

**Annual Report
and
State of the Wet Tropics Report
2004 - 2005**



Wet Tropics Management Authority



WET TROPICS MANAGEMENT AUTHORITY

16 September 2005

The Honourable Desley Boyle MP
Chair, Wet Tropics Ministerial Council
Minister for Environment
PO Box 15155
CITY EAST 4002

Dear Minister,

I have pleasure in submitting the Wet Tropics Management Authority's Annual Report for 2004-2005.

Under section 63(1) of the Wet Tropics World Heritage Protection and Management Act 1993 (Qld) the Authority must, within three months after the end of the financial year, give an annual report to the Minister and the Australian Government.

In submitting this report to you today the Authority is complying with this requirement.

Section 63 (2) of the Act requires you to lay a copy of this report before the Legislative Assembly within 14 sitting days of your receiving it.

Yours sincerely

JC Grey AC

Lieutenant General (Ret'd)

Chair

**Annual Report
of the
Wet Tropics Management Authority
2004 - 2005**

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Terms and abbreviations

Area	Wet Tropics of Queensland World Heritage Area
ARC	Aboriginal Rainforest Council
Authority	Wet Tropics Management Authority
Bioregion	Wet Tropics of Queensland biogeographic region
CAG	Cassowary Advisory Group
CCC	Community Consultative Committee
CLO	Community Liaison Officer
Commonwealth Act	<i>Wet Tropics of Queensland World Heritage Area Conservation Act 1994</i>
CRC	Cooperative Research Centre
CREB	Cairns Regional Electricity Board
CSIRO	Commonwealth Scientific, Industry and Research Organisation
DATSIP	Department of Aboriginal and Torres Strait Islander Policy
DNRM	Department of Natural Resources and Mines
DPG	Daintree Planning Group
DPIF	Department of Primary Industries and Fisheries
EEO	Equal Employment Opportunity
EPA	Environmental Protection Agency
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i>
FNQNRM Ltd	Far North Queensland Natural Resource Management Body
GIS	Geographic Information Systems
ILUA	Indigenous Land Use Agreement
INF	Interim Negotiating Forum
MOU	Memorandum of Understanding
NHT	Natural Heritage Trust
NRM	Natural Resource Management
QPWS	Queensland Parks and Wildlife Service

Queensland Act	<i>Wet Tropics World Heritage Protection and Management Act 1993</i>
RAAC	Rainforest Aboriginal Advisory Committee
Rainforest CRC	Rainforest Cooperative Research Centre
SAC	Scientific Advisory Committee
SOSE	Studies of Society and the Environment
Plan	<i>Wet Tropics Management Plan 1998</i>
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VMS	Visitor Monitoring System
WETMAPS	Wet Tropics Mapping Project
WHA	Wet Tropics of Queensland World Heritage Area
WTMA	Wet Tropics Management Authority

Highlights from the Chair

In 2004-2005, the Wet Tropics Management Authority has continued to make sound progress across a number of project and program areas. While the challenge of balancing reduced resources with our legislative obligations and community expectations continues, the Authority has achieved a number of exciting and significant outcomes over the past year.

Wet Tropics Regional Agreement

A crowning achievement for the Authority was the historic signing of the Wet Tropics Regional Agreement on 29 April 2005 by 17 Rainforest Aboriginal tribal groups, the Queensland and Australian Governments, and the Wet Tropics Management Authority.

The Regional Agreement is the result of over 20 years of negotiation and planning between Rainforest Aboriginal people and government. It provides the basis for cooperative management of the Wet Tropics World Heritage Area by ensuring that Rainforest Aboriginal people are informed and empowered to effectively participate in decision-making and management activities, while coordinating and improving service delivery by management agencies.

Review of the Wet Tropics Management Plan 1998

In December 2004, the Authority commenced the review of its statutory management plan. This Plan regulates all activities that disturb vegetation, earth or watercourses, or diminish the scenic beauty of the Area. Although the Wet Tropics Act requires that its management plan be reviewed no later than 1 September 2005, the Authority is seeking a legislative amendment to change the review period from seven to ten years. This will allow the Authority to take a little more time to complete this task. Eighty submissions were received in the first round of public consultation, including consolidated responses from Rainforest Aboriginal people, tourism and conservation interests. The Authority will seek Ministerial Council approval of proposed amendments following the second round of public consultation.

Improved tools for decision making

I am pleased to report the finalisation and launch of the Wet Tropics Conservation Strategy in September 2004. This Strategy outlines actions to achieve the conservation of the World Heritage Area and surrounds. It will serve as an important educational tool for the regional community and guide management efforts across the 730 parcels of land which comprise the World Heritage Area.

The development of another key management tool is almost complete. Vegetation mapping of the World Heritage Area at a 1:50,000 scale is now close to finalisation. Some 90,000 polygons, representing individual vegetation units, have been digitised from aerial photos and field mapping. Data from this work will guide decision-making at all levels of government in Wet Tropics natural resource management over the next generation.



Chair of the Wet Tropics Board, John Grey AC

Planning partnerships

On the international front, the Authority, in partnership with the Rainforest CRC, recently completed the Lorentz Strategic Plan. This Plan will guide management in the Lorentz National Park World Heritage Area in Papua, Indonesia over the next five years.

Closer to home, the Authority continues to provide secretariat, mapping and technical support to the Daintree Planning Group and secretariat support to the Cassowary Advisory Group. The Authority also continues to work closely with the Australian Rainforest Foundation on cassowary and Daintree conservation initiatives.

Major developments

Over the last year, significant resources have continued to be directed to the assessment of development proposals and advice on land dealings within and adjoining, the Wet Tropics World Heritage Area. A major ongoing activity has been the assessment of the proposed Kuranda Range Road upgrade and in July 2005 the Authority's Board will meet to consider the commencement of a rezoning process. Other assessments have involved the commencement of the rezoning process for the proposed Ma:Mu canopy walk; and advice on development applications, particularly in the Cairns and Mission Beach areas.

Native Title and Indigenous Land Use Agreements

Similarly, considerable resources have been allocated to the resolution of Native Title claims and associated Indigenous Land Use Agreements (ILUAs), including legal implications and assessment of the impact of ILUA proposals on the protection and management of World Heritage values. The Authority continues to play a major role in the Eastern Kuku Yalanji ILUA negotiations aimed at resolving native title, land tenure, land use and management arrangements within and adjacent to the northern region of the World Heritage Area.

Research and monitoring

On the scientific front, the Authority continues to invest considerable time working with researchers to ensure comprehensive research and monitoring of the values of the World Heritage Area and threatening processes in and around the Area. Such research contributes to improved understanding of how best to manage the Area and is reported in the annual State of the Wet Tropics Report. The Authority's Board receives advice from the Scientific Advisory Committee and has maintained a close working relationship with the Rainforest CRC. The Authority is also an active participant in interim arrangements for the new Marine and Tropical Science Research Facility.

Advisory committees and partnerships

Over the last year, priority has been given to improving and upholding effective communication with the regional community through its advisory and liaison groups, community liaison officers, industry partnerships and its education program.

The Authority has reviewed and updated its website to include the latest information on the Authority's policies, guidelines and initiatives. The website now includes information on activities and events for landholders and neighbours, the history of the Cassowary Awards and special pages where members of statutory advisory committees can view Board papers, resolutions, and the minutes of advisory committee meetings.

Community education program

Significant advancement has also been made on a number of initiatives under the Authority's community education program, including:

- development of a Wet Tropics educational kit for regional schools and a nationally accredited World Heritage studies unit for secondary schools;
- the launch of a Be cass-o-wary campaign, comprising the production of broadcasting of radio and television 'cassowary care' community service announcements; production of the popular 'take care' cassowary stickers and back to school stickers and book marks;
- the launch of the second World Heritage image CD in partnership with the tourism industry;
- World Heritage community service announcements to promote the environmental and community benefits flowing from the World Heritage Area; and
- production of the Rainforest Aboriginal News and Australia's Tropical Rainforests World Heritage Magazine.

The annual Cassowary Awards were once again an outstanding success. Held at Paronella Park near Innisfail, and attended by over 150 people, the Awards honoured the outstanding contributions of ten individuals and organisations to the conservation of World Heritage area. The Cassowary Awards provide a timely reminder of the vast network of people in our region who, through community effort, education, conservation or research, dedicate so much of their time to the preservation our Wet Tropics.

Challenges for the future

The Authority will continue to be faced with significant challenges to maintain the Wet Tropics World Heritage Area as a place internationally renowned for its management to world-class standards. The Authority will rely on its strong partnerships with, government, community and industry to meet the challenges to:

- tackle pressures associated with population growth and urban expansion surrounding the Area.
- balance the need to protect the Area's natural and cultural values, while providing for essential community infrastructure within the Area, including the development of best practice design, construction and maintenance guidelines.

- commission research to identify ways to build ecosystem resilience to external pressures and to address predicted climate change and associated biodiversity impacts.
- resolve and implement native title claims and associated ILUAs, including the development of community development plans for Aboriginal communities moving back on to country.

Also ahead is a review of the Wet Tropics Intergovernmental Agreement between the Australian and Queensland Governments. This Agreement provides a framework for the Authority's structural, management and funding arrangements. The review of the Wet Tropics Intergovernmental Agreement will take place in the context of a broader review looking at governance and funding arrangements for all Queensland World Heritage properties. The review will be led by the Queensland Environmental Protection Agency and Australian Department of the Environment and Heritage, and report to the Wet Tropics Ministerial Council. It is my hope that this review will result in arrangements that will enable the continuance of the current high standards of management in the Wet Tropics World Heritage Area, and see the extension of similarly high standards across all Queensland properties.

Thanks

I would like to acknowledge the work of the Authority's Board and staff. Many thanks to Mr Russell Watkinson who completed a six-year appointment as Executive Director of the Authority in September 2004. Russell's commitment ensured that the Authority remained a leader in World Heritage management. He was responsible for initiating many of the achievements of the Authority this year. Many thanks also to Ms Josh Gibson who has excelled in the role of Acting Executive Director while the permanent position remains unfilled. I acknowledge the contribution of Mr Tom Dacey, the Executive Officer, who retired this year after twelve years of providing learned advice to the Authority, including more than a year as Acting Executive Director.

On behalf of the Board, I thank the dedicated staff of the Authority who continue to remain committed to the conservation and promotion of the World Heritage Area, ensuring it plays a vital role in the life of the community.

In conclusion, I thank my fellow Board members who have actively and conscientiously contributed to the good governance and the management of the World Heritage Area.



John Grey AC

Lieutenant General (Ret'd)

Chair, Wet Tropics Board

Introduction

World Heritage

The World Heritage Convention has been ratified by 178 countries (as of 1 May 2004). Australia became a signatory in 1974 and there are currently sixteen Australian properties on the World Heritage list. World Heritage listing is recognition by the international community that an area is such an outstanding example of the world's natural or cultural heritage that its conservation is of value to all people.

The Wet Tropics of Queensland World Heritage Area (the Area, WHA) is an area of outstanding natural values, meeting all four natural criteria for World Heritage listing and fulfilling the necessary conditions of integrity. The criteria current at the time of listing (December 1988) and specified in the nomination were:

1. Outstanding examples representing the major stages of the earth's evolutionary history.
2. Outstanding examples representing significant ongoing geological processes, biological evolution and man's interaction with his natural environment.
3. Superlative natural phenomena, formations or features or areas of exceptional natural beauty.
4. The most important and significant natural habitats where threatened species of plants and animals of outstanding universal value from the point of view of science and conservation still survive.

Obligations under the World Heritage Convention and statutory management arrangements

It is an annual, statutory requirement under section 63(1) of Queensland's *Wet Tropics World Heritage Protection and Management Act 1993* and section 10 of the *Commonwealth's Wet Tropics of Queensland World Heritage Area Conservation Act 1994* for the Authority to prepare a report on the administration of the Act during the year; statements for the year; and the state of the Wet Tropics Area.

This Annual Report focuses on the administrative and financial activities of the Authority during 2004-05. The following State of the Wet Tropics Report provides information on the condition of the Area's natural values and describes the role of the Area in the life of the community.

Administration of the Act

Enabling legislation

The *Wet Tropics World Heritage Protection and Management Act 1993* (Queensland Act), was proclaimed on 1 November 1993, apart from sections 56 and 57. The *Wet Tropics of Queensland World Heritage Area Conservation Act 1994* (Commonwealth Act), was proclaimed on 15 March 1994. It has since been replaced by the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Queensland Act provides the legal basis for the *Wet Tropics Management Plan 1998* (the Plan) which regulates land use activities in the WHA through a zoning and permit system. The Plan was gazetted on 22 May 1998 and commenced operation on 1 September 1998. Section 56 of the Queensland Act, which prohibits the destruction of forest products, and section 57 which sets out compensation provisions, also commenced on 1 September 1998.

The Wet Tropics World Heritage Area Management Scheme is an intergovernmental agreement signed by the Prime Minister and Premier of Queensland in 1990. It sets out broad structural and funding arrangements for the management of the Area. The agreement is scheduled in the Queensland Act and given effect by section 3 of the Commonwealth Act. Australian and Queensland Ministers last revised the agreement in December 1995. A second review is to be initiated in late 2005. This review will take place in the context of an examination of governance and funding arrangements for all Queensland World Heritage properties.

The Wet Tropics Management Authority

The Wet Tropics Management Authority was set up to ensure Australia's obligation under the World Heritage Convention is met in relation to the Area. The Authority is a body corporate, with statutory powers defined under the Queensland Act.

The Authority's functions, as defined under section 10 of the Queensland Act, are to:

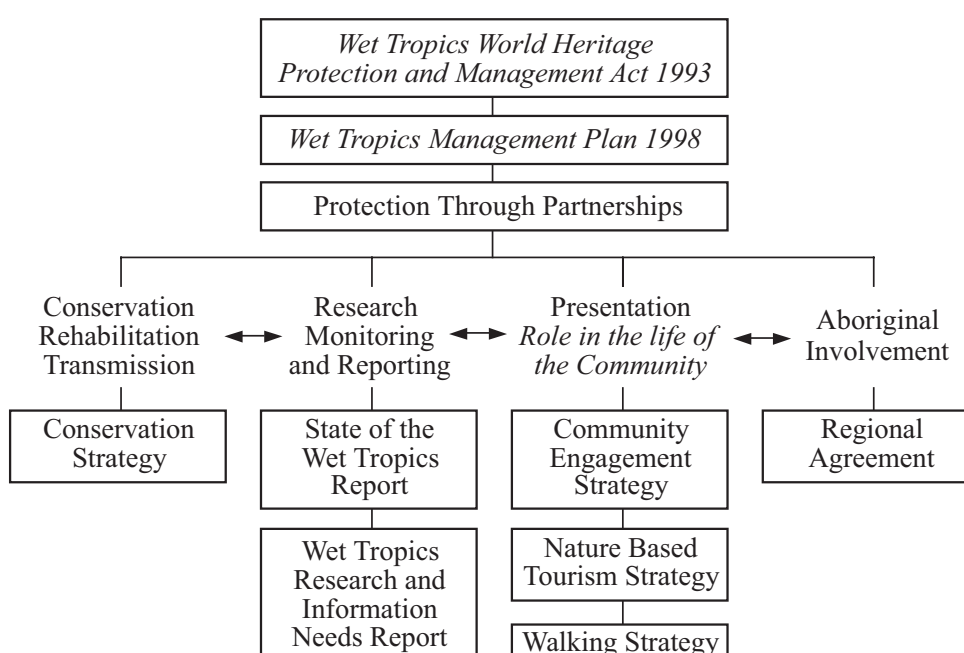
- develop and implement policies and programs for management of the Wet Tropics Area.
- formulate performance indicators for the implementation of approved policies and programs.
- advise and make recommendations to the Minister and the Ministerial Council.
- prepare and implement management plans for the Area.
- administer funding arrangements.
- facilitate and enter into Cooperative Management Agreements.
- rehabilitate and restore the Area.

- gather, research, analyse and disseminate information on the Area.
- develop public and community education programs.
- promote the Area locally, nationally and internationally.
- liaise with the Queensland and Australian Governments, agencies and international organisations.
- monitor the state of the Area.
- advise and report to the Minister and the Ministerial Council on the state of the Area.

In performing its functions, the Authority must, as far as practicable, consider Aboriginal tradition and liaise and cooperate with Aboriginal people particularly concerned with the Area. In April 2005 the Authority, the Australian Department of the Environment and Heritage (DEH), the Department of Natural Resources and Mines (DNRM) and the Environmental Protection Agency (EPA) signed a Regional Agreement with Rainforest Aboriginal people. This Agreement sets out principles, guidelines and protocols for the meaningful involvement of Aboriginal people in WHA management. The Authority must also perform its functions in a way that is consistent with the objectives and principles of the National Strategy for Ecologically Sustainable Development.

The Authority is a small organisation and works in partnership with other agencies and stakeholder interest groups. The Authority has produced a range of strategic policy and planning documents which guide management of the WHA, consistent with its legislative responsibilities. **Figure 1** provides an overview of the Authority's legislative and strategic planning framework.

Figure 1. Legislative and strategic planning framework for the WHA



Management structure

The intergovernmental agreement provides for a Wet Tropics Ministerial Council, comprising two Australian and two State Government Ministers. Its function is to coordinate policy and funding for the Area between the Australian Government and the Queensland Government. The Queensland Minister for Environment chairs the Council.

A Board of Directors is set up under the Queensland Act and consists of six directors, five of whom are private citizens who serve as directors in a part time capacity. Two directors are nominated by the Australian Government and two by the Queensland Government. The chairperson is jointly nominated. The Executive Director of the Authority is a non-voting Board Director. The Board's key function is to achieve the implementation of Australia's international obligations for the Area under the World Heritage Convention.

The Authority is a unit within the Queensland environment portfolio. As part of the Queensland public sector, the Authority is subject to established public sector legislation, regulations, standards and guidelines governing administrative functions and arrangements.

The Director-General of the EPA is the accountable officer for the Authority under the *Financial Administration and Audit Act 1997*. The Authority is responsible to the Director-General regarding compliance with state government administrative and financial standards.

The Authority has three statutory committees appointed by the Board under the Queensland Act. They are the Scientific Advisory Committee, the Community Consultative Committee, and the Rainforest Aboriginal Advisory Council. Their role is to advise the Authority on its research, policies and programs.

The Authority also supports two liaison groups, the Conservation Sector Liaison Group and the Tourism Industry Liaison Group. The Authority's Landholder and Neighbour Group was disbanded last year, in favour of increased representation of WHA landholders and neighbours on the Community Consultative Committee. Liaison groups are chaired by a Board director and meet quarterly prior to Board meetings, thus providing a valuable two-way information exchange about important and emerging conservation and tourism issues.

While the Authority is the lead agency responsible for policy, planning, developing standards and the coordination of on-ground management activities in the WHA, it is not responsible for day-to-day operational issues such as infrastructure maintenance and pest and weed control. These are the responsibility of the respective land managers which include the Queensland Parks and Wildlife Service (QPWS), 14 local government authorities, the Department of Natural Resources and Mines (DNRM), and relevant infrastructure service providers for power, water and roads. **Figure 2** provides an overview of the roles of Authority and other government agencies in the management of the WHA.

A Principal Agencies Forum meets every six weeks to ensure that management activities are coordinated between the Authority, DNRM and QPWS. To prioritise

and coordinate management activities in the protected area estate within the World Heritage Area, a Service Agreement is developed each year between the Authority and QPWS. The Service Agreement outlines products and services to be delivered by QPWS under funding provided by the State for WHA management.

Figure 2. World Heritage Area management



Structure and organisation

Wet Tropics Ministerial Council

At 30 June 2005 the Ministerial Council comprised:

Chair

The Hon. Desley Boyle MP, Queensland Minister for the Environment

Members

Senator, the Hon. Ian Campbell, Australian Government Minister for the Environment and Heritage

The Hon. Margaret Keech MP, Queensland Minister for Tourism, Fair Trading and Wine Industry Development

The Hon. Warren Entsch MP, Federal Parliamentary Secretary to the Minister for Industry, Tourism and Resources.

Ministerial Council did not meet in the 2004-2005 financial year. However, a number of policy and funding matters were dealt with out of session.

Wet Tropics Management Authority Board of Directors

At 30 June 2005, the Board comprised:

Chair

John Grey AC, Lieutenant General (Ret'd)

Directors

Australian Government nominee Mr Tom Gilmore

Queensland Government nominees Ms Anne Portess and Mr Peter Valentine

Mr Russell Watkinson's term as Executive Director concluded on September 2004 and Ms Josh Gibson acted in the role of Executive Director from 1 October 2004 to 30 June 2005. One Australian Government nominee position was vacant at 30 June 2005.

The Authority's Board meets quarterly or as required. Meetings were held in Cairns on 23-24 August 2004, 20 September 2004, 3-4 November 2004, 4 December 2004, 21-22 February 2005, and 16-17 May 2005.

The overall cost of the Authority Board was \$31,304. This included meeting fees, special assignment fees, air fares and travel allowances for 2004-2005.

Community Consultative Committee

Appointed on 4 April 2004 for a three-year period, members come from a broad range of backgrounds across the WHA, including conservation, education, tourism, local government, recreation and scientific sectors.

Chair

Prof Nigel Stork

Members

Ms Jax Bergersen

Mr Marcus Bulstrode

Ms Jan Cameron

Ms Caroline Coppo

Mr John Courtenay

Ms Minelle Creed

Mr Pino Giandomenico

Mr Andy Gierz

Mrs Alison Gotts

Ms Marina Gurtzis

Mr Brian Hewitt

Mr Bood Hickson

Ms Nicky Hungerford

Mr Charlie Morganson

Mr Jeff Pezzutti

Mrs Diana Pregl

Mr Ross Rogers

Mr Nigel Tucker

Mrs Linda Venn

Mr Norm Whitney

Ms Diana Wood

The Community Consultative Committee met four times in Cairns on 20 August 2004, 27 October 2004, 18 February 2005 and 13 May 2005.

Members do not receive sitting fees. The Committee cost \$5,319 to operate in 2004-05, mostly for reimbursed travel expenses.

Scientific Advisory Committee

Appointed on 15 May 2004 for a three-year period, members come from a broad range of disciplines include the social, biological and physical sciences.

Chair

Dr. Chris Margules (*CSIRO*)

Members

Dr. Joan Bentrupperbaumer (*James Cook University/Rainforest CRC*)

Dr. Rosemary Hill (*Australian Conservation Foundation*)

Prof. Ralph Buckley (*Griffith University*)

Mr Peter Stanton (*Consultant*)

Assoc. Prof. Steve Turton (*Rainforest CRC*)

Prof. Bruce Prideaux (*James Cook University*)

Dr. Romy Griener (*CSIRO*)

Dr. Marcus Lane (*Adelaide University*)

Dr. Henrietta Marrie (*Christensen Fund*)

The Scientific Advisory Committee met in Cairns on 21-22 October 2004 and 18-19 April 2005.

Members do not do receive sitting fees. The Committee cost \$3,920 to operate in 2004-05, mostly for reimbursed travel expenses.

Rainforest Aboriginal Advisory Committee

This Committee was established in November 2004. Members were appointed on 3 November 2004 for a one-year term and are the same 12 Rainforest Aboriginal representatives that comprise the independent Aboriginal Rainforest Council.

Chair

Mr Russell Butler Jr (*Girringun (Bandjin)*)

Members

Mr Peter Wallace (*Kuku Yalanji*)

Ms Rhonda Brim (*Djabugay*)

Mr Mervyn Riley (*Koko Muluridji*)

Mr Kevin Singleton (*Yirrkanydji*)

Mr Seith Fourmile (*Yidinji*)

Mr Hilton Noble (*Gunggandji*)

Mr Victor Maund (*Ma:Mu*)

Ms Eliza Morta (*Ngadjon-Jii*)

Mr Danny Hooligan (*Girringun (Warungnu)*)

Ms Christine George (*Wulgurukaba*)

Vacant (*Girringun*)

The Rainforest Aboriginal Advisory Committee met in Cairns on 14-15 February 2005, 9-10 May 2005 and 14-15 June 2005.

Members do not receive sitting fees. The Committee cost \$3,173 to operate in 2004-05, mostly for reimbursed travel expenses.

Tourism Industry Liaison Group

Members are nominated by key industry groups and serve a three-year term. Current members were appointed on 3 November 2004.

Chair

John Grey AC, Lieutenant General (Ret'd) Chair WTMA

Members

Mr Bill & Ms Leanne Bayne (*Tableland Promotion Bureau*)
Mr Willie Brim (*Djabugay Country Tours*)
Mr Terry Carmichael (*Rainforest Habitat*)
Mr John Courtenay (*Pacific Asia Travel Association*)
Mr Gordon Dixon (*Far North Queensland Tourism Operators Association*)
Mr Mark Evans (*Paronella Park*)
Ms Angela Freeman (*Australian Tourism Export Council*)
Mr Daniel Gschwind (*Queensland Tourism Industry Corporation*)
Ms Lynley Halliday (*Australian Rainforest Council*)
Mr John McIntyre (*Tourism Tropical North Queensland*)
Mr David Morgans (*Tourism Queensland*)
Ms Glenys Schuntner (*Townsville Enterprise Ltd*)
Mr Rob West (*Port Douglas and Daintree Tourism Association*)
Mr John White (*Wait-a-While Tours*)

The Tourism Industry Liaison Group met in Cairns on 31 August 2004, 30 November 2004, 8 February 2005 and 10 May 2005.

Conservation Sector Liaison Group

Members are nominated by key conservation groups and serve a three-year term. Current members were appointed on 3 November 2004.

Chair

Mr Peter Valentine (*Authority Board Director*)

Members

Mr John Beasley (*Kuranda EnviroCare*)
Mr Chris Bennett (*Daintree Rainforest Foundation Ltd*)
Ms Murita Budden (*Aboriginal Rainforest Council*)
Mr Steve Canendo (*Yarrabah Aboriginal Community Council*)
Ms Jodie Eden (*Tableland Environment Network*)
Ms Brenda Harvey (*Community for Coastal and Cassowary Conservation*)

Mr David Hudson (*Conservation Volunteers Australia*)
Mr Tony Irvine (*Trees for Evelyn and Atherton Tablelands*)
Ms Sue Jenkins (*Earthwatch*)
Ms Margaret Moorhouse (*Alliance to Save Hinchinbrook/North Queensland
Conservation Council*)
Ms Deborah Pergolotti (*Cairns Frog Hospital*)
Ms Elaine & Mr John Ridd (*Johnstone Ecological Society*)
Ms Tania Simmons (*Tree Kangaroo & Mammal Group*)
Mr Peter Smith (*Wildlife Preservation Society Queensland*)
Mr John Rainbird (*Cairns and Far North Environment Centre*)

The CSLG met in Cairns on 30 August 2004, 29 November 2004, 7 February 2005 and 9 May 2005.

Members of liaison groups do not receive sitting fees. The liaison groups cost in total \$5,162, mostly for reimbursed travel expenses.

Program reports

The Authority comprises five programs which work cooperatively to manage the World Heritage Area. Reports on the five programs' activities are listed in the following order:

- Corporate Services
- Area Conservation
- Planning and Research
- Aboriginal Resource Management
- Community Relations

Corporate Services

The Corporate Services program is responsible for financial management, workforce management, general administration, office services and program coordination functions within the Authority. The program also provides secretariat support for the Authority's Board and for the Wet Tropics Ministerial Council.

The primary objective of Corporate Services is to develop and maintain appropriate management information and financial systems to assist other programs to achieve the Authority's overall objectives and to improve its efficiency and effectiveness.

Financial management

The Authority's general-purpose financial statements for 2004-2005 were incorporated in the overall EPA general-purpose financial statements. Total funding of \$5,025,000 for 2004-2005 was provided to the Authority, principally by the Australian and Queensland Governments, and supplemented by other forms of income. Included as part of total funds, \$555,337 was carried forward from the previous financial year. A summary of the Authority's operating statement for 2004-2005 is provided in **Appendix 1**.

The lack of a financial agreement between the Australian Government and the Queensland Government has continued to hinder the Authority in planning for the future management needs of the Area. Ministerial Council did not approve the Authority's 2004-2005 budget until July 2005. The Australian Government's base allocation to the Authority was \$2.2 million with an additional half a million dollars provided for specific activities and projects. These funds were distributed among the Corporate Services, Aboriginal Resource Management, Planning and Research, Area Conservation, Community Relations programs within the Authority. The Queensland Government contributed \$1.83 million to the Authority. Of this, \$1.79 million was returned to QPWS under the Service Agreement.

No operational audits were conducted in 2004-2005.

Staffing, consultancies and contracts

The approved staff establishment of the Authority as at 30 June 2005 totalled 28 permanent positions, five of which were vacant. An overview of the Wet Tropics management structure is provided in **Appendix 2**. Details about the Authority's staffing structure are shown in **Appendix 3**.

During the year temporary contract staff supplemented staff resources. This included contracting: three Aboriginal community liaison officers to support the Aboriginal Resources Management program; the Rainforest CRC to progress the development of the Lorentz Strategic Plan; GIS technicians to provide vegetation mapping support; education curriculum writers to develop the WHA education kit; Corporate Solutions Queensland for financial and workforce management services; and legal advice to the Area Conservation program. **Table A** shows consultancies by category and contracts by program for 2004-05 compared to the previous financial year.

Table A. Consultancies and contracts

	Expenditure \$	
	2004/05	2003/04
Consultancies by Category *		
Communications	33,993	102,863
Scientific/Technical	0	50,000
Management	0	0
TOTAL	33,993	152,863
Contract Staff by Program*		
Area Conservation	2,293	110,140
Planning & Research	138,021	105,177
Community Relations	8,587	12,935
Corporate Services	59,028	64,255
Aboriginal Resource Management	195,969	309,867
Daintree Rescue	0	660
TOTAL	403,898	603,034

* Excludes the QPWS expenditure on direct funded projects.

Training and development

The Authority participates as a member of the Regional Training and Human Resource Network. Expenditure for staff training, development and attendance at conference and seminars was \$10,672. There were 72 attendances as seminars and conferences about tourism, scientific, GIS, environmental law and legislation, some of which were at no cost. Several attendances were to public courses to fulfil training requirements. In-house training was provided to Authority staff on the Wet Tropics Management Plan, evacuation procedures, GIS, safety and administrative procedures as well as the orientation of new staff.

Overseas travel

The Manager, Planning and Research, travelled to Jakarta, Indonesia, in March 2005 to progress the AusAID funded project – Enhancement of Local Government Planning and Management Capacity at Lorentz National Park World Heritage Property, Papua Indonesia.

Workplace health and safety

The Authority participates on a regional committee for workplace health and safety issues. Monthly workplace health and safety inspections were conducted. No significant issues were revealed and no workplace incidents were recorded during the year. One staff member completed a 4WD course, one staff member completed a first aid certification.

Equal Employment Opportunity

The Authority participates on a joint Equal Employment Opportunity (EEO) network committee with the EPA Northern Region. All selection recommendations are monitored and reviewed to ensure compliance with the recruitment and selection standard. All appointments complied with the standard and the Authority received no EEO complaints. As at 30 June 2005 the Authority had 13 females and 10 males on staff with five positions vacant. Profiles on gender by occupational stream and salary are shown in **Table B**.

Table B. Employment by gender, occupational stream and salary**Employment by gender and occupational stream as at 30 June 2005
(based on substantive positions)**

Stream	Female (%)	Male (%)
Administration and Senior Executive Service	11 (47.82)	6 (26.09)
Professional	2 (8.70)	3 (13.04)
Technical	0	1 (4.35)
Operational	0	0
Total	13 (56.52)	10 (43.48)

**Employment by gender and salary level as at 30 June 2005
(based on substantive positions)**

Salary Range	Female (%)	Male (%)
\$81,433+		
\$76,997 - \$81,432	1 (4.35)	1 (4.35)
\$69,494 - \$74,516		2 (8.70)
\$61,677 - \$66,446	1 (4.35)	3 (13.04)
\$53,055 - \$58,831	2 (8.70)	3 (13.04)
\$46,091 - \$52,524	5 (21.73)	
\$39,457 - \$45,162	4 (17.39)	1 (4.35)
\$29,955 - \$38,017		
Total	13 (56.52)	10 (43.48)

Area Conservation

The Area Conservation program is responsible for managing the implementation of the *Wet Tropics Management Plan 1998* (the Plan), including the assessment of permit applications under the Plan. The program is also responsible for advice on development proposals, the development of cooperative management agreements with landholders, working with local government and private landholders about weed and feral animal controls, and the negotiation of the annual service agreement with QPWS.

Plan administration

Land use activities within the WHA are regulated under the Plan which, to the extent of any inconsistency, overrides local government planning schemes. The majority of Plan administration comprises assessment and renewal of permit applications for activities such as construction and maintenance of roads, powerlines and water supplies; vehicular access in the WHA; and seed collecting. The program also develops policies and guidelines for the management of the WHA, including Codes of Practice and Environmental Management Plans for use as part of permit conditions for infrastructure in the WHA.

Assessments and permits for development applications for the WHA

Major development applications

The assessment of environmental impacts for nine major development proposals, including four major road works projects, took up a significant proportion of the program's resources throughout 2004-05. Permit applications were made for the following major projects (listed with the proponent and current outcome):

- Redevelopment of the Lake Eacham National Park day use area (QPWS - permit issued).
- Realignment of Wrights Creek Road (Eacham Shire Council - permit issued).
- Approval of an Environmental Management Plan as part of the maintenance permit for Southedge Road (Southedge Pastoral Company - application undergoing assessment).
- A major upgrade of the Kuranda Range Road (Department of Main Roads - application undergoing assessment).
- The proposed upgrade of the Kareeya to Innisfail powerline and assessment of options for proposed routes (Powerlink – application withdrawn due to a decision by the Australian Government under the EPBC Act to approve the proposed route outside the WHA and to decommission the existing powerline within the WHA).

- Dredging of Junction Creek adjoining Russell River National Park (Cairns River Improvement Trust – permit issued).
- A review of infrastructure maintenance permits, entailing updating of Road Corridor Environmental Assessments for all major highways through the WHA (Department of Main Roads - application undergoing assessment).
- Seed collecting in the WHA (DPIF - application undergoing assessment).

Minor and inconsequential activities

Activities deemed to be minor and inconsequential under the Plan do not require a permit to be issued. Some of the proposals assessed by the Area Conservation program during 2004-05 and deemed to be minor and inconsequential were (listed with proponent):

- Redevelopment of the South Wangetti Beach carpark (Douglas Shire Council).
- Replacement of the administration building and visitor centre at the Barron Gorge Hydro Power Station (Stanwell Corporation).
- The reconstruction of a cable suspension bridge within the Tully Training Area lease (Department of Defence).

QPWS permits

A large number of Wet Tropics permits are issued by QPWS, as an approved permit entity (or delegate) under Part 6 of the Plan. Almost all of the 572 permits issued by QPWS in 2004-05 were for the use of motor vehicles on presentation restricted and management roads. Five of these permits were issued for seed collecting and one for flying below 1000 feet over the WHA.

Rezoning applications

An application was received from QPWS for the rezoning of an area of Wooroonooran National Park in the WHA for the proposed construction of the Ma:Mu Canopy Boardwalk. The Authority's Board approved the rezoning in May 2005 and the application is awaiting endorsement by Ministerial Council.

Land dealings, development referrals and advice

Land dealings

In 2004-05 the program handled over 85 requests for advice on land dealings and development proposals within and adjacent to the WHA. A significant number of these referrals were received as a result of the extensive urban and rural residential development in the Mission Beach and Cairns areas. The program also provided advice to other government agencies and individuals about management of activities regulated in the WHA such as:

- grazing lease renewals and conditions.

- the condition of WHA roads and the opening and closing of seasonal roads (particularly the CREB Track).
- the location of the WHA boundary for individual properties.

Policy advice

Area Conservation staff also provided advice on the development of the following:

- A Water Use Resource Operational Plan for the Barron Gorge (DNRM).
- A policy for the use of 1080 for the control of feral animals (DNRM).
- A review of codes for ongoing clearing purposes in the Wet Tropics Bioregion (DNRM).
- Carrying capacity for the use of presentation restricted roads (QPWS).
- A draft management plan for the Blue Hole as part of a tenure review for the adjoining Flame Tree Road Reserve (Douglas Shire Council).
- Negotiations for the Eastern Yalanji ILUA.
- Negotiations over Management Agreements for Mona Mona and Buru, including facilitating measures to protect Kija (Roaring Meg Falls), a significant cultural heritage site.
- Cairns Hillslopes fire management planning.

Threat management

Weeds and feral animals

Area Conservation officers attended the quarterly FNQ Pest Advisory Forum and, where relevant, council pest meetings. The program gave advice on the development of pest management plans for local governments authorities. Officers also attended a best practice workshop for weed control run by DNRM for staff of QPWS and WTMA. These workshops are held annually and funded by the Authority under the WTMA-QPWS Service Agreement.

Area Conservation developed a policy for the use of 1080 for pig control in the WHA. The policy contains a Code of Practice to minimise threats to off-target species.

Area Conservation staff finalised a report on the extent and control of pond apple in the Wet Tropics region in October 2004. Pond apple is considered to be one



*Feral pig
(Photo courtesy of DNRM)*

of the worst weeds in Australia due to its invasiveness, potential to spread and economic and environmental impacts. The Authority coordinated research of the report over two years with NHT funding and in kind contributions from QPWS, local government and community groups.

In late 2004 the program also helped to produce control sheets for various weeds as a follow up to the production of a Weed Identification Pocket Guide.



Pond apple infestation (Photo courtesy of DNRM)

WTMA-QPWS Service Agreement

Each year the Authority negotiates a Service Agreement with QPWS Northern Region for services to be delivered by QPWS against funding provided by the State to the Authority. It is currently a Queensland Government requirement that funds provided by the EPA to the Authority for WHA management are returned to QPWS.

Despite repeated attempts, the Authority and QPWS were only able to reach agreement on \$1.32 million of the State's \$1.79 million funding contribution to the Authority. The inability to reach full agreement on services and products to be delivered was largely the result of the limited capacity for QPWS staff to undertake projects which fall outside broader state-wide protected area management priorities. The Authority has sought a review of current funding arrangements, including the requirement for all State funds to be directed to QPWS. This will be addressed as part of the intergovernmental agreement review.

Planning and Research

The Planning and Research program is responsible for land use planning, policy and research coordination. It is also responsible for an annual State of Wet Tropics Report and the management of geographic information systems (GIS).

Wet Tropics land use planning

Wet Tropics Plan Management Plan 1998 review

As required under the *Wet Tropics World Heritage Protection and Management Act 1993*, the Authority commenced a review of the *Wet Tropics Management Plan 1998* in November 2004. Public notices were placed in newspapers inviting submissions for the first formal stage of public consultation. A Plan review booklet was distributed outlining the review process and proposed changes to the Plan. The Authority also conducted numerous meetings with stakeholder groups. Over eighty formal submissions were received. The Authority is now considering submissions and preparing proposed Plan amendments for drafting before the second stage of formal consultation.

The Authority is also in the process of seeking an exemption for the Plan from automatic ten year expiry provisions of subordinate legislation, which operate under the *Statutory Instruments Act 1992*. The Authority has been liaising with QPWS about the State Forest transfer process and any implications from this process for the Plan review. The Plan review is scheduled for completion in 2007.

Wet Tropics Conservation Strategy

The Hon. Desley Boyle MP, Minister for Environment, launched the Conservation Strategy in September 2004. The strategy outlines conservation priorities for the WHA and emphasises the importance of conservation management both within and outside the Area. The strategy details the natural, cultural and socio-economic values of the Area. It discusses how best to address the various threats to the WHA's health and integrity, covering issues such as weeds, feral animals, forest fragmentation and restoration, endangered species, fire management, climate change and water flows.

Wet Tropics Natural Resource Management Plan

The Authority worked with the Rainforest CRC and the Far North Queensland Natural Resource Management Board (FNQ NRM Ltd) to help develop the Wet Tropics Natural Resource Management Plan and the Wet Tropics Aboriginal Cultural and Natural Resource Management Plan. The Authority provided expertise and advice on biodiversity conservation and management and monitoring and reporting on the state of the Wet Tropics.

Daintree Planning Group

The Authority continues to provide secretariat support to the Daintree Planning Group (DPG). Established by the Wet Tropics Ministerial Council, the DPG's role is to facilitate a cooperative approach between the three levels of government to implement the Daintree Futures Study. Recommendations from this Study cover a broad range of issues including pest control, sustainable agriculture, water quality, tourism, remote area power, private sector opportunities, land acquisition and other matters affecting integrated planning and management of the area. The DPG met eight times in 2004-05.



Daintree coast

Daintree priorities mapping project

In April and May 2005 the Authority, on behalf of the Daintree Planning Group, convened specialist workshops to update scientific and planning data for the Daintree lowlands. A series of maps identifying conservation and biodiversity values were generated from these workshops. These maps will help to ensure that the management efforts of both the public and private sector are focused on securing the protection of priority conservation values in the region.

Lorentz Strategic Plan

In June 2005 the Authority, in partnership with the Rainforest CRC, completed the Strategic Plan for the Lorentz National Park World Heritage Property, Papua, Indonesia. The Lorentz World Heritage Area is the largest protected area in South East Asia (2.5 million hectares) and shares a common ancestry with the Wet Tropics, including many related plants and animals.

This AusAID funded project was undertaken as part of the Australia – Indonesia Government Sectors Linkages Program. The project aimed to strengthen the capacity of local government, communities and World Heritage property managers, to participate in effective planning and management of Lorentz National Park World Heritage Area.

The Project comprised three key activities: an initial stakeholder consultative workshop in Papua (November 2002); training of stakeholder representatives in Cairns and the Wet Tropics WHA (February 2004); and a participatory planning exercise in Papua to develop the Lorentz Strategic Plan (June 2004). The activities were conducted in partnership with the Directorate-General of Forest Protection and Nature Conservation and UNESCO (Jakarta office).

The Lorentz Strategic Plan will be used to guide planning and management of the Lorentz World Heritage property over the next five years. A 'twinning agreement' to promote the exchange of World Heritage management skills is being progressed between the Authority and the Indonesian Ministry of Forestry and Nature Conservation.

Research, reporting and information delivery

Vegetation mapping

The 1:50,000 scale Stanton and Stanton vegetation mapping of the Wet Tropics Bioregion is near completion. All field mapping and GIS digitisation is now finalised. Final data verification will be completed in August 2005. The process of defining and reclassifying the vegetation codes to match statewide Regional Ecosystem mapping under the *Vegetation Management Act 1999* is also due to be finalised in August 2005. Data from this work is already proving valuable to guide decision-making at regional, local and individual property levels.



Bob Pettit, GIS unit

WETMAPS

The purpose of the Wet Tropics Mapping Project (WETMAPS) is to deliver conservation information, knowledge and advice, in a readily accessible and user-friendly format for planning and on-ground management. The information will be made available to land managers, operational staff, local governments, Rainforest Aboriginal people, conservation groups, and Wet Tropics landholders and neighbours.

The primary data source for this project is the Stanton and Stanton vegetation mapping and reports, which describe the individual vegetation communities, their condition and their conservation values. These reports also include recommendations for conservation planning and management of the Wet Tropics relating to these vegetation communities.

WETMAPS products will be accessible on the Wet Tropics website and will include the 1:50,000 Stanton and Stanton vegetation data and a range of maps developed using the vegetation data and reports. A database has been developed which will assist users to identify specific conservation issues described in the reports. The initial WETMAPS products are due for completion early 2006.

GIS delivery and Education Queensland

Teachers are increasingly using GIS as an educational tool to deliver complex layers of information, particularly in the area of natural resource management. As a result, the Authority has entered into an agreement with Education Queensland for the delivery of its GIS digital data for use in school projects. Under this agreement, the Authority's data was collated and made available to schools as a DVD for distribution by them or Education Queensland. Use of the GIS data will be linked to the Authority's development of a Wet Tropics World Heritage curricula and education kits for primary and secondary schools.

Research coordination

To fulfil and uphold the Authority's goal of becoming a best practice leader in World Heritage management and to achieve its monitoring and reporting responsibilities, the Authority must have access to the latest environmental research. To this end, the Authority has continued its representation on the Rainforest CRC at both Board and Executive levels. This provides the Authority with the opportunity to advise on its research priorities and identify collaborative opportunities for research coordination and cooperation associated with the WHA.

Visitor Monitoring System for the Wet Tropics World Heritage Area

In December 2004, the Authority's Visitor Monitoring System (VMS) for the WHA was finalised. Developed by the Rainforest CRC, in association with Tourism Queensland, the VMS comprises three components:

Volume 1 *Visitor Monitoring Procedure Manual*

Volume 2 *Visitor Monitoring from Pre-Destination to Post-Destination*, and

Volume 3 *Case Studies – Biophysical Assessment*.

The overall aim of the project was to design a robust, efficient, practical and cost effective monitoring system to assist managers to identify whether visitor management objectives are being met. Key elements of the VMS include: the matching of pre-destination marketing and visitor interests with site level planning and nature based tourism products; the engagement of the tourism industry, Aboriginal people and land managers to establish objectives for visitor site management; and the use of rapid assessments by rangers and tour operators. A number of visitor sites in the WHA will be selected as pilot sites to trial the VMS.

Feral deer research

In October 2004, the Authority secured Natural Heritage Trust (NHT) funds to commission research to assess the risk and potential impacts of feral deer becoming an established pest in the Wet Tropics. The funds will also be used to undertake an education program with deer farmers and the broader community about the need to prevent further introduction of feral deer. The outcomes of the project will be used to review the status of deer under various local and State legislation and to determine the best method of controlling feral deer on various land tenures within the Wet Tropics Bioregion. The project is due to be finalised in September 2005.

Phytophthora research project

The Authority's Stanton and Stanton vegetation mapping program located numerous small patches of dead rainforest across parts of the Area. Several species of phytophthora, including *Phytophthora cinnamomi*, have been identified from these dieback patches by researchers from the Rainforest CRC.

In July 2004 the Rainforest CRC was commissioned by the Authority to develop a program to monitor the recovery of rainforest patches suffering from dieback caused by *Phytophthora cinnamomi*. The program includes long term monitoring of dieback plots by QPWS ranger staff as part of the Service Agreement with the Authority.

State of the Wet Tropics Report

The Authority produced the 2003-2004 State of the Wet Tropics Report as required under section 63(1)(c) of Queensland's *Wet Tropics World Heritage Protection and Management Act 1993* and section 10 of the Commonwealth's *Wet Tropics of Queensland World Heritage Area Conservation Act 1994*. The Report was published as an appendix to the Authority's Annual Report and provided an update on the condition of the Area based on the more detailed Periodic Report published in 2003.

Aboriginal Resource Management

The Aboriginal Resource Management program is responsible for Aboriginal community liaison, policy and protocol development, cultural heritage management and the implementation of the Wet Tropics Regional Agreement. The program works closely with native title representative bodies, the Indigenous Coordination Centre (for Australian Government departments), Aboriginal local governments, local Aboriginal corporations, and negotiating teams and reference groups.

Partnerships with Rainforest Aboriginal people

Wet Tropics Regional Agreement

In June 2004 the Interim Negotiating Forum (INF) process between Rainforest Aboriginal and WHA Government representatives was completed. The INF process resulted in a Wet Tropics Regional Agreement between the 18 Rainforest Aboriginal tribal groups and the Queensland and Australian Government World Heritage Area management agencies. The Agreement was endorsed by Ministerial Council on 16 September 2004 and signed by Elders, Ministers and the Authority's Chairperson at Innisfail on 29 April 2005.

Around 400 people attended the signing ceremony. Key outcomes of the Wet Tropics Regional Agreement include:



L–R: Queensland Minister for Natural Resources and Mines, Stephen Robertson, Melvin Hunter (Djabugay), Queensland Minister for Environment Desley Boyle, Rhonda Brim (Djabugay) and Parliamentary Secretary to the Australian Minister for the Environment and Heritage, Greg Hunt.

- the establishment of the Aboriginal Rainforest Council (ARC), recognised by World Heritage management agencies as the peak organisation for land and cultural heritage matters in the WHA, including its recognition as a statutory advisory committee to the Wet Tropics Board.
- support to seek listing of the WHA on the National Heritage List as a precursor to potential nomination of cultural values for World Heritage listing.
- the appointment of a second Aboriginal Board Director of the Wet Tropics Management Authority.
- the development of detailed protocols and guidelines outlining how Rainforest Aboriginal people are to be involved in the range of management activities.

- support for improved training and employment opportunities for Rainforest Aboriginal people.
- support for long term contracts for the Authority's Community Liaison Officers (CLOs).
- recognition and protection of intellectual and cultural property rights and involvement in research.

The Regional Agreement reconfirms the Authority's obligations and commitment to cooperatively manage the WHA with Rainforest Aboriginal people. Implementation of the Agreement is well underway with the establishment of the ARC in September 2004 and the Rainforest Aboriginal Advisory Committee (RAAC) in November 2004. The ARC functions as the peak body for Rainforest Aboriginal involvement in land and cultural heritage matters in the WHA. The RAAC deals with issues specific to the Wet Tropics Management Authority.



An ARC meeting in progress

Research and monitoring activities

The Aboriginal Resource Management Program continued to provide strong support to the Rainforest CRC's Aboriginal collaboration and capacity building program.

Land use agreements with Rainforest Aboriginal people

The Authority is responsible for having regard to the traditions of, and working cooperatively with, Aboriginal people with interests in the WHA. In keeping with the principles and guidelines of the Wet Tropics Regional Agreement, the program is involved in the negotiation of Management Agreements and Indigenous Land Use Agreements (ILUAs) and developing Memoranda of Understanding with Rainforest Aboriginal people. These negotiations reconcile native title rights and community development aspirations within the Authority's statutory obligations to protect World Heritage values.

Indigenous Land Use Agreements

The Authority continued to play a major role in the Eastern Kuku Yalanji ILUA negotiations aimed at resolving native title, land tenure, land use and management arrangements within and adjacent to the northern region of the World Heritage Area. This included an assessment of the impact of ILUA proposals on management of the WHA and involved a major commitment of resources.

The Authority is also party to ILUA negotiations with Mandingalbay Yidinji people, EPA and DNRM to resolve use and access arrangements for National Parks and State Forests adjacent to the Yarrabah Local Government Area.

Cooperative Management Agreements

Discussions continued between the Authority, Djabugay Tribal Aboriginal Corporation, Department of Aboriginal and Torres Strait Islander Policy (DATSIP), Koko Muluridji Corporation and the Mona Mona community regarding the renegotiation of the Mona Mona Wet Tropics Management Agreement. As Trustee of the Mona Mona lands, DATSIP has taken the lead role in facilitating native title, tenure and management outcomes, with support from the Authority. The Authority has provided direction and advice on the process and assessments required under its legislation to progress construction of some infrastructure and buildings under the National Aboriginal Health Strategy.

Negotiations continued on the Buru (China Camp) Management Agreement with the Burungu Aboriginal Corporation, the Cape York Land Council, QPWS and the Authority. Within the context of the native title rights and interests of the Kuku Yalanji ILUA, the Buruwarra community's resettlement planning has been addressed. Cooperative planning and implementation of on-ground works for visitor management was undertaken at the Yalanji significant site, Kija (Roaring Meg Falls).

Memorandum of Understanding

Ngadjon-Jii Traditional Owners, the Environmental Protection Agency and the Authority continued implementation of the Ngadjon-Jii MOU. Implementation focussed on assisting Ngadjon-Jii people to utilise Envirocare funding for the design, creation and erection of interpretative signage for Ngadjon country.

Consultation and activities with Rainforest Aboriginal people

Community Liaison Officers

The Authority's Aboriginal Community Liaison Officers (CLOs) continue to play a vital role in engaging Rainforest Aboriginal people in WHA management. The key objectives of the CLOs are to inform Rainforest Aboriginal people and the ARC about the Authority's role and processes, to inform the Authority about Rainforest Aboriginal views and to raise community awareness of

Rainforest Aboriginal people's aspirations regarding management of the WHA. The Authority contracted the Girringun Aboriginal Corporation and the North Queensland Land Council to provide three CLOs to work from the Aboriginal Resource Management program to build relationships with Rainforest Aboriginal people in the northern, central and southern regions of the WHA. As of December 2004 all three CLO positions were contracted through the North Queensland Land Council. The Wet Tropics Regional Agreement recommends the continued employment of CLOs under long term contracts.

Consultation

The program has undertaken extensive consultation with Rainforest Aboriginal people and government agencies throughout the year:

- to finalise the Regional Agreement.
- to establish and support the Rainforest Aboriginal Advisory Committee (RAAC) and to organise three formal meetings.
- to consult and seek submissions from Rainforest Aboriginal people on the review of the *Wet Tropics Management Plan 1998*.
- to update the Authority's Rainforest Aboriginal contact database to ensure that appropriate Aboriginal people are regularly informed of Authority projects.
- to assist the EPA's consultation process for Rainforest Aboriginal people and Land Councils about the Wet Tropics State Forest transfer process.
- to ensure that the rights and interests of Rainforest Aboriginal people are included in the Authority's management activities. These included publications, permits, land dealings and assessments, and planning issues.

Land and Cultural Heritage Management

Development of appropriate strategies for land and cultural heritage management continued to be a focus of the program. Activities included:

- the development and implementation of the Wangetti Recovery Plan and interpretation opportunities.
- numerous native title claim mediations.
- development of interpretive signs for visitor sites and visitor centres.
- contributions to the 'Aboriginal Natural and Cultural Resource Management Plan' developed by the Rainforest CRC for the Wet Tropics NRM region.

Community Relations

The Authority has developed a successful partnership model to ensure that the community plays a vital role in the management of the WHA. The community relations program is central to the Authority's capacity building and cooperative management with the local community. The program runs advisory groups, appointed by the Authority's Board, to provide formal community involvement and feedback about management issues. The program is also active in numerous community education and engagement projects about the WHA and the role it plays in the life of the community.

Role in the life of the community

Community survey results

The Authority published a simple, easy-to-read summary of the key findings from its community attitudes survey. Funded by Tourism Queensland, the brochure, *Living with World Heritage*, was launched by the Queensland Minister for Tourism, the Hon. Margaret Keech MP. The survey results give an insight into the opinions of people living in the Wet Tropics region and the role the Area plays in their lives. The community attitudes survey included residents living in 70 regional towns and suburbs in the Wet Tropics region. A second survey on visitors was conducted at 10 key visitor sites in the WHA. The surveys were undertaken by researchers from the Rainforest CRC.

Visitor centres

The Authority maintained its support for visitor information centres and their WHA displays and interpretation. A Natural Heritage Trust grant was obtained to provide World Heritage and Rainforest Aboriginal information in a number of visitor information centres in the region. Consultation with visitor centre staff and Rainforest Aboriginal people took place for the new information panels which will be distributed to visitor centres in September 2005.

Johnstone Shire Handbook

In August 2004 a handbook for residents in the Johnstone Shire was produced and distributed free to all ratepayers and residents. The 40 page handbook was produced by the Authority, in partnership with the Johnstone Shire Council, to provide useful environmental advice to new landholders. Farmers, architects, government officers and many others contributed their ideas to the booklet. It includes sections on home design and construction, agriculture and nature conservation, weeds, feral animals and wildlife. The handbook was developed as a prototype, and the Authority hopes to reproduce the booklet for other local governments in the Wet Tropics region.

Australia's Tropical Rainforests Wet Tropics Magazine

A 16 page edition of Australia's Tropical Rainforests Magazine was published and distributed to regional visitor centres. The magazine included features about crocodiles and the mountains of the WHA. Another edition is due to be published in August 2005.

Cassowary Advisory Group

The Cassowary Advisory Group (CAG) advises the Authority on a range of cassowary conservation issues. Membership includes key community groups, wildlife parks, local authorities and government departments. The Authority provides secretariat support. The Group met in November 2004 and February 2005. Major issues dealt with by CAG included mapping of cassowary habitat, cassowary deaths, development proposals in the Mission Beach region and cassowary awareness education. CAG intends to establish a working relationship with the Australian Rainforest Foundation for cassowary conservation.

The 'Be cass-o-wary campaign'

Through NHT funding, CAG has launched a 'Be cass-o-wary' campaign to raise community awareness about the endangered species. The campaign was officially launched at the Cairns Rainforest Dome in December last year by the Hon. Desley Boyle MP, Minister for Environment. The aim of the awareness strategy is to encourage the community to help save the cassowary population in the WHA. There are only about 1,200 cassowaries left in the region.



*Environment Minister Desley Boyle
launches the Be cass-o-wary campaign*

The strategy includes the cassowary 'take care' bumper stickers, community service announcements on television and radio, cassowary bookmarks and cassowary stickers for school children.

CAG worked in conjunction with QPWS on the 'Be cass-o-wary' message and strategies. The 'Be cass-o-wary' media campaign was sponsored by WIN television, 4CAFM and The Cairns Post. Additional sponsorship came from the Australian Rainforest Foundation and the Cairns Rainforest Dome. The strategy was funded by an Australian Government Envirocare grant.



*WTMA Principal Conservation Officer,
Bill Carrodus plants trees at Wangetti*

Wangetti Recovery Group

The Wangetti Recovery Group, a community group comprising representatives of the Wangetti hamlet, Traditional Owners from the Yirrganydji and Djabugay clans and State Government agencies including WTMA, recently won the Douglas Shire Council's 'Developing Sustainable Communities Environment Award'. The group was formed to protect fragile beach rainforests which were being

degraded by unmanaged recreational use, and has succeeded in arresting further environmental damage by implementing a Recovery Plan.

Website

The website continues to be the Authority's conduit for Wet Tropics World Heritage information to the global community. It has been updated to reflect the changing environment and emerging issues of the Authority and the World Heritage Area. As part of its ongoing improvement, the Authority's website has become a major resource tool for its advisory committees. In an innovative step, agendas, minutes and board papers of the Wet Tropics Board and its advisory committees have been made available to members. Committee members can now review minutes and keep updated on events and issues discussed at other Wet Tropics meetings. The cross communication between advisory committees that has come from this initiative has been very valuable.

Tourism industry partnerships

Daintree Tour Guide Handbook CD

Due to popular demand, the Authority has reproduced 200 copies of the Daintree Tour Guides Handbook CD. The CD has become a valuable tool of trade for tour companies operating along the Daintree Coast. It contains over 100 pages of information about the Daintree's plants, animals and other special World Heritage features. The new stock has been funded with support from the Australian Department of the Environment and Heritage. Free copies are provided to companies with permits to operate in the WHA.

New World Heritage Image CD

A new CD featuring World Heritage images, maps and logos for the tourism industry was released by the Authority in May 2005. The CD is a joint initiative between the Authority, Townsville Enterprise and Tourism Tropical North Queensland, and was funded by Tourism Queensland. Copies of the CD were mailed to over 120 rainforest tour operators who bring visitors to the World Heritage Area, as well as regional visitor centres and other organisations.

Some of the many high quality images available on the new World Heritage Image CD.



Education

Newspapers in Education

In 2004 the Authority became an official sponsor of The Cairns Post Newspapers in Education supplement and worked with newspaper staff to develop a series of classroom-focussed environmental education columns, associated competitions and give-aways. They included subjects such as endangered species and urban biodiversity. Future columns will feature the unique relationships between rainforest animals and plants.

In 2005, the partnership continued to strengthen with the publication of a series of colourful rainforest activity sheets for the classroom:

- Rainforest Rave explains how tropical rainforest is formed and why it is important.
- Evolution in Motion illustrates why the Wet Tropics has the oldest rainforest on earth.

Due to strong demand an extra 5,000 copies of each poster were printed and distributed to regional visitor centres.

School curricula

Work has commenced on the development of accredited World Heritage curricula for primary and secondary schools. Teachers from James Cook University, Tinaroo Environmental Education Centre and Queensland Education were contracted to develop curriculum materials for preschool to year nine students. The curricula will be completed in December 2005 and presented on the Authority's website as a series of student-friendly learning activities. Teachers can adapt these resources to use for one day, one week or an entire semester of work. It is also proposed to replicate the materials on high-resolution DVD for distribution to schools.

The primary school project will introduce regional primary schoolchildren to tropical rainforest topics using local examples and activities in the WHA. It will provide regional environmental centres which host primary school groups with accurate and useful activities and lesson plans.

The lower secondary Studies of Society and the Environment (SOSE) project will focus on the nomination and listing of the WHA, the different community views about WHA management, threats to the WHA and case studies about controversial issues.

Promotion

Cassowary Awards

In December 2004, the Authority's annual Cassowary Awards honoured ten individuals for their significant contributions to the protection, rehabilitation and presentation of the WHA. The event, held at Paronella Park, was sponsored by Mark and Judy Evans and Tourism Queensland, and was attended by over 130 guests. The Hon. Desley Boyle MP, Minister for Environment, presented the awards. Each year the awards enable the Authority to acknowledge and celebrate those achievements made possible by the help of dedicated individuals and organisations within the community.



Dr Mike Hopkins and Jax Bergerson receive their awards from Environment Minister Desley Boyle.

The Cassowary Award recipients (and category) for 2004 were:

- Helen Adams (*Unsung Hero*).
- Maise Barlow (*Arts*).
- Jax Bergerson (*Community Conservation*).
- Milton Brim (*Rainforest Aboriginal Culture*).
- Margit Cianelli (*Unsung Hero*).
- Russell Fry (*Neighbour*).
- Mike Hopkins (*Science*).
- Terry and Cathy Maloney (*Nature Based Tourism*).
- Allen Sheather (*Community Conservation*).
- Bill Sokolich (*Government*).

Young Cassowary Award launch

A new award recognising young people who actively participate in conservation of the Wet Tropics World Heritage Area was launched in June 2005 by the Hon. Desley Boyle MP, Minister for Environment. The Young Cassowary Award is a new category in the annual awards event aimed at encouraging students and schools to become involved in conservation activities. Winning schools will receive a special award sponsored by The Cairns Post. Winning students will receive prizes donated by the tourism industry, and will be invited to present their project at a special awards ceremony with over 100 invited guests in November 2005.

Media relations

The Authority continued to attach a high priority to timely responses to relevant media issues. There was considerable coverage of a range of issues including:

- the release of the new World Heritage Image CD.
- the Wangetti Recovery Group receiving both the Community Group and the overall Outstanding Achievement Awards at the Douglas Shire Council Sustainable Communities Environment Awards ceremony.
- the Wangetti Reserve being targeted by locals and Conservation Volunteers Australia as part of Clean Up Australia Day.
- rezoning of the WHA for the Ma:Mu canopy walk.
- the first native title consent determination in the WHA handed to the Djabugay people – the traditional owners of the Barron Gorge National Park.

Media launches included a new youth category for the Cassowary Awards, the Regional Agreement signing ceremony, the 'Be cass-o-wary' campaign, the Pond Apple Report, the Wet Tropics Conservation Strategy, the Living with World Heritage brochure, an educational brochure about dieback and the launch of several other brochures and stickers.

**Annual Report
2004-2005
Appendices**

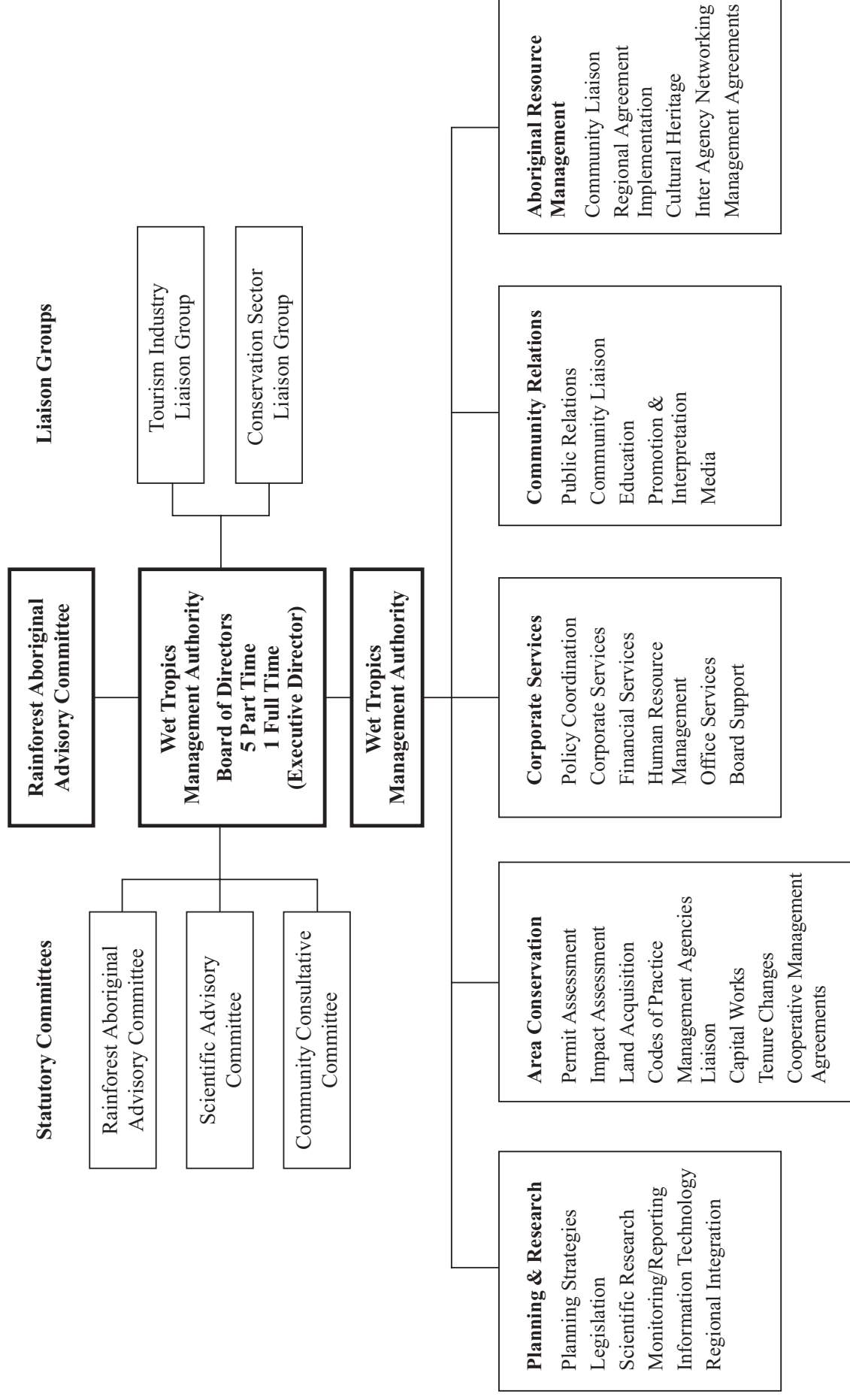
Appendix 1. Operating statement

Wet Tropics Management Authority Operating Statement

Controlled Revenue and Expenses	2004-05	2003-04
REVENUE	\$'000	\$'000
Revenue from Government		
Payments for Outputs	1,938	2,315
Asset Assumed/Liabilities transferred	0	0
Sub-total Government Revenue	1,938	2,315
Own Source Revenue		
User Charges	5	18
Grants and Other Contributions	3,061	3,052
Taxes fees and fines	0	0
Gain on disposal of fixed assets	0	0
Other Revenue	21	32
Interest	0	0
Sub-total Own Source Revenue	3,087	3,102
TOTAL REVENUE	5,025	5,417
EXPENSES	\$'000	\$'000
Operating Expenses		
Program		
Corporate Services	898	885
Aboriginal Resource Management	403	606
Area Conservation	2,145	2,551
Planning & Research	859	926
Community Relations	311	350
Daintree Rescue Package	394	166
Sub-total Operating Expenses	5,010	5,484
Non-Operating Expenses		
Depreciation	38	41
Equity Return	0	8
Asset Writedowns/Loss on disposal	0	0
Sub-total Non-Operating Expenses	38	49
TOTAL EXPENSES	5,048	5,533
OPERATING RESULT	-23	-116

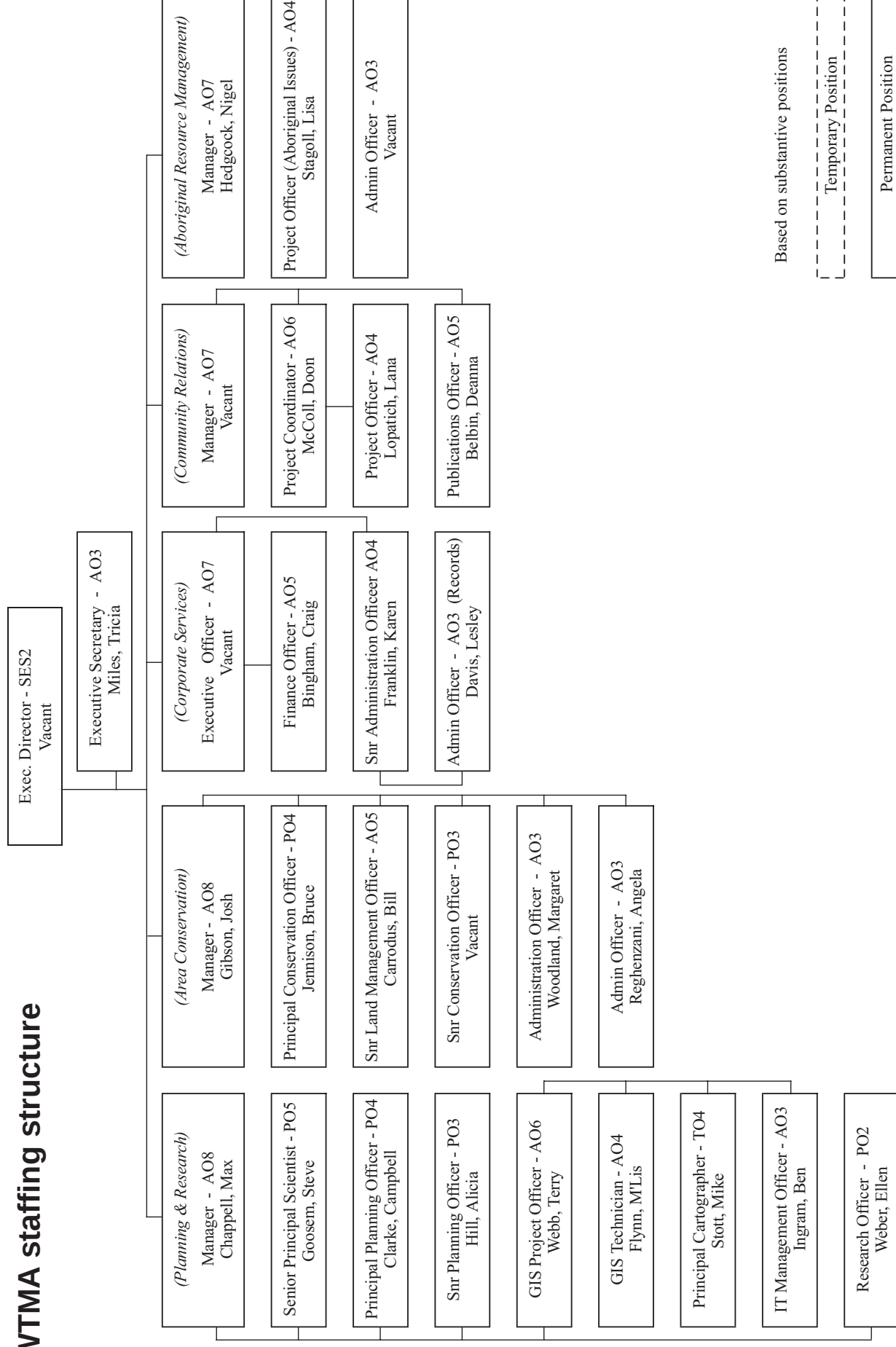
Appendix 2. Management structure

Wet Tropics management structure



Appendix 3. Staffing structure

WTMA staffing structure



Based on substantive positions

Temporary Position

Permanent Position

**State of the
Wet Tropics Report
2004 - 2005**

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Terms and abbreviations

Area	Wet Tropics of Queensland World Heritage Area
ARF	Australian Rainforest Foundation
ATFI	Australian Tropical Forests Institute
Authority	Wet Tropics Management Authority
Bioregion	Wet Tropics of Queensland biogeographic region
C4	Community for Coastal and Cassowary Conservation
CAG	Cassowary Advisory Group
CRC	Cooperative Research Centre
CSIRO	Commonwealth Scientific, Industry and Research Organisation
DMR	Department of Main Roads
DNRM	Department of Natural Resources Mines and Energy
DPIF	Department of Primary Industries and Fisheries
EMP	Environmental Management Plan
EPBC	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
FNQ	Far North Queensland
ILUA	Indigenous Land Use Agreement
INF	Interim Negotiating Forum
LGA	Local Government Authority
MOU	Memorandum of Understanding
NHT	Natural Heritage Trust
NRM	Natural Resource Management
QPWS	Queensland Parks and Wildlife Service
SLATS	The Statewide Landcover and Tree Study
TKMG	Tree Kangaroo and Mammal Group
TREAT	Trees for the Evelyn and Atherton Tablelands
WHA	Wet Tropics of Queensland World Heritage Area
WTMA	Wet Tropics Management Authority

1. Overview

1.1 Natural condition

A conclusion from the 2003 Periodic Report [3] was that the present condition of the Wet Tropics of Queensland World Heritage Area (WHA) has been at least maintained since listing. A wide range of management responses have been implemented to achieve a progressive enhancement of this condition in the longer-term.

- Natural processes are being relied on to gradually reinstate ecosystem composition, structure and function in previously logged forests.
- The extent of cleared areas has been significantly reduced as has the amount of internal habitat fragmentation within the WHA. This has resulted in a general enhancement of the integrity of the WHA.
- Systematic fire planning and management of the open forests and woodlands of the WHA is progressing on a more rigorous and scientific basis than at listing, but more needs to be learnt and the lessons applied.
- Rare and threatened species are afforded a higher level of protection than at listing. However, species recovery plans are few and their implementation slow.
- Since listing there has been a very significant increase in conversion of parcels of land to higher-order protection tenures which are unencumbered by leases or other use-rights.
- Invasive pest species including diseases, plants and animals are more prevalent now than at listing and their impact presumably more pervasive.
- Significant advances and improvements in the design, construction and maintenance standards for infrastructure within the WHA have occurred since listing.
- Climate change is a major emerging threat to the condition of the WHA and the survival of a large proportion of the WHA's unique biota.

1.2 Key pressures

Although many sound conservation activities, programs and policies are in place, there remain a number of longstanding key pressures which still prevail within the region with the potential to impact negatively on the WHA:

- The increasing regional population is manifested in an expansion and intensification of urban development, urban clearing, drainage and community infrastructure.
- Regional population growth, urban expansion and changing land uses are resulting in increasing demands for human water consumption, use and

disposal. Supplying this increasing demand while maintaining ecological systems, environmental water flows and water quality is a growing problem.

- Vegetation clearing and ecological fragmentation of natural habitats outside the WHA have the potential to adversely affect the WHA through the severing of wildlife linkages and ecological connectivity, alterations to hydrological and fire regimes and increased invasion by exotic organisms.
- Internal fragmentation of large blocks of rainforest by a network of cleared powerline and road easements is a major threatening process within the WHA.
- The implementation of species recovery plans and ecosystem repair activities are not presently being resourced adequately.

1.3 Role of the WHA in the life of the community

Over the life of the WHA there have been marked improvements in community awareness and attitudes about the WHA and the benefits it provides. Community participation in WHA management has also prospered. In particular:

- community attitudes surveys have shown a significant increase in support for the listing and the management of the WHA.
- a wide range of educational materials about the WHA are now available in formats such as booklets, CDs and web sites.
- additional visitor facilities have been constructed to cater for the growing tourism industry. However, some presentation roads have been closed due to lack of maintenance.
- there has been an increase in the participation of Aboriginal people and the broader community management and conservation of the WHA and surrounds.

To enhance the role of the WHA in the life of the community, the Authority will continue to:

- foster community participation and engagement in conservation of lands outside of the WHA to enhance ecological connectivity and address the range of other threats to the WHA.
- undertake further economic, sociological and ecological research to demonstrate the benefits of the WHA to the community.
- promote Aboriginal participation in all aspects of WHA management.
- seek additional funds and community contributions to maintain roads and visitor facilities.

2. Background

2.1 Reporting obligations and framework

Reporting on the state of the Area is an annual statutory requirement under section 63(1)(c) of Queensland's *Wet Tropics World Heritage Protection and Management Act 1993* [1] and section 10 of the Commonwealth's *Wet Tropics of Queensland World Heritage Area Conservation Act 1994* [2].

Section 63(1) states that "The Authority must, within 3 months after the end of each financial year, give to the Minister and the Commonwealth a report on –

- (a) the administration of this Act during the year; and
- (b) financial statements for the year; and
- (c) the state of the Wet Tropics Area.

Every six years the Authority is also obliged to prepare a detailed Periodic Report on the state of conservation of the World Heritage Area in accordance with Article 29 of the World Heritage Convention and the decisions of the Eleventh General Assembly of States Parties and the 29th General Conference of UNESCO.

In 2003 the Authority prepared its first Periodic Report on the state of conservation of the Wet Tropics of Queensland World Heritage Area, including a revision of the nomination dossier [3].

The Periodic Report serves four main purposes. It provides:

- (a) an assessment of the application of the World Heritage Convention by the Authority.
- (b) an assessment as to whether the World Heritage values as inscribed on the World Heritage List are being maintained.
- (c) up-dated information about the WHA and records changing circumstances and state of conservation of the WHA.
- (d) a mechanism for regional cooperation and exchange of information and experiences between different World Heritage properties.

The State of Wet Tropics Report provides information on activities, organisations and pressures from a regional perspective which either directly or indirectly may impact on the WHA and its natural values. For historical background the reader is directed to the Wet Tropics Periodic Report [3] which provides comprehensive information on pressures and management responses since the Area's listing in December 1988. This annual State of Wet Tropics Report primarily focuses on management initiatives introduced or progressed during the 2004-2005 financial year. Additional detail about the Authority's activities can be found in the Annual Report.

3. State of biodiversity

3.1 Ecosystems at risk

Background

The concept of regional ecosystems now forms the scientific basis of Queensland's conservation planning, biodiversity management [4] and vegetation management legislation and guidelines [5]. Regional ecosystems are vegetation communities consistently associated with a particular combination of geology, landform and soil within a bioregion, and are being increasingly used to describe, protect and manage wildlife habitat. Each regional ecosystem supports its own unique biodiversity values and the endangerment of any regional ecosystem represents the endangerment of a complex series of interrelationships and associations between plants and animals and their environment which are different to those found in any other regional ecosystem.

The conservation status of each regional ecosystem is based on its current extent as a proportion of what once existed prior to broadscale bioregional clearing. Regional ecosystems are classified as:

Endangered

- less than 10 percent of the pre-clearing extent remains, or
- 10-30 percent of the pre-clearing extent remains (if the area of remnant vegetation is less than 10,000ha).

Of concern

- 10-30 percent of the pre-clearing extent remains, or
- more than 30 percent of the pre-clearing extent remains (if the area of remnant vegetation is less than 10,000ha).

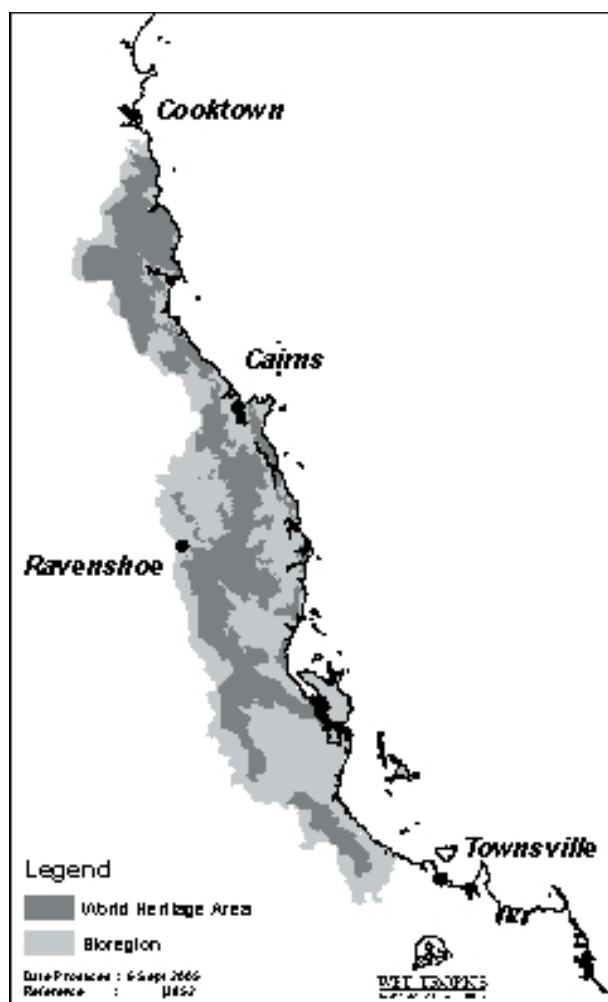
Not of concern

- more than 30 percent of the pre-clearing extent remains, and the area of remnant vegetation is more than 10,000ha.

Although being Queensland's third smallest bioregion, the Wet Tropics has a very high diversity of regional ecosystems, with a disproportionately large percentage having an 'endangered' or 'of concern' conservation status [4].

Figure 1 depicts the 894,420ha WHA in relation to the larger, 1,976,000ha Wet Tropics Bioregion. The data presented refers to the whole Bioregion which includes the smaller, less disturbed WHA.

Figure1. Wet Tropics Bioregion and Wet Tropics WHA



Summary data

Table 1. Conservation status of Wet Tropics regional ecosystems

No. RE (Total)	No. Endangered	% Endangered	No. 'of concern'	% 'of concern'
105	24	23	17	16

Eighteen of the 24 endangered Wet Tropics regional ecosystems occur on the coastal lowlands as fragmented remnants, while a further five are from basalt landscapes on the Atherton Tableland [6]. Most have attained 'endangered' status due to agricultural land clearing outside of the WHA and most also have naturally

restricted distributions. A further 17 regional ecosystems have been classified as 'of concern' including once widespread types that have been extensively developed for agriculture, and some open forest systems that are rapidly changing structure and floristic composition due to altered fire regimes [6].

Of the endangered regional ecosystems:

- six are not represented within the WHA at all.
- five have less than 100ha within the WHA.
- seven have between 100ha and 500ha protected within the WHA.
- six have more than 500ha protected within the WHA.

Recent legislation and government policy has significantly increased the level of protection for endangered and 'of concern' regional ecosystems, however, these initiatives have not altered their condition, with ecosystems still being highly fragmented. Pressure on these areas is increasing due to surrounding land clearing and other threatening processes, particularly on the coastal lowlands.

Management initiatives (2004-2005)

- Significant work on a major review of Wet Tropics regional ecosystem descriptions and mapping was undertaken in 2004-2005. This revision will be completed by the Queensland Herbarium in September 2005 based on the detailed regional vegetation mapping program being undertaken by the Authority. The Authority's vegetation mapping program [7], now being finalised, has been an eight year commitment by the Authority and provides a very detailed and up-to-date coverage of vegetation community types and their ecological condition for the entire Wet Tropics Bioregion.



Tchupala Falls

- The Queensland Government passed legislation in 2004 to phase out broadscale clearing of remnant vegetation by December 2006. The *Vegetation Management and Other Legislation Amendment Act 2004* has significantly changed Queensland's tree clearing laws. It incorporates the tree clearing provisions of the *Land Act 1994* and the *Vegetation Management Act 1999* into a single piece of legislation for both leasehold and freehold land. Vegetation in urban areas is protected if it is 'endangered' on freehold land, or if it is 'endangered' or 'of concern' on leasehold land.
- Mabi forest (regional ecosystem 7.8.3) on the Atherton Tablelands, is recognised as an endangered 'ecological community' under the Commonwealth's EPBC Act and a recovery plan is currently being developed and restoration plantings implemented.

3.2 Species at risk

Background

In Queensland species considered 'at risk' are often referred to as 'rare and threatened' species. State-listed rare and threatened species [8] are afforded statutory protection under the *Nature Conservation Act 1992* [9]. Threatened species encompass the categories of extinct, endangered and vulnerable. A species is designated as vulnerable when there is strong evidence that it faces a high risk of extinction in the medium term, and endangered if it faces a very high risk of extinction in the near future. A species is classed as extinct if there is no reasonable doubt that the last member of the species has died. Rare species are not presently threatened but include species with small geographic ranges or low local abundances, patchily distributed within their ranges. Because of these attributes, rare species are often a primary focus of conservation planning and monitoring even when no obvious threats to their survival are apparent.

Although the number of species considered to be at risk are only a small part of the region's overall biological diversity, a decline in these species threatens ecological processes and can point to a wider decline in biodiversity. While representing only one percent of the land area of Queensland, the Wet Tropics has the highest number of species considered to be at risk of any bioregion in Queensland. The WHA thereby plays a very important role in the conservation of many of the listed species.

Summary data

Table 2: Rare and Threatened Species of the Wet Tropics Bioregion

Group	Extinct	Endangered	Vulnerable	Rare	Total
Wet Tropics animals	0	19	21	53	93
Wet Tropics plants	20	35	51	253	359
Queensland animals	7	59	77	143	286
Queensland plants	27	149	279	696	1151
Wet Tropics R&T animals as a percent of State total	0%	32%	27%	37%	33%
Wet Tropics R&T plants as a percent of State total	74%	23%	18%	36%	31%

Endangered animals include seven frog species, six mammals and six birds. A further 20 vertebrate species and one invertebrate species are classified as vulnerable [6].

The high proportion of the State's presumed extinct, endangered and vulnerable plants in the Wet Tropics reflects the vulnerability, small population size and restricted distribution of many of the region's locally endemic plants and the pattern and extent of past habitat clearing.



The decline and disappearance of the region's frog populations has been catastrophic. Several regionally endemic upland stream dwelling frogs have not been able to be located for several years. The recently discovered primary cause of these mass frog mortalities is chytrid fungus disease which is widespread throughout the Bioregion. A range of other amphibian diseases also appear to be affecting the region's frogs.

Declines in the region's adult cassowary population continue due to the cumulative effects of lowland habitat clearing, in particular, and mortality caused by collisions with vehicles, especially in the Mission Beach district. Stress, disease and dog attacks may also be contributing factors in their decline .

Regional Recovery Plans are presently in place for eight frog species [10] [11], the northern bettong [12], the mahogany glider [13], the southern cassowary [14] and cave-dwelling bats.

No systematic recovery planning for any plant species has been undertaken despite the Bioregion's extremely high record of recent plant extinctions.

Management initiatives (2004-2005)

- Recovery Plans have been prepared for the spotted-tailed quoll and spectacled flying-fox but have yet to be endorsed. A draft Conservation Plan for the mahogany glider has been prepared under the *Nature Conservation Act* and a Conservation Plan is also being developed for flying-foxes.
- Many key populations of locally restricted endemic, rare and threatened plant species are being conserved through a coordinated Daintree lowlands land acquisition program.
- The Douglas Shire Council, with the support of the Queensland Government, imposed a temporary planning instrument on their proposed Shire Planning Scheme for the Daintree area. The temporary planning instrument effectively places a moratorium on development and prevents speculative building applications pending final decisions on their new planning scheme.
- The Authority's Cassowary Advisory Group (CAG) in conjunction with QPWS launched a 'Be cass-o-wary' campaign in December 2004 to raise community awareness about the endangered cassowary.
- Fauna friendly road design improvements are being progressively implemented including purpose-built tunnels under roads and canopy bridges above roads, traffic calming designs, fencing to funnel cassowaries away from roads and into culverts, elevated dry passageways retrofitted to some large under road culverts and a range of newly designed awareness signage. These initiatives have mainly occurred in the Mission Beach and Palmerston areas and should benefit cassowaries, mahogany gliders and tree kangaroos in particular.



*Faunal underpass, East Evelyn Road.
(Photo: Jonathon Munro)*



Faunal overpass, a Herbert River ringtail possum crossing a rope bridge. (Photo: Nigel Weston)

- Research by James Cook University into chytrid fungus disease as the key threatening processes endangering frogs is progressing under a \$1.6 million Natural Heritage Trust grant.
- A range of research activities are being undertaken by Rainforest CRC scientists on the ecology, distribution and physiology of threatened species of frogs, upland possums, other small mammals including the spectacled flying fox, northern bettong and tree kangaroos and birds such as the cassowary.
- The blue tassel fern (*Huperzia dalhousieana*) last recorded 26 years ago and considered extinct was rediscovered by James Cook University researchers in 2004.
- As part of the WTMA-QPWS Annual Service Agreement for 2004-2005:
 - A rapid response program was developed for cassowary management in the Mission Beach, Daintree and Tablelands areas.
 - A new cassowary protection program was instigated in the Daintree area in collaboration with the Douglas Shire Council.
 - Four satellite and 16 radio transmitters were attached to flying foxes to better understand their ecology, behaviour and movement patterns.
 - Fox surveys in endangered northern bettong habitat were completed.
 - Genetic analysis of the endangered mahogany glider was commenced.
 - Ongoing monitoring programs for endangered frogs, northern bettongs and mahogany gliders were completed as scheduled in recovery plans for these taxa.

3.3 Land tenure within the World Heritage Area

Background

The WHA includes within its 3,125km boundary almost 730 separate parcels of land comprised of a variety of land tenures including National Park, Forest Reserve, State Forest, Timber Reserve, Unallocated State Land, Leasehold and Freehold. A corresponding range of government agencies and private land holders have responsibilities for managing these tenures under a range of legislation. Although World Heritage listing does not affect land ownership, the *Wet Tropics Management Plan 1998* [31] does regulate activities in the WHA across all tenures.

National Park status provides the highest level of nature conservation tenure, while Freehold and Leasehold tenures are associated with a range of landuse rights which provide lower levels of statutory protection for nature conservation.

Summary data

The relative proportions of the WHA under various tenures are: National Park (32%), Forest Reserve (29%), State Forest (10%), Timber Reserve (7%), Unallocated State Land (7%), Freehold and similar (2%), various reserves and dams (1%) and rivers, roads and esplanades (1%). There are 28 Grazing Authorities (non Freehold) current within the WHA of which 15 will expire before 2010. The longest running Grazing Authority will expire in 2037.

The increase in higher order land protection within the WHA since listing has been significant. At the time of listing (December 1988) only 14 percent of the WHA was National Park compared to 32 percent at present.

Since November 2000 a process has been in place to progressively transfer State Forests and Timber Reserves in the Wet Tropics to one of five protected area tenures under the *Nature Conservation Act 1992*. This tenure transfer will finalise a long-standing commitment by the Queensland Government to provide a secure and high level conservation tenure for significant lands within and adjacent to the WHA. The tenure transfer will result in increased protection for nearly 50 percent of the WHA. Parts of some forest reserves located outside the WHA such as the Mount Windsor Forest Reserve have been included in the transfer process due to their high conservation values.

Stage 1 of the transfer process was completed in September 2001, when a total of 324,000ha of State Forests and Timber Reserves were transferred to Forest Reserve tenure pending eventual conversion to National Park. Stage 2 resulted in a further 141,900ha being gazetted in May 2003. The final Stage 3 tenure conversion involves a further 34,000ha of State Forests and 38,000ha of Unallocated State Lands. Over 70 percent of the WHA will eventually be managed as National Park and other protected areas when the tenure conversion process is completed.

Land unencumbered by leases has also been substantially reduced from 16 percent at the time of listing to 11 percent.

Management initiatives (2004-2005)

- A 10ha site within the WHA, consisting of freshwater swamps and complex sand dune systems near Russell Heads about 45km south of Cairns, was acquired by the Commonwealth and Queensland Governments in July 2004. The site was gazetted in the 1800s as the township of Woolanmarroo but was never developed. This is the only area within the Bioregion where a wide variety of wetland ecosystems can be guaranteed long-term survival through protection of their total catchment area. The property comprised 98 freehold lots which had been zoned 'rural' by the Cairns City Council. The previous owner of the land purchased the lots almost 30 years ago and his decision not to develop the site ensured that it was kept in its natural state and retained its conservation values. It is currently in the process of being converted to National Park.

- Consultation on the Stage 3 transfer process continued with Traditional Owners and the community, particularly with respect to access, future use and proposed ultimate tenures. There are also a range of other outstanding issues to be determined including activities such as seed collection, horse riding and bee keeping. QPWS is hopeful that parts of the Stage 3 gazettals will proceed in December 2006.
- As part of the State Forest Transfer process, QPWS is negotiating with lease holders to phase-out existing grazing leases or to transfer to a new lease under the *Nature Conservation Act 1992*.

4. Pressures

4.1 Climate change

Background

Climate change is emerging as a major threat to the biodiversity values of the WHA. The regional effects of climate change remain uncertain. However, there is now scientific consensus that changes in rainfall patterns, cyclone activity and periods of climatic extremes are inevitable and are already underway.

As climate warms, the preferred climatic conditions for a species will shift to higher altitudes and its survival will depend on both its ability to relocate and on the availability and accessibility of alternative areas with suitable habitat. The disruption and fragmentation of wildlife habitat corridors by human activities will also impact on the ability of organisms to move to new areas in response to climate change. Urban development, agriculture, pastoralism and infrastructure corridors such as wide powerline clearings and highways act as barriers, preventing the movement of many species to new more favourable areas. Rainforest species which are dependent on canopy cover will be especially vulnerable to the effects of such landscape fragmentation. Computer simulations suggest cloud bands will shift upwards on tropical mountains by hundreds of metres during the dry season [25] with upland nodes of endemism likely to be particularly susceptible to climate change effects in the near future [26].

Biodiversity, locally endemic and spatially restricted species that are keystone elements of the WHA's World Heritage values will be under severe pressure over the coming decades due to the predicted rapid rate of climate change and the associated increased frequency of severe climatic events such as cyclones, floods and droughts.

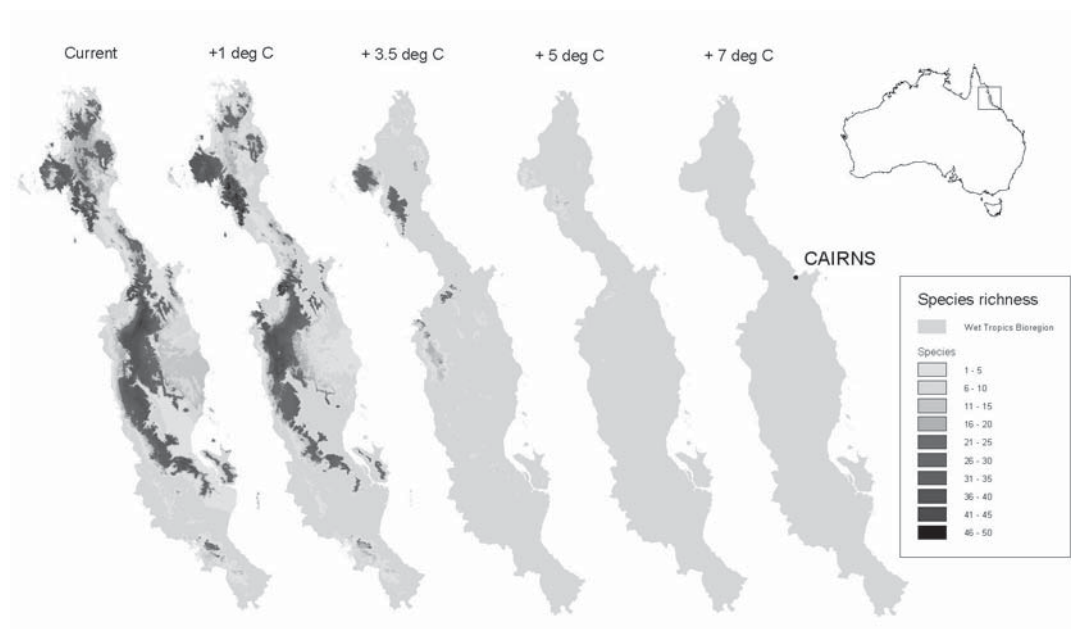
Summary data

Global warming has the potential to decrease the available habitat for many endemic species adapted to the cooler wet upland and montane rainforests [27]. The Rainforest CRC [28] has identified seven frog species, five mammal species, three bird species and three skink species which are predicted to lose over half their present core habitat with only a 1°C temperature increase. Increased carbon dioxide levels are predicted to reduce the nutritional value, increase the toughness and reduce the digestibility of foliage many vertebrate and invertebrate animals rely on. Seasonal changes may affect plant reproduction cues and fire regimes and increase the vulnerability of ecosystems to invasion by feral animals, weeds and pathogens.

By 2100 it is predicted that coastal north east Queensland will be warmer by 1.4 to 5.8°C with a plus 4 percent to a minus 10 percent change in rainfall per degree of warming, depending on location [29]. Current computer modelling simulations (**Figure 2**) predict the loss of up to 66 percent of all the WHA's locally endemic vertebrate species over the next 50 to 100 years as a consequence of the current trends in climate change[30]. The impacts of internal habitat fragmentation

as barriers to movement and migration are expected to exacerbate this impact in addition to assisting accelerated pest invasions and providing conduits for increases in fire risk.

Figure 2. Geographic pattern of species richness of regionally endemic rainforest vertebrates at varying temperature scenarios predicted to 2100 [27].



The effects of climate change, particularly with respect to increases in extreme El Nino-like weather conditions, have been more evident since listing. But it is our awareness of the issue and its potential impacts that has increased dramatically since listing.

Management initiatives (2004-2005)

- The Rainforest CRC has commenced a program of research to determine feasible proactive regional-scale management responses to predicted climate change. This research program will also provide a better idea of:
 - what species and ecological communities might be most at risk from accelerated climate change;
 - where the threats might be greatest;
 - the long term effects of these threats;
 - how climate change might interact with other threats such as clearing, fragmentation, fire, weeds and feral animals; and
 - whether or where some areas may provide continued habitat or new areas of habitat in the future.

- The Authority's Conservation Strategy [19] outlines a range of management, policy, research and educational priorities relevant to this emerging issue.
- Educational campaigns and public lectures by conservation groups, academics and the local media have resulted in much greater awareness of the climate change issue. The climate change message has been reinforced by the recent prolonged drought, enforced water restrictions and unusual, widespread bushfires on the coastal mountain ranges surrounding Cairns in particular.

4.2 Regional growth

Background

Regional population

The Wet Tropics is the most populated region in tropical Australia [15] with most inhabitants living within 50km of the WHA's boundaries in the major cities of Cairns and Townsville, smaller coastal towns and the closely settled farming areas of the Atherton Tableland. Development associated with a rapidly increasing regional population is leading to greater urbanisation and subsequent increases in demand for energy supplies, telecommunication facilities, the upgrading of transport corridors and water supplies.

The increasing regional population is manifested in an expansion and intensification of urban development, urban clearing and community infrastructure. A number of the areas identified in the FNQ Regional Plan [40] as priority biodiversity areas such as the Daintree-Cape Tribulation coastal strip and the Mission Beach and Kuranda areas are all parts of the region subject to rapid urban growth.

Vegetation clearing

Most of the region's extensively cleared coastal lowlands are freehold agricultural land. Similarly, the fertile soils and gentle terrain of the basalt tablelands led to widespread selective clearing of this landform from the time of European settlement of the region. As many areas have already been extensively cleared, even small amounts of additional clearing of some habitat types can have a relatively high impact on biodiversity. The richest, highest quality habitats are typically cleared first and most extensively. Many mammal and bird species prefer these fertile habitats [16] and, even if the overall level of clearing is not high, their local populations are rapidly depleted or even lost.

Although the clearing data presented here relate to areas outside of the WHA itself, regional patterns and trends in clearing and land uses surrounding the WHA are underlying threats to the long-term integrity of the WHA. Some of the associated impacts include loss, fragmentation and degradation of habitat, severing of wildlife corridors, reduction in habitat refuges, and increased demand for water, reduced water quality, changing water tables and introductions and spread of pest plants, animals and diseases. The WHA is not one continuous block and there is

particular concern that clearing patterns may adversely affect the integrity of the WHA by severing ecological connectivity between areas of World Heritage.

Summary data

Regional population

- The region's population increased by 3,137 from 208,290 to 211,427 people in the year to June 2004, representing an annual growth rate of 1.5 percent [17].
- Cairns City had the largest annual population change of any local government area outside South East Queensland in the year to June 2004 growing by 2,800 people to have a population of 125,000 [17].
- Five of the region's LGAs recorded positive growth rates: Atherton, Cairns, Cardwell, Douglas and Herberton [17].
- In the year to December 2004, new dwelling approvals in the region (2,394) were up 36.3 percent on the previous year's total of 1,757 [17].

Most of the growth in the regional population has occurred since the early 1970s. Between 1947 and 1971 the population increased by 32,980 persons, while between 1971 and 1996 the population more than doubled. By the year 2016, it is projected that the population will increase to 263,890 persons.

Vegetation clearing

The Statewide Landcover and Trees Study (SLATS) [18] monitors tree clearing in Queensland using satellite imagery [18]. For the period 1991 to 1995 the clearing rate for the entire Wet Tropics region averaged 3,583ha per year reducing to 1,275ha per year for the period 1997 to 1999. Between 1999 and 2001 the average annual clearing rate was 1,070ha per year.

Table 4. Annual rate of Bioregional forest conversion 1997 - 2003 (km² per year) [18]

<i>Period</i>	<i>Pasture</i>	<i>Crops</i>	<i>Forestry</i>	<i>Infrastructure</i>	<i>Settlement</i>	<i>Total</i>
1997-1999	4.48	7.23		0.78	0.27	12.75
2000-2001	7.33	0.67	0.69	1.08	0.30	10.07
2001-2003	6.83	1.88	1.31	0.46	0.21	10.69

The rate of clearing of woody vegetation as measured by SLATS [18] increased during the first half of the 1990s in the lead-up to the introduction of the *Vegetation Management Act 1999*. The overall rate of broadscale tree clearing has declined very significantly in recent times.

Table 5. Rate of clearing 1991-2003 for the Wet Tropics Bioregion

<i>Period</i>	<i>Rate of clearing (ha/year)</i>
1991-1995	3583
1997-1999	1275
2000-2001	1007
2001-2003	1069

It has been conservatively estimated that land clearing within the region for the period 1999-2001 resulted in the direct loss of habitat for 54,000 mammals per year [16] and the loss or displacement of an estimated 29,000 birds per year [16] in addition to the destruction of an estimated 350,800 open forest and woodland canopy trees, 383,600 rainforest canopy trees and 251,200 wetland canopy trees [16].

New clearings within the WHA since listing in December 1988 cover a total area of 101ha. Eighty-five hectares occurred on freehold land prior to the commencement of the *Wet Tropics Management Plan 1998*, with most of the remaining 16ha associated with the provision of community infrastructure.

Management initiatives (2004-2005)

- The Wet Tropics Conservation Strategy [19], released by the Authority in September 2004, has identified the regional rehabilitation priorities for landscape linkages, riparian zones and wetland areas.
- The Wet Tropics Natural Resource Management Plan launched in 2004 [20] identifies key natural resource management priorities within the region. This plan and a Regional Investment Strategy form the basis for allocation of Commonwealth funding under the Natural Heritage Trust (NHT) and other investment in the region.
- In 2004 the Queensland Government passed the *Vegetation Management and Other Legislation Amendment Act 2004* to end broad-scale clearing, halt clearing of endangered vegetation on all Freehold lands (including urban areas) and to halt clearing of both endangered and 'of concern' regional ecosystems on all leasehold lands by 2006. This amendment affected both the *Land Act 1994* and the *Vegetation Management Act 1999* which required clearing of other vegetation on freehold lands to be assessable development under the *Integrated Planning Act 1997*. Applications for clearing on relevant State and Freehold land are now code assessable under State legislation. The code provides performance criteria and acceptable solutions that achieve the purpose of the *Vegetation Management Act 1999*. The code for the Wet Tropics identifies the need to maintain important landscape linkages, wetlands and riparian corridors, and essential habitat for cassowaries and mahogany gliders.

- QPWS continued rehabilitation activities within the WHA, including ongoing replanting to re-establish ecological connectivity between the Mission Beach coastal lowlands to the Tablelands along the Walter Hill Range.
- Tree planting continued at Peterson Creek which is an important ongoing landscape corridor project located on the Atherton Tableland. This project is a collaborative effort by the community group TREAT and QPWS.
- Four Nature Refuges were gazetted in the region during 2004-2005, three on the Tablelands and one in the Mossman area. It is expected that substantially more Nature Refuges will be gazetted in the coming year.

4.3 Landuse activities

Background

Grazing

The grazing of stock is generally incompatible with the goals of World Heritage management. Although the most significant problems created by grazing animals within the WHA are those of feral cattle, the grazing of domestic herds is also causing serious problems in some areas. The potential impacts of grazing include:



Photo courtesy DNRM

- modifications to vegetation structure and floristic composition of the understorey and ground cover.
- reduced habitat diversity.
- initiation and exacerbation of soil erosion and consequent effects on water quality.
- introduction and spread of invasive weeds, particularly exotic pasture grasses and legumes.

- alteration of natural fire regimes.
- impacts of fencing, mustering activities, access roads and other infrastructure.

Tourism

The Wet Tropics region is a primary tourist destination. The tourism industry not only contributes significantly to the local and regional economy but also plays an important role in presenting the WHA and explaining its World Heritage values to visitors. Increased visitation does however place greater demands on the WHA for recreation and tourism infrastructure such as scenic roads, walking tracks, more developed visitor sites, camping grounds, picnic areas, lookouts and other constructed facilities. There is concern about the impact high concentrations of visitors may be having to certain parts of the WHA, particularly along the coast between Cairns and Cape Tribulation.

To ensure tourism use of the WHA is managed sustainably, the Authority has established a Tourism Industry Liaison Group with representatives drawn from regional tourism associations to improve communication with the industry. In August 2000 the Authority released the Wet Tropics Nature Based Tourism Strategy [23] which now provides the basis for tourism management in the WHA. In November 2001 the Authority released the Wet Tropics Walking Strategy [24] which identifies over 170 different walks in the region and aims to provide a coordinated network of walking tracks throughout the WHA.

Summary data

Grazing

Grazing, under formal tenure, is presently occurring on 30 grazing properties that make up approximately eight percent of the WHA. These include the following tenure categories:

- 15 Special Leases.
- 7 Pastoral Holdings.
- 3 annual Occupation Licenses.
- 1 Non Competitive Lease.
- 2 Stock Grazing Permits.
- 2 Freehold properties.

Tourism

The Wet Tropics region has experienced substantial increases in both domestic and international visitors over the past two decades. The major tourist destination at present is the Great Barrier Reef, but substantial numbers also visit the WHA with 45.6 percent of visitors nominating a rainforest experience as one of their three main reasons for visiting the region [46].

Management initiatives (2004-2005)

Grazing

- In 2004 the WTMA Board adopted a general policy to have grazing phased out in the WHA except where it can be demonstrated the grazing activity is beneficial to World Heritage management and no prudent and feasible management alternatives are available. The Authority therefore generally opposes the renewal of grazing authorities or expansion of grazing activities within the WHA unless a benefit to WHA management can be demonstrated. Some grazing is also being phased out or leases renegotiated under the State Forest transfer program.

Tourism

- The Authority works closely with QPWS and the tourism industry to promote presentation opportunities in the WHA. Initiatives in 2004-2005 included the opening of the Misty Mountain trail network, progress on the Great Walks project and further planning of the Ma:Mu canopy walkway for the Palmerston section of the WHA. These initiatives will help reduce visitor pressures on some of the more traditional tourism nodes such as the Daintree area.
- Traffic counters were installed on Black Mountain Road and Cochable Creek Road to measure vehicle numbers and speeds. Fifteen pedestrian counters to monitor site use were also installed.

4.4 Infrastructure

Background

Regional development pressures typically result in subsequent demands for community services infrastructure such as roads, powerlines, water supply and water storage. Significant impacts are associated with such infrastructure, particularly where cleared corridors are required through rainforests. Impacts include:

- ecological fragmentation.
- edge effects caused by increased levels of exposure to sun and wind.
- changes to water cycles and local air temperatures.
- invasion by exotic weeds and feral animals.
- a loss of native 'deep' forest plant and animal species.

Roads

The presence of a road alters hydrology, fragments habitat and results in road-kill. Some native animals avoid roads, resulting in wildlife populations becoming isolated and causing a disruption to seasonal movements and genetic interchange. Roads are also a source of stream pollution and increased sediment

load, while road culverts often result in the fragmentation of aquatic habitats and the altering of stream flow patterns. The habitat fragmentation impacts of a road can be amplified by road use which results in noise, vibration, movement, dust, emissions, and lights, each of which can interfere with wildlife activities and behaviour.

Electricity supply

Although there are fewer kilometres of power transmission lines than roads through the WHA, the clearings associated with them are typically wider, the fragmentation impacts greater and the array of edge effects of a greater magnitude. The clearings associated with powerlines result in the intrusion of non-forest habitats (usually tall exotic grasslands or shrublands) into native forests which act as conduits for weeds, feral animals, non-local native animals, wind and fire into the interior of the forest.



Powerline corridor, Bridle Creek Road

Water supply and storage

Dams, weirs and culverts result in pressures on aquatic ecosystems by causing:

- changes in natural flow regimes as a result of water extraction and supply.
- direct modification or destruction of important habitats.
- barriers to the movement of plants and animals, for example within rivers and between rivers and their floodplain.
- decreased water quality and quantity.
- increased colonisation by introduced and exotic animal and plant species.

Under the *Wet Tropics Management Plan 1998* infrastructure agencies require a permit to undertake maintenance activities [41]. One tool employed by the Authority and infrastructure agencies to mitigate impacts is the use of environmental Codes of Practice which are also stipulated as a condition of Wet Tropics permits. Codes of Practice have been produced for road, electricity and water infrastructure [42], [43], [44].

As well as these general Code of Practice provisions, the Authority also requires that Environmental Management Plans (EMPs) be developed as an additional condition of some permits to allow more explicit compliance monitoring. The intention of these EMPs is:

- to provide detailed prevention, minimisation and mitigation strategies by identifying and mapping both environmental values and potential maintenance activity impacts to those values.
- to specify mitigation strategies together with appropriate monitoring.
- if an undesirable or unforeseen level of impact occurs, to specify the appropriate corrective action.

Summary data

Roads

The commencement of the *Wet Tropics Management Plan 1998* [31] saw the prohibition of vehicle use of approximately 6,535km of vehicle tracks within the WHA which had a combined footprint of approximately 2,070ha. The majority of these were unformed logging tracks previously used by the timber industry. No program of environmental impact assessment, decommissioning or active rehabilitation of these redundant roads and tracks has so far occurred.

A total of 1,213km of roads remain available for use in the WHA. However, with dwindling financial resources, it is becoming increasingly difficult to maintain this access network in a safe, trafficable, non-eroding condition.

The growing commuter, tourism and freight transport needs of the region are resulting in an increasing demand for the upgrading of many of the region's main roads including sections within the WHA.

Electricity supply

Within the WHA electricity supply infrastructure includes three hydro-electric schemes with power stations and associated dams, 222km of high voltage power transmission lines, 98km of power distribution lines, one substation and various ancillary facilities such as roads and buildings. No new powerline clearings have occurred since the introduction of the *Wet Tropics Management Plan 1998*. The range of initiatives being employed to reduce the impacts of powerline maintenance is resulting in increased levels of tree cover across most powerline easements throughout the WHA. The proposed decommissioning and removal of significant sections of high voltage powerline in the near future will result in major improvements in the overall integrity of parts of the WHA in the medium term.

Water supply and storage

Within the WHA there are 2,129ha of artificial water supply lakes which were present prior to World Heritage listing. There are three dams located within the WHA: Copperlode Falls Dam, Paluma Dam and Koombooloomba Dam. Eight local government authorities have 22 domestic water intakes within the WHA, each with associated pipelines, access roads and powerlines. Water demand for agricultural, industrial and domestic uses continue to increase due to the diversification and intensification of agriculture and with regional population

growth and increased urbanisation. Use of groundwater resources on the Tablelands is increasing as surface water resources become fully allocated. The effect of increased groundwater extraction on stream recharge, wetlands and other groundwater-dependant ecosystems is still unknown.

Nearly every coastal stream and river in the region is affected by in-stream barriers of some sort. Barriers to native fish movement by weirs, dams, culverts and bridges result in reduced reproductive success and access to suitable habitat by aquatic organisms. Retrofitting fishways to overcome many of the major stream barriers is being considered, but effective and cost efficient designs are still being developed.

Management initiatives (2004-2005)

- The Department of Main Roads (DMR) is planning for an upgrade to a four-lane highway on the 14km section of the Kennedy Highway between Cairns and Kuranda, known locally as the Kuranda Range Road. The road links the coastal plains of Cairns to the Northern Tablelands and part of it goes through the WHA. DMR have applied to the Authority for a rezoning of the proposed upgrade route and for a permit to construct the road. The Authority is currently reviewing documentation in support of the application in conjunction with the findings of several public consultation surveys. The ecological impact assessment procedure and the scope and extent of impact mitigation strategies examined, researched and documented by DMR for this proposal has set a new benchmark for development proposals in ecologically sensitive environments.
- A range of mitigation strategies are being implemented along the El Arish-Mission Beach Road and Tully to Mission Beach Road as part of permit conditions imposed by the Authority aimed at reducing the negative impacts of these roads on the conservation of the cassowary.
- A decision was made in 2005 by the Australian Government that the upgrade to the high voltage Tully to Innisfail powerline will involve a new coastal alignment and the eventual removal of 35km of high voltage electricity infrastructure from the Palmerston section of the WHA. The service provider must now investigate the most suitable means to decommission the powerline and rehabilitate the infrastructure corridor through the WHA.
- The Rainforest CRC is undertaking several research projects directed at assessing and quantifying the ecological impacts associated with powerline clearings through rainforests, and the relative success of actions being taken to avoid or reduce these impacts including the on-going monitoring of trial rehabilitation plots and their use by native rainforest fauna.
- A three year Catchment to Reef research program is underway as a joint initiative of the Rainforest CRC and Reef CRC. This research program aims to develop new tools to assess and monitor the health of catchments and aquatic systems in both the Wet Tropics and Great Barrier Reef World Heritage Areas.

4.5 Altered fire regimes

Background

Most of the Wet Tropics' non-rainforest ecosystems evolved under the influence of fire and rely on particular fire regimes for their survival. A fire regime is a long-term pattern of fires, defined by their frequency and intensity and the season in which they occur. Many of Australia's native plants and animals show evolutionary adaptations to pre-European fire regimes.

Summary data

The survival or regeneration of a number of the more restricted sclerophyll vegetation types is doubtful due to the apparent severe disruption of historical fire patterns in the last twenty years and the unlikely event of their re-establishment in the future in the face of permanent changes to the landscape from settlement activities.

It has been found that ecologically significant changes to the rainforest/open forest boundary have taken place over the last 50 years with large areas of wet sclerophyll forest types, in particular, being progressively converted to simple rainforest. Presently, wet sclerophyll forests occur as a discontinuous strip up to 4km wide along the western margin of the rainforest and occupy approximately 54,000ha. This represents only half the extent identified from airphotos taken in the 1940s [39]. The narrow strip of tall open forest is important for the conservation of one of the mammals restricted to the Bioregion, the endangered northern bettong (*Bettongia tropica*), and the northern population of two other species of mammals restricted to this forest type - the yellow-bellied glider (*Petaurus australis*) and the swamp rat (*Rattus lutreolus*). It is a matter of urgency to determine which biota are dependent upon wet sclerophyll forest types and the level of threat to these species imposed by this rapid trend toward rainforest conversion.

Conversely, inappropriate fire management and wildfires has also impacted on some rainforested areas which are not adapted to burning. Extreme examples are areas of fire-degraded hillslopes where rainforests have been converted to grasslands particularly around Cairns. Within the WHA itself there are 105ha of these fire-degraded hillslopes. Changes to sugarcane harvesting techniques and urban expansion has reduced the frequency of hillslope fires penetrating into rainforest communities, and there has been no increase in this category of disturbance since listing.

Tall aggressive weeds such as guinea grass and molasses grass are changing the seasonality and intensity of fires when they dominate the ground cover.

Management initiatives (2004-2005)

- QPWS have developed a state-wide fire policy and are progressively drawing-up fire management plans for individual protected areas within the region based on the Authority's latest vegetation mapping [7]. The protection of ecological systems is one of the two main purposes for these fire management plans, the other being the safeguarding of life and property. The Authority has provided input into fire management planning for the Wet Tropics region. Draft

fire management coordination arrangements have been developed involving the establishment of regional planning groups including Aboriginal representatives. On-ground land managers' fire plans are being progressively implemented. Specific fire management plans and detailed monitoring programs are also a component of the Northern Bettong Recovery Plan process [12].

- The Authority's Conservation Strategy outlines a range of fire management, research and monitoring priorities which have informed the development of regional fire management plans.
- As part of the WTMA-QPWS Service Agreement for 2004-2005, 24 controlled burns were completed. A major focus was burning of coastal wetlands after the two previous dry years. Fire hazard mapping for Mareeba, Atherton, Eacham and Herberton Shires was undertaken.

4.6 Pest plants

Background

Most pest plant invasions are closely related to disturbances caused by human activity. In the WHA itself, the majority of weeds are associated with infrastructure corridor clearings such as powerline easements and road verges which act as both habitats and conduits for weed dispersal.

Weeds generally compete vigorously with native species for water, nutrients, light, habitat or pollinators and can affect animal biodiversity by removing or reducing food supplies, habitat and nesting sites. Although most pest plants do not invade undisturbed habitats, they often prevent native species regenerating in disturbed areas. Weeds also cause flow-on effects. Some weeds are either more flammable or more fire retardant than the species they displace and can alter the fire patterns of the communities they invade which may subsequently impact on native animals living in those communities.

Summary data

The number of recorded exotic plant species which have escaped from gardens, spread beyond managed agricultural lands or been introduced inadvertently to the region has grown rapidly over the past 50 years. Within the region, 508 exotic plant escapees have been identified as having become established [32], which amounts to almost 11 percent of the region's native flora and represents almost 39 percent of Queensland's total alien plant escapee species. About 40 of these regional escapees are currently considered environmental weeds within the WHA. The rate of increase in recorded exotic escapee plant species is alarming with around 200 newly established exotic species having been identified in the region over the past decade, many of which are destined to become environmental, agricultural or urban weeds. Of major concern is the number of recent introductions of weeds on the Northern Australian Quarantine Strategy's Weeds Target List [33] which is a compilation of those species considered to pose the greatest potential threat to Australian rural industries and/or natural environment.

Management initiatives (2004-2005)

- Historically, weed control has focused on major infestations of long established weeds and funding has usually been short term. Consequently, control measures have been ineffectual in the long term. A recent initiative is focussing management responses on 'newly arrived' environmental weeds, considered to be some of the world's worst weeds, which are currently becoming established in the region, but where eradication is considered feasible. Targeting new incursions of miconia species, mikania vine, Koster's curse, Siam weed and limnocharis, the Australian and Queensland Governments have provided \$490,000 for the first year of a concerted eradication program and guaranteed funding for five years, to be administered and implemented through DNRM.
- QPWS participated in eradication programs for miconia (Barron Gorge NP), Siam weed (Maria Creek NP and Jalum Conservation Park), hymenachne (Eubenangee Swamp NP), thunbergia (Mulgrave River section of Wooroonooran NP) and pond apple (Maria Creek NP, Eubenangee Swamp NP, East Trinity and Bailey Creek).
- The Authority's Conservation Strategy [19] has prioritised emerging, established and potentially invasive environmental weeds likely to threaten World Heritage values. Weeds have been prioritised according to their potential to invade, disrupt and transform a variety of Wet Tropics ecosystems. Some have already demonstrated their invasive potential in the region, whilst others are major weeds in other tropical areas and have the potential to spread here. This prioritising process has identified 59 species and five plant groups as the focus for weed control programs within the region.
- As the majority of environmental weeds are not listed under their species names on herbicide registrations, an off-label permit has been approved by the Australian Pesticides and Veterinary Medicines Authority to assist government and environmental groups manage these pest plants. Herbicides have been approved for use against a large variety of environmental weeds. It is a requirement that all persons using products covered by this off-label permit comply with the details and conditions listed in the permit.
- The Authority and QPWS completed a Pond Apple Control Project in 2004. The research found that the short seed viability of pond apple provides the possibility for meaningful long-term control of this very destructive species. The primary aims of the project were to:
 - map known infestations and areas most at risk from pond apple.
 - conduct trials to determine the most effective way to control pond apple in a range of different situations.
 - increase community awareness of the issue.

The project was funded through a \$213,000 NHT Weeds of National Significance program grant and in-kind contributions from QPWS, local government and

community groups. A report on the project was launched on 22 October 2004 as part of Weed Buster Week.

- As a follow-up to the Weed Identification Pocket Guide, the Authority produced a series of weed control sheets in 2004 to provide landowners with information about how to control weeds once they have identified them. The control sheets are available through regional councils and other relevant organisations and are also available on the Authority website [34] and DNRM websites. The Authority's contribution was made available as part of the Good Neighbours Program with funding assistance from the NHT.
- A Rainforest CRC program being undertaken by DNRM at South Johnstone is researching the biology, ecology, and control of several major environmental weeds with the aim of improving our knowledge of the weeds, their effect on the environment, and the effect of weed control treatments on these environments. The research is currently focussed on pond apple, harungana, hymenachne, Siam weed and tobacco weed.
- A national survey, led by the DNRM, is being conducted to establish the extent of Siam weed infestations in Australia. Siam weed (*Chromolaena odorata*) is one of the world's most invasive tropical weeds, a Class 1 declared plant of Queensland and a national eradication target. As such, it is essential to locate all infestations of the weed. All known outbreaks of Siam weed in northern Queensland in the Tully, Townsville and Thuringowa areas are being controlled with an aim to eradication. Extensive ground and aerial surveys are being conducted. An integrated community engagement program including television, media and publications is being conducted to encourage landholders, industry, local governments and community groups to be vigilant and report suspected infestations.



Siam weed flower
(Photo courtesy DNRM)

- In previous years the Authority funded the purchase of weed spray trailers for the Douglas, Johnstone, Mareeba and Eacham Shires. These councils continue to loan the trailers to landholders for weed control in and around the WHA.
- All shires within the Wet Tropics Bioregion had completed their Pest Management Plans during 2004-2005 with Cairns City Council being the first to gain ministerial endorsement of their plan in June 2005.

- A number of ongoing programs of weed control are being undertaken by local government authorities in the region. The major focus of these programs varies. For example, while hymenachne is an on-going weed control priority in all shires, pond apple is of particular concern in the Johnstone and Douglas Shires, tobacco weed is a concern of the Eacham Shire, sicklepod, giant sensitive plant and panama rubber are a focus for the Cairns City Council, while hiptage and a range of new emerging weeds are a focus of the Douglas Shire. A range of newly emerging highly invasive weeds is also a primary focus of the Mareeba Shire Council in addition to species such as giant rats tail grass and rubber vine. Cairns City Council also has an on-going control program for several newly emerging class one weed species such as limnocharis, miconia, Siam weed and *Thunbergia laurifolia*.
- DNRM coordinates quarterly meetings of the Local Government Pest Plan Advisory Committee and the Far North Queensland Pest Advisory Forum.
- As part of the WTMA-QPWS Service Agreement a weed management program for 2005-2006 was developed consistent with the priorities identified in the Wet Tropics Conservation Strategy. Remote area helicopter surveys of weeds in the Daintree and Monkhouse areas were also conducted.

4.7 Pest animals

Background

Pest animal species can impact on ecosystems and species by predation, competition for food or breeding areas, pest-induced habitat changes, or the transmission of parasites and other disease organisms. The Rainforest CRC [35] assessed the status of exotic vertebrate animal species which have escaped into the wild within the region. Their findings were that the current major vertebrate pests are the pig, cat, cane toad, dog/dingo and tilapia. These species achieved a high ranking due to their current levels of ecological impacts and because of the current lack of feasible options to control them.

The Authority's Conservation Strategy has identified feral deer as a major emerging pest animal threat that needs to be tackled before they become established as major pests in the region. Feral deer can degrade native vegetation communities and revegetation areas through browsing, grazing and trampling. They can compete with native fauna for resources and lower the water quality of creek and river systems through erosion and faecal contamination. Feral deer may also harbour or spread diseases.

The translocation of large predatory native fish such as barramundi and sooty grunter outside their natural range as part of regional recreational fish stocking projects is an emerging concern. Waterfalls have provided natural barriers to the upstream movement of large fish predators (except for eels) for millions of years. Translocating recreational fish species above these waterfalls may put the natural assemblages of aquatic species (e.g. fish, amphibians, invertebrates) and

the ecological processes of these streams, at enormous risk. Despite the extent of stockings that have already occurred and the important faunal components of Wet Tropics streams which may be vulnerable to predation by novel fish predators, no environmental impact evaluations have yet been undertaken.

Exotic fish species, such as the tilapia, guppy and gambusia are present in the region and have huge potential to dominate aquatic systems. Tilapia are rapidly invading many of the region's major rivers, streams and water storages, possibly aided by illegal movement and release by people. Once in a river system tilapia are presently impossible to eradicate. Their rate of population increase is very rapid. For example, five fish were released into a Port Douglas resort pond in 1989. Three years later over 1 million fish (18 tonnes) were destroyed [36].

Very little is known about the status of invertebrate pest species apart from those of importance to agricultural or human health. Invertebrate species such as the crazy ant, fire ant, European bee, papaya fruit fly, palm leaf beetle and spiralling white fly have all been recognised as potential threats to the integrity of the WHA.

Summary data

Although the number of vertebrate pest species (28) has remained stable for several years, their population numbers, distribution and ecological impacts are generally very poorly understood. The populations of some have apparently increased markedly in recent years. It has been estimated that there are in the vicinity of 27,000 feral pigs in the region (J. Mitchell pers. com). Apart from the feral pig, no estimates of feral animal numbers, densities or distribution have been undertaken within the region.

Populations of feral deer have been identified in several locations, including the Palmerston, Bingil Bay, East Russell, Ithaca River and Tarzali areas, where it is believed they escaped from farms. Species include rusa (*Cervus timorensis*), fallow (*Dama dama*) and sambar (*Cervus unicolor*) deer.

The introduced pest fish, tilapia, has become established in the Barron River, Lake Tinaroo, Herberton Dam, creeks and drains in the Cairns region and in farm dams.

A total of 36 native fish species (plus red-claw crayfish) have been translocated into many of the region's waterways [37].

Two contained outbreaks of crazy ants have occurred around Cairns City and Edmonton in recent years. Preventing the establishment of these new feral invertebrate species is vital for conservation management as well as for quarantine, economic and trade reasons.

Management initiatives (2004-2005)

- The Authority is currently developing a policy on fish stocking and the translocation of native fish outside of their natural range within the WHA based on the findings and recommendations from a fish stocking and translocation report [37] commissioned by the Authority. The Authority is also

continuing discussions with DPIF to minimise the environmental impacts of fish stocking in and around the WHA.

- In 2005 the newly established Invasive Animal CRC identified the feral pig as a research focus and has chosen the Mossman/Daintree area for the establishment of several demonstration sites for the testing of control methodologies.
- The crazy ant outbreak at Edmonton has been subject to highly effective control measures during 2004-2005. DNRM are the lead agency for the control of this pest animal, with Cairns City Council and other government agencies providing assistance when required.
- A 16 month pilot program to research and develop a super-roost, Indian myna bird trap received Commonwealth funding of \$130,000 in 2005. This project is being administered by the Australian Rainforest Foundation. The World Conservation Union has listed the Indian myna bird as one of the world's 200 worst invasive species. The presence of the aggressive Indian myna in an area signals a disastrous change to local native bird populations. Overseas, the Indian myna has pushed native birds towards extinction in Polynesia, Hawaii and Mauritius.
- In 2005 the Authority contracted the Rainforest CRC to assess the distribution and abundance of feral deer in the Wet Tropics and to assess their potential to become a major pest. A concurrent community education program is also being developed and will be operational in the 2005-06 financial year.
- DNRM recently completed a pest status review of deer in Queensland. This review will enable the department to undertake assessments that may change or develop government policy on deer in Queensland.
- As part of the WTMA-QPWS Service Agreement for 2004-2005:
 - An additional 30 feral pig traps were employed in targeted pig control projects in and adjacent to the WHA.
 - An MOU was signed with the Cairns City Council regarding feral pig, wild dog and cattle management.
 - A coordinated agreement was made with the Douglas Shire Council regarding feral pig control in the Daintree area.
 - Aerial surveys of Daintree National Park were undertaken to assess the extent of feral cattle.
 - 270 head of feral cattle were mustered from the Henrietta section of Girringun National Park.

4.8 Pathogens

Background

Little is known about the ecological impacts of introduced pathogenic micro-organisms, although they are likely to be significant. The forest dieback/root rot disease (*Phytophthora cinnamomi*), and frog chytrid fungus (*Batrachochytrium dendrobatidis*) are water-borne pathogens that are known to be having significant impacts on many native species. These impacts are being exacerbated by human activities that help to spread them, such as soil and water disturbance and trafficking of infected soil, mud or water by vehicles.

Widespread, small, dead patches of rainforest caused by outbreaks of *P. cinnamomi* were first recorded in the 1970s prior to World Heritage listing. More recent outbreaks were found in the late 1990s and continue to the present day. The cause or trigger of these outbreaks is presently unknown, but appears to be correlated to past disturbances associated with the logging industry. The effects of *P. cinnamomi* on the region's rainforests vary from no visible impact to slight loss of canopy leaves in susceptible species to the death of all plants in virulent outbreaks. Where virulent outbreaks occur the anticipated consequences include:

- major disruptions to ecological community structure.
- local extinctions of populations of some plant species.
- a massive reduction in primary productivity.
- less productive, more open, less diverse habitat for wildlife.

Frog chytrid fungus is the common name for the recently discovered disease, *Batrachochytrium dendrobatidis*, which has been identified as the cause of massive mortality of stream-dwelling frogs in the region. Frog chytrid fungus appears to have emerged in southeast Queensland or northern New South Wales in the late 1970s (first case detected in December 1978) and subsequently spread, eventually reaching the Wet Tropics in the early 1990s.

Frog chytrid fungus is also linked to amphibian declines in Central and South American and other Australian rainforests. The emergence of this disease radically changes our view of wildlife diseases, because it is the first such disease to emerge in pristine sites, to infect a wide range of hosts, and to cause declines and possibly extinctions in disparate regions. Hypotheses for the relatively synchronous emergence of amphibian chytridiomycosis globally include human-assisted introduction to previously unexposed amphibian populations, or an alteration of pre-existing host-parasite relations owing to climate change or other environmental stress.

Summary data

A major loss of biodiversity may occur when a new disease is introduced into naive populations resulting in catastrophic depopulation. Two equivalents of these first-contact depopulations appear to have occurred recently in the Wet Tropics (phytophthora dieback and frog chytrid fungus), but their true extent has probably

been grossly underestimated. It is anticipated that recent initial catastrophic declines may be followed by chronic population depression and, if the threshold host density for disease transmission is lowered, local extinctions may continue to occur.

The Authority's vegetation mapping program [7] has so far identified over 200 small patches of dead rainforest in the Mount Lewis, Lamb Range and Tully Falls sections of the WHA. Based on preliminary findings, approximately 14 percent or 126,000 hectares of the WHA may be considered highly susceptible and at risk from rainforest dieback [38]. At least five species of phytophthora have been identified from dieback sites: *P. cinnamomi*, *P. heveae*, *P. katsuurae*, *P. palmivora* and another, as yet unidentified species.

Several species of locally endemic rainforest stream-dwelling frog, which were once distributed widely and in high numbers throughout the Wet Tropics, vanished within a very short period of time from altitudes above 300m. Three species, the sharp-snouted day frog (*Taudactylus acutirostris*), mountain mist frog (*Litoria nyakalensis*), and the armoured mist frog (*Litoria lorica*) only occurred at high altitudes and it is highly likely that they have now become extinct. A fourth species, the northern tinker frog (*Taudactylus rheophilus*), is the only specialised high altitude stream-dwelling frog to have been rediscovered (at two mountaintop locations in late 1996).

Another four species, the common mist frog (*Litoria rheocola*), waterfall frog (*Litoria nannotis*), Australian lace-lid (*Nyctimystes dayi*) and the green-eyed tree frog (*Litoria genimaculata*) have suffered extensive declines and are no longer able to be located from their high altitude habitats but they still persist in their lower elevation habitats.

Management initiatives (2004-2005)

- In 2004-2005 the Rainforest CRC was commissioned to develop a *P. cinnamomi* dieback monitoring framework for the Wet Tropics to monitor recovery of vegetation post die-back. As part of this research program researchers are assessing the level of risk of forest dieback in highland areas within the WHA, specifically the mountain-top areas of Mount Bellenden Ker and Mount Bartle Frere.
- In October 2004 the Authority launched its Stamp Out Phytophthora information brochure to educate people about the disease. The brochure is being distributed to bushwalkers, land owners and land managers in the Wet Tropics, through visitor centres and QPWS offices and outline common-sense measures to stop the risk of dieback spreading. The brochure was funded by the NHT.
- Chytridiomycosis infection in amphibians has now been listed as a key threatening process under the EPBC Act and a National Threat Abatement Plan is currently being developed for this pathogen.
- In February 2005 James Cook University was awarded a \$1.6 million grant from the Australian Government's Natural Heritage Trust for research into frog chytrid fungus and frog decline.

5 . The role of the World Heritage Area in the life of the community

The Authority has an obligation under the World Heritage Convention to give the Area a function in the life of the community. The Authority's policy document Protection through Partnerships [45] identifies a desired future in which the WHA provides benefits and essential services to the community. It is also intended, in a reciprocal way, that the community has an active role in caring for the Area. These benefits and essential services are to flow, in part, from partnerships between the Authority and the community. In this sense the community includes the local and regional community, the Aboriginal community, the wider community (domestic and international visitors) as well as management agencies, local government, landholders, industry and the research community.

This chapter of the State of the Wet Tropics Report deals with the socioeconomic and cultural benefits provided by the WHA for the community and the role of the community in conservation and management of the WHA.

5.1 Benefits of the World Heritage Area

Community services

The WHA supports a variety of natural processes through which ecosystems sustain and fulfil human life. In economic terms, the natural capital of the Area's resources provides 'ecosystem goods and services' which have a wide range of social and economic benefits to the Wet Tropics community. These benefits from the Area may range from direct products to vicarious pleasures, from the personal to the international. Benefits may be environmental, economic, cultural, spiritual, educational, recreational or medicinal. By far the most important of these goods and services are those which provide support for life such as clean water and soil fertility. There are also numerous others services and products which may enhance the quality of life in the Wet Tropics. Some ecosystem goods and services provided by the WHA are listed in **Table 6** below. The use of the term 'ecosystem goods and services' implies that the WHA has both intrinsic and flow-on economic benefits. However, the true economic and social benefits of most ecosystem goods and services remain unquantified.



Rainforest hiker

The spiritual and aesthetic qualities of the WHA may be more highly valued by the local community than more tangible products and economic benefits. Results from a survey conducted by Bentrupperbaumer and Reser [46] showed that the local community viewed the Area as an integral and cherished part of their natural and cultural landscape, with ‘just knowing it is there’ rating as the most important benefit overall. The WHA and its attributes contributed significantly to the community’s sense of place and identity.

Table 6. Ecosystem goods and services provided by the WHA

<i>Environmental values and processes</i>	<i>Environmental regulation</i>	<i>Community services</i>	<i>Community enrichment</i>
• biodiversity • habitats and refugia • soil formation & fertility carbon sequestration • conversion of solar energy • biomass production • pollination • nutrient recycling • nitrogen fixing • water cycles • genetic resources • fire regimes	• regulation of regional & micro climates • flood mitigation • water purification • erosion control • pest control • groundwater recharge • waste treatment • energy conversion	• food • clean water supply • energy (hydro, solar & wind) • shade and shelter • soils • pharmaceutical and biological products • horticultural products • art and craft materials	• tourism • recreation and leisure activities • spiritual values and enjoyment • natural values • scenic & aesthetic values • cultural and historical values • awareness and education • scientific discovery • sense of place and identity • maintaining options for the future

While there has been extensive research on the natural values of the WHA, there has been little research on the WHA’s community benefits. To date, socioeconomic research has focused primarily on tourism and community attitudes (see ‘Tourism and recreation’ and ‘Community awareness and education’ below).

CSIRO research on water cycles within the montane forests of the WHA is one of the few examples of research which demonstrates the contribution of the WHA to community services. Cloud stripping in high altitude rainforests has been shown to contribute an additional 40 percent more water than that provided by the annual rainfall [56]. This could be particularly important for maintaining dry season water supplies to the community.

Management initiatives (2004-2005)

- The Authority developed a policy for the ‘Commercial Use of Forest Products in the World Heritage Area’ which outlined the various laws which apply to such commercial activities. The policy specified under what circumstances the Authority would allow commercial use of forest products in the WHA which were otherwise lawful [57].
- A grant has been made available from the Queensland Government for JCU to study the propagation of the very rare blue tassel fern and the feasibility of extracting the compound Huperazine, a drug believed to be effective in treating Alzheimer’s disease.
- As part of the proposed transfer of State Forests and Forest Reserves to National Park tenure, QPWS undertook extensive consultation with the community about the potential for transfers to prohibit existing commercial and community activities such as seed collecting, horse riding, bee keeping and grazing.
- The Authority conducted a first round of public consultation for the review of the *Wet Tropics Management Plan 1998*. Issues raised affecting use of the Area by the community included vehicle access, tourism sites, aircraft access, zoning amendments, keeping of dogs and cats, subdivision and fish stocking.

Rainforest Aboriginal people

Background



Traditional owner for the Babinda Boulders area, Anna Wonga

There are 18 Aboriginal tribal groups with ongoing traditional connections to land in and near the WHA. Each group has customary obligations for management of their country under Aboriginal law. To Rainforest Aboriginal people, the Wet Tropics region is a series of living cultural landscapes which identifies Rainforest Aboriginal peoples’ place within their country and reinforces their ongoing customary laws and connection to country. The special association of Rainforest Aboriginal people with the land in the WHA is recognised

in both State and Commonwealth World Heritage legislation. For example, the preamble of the *Wet Tropics World Heritage Protection and Management Act 1993* states: “It is also the intention of the Parliament to acknowledge the significant contribution Aboriginal people can make to the future management of cultural and natural heritage within the Area, particularly through joint management agreements.”

Reaching agreements about tenure, land use and management regimes has been the key focus for Rainforest Aboriginal people to maintain the vitality of their cultural values and to achieve social and economic benefits from their traditional lands. **Table 7** below describes some of the cultural values which relate to Aboriginal land use within the WHA.

Table 7. Some Rainforest Aboriginal cultural values relating to land use the WHA

<i>Spiritual</i>	<i>Ecological</i>	<i>Social</i>	<i>Economic</i>
• <i>creation stories</i> • <i>sacred sites</i> • <i>burial grounds</i> • <i>bora grounds</i> • <i>ceremony</i> • <i>responsibility for country</i> • <i>totems</i>	• <i>bush tucker (animals and plants)</i> • <i>bush medicine</i> • <i>knowledge of ecological relationships</i> • <i>fire management</i> • <i>seasonal calendar</i>	• <i>language</i> • <i>living areas and camps</i> • <i>walking tracks</i> • <i>kinship systems</i> • <i>clans</i> • <i>cultural identity</i> • <i>traditional law</i>	• <i>hunting and gathering</i> • <i>tools</i> • <i>food preparation</i> • <i>shelter building</i> • <i>harvesting resources</i> • <i>art and craft</i>

Mechanisms for determining Rainforest Aboriginal interests in tenure, land use and participation in management are provided under legislation such as the *Aboriginal Land Act 1991* (Qld), the *Native Title Act 1993* (Commonwealth), the *Land Act 1994* (Qld) and the *Wet Tropics Management Plan 1998* (Qld).

At least 80 percent of the WHA is potentially claimable under the *Native Title Act 1993*. Currently, 16 Native Title claims, representing 282,966ha or 32 percent of the WHA have been lodged with the National Native Title Tribunal for land in the WHA. Only the Djabugay claim has been decided (see management initiatives below).

A variety of land management agreements are being developed to enable Aboriginal participation in conservation management. Two successful agreements have been:

- a Memorandum of Understanding between the Authority, the Environmental Protection Agency and the Ngadjon-Jii Traditional Owners which relates to the traditional Ngadjon-Jii lands that fall within the boundaries of the Wooroonooran National Park.
- a Memorandum of Understanding with Ma:Mu people for the development of a proposed canopy walk and long distance walk on their country.

Management initiatives (2004-2005)

- The first native title consent determination in the Wet Tropics World Heritage Area was handed to the Djabugay people by the Federal Court of Australia on 17 December 2004. The Djabugay people are the traditional owners of

the Barron Gorge National Park. The Federal Court noted that the Djabugay people, the State of Queensland and the Cairns City Council as parties to the native title claim had reached agreement on the terms of the determination. Other interest holders such as Skyrail, Powerlink, Ergon and the public who use the national park for recreational purposes will still be able to exercise their interests.

- Negotiations continue on the Eastern Kuku Yalanji Indigenous Land Use Agreement, aimed at resolving native title, land tenure and land use within and adjacent to the northern section of the WHA, including an assessment of the impact of ILUA proposals on management of the WHA.
- Negotiations continue between the Authority and Traditional Owners on management agreements at Buru (China Camp) and Mona Mona.
- Native title claim mediation processes in the Wet Tropics in 2004-2005 included Barron Gorge National Park (Djabugay), Gadgarra State Forest (Yidinji), Wooroonoran National Park (Ma:Mu, Ngadjon-jii and Yidinji), Grey Peaks National Park / Malbon Thompson Forest Reserve (Mandingalbay Yidinji), Wooroonoran National Park (Dulabed, Malanbarra Yidinji) and Yarrabah (Gunggandji and Mandingalbay Yidinji). These mediation processes will establish Aboriginal interests with regard to land use in the WHA.
- Discussions continue on a draft MOU with the Budjubulla Aboriginal Corporation and QPWS to protect World Heritage values adjacent to Budjubulla Station (formerly known as Kirrama Station) from cattle grazing impacts.

Tourism and recreation

Background

Nature based tourism and recreation is helping to achieve regional, national and international recognition and appreciation of the World Heritage Area. Tourism and recreation also provide enormous economic and social benefits for the region. There are over 200 visitor sites and 150 managed walks in and around the WHA. These are managed primarily by QPWS and by local governments. Joan Bentrupperbaumer (pers. comm.) has calculated that Wet Tropics Visitor sites receive about five million site visits per annum.

There have been some attempts to quantify the economic benefits of tourism and recreation in the Wet Tropics. The direct and indirect benefits of tourism and recreation in the Wet Tropics was estimated in 1997 to be over \$750m per annum [21]. Similarly, it has been estimated that Daintree tourism and recreation is worth \$395million per annum [47]. Visitor expenditure in the region, based on expenditure associated with commercial tours, hire cars, running costs for private vehicles and their flow-on effects, is now estimated to exceed \$2 billion annually [22] and tourism contributes up to 35-40 percent of jobs and income in the region [20].

In 2002 a Wet Tropics visitor survey [48] was conducted at the following ten visitor sites: Mossman Gorge, Lake Barrine, the Crater, Barron Falls, Marrdja, Murray Falls, Henrietta Creek, Goldsborough Valley, Big Crystal Creek and Davies Creek. Some of the key findings are listed below:

- There was a decline in vehicle numbers across all sites in comparison to available 1998 traffic data, with the exception of the Crater.
- The heaviest visitation was at Mossman Gorge with 366,415 visitors.
- The majority of visitors (72.5%) to the ten sites were independent travellers using private vehicles.
- There were significantly more local than domestic Australian visitors and significantly more overseas visitors than domestic visitors at the ten sites.
- The most popular sites with domestic Australian visitors were Barron Falls and Mossman Gorge.

The survey also found that visitors considered the WHA most important for a nature based experiences, more so than for undertaking recreational activities or learning about nature or culture. Overseas visitors rated the natural environment and the infrastructure and facilities less positively than Australian domestic visitors. The presence of a ranger at the site was more important to overseas visitors than local or domestic Australian visitors.

In conjunction with the tourism industry, QPWS and the broader community, the Authority has developed the Nature Based Tourism Strategy [23] and the Walking Strategy [24] to provide the basis for tourism and walking management in the WHA. The strategies aim to encourage a dynamic, sustainable and professional nature based tourism industry in the Wet Tropics. The Authority and QPWS both meet regularly with the tourism industry through the Tourism Industry Liaison Group and the Tourism Industry Forum respectively.

Vehicle access to the WHA for tourism and recreation has been limited to public roads and presentation roads as designated on the zoning maps of the *Wet Tropics Management Plan 1998*. As a result, many old logging roads are now unavailable for public vehicle access. The tourism industry and recreational users express concern about the closure of some presentation roads due to lack of resources for repairs and maintenance. Some recreational users wish to open additional roads for four wheel drives and trail bike use.

The current program to transfer State Forests and Timber Reserves to National Park tenure may restrict activities such as horse riding which are allowed in State Forests, but would not be allowed in National Parks except on gazetted roads or the Bicentennial Trail.

Management initiatives (2004-2005)

Facilities and walks

- QPWS has continued to maintain over 30 campgrounds and numerous other day use areas and walks for visitors on protected areas in the Wet Tropics region.
- The Wet Tropics Great Walk has been completed by QPWS and is due to be officially opened in August 2005. It goes from Wallaman Falls to Blencoe Falls and includes numerous options for day walks and overnight walks.
- The Lake Eacham day use area has been upgraded by QPWS to allow for better presentation and to better cope with the large numbers of locals and visitors who visit the lake.
- On-ground works for new visitor facilities began at Kija (Roaring Meg Falls).
- The Authority's Board approved a rezoning for the proposed Ma:Mu Canopy walk in the Palmerston section of the WHA.

Roads

- Under the WTMA-QPWS Service Agreement for 2004-2005 QPWS spent over \$200,000 to maintain roads for recreational use, presentation and access to visitor sites within the WHA. Maintenance focused on Black Mountain Road, Bluewater Road, Mount Spec Road, Mount Lewis Road and roads in the Koombuloomba and Roaring Meg areas.
- Several roads designated for public 'presentation' remained closed throughout 2004-2005 for safety reasons, notably the Culpa Road where bridges are in need of repair.
- Extensive public consultation was undertaken by QPWS and the Authority regarding use of roads in the WHA as part of the proposed transfer of State Forests and Timber Reserves to National Parks and the review of the *Wet Tropics Management Plan 1998*.

Information

- An image CD was produced featuring images, maps and logos for the tourism industry. The CD was funded by Tourism Queensland and produced by the Authority in partnership with Tourism Tropical North Queensland and Townsville Enterprise. Copies of the CD were mailed to over 100 rainforest tour operators who bring visitors to the World Heritage Area, as well as regional visitor centres and other organisations.
- The Daintree Tour Guide Manual was distributed in CD format to interested tour operators in the region. QPWS compiled similar information about ten major tourism sites in other parts of the WHA. The information was distributed to the tourism industry.



Wallaman Falls

Community awareness and education

Background

The Authority produces a range of publications about the WHA aimed at targeting regional residents, visitors and schools. Over the years these have included WHA scenic posters, wildlife posters, visitor centre display materials, brochures on WHA issues, cassowary education kits, a Wet Tropics magazine, fact sheets, posters, CDs, features in The Cairns Post newspaper and television awareness campaigns.

The Wet Tropics website was launched in late 1999 and attracts more than 4000 hits per month. New features continue to be added to the Authority's website including news, a resource library, policies, information on over 150 walking tracks and an educational section for teachers and students. Much of the website information can also be found on touch-screen visitor information kiosks throughout the region.

In conjunction with the Authority, QPWS has produced over 50 Tropical Topics publications about Wet Tropics plants, animals and natural processes. QPWS has published information sheets about the majority of National Parks and major walking tracks in the Wet Tropics. Much of this information can also be found on the EPA website [49].

The Authority supports a network of community visitor and interpretive centres throughout the region which play a significant role in promoting regional tourism and presenting WHA to visitors. Many of these visitor centres are run by volunteers. Authority staff have tailored World Heritage knowledge training courses to meet the needs of the different centres' staff. There is also a range of privately owned tourist attractions and which provide specialised visitor information.

Each year the Authority honours exceptional individuals and organisations who do so much to help conserve the Wet Tropics WHA. Cassowary Awards are presented to dedicated individuals and organisations for their work in areas such as science, agriculture, tourism, culture and conservation.

The Authority has funded several community attitudes surveys since WHA listing. The latest was conducted through the Rainforest CRC in 2002 [46]. The regional community survey comprised face-to-face interviews and mail-outs in the area between Townsville and Cooktown. Key findings of the survey included:

- 94 percent of regional community are aware of the WHA's World Heritage status.
- 88 percent support World Heritage listing of the WHA.
- Quality of life advantages were rated the most important personal benefits bestowed by the WHA with the highest rating of 61 percent given for 'just knowing it is there, that it exists' followed by 'providing a quality environment in which to live'.
- The most important benefits bestowed by the WHA on the regional community as a whole were given as 'providing clean water and air' (92%), 'protection of rainforest plants and animals' (89%) and 'protection of scenic landscapes' (88%).
- The majority of responses concerning expectations from management agencies related to protection (26.5%), preservation (5.3%) and conservation (2.2%).
- 'Introduced animals, plants and pests' constitute the most serious perceived threats for residents (26.7%). Human activities both outside (26.1%) and within (25.9%) the WHA are seen as posing the second and third most serious threats.
- 49.1 percent of community respondents visit the WHA at least once a year to once every 3 months.
- Reasons for visiting the WHA were diverse, but predominantly related to recreational activities (55.9%), or the seeking of a particular type of experience, either personal or social (37.8%).

Management initiatives (2004-2005)

- With funding from Tourism Queensland, the brochure, Living with World Heritage, was launched in October 2004. The brochure summarises the key findings from the Authority's survey on community attitudes to the Wet Tropics World Heritage Area and its management.
- Wet Tropics Visitor Centres continued to operate throughout the region, staffed by volunteers and local government. The Authority conducted training for staff at two visitor centres and is currently providing new displays for the visitor centres.
- In partnership with Johnstone Shire Council, the Authority produced the Johnstone Shire Handbook for ratepayers and residents. The booklet provides useful environmental advice for landholders.
- The sixth annual Cassowary Awards were held at Paronella Park to honour the contributions of the community to conservation of the World Heritage Area. In 2005 there will be a new category for students who have helped to conserve

the Wet Tropics WHA. Primary and secondary schools can enter an individual student, a group of students, a class, a school grade, or the whole school.

- Together with teachers from James Cook University, Education Queensland and Tinaroo Environmental Education, the Authority is developing a school curriculum for pre-school to year 9 students. The curriculum will educate students about the World Heritage Area and its management. It will be available on DVD and the Wet Tropics website.
- The Authority's Cassowary Advisory Group (CAG) launched a 'Be cass-o-wary' campaign in December 2004 in a bid to raise community awareness about the endangered cassowary. The campaign was funded by an Australian Government Envirocare grant. The aim of the awareness strategy is to encourage the community to help save the cassowary population in the region. The strategy includes yellow cassowary 'take care' bumper stickers, community service announcements, cassowary bookmarks and cassowary stickers for school children. CAG worked in conjunction with QPWS on the 'Be cass-owary' message and strategies. The 'Be cass-o-wary' media campaign was sponsored by WIN television, 4CAFM and The Cairns Post with additional sponsorship coming from the Australian Rainforest Foundation and the Cairns Rainforest Dome.
- A 16 page edition of Australia's Tropical Rainforests Magazine was published and distributed to regional visitor centres. The magazine featured articles on mountains of the Wet Tropics and crocodiles, as well as a variety of visitor information.
- The Tree Kangaroo and Mammal Group purchased preserved specimens of a Lumholtz's tree kangaroo and a northern quoll for the display at the Malanda Visitor Centre.
- Kuranda EnviroCare continued to work with schools in the Kuranda area on cassowary conservation.

5.2 Community participation

Management of the WHA

The Authority has a statutory responsibility to consult with the community about management of the WHA. There are now three statutory advisory committees to the Board:

- the Community Consultative Committee.
- the Rainforest Aboriginal Advisory Committee.
- the Scientific Advisory Committee.

The Authority's Board has appointed a Conservation Sector Liaison Group and a Tourism Industry Liaison Group. The Authority also undertakes a broad range of informal consultation to include the community in management of the WHA.

The vast majority of the WHA is managed by government agencies. WTMA has the principal role in setting policy and coordinating management across the WHA. QPWS manages almost 80 percent of the area – National Parks, Forest Reserves and Timber Reserves. Unallocated State Land (7 percent of the Area) is managed by DNRM, as are numerous leases within the WHA. DPIF manages fisheries resources and fish habitat such as mangrove systems. In addition to these land managers, there are also a number of state agencies and local governments which manage service infrastructure such as roads, powerlines, water supplies and telecommunications. There are 14 local governments which have part of their areas within the WHA. WTMA relies on cooperative partnerships with these numerous on-ground managers to effectively conserve World Heritage values and manage threats.

A number of legislative and planning instruments have been introduced at all levels of government to achieve conservation of the WHA and surrounds. These cover such issues as vegetation clearing, water quality, agriculture, wildlife, weeds and feral animals, fisheries, fire management, endangered species, development assessment, coastal zones and wetlands. It is vital that all levels of government work together efficiently, pooling resources and focusing their efforts on common goals whenever possible. A key role of the Authority is to focus efforts to achieve a coordinated approach to WHA management.

The private sector also plays an important role in conserving World Heritage values. For instance, the

Australian Rainforest Foundation (ARF) is an independent not for profit company established by the Authority in 1996. Its primary goal is to raise private sector funds to support the conservation of the Area and surrounds. The Authority provides a variety of administrative and other in-kind support to the Foundation. The Daintree Rainforest Foundation is committed to conservation of the Daintree lowland rainforests, primarily through education, research and land acquisition.

Management initiatives (2004-2005)

- In 2004 the Rainforest Aboriginal Advisory Committee was established as a statutory committee under the *Wet Tropics World Heritage Protection and Management Act 1993*.
- The Authority continued to hold regular meetings of its statutory advisory committees and liaison groups. Members of these groups are listed in the Annual Report 2004-2005.
- The Landholders and Neighbours Advisory Group was disbanded in 2004. However, the representation of landholders and neighbours on the Community Consultative Committee has been increased and the Wet Tropics website now includes a page devoted to upcoming activities and events which promote sustainable land use and conservation in the region.
- Funding was provided to assist tourism, conservation and Aboriginal groups to comment on proposed amendments to the *Wet Tropics Management Plan 1998*.

- Sustaining the Wet Tropics: A Regional Plan for Natural Resource Management 2004-2008 was released in December 2004 [50]. The Plan has been used to develop an investment strategy for the Wet Tropics NRM region for expenditure of NHT funding and other investment in Wet Tropics conservation and sustainable land use.
- The ARF acquired 14 blocks in the Daintree with \$1 million of Commonwealth funding for conservation purposes. Additional blocks are under negotiation. The ARF also received a further \$5 million from the Australian Government for land acquisition and conservation activities in the Daintree and a grant of \$1 million for cassowary conservation in the Wet Tropics.
- The Daintree Rainforest Foundation acquired one property in the Daintree through donation and purchased a 5ha property near Forest Creek to form part of a corridor for tree kangaroos.

Aboriginal participation

Background

Aboriginal participation in all aspects of land management can result in mutually beneficial sharing of knowledge and help resolve any potential conflicts between Aboriginal cultural management of country and scientific conservation management. Under the *Wet Tropics World Heritage Protection and Management Act 1993* the Authority must perform its functions, as far as practicable, having regard to the tradition of Aboriginal people particularly concerned with the land and liaising and cooperating with Aboriginal people particularly concerned with the land. Other legislation which may help to achieve Aboriginal recognition and involvement in management includes the *Native Title Act 1993*, the *Nature Conservation Act 1992* and the *Aboriginal Land Act 1991*.

The Master Plan for Queensland's Parks System [51] acknowledges the rights and interests of Indigenous peoples. It states that "responsibilities, interests and aspirations of the Indigenous peoples will be respected in relation to their lands, and their roles in park management will be supported. The Parks system will be managed with a high level of cooperation between Indigenous peoples and the Service in a manner appropriate to Indigenous cultural heritage and the protection of natural and cultural values".

A review of Aboriginal involvement in the management of the WHA entitled 'Which Way Our Cultural Survival' [52] was completed in 1998. The process was directed by an all-Aboriginal steering committee. The Review presents a commentary on current approaches to Aboriginal involvement in the Wet Tropics World Heritage Area and provides a series of recommendations regarding ways of more effectively meeting land management needs and the aspirations of Rainforest Aboriginal people.

A key recommendation of the Review was to establish an Interim Negotiating Forum (INF) between Rainforest Aboriginal people, the Authority, and the Queensland and Australian Governments to negotiate solutions to complex

management issues and recommendations identified in the Review. The INF was charged to reach agreement between management agencies and Rainforest Aboriginal people on issues such as:

- Recognition and protection of the cultural values of the WHA.
- Aboriginal involvement in policy, planning, and management.
- The development of meaningful management agreements.
- Traditional resource use and the use of traditional knowledge.
- Employment and capacity sharing.

While achieving most, but not all, of these objectives, the INF process led to the development of the Regional Agreement to further implementation of Rainforest Aboriginal objectives.

Management initiatives (2004-2005)

- The Wet Tropics Regional Agreement [53] was signed by the 18 Aboriginal tribal groups in the region, the Australian Government, the Queensland Government and the Authority on 29 April 2005. The Regional Agreement establishes a Rainforest Aboriginal Council as the peak organisation for land and cultural heritage matters in the Area. The agreement also supports listing of the WHA on the National Heritage List as a precursor to potential nomination for World Heritage listing. The addition of a second Aboriginal member on the Authority's Board is recommended. The signatories also agreed to abide by a set of protocols for consultation with Rainforest Aboriginal people across a range of land management activities.
- The Rainforest Aboriginal Advisory Committee was established in 2004 as an outcome of the Regional Agreement process.
- Caring for Country and Culture – The Wet Tropics Aboriginal Cultural and Natural Resource Management Plan [54] was launched in 2005 by the FNQ NRM Ltd and the Rainforest CRC.
- Aboriginal people continued their active land management through the QPWS Centre for Tropical Restoration and community ranger groups such as those based at Mossman Gorge (Kuku Yalanji), Kuranda (Djabugay), Clump Mountain (Djiru and Ma:Mu) and Girringun (Girramay and others) and Yarrabah Community.

Conservation activities

The Wet Tropics community plays an enormously important role in conservation management. It contributes local knowledge and expertise, and provides labour and enthusiasm. The Wet Tropics community is particularly rich in groups active in natural resource management and environmental issues. The vast network of groups includes BatReach, Birds Australia, Cairns and Far North Environment Centre, Cairns Frog Hospital, Coastcare groups, Community for

Coastal and Cassowary Conservation, Conservation Volunteers Australia, Daintree Cassowary Care, Environmental Defender's Office, Greening Australia, Integrated Catchment Management groups, Kuranda EnviroCare, Landcare groups, Low Isles Preservation Society, Queensland Wildlife Preservation Societies branches, Tablelands Frog Club, Tolga Bat Hospital, Tree Kangaroo and Mammal Group, TreeForce, Trees for the Evelyn and Atherton Tablelands, WaterWatch groups, Wet Tropics Volunteers, Wildlife Rescue, and other community organisations.

The World Heritage Area includes over 100 Freehold blocks or parts thereof (2 percent of the Area) and over 100 leases (10 percent of the Area, mainly due to large grazing leases). Neighbouring land is managed for a multitude of purposes including conservation, timber production, grazing, sugar cane and other agriculture, beekeeping, tourism and private residences. There are more than 2500 individual blocks of land neighbouring the WHA's 3000km boundary and many more in the catchment areas. Many of the major threats to World Heritage values occur along the boundaries. The assistance of landholders and neighbours is vital for the retention and rehabilitation of habitat outside the WHA and wildlife corridors, fire management, weed and feral animal control, and care of water quality and flows – all of which can also benefit landholders.

This immense resource of community knowledge and support must be fostered and maintained. State and local government land managers could not achieve many on-ground outcomes without them. Maintaining the capacity of community groups to continue to operate in an era of reduced and uncertain funding is also extremely important. In addition to achieving on-ground outcomes, community conservation creates a culture of caring for the environment and a heightened awareness and appreciation within the general public of the value of the WHA and its values.

Management initiatives (2004-2005)

- The Wangetti Recovery Group won the Douglas Shire Council's 'Developing Sustainable Communities Environment Award'. The group comprises representatives of Wangetti residents, Yirrganydji and Djabugay Traditional Owners, the Authority, other State Government agencies and Conservation Volunteers Australia. A Recovery Plan has been implemented to repair and protect the fragile Wangetti coastal area which was being degraded by unmanaged recreational use. The group work together on beach patrols, community education, rubbish collection and rehabilitation.



The Wangetti Recovery Group at the awards ceremony. L-R: Christine Fry (Wangetti resident), Bill Carrodus (WTMA), Sue Foley (Wangetti resident), Sonja Anderson (Asia-Pacific Tropical Homes - award sponsor), Hilton Noble (WTMA), Peter McNamara (Department of Main Roads) and Mark Dwyer (Conservation Volunteers).

- Conservation Volunteers Australia has also been working on pond apple eradication and walking track maintenance in the Daintree and Cairns areas; Cardwell Shire wetland rehabilitation through the 'Revive our Wetlands Program'; and weed control and rehabilitation works in the Cairns and Tableland areas.
- TREAT and QPWS have been replanting the Peterson Creek corridor near Yungaburra.
- The Tree Kangaroo and Mammal Group (TKMG) has worked with TREAT on planting of mabi forest at Picnic Crossing and planting of hypsi forest on private properties around Millaa Millaa. The TKMG also worked to have tree kangaroo crossing signs erected around Millaa Millaa and Malanda townships.
- Kuranda EnviroCare has been active planting native forests as part of the Kuranda EnviroLink Wildlife Corridor. EnviroCare has also planted native trees at Kuranda School for future use as a production plantation. The group is also using local residents to assist with mapping cassowary sightings and movements around Kuranda.
- The Community for Coastal and Cassowary Conservation (C4) has continued to maintain its nursery of 10,000 native trees which are sold for two dollars each, primarily for domestic planting in the Mission Beach area. C4 has also been planting native trees in the Mission Beach area in collaboration with the revegetation units at Johnstone and Cardwell Shire Councils.
- TreeForce has continued rehabilitation planting of native trees along Freshwater Creek in Cairns.

Research

Research into Wet Tropics World Heritage values and threatening processes is integral to effective conservation management. Research is needed to help us better understand how ecosystems and species behave and interact. It can identify threatening processes and help find biological and technological solutions for them. Research is also required into how the WHA and surrounds function in the life of the community. Beneficial fields of study may include ecology, zoology, botany, genetics, taxonomy, geology, geography, environmental studies, economics, anthropology, engineering, sociology and psychology.

The Rainforest CRC, James Cook University and the CSIRO are the primary research organisations for the Wet Tropics Bioregion. Research projects may involve affiliations between these research bodies as well as with other universities and CRCs for issues such as weeds, vertebrate pests and the reef. Government agencies such as QPWS, DNRM, WTMA, DMR and DPIF may help fund or conduct research programs individually or within the Rainforest CRC, as well as participating in the Rainforest CRC as research user groups.

For the past 14 years the Rainforest CRC has been the primary focus for research activities for the WHA. The multi-faceted nature of the rainforest is reflected in

the multi-disciplinary research of the Centre, which brings together a range of experts covering the following key areas of research:

- Environmental planning and management in rainforest regions.
- Evaluating ecosystem goods and services in a dynamic landscape.
- Rainforest visitation, business, interpretation and presentation.
- Managing and monitoring impacts arising from rainforest access.
- Rehabilitation and restoration, including riparian.
- Conservation principles and management.
- Aboriginal and collaborative management.

The Earthwatch Institute in Atherton is a not for profit organisation which conducts research in the Wet Tropics. Its Rainforest to Reef Conservation Research Initiative supports local conservation field research by providing funds and willing workers to local scientists, and implements a range of community education and awareness raising initiatives.

Research and Information Needs for the Wet Tropics WHA [55] has been developed by the Authority and its Scientific Advisory Committee in collaboration with other regional land management agencies. The aim of the Report is to guide the Authority and other funding bodies, research organisations and other groups with an interest in the WHA, to identify opportunities for collaboration and areas for further exploration and attention.

Management initiatives (2004-2005)

- The Rainforest and Reef CRCs are in the process of winding down and are to be superseded by a Marine and Tropical Science Research Facility with a government commitment of \$40 million over four years for its establishment. The rainforest hub of this new facility will be based at the James Cook University campus in Cairns. The facility will become the world's largest dedicated tropical environmental research centre.
- The Australian Tropical Forests Institute (ATFI) has completed its business plan and the ATFI building is expected to be completed by the end of 2006, funded by a Smart State grant. James Cook University and CSIRO have committed staff to the Institute and provided funding for the Chief Executive Officer position.
- As part of the Rainforest to Reef Conservation Research Initiative, Earthwatch has supported research on the impacts riparian replanting on aquatic fauna (CSIRO); the impacts of global warming on rainforest vertebrate species (Rainforest CRC); and rainforest seed dispersal by native animals in a predominantly agricultural landscape (CSIRO).

- Earthwatch also provided fellowships for 25 volunteers, including ten local people, to assist in the field on research projects.
- The Wet Tropics Conservation Strategy [19] listed research requirements for an improved understanding of the values of the WHA and threats to those values. The Authority continues to work with research organisations to progress WHA research consistent with the strategy's priorities.

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