

ABOUT US

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## Our Expertise

The Rainforest CRC has a wealth of expertise in tropical rainforest ecology and management.

### Biodiversity Assessment

### Environmental Planning and Management in Rainforest Regions

### Ecosystem Goods and Services

### Managing and Monitoring Impacts Arising from Forest Access

### Rehabilitation and Forestry

### Conservation Principles and Management

### Working with Local and Indigenous Communities

## BIODIVERSITY ASSESSMENT

### **Rapid Appraisal**

The CRC has the ability to undertake rapid resource and biodiversity assessment in tropical forest environments and can bring together multi-disciplinary teams which enable these appraisals at any scale.

### **Ecosystem Integrity**

Our approach to biodiversity assessment includes the assessment of the integrity of ecosystem processes and conservation values from the catchment level down to site level and including the presence of invasive weeds species, pathogens and pest animals.

### **Conservation Prioritisation**

Based on our resource assessment others can identify conservation priorities in the knowledge that rarity based conservation status, ecosystem services, and the integrity of values have all been taken into account. Scales can range from local through to regional and national level assessment.

#### **World Heritage**

We can provide a systematic description of conservation values and their integrity suitable for use in world heritage nominations and the expertise to assess tropical forest environments against all world heritage criteria and operational guidelines.

### **ENVIRONMENTAL PLANNING AND MANAGEMENT IN RAINFOREST REGIONS**

#### **Ecologically Sustainable Forest Management**

The CRC has experience in developing principles and methods for integrated environmental planning and management at the bioregion level adopting the principles of sustainable development and Ecologically Sustainable Forest Management (ESFM) in particular.

#### **Protected Area Management**

The CRC has specialist expertise in protected area management and planning. We have the ability to bring together protected area planners and experts in resource assessment, conservation of tropical forest, aquatic, karst, coastal and littoral environments and can assist in the development and management of ecotourism and tourism enterprises.

#### **Integrated Land Use, Biodiversity**

In many tropical areas there is ongoing human use and occupation throughout forest environments. In this context, the Rainforest CRC can provide integrated planning addressing biodiversity conservation priorities, traditional or indigenous land use and providing poverty alleviation through economic benefits of land use.

#### **Remote Sensing Technology and Modelling**

The CRC has extensive expertise and technology to apply remote sensing and modelling techniques including the application of various satellite imagery data sets and the use of airborne radar. Our modelling capabilities include climatological, terrain, vegetation pattern and habitat prediction.

#### **Geographical Information Systems**

The CRC has expertise in the application of GIS in biodiversity assessment, environmental planning and other research.

### **ECOSYSTEM GOODS AND SERVICES**

#### **Water Regulation**

Where continuing development exerts increasing pressures to dam, divert and harvest water for

urban and agricultural uses, the CRC can assist with knowledge is vital in developing a more predictive understanding of the effects of possible land use and climate changes on water resources (distribution and flows) in the region.

#### **Socio Economic Analysis**

The CRC has economists and specialists in social impact assessment who can provide socio-economic analysis. Our services range from baseline socio-economic snapshot assessment to cost-benefit analysis and social impact assessment of projects and to poverty alleviation projects.

#### **Ecotourism and Sustainable Tourism**

The CRC has expertise in the development of sustainable tourism and ecotourism in tropical forest environments. We have an understanding of the principles of sustainable tourism development and the ability to provide solutions that are beneficial to local communities and the natural/protected areas visited.

#### **Visitor Monitoring Surveys**

The Centre can provide reliable, accurate and relevant information on tourism in the tropical forest regions to assist both public and private sector managers in their planning for, and development of, sustainable tourism. Such research can provide information on market characteristics and thus support the development of improved marketing.

#### **Monitoring Destination Competitiveness.**

The CRC can provide an understanding of the processes involved in destination choice so that managers and operators can make more efficient use of information delivery systems, have a greater influence over tourist flows and assessing their competitiveness in the open market.

#### **Interpretation and Visitor Centres**

The CRC has developed best practice guidelines for visitor centres applicable to local, regional and national level interpretation projects. We have the capability to provide advice and services in the development of face-to-face, guide programs, interpretive signage and major interpretation centres and displays.

#### **MANAGING AND MONITORING IMPACTS ARISING FROM FOREST ACCESS Tourism Access**

The CRC can assist in developing a practical and transparent understanding of the nature and reciprocal interaction of biological, physical, social and psychological impacts in tropical forest visitor sites, and develop practical mechanisms and strategies to mitigate the impacts of forest visitation and use on those natural and cultural features of tropical forests.

#### **Roads and Powerlines**

The CRC has an extensive knowledge base on 'best practice' for the design, construction and maintenance of visitor infrastructure and experience, visitor access and movements, roads,

powerline corridors and walking tracks. It can apply and verify this knowledge in tropical forest environments worldwide providing land managers, public utilities, the tourist industry and other stakeholders with relevant information and tools to consider and manage the potential consequences for sustainable rainforest visitation and usage.

#### **Best Practice Guidelines**

The CRC has developed best practice guidelines for roads in tropical forest environments and continues to develop knowledge of best practice sustainable infrastructure in tropical forest environments.

#### **Corridor Planning**

With its' biodiversity assessment expertise, its modelling and GIS capability and use of advanced remote sensing techniques, the CRC can offer corridor planning services, which enable the integration of socio-economic (eg land use, amenity etc.) as well as biodiversity conservation aspects.

### **REHABILITATION AND FORESTRY**

#### **Farm Forestry**

The CRC has expertise in assessing the merits of a variety of approaches to forest rehabilitation for different environments based on existing field trials as well as newly established trials. The main potential application of this knowledge is the ability to apply systems of farm forestry that yield commercial timber production and increased levels of biological diversity.

#### **Carbon Sequestration**

The CRC has the ability to provide measurement of variability in stocks and sequestration of Carbon and other elemental stocks over the wide temperature and precipitation gradients existing in the tropical forests. Where required we can also analyse time series of satellite imagery to identify recent patterns of land-cover change. Various modelling approaches can be used to estimate land-cover patterns in the more distant past.

#### **Social and economic aspects of reforestation**

The CRC has experience in investigating the critical socio-economic issues associated with the successful establishment of farm forestry industries in tropical forest environments and has developed an Australian Cabinet Timber Financial Model, which can be applied or reconstructed for other tropical forest environments.

#### **Illegal Logging Assessment**

The CRC can provide techniques for the assessment of illegal logging and/or inappropriate logging (ie. not to relevant guidelines). This expertise can range from on-site audits through to using remote sensing and GIS to monitor logging activity at the macro scale.

**Sustainable Logging**

The CRC has researchers with substantial experience at managing sustainable logging practices. Where logging is appropriate, the CRC can provide guidelines and indeed provide management direction for the implementation of sustainable logging.

**Rehabilitation**

The CRC can provide expertise on methods of restoring and sustaining both diversity and ecological process to these degraded multiple-use landscapes including advice and analysis on the effectiveness of different styles of reforestation for sustaining or restoring local terrestrial and in-stream biodiversity and ecological process.

**Grow out**

Particularly in relation to bioprospecting, the CRC has the ability to develop techniques for the commercial grow out of particular species.

**CONSERVATION PRINCIPLES AND MANAGEMENT****Strategic Conservation Planning**

The CRC has significant expertise in provide methods, tools and case studies for natural resources programs in tropical forest regions for use by government and industry groups including farmers, nature conservation agencies, land developers and foresters.

**Water Resources Ecology and Management**

The CRC can provide strategic advice and research to provide for sustainable use and informed management of the waterways assisting managers involved in water and infrastructure projects by providing a suite of planning, design and implementation procedures, (eg. stream rehabilitation protocol), planning and design tools and techniques (eg. environmental flow evaluation), and an understanding of natural ecosystem processes and interaction with human use (eg. infrastructure effects on stream habitat and biota).

**Improved design for linear infrastructure**

The CRC has knowledge of the various impacts that result from inappropriate design of stream crossings and can provide advice on best practice techniques to minimise the effect of culverts as barriers to migration and dispersal in-stream faunal connectivity is severely affected, improved design criteria of underpasses (including culverts) and methods of reducing stream contamination from road drainage.

**Environmental flow management requirements**

The CRC has knowledge and experience in assessing the fundamental determinants of the ecology of streams, namely the flow regime and key targets for Wet Tropics streams and can investigate the ecology and distribution of selected fish and invertebrate communities, in relation to flow-determined habitats and species' needs, at reach, stream and catchment scales, and at a variety of temporal scales.

**Integrated Catchment Management**

The CRC is currently developing a framework for integrated catchment management, including assessing stream-bank, riparian and in-stream condition and deciding on priorities and techniques for restoration and other on-ground works, and then testing outcomes of selected works via research and monitoring, leading to development and collation of a set of "Best Practice" guidelines, protocols, manuals etc for planning and management at catchment scale in the tropical forest regions.

**Managing Threatening Processes and Endangered Species**

The CRC, has knowledge to improve management of endangered and endemic species and their habitat through the incorporation of population and landscape level data on their ecology, behaviour, and responses to landscape modification.

It aims to improve landscape and ecosystem management planning and decision making through an understanding of the influence of landscape structure on vertebrate responses to landscape structure and the influences these responses have on ecosystem processes mediated through movement within landscapes.

**WORKING WITH LOCAL AND INDIGENOUS COMMUNITIES****Aboriginal and collaborative management**

The Rainforest CRC has undertaken a major contribution to the local and regional protection of Aboriginal Intellectual property and traditional knowledge and build bridges between Western research methodologies and practices, and Indigenous research methodologies and practices. With this experience, the CRC has the people and the expertise to involve indigenous peoples and communities.



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Feedback

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