

The Habitat Advocate

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Thursday, 22nd October 2009

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Dear Dr Williams,

**Submission to NRC: 2009 Assessments of River Red Gum, White Cypress & Ironbark Forests across the Australian Riviera Bioregion**

The Habitat Advocate is a Blue Mountains based not-for-profit organisation advocating the preservation and rehabilitation of Australia's native wildlife habitat and challenging actions that cause damage to the integrity of that habitat.

The Habitat Advocate welcomes the opportunity to make this submission to the Natural Resources Commission (NRC) in its 2009 Preliminary Assessment Report (NRC's Report) on 'River Red Gums and White Cypress Forests across Australia's Riverina Bioregion. Importantly, sharing similar areas and threats and facing a comparable irreversible loss of ecosystem health and habitat are the Ironbark Forests of the same bioregion, so NRC assessment is warranted for these ecosystems in this same exercise.

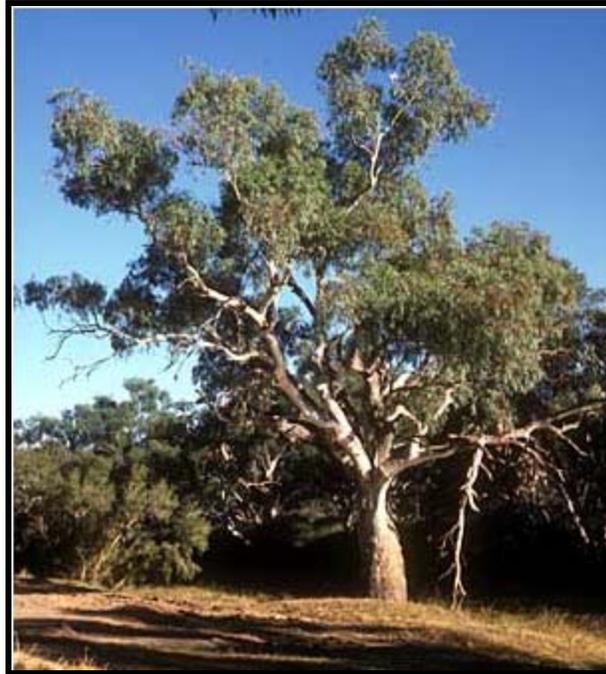
Please confirm receipt promptly and feel free to include this submission on the NRC website.

Sincerely,

S.J. Ridd  
Editor, The Habitat Advocate

*Copies to:*

*The Hon Nathan Rees MP  
The Hon Barry O'Farrell MP  
The Hon Kevin Rudd MP  
Senator the Hon Penny Wong  
The Hon Peter Garrett AM MP  
Senator the Hon Bob Brown  
The Hon Malcolm Turnbull MP.*



Australia's Iconic River Red Gum © CSIRO

### ***NRC Issue 1: Have the values supported by the forests been adequately described?***

#### **1.1 A monoculture fallacy**

The NRC approach to forest types across the Riverina Bioregion that are identifiably River Red Gum only or White Cypress only or Ironbark only is misinformed. Although one or two dominant species of native trees may be prevalent in such forests, a mix of native tree species is typical.

In fact NRC's Preliminary Assessment s3.1.3 'Distribution of vegetation groups' acknowledges:

*"vegetation types occurring in the Riverina were collated into broader 'vegetation groups' for the purpose of reporting and mapping within State Forests and Western Land Leases."*

NRC's 'Distribution of Vegetation Groups within the Murrumbidgee Region from pages 45 through 50 for instance, clearly indicates in each of the vegetation maps the multiple native tree species combined within the one forest group.

Native forest types across the region include a variable mix of the following species/forest characteristics:

- Box - White Cypress Woodland
- Chenopod Shrubland
- Ironbark Shrubby Woodland

- Mallee Woodland
- River Red Gum Very Tall Forest
- River Red Gum Tall Open Forest
- River Red Gum Woodland
- River Red Gum - Box Woodland
- Riverine Box Woodland
- Riverine Shrubland
- Semi-arid Acacia Woodland
- Semi-arid Oak Woodland
- Slender Cypress Woodland
- Swamp Grassland
- Tussock Grassland
- White Cypress Woodland
- River Red Gum (*Eucalyptus camaldulensis*)
- Jarrah (*Eucalyptus marginata*)
- Red Box (*Eucalyptus polyanthemos*)
- Yellow Box (*Eucalyptus melliodora*)
- Ironbark (*Eucalyptus sideroxylon*).

[NRC's Report]

## **1.2 The NRC description of values could be better complemented by obtaining the following data:**

- It is not sufficient to “apply the best available knowledge”, but good governance to seek out the best expert knowledge from independent research bodies and universities in New South Wales and elsewhere across Australia.
- A summary of overall condition of the Riverina Bioregion as it compares to other comparable bioregions across Australia
- An assessment of the likely future condition of the Bioregion if no special action is taken beyond the current policies and institutional arrangements and the ecological and social costs this would have on the region.
- Aerial mapping of the region over time showing clear and specific vegetation and soil changes
- Distribution of weeds by type
- Fire regimes mapping
- Feral animals and livestock distribution
- Geographical distributions of crop type, rated on their average water usage
- A summary of current priority management/conservation priorities
- Fauna mapping (wildlife inventory) including species at risk (threatened and endangered) habitats (perhaps not publicly available for obvious reasons)
- Floristic mapping including extent of richness and integrity

- Cadastral mapping of Aboriginal traditional lands with the identified major forests and wetland areas in the NRC's Report
- Soil mapping including areas of salinity, acidification, extensive erosion, natural moisture loss

By not obtaining the requisite accurate data, the NRC risks misunderstanding or falling short of knowing the true extent of the condition of and risks to the environment. Environmental assessment and decision making is therefore at risk of making recommendations that may be inappropriate and even harmful.

Like the exploited and denuded landscape of the Murray-Darling Depression, it is almost a case of 'too little too late' for the adjoining upstream Riverina Bioregion. Like a Yorta Yorta outcome about forest connectivity, what's left of the fragmented Red Gum forests have lost their ecological corridor connectivity.

### ***NRC Issue 2: What other information is available to inform the assessment, particularly on areas outside the Central Murray?***

#### **2.1 The destruction of Red Gum, White Cypress and Ironbark habitats is a serious matter of national significance**

NRC should recognise the seriousness of this undertaking and the long term implications of NRC recommendations to the viability of the region and the precedents this may set.

The Riverina Bioregion is huge. It makes up 1/7 the area of NSW [\[ABS\]](#) and is almost the same size as Sri Lanka.

It is vital that the NRC is cognisant of its public responsibility and its privileged position of influence on government it has. It is to arrive at a statement of recommendations to the NSW Premier that will have structurally long term impacts on the region, its environment and its people for many years to come. The Riverina Bioregion covers a vast area of 56 910 km<sup>2</sup> [\[Department of Environment etc, Riverina Bioregion\]](#) across the southern riverine floodplains of New South Wales (NSW) plus a narrow oft overlooked remnant in South Australia.

#### **2.2 Ironbark Forests of the Riviera warrant equivalent assessment by the NRC**

Ironbark species of Eucalypts [Industry Group II] in addition to White cypress pine remain currently commercially rated by the logging industry [RACAC]. Ironbark Forests are subject to serious ecological threat from logging, mainly from the domestic firewood industry. Relevant to NRC in its assessment of River Red Gum, it is important to note that the domestic firewood industry's sales of what it chooses to label as '**Ironbark Firewood**' includes not just Ironbark species.

The five most commonly burned tree species (labeled as '**Ironbark Firewood**') are:

- **River Red Gum** (Eucalyptus camaldulensis)
- **Jarrah** (Eucalyptus marginata)
- **Red Box** (Eucalyptus polyanthemos)
- **Yellow Box** (Eucalyptus melliodora)
- **Ironbark** (Eucalyptus sideroxylon).

Consequently, it would be neglectful of the NRC to complete its assessment of the 'at risk' native forest types of the Riverina Bioregion while selectively excluding the well known logging threats impacting the important Ironbark Forests of the same region.

The national focus on the adjoining downstream Murray-Darling Depression Bioregion indeed shares similar landscapes, vegetation types and environmental issues as those of the Riverina Bioregion. In 2001, the Australian and New Zealand Environment and Conservation Council (ANZECC) issued the document: 'A National Approach to Firewood Collection and Use in Australia' (ANZECC 2001). The national approach was developed by the Joint Standing Committee on Environmental Protection (SCEP) and Standing Committee on Conservation (SCC) Taskforce on Firewood, which included State and Commonwealth representatives, including participation from CSIRO.

As part of the CSIRO's 2001 Sustainable Ecosystems (CSE) project 'Sustainable Firewood Supply in the Murray-Darling Basin', the following research gaps/questions should be factored into the NRC's current assessment process:

- *"What are the rates of accumulation of fallen timber, and sustainable rates at which to harvest it?"*
- *What are the amounts, availability, and economics of alternative firewood sources?*
- *A guideline is required for calculating a sustained yield of firewood*
- *Data is required on the dead and live wood component of vegetation communities used for firewood collection and reconciled with firewood collection levels*
- *The rate of natural regeneration and tree mortality in vegetation communities subject to firewood collection requires assessment*
- *Primary productivity of the native forest and woodland ecosystem is a key driver for sustainability*
- *A model is developed to guide the sustainable harvest of timber resources*
- *Whether firewood collection is likely to cause a decline in biodiversity in particular ecosystems."*

In addition, the following selected key findings from Driscoll et al. (2000) should be noted

- *“Australian households burn from 4.5 to 5.5 million tonnes of firewood per year. With the addition of firewood for industrial use, this figure rises to between 6 – 7 million tonnes. The four most commonly burned tree species are River Red Gum (Eucalyptus camaldulensis), Jarrah (Eucalyptus marginata), Red Box (Eucalyptus polyanthemos), Yellow Box (Eucalyptus melliodora) and Ironbark (Eucalyptus sideroxylon).”*
- *“Driscoll et al. (2000) estimated that 84% of firewood for household use is collected from private lands and that only 9.5% of firewood is collected from State Forests. The remaining firewood was classified as coming from either crown land, such as Travelling Stock Reserves and roadside reserves, or “other” i.e. unknown. An important finding was that approximately half of the household firewood was collected by residents rather than purchased and this firewood was primarily fallen timber gathered on private land. The remaining households who purchase timber do so from small suppliers and friends. Established wood merchants only account for around a quarter of these purchased firewood loads.”*
- *“Driscoll et al. (2000) identified that inland forests and woodlands in lower rainfall zones, i.e. in areas such as the MDB, were most threatened by firewood collection. This is because the most heavily utilised firewood species originate from the Basin; they have slow growth rates due to generally low net primary productivity (NPP) and have been extensively cleared.”*

[\[CSIRO\]](#)

The key species harvested for firewood occur in particular on the western slopes and plains of NSW and in the Victorian and NSW Riverina in the Box-Ironbark woodlands. These woodlands and forests have been extensively cleared for agriculture. The Yellow Box/Red Gum Grassy Woodland which was previously extensive in the intensive land use zone has been declared a threatened ecological community.

The recommendation to the NRC is that only firewood sourced from plantations is sustainable to the environment, so long as new plantations do not supplant existing native forests.

### 2.3 Terms of reference too narrow to be effective

A key reservation and concern we have with the NRC's assessment process is that its terms of reference indicate a preconceived utility mindset about the “management” and “uses” of the forests, rather than the PROTECTION of these forests that given 200 years of ABUSE by mixed immigrants and their descendants, have become 90% depleted. That this assessment is preliminary provides a window of opportunity before the final assessment for the NRC to redress this critical misguided approach. If the NRC is to recommend a plan and strategy to the NSW Premier to ensure remnant patches of Riverina Red Gum Forest can become resilient, to be effective the bioregional management focus needs to move beyond vague value statements.

*“The all-important clause missing from the Hawke government's 1985 woodchip licence decision was firm undertaking to protect the National Estate forests. When the federal government finally signed off on the decision there was a vague commitment to protect ‘values’ of the forests but nothing solid.” [Gee, ‘For the Forests’, 2001:230]*

A superior recommendation is for best practice standard setting and to reform initiatives that have proven practical foundation.

It would be anathema to the mission and goals of the NRC and the spirit of this environmental assessment to recommend facilitating the perpetuation of forestry in a dying resource. The remaining pockets of intact stands of red gum forest provide the last desperate retreat for dependent fauna seeking refuge from the clearing and logging. Two centuries of intense conventional western farming across the fragile Riverina landscape has taken its toll. The landscape result is prima facie evidence of a recidivist ecological crime – one that has entrenched as a cultural addiction. As each coupe is pillaged and topsoils depleted, calls for more native forest are made. Like the Easter Island ancients, the cultural addiction for more forest saw that nation's extinction.

## **2.4 NRC to adopt the guiding principles of 2003 Murray Catchment Blueprint**

The NRC should learn from comparable assessment in the Riverina Bioregion undertaken by the Murray Catchment Management Board in 2003. The management principles adopted under the 2003 Murray Catchment Blueprint are as follows:

- Modified farming landscapes can be managed for both production and biodiversity outcomes
- 'No net loss' principle for native vegetation management
- Native vegetation targets to be based on scientific (ecological) research, which confirms that biodiversity declines rapidly one the area of native vegetation is less than 30% of its original extent
- The catchment target can be achieved at a landscape scale rather than an arbitrary percentage area on each property
- Restoring and enhancing existing native vegetation ('bush regeneration') is more effective than revegetation in order to achieve the catchment's vegetation target
- Proposed actions should complement proposed actions of the Threatened Species Conservation Act (TSC Act) and the Environmental Protection Biodiversity Conservation Act (EPBC Act)

[Murray Catchment Blueprint, 2003:21]

## **2.5 Geographic area conflict requires resolution at federal level**

The following map excludes the Murray Catchment Area and the Victoria portion.

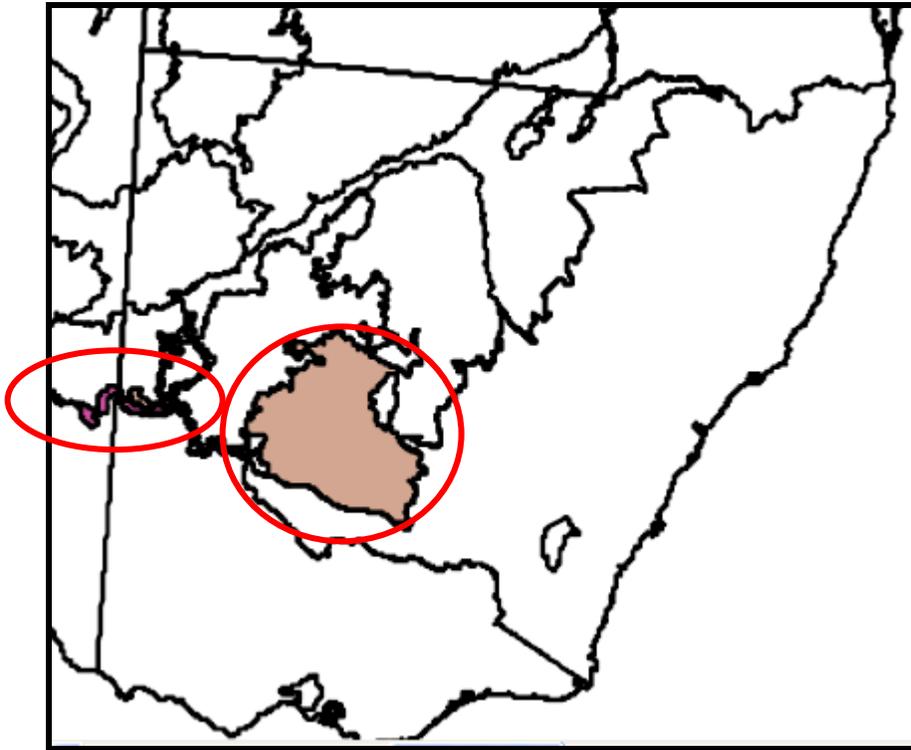


Figure 1 Riverina Bioregion [[Department of Environment, etc. Riverina Bioregion](#)]

The NRC map includes the Murray Catchment Area and the Victoria portion.

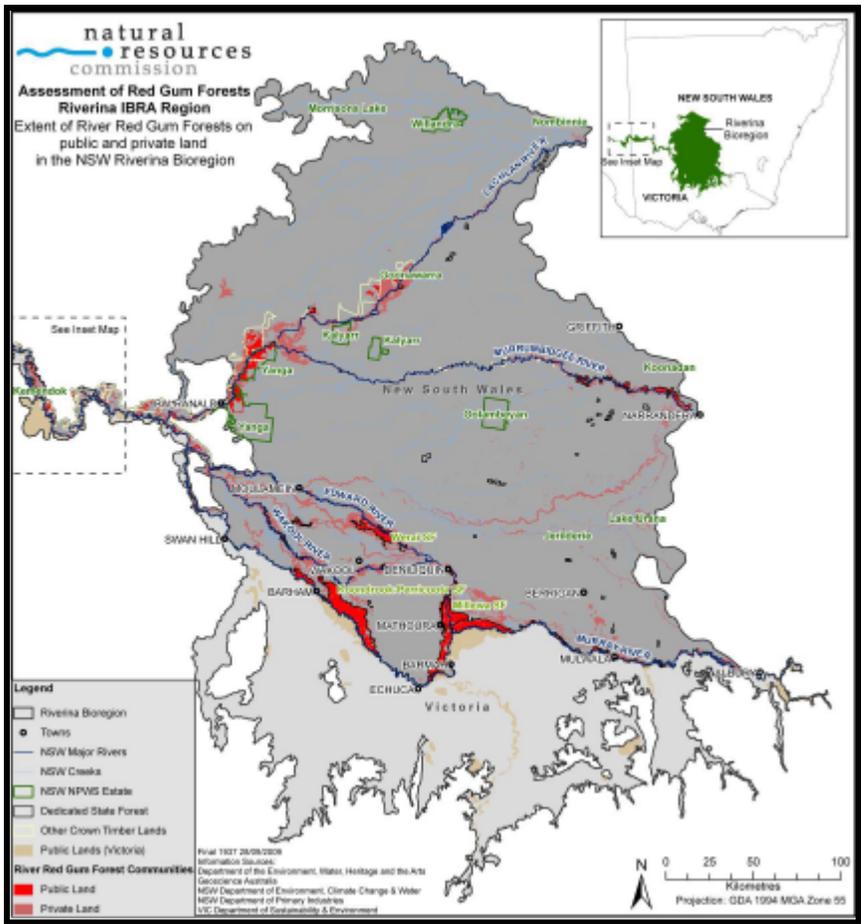


Figure 2 Riverina Bioregion [NRC's Report]

Why is there a discrepancy? Which is correct?

## 2.6 Root Cause Analysis

The signs of the decline in health of forest ecologies across the region include the following:

- Trees dead and dying
- Changes to hydrological flows
- Dieback
- Increased dry land salinity mainly due to excessive and extensive irrigation for cropping
- Soil acidification, mainly due to agricultural practices (e.g. excessive fertilizer)
- Soil erosion
- Sedimentation of rivers and in-stream turbidity
- Nutrient leaching
- Blue-green algae outbreaks.

NRC should recommend the NSW Government undertake a root cause analysis & problem solving approach to seeking management solutions to the problems facing the Riverina Bioregion.

The root cause of the Red Gum Forest depletion problem lies in the focus on the unsustainable economic choices made by the non-indigenous population. This is where the assessment should concentrate. The Riverina Bioregion is a microcosm (and a big one at that) of Australian colonial settlement. The economic, social and environmental problems are consequential symptoms of an imported agrarian culture. Turning around the economic, social and environmental problems must start with the root cause – the unsustainable rural Australian farming culture – ‘CONVENTIONAL WESTERN FARMING’. After nearly two hundred years in the fragile Riverina landscape, conventional western farming culture has dug itself into an entrenched complex cultural problem. As typically inherent with complex problems, resolution will take many years of iterative change to undo the damage and re-align the culture to sustainable rural practices.

It is naive and counterproductive for the NRC assessment process to only include local indigenous peoples by considering their heritage values as part of the broader ‘western’ culture – as if being relegated to a subsidiary group status. This suggests an inappropriate colonial mindset.

Stepping out of this mindset, NRC must recognise and respect the millennia of sustainable co-existence of traditional people with the land (and forests); the local indigenous peoples deserve to be integral to the future management of the forests and their uses. The NRC must start engaging and trusting local indigenous people to be land managers of natural forests and ecologies such as the Red Gum forest ecology.

The NRC in its terms of reference for its Report states that the NRC is to “otherwise meet the assessment requirements of the Environment Protection and Biodiversity Conservation Act 1999 (C’t’h) as determined in discussion with DEWHA.” As a matter of corporate governance, it is important that the outcomes of that discussion and the specific assessment requirements are made publicly available on the NRC website. Not to be publicly transparent, leaves open the risk of perception that perhaps a special deal has been struck to achieve a watered down interpretation of the EPBC Act for the purposes of this assessment process.

The risk for the NRC is that if the assessment process fails to recognise and address the key causes (drivers) of the ecological problems facing the Riverina Bioregion, then this entire exercise and the NRC itself will lose credibility and public trust which will mean a waste of time for all participants.

## 2.7 Tighter Water Regulation

- The NRC should talk with the catchment management authorities (CMA) of the region about Water Regulation since this issue is no doubt one that has become intimate and mature with them. The CMA’s of the region are as follows:
  - Murray CMA
  - Lower Murray Darling CMA
  - Murrumbidgee CMA
  - Lachlan CMA.

## 2.8 Apply relevant lessons from history and comparable cases

The NRC should interpret and apply relevant lessons from history and comparable cases. From the 1840s, private land holders introduced sheep and cattle on a large scale, which led to large areas of floodplain and woodland being cleared and converted to grasslands. The NRC would be wise to recognise and understand the lessons of colonial exploitation and abuse that has seen this region's landscape, forests and wildlife mostly wiped out, leaving only small islands of remnant ecosystems, which remain under threat. What's happened to the Riverina is a microcosm of many regions of rural and outback Australia.

Lessons should also be learnt and applied from other similar landscapes that have endured colonist exploitation and environmental destruction, such as that of the adjoining downstream bioregion of the Murray-Darling Depression. The following comparable cases should be researched so as to draw relevant lessons for the Riverina Bioregion:

- Murray-Darling Depression
- Barkly Tablelands in western Queensland
- Madagascar.

In the case of Madagascar for instance, of the 10,000 native plants, 90% are found nowhere else in the world, yet Madagascar's varied fauna and flora are endangered by human activity, as a third of its native vegetation has disappeared since the 1970s.

*"Forests that once blanketed the eastern third of the island have now been degraded, fragmented, and converted to scrub land [\[Madagascar Biodiversity & Conservation\]](#) just like the red gum forests of the Riverina. Throughout Madagascar, less than 15% of the original native forest remains. The rest has been cleared by people or transformed by cattle and fire. Only about 2% of the total area is in parks or reserves.*

*"Extensive deforestation slash-and-burning of forests, have created short-term yields from marginal soils. Much of the country is subject to increased surface runoff from burned lands, significant erosion and resulting high sedimentation to western rivers. Madagascar has lost more than 90% of its original forest, which is equally comparable to our Riverina Bioregion." [\[Wikipedia\]](#)*

## 2.9 NRC to acknowledge prior assessments in 2003 by the Murray Catchment Management Board

The task of the NRC seems to have in the main all been done before in the **Murray Catchment Blueprint** of 2003. Albeit more upstream and more focused on the Murray River within the Riverina rather than specifically about forests, the assessment of 'values' appears much the same as that now being done by the NRC.

In May 2000, one of the former NSW Ministers for Land and Waters Conservation, Mr Richard Amery MP, appointed the Murray Catchment Management Board to undertake the development

of the 'Murray Catchment Blueprint.' The Murray Catchment (35,000 km<sup>2</sup>) overlaps a large part of the Riverina Bioregion and continues upstream east to the Australian Alps. It encompasses the Edward and Wakool River systems.

In the Chairpersons Forward of the Blueprint the then Board Chair, D L McGregor, outlined the scope of the assessment process as follows:

*"This Plan has been developed to provide a blueprint for action that will lead to improved natural resource management outcomes in our Catchment for our generation and generations to follow. It has been developed by drawing upon the previous ten years of work by the former Murray Catchment management Committee, a range of Landcare and community groups as well as by using the best available knowledge and technical advice. It is an adaptive management document that will be reviewed and modified to take into account new information and changing environmental, economic, social and cultural needs...Protecting our values and heritage are central to the objectives of this Blueprint."*

The obvious questions are what follow up actions occurred (or apparently didn't) in the intervening years 2003 through 2009 in which the Riverina landscape has further deteriorated, and why is the NRC starting the assessment process again from scratch?

The development of the Murray Catchment Blueprint involved four stages of planning:

*Stage 1: "Primary objectives were developed to provide a statement of the community's values about the desired state and functioning of the area's natural resources (including forests)"*

*Stage 2: "Catchment targets were set as an indication of what needs to be achieved across the landscape to work towards meeting the Primary Objectives"*

*Stage 3: "Management Targets to define what has to be done to achieve the Catchment Targets."*

*Stage 4: "Management Actions: to specify who is to do what by when in order to meet the Management Targets and Catchment Targets."*

The NRC would do well to utilise the wealth of information gathering and analysis captured to produced the Murray Catchment Blueprint of 2003, particularly the following:

- The landscape mapping undertaken by the Murray Catchment Management Board in 2001 for this part of the Bioregion
- Soil Health Management Targets
- Biodiversity Catchment Targets
- Strategies
- Priority Actions for Investment
- Plan Action Table listing hundreds of strategies and projects catchment wide.

A copy of the Murray Catchment Blueprint may be obtained from The Habitat Advocate provided appropriate copyright permission can be obtained.

Other relevant catchment authorities in the Riverina include:

- Lower Murray Darling CMA
- Murrumbidgee CMA
- Lachlan CMA.

## **2.10 NRC to acknowledge relevant assessments in 2003 by the Resource and Conservation Assessment Council (RACAC)**

As part of a series of broad based regional assessments, the Resource and Conservation Assessment Council (RACAC) has undertaken region based project studies including fauna and vegetation surveys, wood resources inventory, socio-economic studies and Aboriginal heritage and community consultation.

The first region to be assessed in the Western Regional Assessment was The Brigalow Belt South Bioregion (including Pilliga and Goonoo State Forests and nearby national parks and nature reserves). The second region to be assessed in the west is the Nandewar Bioregion. This region lies between the Brigalow Belt South Bioregion and the Upper and Lower North East Regional Forest Agreement areas. Pockets of land around Tenterfield and Nundle have been included to establish continuity across the landscape for the four regions.

<http://www.racac.nsw.gov.au/rfa/wra/western.shtml>

It would seem likely that much of the Riverina Bioregion has also been 'assessed' by RACAC. The NRC would benefit by obtaining information gained which it considers relevant and useful to the NRC's current assessment process.

## **2.11 Joint working partnership with Victoria and South Australia**

The Riverina bioregion is located in the south west of NSW and covers an area of about 9.7 Million hectares, of which 77% (7.0 million hectares) lies in NSW (Thackway and Cresswell, 1995). The remainder occurs in Victoria (2.5 million ha) and South Australia (0.2 million hectares).

There should be joint interstate partnership given the Riverina Bioregion crosses into Victorian and South Australia

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## 2.12 Consistency with the Murray Darling Depression Bioregion

NRC assessment process and recommendations to be Consistent with Murray Darling Depression bioregion planning approach and strategies

Not inconsistent with needs and conservation issues affecting the downstream adjoining bioregion of Murray Darling Depression:

The Murray–Darling Depression bioregion (98,080 km<sup>2</sup>) is characterised by extensive undulating plains, linear and parabolic dunes, and lakes. The Darling and Murray Rivers flow through the bioregion. The vegetation consists mainly of mallee shrublands with a chenopod shrub understorey, rosewood–belah open woodlands and bluebush chenopod shrublands. Leasehold grazing is the major tenure in rangeland areas, and small freehold blocks exist on the interface with the cropping zone. Irrigated and dry land cropping, sheep grazing, horticulture and mining are all important to the regional economy. Ivanhoe, Dareton and Gol Gol are the major population centres.

[\[Murray-Darling Depression bioregion\]](#)

## 2.13 Talk face-to-face with each local indigenous people and invite indigenous people to participate in NRC's assessment process

Presuming the following map is correct, in order that the NRC respectfully undertakes to engage with the local communities on the planning for the Riverina Bioregion, the NRC will need to consult with the following Aboriginal peoples of the region, namely the:

- Muthi Muthi
- Wati Wati
- Wembawemba
- Baraparapa
- Jotijoya
- Jeithi
- Kwatkwat
- Narinari
- Jitajita

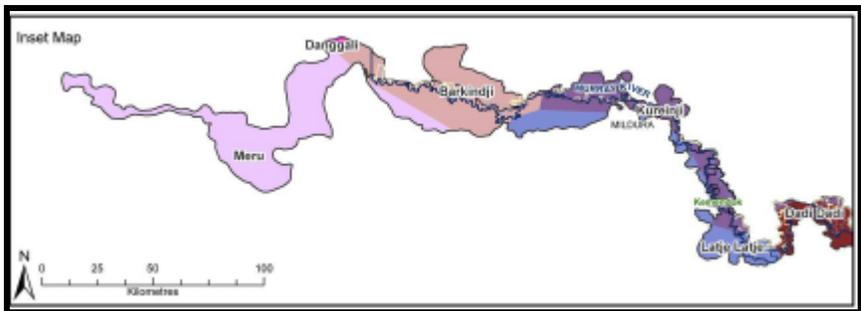
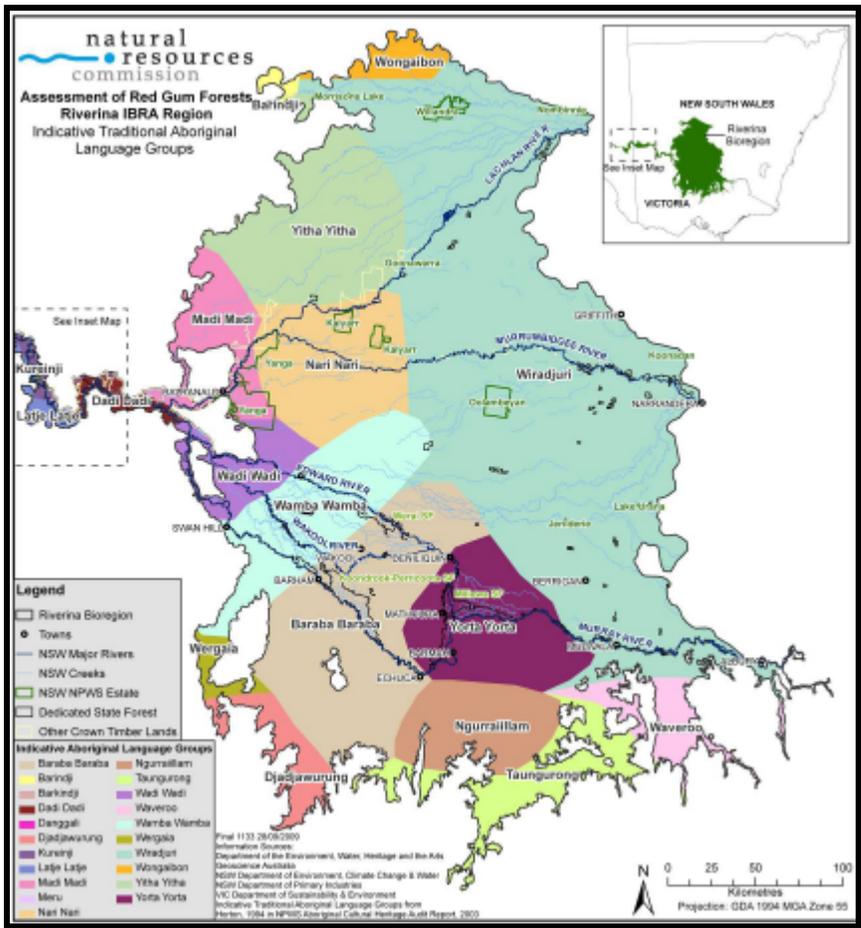


Figure 3 Indicative Traditional Aboriginal Language Groups (NRC)

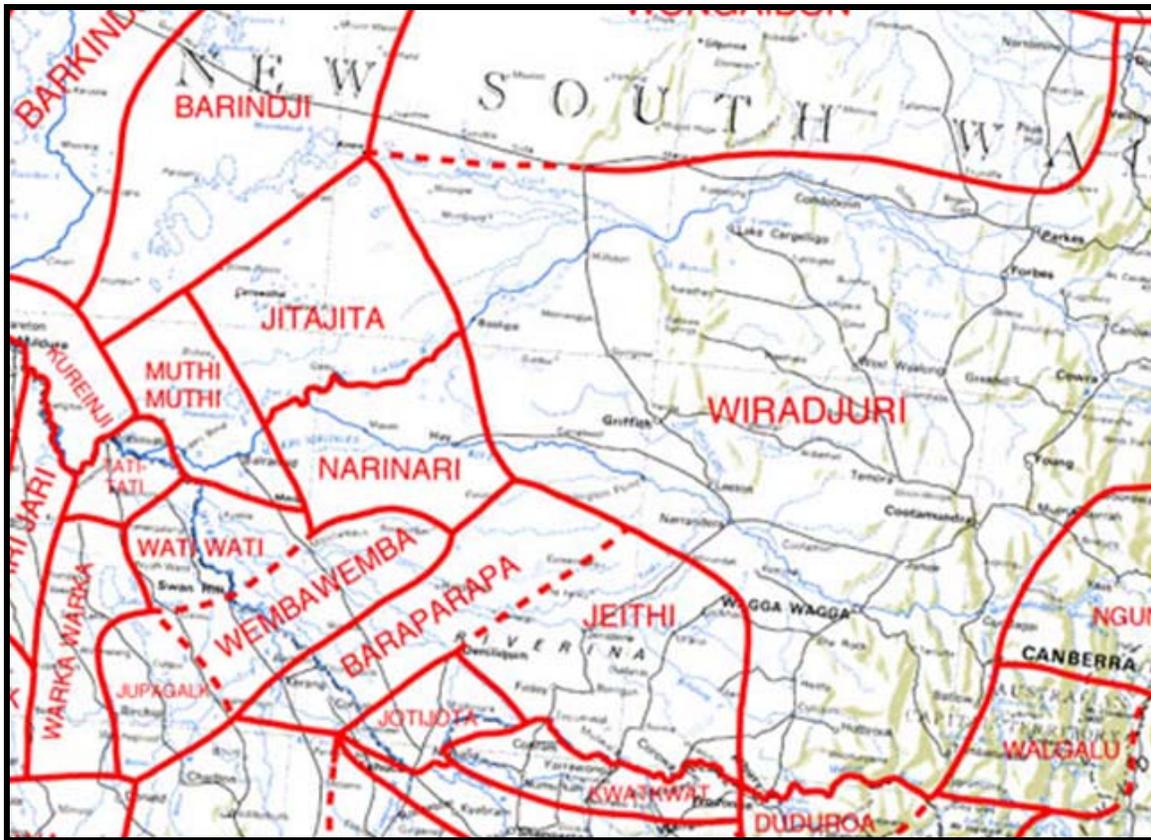


Figure 4 Aboriginal Nations

[[Norman B Tindale, South Australian Museum](#)]

The map shows nine Aboriginal nations with ancestral homelands either wholly or partially within the boundary of the NRC's River Red Gum Forest Assessment. To add to the cultural complexity, there may well be multiple clans with each of these Aboriginal nations potentially having conflicting ideas and priorities.

Since the NRC is not an indigenous organisation, it likely lacks the requisite understanding of indigenous cultures and so would be wise to seek appropriate advice and guidance. To respect each clan, the NRC would need to contact each separately. Any presumption that representatives of different traditional nations can be conveniently brought together collectively for joint dialogue, will perhaps be misguided. Each is a nation in its own right and representativeness in Aboriginal culture works differently to white culture.

The NRC is referred to the current example of the misguided policy adopted by the Northern Territory Government to form a new indigenous parliament called the Dilak Provincial Authority, which is supposed to represent 12,000 Aboriginal people from the Yolngu nation from 40 clans across Arnhem Land. The most senior traditional leader in Arnhem Land, Dr Gawirrin Gumana, in an article in the Sydney Morning Herald 17-18<sup>th</sup> October 2008 [p.14] warns that traditional laws have been usurped by this attempt to amalgamate disparate clans, that consultation has not been made in the traditional way. *"Any move like this should have come after the traditional leaders from all 40 clans across Arnhem Land discussed whether they wanted to make way for this to happen."*

In addition, the boundary of the Riviera Bioregion may dissect traditional lands like an arbitrary 'Radcliffe' line on a map akin to the travesty of the 1947 Partition of India.

## 2.14 Invite participation from each of the local indigenous peoples

Invite each of the local indigenous peoples to participate in all decision making and ongoing management of natural lands.

### Implications of the Mabo Native Title Case 1992

The NRC would be wise be mindful of the Australian High Court recognition of native land title that has come out of the Mabo Judgment in 1992. Any one of the Aboriginal peoples above may similarly have such a claim for native land title common law rights over their traditional lands. The Mabo judgment does not challenge the legality of non-Aboriginal land tenure; rather it applies only to "vacant crown land, national parks and possibly some leased land, where the lease is subject to Aboriginal rights of access to the land, can be subject to claims by the Aboriginal owners." Aboriginal claimants have either to go to court, or possibly tribunals, and prove that they continually maintained their traditional association with the land they are claiming.

[\[Stan Pelczynski, Mabo Native Title Case 1992\]](#)

### Yorta Yorta native title case [2002]

The Yorta Yorta indigenous people claimed native title to the area of land and waters in Northern Victoria and Southern New South Wales along the Murray River. The evidence indicated that at some point in the late 19th century the Yorta Yorta people ceased to occupy their land in accordance with traditional laws and customs and, therefore, ceased to function as recognisable traditional community. The evidence established that this break in continuity was substantial and therefore fatal to the Yorta Yorta people's native title claim.

The implications of the Yorta Yorta decision however indicates that it may be difficult for claimants to establish native title, particularly over areas of land where there has been intensive European settlement. The attempt by the Yorta Yorta people to revive laws and customs that had been effectively lost at some point in the past was not sufficient to establish native title. In many cases, claimants may find it difficult to adduce the oral and historic evidence necessary to meet the criteria set down by the High Court.

[\[Ken Jagger, Yorta Yorta Native Title Case 2002\]](#)

Intensive European settlement over decades dispossessed the Yorta Yorta people of their traditional lands.

## 2.15 Involve local government in assessment & recommendation process

The NRC process and recommendations should seek out and factor in relevant studies and policies of each local government of the Riverina Bioregion and involve their participation in all decision making.

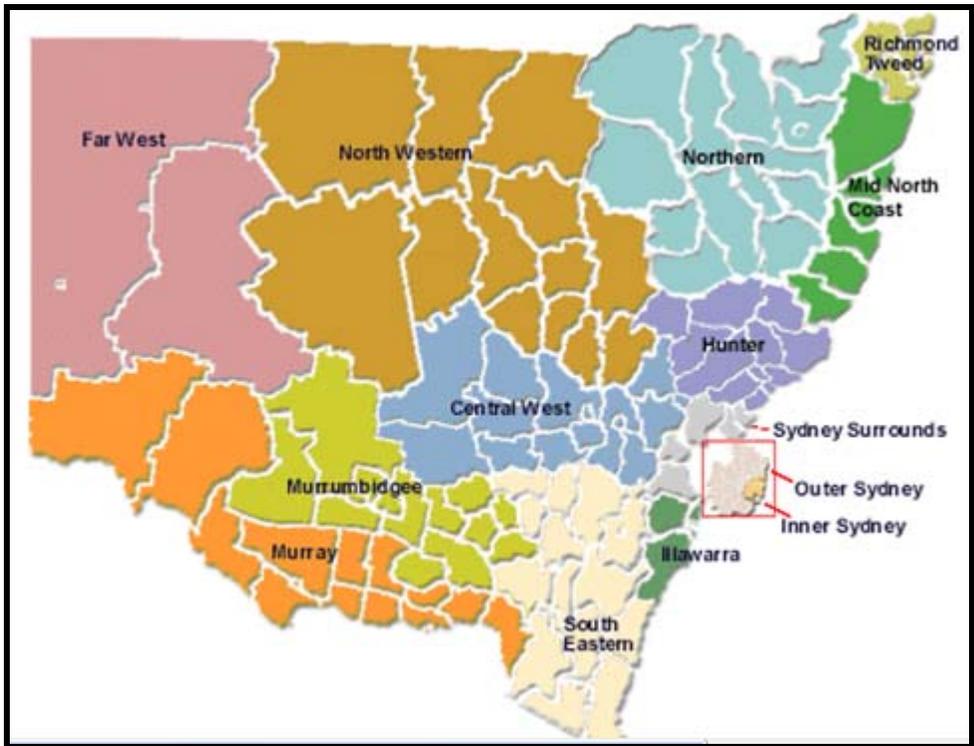


Figure 5 NSW Government Regions [\[NSW Department of Local Government\]](#)

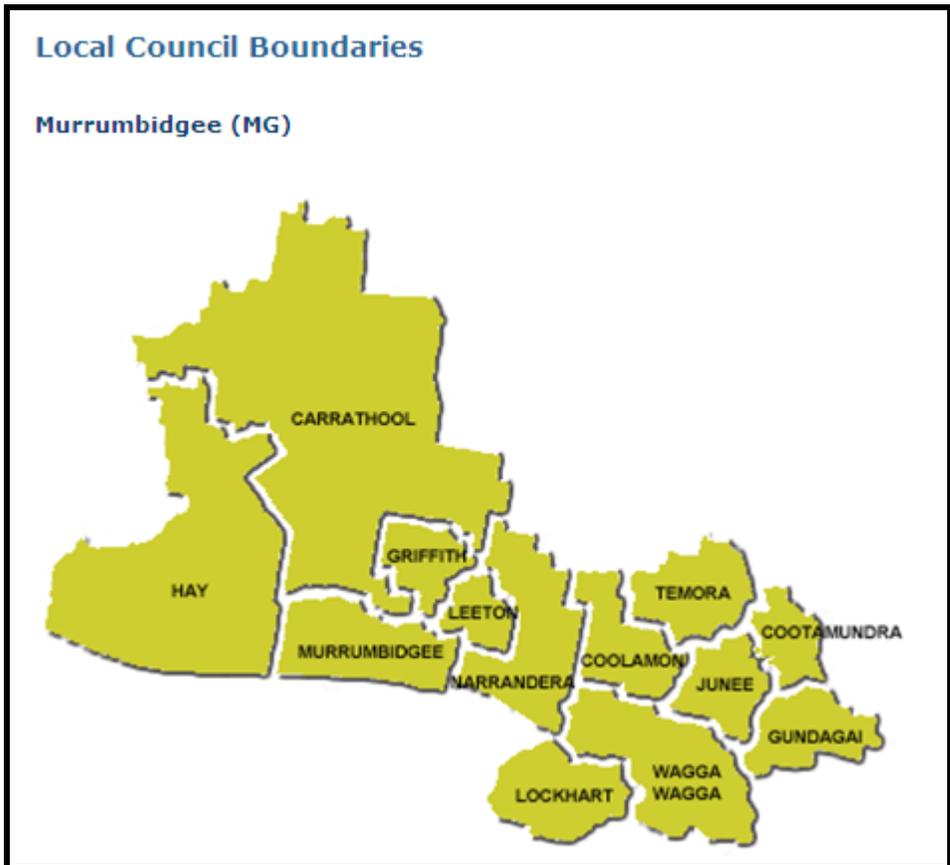


Figure 6 Murrumbidgee Region [\[NSW Department of Local Government\]](#)

So the local shire councils in the Murrumbidgee Region likely to be affected include:

- Carrathool Shire Council
- Griffith Shire Council
- Hay Shire Council
- Leeton Shire Council
- Murrumbidgee Shire Council
- Narrandera Shire Council.



Figure 7 Murray Region [\[NSW Department of Local Government\]](#)

The local shire councils in the Murrumbidgee Region likely to be inside the Riverina Bioregion include:

- Balranald Shire Council
- Conargo Shire Council
- Jerilderie Shire Council
- Urana Shire Council
- Wakool Shire Council
- Wentworth Shire Council

## 2.16 Acknowledge the indistinct boundaries of the Bioregion

NRC should recognise the indistinct boundaries of the Riverina Bioregion in its assessment process and recommendations.

***NRC Issue 3: How will river regulation, climate variability and climate change affect the forests and the values they can support in the future?***

- Not addressed in this submission

***NRC Issue 4: What are the key forest values and core ecological processes we should seek to maintain in this dynamic context?***

#### **4.1 The whole forest habitat is more valuable than the sum of the individual trees**

The surviving native forests of the Riverina are not just collections of trees. They have a richness and diversity providing important refuges for wildlife habitat. While forest treatments typically focus on the live tree component, other biotic (e.g. snags, downed woody material) and abiotic (e.g. water sources) habitat components are important to wildlife and need to be considered as well.

Forest ecosystem can be likened to an organism. An organism is characterised by wholeness, which is an organising principle of nature (J. C. Smuts, 1912). *“Forests are composed of living organisms; the forest itself changes, lives and dies in ways similar to a living entity or organism. The forest as a whole remains the same. The changes in various parts balancing each other.”* (W.S. Cooper, 1913).

These forests in their original natural state are rich, diverse holistic communities that are self-sustaining. They have intrinsic value in their own right [Simey, 2009]. They do not exist purely for the benefit of humans. They do not require ‘management’ in order to exist and to enable their ecological processes function. The forests’ existence value is superior to their utility value.

In NRC’s Report, the Forward states:

*“River red gums are Australian icons. They are immortalised in Australian art, poetry and song. For Aboriginal people the river red gum forests in the Riverina are a cultural landscape with rich archaeological sites and ongoing spiritual and cultural significance. The fabric of the land itself is culturally important to them.”*

*“The river red gum forests in all their different structural forms are important to a wide range of people from very different social, economic and cultural groups in our society and we derive a variety of uses, values and amenities from the forests in the Riverina region. The question before us is how best to conserve, protect, use and manage this most valuable asset into the future for all Australians.”*

This is all about the forests’ existence values – the value of leaving them in their natural state.

The existence values of a forest are inherently intangible because the value concept is not associated with tangible economic benefits. The existence value of a forest is otherwise the non-extractive value of forest – i.e. the value of leaving a forest naturally the way it is. [[Lampietti, Dixon, 1995](#)]

Existence values include the ecological functions of a forest that contribute natural benefits like providing canopy protection from the sun for undergrowth vegetation, providing faunal habitat, protecting the soil structure, preventing soil erosion, photosynthesis using the energy from sunlight to convert carbon dioxide in the atmosphere into organic compounds.

Existence values of a forest necessitate its conservation. When a forest is deemed to have high conservation values, according to the [Forest Stewardship Council](#) this implies high environmental, socio-economic, biodiversity or landscape values.

The [High Conservation Value Forests](#) (HCVFs) concept is being extended to more general conservation planning including the design of representative networks of protected areas and buffer zones. Such values become high only when the concern of scarcity presents. In the world there are very few intact areas of River Red Gum forest ecosystems in their natural state complete with wildlife. The Millewa group of forests covering 38,000 hectares is one. Koondrook-Perricoota State Forests covering 34,000 hectares is another. Such rare natural forest assets possess high conservation value and deserve environmental protection to National Parks status.

When humans interfere by redirecting natural water flows away from these water dependent forest ecosystems, the forests are naturally harmed. Many of these damaged by humans can benefit from temporary ecology management until the correct natural balance is restored.

Regrettably, vast areas of the Riverina have been irreparably destroyed by many decades of State-sanctioned logging, bulldozing of vital fragile soils and the transformation of the natural landscape into an artificial farming one.

Left undisturbed in their natural state, these forests are adaptive and resilient to climate variations even in the extreme, but artificially changing hydrological flows, fire regimes, logging, land clearing fragmenting habitat, introducing grazing and introduced pests all take their toll and alter the composition and harmony of the whole forest ecosystem.

The immense insight that can be gained by consulting with ecological experts should not be underestimated. Richard J. Hebda Ph.D, a botany lecture from the University of British Columbia in Canada with specialist interest in ethnobotany and the restoration of natural systems and processes writes "*we must understand better how forests work.*"

*"Today many of our forest management strategies are highly reductionist, focused on elements such as timber, endangered species and wildlife trees rather than on the forest as a whole. These are biological and ecological elements that we often try to enhance without full understanding of the functioning of the entire system. A return to a system rather than element appreciation and management is central in fostering resilience, which represents the capacity of the system to withstand stress."* [Wild Forestry, 2009: 207]

The current inclination to put the cause of ecological stress of Riverina native forests conveniently on prolonged drought or climate change, should be tempered with the far more obvious direct consequences of the artificial redirecting of natural hydrological flows. As the NRC observed first hand when touring Yanga National Park, the health of the forests is noticeable when water is

available, but "in adjacent nonflooded areas we saw drought-stressed trees, and the legacy of large tracts of dead and dying trees from previous dry conditions."



**Figure 8** A photographic description of dead and dying red gums in Yanga National Park, Riverina Bioregion [NRC]

#### **4.2 Importance of preserving the home range values of top order predators**

The NRC in its Report at page 72 confirm that forest groups of the Riverina provide important habitat for "a diversity of fauna, flora and vegetation types" and that "these include a number threatened species, populations and communities listed under the NSW Threatened Species Conservation Act 1995 (TSC Act) and/or the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)."

Four environmental management focuses are recommended in respect to addressing the threats to threatened species in the identified major forests in NRC's Report.

1. Respective dedicated pest control programmes for foxes and feral goats
2. Top Order predator research and conservation
3. The complete ban on shooting, trapping and baiting (particularly 1080)
4. Control of invasive weeds

In respect to top order predators, NRC's Report in Table 11 '**TSC and EPBC listed fauna species of the Riverina**', from pages 72 to 74, includes the following predators in the region:

- 
- *Dasyurus maculatus* Spotted-tailed Quoll (listed as Endangered)
  - *Falco hypoleucos* Grey Falcon (listed as Vulnerable)
  - *Lophoictinia isura* Square-tailed Kite (listed as Vulnerable)
  - *Ninox connivens* Barking Owl (listed as Vulnerable)
  - *Tyto novaehollandiae* Masked Owl (listed as Vulnerable)

## The Priority of Tiger Quoll Conservation

Of these, the top order predator most at risk and therefore most deserving of conservation focus is the Tiger Quoll (or Spotted-Tailed Quoll) [*Dasyurus maculatus*], which is a small brown mammal about the size of a domestic cat with a large bushy white-spotted tail.



**Endangered Tiger Quoll**

The other vulnerable predators are birds which because they can fly have a broader home range, but the Tiger Quoll is confined to the ground.

In the world, the Tiger Quoll is only found in Australia. Australia's Department of the Environment, Water, Heritage and the Arts has the Tiger Quoll *listed as endangered* by the Threatened Species Scientific Committee (TSSC) under section 178 the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). It is the largest surviving marsupial carnivore on mainland Australia. As a top order predator they contribute a key role in stabilising ecosystems. <http://www.environment.gov.au/biodiversity/threatened/species/tiger-quoll.html>

*"Where previously the Tiger Quoll was considered common in a wide range of habitats including rainforest, open forest, woodland, coastal heathland and inland riparian forests extending from the coast to the snowline throughout southeastern Australia it is now generally regarded as rare to uncommon in most of these habitats"*, including across the fragmented forests of the Riverina.

According to the [World Wildlife Fund](#), *"Tiger Quoll numbers have declined by up to 50 per cent since European settlement, predominately because of habitat loss and degradation due to land*

*clearing and inappropriate frequent fire regimes that remove protective cover and food resources and degrade faunal habitat for long periods. The presence of competitive predators, particularly foxes, may also result in a significant decline in the quality of habitat."*

*"Quolls are secretive and cryptic, making it difficult to know where they are and how many survive in an area. Since there is limited quantitative data available on the Tiger Quoll, its geographic distribution, population densities, habitat, den sites, breeding, home range, competition from other predators such as foxes, food sources etc, and because of it being endangered, there is an urgent priority for systematic and comprehensive broad scale survey data. Increasing awareness of the tiger quoll and getting the community involved in surveys are priorities in the battle to prevent its extinction."*

*"It is known however, that Tiger Quoll populations are in relatively low numbers in the southern regions of New South Wales and Victoria where fox numbers are higher. In Tallaganda State Forest (southern New South Wales), in an area of 43 km<sup>2</sup>, six individuals were recorded in 1997, seven in 1998, eight in 1999 and one in 2000. In Badja State Forest (southern New South Wales), in an area of 60 km<sup>2</sup>, 11 individuals were recorded in 1996 and zero in 2000 and 2001. A transect survey encompassing parts of both Tallaganda and Badja State Forests, with an estimated catchment area of 240 km<sup>2</sup>, recorded 23 individuals in 1999. "*

*"Declines in the extent of occurrence, area of occupancy, number of locations or subpopulations, number of mature individuals and the area, extent and quality of habitat have been observed and are projected to continue. The major factors in observed and projected declines are habitat loss and degradation and competition with introduced predators inappropriate application of 1080 poison baits may also be contributing to declines."*

The feral animal poison, sodium monofluoroacetate (Compound 1080), commonly referred to as just '1080' is a white, fluffy, odourless, tasteless compound first used to control rabbits in Australia in 1952. It is typically mixed with an attractive food, such as carrots, and then dropped indiscriminately by helicopter. So it is not surprising that many non-target species are killed throughout Australia as a result.

*"The susceptibility of Tiger Quoll to 1080 poison baiting has been inferred for some years from knowledge of the animal's relative susceptibility to 1080 and its role as a scavenger and consumer of carrion. Research at two study sites in southern New South Wales and one in Victoria indicated local declines in the order of 60 - 100% over the past five years, the researcher suggesting aerial baiting for wild dogs with 1080 poison to be the primary cause of these localised population declines and extinctions."*

[[WWF, 'Saving Australia's Tiger', 15 Dec 08](#) ]

The current use of 1080 is immoral and cruel and must cease immediately. As an urgent priority, the NRC should recommend a ban on 1080 across the Riverina Bioregion. Further information about the Tiger Quoll may be obtained from Helen Pitman, Communication Manager, Threatened Species Network, WWF-Australia [www@wwf.org.au](mailto:www@wwf.org.au).

Research material is also available from the academic research of Belcher, C. (2001 in prep.). Ecology of the Tiger Quoll *Dasyurus maculatus maculatus* in southeast Australia i) Home Range and Spatial Organisation.

### ***NRC Issue 5: What approaches should we take to maintaining the forest values and processes through the transitions that seem inevitable?***

Importantly, the NRC's approaches to maintaining the Red Gum, White Cypress and Ironbark forest values and, indeed tangibly protect the forest ecology, to be effective must extend beyond any "transition" phase. The protection needs to be ongoing and enshrined in rigorous Australian national environmental law.

It is regrettable that colonialists intensively destroyed much of Australia's native vegetation including across the Riverina Bioregion and that this accelerated throughout the 20<sup>th</sup> Century. But in the 21<sup>st</sup> Century, that NRC is aware of the irreversible damage and threats logging and clearing is wreaking, it would be immoral for NRC to recommend any actions that would exacerbate further damage to threatened and vulnerable Red Gum, White Cypress and Ironbark forests and the wildlife habitats they support.

It would be a fatal contradiction for NRC on the one hand to acknowledge the important ecological values of these forests, and then on the other to recommend that those same forests are subject to ongoing logging. Logging is clearly mutually exclusive to any genuine notion of protecting forest ecology.

The Habitat Advocate concurs with The Wilderness Society's recommendation that an immediate moratorium be legislated on all logging across the Riverina Bioregion.

#### **5.1 Transpose and apply the Biodiversity Management Targets adopted by the Murray Catchment Blueprint (2003)**

It is important that the NRC recognise the valuable work already done by the Murray Catchment Board on assessing that part of the Riverina bioregion. The NRC should aligning its recommendations in its Report to the NSW premier with the approaches adopted by the Murray Catchment Blueprint (2003) include the following biodiversity management targets.

These targets are very relevant to the Riverina Bioregion as a whole and the proportional areas should be transposed to the larger area accordingly. The references to 'vegetation types' can be equated to Red Gum, White Cypress and Ironbark forests.

- 1) *"Manage for conservation (i.e. improve habitat health, biodiversity & ecological processes) areas of existing native vegetation (as mapped in 2001) by 2032 (40% of each broad vegetation type actively managed by 2012)."*
- 2) *"Restore (i.e. encourage natural regeneration) at least 52,500 ha of under-represented (<30% remaining) vegetation types by 2012, with the goal of achieving a minimum of 30% of the original extent and composition (i.e. natural floristics and structure (height and density) of each broad vegetation type by 2052."*
- 3) *"Retain and manage for conservation existing riparian vegetation and by 2052 restore and manage for conservation 80% of the total length of the riparian zone (whilst*

*recognising and maintaining riparian rights). By 2012 restore and actively manage at least 20% of the total unvegetated area (7,000 ha combined area in total) of the riparian zone in each management unit."*

- 4) *"Maintain the population of selected locally threatened birds, mammals, reptiles and aquatic species within the catchment by 2012 and where possible increase these populations by 10% by the year 2022." (see note)*

[Murray Catchment Blueprint, pp 23-25]

[Note: The selected species need to be selected wildlife indicator species for the specific catchment]

## 5.2 Transpose and apply the Strategies adopted by the Murray Catchment Blueprint (2003)

- **Capacity building:** *"This strategy has identified a range of needs within the catchment to build and enhance the community's understanding of the issues, their capacity to adapt to changing circumstances, to adopt innovative approaches, to respond to new influences and pressures, and ultimately to undertake on-ground works.*

*The strategy includes an educational component and has provision for supporting indigenous and other groups. It also has provision for a number of local, regional and technical employment positions that will be needed to help build this capacity within the community.*

*The Murray Catchment Blueprint has identified priority areas for action [144 no less!] and the resulting anticipated needs for capacity building to implement and further develop the Blueprint.*

*Key natural resource management capacity building activities include:*

- *Ensuring communities have access to data and information*
  - *The provision of knowledge, skills and abilities*
  - *Additional support of research and development."*
- **"Incentives and investment:** *An investment team, reporting to the Board, has been established in the region to help formulate incentive packages and to broker private investment in natural resource management.*
  - **"Research:** *A research programme is being developed to address the requirements of the Blueprint. A list of research and monitoring needs for the next decade has been compiled by the Board and the next task will be to identify current research and that it is meeting some of these needs, and to establish partnerships and programmes for the areas not currently covered.*

- ***“Auditing and reporting:*** *A monitoring and auditing strategy is being developed to monitor outcomes (catchment targets), activity and investment. Benchmarking will include landholder farm practice surveys, and identification of indicator species.*
- ***“Cross-border planning:*** *A strategy is being developed to ensure that natural resource planning occurring on both the NSW and Victorian (and South Australian in the case of the Riverina Bioregion) components of the catchment are consistent and complementary.”*

### ***Issue 6: What are the key features of a sustainable future for the forests, forest industries and the local communities?***

Response to these issues is included in our response to Issue 2 ‘What other information is available to inform the assessment, particularly on areas outside the Central Murray?’

### ***NRC Issue 7: How can local communities transform to cope with less water?***

#### **7.1 Identify the specific problems with current irrigation management practices**

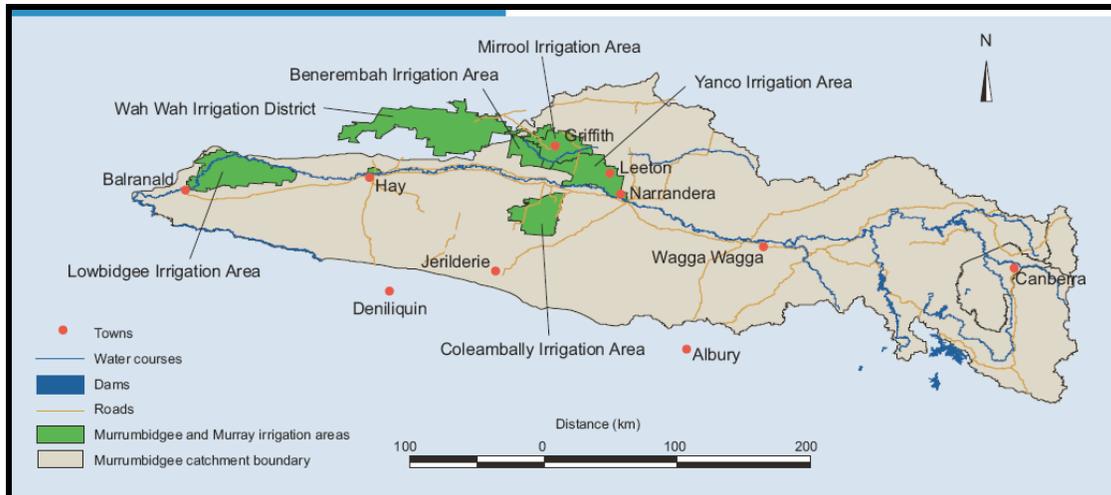
Problems stem from accepting that water is cheap and unlimited, consequently water has tended to be over-allocated and over-used.

A research program by CSIRO into Irrigators and Water Use across the Murrumbidgee Catchment [within the Riverina Bioregion] has examined how behavioural change and catchment management is used to achieve water quantity and quality targets and to maximise the benefits of water in rural communities. CSIRO has found that significant improvements in irrigation water efficiency are possible by increasing the value of water use at the paddock, farm and irrigation area level through:

- targeted use of existing and future technologies
- smart water management
- Better matching of water supply and demand.

Much of the solution to achieving water sharing efficiency and catchment management targets lies in changing on-farm irrigation, land management practices and farmer attitudes and behaviours.

<http://www.csiro.au/science/Irrigatorsandwateruse.html>



**Figure 9 Irrigation across the Murrumbidgee Catchment**

The CSIRO concluded the following key irrigation opportunities for basically coping with less water:

#### **Water storage**

- *“Construction of on-farm storage and drainage recycling*

#### **Water application**

- *“Laser levelling and other land forming activities*
- Adoption of flow monitoring for surface irrigation
- Continued finetuning of the concept of rice suitable soils to include depth to watertable
- Review of area-based entitlements to better reflect best irrigation practice in terms of soil type, watertable depth and hydraulics
- Ensure all water in the soil profile is used through water-efficient rotations
- Conversion of horticultural farms to pressurised irrigation systems
- Conversions to pressurised irrigation on large area farms with deep watertables (< 3.5 m)

#### **Water use efficiency**

- Adoption of soil moisture monitoring and irrigation scheduling technologies and practices

#### **Water productivity**

- Uptake of management practices to improve water productivity by bringing water application rates closer to net crop water requirements

**Further opportunities generally include:**

- Continue to map and monitor seepage in the supply channels in the Murray Basin irrigation supply channels using a combination of EM31 survey and direct measurement
- Use economic analysis to target priority works and methods of remediation for key supply channels
- Continue to develop and refine predictive and monitoring tools for mitigating on-farm channel seepage throughout the Murray Basin
- Continue to monitor on-farm seepage rates from channels as a key input to on-farm water use efficiency decisions

[CSIRO](#)

## 7.2 Phase out and replace the unsustainably thirsty crops of the Riverina

The trends toward climate change and longer and more severe drought conditions across Australia means that communities have little options to capture more rainwater if it simply isn't falling.

So with the supply side of water uncontrollable and reducing each year, the only other option is to deal with the demand side of the problem. Agriculture across the Riverina is collectively the largest user of irrigated water. Much of that agriculture has origins in Europe and South East Asia where traditionally rainfalls are high. Without irrigation, many of those crops are unviable in the Riverina. But it is this unsustainable agriculture that has decimated the fragile environment by sucking rivers, lakes and underground water sources dry.

Excessive intensive irrigation, leaky irrigation systems, wasteful field application methods and pollution by agri-chemicals applied over many decades has also caused soil salinity and soil acidification. This has destroyed both the soil and water quality, and by washing pollutants and pesticides into rivers that in turn destroy downstream ecosystems such as the Murray-Darling Depression.

The waste and pollution of water is made worse by misdirected subsidies, low public and political awareness of the crisis, and weak environmental legislation. An effective means to enable local communities of the Riverina cope with less water is to first target the largest users of that water.

Horticulture across the Riverina includes many crop types and some are the largest users of irrigated water. The obvious culprit is cotton. Cotton is probably one of the most environmentally damaging crops. "It can take more than 20,000 litres of water to produce 1kg of cotton; equivalent to a single T-shirt and pair of jeans. 73% of global cotton harvest comes from irrigated land (as documented in the WWF report *The Impact of Cotton on Freshwater Resources and Ecosystems*). [[World Wildlife Website](#)]

Rice and dairy are two another extreme users of irrigation water.

The Riverina has been allowed to grow to becoming Australia's largest rice producer with up to 2500 growers. But in the 2007-08 season just 30 of 2500 growers planted crops due to a lack of irrigation water and production was down to just 18,000 tonnes. Last year, 180 SunRice staff were laid off including 30 in Leeton Shire. ['Riverina rice struggle', Katana Smith, The Land newspaper, Thursday, 22 May 2008].

The cultivation of thirsty crops not suited to the environment must be phased out and replaced either with the local native vegetation and/or with cropping that requires considerable less water. If the land cannot sustain a replacement crop to generate sufficient farm gate revenue, then the message is that there are too many farmers for a region that simply cannot sustain what they are doing.

### ***NRC Issue 8: How can forestry industries respond to declining wood yields?***

#### **8.1 Timber shortage a fait accompli after decades of State-sanctioned logging**

Timber yields across the Riverina have been decimated from two centuries of State-sanctioned logging. The NSW Government is equally responsible for the current state of affairs. The forests have been treated as a limitless resource for the taking and now the wood is running out. Compounded by land clearing and allowing widespread topsoil erosion, failure to replant, it is not surprisingly that the Riverina has what NRC describes as 'declining wood yields'.

Frankly, the demise of the Riverina's forests ecosystems is more of a concern than the demise of loggers who have chopped down too many trees and are wondering where their next log is coming from. Short term thinking has got loggers into this predicament. It is an issue of greed and a failure to plan for the long term. There' no magic fix.

Over the decades, successive governments have perceived little value in Red Gums just standing there growing and assigned low prices for them to be logged. The loggers got them for a song allowing them to earn an artificial profit. Profits attracted more loggers and this has been the driver perpetuating the carnage.

Now we have these 'declining wood yields' and the environmental problems and struggling rural communities that have grown dependent on an artificial profiteering and unsustainable agriculture. The scenario is almost comparable to the Polynesian deforestation of *Paschalococos dispersa* palm trees on Easter Island that led to extinction on the island.

Lessons of history need to be heeded.

#### **8.2 Farm Forestry**

A positive component of the 2020 Vision was to refocus the timber industry away from logging our finite native forests and toward renewable timber plantations and the concept of 'Farm Forestry'. Farm Forestry involves commercial tree growing being incorporated into existing farming systems. Farm forestry is not about logging native forests and it is not intended to replace private farming crops or pasture per se. Instead it is about better land utilization by planting native tree crops and integrating this into part of 'whole farm' planning. It adds a native

plantation timber crop to existing farm produce, while also improving land management, soils, water quality, mitigating salinity, providing carbon and biodiversity benefits and helping to sustain employment within the region.

In 1997, the Australian Department of Agriculture, Fisheries and Forestry (DAFF) launched its Plantations 2020 Vision strategy designed *"to enhance regional wealth creation and international competitiveness through a sustainable increase in Australia's plantation resources, based on a notional target of trebling the area of commercial tree crops by 2020."* The idea of better utilizing already degraded farmland to grow trees for logs has merit. It is doing what the logging companies could have done years ago when they first got the idea of making ready money from mature trees.



**Figure 10** Blue Gum plantation on degraded farmland, Mt Lofty Ranges, SA.

The Federal Government's 'National Forest Policy Statement' aims to increase plantation timber resources to expand Australia's forest industries and offset the reduced access to native forest resource.

In 2006, DAFF released its [Australia's Plantations 2006](#) report to help explain some of the environmental, economic and social effects of farm forestry as part of the suite of crop options available for farmers.

Of the fifteen regions established under the National Plantation Inventory, the Murray-Riverina region stretches from Gundagai south east to Melbourne and includes some of the Riverina. The total plantation area of 184,602 hectares is 96.5% softwoods and 3.5% hardwoods. Softwood plantations provide saw logs, veneer and pulpwood to industries dispersed throughout the region. More than half of the hardwood plantations are blue gum. Major processing industries are located (in Victoria) at Tumut, Tumbarumba, Wagga Wagga, Albury, Wangaratta, Myrtleford and Benalla. An important economic value of this forest farming programme to the region is in 2003 about 5,885 people were directly employed.

There is every reason that with careful planning and regional consultation that extending forest farming across the Riverina should attract similar benefits.

Farm forestry has an important role in helping tackle the land and water degradation issues affecting Australia's agricultural landscapes. The booklet, *Farm Forestry's Role*, describes how farm forestry projects can be incorporated into the regional natural resource management planning processes and framework. [\[DAFF website- Plantation farm Forestry\]](#)

It is essential for the future existence of Red Gum, White Cypress and Ironbark forests across the Riverina that the timber industry is encouraged away from these important native forests and drawn increasingly toward regrowth native forests and plantations. But encouragement is not enough to protect these forests. It is essential that the federal and state governments impose an immediate moratorium on all logging in these forests and to legislate to include them under the National Park estate.

***NRC Issue 9: What are the appropriate policies and institutional arrangements to manage these forests through such a challenging and uncertain future?***

**9.1 Regional Forest Agreements are simply licenses to log and an inappropriate arrangement to address Riverina's forest ecosystems**

The forest conservation record of Regional Forest Agreements (RFAs) between NSW and the Commonwealth is poor. RFAs are supposed to provide for the conservation of certain State forests for their ecologically sustainable management for the long-term stability of forests and forest industries. When implemented they have legislative status through the Regional Forest Agreements Act 2002 (RFA Act), so no going back once agreed.

Yet a clear conflict of priorities is apparent from the key objectives of the RFAs:

- To protect environmental values and a world-class system of national parks and other reserves
- To manage all native forests in an ecologically sustainable way, and
- To encourage job creation and growth in forest-based industries, including wood products, tourism and minerals.

So at the same time as protecting forest ecology, forest-based industries including logging operators are provided certain of log supply for the duration of a Regional Forest Agreement.

In the RFAs initially, Threatened Species Recovery Plans for were required to be prepared for each of the species listed in a given area, however in 2005 these statutory requirements were removed by parliament in NSW and then in 2007 by the Commonwealth in the EPBC Act. Since then Threatened Species Recovery Plans under the RFAs have been replaced by the much less effective Priorities Action Statement. The Minister has discretion to decide whether to have a recovery plan for a listed species or ecological community, or to have the entity addressed through conservation advice only.

This is a serious watering down of the only effective legislation supposed to ensure the protection and recovery of native species.

These RFAs are currently under a period of national review driven by the Commonwealth coordinating what it terms 'a national approach to environmental and industry-development issues' and coincidentally timed with the NRC assessment process. The New South Wales (NSW) and Commonwealth of Australia governments made the regional forest agreements (RFAs) for

three NSW regions - Eden, North East and Southern - 1999, 2000 and 2001, respectively. It is in these areas that NSW logging operations have thrived since that time.

More information about RFAs may be sourced from the federal environment website link:  
<http://www.environment.nsw.gov.au/resources/forestagreements/09200drafttrfa.pdf>

If this is the aim of the NRC in its Report to provide support for regional forest agreement for the Riverina's threatened remnant native forests, then the NRC process is disingenuous and the community consultation a mere token one to achieve minimum compliance.

The proof will be in the pudding.

## **9.2 Forests NSW poor record on forest ecology deserves that it only be permitted to contribute a role of data provision**

The NRC's Report at page 13, describes the river red gum and other woodland forests in the Riverina bioregion as having a long history of active silviculture and water management. The report points out:

*"The current extent, condition and values supported by the forests are strongly influenced by the way in which they have been managed and the amount and duration of flooding that has occurred."*

NRC's Report also makes clear that:

*"Forests NSW actively manage the forests for timber production; preservation of soil resources, water catchment capabilities and flora; and conservation of birds and animals."*

Clearly, this attributes full responsibility and accountability and the failure of Forests NSW in forest ecology management across the Riverina forests and woodlands.

The NSW Department of Primary Industries (DPI) in its Forestry division, branded innocuously 'Forests NSW', has consistently failed the forest community and the regional social communities of the Riverina. The plain language, spin-free name should be 'DPI's logging division'.

We challenge the NRC to compare the forest cover in any NSW region from ten years ago, five years ago to today. It is a graph clearly trending down. Forests NSW has shown to be ecologically bankrupt and only interested in one thing when it comes to its forests industrial arm, and that is logging and building the NSW logging industry by investing in more mechanisation.

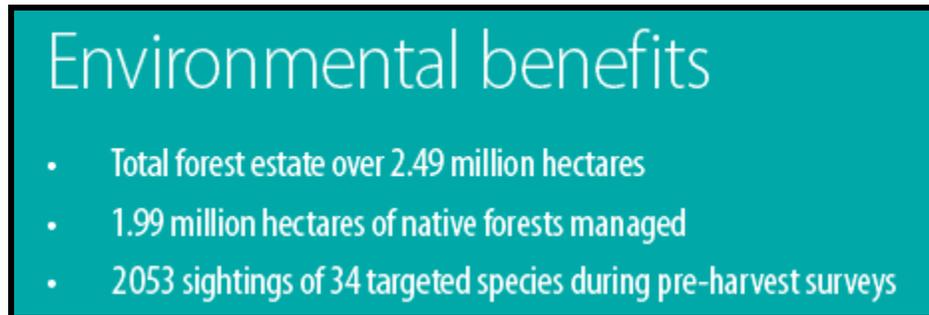
DPI's key result areas are:

- *Strong economic performance of primary industries*
- *Appropriate access to and wise management of natural resources*
- *Safe, healthy and biosecure industries*

- *A strong voice for primary industries*
- *Excellence in people, innovation and service delivery.*

Forests NSW promotes its main business as

*"We harvest over 2.5 million cubic metres of logs and over 1.5 million cubic metres of pulpwood and other products every year ensuring the supply of timber and other products to the industry in NSW. Our business management results in a dividend paid to the State government each year."*



Here 'managed' is spin for logged or allocated or logging. And what is to happen to the 2053 targeted native animals sighted in their native habitat in the forests that Forests NSW is set to cut down?

Forests NSW boasts economic benefits of its industrial forestry as:

*"1.4 million hectares of native State forest available for timber harvesting"*

and

*'helping trees and jobs live together'*

[\[Department of Primary Industries\]](#)

Q.E.D

NSW Forests is not doing too badly financially either and profits are up, while at the same time it is steadily reduces its labour force and replacing them with more mechanisation.

## Forests NSW finances

	2007–08 \$'000	2006–07 \$'000	2005–06 \$'000	2004–05 \$'000	2003–04 \$'000
Revenue	293 795	270 550	259 747	247 546	240 634
Operating profit	42 646	28 037	31 116	36 819	37 860
Significant items and biological assets revaluation	75 005	-166 357	-19 696	-29 163	17 392
Operating profit (before tax)	117 651	-138 320	11 420	7 656	55 252
Distribution to Government	1 000	16 000	26 322	32 544	13 096
Capital expenditure	34 904	45 039	31 451	31 531	36 315

Forests NSW productivity measures	2007–08	2006–07	2005–06	2004–05	2003–04
Employee numbers (30 June)	943	1 045	1 069	1 039	1 112
Timber sales by volume (m <sup>3</sup> )	4 797 875	4 659 225	4 414 591	4 338 255	4 489 397
Timber sales per employee (m <sup>3</sup> )	5 088	4 458	4 130	4 175	4 037
Timber sales/employee (\$'000)	147	123	126	123	118

DPI is clearly disingenuous about forest protection. It is only interested in forests as a logging resource. Its perception of native forests as valuable is only if they are 'working' forests' in terms of its logging performance and potential. In July 2009, the Department of Primary Industries was rebranded as part of a new mega-department called [Industry & Investment NSW](#). The government protection of NSW forests is now bundled with the following:

- Primary Industries – Mining, Fisheries, Forestry (aka logging)
- Energy
- NSW Tourism
- NSW Food Authority
- NSW Film & Television Office
- Rural Assistance Authority
- Game Council NSW
- Mine Subsidence Board

According to the **Draft Interim Forestry Assessment Report** by the Resource and Conservation Assessment Council (RACAC), the NSW Government is committed to *"a viable timber industry based on native forest"*.

[http://www.racac.nsw.gov.au/reports/iap/chapter1/ch1\\_300.htm](http://www.racac.nsw.gov.au/reports/iap/chapter1/ch1_300.htm)

Exploitation for economic gain seems to be the consistent single minded focus and message here. So long as Forests NSW continues to log native forests, its role in the Riverina Bioregion is inappropriate. Forests NSW has nothing constructive to add to the health of the forests of the Riverina Bioregion. The only role it deserves to contribute to the NRC assessment process is that of providing data statistics and its publications it has produced on forests of the Riverina, as listed in NRC's Report in the 'References' attachment on pages 199-200.

### **9.3 Australian Forest Standard inadequate instrument to protect Riverina's forest ecosystems**

NSW Forests relies upon the Australian Forestry Standard to guide its forest management practices. But this so called standard is one designed by the forestry' industry and does not protect forest ecology.

For instance, Clause 4.3.2 permits a forest manager to convert native vegetation to plantation forest cover or non-forest cover for infrastructure development and for up to a limit of 40 hectares on a single forest management unit, 'with appropriate offsets'.

Clause 4.3.7 Forest managers may "*use fire and other disturbance regimes*" (.i.e. bulldozing) on the basis that lighting fires in forests "supports the protection and maintenance of biological diversity values." The myth of native forests requiring fire to survive is misguided. At best, some flora species have learnt to cope with fire, but it is a coping mechanism not a necessary ecological process to sustain forest ecology. One is yet to learn of any native fauna or flora that has become extinct as a consequence of lack of fire.

Clause 4.5.5 tokenly gestures - forest managers "*shall reduce reliance on chemicals (including pesticides and fertilisers)*" except this "*is not intended to result in forest managers foregoing achievement of critical forest management outcomes.*"

[\[Australian Forestry Standard\]](#)

It is noted that the structure and order of the nine issues flagged by NRC in its preliminary assessment is closely aligned with The Australian Forestry Standard AS 4708-2007. This suggests the underlying focus of the assessment is aligned to serving the needs of Forests NSW.

Instead, what is needed and long overdue from government neglect at state and federal levels rather is a genuine nonpartisan commitment, protect the native forest ecologies of the Riverina, to remediate decades of State-sanctioned ecological damage and to provide long term sustainable alternative economic focus for Riverina communities away from unsustainable logging and unsustainable agricultural practices.

### **9.4 National Park listing is the most certain institutional arrangement to protect the vulnerable and threatened forests of the Riverina**

The major forests of the Riverina Bioregion, which have been identified and described in the NRC's Report and mapping, are all public land yet subject to logging and continued environmental degradation from poor or no ecological management.

It is recommended, pending no intent to apply for Native Title claim by local indigenous people, that these forest reserves be incorporated into the National Park estate. It is only under the federal protection of the National Parks and Wildlife Act 1974 (The Act), that the important

forests of the Red Gum, White Cypress and Ironbark can be properly conserved with the best opportunity of ecological rehabilitation funding from the federal government.

Park management agencies in Australia use the following definition of National Park:

*"a relatively large area, set aside for its features of predominantly unspoiled landscape, flora and fauna, permanently dedicated for public enjoyment, education and inspiration, and protected from all interferences other than essential management practices, so that its natural attributes are preserved."*

[1970, CONCOM, now called the Australian and New Zealand Environment and Conservation Council (ANZECC)]

It is important that the overriding benefit of '*protected from all interferences*' is ranked higher than any reservations about some of these natural reserves not being *unspoiled*. If the current management status quo is allowed to prevail, these forests may eventually otherwise die. While it is also acknowledged that these forests separately do not cover a large area typical of many national parks, it is only National Parks status, rather than the less protective 'conservation area' that will serve to afford these forests adequate federal environmental protection.

The strength of The Act particularly for these forests is that it provides for the creating of sanctuaries (Div 7), the conservation of native plants (including the Red Gums, White Cypress and Ironbarks) (Part 4), the conservation of native animals (Part 5), the banning of hunting (Part 5A).

An immediate moratorium on all logging and land clearing activities in these State reserves is called for. In time under proper environmental protection of the National Parks estate, these forests will have the opportunity to recover and so become *unspoiled* once again.

The benefit of National Park listing will also allow resources to be put in place to attract increased visitation to the region which will bring with it increased tourism and recreation revenues directly and indirectly.

NRC should acknowledge and support the environmental case that if the NSW Government is genuine about truly saving and protecting these forests, it will agree to recommend that they be afforded National Park protection status under The Act.

Recommendations for National Park listing of State reserves in the Riverina Bioregion are as follows:

#### **National Park Recommendation 1: Barmah-Millewa National Park**

The Millewa group of forests (38,100 ha) includes the Millewa, Moira, Gulpa Island and Tuppal State Forests, and the Barmah Forest lies immediately south along the Murray River in Victoria. Since the combined Barmah-Millewa Forests have been recognised as a "*highly significant wetland complex...jointly containing the largest area of river red gum forest in the world*" (O'Connor et al 2006), it is recommended that these forests on both sides of the State border be collectively formed into a Barmah-Millewa National Park. [NRC's Report]

#### **National Park Recommendation 2: Koondrook–Perricoota National Park**

Koondrook-Perricoota State Forests (34,546ha) includes an important area of river red gum forest is already public land but not protected from logging. Adjoining the forest is the Wakool River system and combined are recognised as having high ecological value and feature the iconic river red gum as well as box-river red gum woodland and box woodland. Since the Wakool Group of forests along the Wakool River are little surveyed and the area is quite large and includes private lands, an environmental assessment be jointly commissioned by DECC and the Federal Department of Environment Heritage and the Arts of the combined Koondrook-Perricoota State Forests and the area enclosed by the Edward and Wakool Rivers. The outcome of this assessment is that a recommendation be made by both organisations for a contiguous area for National Park listing.

It is recommended that local indigenous peoples be consulted with to consider a local indigenous name for the National Park and be offered key remunerated role in its management.

### **National Park Recommendation 3: Werai-Barratta National Park**

The Werai Forests (11,403 ha) including the Werai State Forest and Barratta Creek State Forest are situated on the floodplain of the Edward and Niemur Rivers between Yadabal Lagoon and Morago. They include significant red gum forest and Ramsar-listed wetlands of international significance.

It is recommended that the entire Werai Forest become the Werai-Barratta National Park and that local indigenous peoples be consulted with to consider a local indigenous name and be offered key remunerated role in its management.

### **National Park Recommendation 4: Murrumbidgee Ramsar Wetlands National Park**

In the Murrumbidgee region two of a total of 33 sites listed as wetlands of national significance, are Ramsar listed as Wetlands of International Importance (Fivebough and Tuckerbill Swamps).

It is recommended that these jointly become the Murrumbidgee Ramsar Wetlands National Park and that local indigenous peoples be consulted with to consider a local indigenous name and be offered key remunerated role in its management.

### **National Park Recommendation 5: (Mid Murrumbidgee) Wetlands National Park**

The Mid Murrumbidgee Wetlands (2,500 ha) comprise a series of lagoons and billabongs along the Murrumbidgee River from Narrandera to Carrathool. The vegetation is dominated by river red gum forest plus marginal black box woodland (CSIRO 2008b, Environment Victoria 2001, cited in NRC's Report).

It is recommended that these wetlands jointly become a National Park and that local indigenous peoples be consulted with to consider a local indigenous name and be offered key remunerated role in its management.

#### **National Park Recommendation 6: Booligal National Park**

The Lachlan region is located within central western NSW and covers 85,532 km<sup>2</sup> or 8 percent of the Murray Darling Basin. The Lachlan The Booligal Wetlands (5,000 ha) on the lower Lachlan River, including Booligal Swamp and Little Gum Swamp, which is dominated by river red gum overstorey (CSIRO 2008c, Magrath 1992, cited in NRC's Report). It contains large river red gum wetlands of national significance.

It is recommended that these jointly become a National Park and that local indigenous peoples be consulted with to consider a local indigenous name and be offered key remunerated role in its management.

#### **National Park Recommendation 7: Cumbung National Park**

The Great Cumbung Swamp (16,000 ha) at the end of the Lachlan River adjacent to the Murrumbidgee River and the Lowbidgee Wetlands is characterised by river red gum and black box cover large areas of the swamp (CSIRO 2008c, cited in NRC's Report).

It is recommended that these jointly become a National Park and that local indigenous peoples be consulted with to consider a local indigenous name and be offered key remunerated role in its management.

#### **National Park Recommendation 8: Redbank-Yanga National Park**

The Redbank-Yanga system on the Lowbidgee Floodplain downstream on the lower Murrumbidgee River is dominated by river red gum forest and woodlands, with black box on the floodplain margins (CSIRO 2008b, Environment Victoria 2001, as cited in NRC's Report).

It is recommended that the Redbank-Yanga system become a National Park and that local indigenous peoples be consulted with to consider a local indigenous name and be offered key remunerated role in its management.

#### **National Park Recommendation 9: (name to be decided)**

In the Lower Murray River riparian zone, there is a western group of forests situated on the lower reaches of the Murray, with some located downstream of the Darling confluence. These forests

support a diversity of communities, with river red gum forests, river red gum - box woodlands, mallee woodlands and semi-arid acacia woodlands.

It is recommended that this forest area be assessed jointly by DEC and the Federal Department of Environment Heritage and the Arts to recommend that a contiguous area be listed as a National Park. It is also recommended that local indigenous peoples be consulted with to consider a local indigenous name and also be offered key remunerated role in its management.

### **Restoring River Gum Forest Health in these new National Parks**

The condition of river red gum in the NSW Riverina within state forests and elsewhere of the Riverina is generally in decline as a result of substantially reduced flows primarily due to river regulation altering the natural water flows.

Since the only region in Victoria where the majority of river gum stands were in good condition is the Victorian Riverina area, it is recommended that the river regulation and environmental factors associated with the tree health in the Victorian Riverina area be the first steps in identifying restorative strategies.

Since the NSW Minister for Climate Change and Environment has a concurrence role in the making water management plans, he must be responsible for changing the current water management plans to enable adequate natural flows to reach these forests year round.

## **9.5 Fund and deliver Structural Adjustment Programmes to re-employ loggers away from Native Forests**

A Structural Adjustment Programme for native forest industry loggers on behalf of Governments by the Forestry Structural Adjustment Committee comprises representatives of NSW and Commonwealth Governments, industry and unions. According to the Resource and Conservation Assessment Council (RACAC) in the Draft Interim Forestry Assessment Report:

*"the Government recognises that there will be impacts on individual workers and businesses in the timber industry in the transition from current harvesting and sawmilling practices to production based on higher levels of value adding and reduced volumes available for processing from native forests."*

*"To assist workers and businesses in the hardwood timber industry, the NSW Government in partnership with the Commonwealth has committed \$120 million over five years to assist the industry in moving to long-term sustainable and profitable harvesting and production processes. The assistance is tailored to help workers and businesses wishing to invest in the industry and businesses wishing to exit from the industry."*

*"The Structural Adjustment Program has three major components:*

- 1. Industry Development aimed at assisting businesses wishing to invest in new value-adding and further processing issues. Financial assistance is provided for a wide range of developments including:*
  - plant and equipment upgrades*

- *better recovery and utilisation of resource*
  - *value adding residue utilisation*
  - *plantation establishment/improvement*
  - *improved log harvesting, extraction and handling systems*
  - *redevelopment and new employment within the industry*
  - *training and retraining initiatives.*
2. *Worker Assistance for the retraining and reskilling for the jobs in the restructured native timber industry. Assistance includes preparatory and vocational training, wage subsidies, relocation costs including support in the purchase of a home, income support and as a last resort special redundancy payments.*
  3. *Business Exit Assistance to contractors and sawmillers who may wish to exit the industry due to changes in timber supply arrangements."*

[http://www.racac.nsw.gov.au/reports/iap/chapter1/ch1\\_300.htm](http://www.racac.nsw.gov.au/reports/iap/chapter1/ch1_300.htm)

## 9.6 Ecoforestry policy is superior than peddling sustainable forestry in native forests

Sustainable forestry is fundamentally logging propaganda designed to sell more timber products "to unwitting consumers to assuage their guilt." "Promoters of sustainable exploitation tend to start with the premise that they are going to log the forest and then attempt to make the land fit the needs of the industry, while doing less ecological damage. The practice of sustainable forestry is a misnomer and indeed an oxymoron. It is really about ensuring there is a sustainable supply of logs for the sawmill, while paying token regard for preserving forest ecosystems.

"Some proponents of sustainable forestry and adherents of the working forest paradigm believe that if we manage forests in a sustainable manner, there is little reason to protect wild forests. In fact, there is even the implied message that wild forests, i.e. the non-working forests, are somehow inferior to those doing real work (nearly always defined as producing timber..for society."

"We have only succeeded in preserving forest ecosystems by preserving wild forests."  
 [Wuerthner G, 2009]

Alan Drengson and Duncan M. Taylor in their book 'Wild Forestry: Practising Nature's Wisdom, summarise the main contrasts between conventional industrial forestry and ecoforestry.

Conventional industrial forestry	Ecoforestry
1 Trees are seen as products	1 Forests are ecological communities
2 Short-term production goals	2 Long-term sustainability goals

3 Agricultural production model	3 Forest ecosystem model
4 Trees are the only cash crop	4 Diverse forest products and services
5 Trees' survival dependent on humans	5 Self-sustaining, self-maintaining and self-renewing
6 Chemicals	6 No chemicals
7 Clearcuts	7 Harvesting surplus wood and selective removal
8 Same age stands of trees	8 All ages of trees
9 Monoculture of single or few species	9 All native species of trees
10 Simplified ecosystem	10 Natural biodiversity and complexity
11 Capital-intensive and corporate-based	11 Labour- intensive and locally-based
12 Redesigning nature	12 Accepting nature's design
13 Life span: 60-100 years	13 Life span: millennia
14 Loss of the sacred	14 Sense of sacred and mysterious
15 Older traditions, aboriginal knowledge outdated	15 Older traditions and aboriginal knowledge are sources of wisdom

[Drengson & Taylor, 2009:283]

## 9.7 Adopt the guiding principles of the Murray Catchment Board

Much of the Riverina Bioregion as it extends into NSW includes the Murray Catchment. Consequently, and in recognition of the value and insight gained by the Board in preparing its Murray Catchment Blueprint in 2003, just six years ago, it is recommended the NRC wholly adopt the Boards guiding principles to assess projects

These are as follows:

1. *“Projects that **contribute significantly** to the Catchment (read ‘Bioregion’) Target/s should have a higher weighting. (Considers scale, technical feasibility, short term and long term impacts and treatment of cause rather than symptoms)*
2. *“Projects that address **more than one target and achieve compound benefits** should have higher weighting. (Considers Targets and Primary Objectives, synergies and risks)*
3. *Projects that **reflect underpinning social and economic values** of the Blueprint should have higher weighting. (Considers Indigenous cultural values and level of social and economic benefit).*
4. *Projects that have a **high degree of cost effectiveness** should have higher weighting. (Considers natural resource outcomes for level of public investment and cost-benefit)*
5. *Projects that are a **pre-requisite or co-requisite for other actions/projects** should have a higher weighting. (Considers timing, implications in no action taken).*
6. *Projects that can be **easily implemented** should have higher weighting. (Considers organisational capacity, level of community/client motivation/support and available resources).*
7. *Projects that **build community capacity in the long term** should have higher weighting. (Considers the development of new technical solutions, demonstration value and ability to raise knowledge and understanding).*

## 9.8 Funding of recurrent and capital must come from Federal and State sources, given that local governments have a chronically under-resourced revenue base.

- Self-explanatory

## 9.9 Develop Eco-tourism employment opportunities

For the Riverina region to take a cultural leap toward protecting its wealth of natural wetland and forested assets by enshrining them into National Parks, new and challenging economic opportunities present. But cultural change takes time and necessitates careful consultative planning and reaching out to guide people through the transition phases.

The term 'ecotourism' is now (rightly) restricted to those nature-based activities that genuinely include elements of environmental appreciation and education as well as being undertaken in an environmentally sensitive manner. [\[Victorian Government\]](#) In Victoria, nature-based tourism continues to grow at a faster rate than the overall tourism sector. Ecotourism alone is growing globally at 20 per cent per annum compared with just 7 per cent for tourism overall. [\[Tourism Victoria\]](#)

Ecotourism can play an important role in a regional economy by creating permanent employment in remote regions that historically have missed out to the town centres where traditionally employers have tended to base themselves. A small number of new jobs in a remote rural community can make a large proportional difference off a small population base.

Ecotourism can help assign value to an ecosystem and genuine ecotourists are willing to pay a premium for preservation in the form of park entrance fees and the hiring of local guides, wildlife guides, park rangers, and local workers in the service force of hotels, restaurants and lodges.

Economic benefits of ecotourism to the local regional economy rely upon the level of quality and target market being attracted. The flow on economic benefits to the region are maximised if the ownership of the ecotourism operation is also regionally based. In the case of the newly opened six star rated ecotourism Wolgan Valley Resort and Spa located in the NSW Blue Mountains region the owner is Emirates Hotels and Resorts, which is based in the United Arab Emirates. Hailed (on its website) as Australia's most environmentally responsible tourist destination, the fact is that the resort set a poor precedent of being built inside a National Park. Instead of profits being returned to the Blue Mountains region they will be channelled to head office outside the region and probably outside Australia to the Middle East. [\[Wolgan Valley Resort and Spa\]](#)

Joint venture ecotourism development between the State government and private enterprise based in the region, could facilitate comparable quality opportunities. Any ecotourism development of course must respect the integrity of the natural environment. However, ecotourism requires accreditation and a special set of skills that may need to be learnt. This is where government can also play a key role.

Benefits of ecotourism should not be oversold, or else risk a backlash as reality fails to live up to expectations. Ecotourism has been assessed as accounting for only 5 to 10 per cent of Australia's domestic nature-based tourist activity, so Australia in general has a long way to go. The Bureau of Tourism Research considers that the potential for further growth of domestic ecotourism is quite large

Across the border in Victoria, the Mallee Tourism and Recreation Strategy gives high priority to interpretation, education and conservation and is a nearby region with which the Riverina region could network with developing ecotourism opportunities in both regions.

One of the advantages for the Victorian economy of tourism, particularly nature-based tourism and ecotourism, is that it is labour intensive and can direct returns to regional areas. Well-

regulated, planned and managed nature-based tourism and ecotourism can provide the following on-going social and economic benefits:

- Provides the rationale and resources for conservation of natural and cultural areas
- Fosters a broad conservation ethic
- Regional economic gains
- Regional employment and skills development
- Revitalising of local communities
- Provision of new local infrastructure and service development.

[\[Victorian Parliament Report\]](#)

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