STAKEHOLDER VIEWS: ASSETS AND THREATS TO THE TROPICAL RIVERS OF THE FLINDERS RIVER CATCHMENT, QUEENSLAND

INTERIM WORKSHOP REPORT RICHMOND TUESDAY 6 JUNE, 2006



Flinders River, north of Maxwelton



national centre for tropical wetland research



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Acknowledgements

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Date of Report June 2006

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1. Introduction

The Tropical Rivers Inventory and Assessment Project (TRIAP) Flinders River catchment community consultation workshop was held in Richmond on Tuesday 6 June, 2006. The workshop was organised by the National Centre for Tropical Wetland Research (NCTWRwww.nctwr.org.au), which is undertaking the TRIAP, and facilitated by ACTFR. The TRIAP is funded under Land & Water Australia's Tropical Rivers Program.

The TRIAP is examining the ecological assets and threats to Australia's tropical rivers in terms of risk assessment. The Flinders River catchment is one of the project's '*focus catchments*' and as such, is being analysed in as much detail as possible.

One of the first steps in the risk assessment project is to document the assets and threats in the Flinders River catchment. We have collected some information from existing reports and workshops held previously. Appendix 1 provides a list of reports and workshops referenced to date. It is important we get the views of people who live and work in the catchment on these aspects, so that the project produces meaningful results and relevant outputs.

The major aim of the workshop was to agree on the key ecological assets and threats to the aquatic ecosystems of the Flinders River catchment and to prioritise assets and threats to be examined within the TRIAP. An information sheet (see Appendix 2) and flyer about the workshop was distributed to stakeholders who then passed it on to people they thought may be interested in attending.



Twelve people attended the workshop (see Appendix 3 for a list of workshop participants). They included graziers, land owners, business proprietors and one Queensland Government stakeholder. The workshop included brief PowerPoint presentations with discussion from the participants. The original workshop format was altered to allow for the stakeholders to be engaged in a meaningful and inclusive manner.

Stakeholder representation was an issue influencing the information elicited during the workshop. Although many government stakeholders were invited, only one attended. Distribution of flyers were sent to many stakeholders in the region (see Appendix 4). Compounding the bias in stakeholder participation is geographic representation. The majority of attendees came from the Mitchell Grass Downs region within the catchment. The workshop was framed in an ecological risk assessment context, however due to the composition of stakeholders, assets and management issues were loosely related to ecological aspects though economic drivers. This report is a record of the consultation and is not a definitive report on the ecological assets and threats for the Flinders River catchment.

Ecological risk assessment frameworks refer to ecological assets, pressures and threats. Stakeholders at the Richmond workshop expressed that the terms 'pressure' and 'threat' encouraged a pre-determined answer and suggested that the term 'management issue' should be used in their place. Therefore this report refers to pressures and threats as 'management issues' when reporting on stakeholder views.

This report includes:

- A summary of what is risk assessment and conceptual models as presented at the workshop
- A summary of the ecological assets collected from other reports and the assets discussed at the workshop
- A summary of the management issues collected from other reports and the management issues discussed at the workshop

2. What is risk assessment?

Ecological risk: the chance of a harmful effect taking place of a certain level on man/environment because of exposure to a threat



Pressure: Water impoundment



Threat: Change in water flow



Risk: Chance of a fish kill

Ecological asset: parts of the natural environment/country which are valued or important to the community



Threatened Species



River Flow



Riparian Vegetation

Value: qualities/characteristics of assets that make the community generally value and want to protect the asset

Pressure: any human activity that can impact the natural environment



Mining



Irrigated Cropping

Threat: an action or activity caused by a pressure that can negatively affect an ecological asset and its value

Another word used for threat is *Stressor*



Prickly Acacia



Introduced Animals

2.1. How does this all fit together: the conceptual model

A conceptual model tells a story of how pressures and threats affect ecological assets. It shows the potential ecological consequence of a particular threat to a particular asset. Conceptual models can be shown in different ways. A model for the whole river system can be shown as in Appendix 5 or a model for one asset (e.g. fish diversity and abundance) can be shown as in the example below. Conceptual models can be presented as a series of boxes with words or with symbols and pictures as also shown by the fish diversity and abundance example below.

Example Conceptual Model for Pressures and Threats on Fish Diversity and Abundance in the Fitzroy River, WA





Conceptual Model for Pressures and Threats on Fish Diversity and Abundance in the Fitzrey River, WA

Pressures	Threats	Ecological Effects
🚔 🐌 큤 Climate Change	🍐 Altered Fire Regime	Increased Predation of Increased Temperature Reduction in Breeding
	Agriculture	Nutrient Enrichment Sedimentation Ecological Asset
Increased Human Habitation	Barrage	Increased Turbidity Reduction in Food Sources
Tourism and Recreation	Released Aquarium Fish	Naci Increased Salinity Reduction in Water Quality Fish Diversity and Abundance

3. Ecological Assets

3.1. Summary of Ecological Assets Identified from Previous Stakeholder Consultations in the Region and Reports

Table 1 summarises the key ecological assets identified in previous stakeholder meetings and reports on the Flinders River. These were presented at the workshop and discussed by participants. The main sources of information gathered were:

Southern Gulf Catchments 2005 Natural Resource Management Plan

Department of Natural Resources Mines and Energy 2004. Gulf and Mitchell water resource planning, *Land and water assessment report*.

Table1: Summary of key ecological assets identified in previous stakeholder meetings and reports on the Flinders River.

Ecological Asset
Groundwater
Water Quantity
Water Quality
Wetlands
Biodiversity
Threatened Species
Conservation Areas

3.2. Ecological assets discussed in the workshop

This session involved a general discussion between all participants. This discussion highlighted that what was deemed to be an ecological asset was strongly linked to economic values as opposed to an ecological value. For example, quality of grasslands was valued not for providing habitat or other ecosystem services, but for its potential and fertility for grazing. Similarly improved pastures such as buffel grass that are recognised as a management issue by some stakeholders and in other regions is valued for its ability to stabilise river banks and improve water quality. Table 2 summarises the general discussion. It must be noted that the assets and values reported are representative of the particular stakeholder group in attendance.

Table 2: Summary of Assets. Water quantity followed by quality of grasslands wasidentified as being important.

Asset	Value
Quality of grasslands	Potential and fertility for grazing
Quantity of water	-Surface flow
	-Alluvial aquifer
Seasonal wetlands	-Growth of herbs and grasses
	-Threat is the pigs
Quality of black soil plains	-Agricultural use
	-Salinity is not as much of an issue as DNR has suggested
Fisheries (prawn)	-Water flow in some years is not an important factor
	- Issue of development at lower reaches impacting development at upper reaches (and vice versa)
Riparian vegetation	-"insignificant compared to other areas" with respect to carbon credits
	-There is more erosion with more trees
	-Nesting habitat
Improved pastures on river banks	-Reduces erosion
Eg buffel grass	-Improves water quality
	-Numbers of animals that live on grasses increases (eg kangaroos)
	-Impact on biodiversity is unknown (no baseline studies 30-40 years ago prior to the introduction of buffel grass)
Threatened species	-People may not know what the threatened species are but may see them frequently
	-Sometimes people know where threatened species are but don't say anything because they are worried their properties will be fenced off.
Artificial watering points	Benefit to biodiversity because they provide a water source
Conservation areas	-White Mountains (1/3 in catchment)
	-Blackbraes (1/10 in catchment)

4. Management Issues

4.1. Summary of Management Issues Identified from Previous Stakeholder Consultations in the Region and Reports

Table 3 summarises the management issues identified in previous stakeholder meetings and reports on the Flinders River. These were presented at the workshop and discussed by participants.

Table 3: Summary of the management issues identified in previous stakeholder meetings and reports on the Flinders River.

Pressures	Threats
Water diversion	Cattle
Water extraction	Weeds
Agriculture	Dams
Pastoralism	Introduced animals
Industry	Pollution
Mining	Degradation of Native Habitat
Tourism/Recreation	Altered Fire Regime
Urbanisation	Land clearing
Climate Change	
Development	

4.2. Management issues discussed in the workshop

Table 4 is a summary of the management issues discussed by the workshop group. Some of the management issues described in work conducted previously are considered assets by this stakeholder group. For example, dams are viewed as providing habitat for fish and birds.

Table 4: Summary of the management issues discussed by the group.

Fire	Lack of fire can be a management issue
	because of the intensity of a big fire. But the
	lack of fire also protects biodiversity because
	animals survive and trees increase
	-No fire at top end of Flinders. Weeds and

	woody vegetation are thicker
	-Have to burn more where there is Rubber Vine
	-Big seasonal fires on the Downs prior to white people
	-Traditional fire regimes prior to white people, but no traditional burning today
	-No fire is two-sided
	 Increase in weeds Thickening of trees Poor management of fire is the management issue (dependent on what you are preserving and depends on the country you are on).
	-Fire burns grasslands and no fire preserves the grasslands
Drought	Damages rivers through:
	 Erosion (no grass cover to hold the bank together and the quantity of water upon first rainfall) Dead trees
Climate Change	-Depending on the amount of sea level rise, it would not have a major impact
	-Salinity from cropping/irrigation is not an issue in the alluvial country (it depends on irrigation practices)
	-Most of the cropping is near the coast
	-Dependent on endpoint as to whether it is a management issue
Tourism	-Tourists have no prior knowledge of what the country was originally like
	Eg it is "naturally' cleared
	-They want to preserve the 'naturalness' of the place and have the vote carrying capacity.
	-Political impact rather than a direct physical threat to the environment
	-Wild Rivers legislation: people not in Wild River areas vote on issues like this.
	Legislation is passed because of the number of votes
	Eg: 50 000 tourists pass through Hughenden

	so the local people really don't have a say
	-Direct physical impact from tourists is minimal because the Flinders River has no water or fish
Pastoralism	-There are good and bad managers. The majority are good
	-Fences are down in floods so it is hard to maintain fences
	-Some erosion from cattle
	-There is no clearing of the riparian zone
	-Thickening of riparian vegetation can cause more erosion
	-Land rent is an economic pressure
Weeds	Ranking of weeds (1=minimal impact, 5=high impact)
	Rubber Vine 5 (Cryptostegia grandiflora)
	Prickly Acacia 5 (Acacia nilotica)
	Parkinsonia 1
	(Parkinsonia aculeata)
	Bellyache Bush (Jatropha gossypiifolia) 2 (potentially 5)
	Chinee Apple 4 (Ziziphus mauritiana)
	Mesquite 1 (Prosopis pallida)
	Castor Oil Bush 1 (Ricinus communis)
	Parthenium 1 (potentially 5)
	(Parthenium hysterophorus)
	-State authorities don't enforce eradication, it is left to local authorities which is difficult for them because they live in the area
	-Biggest threat to biodiversity
	-Rubber Vine: spray the banks aerially because the trees will be killed anyway by the Rubber Vine
Development and Urbanisation	-Don't view as a management issue
	-Creates money that can be spent on the environment (eg weeds)

	-Dams are an asset as they provide habitat for fish, birds and people
Water Diversion	-Off stream storage provides habitat and can be done economically and environmentally friendly
	 When river reaches a certain level, you can pump water and store. State Government said no Richmond and Flinders Shires want a dam
Pollution	Not enough development to have an impact
Introduced animals	-Pigs are a big problem (Baits work if DNR put enough 1080 in them)
	-Rabbits: riparian impact
	-Cats: impact on birds and lizards. A lot of cats
	-Wild Dog kill and maim calves, sheep and wildlife
	-Cane Toad-numbers have reduced
Cotton	-May be an asset in the future
	-Need a dam to reach volume
	-If there was a dam at Hughenden crops could be grown
	-There are alternative crops to cotton

5. Conceptual model of key asset and threat

The workshop participants created a conceptual model for what they perceive to be the most important asset and the most pressing management issue. This is not a purely ecology based model. The asset chosen was 'lack of water quantity' which in itself can be perceived as an ecological asset. The drivers for selecting this asset are socio-economic. The conceptual model derived during the workshop is presented below.



6. Summary

The major aim of the workshop was to agree on the key ecological assets and management issues of the Flinders River catchment and to prioritise assets and management issues to be examined within the TRIAP. This aim was achieved. Water quantity was determined to be a priority asset for the TRIAP to examine. The lack of a dam in the region was recognised as a management issue and government regulation was identified as a priority pressure. **The management issues and pressures discussed are not 'ecological' issues and are socio-economic in nature.** Although just as important as ecological assets and threats, socio-economic issues will not be addressed within the existing project scope. The focus on socio-economic issues was due to the stakeholder group, composed of people whose livelihoods depend on multiple use of the catchment.

This report will be distributed to as many stakeholders as possible for comment. Feedback will be incorporated into a final version of the report.

Appendix 1: List of References Used Prior to the Richmond Workshop

- Cummings WS 2004. Globalisation and northern Australia Understanding the impacts of world economic trends on the regions of northern Australia and subsequent impacts on national economy. Cummings Economics, Cairns & North Australia Research Group.
- Department of Natural Resources Mines and Energy 2004. Gulf and Mitchell water resource planning, *Land and water assessment report*.
- Flinders Shire Council 2005. H25, a vision for Hughenden in 2005. Discussion Paper, unpublished. Flinders Shire Council.
- Hogan A & Vallance T 2005. Rapid assessment of fish biodiversity in southern Gulf of Carpentaria catchments. Project report number QI04074, Queensland Department of Primary Industries and Fisheries, Walkamin.
- Morwood MJ (1992). Changing art in a challenging landscape: a case study from the upper Flinders region of the north Queensland highland. In: (eds) McDonald J & Haskovec IP. State of the Art - regional rock art studies in Australia and Melanesia. Occasional AURA Publication No. 6, Australian Rock Art Research Association, Melbourne, 60-70.
- Morwood MJ & Godwin LM (1982). Aboriginal sites in the Hughenden region, north Queensland highlands, research prospects. Australian Archaeology 15: 49-53.
- National Heritage Trust (2004). Bilateral agreement between the Commonwealth of Australia and the State of Queensland to deliver the Natural Heritage Trust in Queensland. Attachment C. <u>www.nht.gov.au/bilaterals/qld/attachmentc</u>. html
- Southern Gulf Catchments 2005 Natural Resource Management Plan
- Tourism Queensland (2005). Sub-regional nature based tourism strategy. Protected areas and council reserves in Dalrymple and Flinders Shire Councils. Dalrymple Shire Council, Flinders Shire Council, Tourism Queensland & Queensland parks & Wildlife Service. Privately published.
- Wallis LA, Smith D & Smith H (2004a). Investigations of Aboriginal hearth sites along the Flinders River, inland north west Queensland. The Artefact 27: 59-76
- Wallis LA, Smith D & Smith H (2004b). Recent archaeological surveys on Middle Park Station, northwest Queensland. Australian Archaeology 59: 43-50.
- Winchester HPM, Davidson I & O'Brien DR (1996). Historical graffiti in northern Australia: evidence of European settlement and society in the Selwyn Range of northwest Queensland. Australian Archaeology 43: 1-7

Appendix 2: Information Sheet Distributed to Stakeholders





Tropical Rivers Inventory and Assessment Project www.nctwr.org.au/publications/tropical-rivers.html National Centre for Tropical Wetland Research

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2 May 2006

Stakeholder Views Workshop: Assets and threats to the tropical rivers of the Flinders River catchment

(6 June 2006)

All stakeholders and community members in the Flinders region are welcome to attend and participate in a workshop to agree on the key assets and threats to the Fitzroy River. This forms a component of the Tropical Rivers Inventory and Assessment Project (TRIAP).

The TRIAP is funded under Land & Water Australia's 'Tropical Rivers Program'. The project aims to provide an information base for determining and applying management priorities and land use practices of relevance to stakeholders, including local and indigenous people, private sectors and governmental agents. Specific objectives of the project are to:

- Compile a multiple-scale inventory of the habitats and biota of the rivers and wetlands of tropical Australia through the use of an integrated GIS, and where necessary develop and/or ensure consistency with other suitable typologies based on hydrological and landform features. This component of the project is known as *Subproject 1: Inventory of the biological, chemical and physical features of aquatic ecosystems*;
- Develop a risk assessment framework and undertake risk analyses for key catchments/significant locations and pressures, which meet stakeholder needs. This component of the project is known as **Sub-project 2: Assessment of the major pressures on aquatic ecosystems**; and
- Provide a framework for analysis of the ecosystem services (e.g. provision of water for multiple uses) provided by the habitats and biota of the rivers and wetlands of northern Australia. This component of the project is known as *Sub-project 3*:

Development of a framework for the analysis of ecosystem services provided by aquatic ecosystems.

The tropical rivers are being assessed at two scales in this project. Firstly there is what we are calling the *continental scale* which encompasses the whole of the northern tropical rivers region. Secondly we are assessing *focus catchments* in more detail. The focus catchments for the TRIAP are the Fitzroy (WA), Daly (NT) and Flinders (QLD). Further information on the TRIAP can be found on the project website: www.nctwr.org.au/publications/tropical-rivers.html

This stakeholder views workshop is focussed on Sub-project 2: Assessment of the major pressures on aquatic ecosystems. Throughout this sub-project stakeholders will be involved in providing input and feedback. At the workshop we will be seeking advice and your views on:

- The key ecological assets and values of the Flinders River and associated waterways; and
- The major pressures and threats to the Flinders River and associated waterways.

We have defined assets, values pressures and threats as follows for the TRIAP.

Ecological Assets: Attributes (eg. components, processes, functions, products) of natural ecosystems, which are valued by the community (eg. river, wetland, biodiversity, water regulation, primary production).

Ecological Values: Qualities or characteristics of ecological assets that make the community value and want to protect them.

Pressures: Any human activity that has the potential to impact the natural environment. "Pressures" here cover indirect pressures (i.e. human activities themselves and trends and patterns of environmental significance) as well as direct pressures (i.e. the use of resources and the discharge of pollutants and waste materials).

Threat: An action or activity that has the capacity to adversely affect an ecological asset and its value.

We have already collected some information on assets and threats from existing reports.

Everyone is most welcome to attend and participate in the workshop. Further details will be provided in the following weeks.

John Dowe (ph: (07) 4781 5654, e:John.Dowe@jcu.edu.au) Renee Bartolo (ph: (08) 8920 1392, e: renee.bartolo@deh.gov.au)

Any questions relating to the project or workshop can be directed to the above contacts.

Please pass this information on to anyone who may be interested.

Appendix 3: List of Workshop Participants

Name	Stakeholder Group
WP Lilyman	Resident on Flinders River
Jeff & Jenny Reid	Reidies Hay Farm
Greg Jones	Flinders Shire Council
	Business Proprietor of Flinders Shire
Dan Burton	Queensland Department of Primary Industries and Fisheries
Dick Cribb	Grazier
Christine Barns	Charters Towers
Linda Knuth	Richmond Land Owner
Greg McNamara	Grazier
Daryl Coward	Grazier
Clive Poole	Grazier/Flinders Shire Council member
Bill Bode	Grazier/ Flinders Shire Council member
John Dowe	Australian Centre for Tropical Freshwater Research, James Cook University
Renee Bartolo	TRIAP Risk Assessment Sub-project Coordinator, Department of the Environment & Heritage

Appendix 4: Stakeholders invited and stakeholders who confirmed that they were attending the workshop

Flyer distribution:

The flyer was included in the Richmond Shire Council's Community Newsletter which is posted to every household and rates payer in the Shire (approximately 350 people). Southern Gulf Catchment was to distribute the flyer to 'interested persons' in the Cloncurry Shire to properties located within the Flinders River catchment. McKinlay Shire Council was to do the same for their Shire. In the Flinders Shire, 112 people were sent a flyer.

NAME	PROPERTY/ORGANISATION
Brett Epple	Alstonvale Station
Beryl Hunter	Torquay
Dick Morton	Strathtay Station
Geraldine Murphy	Gregory Springs
Bill Bode	The Plains Station
Linda Knuth	Woolgar
Wayne & Thomasin	
Lillyman	Stewart Park
Secretary	Gulf Savannah Development Corporation
Tiffany Cofferson	Cloncurry Shire Council
Shane Laffey	DPI & F, Cloncurry
Michelle Wood	NRM, Cloncurry
David Jardine	DPI & F, Hughenden
Manager	DPI & F, Hughenden
Brendan McNamara	Flinders Shire Council
Manager	DPI & F, Julia Creek
Tim Vollmer	McKinlay Shire Council
Paul Woodhouse	McKinlay Shire Council
Charles Curry	Southern Gulf Catchments Incorporated
Michelle Strauss	DPI & F, Mt Isa
Joyce Zahner	Carpentaria Shire Council,
Adam West	DPI & F, Townsville
Daniel Burton	DPI & F, Richmond
Daniel McCudden	Richmond Shire Council
John Warton	Richmond Shire Council
Patsy Cox	Richmond Shire Council

List of Stakeholders who RSVPd to the workshop

Appendix 5: Draft Conceptual Model of Ecological Risk Assessment for the Fitzroy River

