

# Forest Matters



Rainforest CRC Newsletter

october 2003

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## FOREST RESEARCH

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Since 1993, the Rainforest CRC has worked to support the sustainable use, management and conservation of Australia's tropical rainforests through world class research. Centre Reviews invariably refer to the potential for growth in research output and praise the collaborative nature of the organisation. To bring this highly regarded research work to a wider audience the Rainforest CRC has launched two new communications products.

The *Issues in Tropical Forest Landscapes* Series currently has two editions in circulation. *Feral Pig Impacts and Control* was released to coincide with the Feral Pig Action Agenda Workshop staged in June in collaboration with the Pest Animal Control CRC, The Cattle Council and the Australian Veterinarians Association. The second in the series, *Global Warming in the Wet Tropics* was released in the final week of July to coincide with the Global Canopy Program Climate Summit in Brisbane which brought together scientists from eight institutions to produce a report on climate effects on biodiversity for the Queensland Government.

The first quarterly edition of *Forest Matters* was released in June and you are reading the second edition of that title. The Rainforest CRC is working towards building *Forest Matters* into a must read for all those with an interest in conservation biology and related fields. If you would like to subscribe to either product, contact [Jann.OKeefe@jcu.edu.au](mailto:Jann.OKeefe@jcu.edu.au). For more information on any of our communications products available, visit our website at [www.rainforest-crc.jcu.edu.au](http://www.rainforest-crc.jcu.edu.au)

## Feral Pig Impacts and Control

Issues in Tropical Forest Landscapes



Feral pigs pose ecological, economic and disease threats to around 40% of the Australian continent, with populations estimated ranging from 2.5 to 23.7 million. In the wet tropics biological population density ranges from 1 pig per hectare to 3 per hectare in the Wet Tropics World Heritage Area to 10 per hectare in the Wet Tropics National Park. These feral pigs are a major pest of the wet tropics and cause an estimated \$1.4 billion agricultural industry. It would cost \$1.4 billion to eradicate feral pigs from the Wet Tropics World Heritage Area. It may be economically viable to eradicate the disease if it were to be eradicated in the Wet Tropics, particularly in accessible areas.

This latest paper looks at the current state of knowledge of feral pigs, research in the wet tropics bioregion...

## Global Warming in the Wet Tropics

Issues in Tropical Forest Landscapes



Humans are rapidly changing the nature of the planet in profound ways. Climate change is a major concern to the residents of the world. Simulations, global climate models and other scientific data indicate that the next few decades will see a significant increase in the number of extreme weather events.

"The Issues" Series

## FOREST RESEARCH

Climate Change Summit



## FOREST RESEARCH

Feral Pig Action Agenda



## COMMUNITY CHEST

Forestry Workshop





## Planning Process For The New CRC Bid Begins

A first Strategic Planning Workshop to develop a new bid to fund the CRC through to 2012 was held in Brisbane during September. Besides our existing partners, workshop participants included representatives from a range of potential new partner organisations including NSW government agencies, the Bureau of Rural Sciences, the Australian Conservation Foundation, Powerlink, the Australian National University and Southern Cross University. As this was only the first meeting, we expect to discuss the proposal with many other organisations as the planning process for the new bid proceeds.

In any CRC funding bid it is crucial to first identify the major stakeholders and key goals and outcomes they seek, the research and training that is required to achieve these outcomes and the fit of these goals to national objectives. This first meeting focused squarely on past achievements, goals and outcomes desired and the issues raised by these. Participants identified what should 'not' be worked on and defined the likely geographic scope and obvious commercial opportunities available to the new Centre. A 'humid forest landscapes' theme began to emerge encompassing Cape York to Coffs Harbour and with the potential to include humid forests across the top end of Australia. There was strong support for the bid to include social – cultural – economic aspects that would build on our existing expertise in natural areas faced with rapid human development. Other key aspects identified at the Workshop that might address national issues included; sustaining biodiversity and ecosystem function, stimulating sustainable industries, climate change, Catchment to Reef, Education, Indigenous collaboration and land management, capacity-building and international leadership.

Discussions took place on the potential for overlap with other CRCs and research organisations, however as the Reef, Coastal, Catchment Hydrology, Freshwater and Pest Animals CRCs run in a parallel timeframe to the Rainforest CRC, collaborations and joint programs between CRCs were seen as a distinct and highly desirable option during the rebid process.

Before proceeding further, the Centre is awaiting a new set of rules that will result from the July 2003 Howard Report evaluating the Cooperative Research Centres Program. In general, it is a wide-ranging report that covers most, if not all the issues that are of concern to CRCs and the CRC Program. Many of the recommendations are excellent and provide innovative and welcome

new bid, a two stage process is now proposed for new applications. While this would prevent those proposing entirely new CRCs from wasting resources, the process could also take twice as long to complete with the CRC Committee having to meet twice for each bid. The Howard report can be downloaded from the Cooperative Research Centres Website at: <https://sciencegrants.dest.gov.au/CRC>



*A misty morning at the top of the canopy.*

approaches to these issues. In particular, the recognition that there are three different kinds of CRCs delivering different kinds of benefits is comforting to all public good CRCs because it acknowledges them as an important and integral part of the CRC Program. In so far as it affects our

sustainable use and management of tropical forests to co-locate with the Rainforest CRC in the new ATFI building, due for completion at James Cook University Cairns campus late 2004.

### PROGRESS ON ATFI

The ATFI Steering Committee met three times during this year, and an Interim Board was established in July, which has met twice. Considerable progress has been made on a number of issues relating to the development of the Australian Tropical Forest Institute (ATFI).

An important aspect has been to establish the nature of the relationship between the Rainforest CRC and ATFI, which is now proposed as a spin-off company and commercial arm of the CRC. An enormous amount of work has gone into the completion of the building brief and Mr Guy Chester has been engaged by the Centre for six months as Director of Business Development for ATFI. His task is to seek research contracts and tenants with common goals in the





## New Programs Focus on Tropical Forest Landscapes

*Rainforest CRC Deputy CEO Associate Professor Steve Turton*

Several new programs, including Catchment to Reef with CRC Reef, and associated projects were approved by the Board to commence in July 2003 (see opposite). These exciting new initiatives address a number of critical research needs raised by researchers and research users at several workshops and summits held in 2002. An overview of the new Catchment to Reef Program was discussed in the June edition of *Forest Matters*. In this edition I would like to highlight some of the new initiatives for the other programs.

Through Program 1, the CRC is currently involved in the preparation of the Wet Tropics Natural Resource Management (NRM) Plan. The Plan will give direction to future funding and prioritise investment from a range of sources, especially the proposed Natural Heritage Trust (NHT) Phase 2. Rainforest Aboriginal People (Bama) have expressed their desire to have a more effective role in natural resource management on their country. Program Leaders Geoff McDonald (Program 1) and Sandra Pannell (Program 7) will lead the new Bama Plan project which will identify, collect, collate and synthesise Indigenous NRM issues and priorities at the local, regional, state and national levels in existing plans and processes.

Dave Hilbert and Steve Williams will be leading a new project within Program 2, examining impacts of climate change on rainforest ecosystems and biodiversity. A major objective of their project will be to provide the critical information and tools required to develop management plans aimed at the conservation of rainforest ecosystem processes and biodiversity in the face of rapid, unprecedented climate change. To achieve this, they will combine long-term monitoring with the development of one of the most detailed databases on tropical rainforest in the world, and sophisticated modelling tools for predicting effects of global warming. This will put the Rainforest CRC at the forefront in understanding the determinants of tropical biodiversity and in conservation planning and will produce outcomes of international significance in many areas of global change ecology and conservation biology.

The new Program 3 brings together research on canopy processes and dynamics across the CRC. This will

provide our CRC with a direct link to the Global Canopy Program and International Canopy Network, as well as incorporating much of the research at the Australian Canopy Crane Facility, near Cape Tribulation. Project 3.1 will continue Roger Kitching's work on floral/insect interactions in rainforest canopy at the crane site, and in this second phase they will focus on comparative studies of pollination systems using a set of six to ten target plant species in extensive and fragmented forests within the lowland Wet Tropics. Mike Liddell will lead a new project examining carbon, heat and water exchanges between the forest and the atmosphere at the crane site. The crane site is part of the Australian (OzFlux) and international flux networks.

Dave Gillieson will lead a new project within Program 4 that will aim to improve GIS models of ecological impacts by utilising high resolution remote sensing. This project is specifically aimed at supporting the introduction of appropriate remote sensing methodologies to enhance environmental monitoring in the Wet Tropics. It integrates fieldwork with image analysis and addresses issues of scaling up from point-based on-ground measurements to local and regional ecosystem levels.

Several new projects will be undertaken within Program 6. David Westcott and Peter Latch will lead a new project on spectacled flying foxes. This study provides an excellent example of researchers and users working together for multiple objectives. Their project aims to develop management solutions that will enable spectacled flying fox conservation and a prosperous fruit growing industry to co-exist in the long term. Andrew Krockenberger will lead an interesting

and timely project on impacts of climate change on Australian rainforest marsupial folivores. This project will develop distributional models for these animals based on the mechanisms limiting their present distribution. These mechanistic models will then be used to predict the effects of climate change on distributions under a range of climate change scenarios, enabling resource managers to design ameliorative strategies.

Program 7 will continue to play a major role in Aboriginal collaboration and capacity building in research. The program has been restructured to introduce several new initiatives. Sandra Pannell and Yvonne Canendo will prepare an environmental history of Najadjon-Jii Country and community. The overall goals of the project are to identify Indigenous values and indicators and examine their role in contemporary environmental management regimes. Roger Leakey and Marianne Helling will undertake a technical education and training project with the Ma:Mu people on participatory domestication of native food plants.



# Rainforest CRC Research Program at July 2003

## PROGRAM 1 Regional Planning and Management

### *Project 1.1*

Wet Tropics Natural Resource Management Plan

### *Project 1.2*

Regional State of the Wet Tropics Satellite-based

Monitoring Information System

### *Project 1.4*

The Bama Plan

### *Project 1.5*

Appropriate Economies Roundtable

## PROGRAM 2 Functional Ecology and Global Change

### *Project 2.2*

Water Regulation as an Ecosystem Service

### *Project 2.4*

Ecological Services

Provided by Rainforest Arthropods

### *Project 2.5*

Impacts of Climate Change on Rainforest Ecosystems and Biodiversity

## PROGRAM 3 Canopy Processes and Dynamics

### *Project 3.1*

Floral Biology and Canopy Pollination in Fragmented Forests

### *Project 3.2*

Net Ecosystem Exchange of Carbon, Heat and Water in a Tropical Rainforest

## PROGRAM 4 Rainforest Access: Managing and Monitoring Impacts

### *Project 4.1*

Strategies for Sustainable Rainforest Visitation and Use

### *Project 4.2*

Sustainable Roads, Powerlines and Walking Tracks

### *Project 4.3*

Improving GIS Models of Ecological Impacts Using High Resolution Remote Sensing

### *Project 4.5*

Main Roads Strategic Alliance

## PROGRAM 5 Restoration Ecology and Farm Forestry

### *Project 5.1*

Restoration Techniques

### *Project 5.2*

Biodiversity Values and Landscape Context in Reforestation

### *Project 5.3*

Social and Economic Aspects of Reforestation

## PROGRAM 6 Conservation Principles and Management

### *Project 6.2.1*

Ecology and Management of Wet Tropics Weeds

### *Project 6.2.2*

Diet and Trapping of Feral Pigs in the WTHA

### *Project 6.3.1*

Spectacled Flying Foxes: Solutions for Management

### *Project 6.3.2*

Seed Dispersal: A Threatened Ecological Process

### *Project 6.4*

Impacts of Climate Change on Australia's Rainforest Marsupial Folivores

### *Project 6.5*

Dynamic Models of Management



## PROGRAM 7 Aboriginal Collaboration and Capacity-building in Research

### *Project 7.1*

An Environmental History of Ngadjon-Jii Country and Community

### *Project 7.2*

Indigenous Cultural Values of the Wet Tropics World Heritage Area

### *Project 7.3*

Technical Education and Training and Participatory Domestication of Native Food Plants with the Ma Mu Community.

### *Project 7.4*

Aboriginal Training for Capacity-building

## PROGRAM 10 Catchment to Reef Joint Program

- 1: Riparian Zone Performance: Tools and Protocols for Quality Assessment and Monitoring
- 2: Monitoring Tools for Water Quality Assessment
- 3: River Health Assessment Tools
- 4: Frameworks for Integrated Catchment Management
- 5: Advanced Technologies for Monitoring Water Quality in the Great Barrier Reef
- 6: Condition and Trend Assessments for Coastal Marine Communities
- 7: Achieving Outcomes: Adoption of Tools through Training of the Current and New Generation of Practitioners



## Climate Change Summit Convenes in Brisbane

In late July, the Rainforest CRC brought together a group of scientists to consider what a hotter, drier climate might do to Queensland's terrestrial biodiversity, to the interest of Queensland Premier, Peter Beattie. Biodiversity is one of Queensland's greatest resources, he said in welcoming the first meeting of the Brisbane Group, ranking conservation of biodiversity under the pressure of climate change as the greatest challenge facing world governments. The Brisbane Group makes an important contribution to the conservation of our terrestrial biodiversity, the Premier said of the three-day Research and Policy Summit on Tropical Forest Canopy Issues.

Queensland faces some immediate wildlife management issues from climate change. Research such as that by Rainforest CRC Program 6 Ecologist Dr Andrew Krockenberger, indicating mass mortality of upland possum species in particularly hot summer periods, has prompted the discussion of translocation of these species to cooler regions as a policy option. The Brisbane group is urging Government to act to manage for the possibility of as much as a 90% loss of endemic highland species under, what are regarded as conservative IPCC estimates of a 3.5° average warming.

Predicted scenarios for the Wet Tropics provide an example of the sorts of impacts climate change may have in Queensland. The work of the CRC researchers Dr David Hilbert (*Global Warming Implications for Conservation of the Wet Tropics 2002*) and Dr Steve Williams (*Climate Change in Australian Tropical Rainforests: an Impending Environmental Catastrophe. Royal Society 2003*) suggests that in the coming decades the majority of mountain top endemic species in the region could disappear. Associated changes such as increased fire events and weed infestation would profoundly effect the management of biodiversity. These findings formed the basis of the August edition of *Issues in Tropical Forest Landscapes: Global Warming in the Wet Tropics*, published by the Rainforest CRC.



Premier Beattie offered the Brisbane Climate Group report as evidence of his government's commitment to utilising world's best science in action to mitigate climate effects. Bringing scientists and policy makers together is a practical example of the Smart State in action. The Brisbane Group grew out of Rainforest CRC's involvement in the Global Canopy Programme. Through this collaboration research institutes like the Rainforest CRC and the American based Smithsonian Tropical Research Institute work with the Environmental Protection Agency to link forest canopy projects around the world into one integrated global program of research, education and conservation.

The Global Canopy Programme was launched at the Third International Canopy Conference jointly hosted by the Queensland Government and the

Smithsonian Institution in Cairns in June 2002. The Department of the Premier and Cabinet (DPC) provided grant assistance of \$50,000 to support the Rainforest CRC's participation in Phase II of the Global Canopy Programme. One agreed activity was for the Rainforest CRC to bring together a team of eminent scientists for a Research and Policy Summit to produce a document outlining the issues and possible responses to the conservation of Queensland's land-based biological diversity in an era of global climate change. In accepting the summit report, Premier Beattie said The Queensland Government was pleased to provide \$50,000 to support the Rainforest CRC's involvement in the development of the Global Canopy Programme.

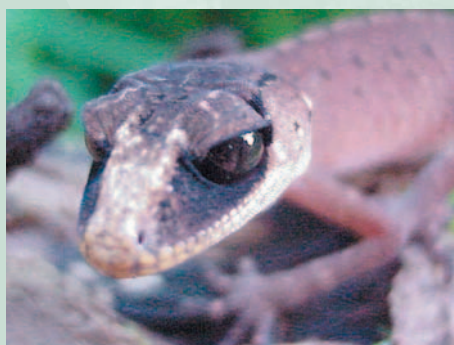
"This is an important summit, we in Queensland are now in a position to use this expert advice from the Summit to inform further policy development," he said.

"Such international collaborations are critical to Queensland realising its potential as the Smart State. The Rainforest CRC's participation in the Global Canopy Programme is recognition of Queensland expertise in environmental research."

The Rainforest CRC would like to acknowledge the contribution of Peter Blondell from the International Office of the Department of Premier and Cabinet and Damian Lewis, the Chief Communications Officer with the Environmental Protection Agency, in writing this article.



Satin bowerbird. Steve Williams



Chameleon Gecko. Steve Williams



Mahogany Glider. Steve Williams



## LIST OF UPLAND SPECIES AFFECTED BY CLIMATE CHANGE

This lists the most vulnerable species of endemic vertebrates, those that are predicted to lose greater than 50% of their current area of core environment with only a 1° C increase in temperature.

### FROGS

Thornton Peak Nursery-Frog	<i>Cophixalus sp Thornton Peak</i>
Magnificent Broodfrog	<i>Pseudophryne covacevichae</i>
Pipping Nursery-Frog	<i>Cophixalus hosmeri</i>
Northern Barred Frog	<i>Mixophyes sp. nov.</i>
Tangerine Nursery-Frog	<i>Cophixalus neglectus</i>
Bloomfield Nursery-Frog	<i>Cophixalus exiguus</i>
Mountain Top Nursery-Frog	<i>Cophixalus monticola</i>
Northern Tinkerfrog	<i>Taudactylus rheophilus</i>

### MAMMALS

Atherton Antechinus	<i>Antechinus godmani</i>
Mahogany Glider	<i>Petaurus gracilis</i>
Daintree River Ringtail Possum	<i>Pseudochirulus cinereus</i>
Lemuroid Ringtail Possum	<i>Hemibelideus lemuroides</i>
Herbert River Ringtail Possum	<i>Pseudochirulus herbertensis</i>
Spotted-tailed Quoll	<i>Dasyurus maculatus</i>

### SKINKS

Thornton Peak Skink	<i>Calyptotis thorntonensis</i>
Bartle Frere Skink	<i>Techmarscincus jigurru</i>
Czechura's Litter Skink	<i>Saproscincus czechurai</i>
Saproscincus lewisi	<i>Eulamprus frerei</i>
Lampropholis robertsi	<i>Glaphyromorphus mjobergi</i>

### BIRDS

Golden Bowerbird	<i>Prionodura newtoniana</i>
Atherton Scrubwren	<i>Sericornis kerri</i>
Mountain Thornbill	<i>Acanthiza katherina</i>

## Model Behaviour

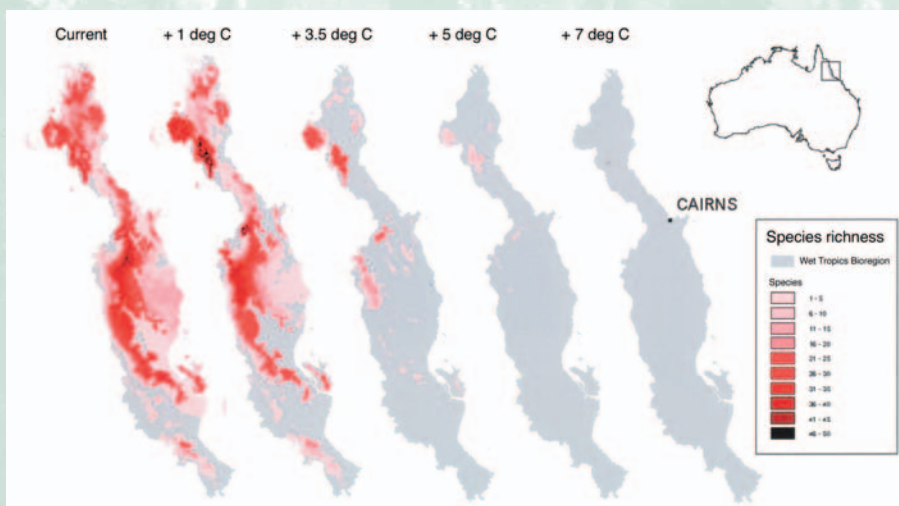
Remote sensing is recognised as an important tool for mapping and monitoring the environment at regional scales, utilising change detection analysis of indicators such as land cover, extent of clearing and fragmentation and structural modifications. Forest canopies are three-dimensional objects that form a two-dimensional image when viewed by a satellite or aircraft. Project 1.2 researcher Peter Scarth uses optical sensor satellite images to track changes in the structure of Wet Tropics rainforest, specifically looking at what is called gap structure – the size and shape of holes in the canopy.

The tropical rainforest is modelled as a continuous canopy layer interspersed with gaps, which form due to natural disturbance from events such as cyclones. The goal of this project is to extract information on the structure of tropical rain forest canopies by looking at both the texture and colour of the two-dimensional image.

This is a new statistical approach to mapping tropical forest gap structures from regional scale satellite image data. By measuring how much the colour changes on average from one pixel to the next it is possible to work out the size of these gaps.

To date the research has focused on establishing the regeneration of gaps caused by tree falls and other disturbances. Ultimately it is hoped the work will inform management agencies concerned with rates of regrowth after major disturbance events such as cyclones.

Peter Scarth is a University of Queensland Post Doctoral researcher who works in Rainforest CRC Project 1.2: Regional State of the Wet Tropics Satellite-based Monitoring Information System under Project Leaders Dr Stuart Phinn and Dr Alex Held.



Indicates the change in distribution of species richness of regionally endemic terrestrial invertebrates with increasing temperature.





## Willing Coalition Needs The Readies to Take on 23 Million Feral Pigs

The historic agreement between representatives of agricultural, pastoral, commercial hunting and scientific peak bodies on an Action Agenda to attack the mounting feral pig problem provides government with an opportunity that should not be wasted. Feral pigs were listed as a threatening process under the Environment Protection and Biodiversity Conservation Act 1999 largely because of their role in modifying habitat across the Australian continent but to date this listing has not been backed by a strong funding commitment.

Over two, sometimes tense days in Cairns in June, a solid coalition was built around the question of what can be done to protect Australia from the threat feral pigs pose to agriculture, the environment and public health. Representatives of the Cattle Council, Agforce, Meat and Livestock Australia, the Australian Veterinary Association, Rainforest CRC, Pest Animal Control CRC, Australian Biosecurity CRC, the Wild Game Harvesting Association, Australian Wildlife Health Network, the Cook and Herberton Shire Councils, Wet Tropics Management Authority, landholders, and government departments from Queensland, New South Wales and Western Australia are to be applauded for generating the necessary goodwill to push through their inherent differences to create an exciting new consensus.

It is the first time a unified national approach has gained such a cross sectorial commitment and is precisely the kind of industry/science partnership that should excite new economy advocates such as Ministers Truss, McGuaran, Kemp, Vaile, Nelson and Anderson. How much is government willing to invest to safeguard the resources and investment in agriculture and tourism, two of this country's most productive industries?

In 2002 a PAC CRC bid for a supplementary three-year \$11 million



Trapping is currently the most popular form of pig control in the Wet Tropics region.

project to develop targeted baits for large scale lethal control of feral pigs and fertility control solutions was rejected on the grounds that it was not of national significance. In the light of the Cairns coalition it is time to revisit that decision. An investment of \$10 million over five years would represent the kind of seed funding needed to action the priority list developed in Cairns.

The Pest Animal Control CRC and the Rainforest CRC have formed a significant alliance to develop novel scientific approaches to the triple threat posed by feral pigs. In June this year the CRCs collaborated on a state of science style publication; *Issues in Tropical Forest Landscapes Feral Pig Impacts and Control*, developed as a guide for landholders and managers. Combine the development and commercialisation expertise in feral animal

control agents of the PAC CRC with the proven regional policy development expertise of the Rainforest CRC and you have the kind of organisation needed to coordinate the delivery of the Cairns priority list.



## Pigs Make Cattle Council Nervous

The Cattle Council of Australia has welcomed progress towards a National Feral Pig Management Plan. Queensland Cattle Council President, John Stewart told the Cairns Feral Pig Action Agenda workshop that it was unacceptable for Australia to have an estimated population of 23 million pigs.

Mr Stewart said the population figure represented the largest pig population in the world – meaning that there are nearly as many feral pigs in this country as there are cattle. The Cattle Councils' immediate concern is the environmental and economic havoc feral pigs are inflicting on Australian farming and rural communities, he said.

If an exotic disease were to take hold in the feral pig population, Australia would face a massive eradication operation followed by many years of intense surveillance before our trading partners and the international health body, the OIE, were convinced the disease had been eliminated. Mr Stewart said the Beef industry is very much aware that the problem is a nation-wide one and looked forward to being part of the management plan process. AgForce participated in the Draft Queensland Feral Pig Management Strategy and other States either have or are developing strategies.

The Cattle Council of Australia is making every effort to initiate a workshop where the Commonwealth, the States and Industry can work together to establish a National Feral Pig Management Plan, which not only develops strategies but deals with both on-going management and funding. The Industry believes that while control is vital, eventual eradication should be the goal with feral pigs proving to be an environmental hazard as well as harbouring the potential to spread exotic disease throughout Australia.







## Draft National Feral Pig Agenda

- Establish a national website and depository of information, including feral pig management
- Ensure all States, regions and planning groups incorporate feral pig management into relevant land management programs
- Gain commitment of land holders and land managers to feral pig management
- Encourage the use of hunters and the game industry as part of regional campaigns to reduce pig numbers
- Ensure actions continue beyond “knock-down” phase to gain longer term advantages from control campaigns
- Develop a new pig bait to aid managers in taking action
- Adapt management programs to better apply current technique
- Improved techniques for removal of pigs at low density
- Initiate a “genetic landscape” of Australia’s feral pig population to aid control programs
- Implement industry adjustment programs to wind-down commercial harvesting of pigs
- Substantially increase penalties for translocation or maintenance of feral pigs and ensure offenders are prosecuted
- Provide additional financial incentives for landholders and land managers to take action
- Establish the benefits and costs of control programs in terms of dollar returns and environmental benefits and risk abatement
- Gain community support to finance a substantial increase in National activity
- Recognise that attitudes and values vary in our society and ensure that the welfare and cultural values are honoured
- Encourage involvement of all interested parts of our community



## All-weather land-cover mapping

Project 1.2 researchers Catherine Ticehurst, Stuart Phinn and Alex Held have developed an active radar satellite imaging system for monitoring the extent of land clearing and fragmentation in the Wet Tropics World Heritage Area

Their technical report, *All-weather land-cover change mapping system for the Wet Tropics* has been released as part of the new Research Report Series. It details the feasibility of using a Japanese Earth Resource Satellite (JERS-1) imaging radar system to detect and analyse changes in the bioregion. The limited number of cloud-free days over tropical far north Queensland prompted the investigation of alternatives to the passive optical sensor satellite systems, such as Landsat Thematic Mapper, that could penetrate clouds and haze to enable routine data collection in the Wet Tropics area.



## Rainforest Dieback

Rainforest CRC researchers have identified the fungus-like soil pathogen *Phytophthora cinnamomi* as the likely source of the extensive canopy dieback events throughout the Wet Tropics World heritage Area (WTWHA).

A technical report, *Rainforest Dieback Mapping and Assessment*, by Rainforest CRC researcher Associate Professor Paul Gadek and Stuart Worboys has been released as part of the new Research Report Series.

The report identifies a correlation between the identification on *Phytophthora cinnamomi* in soils and canopy dieback and details the process of plant infection, which can include yellowing, wilting and ultimately death of foliage and shoots indicative of the canopy dieback disease. Funded by the Wet Tropics Management Authority and Rainforest CRC, this final report in a three stage project presents the outcomes of research undertaken between 2001 and 2002.





## The Bama Plan

Rainforest CRC is involved in the preparation of a Bama Plan as part of the new Wet Tropics Natural Resource Management Plan (NRM) to prioritise funding from the second phase of Natural Heritage Trust (NHT 2) and direct private investment. Rainforest Aboriginal people (BAMA) want more control over NHT 2 funding for natural resources on their country.

In 2002 the Wet Tropics Regional Environment and Natural Resource Management Forum (WTRENRMF) found that despite the standing of Traditional Owners as land holders in Queensland, just 1% of NHT 1 funding was spent on Aboriginal identified projects. The forum identified inadequate consultation, insufficient indigenous representation and the exclusion of BAMA from decision making processes as the reasons for this inequity.

The inclusion of a single representative of Wet Tropics Traditional Owners on a Community-based Board has been proposed to ensure the equitable prioritisation of State and Commonwealth Government investment in regional Natural Resource Management over the period of NHT 2.

This is an important step in the recognition of the rights and responsibilities that Traditional Aboriginal owners have for their traditional Country. The Wet Tropics leads the way in engaging Indigenous Australians in active natural resource management and planning – and they are adding a great deal. These collaborators combine two forms of knowledge to change the way the Australian landscape is viewed. We are starting to see the Australian landscape in different ways – not just as an ecological landscape, but also as a cultural landscape and a source of income and sustenance. This contrasts with the longstanding view that national parks and reserves should be locked up and left alone.

In one case, Indigenous communities are helping with the Queensland National Parks' cassowary recovery program. As a totemic symbol for some, they have a strong obligation to protect not only the bird itself, but also its cultural significance. The cassowary, in turn, helps spread tree seeds around the rainforest and renew it.



*Workshop participants*

## Planting for the Future

**Forestry in Australia is shifting from broad-scale, industrial forestry, to more regionally focused forestry that addresses community objectives. In an effort to adjust to this new forestry, and to reflect on their experiences with rainforest cabinet timber species, researchers were invited to a Workshop in Brisbane during June 2003 to address the question: What have we learnt from the last 10 years of growing rainforest timber species in plantations?**

The Rainforest CRC, The Rural Industries Research and Development Corporation and the QDPI Agency for Food and Fibre Sciences forestry research hosted the workshop which pulled together key forest ecology, silviculture and socio-economic researchers from north Queensland to northern NSW to review the last decade of farm forestry activities in the high rainfall zones of tropical and sub-tropical Australia.

The meeting heard results and reviews on a broad range of topics from silvicultural techniques to social and ecological impacts of rainforest timber species in plantations.

The first day focused on results. Discussions included trade-offs between

production and biodiversity, nursery techniques and vegetative propagation, species performance across a range of sites, plantation design, and mixtures verses monocultures debate. The second day began with presentations of results on nutritional issues, an overview of pests and diseases, growing rainforest timber species, and a discussion about stand management with these species. This was followed by a series of papers on the socio-economics of growing these species and small-scale forestry in general. A final session turned to data security with delegates eager to find a secure site for data collected from existing plantations. The technical group determined to develop a series of policy platforms to manage this data. Papers from the technical meeting are currently being synthesised into the chapters of a book that will capture technical experience and discuss what has been learnt about growing rainforest timber species over the last decade.

Peter Erskine and David Lamb (Rainforest CRC and University of Queensland) and Mila Bristow (DPI-AFFS Forestry Research and Southern Cross University) coordinated the RIRDC funded 2-day technical meeting on June 16-17, at University of Queensland, in Brisbane.





# **ANNUAL CRC CONFERENCE WORKSHOPS AND SYMPOSIA**

**The Hilton Hotel, Cairns, Tuesday 11 November 2003**

Four important workshops and symposia are being run concurrently at the Rainforest CRC's Annual Conference in November. An open invitation is extended to all interested parties to attend these workshops at no charge but registration is essential for catering purposes as morning and afternoon tea will be provided.

**TO REGISTER EMAIL: [Susan.Lowth@jcu.edu.au](mailto:Susan.Lowth@jcu.edu.au), or fax your details to (07)4042 1247.**

## **Plant-animal interactions in rainforest conservation and restoration (9.30am – 1.00pm)**

Animals play key roles in rainforest dynamics, via pollination, seed dispersal, seed predation and herbivory. However, the clearing and fragmentation of rainforest has changed the population size, assemblage composition and behaviour of rainforest animals. These changes have implications for the maintenance of biodiversity in remnant forests, for the restoration of forest to degraded land, and for the interaction of rainforests with their surrounding landscapes. This workshop will bring together researchers examining plant-animal interactions in Australian rainforests to share perspectives on approaches to their research and to discuss the implications of their work for conservation and restoration.

## **Tourism and Visitor Management (9.30am – 1.00pm)**

Current research into tourism and visitation management in the Wet Tropics undertaken by Rainforest CRC researchers has explored the relationships Indigenous and non Indigenous people have with the natural/built/social/cultural environment in the WTWHA and their implications for tourism, environmental management and local communities in the region. This workshop will explore some of these social science insights including who the visitors are and where do they go, the design and management of visitor settings, information dissemination and appraisal, interpretive materials, and visitor experience in this World Heritage Area providing an opportunity for tourism industry and environmental management agency personnel to discuss how these results can best inform them about visitation and use of the WTWHA.

## **Does Culture Matter? An exploration of sustainable landscapes through un-natural frameworks (2.00 pm – 5.30pm)**

Recent NRM initiatives acknowledge that principles of sustainability must involve a holistic negotiation of economic, environmental, social and cultural issues. This half-day symposium explores the topical questions of how cultural values and a range of societal interests are acknowledged in existing environmental management and sustainability frameworks and why recognising culture can contribute to new frameworks for approaching human-environment interactions. The symposium will feature presentations from a number of Indigenous and non-Indigenous speakers and will conclude with a panel discussion on the issues raised and possible future directions. The symposium will also explore the related issues of rights, regional agreements and environmental governance.

## **Targeting Sustainable NRM in the Wet Tropics (2.00 pm – 5.30pm)**

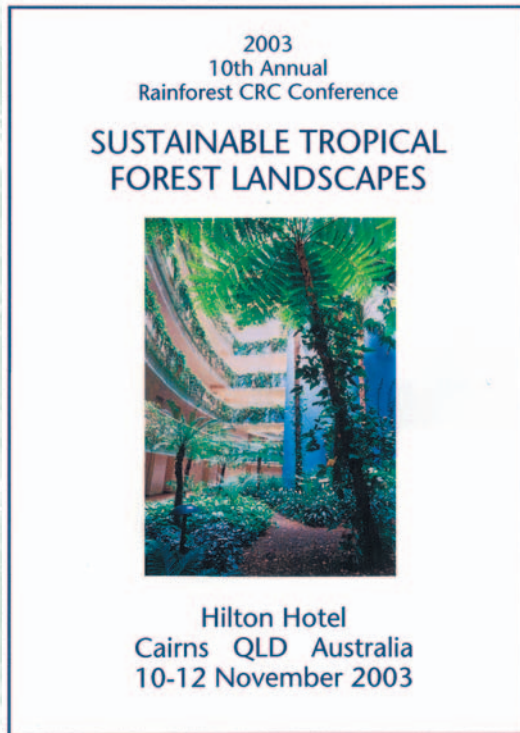
A new regional Natural Resource Management (NRM) Plan for the Wet Tropics is currently being developed. An analysis of relevant regional information, including a broad profile of natural resource condition and trends in the Wet Tropics, has already been undertaken and this half-day symposium will feature presentations by speakers involved in this process. A group discussion on the issues raised will precede roundtable discussions on target setting in the key investment areas of biodiversity conservation, land and water health. The aim of the symposium is to bring together scientists, administrators, policy makers and concerned individuals from different backgrounds and disciplines to discuss the aforementioned plan elements in an open and relaxed atmosphere. The deliberations at this symposium will provide important inputs to the new regional NRM Plan for the Wet Tropics.





## RAINFOREST CRC CONFERENCE PROGRAM

- Presentation of Centre Research
- Public Forum – Current and Emerging Threats to Rainforest
- Thematic Workshops
- Conference Dinner during three hour boat cruise
- Student research presentations and posters



### Conference Registration Includes:

- Three day program
- Conference satchel and Compendium
- Morning and afternoon teas and lunches
- Conference Dinner
- Welcome Reception
- Poster Session Function
- Public Forum

	Conference Fee	Day Only
CRC Member	\$260	\$70
CRC full-time Student	\$150	\$35
Non-Member	\$300	\$90
Non-CRC Student	\$200	\$50

Download Registration Form from:  
[www.rainforest-crc.jcu.edu.au](http://www.rainforest-crc.jcu.edu.au)



Rainforest CRC

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