Forests and the Biodiversity Convention

Independent Monitoring of the Implementation of the Expanded Programme of Work in Australia

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Mountain Ash (*Eucalyptus regnans*) forest, Styx Valley, Tasmania.
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CONTENT

1. EXECUTIVE SUMMARY

The Australian research project into the implementation of the Expanded Program of Work (POW) of the Convention on Biological Diversity incorporated a research survey, which was distributed to stakeholder and interest parties in the field of forest biodiversity protection. This included government agencies charged with implementing the commitments of the Convention, non-governmental organizations (NGOs), environment groups and individual campaigners working for increased forest biodiversity protection, environmental lawyers and Traditional Owner (TO's) groups with forest estate on country.

The report is based on feedback from participants in the survey and consultation process, together with independent research into the status of forest and biodiversity conservation in Australia.

It must be noted that due to the vast scale of the Australian landscape and its forested area, together with the scope and time period of the GFC research project, an exhaustive analysis of stakeholder engagement with the POW and associated groups particularly on behalf of Traditional Owners, was not feasible. As such the feedback contained in this report represents a summary of the information gathered from survey participants. This in turn represents a sampling of the Indigenous and environment groups, government agencies and individual campaigners active in the field and able to participate in the study.

At its draft stage, the independent monitoring of the implementation of the Expanded Program of Work on Forest Biological Diversity in Australia suggests spheres of concern in the programme's implementation and the involvement of relevant actors. While there is some knowledge of the POW/CBD in the relevant policy agencies, and noted in various public policy documents, this is largely in the form of background context, rather than specific policy initiatives. In the NGO/IPO sector, amongst TO groups and within non-profit and conservation campaign actors, knowledge of the POW/CBD is narrow, and largely outside the range of central campaign work in this area. This is a distinct gap in the national conservation and biodiversity area.

There is sound potential for Australia's CBD/POW commitments to be utilised as a important tool for improving national forest biodiversity management, together with increasing knowledge and engagement with other international forest policy processes. Progress in the area requires greater education, cross-sector communication, resources and monitoring to enable collaborative action towards implementing international forest biodiversity protection measures.

2. INTRODUCTION

This report is produced on behalf of the Global Forest Coalition as an Independent monitoring project into the implementation of the Expanded Program of Work (POW) on Forest Biological Diversity. Its aim is to track the Australian implementation of the POW and to analyse the state of forest biodiversity before and after the inception of the CBD, and to assess the engagement of relevant actors with the POW process (Please see Appendix 1 for the Australian research questionnaire).

In an Australian context examining the implementation of the POW is a difficult research task. As forest and biodiversity management is largely directed by federal and state legislation and policy, the CBD and other international commitments are rarely explicitly expressed in policy and management. Instead changes in forest biodiversity management operate within the context of a national Regional Forest Agreement (RFA) process, and state and federally targeted forest campaigns. The POW and corresponding frameworks such as the ecosystem approach largely function as implicit background to the management policies of government

agencies. This is reflected in the limited engagement that NGO/IPO actors have with the POW. As such, this report, research and consultation process is focused on identifying the barriers to understanding and implementation of the POW, and making recommendations to increase engagement in this area.

The first sections of the report evaluate the current forest and biodiversity situation in Australia, examining land tenure and forest management mechanisms, and threats to biodiversity and market mechanisms.

The latter sections outline the key findings from the research project and consultation, examining the barriers to engagement with the POW and making recommendations for better Australian engagement with international instruments for forest and biodiversity protection, including the POW/CBD.

Sets of appendices include background research that underpins the document, and provides further detail on the topics discussed in the body of the publication.

3. FOREST DEFINITIONS:

What is a forest?

The Australian National Forest Inventory's definition of forest is;[i]

> 'an area, incorporating all living and non-living components, that is dominated by trees having usually a single stem and a mature or potentially mature stand height exceeding 2 metres and with existing or potential crown cover of overstorey strata about equal to or greater than 20 per cent. This definition includes Australia's diverse native forests and plantations, regardless of age. It is also sufficiently broad to encompass areas of trees that are sometimes described as woodlands.'

Throughout this century, Australia has used a number of definitions of forest. It has also developed concepts around the words 'forest' and 'woodland'. The definitions and concepts have never aligned perfectly and now that it is possible to map the whole continent in useful detail in a relatively short space of time, the disjunctions have been exacerbated. The release of the National Forest Policy Statement (NFPS) in 1992 included a new, clear biological definition of forest. This definition is very similar to that used by the United Nations Food and Agriculture Organisation (FAO).

As techniques for measuring forests have improved, the need for a scientifically, technically and linguistically rigorous definition of forest has arisen. The definition used by the National Forestry Inventory (NFI) is the one set out in the NFPS, but with two technical changes to accommodate implementation.

Crown Cover

The minimum crown cover for forest has been set at 20 per cent. It also marks a boundary that can be mapped reliably from satellite information in most areas.

Although crown cover is well defined theoretically, the boundaries between areas of different densities can be difficult to determine on the ground. In practice, the usage of wooded lands has not depended upon a strict application of the lower scientific boundary, but has depended on the quality of the potential timber resource.

The standards used now for crown cover are:

- **woodland**: 20-50 per cent crown cover (equivalent to 10-30 per cent projective foliage cover)
- **open forest**: 51-80 per cent crown cover (30-70 per cent projective foliage cover), and

- **closed forest**: 81-100 per cent crown cover (more than 70 per cent projective foliage cover).

Height

There is currently no national standard used for mapping tree height. Mapping compiled for national level reporting had nearly 150 different height classes. Height information has either been collected or reclassified into three categories:

- **low**: 2-10 metres
- **medium**: 11-30 metres
- **tall**: greater than 30 metres.

The terminology used to describe 'forests' in Australia needs reviewing. With the NFPS and FAO definitions both including what has in common usage been called 'forest' and 'woodland', there is ambiguity surrounding the word 'forest'. For the time being, we will use "wooded lands" to refer to the full forest estate as defined by NFPS/NFI. Wooded lands will be divided into closed and open forests, and woodlands.

The common meaning of 'forest' in Australia has tended to be a term describing the use of the wooded land, not its scientifically defined structure and cover. Thus the high forests (>20 m), irrespective of their density were called forests. In many cases these 'forests' are mixtures of open forest, woodland and even open woodland.

Other factors

The NFPS definition refers to 'usually' single stemmed trees, which recognises that tree mallees, Australia's multi-stemmed eucalypts, are to be included. To include mallees in a way that is sensible both biologically and in terms of mapping, a lower height limit of two metres has been adopted, following the definition of forest promulgated by the Australian Forestry Council and recommended by many State agencies that map or work with mallee.

4. WHAT IS AN OLD GROWTH FOREST?

A number of definitions of old-growth forest have been used over recent years; some of these are shown below:

Examples of definitions of 'old-growth forest'

"Old growth forest is ecologically mature forest where the effects of disturbance are now negligible"[ii] .

'Old growth forest is forest which contains significant amount of its oldest growth state in the upper stratum – usually senescing trees – and has been subjected to any disturbance, the effect of which is not negligible[iii]*.*

Old growth forests include many old trees with dead branches and many dead, rotting logs. This dead wood provides a food source for a diverse range of specialised fungi, insects and the many birds, reptiles, mammals and invertebrates, which feed on them. Similarly, forests with large trees produce more nectar than forests with young trees. Nectar is a major source of food for many animals, lorikeets, honeyeaters and numerous insects, bats and possums[iv]

Since many of the last remaining stands of old-growth forests have been removed from the Australian landscape over the last decade, the definitions of such forest may need to be expanded to include the classes 'mature' and 'late mature'. Forests managers have also advocated this preference. For example, the report *A Study of the Old-growth Forests of East Gippsland* stated that the preference should be extended beyond old-growth forest to

negligibly disturbed younger forests and forest with a mature growth stage, which have the potential to become the old-growth forests of the near future. The long-term conservation of old-growth forests must therefore include a wider range of age classes. There are many natural processes constantly shaping and re-shaping the extent and characteristics of these forests. New areas will be recruited as trees reach their older growth stages or as the effects of past disturbance become negligible. [v]

Characteristics of old-growth forests include:

- presence of relatively large trees and other associated understorey species in wetter forest types, to stunted and gnarled trees in drier forest types;
- relatively old trees and other plants, in terms of developmental stage;
- the presence of tree hollows and or fallen trees;
- a particular mix of species and structural elements
- presence of certain growth forms; for example, epiphytes in some forest types
- stable nutrient cycles and high levels of litter (in some forest vegetation classes);
- low rate of change in species, forest structure and ecosystem functioning.[vi]

5. FOREST AND BIODIVERSITY IN AUSTRALIA

The 2001 inventory of the forest estate shows that Australia has a total forest area of more than 166 million hectares, made up of about 164 million hectares of native forests and approximately 1.6 million hectares of plantations. With a land area of 769 million hectares, this means that about 22 per cent of the continent is forested. The estimate of forest cover given here is dramatically different from some previous estimates but well within others; this is due almost entirely to the definition of forest used.

Distribution of Australian forest types

The map below shows the total distribution of native forests by State and Territory by major forest type. Queensland has the greatest area of forest, but the position of the Northern Territory as the second most-forested region may come as a surprise. Almost 27 million hectares of the Territory's total forest area is woodland that has not fallen within many previous definitions of forest.

The status of Australian Forests

Since European settlement, half of the forest area and three-quarters of the rainforest has been cleared from the Australian landscape. Native forests now cover just 5 per cent of our land area. Less than 8 per cent of the pre-European old growth forests remain. Only half of these are protected in conservation reserves.

The loss of forests is having a devastating effect on our unique biota. More than 110 forest-dependent vertebrate wildlife species are formally listed as threatened on State or Commonwealth lists. In other words, over 5 per cent of all our terrestrial animal species – mammals, birds, amphibians and reptiles - are recognised as threatened. Some 400 of these terrestrial species, nearly one-fifth of them, depend on tree hollows. 180 of them – about 10 per cent of all our terrestrial species – are forest dwellers who need hollows

6. KEY THREATS TO FOREST BIODIVERSITY IDENTIFIED IN THE RESEARCH

Key threats to forest biodiversity identified in the research and survey work included weeds, feral species, drought and disease.

Australia is currently facing widespread drought, with subsequent impacts on forests and biodiversity around the nation. For instance, in The Murray Darling Basin (spanning Victoria and New South Wales) recent science indicates that 70% of Riverine Red Gums are stressed or dying as a direct result of drought and reduced environmental water flow from the River system. (Please see Appendix x for a case study of the Murray Darling Basin and drought-stressed forests)

Many study participants also expressed concern regarding the spread of disease in Australian forests and its threat to biodiversity. In particular this included the spread of the 'Dieback' (*Phytophthora cinammomi)* fungus through much of Western Australia's jarrah forest.

In terms of human management issues, research participants and relevant science identified mining and mineral exploration of forested areas as a substantial threat to forest biodiversity. This was particularly evident in responses and discussion in Western Australia where Jarrah *(Eucalyptus marginata)* and Tuart (…) forests are heavily disturbed as a result of mining for both Alumina and mineral sands.[vii] This was of particular concern to study participants as these forest types are both subject to the spread of dieback, the odds of which are greatly increased in cases of soil disturbance.

The mining related issues noted in the study include:

- vegetation removal,
- rubbish,
- noise,
- erosion
- impacts on water quality from run-off

In addition to vegetation and habitat removal, industrial resource extraction uses large quantities of water in processing. As well as using huge volumes of water, the resource extraction sector often contaminates water supply with heavy metals, acids and other chemicals.

The movement of soil and substrate causes siltation and increased turbidity of flooded areas and the river systems. This subsequently increases erosion from riverbanks and other areas, with further impacts on biota in the soil and substrate and/or benthic area at the time of flooding.

There may also be potential for soil acidification depending on the chemistry of the substrate. In a flood prone area this poses a serious risk, with severe environmental effects if acid leachate escapes into the local environment.

Logging

The continued logging and woodchipping of Australia's native forests remains one of the key threats to forest biodiversity. In 2006 4.3 million cubic metres of woodchips were removed from the nation's native forests. As such, this report focuses heavily on logging as the most significant human management impact on forests and biodiversity in Australia.

Impacts of logging on biodiversity:
Current Australian industrial logging practices have a devastating effect on forested areas and biodiversity.

For instance, recent data suggests that in eastern Victoria only 668,396 ha of old-growth forest remains; this represents about 10 % of the land area, most of which was forest and woodland at the time of European settlement (DSE Modelled Old-growth coverage). This forest is scattered across the landscape often in small patches. Logging has a major impact on the characteristics of an old-growth forest:

> *Logging radically alters the structure of the forest - the number of big old trees with hollows, the number of fallen logs, the density of the understorey and the canopy*

vegetation. It also alters the floristic structure of the forest – the number, type and density in the forest. Logging can also create conditions that promote the spread of pest animals and weeds and increase the probability, frequency and severity of fire. Consequently, many plants and animals are now absent from the forest.[3]

Loss of species

The most significant effect of logging is the reduction in the number of trees containing hollows; about 98% of Victorian animal species require hollows for shelter and breeding.[3] Normally, it takes around 100 years for hollows to begin to form in eucalypt species.[viii] Logging is systematically removing this age class from the public native forests, meaning that many species are moving closer to extinction.[ix]

A study in Victoria found that four common shrub and tree species never returned after logging. Also, tree ferns, which play a vital role in maintaining the moisture of the forest floor and providing protection for the growth of other forest plants, are mostly eliminated by logging.[x] Thus, Victoria's magnificent old growth forests, which pre-date the arrival of the first European ships, are unlikely to regenerate to their original state for between 1500 and 2500 years. [xi]

Logging does not simply destroy habitat — it leads to the fragmentation of continuous species' population into a series of small residual populations. These isolated pockets of populations are far more susceptible to extinction due to genetic inbreeding and greater vulnerability to the effects of fire and disease [xii] [xiii] .

In Australia, the permanent loss of old-growth forest habitat has led to a serious decline in both the abundance and distribution of many plant and animal species.[xiv] Many plants and animals simply do not come back after logging has ceased, including a large number supposedly protected by state and federal law, including Leadbeaters possum, Long-footed potoroo and Spotted-tailed quoll (which has disappeared from about 50% of its former range in Victoria).[xv] [xvi] [xvii] [xviii] A similar decline has been identified in many other species of bird, mammal, frog, fish and plants.

The present reserve system that attempts to protect species against processes that drive extinction through logging has been extensively criticised by the scientific community.[xix] [xx] Currently, Australian national standards require that 15% of each forest type is set aside to ensure that biodiversity is maintained. This level of reservation has not been met around the country. Moreover, even 15% reservation is insufficient for securing the conservation of the nation's forest biodiversity because:

- a large number of species simply do not occur in a protected forest and therefore have no protection status

- even the largest old growth forests in states such as Victoria are too small and vulnerable to broad area disturbance; for example, the long-term survival of populations of threatened species within the national park is now limited as a consequence of the fire.

- the small size and relative isolation of old-growth forest reserves do not leave much scope for plants and animals to allow gene flow (to prevent problems such as genetic inbreeding) or adapt to long-term climate change (either through dispersal or by evolution)[xxi]

In addition, the present conservation strategy for forests across the nation is fragmented and state-based, and makes little or no attempt to synthesize the parts of each threatened ecosystem into a working whole. It is not valid to assume that because certain elements are included in a reserve system, the entire ecosystem is protected, and that biodiversity and ecological processes that the forest provides will somehow be preserved in the long term.

These issues mean that a complete reassessment is necessary if the species inhabiting old growth forests are to persist in the future.

Increasing fire risk

Fire is increasingly becoming an issue for Australian wildlife and human populations. The processes of logging of old growth forests contribute to an increase in both the frequency and intensity of fires. Logging reduces the resistance of these forests to fire as the process dramatically changes the very nature of the forest's microclimate. This in turn alters the composition and structure of the forest's plant species, and an old-growth forest changes from a fire-resistant 'wet' forest to a much 'drier', fire-prone ecosystem. [xxii]

This is directly related to objective 4 of the POW, which seeks to prevent and mitigate the adverse effects of forest fires. Additionally, salvage logging of fire affected areas – where logging occurs post wildfire, in turn adversely impacts forest biodiversity. Salvage logging levels have increased in the past decade, spanning the timeframe of the inception of the POW/CBD.

Biodiversity & Water

Water is Australia's most precious and scarce resource. Supply of clean water is emerging as one of the biggest, possibly the biggest, issue the world has to face over the next 50 years.[xxiii] Science indicates three major factors will potentially have dire effects on water supply:

- increasing public demand in both rural and city regions
- climate change
- continuing land clearing and logging in water catchments.

Australia is presently in a water shortage crisis, the demand for water continues to increase and recent drought years have placed added pressure on available supply. For example, if a capital city such as Melbourne's water consumption continues to grow at present rates, it is projected to be using all available water by the year 2012.[xxiv].

Old-growth forests play an important role in protecting and contributing to our water supply, because they produce more and cleaner water (around 12 mega litres of water per hectare per year) than regrowth forests after logging.

Currently, logging is extensive in the rain-soaked upper catchments of the rivers that supply water to cities such as Melbourne, to the irrigation districts of West Gippsland and to the stressed rivers of the upper Murray. Such logging adversely affects water yield,[xxv] as shown by a recent Strategic Water Review undertaken in Melbourne, which found that if catchments were logged, water yield would decrease. The logging taking place in many of Victoria's water catchments is leading to severe damage to catchments in Victoria and substantial reductions in water supply. For example, logging operations in the Thomson catchment have already affected Melbourne's water supply. If logging were phased out of the Thomson catchments by 2020, this would result in a saving of 20,000 ML per annum by the year 2050.[xxvi] Reductions in stream flow due to logging will compound other changes to the reliability of stream flow expected as a result of climate change.

Instead of responding in the traditional way by harvesting more water or building more dams, more water could be increased in catchments simply by protecting the forests in these areas. In turn, water conservation is essential to ensure ongoing biodiversity and the recovery of drought-stricken ecosystems. In addition, protecting water has also shown to be economically beneficial to the community. For example, The New York Department of Environment and Conservation estimates that, by spending US $1.5 billion in catchment management, the City of New York has been able to cancel proposed water treatment plants with an estimated cost of US $6.7 billion.[xxvii]

Water is far more valuable to the community and to the maintenance of the natural environment than native forest wood, for which there are existing plantation alternatives.[xxviii 35]

To protect catchments, Government bodies or water authorities could either buy out the sawlog licenses, compensating saw millers, employees and contractors, or procure wood requirement from plantations should they be available. Assisting a transition out of headwater catchments and into lowland plantations would improve catchment health and increase water yields to all. The Victorian Infrastructure Planning Council discussed principles that could be applied nationally to catchments:

- managers should have a duty of care to not damage the resource, but where damage occurs the responsible party, if identifiable, should pay
- Improvements should be paid for by government.

Forests as Carbon stores – climate change

Current management of Australia's native forests for logging is directly relevant to objective 3 of the POW, seeking to mitigate the negative effects of climate change on forest biodiversity.

The increasing level of carbon dioxide in the atmosphere is one of the major factors causing climate change. Forests store carbon, and if they are destroyed, they release that stored carbon into the atmosphere, either rapidly (such as through fire) or slowly (such as through decay). The world's old-growth forests, particularly the wetter types, are some of the most important carbon stores in nature, storing up to 1500 tonnes of carbon per hectare.[xxix] Logging such forests releases large amounts of carbon into the atmosphere, adding to the greenhouse effect that is causing global warming. Thus, conserving old-growth forests is important in ameliorating the impacts of climate change. (Please see appendix on forests and climate for more information).

Overwhelming feedback from study participants indicated that relevant actors consider current mechanical logging practices and resource management of Australia's forests to be counter-productive to the aims and objectives of the POW/CBD.

7. FOREST MANAGEMENT IN AUSTRALIA BEFORE AND AFTER THE ADVENT OF THE CBD/POW:

At a Federal level, the as Department of Foreign Affairs and Trade including AusAID, the Australian Centre for International Agricultural Research, CSIRO, the Department of Environment and Heritage and the Department of Agriculture, Fisheries and Forestry (DAFF) play a relevant role to the Convention on Biological Diversity. DAFF has overall responsibility to represent Australia's interests in a range of international fora where forestry is an issue. These include:

- United Nations Forum on Forests
- Food and Agriculture Organization
- Montreal Process
- International Tropical Timber Organization
- DAFF also contributes to other fora and activities which are the prime responsibility of other Australian Government agencies, such as The Convention on Biological Diversity Trade fora such as the World Trade Organization
- Commission on Sustainable Development

- The World Conservation Union (The International Union for the Conservation of Nature and Natural Resources)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora

Forest Tenure

In Australia forests on public land are managed through the state and federal governments and their agencies in a variety of land tenure types with varying degrees of biodiversity protection.

While there is some minor variation between states, the various land management classes for forests are thematically and practically similar around the nation.

Tenure Types

Land tenure is crucial to our understanding of the state of the forests, since it determines the uses to which the forests may be put. The NFI recognises five tenure categories:

- conservation reserves: publicly-owned forests reserved for conservation, including national parks and flora reserves;
- multiple-use forests: publicly-owned forests set aside for timber production, including state forest and timber reserves, in which timber production and mining are permitted together with a range of other commercial and non-commercial activities;
- leasehold land: publicly-owned forests on land leased from the crown;
- other crown land: forests on crown (public) land not covered by the previous three categories. This grouping includes such tenures as Aboriginal reserves, defence land, mining reserves and sundry others; and
- private forests - forests owned privately.

The Native Title Act 1993 recognises the customary right to land of Indigenous peoples. The complex issues flowing from this Act are being worked through; at this time it is not possible to gauge how much of Australia's forest will come under native title following application of the Act.

The ratio of public to private ownership for native forest mirrors the general pattern of land ownership in Australia. Approximately 23 per cent of native forests are privately owned and 76 per cent are publicly owned. Approximately 1 per cent are of unclear ownership due to shortcomings in the databases used for this calculation.

The private forest category is the second-largest tenure class: about 45 per cent of the native forest estate is on public land held under lease by the private sector, predominantly the pastoral industry.

The right to use land conferred by a lease does not automatically confer a right to use forest on the land; nevertheless, the forest may be affected by the uses to which the land is put, such as grazing. Relevant State and Territory governments set conditions for the use of leasehold land, and these conditions vary. For instance, pastoral leases usually only confer rights for small-scale timber use such as fencing and similar utilitarian purposes. In contrast, some leaseholders in New South Wales have entitlements similar to those of private owners. A wide range of various conditions relating to the use of forests on leaseshold land also apply in other states and territories.

Taking private and leasehold native forests together, almost 70 per cent are on land managed by the private sector.

The remaining 30 per cent is public forest, which is defined in the National Forest Policy Statement as any forest on crown land for which management responsibility has been delegated to government agencies, local governments or other instrumentalities. Of the publicly managed forest, approximately 40 per cent is in conservation reserves, nearly 25 per cent is in multiple use forest and 35 per cent is in other crown land.

About 12 per cent of the total native forest estate is in conservation reserves; 11 per cent is on other crown land; and about 7 per cent is on land with multiple-use tenure.

Private Native Forests in Australia

Of Australia's 165 million hectares of forest, 42 million hectares are under freehold tenure and approximately 66 million hectares under leasehold tenure There are a wide variety of forest types under private ownership or management. They are used for a variety of commercial purposes and provide a range of ecological, environmental and aesthetic values. In most parts of Australia there is relatively little information available on commercial timber or other values of private forests.

To address this deficiency, the Bureau of Rural Sciences managed a project that developed inventory methods for private native forests and tested those methods in a region of southeast Queensland. The report "South East Queensland Private Native Forest Inventory" is a report of that work.

Private land native forest is managed in accordance with the various state based code legislation for native vegetation management, and comes under all relevant federal laws. However, monitoring and enforcement of native forest management on private land poses a major issue.

Due to the deficiency in information on private land native forests, the focus of IPO/NGO work on public land the Australian research project into POW/CBD implementation is in turn largely focused on forests on public land

As the bulk of the Australian forest estate is managed by the state and federal governments, in turn the major proportion of efforts to protect forest biodiversity on behalf of nongovernmental organisations, including campaigns to protect native forests from logging, are targeted at governmental policy change and law reform.

8. LEGAL FRAMEWORKS FOR FOREST MANAGEMENT AND THE POW/CBD

The Regional Forest Agreement Process

(Please see Appendix 4 for survey feedback in critique of the RFA process)

In terms of the legal framework for forest and biodiversity management, the 1998 Regional Forest Agreement (RFA) process provided an overarching set of agreements between state and federal governments that provides for reserve systems, timber and resource allocations and basic prescriptions for forest management in Australia. While supported by the federal government and industry, the RFA process has been heavily criticised by conservation groups, Traditional Owners and others for its lack of scientific rigour, inadequate community consultation and prioritisation of extractive industry interests (for more information please see:)

It is the RFA process through which the federal government, via the DAFF, has elected to implement the POW/CBD requirements. As the DAFF website entry detailing CBD commitments articulates:

Convention on Biological Diversity

The Convention on Biological Diversity was opened for signature at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in June 1992. Australia signed the Convention on 5 June 1992 and ratified it on 18 June 1993. The necessary 30 countries have now ratified the Convention and it came into force on 29 December 1993.

Briefly the Convention:

- Has as its primary aims the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources;
- Addresses the full range of biological diversity at genetic, species and ecosystem levels in all environments around the globe;
- Emphasises in-situ conservation measures, with ex-situ conservation complementing these;
- Requires the development of national strategies plans or programs for the implementation of its measures.

The Convention contains a wide range of provisions that will need to be considered in a detailed and comprehensive manner during the regional assessment process, particularly those relating to:

- Identification and monitoring (Article 7)
- In-situ conservation (Article 8)
- Ex-situ conservation (Article 9)
- Sustainable use of components of biological diversity (Article 10)
- Incentive measures (Article 11)
- Impact assessment and minimisation of adverse impacts (Article 14)."[xxx]

Subsequently, assessment of the Australian forest situation prior to and after the inception of the CBD/POW must necessarily be examined via domestic legal and policy frameworks and the RFA process.

The RFA agreements in turn intersect with other federal legislation pertaining to forests and biodiversity, including the Environmental Protection and Biodiversity Conservation (EPBC) Act. To date there is some tension in the overlapping application of these different legal frameworks. For instance, the Wielangta Case, currently in the Australian High Court, is contesting whether the RFA should provide for an exemption to the EPBC Act for logging operations that damage the habitat of threatened species including the… eagle.

In turn at the state level forest and biodiversity protection and forest resource management is governed by state-based legislation. For instance, in the state of Victoria forests and biodiversity management is covered by legislation including the Code of Practices for Timber Production, the Safety on Public Lands Act and the Rainforest Action Statement to name just a few. [xxxi]

There have been some changes to federal and sate forest management legislation, but these changes cannot be directly correlated with the implementation of the POW/CBD.

Forests, the RFA and reserve system commitments

Janis criteria – Australian implementation of base level forest biodiversity conservation

In terms of the baseline national standard for biodiversity protection, this report refers to the CAR (Comprehensive Adequate and representative) reserve system for forests in Australia. However it must be noted that the science in this area indicates that the CAR system, as established under the RFA process, is an inadequate standard for biodiversity protection. Nonetheless, the **Janis** criteria for a CAR reserve system is the only national standard for forest protection endorsed in principle by state and federal governments.

In line with the criteria for CAR reserve system:

1. As a general criterion, 15% of the pre-1750 distribution of each forest ecosystem should be protected in the CAR reserve system with flexibility considerations applied according to regional circumstances, and recognising that as far as possible and practicable, he proportion of Dedicated Reserves should be maximized.

2. Where forest ecosystems are recognized as vulnerable, then at least 60% of their remaining extent should be reserved. A vulnerable forest ecosystem is one which is:
   a) Approaching a reduction in areal extent of 70% within a bioregional context and which remains subject to threatening processes; or
   b) Not depleted but subject to continuing and significant threatening processes which may reduce its extent.
   c) Vulnerable ecosystems include those where threatening processes have caused significant changes in species composition, loss or significant decline in species that play a major role within the ecosystem, or significant alteration to ecosystem processes.

3. All remaining occurrences of rare and endangered forest ecosystems should be reserved or protected by other means as far as is practicable.

4. A rare ecosystem is one where its geographic distribution involves a total range of generally less than 10,000 ha, a total area of generally less than 1 000 ha, or patch sizes of generally less than 100 ha, where such patches do not aggregate to significant areas. This criterion is to be applied within a bioregional context having cognizance of distribution in adjoining bioregions. It should be noted that rarity of a naturally occurring phenomenon does not necessarily imply that the ecosystem is under

immediate threat.

5. An endangered ecosystem is one where its distribution has contracted to less than 10% of its former area, or where 90% of its area is in small patched which are subject to threatening processes and unlikely to persist.

6. Reserved areas should be replicated across the geographic range of the forest ecosystem to decrease the likelihood that chance events such as wildfire or disease will cause the forest ecosystem to decline.

7. The reserve system should seek to maximize the area of high quality habitat for all known elements of biodiversity wherever practicable, but with particular reference to:
    - The special needs of rare, vulnerable or endangered species;
    - Special groups of organisms, for example species with complex habitat requirements, or migratory or mobile species;
    - Areas of high species diversity, natural refugia for flora and fauna, and centres of endemism; and
    - Those species whose distributions and habitat requirements are not well correlated with any particular forest ecosystem.

8. Reserves should be large enough to sustain the viability, quality and integrity of populations.

9. To ensure representativeness, the reserve system should, as far as possible, sample the full range of biological variation within each forest ecosystem, by sampling the range of environmental variation typical of its geographic range and sampling its range of successional targets.

Forest ecosystems are often distributed across a variety of physical environments, and their species composition can vary along environmental gradients and between the micro-environments within the ecosystem. This approach will maximize the likelihood that the samples included in the reserve system will protect the full rage of genetic variability and successional stages associated with each species, and particularly those species with restricted or disjunct distributions.

As the agreed national criteria for forest biodiversity protection within the reserve system, the Janis criteria represent the policy implementation of Australia's biodiversity commitments, via the National Forest Policy Statement (NFPS). Nevertheless many of Australia's forest ecosystems are grossly underrepresented, even I terms f the Janis criteria **(please see Appendix 1).** This in turn goes against the effective application of the ecosystem approach and Australia's implementation of international forest policy commitments under the CBD.

9. AUSTRALIAN INVOLVEMENT IN REGIONAL AND INTERNATIONAL FOREST POLICY

International Forestry

Australia is involved in international efforts to foster the sustainable management of forests globally. DAFF's goal is to assist our forest industry to grow, improve and capitalise on international opportunities while protecting the environment and contributing to the prosperity and quality of life in rural and regional Australia. To achieve this, DAFF is engaged in a number of high-level initiatives and fora that deal with issues related to illegal logging, forest certification, and public procurement policies for forest products, sustainable forest management and market access.

The International Forest Policy Section is coordinating the Australian Government's Asia Pacific Forestry Skills and Capacity Building Programme. This $15.7 million programme will assist

countries in the Asia Pacific region to increase their forest management expertise and improve the carbon sequestration performance of their forests.

Asia Pacific Forestry Skills and Capacity Building Programme

This programme compliments the Government's $200 million Global Initiative on Forests and Climate.

Illegal logging:

"The Government is strongly opposed to illegal logging and the importation of illegally sourced timber products. Illegal logging presents a serious challenge to the sustainable management of forests and creates substantial economic and social costs to those countries where it occurs. The Australian Government is committed to ensuring that timber imported into Australia is from legal and sustainably managed sources and that Australian timber producers are viewed as global leaders in international markets."

DAFF has overall responsibility to represent Australia's interests in a range of international fora where forestry is an issue.

10. THE INTERNATIONAL MARKET AND AUSTRALIAN FORESTS & BIODIVERSITY

As a comparatively wealthy minority world country, international organizations such as the World Bank and the International Monetary Fund have little direct input into Australian forests and biodiversity management. At the broad level, the increasing drive for free trade and global demand for forest products, including woodchips for paper products, in turn drives the Australian native forest industry. This is evident in the overwhelmingly woodchip based industry, with high volumes of export woodchips transported from Australia. Japan remains the major overseas purchases of Australian native forest woodchips.

In a similar market-based vein, the international market is influential on Australia in this areas largely based on international trade and consumption of forest products. In line with increasing environmental awareness, this is largely in the form of demand for sustainability certification of Australian forest products.

The Australian Forestry Standard

To this end, with support from the federal government the National Association of Forest Industries (NAFI) launched the Australian Forestry Standard (AFS) to certify timber products from Australian native forests. The AFS is an industry-based standard, and has been hotly contested by environment groups as an industry rubber stamp for all native forest logging operations.

Market based biodiversity initiatives: The Forest Stewardship Council

The FSC certification is intended to give market recognition and a corresponding economic return to forest managers and processors who adopt and pursue better practices. The Forest Stewardship Council (FSC) is an international network to promote responsible management of the world's forests.

The FSC international description states:

"FSC is a stakeholder owned system for promoting responsible management of the world's forests. Through consultative processes, it sets international standards for responsible forest management. It accredits independent third party organisations that can certify forest managers and forest product producers to FSC standards. Its trademark provides international recognition to organisations that support the growth of responsible forest management. Its product label allows consumers worldwide to recognise products that support the growth of

responsible forest management worldwide. FSC undertakes marketing programs and information services that contribute to the mission of promoting responsible forestry worldwide.

Over the past 10 years, over 73 million hectares in more than 72 countries have been certified according to FSC standards while several thousand products are produced using FSC certified wood and carrying the FSC trademark."

FSC Australia is still in its early stages of the passage to developing an Australian national standard. To date several Australian plantation and native forestry companies have been certified under the FSC Interim and Controlled Wood standards. It must be noted that to date there are a number of serious problems with FSC Australian certification in terms of its credibility and rigour, and study participants raised such issues clearly. For more information on this and international concern with the FSC system please see www.fscwatch.org.
At this stage Australian study participants felt it was too early to comment on the impacts of FSC on Australian biodiversity management. FSC influence in this area will be more readily able to be assessed following the development of the national standard in 2008/09.

11. FEEDBACK FROM THE GFC SURVEY AND CONSULTATION PROCESS:

(Please note that this is not a complete set of findings from the research, survey and consultation process. Rather, it represents the key thematic findings and recommendations from participant feedback.)

Independent monitoring of the implementation of the Expanded Program of Work on Forest Biological Diversity: General Findings

Although the POW /CBD process and Australia's international forest policy commitments are highly relevant to national forests and biodiversity, the overwhelming majority of NGO/IPO actors in the study do not work in this area.

In many cases research participants operating outside the forest management sector were unaware of the existence of the POW and its role in ensuring forest biological diversity in Australia. Subsequently while able to make comment on forest management, threats and biodiversity in general terms, many participants from the ENGO sector, Traditional Owners and conservation campaigners were unable to make specific comment on the implementation of the POW.

Feedback from government agencies and officers responsible for implementing the POW in Australia indicates that CBD/POW policies and requirements, including the ecosystem approach, are one of a series of background frameworks used to inform forest biodiversity policies, rather than a separate and distinct forest management programme in its own right. That is, the RFA process remains the core policy framework for forest management, and requirements of the POW/CBD, together with other international obligations are theoretically included within this.

Barriers to engagement with the PoW and the Convention:

- Lack of knowledge relating to the details of the CBD and expanded PoW
- Lack of profile regarding Australia's international biodiversity commitments and low profile of programmes to implement these within Australia
- Time and resource limitations meaning core/priority campaign work areas take precedence over work in other areas

- History of adversarial relationship between government agencies charged with forest management and the environmental NGO and campaign sector

- Lack of communication between the different sectors working in the area of forest biodiversity

- Insufficient staffing and funding for biodiversity protection programmes

- National and state biodiversity legislation and policy not reflective of Australia's international obligations under the Convention.

- Traditional knowledge is inadequately incorporated in forest management decisions and policy in Australia.

- Traditional owner groups consulted on this issue face the challenge of being time pressured and under resourced to engage in the many state, national and international policy instruments relevant to their country.

- Significant influence and political sway of extractive resource industries, including the logging and mining sectors

12. RECOMMENDATIONS:

- The development of an information and training package around the CBD and PoW to educate all relevant interest parties.

- In terms of the GFC project, this may include a series of workshops focused in this area. Again, due to the geographic distribution of interest parties, time and budgetary constraints, this may most effectively be delivered as a series of state and regional forums, rather than a centralised conference.

- Additional biodiversity science is required to fill in the gaps in understanding about different ecological vegetations communities and species.

- Ongoing monitoring and communication with the government agencies and personnel charged with implementing the PoW, to track national progress and better facilitate communication with other stakeholders and the wider community. It must be noted that resourcing and time constraints make this difficult at the national level without a centralised, targeted and resourced ongoing monitoring body to ensure that the implementation of the POW is tracked and encouraged.

13. CONCLUSION:

At its draft stage, the independent monitoring of the implementation of the Expanded Program of Work on Forest Biological Diversity in Australia indicates areas of concern in the programme's implementation and engagement of relevant actors. While there is limited knowledge of the POW/CBD in the Government and policy sector, this is largely in the form of background information separate to national policy. In the NGO/IPO sector, amongst TO groups and within non-profit and conservation campaign actors, knowledge of the POW/CBD is limited, and largely outside the scope of core campaign work in this area.

This is not to say that research participants were disinterested in the POW/CBD, but rather that by virtue of time and resource pressures, together with ongoing controversy about the management of extractive industries, most work in the field of forests and biodiversity in Australia is focused on state and national instruments for conservation. This is a clear gap in the national conservation sector.

There is much potential for Australia's CBD/POW commitments to be utilised as a important tool for improving national forest biodiversity management, together with increasing knowledge and engagement with other international forest policy processes. To this end, progress in the area requires greater education, cross-sector communication, resources and monitoring to enable collaborative action towards implementing international forest biodiversity protection measures.

APPENDIX 1: AUSTRALIAN GFC QUESTIONNAIRE DISTRIBUTED TO PARTICIPANTS

Independent Monitoring of the Implementation of the Expanded Programme of Work on Forest Biological Diversity

AUSTRALIAN SURVEY

Name:

Position/campaign area:

Group/Organisation (if applicable):

Are you aware of the existence of the **Expanded Program of Work (POW) on Forest Biodiversity of the Convention on Biological Diversity?**

Yes No

Does your work for forest and biodiversity protection involve any engagement with Australia's international forest policy commitments?

Yes No

Please explain, give reasons:

Do you consider the POW (or parts of it) useful to enhance the status of forest biological diversity in your country?

Yes No

If yes, why is the POW useful?

Is the POW (or parts of it) being implemented in your country?

Which parts of the POW are being implemented?

What process is in place to implement the POW in your country?

Is the POW being incorporated in sectoral policies? In which sector/s?

What resources and personnel are allocated to the implementation of the POW?

Does your government have a programme of public consultation and discussion for the design, implementation and monitoring of the POW?

Are the underlying causes of forest biodiversity loss and degradation being identified and addressed?

Please specify the underlying causes identified?

Please specify the actions taken to address the underlying causes identified?

Programme element 1 – Conservation, sustainable use and benefit-sharing

What actions are being undertaken by your government to protect forests from identified threats?

What actions are being undertaken by your government to restore, mitigate and eradicate those identified threats?

Is the ecosystem approach* being applied in your country?

Yes No

How is the ecosystem approach being applied?

What is the effect of the application of the ecosystem approach on forest biodiversity?

Is sustainable use of forest biological diversity a concrete activity/policy issue in your country?

Yes No

Please describe

* The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Application of the ecosystem approach will help to reach a balance of the three objectives of the Convention. It is based on the application of appropriate scientific methodologies focused on levels of biological organization which encompass the essential processes, functions and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of ecosystems. As described by the Conference of the Parties, the ecosystem approach is the primary framework for action under the Convention.

For more information please see: The ecosystem approach - Background

Programme element 2 – Institutional and socio-economic enabling environment

Is forest biodiversity an important economic factor for people in your country?

Yes No

Please, briefly describe forest tenure, access and property regimes in your country?

In your experience, how does forest biological diversity contribute to the welfare of all segments of national society?

What actions are being undertaken by your government to create an enabling environment in the institutional and socio-economic fields?

How are the different actors being engaged in this process?

Programme element 3 – Knowledge, assessment and monitoring

What are the priorities for research on forest biological diversity in your country?

How is this knowledge linked to assessment and monitoring of:

- forest cover,
- forest health,
- forest structure and composition,
- forest classification and definitions,
- forest protection,
- forest rehabilitation and restoration

How is this knowledge reflected in policies and measures to curve forest loss and degradation?

How are forests currently defined in your country?

Is traditional knowledge considered in definitions associated to policy making?

Yes No

Please describe:

How is this knowledge reflected in policies and measures to curve forest loss and degradation?

Is traditional knowledge used in policy making regarding assessment and monitoring of the status of forests?

Yes No

Please describe

Final comments and additions

(In particular, please outline any barriers to understanding of/engagement with international forest policy. Please also make any recommendations or comments regarding training, communication or development that might improve national implementation and involvement with international agreements in this area.

Any detail regarding the alternative mechanisms for forest protection that you work towards in your region/Australia would also be useful.)

Many thanks.

APPENDIX 2: CASE STUDY

Case Study: The Red Gum Forests of the Murray Darling Basin

Biodiversity Conservation

The natural ecosystems and biodiversity of the Southern Murray-Darling Basin are collapsing. The intensive land-use zone of the southern Murray-Darling Basin faces some of the most significant challenges in nature conservation in Australia. This area is amongst regions suffering from the:

- Highest measures of landscape stress in the country (including parameters such as habitat fragmentation, altered hydrology, dryland salinity, over-grazing and other land use pressures) (Environment Australia 2001)
- Poorest levels of river catchment condition in the country (NLWRA Audit 2002)
- Highest numbers of threatened species (NLWRA 2002)

- Highest proportions of threatened ecosystems (NLWRA 2002)
- Widest ranges of threatening processes (e.g. pests and weeds, clearing, salinity, grazing pressure, changed fire regimes) (NLWRA 2002)
- Largest on-going decreases in ground-bird species (NLWRA 2002)
- Lowest proportion of ecosystems protected in formal national parks and reserves, and highest levels of risk of irreversible loss of those ecosystems (NLWRA 2002)

National parks and protected areas are the core of any nature conservation system. A system of new parks will also complement achievements in water reform along the Murray with sound management of the floodplain wetlands. Within this region of Victoria, Barmah represents the most significant area of remnant vegetation. The Goulburn Broken catchment encompasses the floodplain forests and wetland areas of the lower Goulburn river catchment, and is known as the Shepparton Irrigation Region (SIR). Barmah contains over 51%. Of all threatened species in the region (Robinson 1998). Private land in the SIR has been substantially altered since European settlement with around 98% of the original extent of native vegetation cleared for agriculture. Of the 2% that remains, around 60% is classified as 'endangered' (GBCMA 2001). These statistics are well supported with figures of just 3.7% of the original extent remaining within the SIR (across all land tenures), with half of what remains threatened by watertables of greater than 3m (Kelly, 1994).

RECOMMENDATIONS: Given the nationally agreed criteria for a comprehensive, adequate and representative reserve system the River Red Gum ecosystems are grossly underrepresented in the reserve system. Significant ecological values and threatened species are an integral part of these ecosystems and require the best possible protection.

APPENDIX 3: FORESTS & CLIMATE

(Information taken from the Victorian Forest Alliance inquiry into native forest logging)

A seminal study of the impacts of logging on old-growth forests showed that logging in the Styx Valley (an old-growth forest in Tasmania) would produce approximately 1000 tonnes of greenhouse gases per hectare.[33] In simpler terms, clearing 1000 hectares of Styx old-growth forest would produce greenhouse gas pollution equivalent to all the cars in Tasmania in a year.

It has been argued that logging of old growth forests is a 'carbon neutral' process, because regeneration after logging rapidly takes up carbon dioxide from the atmosphere, balancing out the carbon released by the logging. However, it is now clear that logging actually reduces the carbon stored in the forest to levels much lower than those estimated after severe wildfire. Wildfires that destroy an entire stand of trees (referred to as 'stand-replacement wildfires') left 1000–1100 tonnes of carbon stored per hectare; whereas, after successive logging scenarios, carbon stored in a regenerating forest could be reduced to as little as 485 tonnes per hectare.[33] These results reflect the global literature, which shows that the amount of carbon stored in the forest ecosystem is related to the age class of the forest.[1]

There are a number of related reasons why logged forests contain far less carbon than old-growth forests:

- logged forests have relatively more frequent fires that emit gaseous carbon
- when a forest is logged, wood products are not returned to the soil
- logged forests often contain a vegetation understorey that is under-developed when compared to old growth forests
- trees in logged forests often only grow to around 60% of the size they would in a old-growth forest
- forest soils lose carbon due to:
  - a loss of nutrients

- changes in the physical properties of the soil due to disturbance by logging machinery
- changes to the microclimate as a result of the loss of forest canopy.

The results of such research are clearly applicable in Victoria's wetter forest types.

Protecting old-growth forests will make a significant contribution to keeping carbon 'locked up' rather than contributing to rising atmospheric carbon dioxide levels.

APPENDIX 4: TASMANIA'S FORESTS AND THE RFA (A CRITIQUE BY THE TASMANIAN NATIVE FOREST NETWORK)

Please note: This research feedback was given by the Tasmanian Native Forest Network, and is included as a vital research perspective countering the governmental endorsement of the RFA process as an effective key tool for adequately protecting forest biodiversity in Australia and fulfilling the nation's international forest obligations.

Tasmania's RFA: A case study in industrial pragmatism

To date, Australia's Regional Forest Agreement process has not been successful in fully integrating the ecological and consultative imperatives required to produce methodologically sound outcomes. The Tasmanian RFA is a case in point, having: overlooked data errors in the information generation phase; ignored a number of major recommendations of the JANIS criteria; and rejected meaningful consultation with non-industry stakeholders.

This has undermined the credibility of forest management in Tasmania, which has been traded off in exchange for increased woodchip exports. The Tasmanian Regional Forest Agreement signed in November 1997 has been roundly criticised by a significant number of stakeholders. There are sound reasons for this. In the data generation process it became apparent to conservation interests early in the piece that the information used for the generation of the many maps was not to be informed by real time observations.

The most significant data layer - the Timber Harvest History - was used to inform the "Biophysical Naturalness" and "Wilderness" maps in particular. The THH layer was not available for public scrutiny, and thus unavailable for peer review. A simple examination of the BN layer revealed a number of instances where the informing THH data was incorrect. One case in point was the designation of a higher BN value to land outside wood production areas along Burnies Creek in Jackeys Marsh than adjacent forest. The area in question had been cleared for agriculture. Attempts to correct data were ignored. Data polygons designating disturbance were extrapolated across areas where old growth forest was located due to some disturbance in one corner. Forest type mapping was inaccurate due to assumptions based on years of harvesting that were not correct.

In terms of the implementation of the Janis criteria, there were also a number of significant shortfalls. Particularly egregious to conservation groups was the failure to meet the reservation targets for old growth forests. Forests of a high old growth value were overlooked because they also had a high wood production value. For instance, the Tall/Dry delegatensis forest types were under reserved by 6,000 ha. Old growth reservation targets of 60% were already a considerable diminution of what needed to be reserved, and this further reduction calls into question the validity of the reserve system established as a trade off for unlimited woodchip exports. Broader protection of pre-1750 forest types at 15% was also inadequate, with over 20 of the 50 forest types failing to meet the reservation target.

It remains to be seen whether any of these problems will be addressed by conservation initiatives on private land. This failure to adequately reserve old growth immediately calls into question the validity of the "ecologically sustainable forest management" process. The recent

logging of under-reserved, old growth Delegatensis forest at an altitude of 850 meters on Mother Cummings Peak has demonstrated this lack of commitment. Due to the "systems based" approach of ESFM in Tasmania, current unsustainable management regimes such as cable logging on steep country forests and continued use of known carcinogenic compounds for plantation management were entrenched.

The exclusion of conservation and indigenous interests from the Steering Committee, while known members of the Forest Protection Society were able to feed into the process left many stakeholders feeling cheated. The complete failure to address the Deloraine Aboriginal Cultural Association's proposal for the "Kooparoona Niara" joint managed park in central northern Tasmania, despite a great deal of effort and time spent lobbying and walking with politicians and bureaucrats through the area, marks a low point in Indigenous/Commonwealth/State relations. The failure of the RFA is a great disappointment to everybody except supporters of industrial forestry. Industry failed to accept that conservation interests had come a long way just by participating in a process that entrenched woodchipping.

For the sake of a further 1-2% diminution of resource which would have seen protection of a number of "icon" areas - and fulfilment of the JANIS criteria - the industry dug in its heels and instead developed a high-risk strategy of disaffection, which has returned Tasmania to another twenty years of resource conflict. To add insult to injury, the timber industry has made a net gain of high production forests out of the RFA. Furthermore, while only $30 million worth of timber was reserved on State forest, compensation of $80 million has been ploughed back into new roads which are being used as strategic boundary markers, running along side World Heritage Areas and carving their way through important forest fragments. While Tasmania's RFA may have done a good thing for NORTH Ltd and BORAL Ltd in the short term, such traditional "might is right" attitudes are a mistake. Conservation groups in Western Australia, basing their actions on the iniquitous Tasmanian outcome, have made it clear they will not participate in that state's RFA. It appears they have a number of major supporters including tourism and political parties. In NSW, the Option being supported by conservation groups for Eden, which targets the need to reserve areas fought for over many years, indicates a belief that the "science" of the RFA is not credible. Once again, the timber industry has thrown away the opportunity for a genuine scientific process with real consultation leading to an end to resource conflict, in exchange for short-term political gain. The status quo, which has been such a problem for both "sides" in this debate, has been maintained.

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REFERENCES

[i] Department of Agriculture, Fisheries and Forestry (2007), What is a Forest?http://www.daff.gov.au/brs/forest-veg/nfi/forest-info/what-is

[ii] Commonwealth of Australia (1997), 'Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia', Commonwealth of Australia

[iii] Woodgate, P.W., Peel, W.D., Ritman, K.T., Coram, J.E., Brady, A., Rule, A.J. and Banks, J.C.G. (1994), 'A Study of the Old-growth Forests of East Gippsland', Department of Natural Resources and Environment, Victoria

[iv] Traill,B. (1995) Woodchips or Wildlife – the case against logging our native forests. Environment papers, Vol:1. Victorian National Parks Association.

[v] DNRE (2000) Gippsland Old Growth. Technical Report. Victoria

[vi] Victorian Forest Alliance (2006) Choosing a Future for Victoria's Forests
www.acfonline.org.au/forests
Accessed November 207.

[vii] The Western Australian Forest Alliance (WAFA) (2006), Mining the Forests
www.wafa.org.au/forests/mining
Accessed October 2007

[viii] Lindenmayer D, Cunningham R, Tanton M, Smith A, Nix H (1991), 'Characteristics of hollow bearing trees occupied by arboreal marsupials in the montane ash forests of the Central Highlands of Victoria, south-east Australia', Forest Ecology and Management 40, pp289-308

[ix] Possingham H, Lindemayer D, Norton T, Davies I (1994), 'Metapopulation Viability Analysis of the Greater Glider Petauroides volans in a Wood Production Area', Biological Conservation 70 pp227-236

[x] Ough K, Murphy A (2004), 'Decline in tree fern abundance after clearfell harvesting', Forest Ecology and Management 199, pp153-163

[xi] Norton T (1996), 'Conserving biological diversity in Australia's temperate eucalypt forests', Forest Ecological and Management 85, pp21-33

[xii] Watson, James, Freudenberger, David & Paull, David (2001) An Assessment of the Focal-Species Approach for Conserving Birds in Variegated Landscapes in Southeastern Australia. *Conservation Biology* **15** (5), 1364-1373.

[xiii] Watson, J. E. M., R. J. Whittaker, and T. P. Dawson. 2004. Habitat structure and proximity to forest edge affect the abundance and distribution of forest-dependent birds in tropical coastal forests of southeastern Madagascar. Biological Conservation 120:311-327.

[xiv] DSE (2003) *Advisory List of Threatened VertebrateFauna in Victoria 2003.* Department of Sustainability and Environment, Victoria.

[xv] Ough K (2001), 'Regeneration of Wet Forest Flora a decade after clearfelling or wildfire – is there a difference', (Australian Journal of Botany, 2001, Vol 49, pp 645-664)

[xvi] Maxwell, S., Burbridge, A.A. and Morris, K.D. 1996. The 1996 Action Plan for Australian and Marsupials and Monotremes. Wildlife Australia. Canberra

[xvii] Mansergh,I. 1984. The status, distribution and abundance of Dasyurus maculates (Tiger Quoll) in Australia with particular reference to Victoria. Australian Zoologist 21:109-22.

[xviii] Mansergh, I. and Belcher, C. 1992 Action Statement No. 15: Tiger Quoll *Dasyurus maculates.* Department of Conservation and Environment, Melbourne.

[xix] Soule ME, Mackey BG, Recher HF, Williams JE, Woinarski JCZ, Driscoll D, Dennison WG and Jones ME (2004), 'The role of connectivity in Australian Conservation', Pacific Conservation Biology, 10: 266-79

[xx] Recker et al., in press.

[xxi] Victorian Forest Alliance (2006) Choosing a Future for Victoria's Forests
www.acfonline.org.au/forests
Accessed November 207.

[xxii] Griffiths, R.C. and Muir, A.M. (1991) Comparisons between the floristic composition of some regrowth and mature forest. Management of Eucalypt Regrowth in East Gippsland Technical Report No 17, DCE and CSIRO.

[xxiii] Harris G (2002) Ensuring sustainability – paradigm shifts and big hairy goals. Speech by Dr Graeme Harris, CSIRO Enviro2002, Melbourne 8 April 2002.

[xxiv] WRSCMA (2001) Discussion starter: Stage 1 in developing a water resources strategy for the Greater Melbourne area. Water Resource Strategy Committee for the
Melbourne Area.

[xxv] Watson FGR (1999) Large scale, long term, physically based modelling of the effects of land cover change. PhD dissertation. Department of Civil and Environmental Engineering, University of Melbourne, Victoria, Australia

[xxvi] WRSCMA (2002) Strategy directions report: stage 2 in developing a water resources strategy for the greater Melbourne area. Water resource strategy committee for the Melbourne area. 52

[xxvii] BREC (199) BREC proposes 120 million dollar catchment protection revenue bond for SEQ. Brisbane region environment council media release 7 Dec 1998. http://brec.ozecol.org/news/current/catchmentbond.html

[xxviii] Read Sturgess Associates,. RG Mein and Associates, consultants in hydrology and water supply management resource and Environmental Economics Group, LaTrobe University, Arthur Webb and Associates, forestry consultants, (1992). *Evaluation of the economic values of wood and water for the Thomson catchment*.

[xxix] Dean C, Roxburgh S, Mackay B (2003), 'Growth Modelling of *Eucalyptus regnans* for Carbon Accounting at the Landscape Scale', in 'Modelling Forest Systems', eds Amaro, Reed D, Soares P (CAB International)

[xxx] Department of Agriculture, Fisheries and Forestry (DAFF) (2006) Convention on Biological Diversity

[xxxi] Lawyers for Forests (2006), Victorian Forest Legislation
www.lawyersforforests.asn.au Accessed October 2007

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