basis for the next stage of my project."

Katie collected leaves during the wet and dry seasons from all trees visited within the four favoured species. Katie explained, "The next step is to analyse these leaves for nutrients such as nitrogen and water, and PSMs such as phenolics, alkaloids and terpenes. Near-infrared reflectance spectroscopy will be used to aid in determining chemical patterns. Emphasis will be placed on intraspecific selectivity, with the aim to determine the underlying chemistry affecting green ringtail possum dietary preferences. Overall, I'm trying to assess whether a warmer, drier climate is likely to have a detrimental effect on these animals."





Top: This tumour is nasopharyngeal squamous cell carcinoma. The first cases arrived at the Cairns Frog Hospital in April 1999. A total of six individuals suffering this particular tumour have been received by the Hospital, almost all of them from the northern beaches area of Cairns.

Centre: Laboratory testing concluded that these epidermal papillomas were benign, however Deborah Pergolotti suggests whenever there is a rapid growth phase in their size and shape the frog dies within a week or two. Like the squamous cell cases, the cause of these neoplasias is considered to be oncogenic viruses.

Bottom: The White-lipped tree frog (Litoria infrafronata) is particularly targeted by multiple problems caused by immune deficiency. Simultaneous secondary problems are present, usually including severe parasite loads. This frog is also suffering from a bacterial infection and something unknown which is affecting the nervous system.

Images courtesy of the Cairns Frog Hospital

Fears Frogs Will Croak Without Hospital

One third of the world's amphibians are now considered rare or endangered, while seven species of Australian frogs are currently presumed to be extinct. The frogs of North Queensland are now facing an equally uncertain future.

Frog enthusiast Deborah Pergolotti opened the Cairns Frog Hospital in 1998 to find out the health of amphibian populations around the region and to receive frogs affected with the chytrid fungus if occurrences arose. In the following months residents of Cairns started to bring in various species of frogs suffering from an array of unknown illnesses.

Since then, Deborah has accepted sick and injured frogs into the care of the hospital with the hope of nursing them back to health, or by collecting samples from those that die that may help identify the cause of their fatal illness. To date, the Cairns Frog Hospital has collected samples that have supported profiles for four new frog diseases that are killing Queensland frogs.

The new diseases include *nasopharyngeal squamous cell carcinoma*, a cancer found in frogs from Cairns' northern beaches area, and *epidermal papillomas*, which often kills frogs within two weeks following a sudden tumour expansion phase. The exact cause of an immune deficiency disorder has not yet been identified, however, the White-lipped tree frog, the species most affected by the disorder, develops an overwhelming suite of secondary problems that include an increased parasite load, bacterial infections and other independent diseases such as cancer and a respiratory/nervous system condition believed to be fungal (the last of the four newly discovered syndromes).

After six years of aiding sick and injured frogs, conducting surveys, chasing relevant researchers, undertaking laboratory testing and providing veterinary services for frogs, the Cairns Frog Hospital ceased taking in new cases in March of this year. A sharp decline in public support followed the Asian tsunami and donation levels have not recovered since.

The frog diseases discovered through the work of the Cairns Frog Hospital have led to the approval of \$50,000 in funding from the Rainforest CRC transitional funds pool to finance a project supervised by Associate Professor Rick Speare of James Cook University in Townsville. The Cairns Frog Hospital has been named as lead collaborator in the project, however "without support from the public, we can't start new hospital activities", Deborah explained. "The minimum amount required to recommence and sustain the operation for at least three months is \$10,000."

While Deborah is relieved that money has finally been allocated towards a laboratory-based effort to identify the causes of amphibian diseases, she is concerned that without the Cairns Frog Hospital in full operation, the sick and dead frogs of north Queensland may not be available to the research team for their studies.

To enable Deborah and her team to recommence their work at the Cairns Frog Hospital, they urgently need financial assistance. Donations are most welcome, and can be made to: Cairns Frog Hospital, PO Box 958M, Manunda QLD 4870.



Top: Some of the attendees of the 2005 meeting, representing 27 countries (Image: CSIRO).

Lower Right: Left, Pierre-Michele Forget will be the host of the 2010 meeting, shown here with Dr Andrew Dennis of CSIRO's Atherton Laboratories, host of this year's meeting (Image: CSIRO).



Brisbane Hosts International Frugivore and Seed Dispersal Conference

Fruit-eating animals and the part they play in seed dispersal were the focus of the *Fourth International Symposium on Frugivores and Seed Dispersal*, held at Griffith University, Brisbane from 9-16 July this year.

One hundred and thirty researchers, representing twenty-seven countries, attended the conference where significant advances in both theoretical and empirical

research into frugivores and seed dispersal were presented. The direction of future research and the challenge of using the available dispersal knowledge to find solutions to ecological problems was also a focus of the conference.

Drs David Westcott, Andrew Dennis, John Kanowski, Carla Catterall, Grant Wardell-Johnson and Cath Moran were among the Rainforest CRC researchers who attended

and contributed the results of their work on seed dispersal, rainforest regeneration and frugivorous fauna to the conference.

The symposium was sponsored by CSIRO, Griffith University, Rainforest CRC, National Science Foundation and Araucaria Ecotours. Meetings are held every five years, with the 2010 meeting planned for Montpellier, France.

Correction - Diversity in Kuku-Yalanji Tourism Untangled

In the June 2005 edition of *Forest Matters* ("Winners!") we published a photo of a guided tour at Bloomfield Falls attributed to Kuku-Yalanji Dreamtime Walks. The caption was incorrect. Tours at Bloomfield Falls are conducted by Walker Family Tours, a Wujal Wujal based tourism business, while Kuku-Yalanji Dreamtime Walks conduct their business out

of the Mossman Gorge Aboriginal Community. We wish to apologise to both parties for this oversight.

Both companies are successful Yalanji-owned and operated tourism enterprises, and hosted and supported Yalanji People and the Rainforest CRC during filming for the recent CRCA Awards for Excellence in Innovation 2005. The two businesses

are award winners in their own rights, who enrich the tourism landscape in the Daintree region with Aboriginal cultural heritage tours guided by Traditional Owners. Walker Family Tours won the Queensland Reconciliation Awards in 2004 in the Emerging Business category. Kuku-Yalanji Dreamtime Walks was a Queensland Tourism Award Winner in 1996.





Kylie Goodall carries out the visitor safety induction in the onsite laboratory (Image: Birgit Kuehn).



Steve Turton presented research findings on rainforest recovery following severe tropical cyclone Rona (Image: Birgit Kuehn).



Lunch break in front of the research facility (Image: Birgit Kuehn).

Tree-top Tours for Crane Visitors

An Open Day was held at the Australian Canopy Crane Research Facility on Monday September 19. The crane is situated within the World Heritage listed Daintree rainforest and is usually available only to scientists involved in canopy research projects. Visitors to the site were able to experience a rare glimpse of the work being undertaken on site, and most took the opportunity to experience the rainforest canopy from the crane's gondola.

With a beam of 55 meters, the crane enables scientists to access nearly one hectare of previously hard-to-reach rainforest canopy. Rainforest CRC CEO, Professor Nigel Stork, also director of the Australian Canopy Crane Company, welcomed visitors to the site and delivered a brief history of the facility. He also took the opportunity to announce that funding has been secured to operate the canopy crane into 2008. Also launched on the day was a high quality magazine, *The Australian Canopy Crane 1999-2005*, recently published by the Rainforest CRC.

Seven research scientists involved in Rainforest CRC Program 3 projects gave concise presentations of their research and their findings to date. Mike Liddell's work on the influence of climatic stresses on the carbon and water fluxes of tropical rainforests indicates that the one-in-fifty-year drought experienced in 2002-2003 changed the rainforest from a carbon

'sink' to a carbon 'source'. Kylie Goodall's study of the reproductive ecology of the rainforest has found a clear seasonal peak in flowering at the end of the dry/beginning of the wet season, and the work of Romina Rader on the vertical distribution of small mammals in the canopy has found that the five species under her microscope display a preference for different layers of the canopy. In 1999, severe tropical cyclone Rona damaged the rainforest surrounding the canopy crane. Steve Turton seized the opportunity to monitor the changing microclimate of the sub-canopy during the rainforest's recovery. Peter Grimbacher summarised his work with Professor Stork using the diversity and composition of rainforest beetle communities to estimate regional

and global biodiversity, leading to their current estimation of 6.3-8.5 million faunal species on Earth, the majority of which are beetles. They have also found that twenty to thirty percent of beetles collected at the canopy crane site can clearly be identified as canopy 'specialists'.

Peter Franks presented his research into stomatal control and hydraulic conductance, with special reference to tall trees. His results indicate that different rainforest tree species have different modes of water use, water status and photosynthetic productivity, while German scientist Christian Geyer is continuing his study into the fruiting phenology of trees, shrubs and vines of a lowland rainforest community.

Visitors to the Open Day included Kuku Yalanji Traditional Owners Francis Walker and Eileen Walker as well as rangers from Queensland Parks and Wildlife Service. CSIRO, James Cook University, FNQ NRM Ltd, the Australian Conservation Foundation and CAFNEC were also represented. Local Daintree Tourism Operators from the Bathouse, Daintree Discovery Centre and the Daintree Entomological Museum took the opportunity to have a closer look at the research facility.

Professor Stork declared the day a fantastic success, with visitors surprised at the range of long-term projects undertaken using the canopy crane.



Rosemary Hill and Leah Talbot of the Australian Conservation Foundation depart on their exploration of the canopy with Dick Cooper, the facility's full time crane driver (Image: Birgit Kuehn).

November Conference to Explore Tree-Kangaroo Conservation

Tree-kangaroos are the subject of a conference being held on the Atherton Tablelands in November 2005. *The Ecology and Conservation of Tree-kangaroos: Current Issues and Future Directions Conference 2005* will take place from 28-30 November with delegates arriving at the Genazzano Lake Tinaroo Conference Centre, Atherton Tablelands on Sunday 27 November.

Conference sessions will focus on current research, captive management, conservation of the tree-kangaroo and its habitat and well as public education. Research and management priorities for

the tree-kangaroo over the next ten years will also be discussed. The opening address will be delivered by Dr Tim Flannery of the Australian Museum.

Registrations for the conference are now open. Further details and registration forms are available on-line at <http://tesla.jcu.edu.au/schools/zoology/treekangas/info.html>. Delegates may also contact the organisers regarding the draft program: Karen.Coombes@jcu.edu.au and Andrew.Krockenberger@jcu.edu.au.



Forest Matters is edited and produced by the Cooperative Research Centre for Tropical Rainforest Ecology and Management (Rainforest CRC). Articles and stories can be used with permission. If you have ideas, contributions or comments, please contact the Communications Officer at Rainforest CRC headquarters.

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Rainforest CRC **CRC Reef**
Research Centre

Rainforest meets Reef

Joint Rainforest CRC and CRC Reef Conference
Townsville Queensland 22-24 November 2005

Highlighting collaborative research solutions to environmental challenges in the tropics

We are calling for papers or posters in the following themes from a biological, social or Indigenous perspective:

- Responding to climate change and building resilience
- Solutions for water quality issues
- Sustainable economies in the tropics
- Maintaining diversity in the face of change
- The role of science in conservation planning and management
- New era of environmental governance and institutional change

Places for oral presentations are limited and only some abstracts will be selected to present. Abstracts are due on Friday 17 June. The deadline for early-bird registration is Friday 15 July, and registration closes on 2 September.

To register, download the registration form at
CRC Reef website: www.reef.crc.org.au
Rainforest CRC website: www.rainforest-crc.jcu.edu.au

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