STAKEHOLDER VIEWS: ASSETS AND THREATS TO THE TROPICAL RIVERS OF THE FITZROY CATCHMENT, WA

WORKSHOP REPORT

DERBY

FRIDAY 17 FEBRUARY, 2006

Fitzroy River, Willare Bridge

national centre for tropical wetland research

Australian Government

Land & Water Australia

Natural Heritage Trust

Helping Communities Helping Australia

An Australian Government Initiative

Stakeholder feedback to be emailed, faxed or posted to:

Renee Bartolo

ERISS

GPO Box 461, Darwin NT 0801

T: 08 8920 1392

M : 0404 868 981

F: 08 8920 1199

E: renee.bartolo@deh.gov.au

Acknowledgements

Many thanks to the Kimberley Land Council people, in particular Charles Prouse and Erica Spry in organising people to attend the workshop and in providing advice in the lead up to the workshop. Gill Holmes provided notes from the consultations undertaken for the Kimberley Draft NRM Plan and ensured we had the relevant information. Scott Goodson from Department of Environment provided useful advice on the workshop. Many thanks to the people who attended the workshop and provided their valuable input to the process.

Date of Report

May 2006

Contents

1. Introduction

The Tropical Rivers Inventory and Assessment Project (TRIAP) Fitzroy catchment community consultation workshop was held in Derby on Friday 17 February, 2006. The workshop was organised by the National Centre for Tropical Wetland Research (NCTWR-www.nctwr.org.au), which is undertaking the TRIAP. The TRIAP is funded under Land & Water Australia's Tropical Rivers Program.

The TRIAP is examining the assets and threats to Australia's tropical rivers in terms of risk assessment. The Fitzroy 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 Fitzroy 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 tropical rivers of the Fitzroy 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.

Fourteen people attended the workshop (see Appendix 3 for a list of workshop participants). They included traditional owners, representatives from the Department of Environment, Kimberley Land Council and Clean Up the Kimberley. The workshop included brief powerpoint presentations with lots of discussion from the participants combined with breakout sessions where small groups discussed their views. The workshop format is outlined in Appendix 4. The concept of ecological risk assessment was discussed in the beginning of the workshop.

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 ecological assets discussed at the workshop
- A summary of the threats to ecological assets collected from other reports and the threats discussed at the workshop

- Priorities for the TRIAP as identified 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

Photo: David Morgan

Sawfish

River Flow

Riparian Vegetation

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

Pressure: any human activity that can impact the natural environment

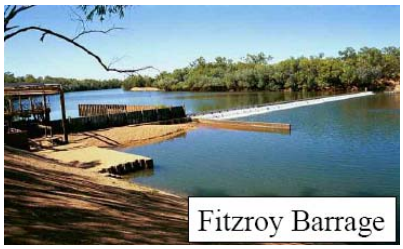


Photo: Andrew Storey

River Regulation

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***

Weeds

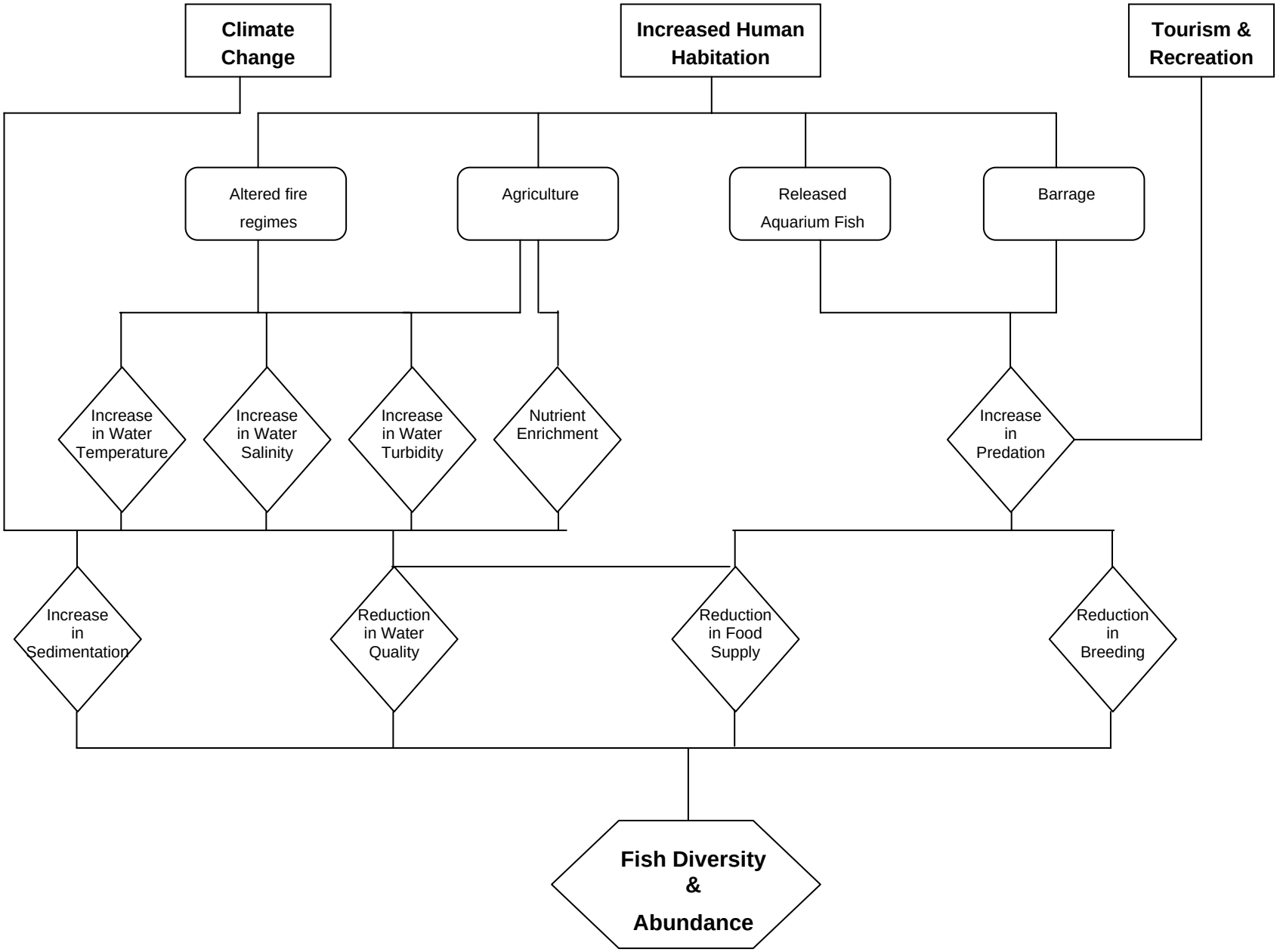
Cattle

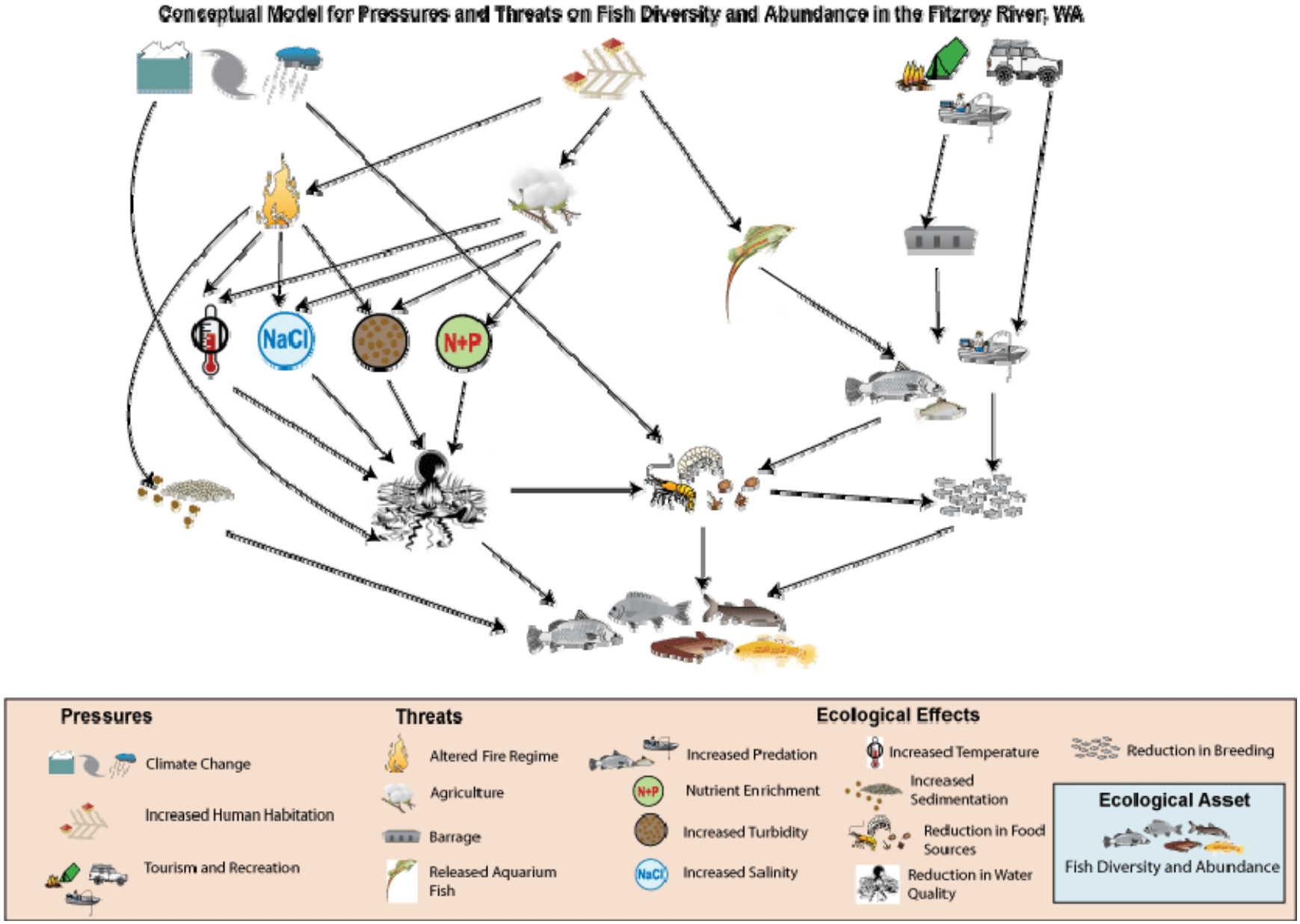
2.1. How does this all fit together: the conceptual model

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. You can show a model for the whole river system as shown in Appendix 5 or you can show a model for one asset (fish diversity and abundance) as shown 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.

The group spoke about fish kills in the context of conceptual models. After the first rain, the first flood is hot because of the dry sand bank and the fish die of these natural causes.

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 Fitzroy River, WA
NaCl
N+P
Pressures
Climate Change
Increased Human Habitation
Tourism and Recreation
Threats
Altered Fire Regime
Agriculture
Barrage
Released Aquarium Fish
Ecological Effects
Increased Predation
Nutrient Enrichment
Increased Turbidity
Increased Salinity
Increased Temperature
Increased Sedimentation
Reduction in Food Sources
Reduction in Water Quality
Reduction in Breeding
Ecological Asset
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 Fitzroy River. These were presented at the workshop and discussed by participants. In addition to the references cited, the workshop notes from the Broome, Derby and Fitzroy Crossing Kimberley Natural Resource Management meetings in 2004 were reviewed.

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

Ecological Asset	Consultation/Report Source
Freshwater Sawfish (*Pristis microdon*) Dwarf Sawfish (*Pristis clavata*)	1. Thorburn *et al*. (2004) Biology & cultural significance of the freshwater sawfish (Pristis microdon) in the Fitzroy River Kimberley, Western Australia.
	2. Morgan, D.L., Allen, M.G., Bedford, P. and Horstman, M. (2002) Inland Fish Fauna of the Fitzroy River Western Australia, including the Bunuba, Gooniyandi, Ngarinyin, Nyikina and Walmajarri Aboriginal names.
	3. Pillsbury, J. (2005) The International and Heritage Significance of Doctor's Creek.
	4. Storey, A.W., Davies, P.M. and Froend, R.H. (2001) Fitzroy River System: Environmental Values (for Water & Rivers Commission).
Fish Diversity and Endemicity	1. Morgan, D.L., Allen, M.G., Bedford, P. and Horstman, M. (2002) Inland Fish Fauna of the Fitzroy River Western Australia, including the Bunuba, Gooniyandi, Ngarinyin, Nyikina and Walmajarri Aboriginal names.
	2. Storey, A.W., Davies, P.M. and Froend, R.H. (2001) Fitzroy River System: Environmental Values (for Water & Rivers Commission).
	3. Draft Kimberley Natural Resource Management Plan (December 2004)
	4. Kimberley Land Council Land & Sea Unit. (2004) "Looking After Country" Workshop Report 14-15 September 2004, Bungarun.
	5.Kimberley Appropriate Economies

	Roundtable. (2005) Interim Report.
Aquatic Threatened Species Freshwater Sawfish (Vulnerable), Freshwater Whipray (Vulnerable), Northern River Shark (Endangered)	1. Morgan, D.L., Allen, M.G., Bedford, P. and Horstman, M. (2002) Inland Fish Fauna of the Fitzroy River Western Australia, including the Bunuba, Gooniyandi, Ngarinyin, Nyikina and Walmajarri Aboriginal names.
	2. Storey, A.W., Davies, P.M. and Froend, R.H. (2001) Fitzroy River System: Environmental Values (for Water & Rivers Commission).
	3.Thorburn *et al*. (2004) Biology & cultural significance of the freshwater sawfish (Pristis microdon) in the Fitzroy River Kimberley, Western Australia.
	4. Draft Kimberley Natural Resource Management Plan (December 2004)
	5. Pillsbury, J. (2005) The International and Heritage Significance of Doctor's Creek.
	6.Kimberley Appropriate Economies Roundtable. (2005) Interim Report.
Wetlands Camballin Floodplain Geikie Gorge	1. Storey, A.W., Davies, P.M. and Froend, R.H. (2001) Fitzroy River System: Environmental Values (for Water & Rivers Commission).
	2. Environment Australia (2001) A Directory of Important Wetlands in Australia (3rd edition)
	3.Draft Kimberley Natural Resource Management Plan (December 2004)
Flow Regime *"floodwaters come every year and clean the country"* *"we must make sure the Fitzroy River flows freely and is not interfered with or blocked"*	1. Storey, A.W., Davies, P.M. and Froend, R.H. (2001) Fitzroy River System: Environmental Values (for Water & Rivers Commission). 2. Kimberley Land Council Land & Sea Unit. (2004) "Looking After Country" Workshop Report 14-15 September 2004, Bungarun. 3.Kimberley Appropriate Economies Roundtable. (2005) Interim Report.
Riparian Vegetation	Storey, A.W., Davies, P.M. and Froend, R.H. (2001) Fitzroy River System: Environmental Values (for Water & Rivers Commission).

	Kimberley Land Council Land & Sea Unit. (2004) "Looking After Country" Workshop Report 14-15 September 2004, Bungarun.
Groundwater	Draft Kimberley Natural Resource Management Plan (December 2004)

3.2. Ecological assets discussed in the workshop

This session involved a general discussion followed by break out groups who then reported back to the whole group.

The general discussion highlighted that the ecological assets were also cultural assets and so some assets are referred to as *eco-cultural assets* as they can not be assigned as either type. Examples of eco-cultural assets given were fish, the black water goanna (Merton's Water Monitor- *Varanus mertensi*) and the water rat (Golden Backed Tree Rat - *Mesembriomys macrurus*) because there are traditional stories associated with them. Riparian vegetation such as pandanus and freshwater mangrove was discussed by everyone as an eco-cultural asset also. Not only does it play an important ecological role in the river's health, but it is an important source of bushtucker, bush medicine and bush tools. For example, "*you have a headache…go to a tree and get your medicine from the tree*"-Leena Fraser Buckle. Alan Lawford also talked about fire as an asset. He told a story showing that if people burn at the right time fire was good and also spoke about the problems of the wrong fire regime for the river. Two other assets that were highlighted in group discussions were the remoteness and low human population of the region.

Alan Lawford telling his fire story

The break out session involved three groups summarising what ecological assets they thought were important and prioritising the most important ones to them. Group 1 was predominantly the Department of Environment (Katya Tripp, Scott Goodson, Michael Harris) stakeholders and Alan Lawford. Table 2 summarises their findings they presented back to the group. Group 2 included Charles Prouse, Lucy Marshall and Jake Zahl and their discussion is summarised in Table 3. Group 3 included Leena Fraser Buckle, Erica Spry, Annette, Hugh Wallace Smith, Mick, Rosie and Aggie Puertollano and their findings are summarised in Table 4.



Group 1 ***Group 2*** ***Group 3***

Table 2: Group 1 Summary of Ecological Assets. Maintenance of natural flow regimes was identified as a priority.

Fish- Barramundi, Sawfish, Cherabin, mussels etc.
Mammals- water rat and river wallaby.
***Maintained natural flow regimes* – unimpeded flow**
Billabongs, permanent pools, flood flush pools and fill billabongs
Riparian vegetation – stable banks, vegetation structure and assemblages
Water Quality- clean, use for drinking
Birds- Gouldian Finch, Purple Crowned Fairy Wren
Reptiles – lizards, goannas, turtles, snakes
Water supply – communities, pastoralism, bores - economic development and industry
Access to river- physical (weeds) and land tenure

Table 3: Group 2 Summary of Ecological Assets. Diversity of wildlife, abundance and quality of water and diversity of native flora were identified as being important.

Ecological Asset	**Nyikina Name**
Bait Fish	
Perch	Jalmonnga
Bony Bream	Budijal
Red Eye Mullet	Lowidingi
Black Bream	Walnga
Mudskippers	
Barramundi	Walja
Freshwater Crocodile	Wyania
Saltwater Crocodile	Linguida
Short Neck Turtle	Mullawai
Long Neck Turtle	Goolarboolu
Water Goanna	Wabada?
Fruit Bat	Nimanbur
Cobbler (Flathead)	Mwahlay
Stingray	Bire
Waterbird-cormorant	
Eagles-Sea Eagle	
Plover	
Pelicans, Spoonbills	
Ducks	
Brolga, Jabiru	
Diversity of wildlife	
Abundance and quality of water	
Diversity of native flora	

Table 4: Group 3 Summary of Ecological Assets. Sawfish, bait fish, seasonal variations, water quality and flow, snags/trees (habitat), frogs, goannas, eagles, pelican, invertebrates, bush medicine, vegetation, flooding, bush tucker, groundwater and billabongs were identified as being important.

Cultural sites (scared stories)
Barramundi
Cherabin
Catfish
Sawfish
Mullet
Long Neck Turtle
Bream
Crocodile
Stingray
Mussels
Oysters
Salmon
Freshwater Crabs
Archer Fish
All the little ones (Bait fish- about 40)
Long Tom
Mangrove Jack
Bull Shark
Eels
Seasonal Variations
Water quality and flow
Snags/Trees (Habitat)
Frogs
Goanna
Kanagaroos
Water Python
Eagles, Pelicans
Egrets

Hawks/Kite
Turkey
Brolga
Emu
Cormorant
Ducks
Magpie Geese
Invertebrates
Bush medicine
Bats (mammals)
Vegetation (e.g. water lily, bush cucumber, figs)
Flooding
Bush tucker (honey)
Groundwater
Billabongs

4. Pressures and Threats

4.1. Summary of Pressures and Threats Identified from Previous Stakeholder Consultations in the Region and Reports

Table 5 summarises the pressures and threats identified in previous stakeholder meetings and reports on the Fitzroy River. These were presented at the workshop and discussed by participants. In addition to the references cited, the workshop notes from the Broome, Derby and Fitzroy Crossing Kimberley Natural Resource Management meetings in 2004 were reviewed.

Table 5: Summary of the pressures and threats identified in previous stakeholder meetings and reports on the Fitzroy River.

Pressures	**Threats**
Water diversion	Cattle
Water regulation	Weeds
Broad scale Irrigated Agriculture	Dams/Barrages
Pastoralism	Cane toads
Horticulture	Litter/Rubbish
Mining	Run-off (Pesticides/Fertilisers)
Tourism/Recreation	Wrong Fire Regime
Human Settlement	Cotton
Climate Change	Saltwater Intrusion
	Illegal Fishing/Netting
	Pigs/Feral Cats
	Bullshark
	Aquarium Fish

4.2. Pressures and Threats discussed in the workshop

Table 6 is a summary of the pressures and threats discussed by the workshop group.

Table 6: Summary of the pressures and threats discussed by the group.

Fencing through rivers when flooded	Stops access of cattle to river and is not well managed.
Infrastructure such as tracks and roads	Enables more access to the river. Results in more sand in the river. People get bogged.
Government is a threat	Support for development in the region
Stormwater/Sewage	Mudflats/artificial wetland filters
Feral animals: pigs are a big problem	Bank erosion Water quality Water chestnut
Feral animals: cats	Impact on birds, insects, reptiles and fish.
Proposed canal development	Not much information supplied to the community (how, what is the science behind it) Creation story will be destroyed (if it is made by nature there is no problem)
Wrong fire regime	Unbalance Early burning is the proper way-low intensity Different country type-soil
Cane Toad	Important threat to examine
Illegal fishing-freezer chiller	No enforcement of the law 7 permits only in Kimberley for netting
Flood	Frogs disappeared in Derby after a big flood
Bullshark-flow, water regulation	Threat to fish diversity Run out of eating fish and starting eating each other, crocs, birds Breed at barrage Increasing in numbers Even jumping up and getting birds
Weeds	Always finding new weeds- “white flowers all

	round”
Weeds: N. burr	Threat to riparian vegetation Cattle can’t get down to river Blocks access
Weeds: Parkinsonia	Cattle eat it
Weeds: Passionfruit vine	
Weeds: Rubber Tree	Becoming extensive
Weeds: Different type to M.pigra	Has spread through floodplain
Climate Change	King Sound protects Derby from cyclones Cherabin numbers have changed because of changes in river flow Tidal creek expansion Marshes and mudflats are expanding 11m king tide Extreme temperatures-build up before rains affects vegetation. - dry and dusty - barrage stagnant and algae present (November) Increase in fire-desert encroaching on floodplain last 50 years Two-three years ago there was an extended cold season until August.
Recreational pressure is high	
Aquarium Fish: swordtails (telapia)	Aggressive Sold in Derby pet shop Eat native fish People use as bait fish Project educating people last year in communities about this problem
Human settlement	Aboriginal people moving into town from country because of no opportunities on country Not a large threat
Mining	Blina Swamp-oil Diamond mine?

	20 years down the track: -mineral wealth -low-grade coal (BHP exploration) -uranium?
Tourism	Controlled tourism is OK Camping at the Erskine Range (where the Fitzroy meets the Leonard) is unmanaged Litter/rubbish Wrong fire regime- 120 000 ha country burnt last year (lit by tourists) At Telegraph Pool, the tourists affect sawfish (both species)- they are trophy hunted (chop off rostrum) Telegraph-Langi: 60 caravans at a time (a lot of grey nomads) with generators and rubbish.
Barrage	Why was this put in, in the first place? Diverts water down Snake Creek White elephant Seasons did not allow for fish migrations sometimes Affects spawning and migration of some fish e.g. barramundi Window of migration reduced from 4 months to 2 months Bullsharks also get trapped and eat all the other trapped fish
Increasing salinity of system upstream	Christmas Creek- Alan Lawford told a story about Christmas Creek. He used to be able to only catch cherabin, perch, catfish and black bream. In the last 3 years he has been able to catch barramundi. Now he can't dig a freshwater soak like he could when he was a kid. Saltwater fish are going up as far as the Crossing where it is freshwater. For example the red snapper are up at the Crossing when the river is flowing.
Grazing and mammals	Grazing on river bank affects mammals (wallaby, Golden Backed Tree Rat (water rat) and quolls) differently compared with birds

	and fish Wallaby are starting to come back after being poisoned in the 1970s Lucy Marshall said she has not seen a Golden Backed Tree Rat (water rat) since the 1940s and maybe it was because of grazing that she has not seen them. These rats are rare and use the river bank.
Litter	Jake Zahl informed the group that in peak flow (every 3-4 years) the Fitzroy discharges 400 000 plastic bags into King Sound. Affects wildlife

5. Summary

The major aim of the workshop was to agree on the key ecological assets and threats to the tropical rivers of the Fitzroy catchment and to prioritise assets and threats to be examined within the TRIAP. This aim was achieved. River flow and water quality was determined to be a priority asset for the TRIAP to examine because' *nothing else would exist without it*'. Other assets that were recognised as priorities were the riparian vegetation and diversity of wildlife, however it was agreed that they would not be examined in the same detail as river flow/water quality in the TRIAP due to limited time and resources. The Cane Toad was recognised as an immediate threat and water extraction/regulation was identified as a priority pressure.

Fire was viewed as an asset by some participants rather than a threat. This is because the correct use of fire as a management tool promotes healthy country. It is wrong fire regime that is a threat.

It was agreed that the NCTWR will supply the workshop participants with Cane Toad risk assessment work that the Department of the Environment and Heritage's Supervising Scientist Division based in Darwin has conducted for Kakadu National Park. This report will be distributed to as many stakeholders as possible for comment. Feedback will be incorporated into a final version of the report. It was agreed that the TRIAP risk assessment Project Coordinator will undertake a return visit to the region in late may/June dependent on the advice of local people.

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

Kimberley Land Council (Land and Sea Unit). (2004) *"Looking After Country" Workshop Report*, Bungarun 14-15 September 2004, pp.74.

Kimberley Land Council, Australian Conservation Foundation, Environs Kimberley. (2005) *Kimberley Appropriate Economies Roundtable*, Fitzroy Crossing 11-13 October 2005, pp.80.

Morgan, D.L., Allen, M.G., Bedford, P and Horstman, M. (2002) *Inland Fish Fauna of the Fitzroy River Western Australia, including the Banuba, Gooniyandi, Ngarinyin, Nyikina and Walmajarri Aboriginal names*. Report to the Natural Heritage Trust, Project Number 003123, pp.97.

Rangelands NRM Co-ordinating Group and Interim Kimberley Natural Resource Management Group. (2004) *Draft Kimberley Natural Resource Management Plan*, pp.139.

Storey, A.W., Davies, P.M. and Froend, R.H. (2001) *Fitzroy River System: Environmental Values*, Report for Waters and River Commission, pp.63.

Thorburn, D., *et al*. (2004) *Biology and cultural significance of the freshwater sawfish (Pristis microdon) in the Fitzroy River Kimberley, Western Australia*, Report to the Threatened Species Network, pp.57.

Appendix 2: Information Sheet Distributed to Stakeholders

national centre for tropical wetland research

Tropical Rivers Inventory and Assessment Project
www.nctwr.org.au/publications/tropical-rivers.html

National Centre for Tropical Wetland Research

Cnr of Pederson Road & Fenton Court
Marrara NT 0812
Postal: GPO Box 461, Darwin
Northern Territory 0801
Phone: (08) 8920 1175
Fax: (08) 8920 1190

www.nctwr.org.au

12 December 2005

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

(Derby, Friday 17 February 2006)

All stakeholders and community members in the Fitzroy 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 *Sub-project 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 Fitzroy River; and
- The major pressures and threats to the Fitzroy River.

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 (ie. human activities themselves and trends and patterns of environmental significance) as well as direct pressures (ie. 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. These reports include:

- Storey, A.W., Davies, P.M. and Froend, R.H. (2001) Fitzroy River System: Environmental Values.
- Draft Kimberley Natural Resource Management Plan (December 2004)
- Thorburn, D., et al. (2004) Biology and cultural significance of the freshwater sawfish (*Pristis microdon*) in the Fitzroy River, Kimberley, WA.

Everyone is most welcome to attend and participate in the workshop:

Friday 17 February, 2006

10:00 am-3:00pm

King Sound Resort

Loch Street, Derby

Morning tea and lunch will provided, but you need to RSVP by Friday 10 February to

Renee Bartolo (ph: (08) 8920 1392, e: renee.bartolo@deh.gov.au)

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

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

Appendix 3: List of Workshop Participants

Name	Stakeholder Group
Charles Prouse	Kimberley Land Council
Erica Spry	Kimberley Land Council
Hugh Wallace Smith	Yiriman Project
Leena Fraser Buckle	Nyikina
Lucy Marshall	Nyikina
Aggie Puertollano	Nyikina
Mick Michaels	Nyikina/Walmajarri
Rosie Mulligan	Nyikina
Annette Kogolo	Walmajarri
Alan Lawford	KAPA
Jake Zahl	Clean Up the Kimberley
Michael Harris	Department of Environment
Scott Goodson	Department of Environment
Katya Tripp	Department of Environment
Renee Bartolo	TRIAP Risk Assessment Sub-project Coordinator (Darwin, NT)
John Dowe	TRIAP Risk Assessment Sub-project (Townsville, QLD)

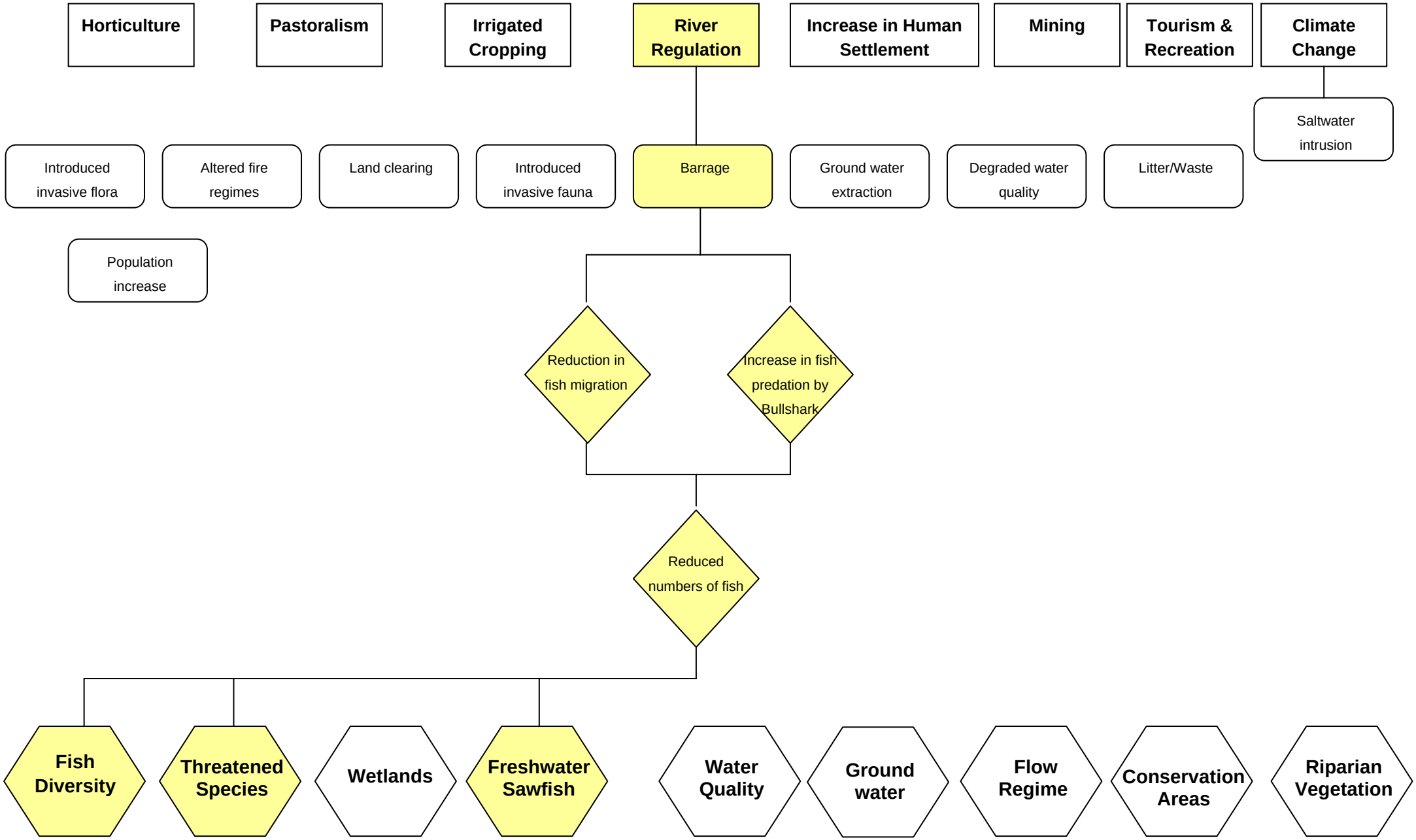
Appendix 4: Workshop Format

Tropical Rivers Inventory and Assessment Project: Sub-Project 2

Fitzroy River Risk Assessment Consultation Friday 17 February 2006

Time	Activity	How
10:00-10:15am 15 mins	*Informal introductions and Morning Tea*	
10:15-10:35am 20 mins	• *Introduction to the TRIAP* • *How does Sub-project 2 fit into existing work that has been done on the Fitzroy River?* • *What is ecological risk assessment?*	Powerpoint presentation (Renee Bartolo)
10:35-10:45am 10 mins	*Questions from workshop participants*	Open floor
10:45-11:05am 20 mins	• *Definitions for ecological risk assessment* • *Ecological assets that have been identified through previous consultations in the region*	Powerpoint presentation (Renee Bartolo) Audience feedback
11:05-11:35 am 30 mins	*Breakout session: ranking of ecological assets in importance to people*	Groups of 4 or 5 people
11:35am-12:00pm 25 mins	*Discussion of ecological assets based on breakout session*	Audience views
12:00-1:00pm 1 hour	LUNCH Provided	
1:00-1:15pm 15 mins	*Review of pressures and threats identified through previous consultations in the region*	Powerpoint presentation (Renee Bartolo) Audience feedback
1:15-1:45pm 30 mins	*Breakout session: identification of pressures and threats which are of the highest priority to stakeholders*	Groups of 4 or 5 people
1:45-2:30pm 45 mins	Discussion of pressures and threats based on breakout session	Audience views
2:30-2:45pm 15 mins	BREAK	
2:45-3:00pm 15 mins	*Closing-summary*	Renee Bartolo

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



Appendix 6: Stakeholder feedback on the Interim Workshop Report

Jake Zahl (Clean Up the Kimberley): Impact of rubbish on biodiversity

Goannas of the species *Varanus acanthurus* get their heads trapped in softdrink and beer cans (see Figure A.6.1).

“Cans are a perfect trap for many species as the ants go in after the sugar even after the residue has dried up and the animal goes in after the ants. Most of the victims hop or crawl off blindly into the bush to die.”

“I am still concerned about the dissapearance of *Varanus Mertensii* from the lower Fitzroy R. It is in plentiful supply on the pristine upper reaches of the river and at gorges throughout the sandstone country. As anyone who has swam in these gorges will tell you this species is very inquisitive and could easily fall victim to an aluminium can”.

There are large volumes of rubbish along the lower reaches of the Fitzory River from Fitzroy Crossing to King Sound (see Figure A.6.2). This rubbish ends up in the Fitzroy River during floods.

Figure A.6.1: Goanna with head trapped in can

Figure A.6.2: Rubbish in an area downstream of Fitzroy Crossing

Troy Sinclair (CALM): Rubber Vine (*Cryptostegia grandiflora*)

There was discussion of rubber vine (*Cryptostegia grandiflora*) in the workshop held by Sue Jackson on Thursday 16 February, however it was not discussed in detail during the workshop on Friday 17 February.

An outbreak of rubber vine was found at Willare Bridge in 2005. Rubber vine is a Weed of National Significance due to its ability to spread, invasiveness and economic and environmental impacts.

CALM are searching for outbreaks other than the Willare outbreak.

Keith Anderson (Jubilee Downs Station): Pastoral Perspective and Issues

Fencing is a major issue.

Jubilee Downs fence their property abutting the Fitzroy and Cunningham Rivers so stock don't get into the river. Communities leave the gates open because of flooding. There is a need for rangers for fence management. Nobody is managing the influx of people onto the river (vehicles, pig shooting and fishing). Other pastoralists allow cattle to go down to the river because they don't fence due to people not closing gates. This requires government management. Allowing cattle down to the rivers causes erosion.

Pastoral industry maintains a healthy environment in a lot of areas of the Fitzroy. The situation is alot better than in 1960s when cattle numbers were high.

In two decades the riverbank vegetation has gone down hill but the Fitzroy is still a healthy river. There is alot of *Noogoora burr*.

The barrage is an impediment to the natural flow. In years of low flow, wildlife can't get upstream. Saltwater fishes are unlikely to be getting up to Fitzroy Crossing.

In the future, what has happened at Camballin will happen everywhere. Keith is against damming the Fitzroy River but can see the possibilities of the Magaret River being dammed (it may be beneficial).

Tanya Vernes (WWF): Ecological Assets

Other assets that have been previously recorded that could be included are:

1. Mangrove communities

Storey, A.W., Davies, P.M. and Froend, R.H. (2001) *Fitzroy River System: Environmental Values*, Report for Waters and River Commission, pp.63.

- 15 species of mangroves are found within this region, most diverse and dense stands of mangal are found near the mouth of the Fitzroy River
- 17 species of bird have been recorded in King Sound mangroves in the vicinity of the Fitzroy estuary
- There have been few detailed surveys of waterbird usage of the Fitzroy River estuary and King Sound
- Unlike most mangrove systems which are aggrading, the mangroves of the Fitzroy estuary are eroding, and gradually retreating inland. This gives the system intrinsic scientific interest

- Discharge from the Fitzroy River modifies the salinity of the estuary, with the system being fresher during the wet season; this undoubtedly influences the ecology of the system, but the extent to which this occurs is unknown.

2. Waterbirds (especially those listed under JAMBA/CAMBA)

Halse, S. & Jaensch, R. (1998) *Waterbirds and other fauna of the Fitzroy river and associated wetlands*. Limnology of the Fitzroy River, WA: A technical workshop. Proceedings of a workshop held on 18th Feb 1998 at Edith Cowan University, Claremont, WA

For listings of natural heriatge criteria (rare species etc for Fitzroy), another reference to include for Camballin Floodplain:
Livesey, N. J. (1993) *Camballin floodplain and wetland system.* Supporting documentation for inclusion on the register of the National Estate. Report to the Australian Heritage Commission and the Heritage Council of Western Australia, June 1993.