Securing the Future of Tasmania's Forests and Forest-Dependent Industries

Protecting Forests

Growing Jobs

THE WILDERNESS SOCIETY

A report prepared by The Wilderness Society, in collaboration with the Australian Conservation Foundation, and supported by Greenpeace Australia-Pacific, which incorporates the work of the following Tasmanian community groups:

Tarkine National Coalition, Friends of the Blue Tier, South East Forests Protection Group, Doctors for Forests, Reedy Marsh Forest Conservation Group, Tasmanian National Parks Association, Huon Valley Environment Centre, Arts for Forests, The Environment Association, North East Bioregional Network, Great Western Tiers National Park Campaign, Mount Arthur Environment Management Group, Launceston Environment Centre, Canyon and Bluff Working Group, Panama Forest and Denison River Catchment Group, Jackeys Marsh Residents Association, Tasmanian Conservation Trust (North West Branch).

It is also supported by the Melbourne Tarkine Action Group.

Australian Conservation Foundation

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Securing the future of Tasmania's forests and forest-dependent industries

Protecting Tasmania's forest heritage requires a change of direction in Tasmania.

The forests identified in this report as being of high conservation value must be added to secure reserves in National Parks and in some cases to the Tasmanian Wilderness World Heritage Area. But conservation needs cannot be met through a reserve system alone. It is also critically important that intensive logging practices in native forests cease.

To meet the aspirations expressed by the community through the *Tasmania Together Process*, and create a climate conducive to the major investments that Tasmania's extensive existing plantation resource can now support, the following steps are required.

Firstly, long standing forest reserve proposals, supported by good science and the Tasmanian community, must be implemented. Many of these forests still satisfy the requirements for World Heritage listing in line with recommendations from bodies such as the Australian Heritage Commission from as far back as 1987. By incorporating a suite of biologically and culturally important forests into the existing reserve and World Heritage system the long term future of many forested landscapes, ecosystems, forest wildlife (and tourism and recreational businesses with strong growth potential) would be given a much more secure future.

Secondly, all intensive logging practices in native forests (driven by the desire to increase the plantation estate and/or the profits of native forest export woodchipping) must cease. Commodity production could be rapidly transferred to Tasmania's existing plantation estate. The way would then be opened up to develop a model of low intensity/high value native forest wood production which the Tasmanian community could be proud of.

Over 900 new jobs are possible in the timber industry alone without factoring in the blossoming opportunities opening up for small businesses as a result of the growth in nature based tourism in Tasmania. The relatively simple steps outlined in PART TWO of this document would deliver more diverse and more secure jobs and greatly strengthen the future for young people in Tasmania.

The solutions suggested in PART TWO cover a range of options from which government, industry and the community can choose. If every suggestion made in the report were implemented 1190 new direct jobs would be created. The path suggested will only be achievable with strong Federal Government support. A maximum of $250 million is sought from the Federal Government for 5 years.

The proposals outlined in this report are comprehensively costed by independent economist, Robert Gillespie of Gillespie Economics, experienced in environmental and resource economics, and environmental planning and assessment. The Report is based on experience from structural adjustment packages in NSW, Victoria and WA. Robert Gillespie's Report assessing the economic feasibility of the TWS/ACF proposal is Attachment F in this report.

Tasmania's old growth forests and forestry jobs are being lost.

The forest being destroyed is ancient, beautiful, important to wildlife, and irreplaceable. Tasmania has the tallest flowering plants on Earth, with trees reaching over 90 metres in the Styx valley. Tasmania has Australia's greatest tract of temperate rainforest – in the little-known Tarkine wilderness in the northwest of the state.

Tasmania has a logging industry which exports more than twice the volume of native forest woodchips than all the other states combined (around 5 million tonnes per annum). An average of 20,000 hectares of native forest are clearfelled and burnt each year. Tasmania also has one of the highest rates of land clearing in the developed world, with 80,000 hectares of native forest having been converted to plantations in the last 7 years.

At the same time jobs in the Tasmanian logging industry are in decline. Unlike NSW or Victoria, little or no assistance has been provided to these families to build new lives nor to develop sustainable long term jobs.

For decades the Tasmanian forestry industry has operated in a climate of controversy. Despite significant subsidies from Commonwealth and Tasmanian taxpayers over the last ten years, the picture has been one of declining jobs, spiralling low value woodchip exports and a persistent balance of payments deficit.

Recent decades have seen a large investment in the establishment of soft and hardwood plantations. Australia will soon have close to 1.75 million hectares of plantations. The predicted supply of plantation based saw and pulp logs is expected to transform the industry and creates a valuable opportunity to dramatically reduce the scale of native forest logging. Tasmania shares in this plantation boom, with an unprecedented 1 million m^3 p.a. of hardwood plantation sawlogs coming on stream from 2015 -2020.

Against this backdrop, scientific and community concern about forest destruction and land clearing of native forests has continued to escalate. Recently, eminent scientists including Professor Tony Norton, Head of Geospatial Science at RMIT University and Professor Jamie Kirkpatrick AM, Head of School, Geography and Environmental Studies, University of Tasmania, have said that "in the light of the extensive changes that have occurred in many of the most productive forest ecosystems in Tasmania, we believe that the reserve system should be significantly extended to include all high conservation value forests."

Doing nothing is not an option – old growth forests, biodiversity and jobs will continue to be lost. Federal Government support is urgently needed for a plan that can deliver certainty both for Tasmania's high conservation value forests as well as for forest dependent industries.

Protecting Forests

To ensure adequate protection of this irreplaceable part of our national heritage the following steps are required:

1. Protect Tasmania's wild forested landscapes, wilderness areas, biodiversity and other areas of great natural significance and high conservation value on public and private land.

Globally important old growth, rainforest and forested wilderness are still unprotected in Tasmania and suffering unprecedented destruction.

The Tasmanian community needs urgent Federal Government assistance to help protect high conservation value forests on public land in secure reserves. This requires extensions to existing reserves to include the proposed eastern and northern extensions to the Tasmanian Wilderness World Heritage Area, incorporating the Styx Valley; the Tarkine; the Great Western Tiers; the North-East Highlands (including Blue Tier and Ben Lomond forests); the Eastern Tiers; the Tasman Peninsula; and the Leven Valley forests.

240,000 hectares of these high conservation value forests which must be protected would have an impact on premium grade sawlog supply. Other high conservation value forests and state lands essential to achieve a good reserve system should also be protected but would have negligible or no impact on sawlog supply.

All the areas outlined in the attached map must be protected for future generations.

On private land extensions and improvements to the existing Private Forest Reserve Programme need to be made to achieve the government target of protecting 165,000 hectares of highly bio-diverse private forests.

2. End landclearing and unsustainable logging of native forests outside reserves.

It is important that forests outside the reserves do not become 'sacrifice zones', with an even higher rate of logging than currently experienced. This requires prevention of any further clearing of native forests for plantations and other broad-scale clearing of native vegetation. A fund is needed to compensate private landholders and/or to enable the purchase and covenanting of native vegetation. On public land a change in government policy is required. It is also important to reduce overall logging to more acceptable levels, to help shift woodchip production out of native forests and to improve forestry management practices.

3. Ban the use of 1080 poison on native wildlife and other damaging management practices on plantations.

The use of 1080 poison to reduce native wildlife numbers in areas established for plantations should be banned. 1080 poison kills thousands of possums and wallabies as well as 'non-target' species such as bettongs, quolls and wombats every year. Strong encouragement should be given to have all plantation management achieve Forest Stewardship Certification (FSC) Certification Standards.

4. Rule out the burning of native forests for electrical power across Australia.

Burning of native forests for electricity should be ruled out through amendments to the Mandatory Renewable Electricity Target (MRET) legislation. This will bring Tasmania in line with commitments from all other relevant states.

5. Manage suitable areas of public forest for specialty timbers and other uses.

By shifting woodchip production from native forests to plantations, it becomes possible to focus native forest production on low-volume, high quality products, such as specialty timbers. This would require managing some areas on long intervals between logging operations as well as the planting of suitable species on private land.

Growing Jobs

This Tasmanian development package is premised on the need to grow jobs in industries that depend on Tasmania's forests, including forestry and tourism, and assistance for workers affected by proposed forest conservation initiatives. It also seeks to provide jobs that are appropriate for the skills sets of these workers.

The proposals outlined in this report are comprehensively costed by independent economist, Robert Gillespie of Gillespie Economics, experienced in environmental and resource economics, and environmental planning and assessment. The Report is based on experience from structural adjustment packages in NSW, Victoria and WA. Robert Gillespie's Report assessing the economic feasibility of the TWS/ACF proposal is Attachment F in this report.

Federal Government investment of $50m per year for five years is proposed to create up to 1,190 jobs, more than offsetting the 320 jobs assessed to be impacted by the forest conservation initiatives. Total direct jobs in the forestry industries in Tasmania are approximately 5,000. Most of Tasmania's large forestry employers will not be affected by this plan because they already use plantations and/or regrowth native forests. A small number of operations that rely largely on old growth timber will be adversely affected, but the opportunities to stimulate higher value forestry industry and employment are substantial.

The plan focuses on expanding park and tourism infrastructure, supporting higher value plantation management, retooling for the increasing plantation timber supplies, environmentally-sound downstream processing, and supporting the high value artisan sector. Higher value forest industries and tourism infrastructure will generate jobs appropriate to the skills sets of existing forest industry jobs.

A secure future for the timber and tourism sectors can be achieved only if forest protection and management are not highly contentious issues in the community. If this is achieved, an important barrier to investment in value adding in the wood and wood processing sector will also disappear.

We acknowledge that this proposal would mean change for the Tasmanian timber industry. But change is essential to ensure the protection of old growth forests for future generations and jobs for timber workers and in the tourism industry.

This proposal has had input from, and is supported by, at least sixteen Tasmanian conservation and community groups.

A five year investment in jobs growth

What do we need to do?

1. Immediately protect Tasmania's old growth and high conservation value forests and landscapes
2. Expand forest based and tourism employment

How do we achieve this?

Invest $50 million in public funds every year for 5 years, leveraging sufficient private investment to create up to 1,190 new and restructured jobs.

The 5 year forests action plan

A. Tourism and Parks Development

1. Tourism Infrastructure Development

Upgrade tourist roads to new parks and attractions **$40,000,000**
These funds are directed to local government and the State's parks service for construction and development of appropriate access for tourism to the expanded reserve areas.

It is anticipated that this program will provide immediate employment for displaced forestry workers.

Local minor facilities upgrade **$4,000,000**
These funds would be targeted toward local government as capital to enable them to benefit at a local level from tourism growth.

60 direct new jobs for 5 years

2. Parks and World Heritage Funding

Rangers, Construction and General duties workers **$15,000,000**
New staff required for infrastructure development and park management functions.

Parks operating costs
$10,000,000

Funds required to meet equipment and material needs.

50 Direct New jobs for 5 years

3. Tourism Programs

Nature-based tourism program **$10,000,000**
These funds would be used to enhance the capacity within the Tasmanian Parks Service to present Tasmania's unique natural environment to international tourism.

Local tourism strategies implementation **$4,000,000**
These funds also would be targeted toward local government programs to benefit at a local level from tourism growth.

20 direct new jobs for 5 years

4. Private Forests

Private Forests Reserves Program **$30,000,000**
These funds are intended to enhance the RFA's Private Forest Reserve Program.

Land purchase/covenant/resale program* **$10,000,000**
* *To prevent conversion of private native forests to plantations.*
This funding is directed to the purchase, protective covenanting and resale of around 30,000 ha of private forested land that has been approved for clearing. It is intended to cover any change in property value.

40 Direct New jobs for 5 years

B. Structural Adjustment and Industry Development Assistance

Tasmanian Forest Industry Structural Adjustment Package - FISAP

Industry Development Assistance

1. New Resources - Plantation Hardwood Sawlog Program.

High prune an additional 14,000 ha of existing hardwood plantations for High Quality saw logs. 100,000m3/annum. $32,000,000

This initiative is an expansion to Forestry Tasmania's existing Plantation High Quality Sawlog program. Current planned production data shows that managed hardwood plantations are expected to produce Category 3 sawlogs. This funding provides for an expansion of that program[1] for existing plantations.

It is anticipated that this program will provide immediate employment for displaced forestry workers.

20 new jobs created

2. Incentives for higher value downstream processing

More productive, sustainable and responsible utilization – Retool mills and encourage investment in downstream processing of existing plantations

Create sawn timber, veneer, laminated veneer lumber (LVL), various particle boards inc. MDF, pulp & paper, based on world's best practice environmental processes. Incentives for selected projects up to $48,500,000

It is anticipated that this program will provide immediate higher employment for displaced sawmill workers.

Up to 900 direct new jobs created

[1] Sustainable High Quality Eucalypt Sawlog Supply from Tasmanian State Forest – Review 2002 page 12. www.forestrytas.com.au/forestrytas/pdf_files/hq_euc_sawlog_supply_review2.pdf

3. Ensure a Specialty Timber Supply

For artisan and other high value/low volume users.

These include speciality processors, furniture designers/makers, craft workers, timber splitters, wooden boat builders etc. **$ 5,000,000**

To support employment in wood skills centres and support participation in wood-skills industries such as boat building and furniture making.

Up to 100 direct new jobs created

Worker and Business Exit Assistance

Worker and Business Exit assistance to minimize impacts of industry changes. **Up to $41,500,000**

Based on successful forest industry structural adjustment programs

in New South Wales and Victoria, this package supports retraining and reskilling or business exit assistance for those affected by changes in timber supply. While we believe many of the 320 employees affected by the proposal will be able to be employed almost immediately in jobs listed above, this line item covers all potentially affected employees.

320 jobs restructured.

TOTAL New Jobs **Up to 1,190**

TOTAL FUNDS (over five years) **$250,000,000**

The following document has been prepared by The Wilderness Society in collaboration with the Australian Conservation Foundation, and the support of Greenpeace Australia Pacific.

It has had substantial input from many Tasmanians and by more than 16 Tasmanian conservation and community groups in developing this proposal.

The report reflects the aspirations of the Tarkine National Coalition, Friends of the Blue Tier, South East Forests Protection Group, Doctors for Forests, Reedy Marsh Forest Conservation Group, Tasmanian National Parks Association, Huon Valley Environment Centre, Arts for Forests, The Environment Association, North East Bioregional Network, Great Western Tiers National Park Campaign, Mount Arthur Environment Management Group, Launceston Environment Centre, Canyon and Bluff Working Group, and Panama Forest and Denison River Catchment Group, Jackeys Marsh Residents Association, and Tasmanian Conservation Trust (North West Branch). Together they represent over 250,000 members and many more Australians who care deeply about the future of Tasmania, its unique forest heritage and the livelihoods of all Tasmanians.

It is also supported by the Melbourne Tarkine Action Group.

We note that scientific knowledge about issues affecting the survival and wellbeing of our plants, animals, landscapes and cultural heritage changes over time and that new knowledge will always need to inform our actions to protect and sustain our forest heritage.

Our approach attempts to deal with some of the well documented weaknesses of the decade old JANIS approach to forest conservation and notes several advances in scientific knowledge which now need to be taken into account in forest conservation and management issues.

The conservation needs identified in this document will mean change for the Tasmanian timber industry. We have suggested a range of economically sound and feasible development paths for increasing employment in both the timber industry and tourism sector. A serious attempt has been made to focus on blue collar jobs to help the timber industry change direction.

A secure future for the timber and tourism sectors can be achieved only if forest protection and management are not contentious issues in the community. If we achieve broad acceptance of the way in which forests are managed and protected in Tasmania, an important barrier to investment in value-adding in the wood and wood processing sector will disappear.

The approach suggested in this document would go a long way to resolving the many conflicts between the timber industry and the community. It attempts to deliver a win for the protection of Tasmania's World Class forests and a win for jobs and the Tasmanian economy.

Biodiversity

"A major goal of broad scale conservation projects is the regional or continental protection of living nature, or biodiversity. Biodiversity is the variety and variability among living organisms and the ecological complexes in which they occur. The term encompasses not only all species everywhere, but the variations in the composition, structure and functional process of the ecosystems in which they live." Commonly four integrated components are considered to comprise biodiversity: "genetic; population-species; community-ecosystem; and landscape or regional. When creating a reserve complex to preserve biodiversity, the various scales of biological and ecological organization must be fully considered. Each level of organization demands a different way, or scale, of thinking about nature."[2]

World Heritage

To be included on the World Heritage List, natural areas must satisfy at least one of four selection criteria. To achieve listing as a joint cultural and heritage site an area must also satisfy at least one of six cultural heritage criteria. The Tasmanian Wilderness World Heritage Area is one of only 23 sites (out of a total of 788) on Earth to have been listed for its natural and cultural heritage values. The criteria for listing as a natural World heritage site are:

i) be outstanding examples representing major stages of the earth's history, including the record of life, significant ongoing geological processes in the development of landforms, or significant geomorphic or physiographic features, or

ii) be outstanding examples representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;

iii) contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance, or

iv) contain the most important and significant natural habitats for in situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

[2] Michael E Soulé and John Terborgh, 'The policy and Science of Regional Conservation' **in** Continental Conservation: Scientific Foundations of Regional Reserve Networks, 1999

The maps prepared for this report have been based on the only publicly available information - that produced for the Tasmanian Regional Forest Agreement (RFA). There are inadequacies in this data. The areas proposed for reservation in this report may therefore need further refinement.

We also note that satellite imagery available for 2002 indicates that areas of plantations (approximately 3,000 hectares at that time) and recent clearfell coupes fall within the proposed reserve boundaries. Ongoing work will be required to develop the optimum reserve boundaries.

Scientific advice suggests that the proposed additions outlined in this report to the reserve system in the North East of Tasmania are currently inadequate, and will require further re-configuration to achieve the optimum reserve outcome.[3] This is not expected to change the overall area in hectares required for reservation in Tasmania.

There has been wide consultation with Tasmanian conservation groups and members of the scientific community in the preparation of this document. Nonetheless further consultation with Tasmanian community groups, scientists and local councils will be undertaken. It is hoped that a dialogue with the forestry industry can be established.

This report was written and prepared by Virginia Young, Felicity Wishart, Greg Barber, Andrew Wong and Julie McGuiness.

The reserve proposals outlined in the report incorporate long standing reservation needs identified by a wide range of Tasmanian community groups.

Significant contributions were made by Geoff Law, Lindsay Hesketh, Sean Cadman and Andrew Ricketts.

Special thanks are due to the Australian Conservation Foundation for commissioning the work of Gillespie Economics.

Critical input was received from various members of the scientific community and many Tasmanian community groups.

[3] Professor Tony Norton, Department of Geospatial Science, RMIT University, per comm.

1.1 Expanding the Reserve System

Globally rare old growth, rainforest and forested wilderness are still unprotected in Tasmania and suffering unprecedented destruction from Australia's biggest woodchip industry. The Tasmanian community needs urgent Federal Government assistance to help protect, from all logging, Tasmania's wild old growth forested landscapes, wilderness areas and other areas of great natural significance. Significant additions to the public and private forest reserve system must be made.

The rationale for, and proposed additions to, public forest reserves are outlined below and illustrated on the enclosed maps. Our public forest reserve proposal includes 240,000 hectares of 'highly productive forests' currently available for logging (which would impact on high quality sawlog supply - the RFA legislated category 1 & 3 sawlogs[4]). Therefore considerable work has gone into an economic and employment package which would more than offset this impact (see PART TWO of this document).

Other High Conservation Value areas encompassed by the reserve proposal have negligible impact on legislated wood supply. They include 76,000 hectares of current informal reserves, 72,000 hectares of non-forest, 60,000 hectares of low productivity forests (category 2 & 8 sawlogs) and 57,400 hectares of non-commercial forest (short rainforest, tee tree, king billy pine, huon pine and threatened forest communities).

Many forests missing from the reserve system are on private land. 165,000 hectares of High Conservation Value forests have been recommended for protection by a joint Commonwealth/State scientific advisory body (CARSAG).

1.1.1 Inadequacies of the Current Public and Private Forest Reserve System

A recent statement from concerned scientists (see Attachment A) draws attention to the serious political compromises made during the RFA process and calls for increased protection for Tasmania's forests.

"The Tasmanian Regional Forest Agreement (RFA) is widely perceived in the scientific community to have failed to deliver the intended protection for environmental, wilderness and heritage values that state and federal governments committed to when they signed the National Forest Policy in 1992.

"The scientific processes in the Tasmanian RFA were overwhelmed by political compromises. Established criteria for forest protection were not fully applied. There are large areas of high-value conservation forest that would have been reserved if the RFA criteria for forest conservation had been fully applied.

[4] Category 1 + 3 are premium grade sawlogs. Category 2 + 8 are medium and low grade sawlogs.

The 12 scientists and academics concluded that "in light of the extensive changes that have occurred in many of the most productive forest ecosystems in Tasmania, we believe that the reserve system should be significantly extended to include all high-value conservation forests."

The proposed additions to the public forest reserve system identified in the attached maps have a sound scientific, cultural and heritage basis. The additions are based around consolidating the existing reserve system and adding high productivity sites (or source areas) to a system primarily comprised of the most marginal examples of forest types. All other factors being equal, sites with an intrinsic higher rate of net primary productivity generate higher levels of biomass. Thus, high 'productivity' sites generate more food for herbivores, carnivores and detritovores. Such sites have been found to support higher levels of species richness and abundance.

Many areas proposed for reservation will be important to maintain biodiversity in the face of climate change. Maximising the gradients covered and connectivity over large areas will be important in the face of global warming. The significance of this issue for reserve design has never yet been dealt with in Australia. Neither has the impact of removing the vast stores of carbon contained in old-growth forests and replacing it with regenerating or short rotation plantation forests[5].

The RFA process largely failed to deliver the 'adequacy' or 'representativeness' components of a CAR (Comprehensive, Adequate and Representative) reserve system. In an attempt to meet the 'comprehensiveness' component, examples of broad forest types were selected which minimized the cost to wood, and young regenerating forest was treated as being of equivalent conservation value to old growth examples of the same forest type. From an ecological perspective this was false.

It is well known that selecting any percentage benchmark of broad forest types as a surrogate for biodiversity protection is deeply flawed. [6] Recent scientific analysis suggests that if sole reliance is placed on this approach 50% or more of each forest type would need to be protected in secure reserves.[7]

A short scientific analysis of the inadequacies of the JANIS approach to forest conservation can be found in Attachment B.

Recent scientific evidence suggests that many mixed rainforest/eucalypt forests should be re-classified as a new forest type (Cameron, pers. comm 2003). Rather than being 'successional' forest systems, they appear to be in a relatively steady state with rainforest species surviving low intensity fires and eucalypts regenerating after fire or other moderate disturbances. The rainforest in these systems appears to be more resilient to diseases such as myrtle wilt. Similar systems in Queensland have recently been re-classified by the Queensland Herbarium. This issue was completely missed during the RFA process and the scientific understanding of the conservation significance of these systems is still incomplete. One thing however is very clear: that in such forests any distinction between 'pure rainforests' and 'mixed rainforests/eucalypts' is ecologically meaningless and that adequate protection for these forest types in secure reserves needs to be assured. Recognition of this class of forest has been explicitly made in vegetation mapping of the World Heritage Area where the mixed rainforest dominated by *E. delegatenis* and *E. obliqua* have been elevated to community status.

[5] C Dean, S Roxburgh and B Mackey , 2003, Growth modelling of Eucalyptus regnans for carbon accounting at the landscape scale, *Modelling Forest Ecosystems*, pp 27 – 39.
[6] ME Soule and MA Sanjayan, 1998, Conservation targets, do they help?, *Science*, 279: 2060 – 2061.
[7] Dr Peter McQuillan, Centre for Environmental Studies, School of Geography & Environmental Studies, University of Tasmania.

In many ways biodiversity values were the least well addressed by the reservation outcomes from the RFA. The north east highlands has been recognised as the stronghold for a number of invertebrate groups notably flightless beetles and forest snails. Despite this the area has borne the brunt of clearing for plantations often within the habitats of this group of rare and threatened invertebrates (Dr Peter McQuillan, pers comm.[8]). Despite it's iconic status the recovery planning process for the Giant freshwater crayfish *Astacopsis gouldi* has failed to protect this nationally vulnerable species. Vital habitat in headwater streams is not protected from logging and the species is continuing to decline in the north east (Todd Walsh, pers comm[9]).

Mechanisms to protect endangered forest communities are largely absent. This has led to both logging and clearing of forest communities like Shrubby *E. ovata* forest which was identified as 97% depleted during the RFA (more recent mapping indicates 94.5% depletion). Many of these communities are largely confined to private land. However, occurrences on public land are often not identified or become isolated by highly disturbed and or cleared forest. Our reservation proposals have captured many small stands of these threatened forest communities on public land within good protection boundaries.

Over 1 million hectares of Tasmania's forests are privately owned. Only 2.7% is protected through the private forest reserve programme. Some forest communities are predominantly found on private land. For example, 96.29% of *E. viminalis* is found on private land. Scientific advice suggests that the current (RFA) approach to private forest reservation has serious shortcomings. The continuation of a Private Forest Reserve Programme is strongly supported. However, independent scientific review of the efficacy of the programme should be undertaken with a view to maximizing conservation outcomes. A substantial proportion of the high conservation value forest referred to the program has not been conserved but instead has been subsequently logged. The current programme and system appears unable to compete with woodchip royalties. Such matters must be addressed in genuinely seeking to achieve the identified conservation target.

The current program has expended $21 million to reserve approximately 27,000 ha, with an additional $9 million yet to be allocated. Clearly, this allocation will not be sufficient to achieve the CARSAG recommended target for protection of 165 000ha, under the current legislative and policy environment. With a range of more stringent controls however, a more cost- effective program could be achieved. Such controls should include the immediate cessation of logging of the rare, depleted and endangered forest vegetation communities and those which, under the RFA require 100% protection. This, coupled with legislated, effective and immediate land clearing controls and an additional allocation for acquisitions sufficient to achieve the recommended targets, is crucial. Additionally, incentives to conserve could easily be improved.

1.1.2 World Heritage

A significant component of the reserve agenda involves adding areas identified by the World Conservation Union (IUCN), World Heritage Bureau Australian Heritage Commission and the Tasmanian Department of Parks Wildlife and Heritage to the Tasmanian Wilderness World Heritage Area (TWWHA). (see Attachment C)

[8] Dr Peter McQuillan, Centre for Environmental Studies, School of Geography & Environmental Studies, University of Tasmania.
[9] Todd Walsh (Associate Diploma in Applied Science, Aquatic Ecology and Aquatic Technology), runs a Giant Freshwater Lobster population monitoring programme and is a winner of the Professor Harry Bloom Memorial Award, 2001.

Western Tasmania has recognised natural and cultural values that resulted in a large World Heritage Area being declared over much of its wilderness. It is one of only 23 sites on Earth to have been protected for both its natural and cultural values. Unfortunately, the boundaries of the Tasmanian Wilderness World Heritage Area do not adequately protect either wilderness or World Heritage values[10]. The Tarkine Rainforests region is missing from Tasmania's World Heritage Area, as are areas on Tasmania's West Coast and many of the tall-old-growth forests along the eastern boundary. These places, which should not be regarded in isolation from the TWWHA itself, contain values that include rare and threatened species, wilderness, giant trees, rainforests, wild rivers, karst systems and Aboriginal heritage.

The significant values of places such as the Styx, Counsel, Huon, Picton, Weld, Gordon, Florentine, Navarre and Upper Derwent valleys and the Vale of Belvoir have been recognised by the expert bodies mentioned above and the Department of the Environment & Heritage.

Furthermore, eminent experts such as Professor Jamie Kirkpatrick[11], Peter Hitchcock[12] and the Department of Environment and Heritage[13] have warned of the damaging impacts on the integrity of the TWWHA if such areas are logged.

Recent discoveries of important karst features and Aboriginal heritage sites in threatened old-growth forests adjacent to the TWWHA, highlight the importance of fully assessing and protecting the World Heritage values of areas currently outside the reserve system.

The Styx valley is one of the important areas which currently remains open to logging and clearfelling. Strong scientific support for its protection includes recent statements by Professor Jamie Kirkpatrick and Dr Peter McQuillan (see Attachments D & E).

Protecting Tasmania's 'World Heritage' forests would help provide a new future for Tasmanians and ensure ongoing Commonwealth support for long term conservation and 'presentation' goals.

1.1.3 Protecting High Conservation Value Old Growth Forests

Forests are rare in Australia (covering approximately 5% of the continent) and old growth forests are even rarer (less than 8% of the old-growth cover at the time of European settlement remains).

The Resource Assessment Commission noted in 1992 that logging old growth forest 'potentially violates the precautionary principle in that an irreplaceable resource is being destroyed'. [14]

In 1994, a CSIRO publication 'Ecology and Sustainability of Southern Temperate Ecosystems' noted in an article by Norton and May that "In the case of old-growth eucalypt forests that have been

[10] Map 3 shows that most of the tall forest in Tasmania is currently not protected in the TWWHA.
[11] JB Kirkpatrick, 1994, *Assessment of likely impacts on World Heritage values of forestry operations in areas proposed for addition to the TWWHA.* For the Federal Department for the Environment.
GM Blake, EI van Putten and JB Kirkpatrick, 1995, *World Heritage values on the eastern boundary of the World Heritage Area and their relationship to recent logging and roading activity*. For the Federal Department for the Environment.
GM Law & JB Kirkpatrick, 1999, *Cutting to the Edge: impact of current and planned forestry operations on the integrity of the Tasmanian Wilderness World Heritage Area (eastern boundary).*
[12] P Hitchcock, 1988, Lemonthyme and Southern Forests Inquiry Minority Report.
[13] Federal Department of the Environment, advice to the Minister, 1993.
[14] Resource Assessment Commission, 1992, Forest and Timber Inquiry: Final Report, vol 1. Australian Government Publishing Service.

subject to clearfelling, where virtually every live tree is removed, it may take several generations of the dominant overstorey (i.e. 1500-2500 years) to recover the full range of structural diversity present in uncut forest (eg. large live trees, large stags, collapsed large trees in various stages of decay)."[15]

And that "although precise data on the remaining extent of old growth eucalypt forests on fertile soils are limited, the extent of these ecosystems may be contracting rapidly due to integrated harvesting. Old-growth forest ecosystems on fertile sites may be considered endangered". It is acknowledged that the RFA failed to properly identify significant areas of Tasmania's old growth forests.

"Forest communities on fertile and accessible land were mostly alienated and mostly cleared whereas unproductive and remote forests were far better represented in reserves.

"…mature and old-growth forests are far more than just young forest stands grown senescent. Such forests have distinctive properties and functions. Compositional, functional and structural complexity and diversity within the forests provide a myriad of habitats and niches for taxa and are themselves important components of biodiversity.

"The past legacies of forest use have created a highly fragmented and modified eucalypt forest estate. In eastern continental Australia it is rare to find areas of eucalypt forest larger than a few contiguous catchments that have not been roaded, fragmented and modified to some degree. Integrated harvesting further exacerbates ecosystem fragmentation and destroys or reduces the natural connectivity between and within ecosystems in the landscape."

These facts exemplify the importance of protecting old growth forests, particularly those set in a wilderness (or 'high ecological integrity') context.

Old growth examples of the most commercial forest types *E.regnans*, *E.delegatensis* and *E.obliqua* are all under-represented in the formal reserve system, which relies to a large extent on informal, often narrow linear reserves. They have also been heavily cleared for plantations.

1.1.4 Description of Areas of High Conservation Value Proposed for Reservation

i) Leven Canyon & Black Bluff

- Outstanding geo-heritage significance – landform and karst;
- Threatened flora and fauna habitat;
- Outstanding scenic quality – tourism and recreation;
- Small and important areas of remnant old-growth forest habitat;
- Important for landscape integrity and connectivity; and,
- Threatened rainforest communities.

[15] TW Norton and SR May, Towards sustainable forestry in Australian temperate eucalypt forests: ecological impacts and priorities for conservation, research and management, **in** TW Norton and SR May (eds), 1994, *Ecology and sustainability of southern Temperate Ecosystems*, CSIRO.

ii) Reedy Marsh and Dazzler Range

- Very high biodiversity values including:
  - Threatened flora and fauna habitat;
  - High priority habitat for the Spotted Tailed Quoll;
  - Identified migratory bird corridor;
  - Significant populations of threatened flora species;
  - Threatened (including endangered) lowland forest communities;
- Relict wet forest communities;
- Small and important areas of remnant old-growth forest habitat and,
- Important for landscape connectivity and integrity.

iii) Great Western Tiers

- The Mole Creek Karst System outstanding and representative geomorphology at a national level (part of karst still unreserved is in proposed extension);
- Other outstanding and or representative areas of geo-heritage significance;
- Very high biodiversity values including:
  - Threatened flora and fauna habitat;
  - Significant populations of threatened flora and fauna including specialist karst invertebrates, spotted tailed quolls, grey goshawks and wedge-tailed eagles;
  - Threatened (including endangered) lowland forest communities;
- Important areas of both lowland and highland old-growth habitat;
- The steepest climate gradients in Australia (climate proofing);
- Very high levels of β (habitat) diversity;
- Outstanding scenic quality – tourism and recreation;
- Outstanding Aboriginal cultural heritage values; and,
- Important for landscape connectivity and integrity.

iv) North East Highlands including Blue Tier and Mt Arthur

- Very high biodiversity values:
  - Threatened flora and fauna habitat;
  - Significant populations of threatened flora and fauna including a range of locally endemic invertebrates, disjunct populations of the Tasmanian giant freshwater crayfish, spotted tailed quolls, grey goshawks and wedge-tailed eagles;
  - Threatened (including endangered) lowland forest communities;

  - Tall Wet forest communities (including *E. regnans*) recognised as poorly reserved within the Ben Lomond bioregion;

- Important areas of both lowland and highland old-growth habitat;
- Outstanding scenic quality – tourism and recreation;
- Highly significant Chinese mining heritage;
- Important glacial refugia;
- Relict rainforest; and,
- Important for landscape connectivity and integrity.

v) Ben Lomond Extensions

- The only remaining wilderness in NE mainland Tasmania;
- Very high biodiversity values:
  - Threatened flora and fauna habitat;
  - Significant populations of threatened flora and fauna;
  - Threatened (including endangered) lowland and/or grassy forest communities;
  - Tall Wet forest communities recognised as poorly reserved within the Ben Lomond bioregion;
- Small and important areas of remnant old-growth forest habitat;
- Important for landscape connectivity and integrity;
- Significant low to high altitude vegetation sequences;
- Economically and ecologically significant upper catchments; and,
- Outstanding scenic quality – tourism and recreation.

vi) Eastern Tiers

- Very high biodiversity values:
  - Threatened flora and fauna habitat;
  - Significant populations of threatened flora and fauna;
  - Threatened (including endangered) lowland and/or grassy forest communities;
- Large contiguous areas of old-growth forests;
- Economically and ecologically significant upper catchments; and,
- Very important for landscape connectivity and integrity.

vii) Wielangta

- Very high biodiversity values:
  - Threatened flora and fauna habitat (notably for swift parrots);
  - Significant populations of threatened flora and fauna;
  - Threatened lowland and/or grassy forest communities;
- Relictual wet forest communities;
- Large contiguous areas of old-growth forests; and,
- Important for reserve connectivity.

viii) Tasman Peninsular and Bruny Island

- Very high biodiversity values:
  - Threatened flora and fauna habitat (notably for swift parrots);
  - Significant populations of threatened flora and fauna;
  - Threatened lowland and/or grassy forest communities;
  - Disjunct populations of species;
  - Distinct genetic populations;
- Small but significant areas of old-growth forest;
- Important for reserve connectivity; and,
- Outstanding scenic quality – tourism and recreation.

ix) Eastern Boundary Extensions to current WHA

- Part of the one of the World's great temperate wilderness areas;
- Identified as of World Heritage significance;
- Outstanding geo-heritage values at the international level;
- Large areas of unprotected forested wilderness;
- Large areas of high biological productivity contiguous old-growth forest;
- Habitat for threatened flora and fauna species;
- Very large carbon sinks;
- Significant low to high altitude vegetation sequences;

- Outstanding scenic quality – tourism and recreation;
- Very important for landscape connectivity and integrity of existing World Heritage Area;
- Very significant Aboriginal cultural history; and,
- Significant areas of early European cultural history.

x) Styx Valley

- Large areas of contiguous old-growth forest including large contiguous areas of poorly reserved old-growth *E. regnans*;
- Very large carbon sinks;
- Significant low to high altitude vegetation sequences;
- Outstanding scenic quality – tourism and recreation;
- Very important for landscape connectivity and integrity; and,
- Important habitat for marsupial carnivores and large raptors including threatened grey goshawks and wedge-tailed eagles.

xi) The Tarkine Wilderness and adjacent forests

- Proposed for World Heritage Listing;
- The largest remaining single patch of Gondwanan rainforest in Australia including highly biologically productive rainforest on basalt soils;
- Large contiguous areas of old-growth forest;
- Outstanding geo-heritage values;
- High Biodiversity values including:
  - Stronghold for threatened serpentinite endemic plant species;
  - The most significant remaining catchments for the conservation of the Tasmanian giant freshwater crayfish;
  - Important habitat for marsupial carnivores (including genetically distinct Tasmanian devils) and large raptors including threatened grey goshawks and wedge-tailed eagles;
- Threatened lowland wet forest communities;
- Large carbon sinks;
- Outstanding scenic quality – tourism and recreation;

- Very important for landscape connectivity and integrity; and,
- Very significant Aboriginal cultural history.

1.1.5 Community Values

The beautiful landscape of Tasmania is a crucial element in the sense of identity of its people. This is particularly important in small communities adjacent to spectacular mountains or coastlines.

The image of Tasmania as a place of enthralling natural beauty has become part of the economic backbone of many such communities and for Tasmania as a whole. Hundreds of thousands of tourists visit Tasmania because of its scenery. The decline in the Tasmanian population has recently been reversed because of the influx of mainlanders moving to Tasmania to enjoy a better quality of life.

Forests form an integral part of the scenery in rural Tasmania. The forested Tasman Peninsula was listed on the Register of the National Estate for both historic and scenic reasons. The Great Western Tiers form the northern frontispiece of the Tasmanian Wilderness World Heritage Area. The forested upper catchment of the Leven River is part of a landscape of scenic mountains and gorges. North-east Tasmania is a land of forested mountains. The forests of Bruny Island are the backdrop to a secluded rural community and windswept open beaches.

Across rural Tasmania, groups of local people have banded together to defend their natural environment and to seek recognition of their beautiful natural assets. Proposals put before the public and state government include:

- The Great Western Tiers (Kooparoona Niara) National Park;
- Extensions to the Tasman National Park;
- The North-East Highlands National Park;
- The extension to the Blue Tier Forest Reserve;
- Reserves on Bruny Island;
- Extensions to reserves at Leven Canyon and Black Bluff;
- New reserves on Mt Arthur and at Panama Ridge in the north-east;and,
- Reserve extentions in the Reedy Marsh and Dazzler Range area.

Some of these proposals have received support from local councils and tourism authorities, yet the response from the state government and Forestry Tasmania has been antagonistic. Massive destruction of forests cherished by local communities has occurred in north-east Tasmania, in the Leven catchment, in the southern parts of the Great Western Tiers, at Reedy Marsh and near Fortescue Bay on the Tasman Peninsula. Physical impacts have included destruction of scenery, sullying of domestic water supplies, and loss of air quality due to smoke from regeneration burns.

The destruction of forests that have formed part of the sense of place has also impacted on the psyche and social well-being of people in local communities. The divisive nature of the forests debate is exacerbated in small communities. Many people have felt a loss of control over an important part of their lives.

The Commonwealth Government should take a positive lead in ending such conflicts. In doing so, it can protect an important environmental, economic and social resource for local communities.

1.2 Ending Intensive Native Forest Logging, the Conversion of Native Forests to Plantations and Improving Forestry Management

The extremely high level of export woodchips produced in Tasmania is driving intensive native forest logging, and the conversion of these forests to plantations[16]. Additionally, the high profitability of selling interests in plantation establishment is adding to the pressure to convert native forests.[17]

Furthermore the failure to reduce the allowable cut of high quality sawlogs has increased logging pressure. Lastly, the legislative and regulatory framework which oversees this intensive forestry industry in Tasmania is very inadequate.

The long term protection of the forests will require shifting woodchipping out of native forests, an end to the conversion of native forests to plantations, reducing the legislated supply of high quality sawlogs and significant improvements to forestry management.

1.2.1 Shifting Export woodchip production out of Native Forests

Native forest woodchip exports from Australia currently supply one third of the global market for native forest hardwood woodchips (one third comes from North America and one third from other areas principally Chile and South Africa). Two thirds of this volume comes from Tasmania, which exports around 5 million m^3 p.a. - about twice the volume from Victoria, NSW and WA combined.

In 2002, 73.2% of the profits of Australia's largest native forest logging and woodchip company, Gunns Limited, were from Tasmanian export woodchip sales.[18]

There is evidence that many native forests in Tasmania are being logged on rotations well short of 90 years. Ample physical evidence exists (in the form of young re-growth forests being logged at 15 or 20 years for chipping) to suggest that short rotation products will be a key determinant of future native forest management in Tasmania. As much as 90% of the forests logged ends up on the export woodchip pile.

The considerably longer rotational times needed for dry forests is not even considered.

We support alternative uses of currently woodchipped trees if it reduces the pressure on native forests and increases capacity for forest conservation. But we do not support simply swapping one intensive use for another (as will happen if ventures like the proposed contentious Southwood woodchip mill get off the ground). Such ventures will do nothing to shift the fundamental problem. More alarmingly, in promoting a pulp mill for Tasmania no constraints have been proposed on the wood supply. Gunns is already on the record as stating that native forest chips would be required for the mill.

[16] Historically, the way in which Australia's forests have been logged has been largely determined by available markets (Dargavel, Fashioning Australia's Forests, 1995).
[17] Edwards, 'Can Gunns Afford to take the Ethical High Ground', 2002
[18] Gunns Limited Annual Report, 2003.

Export woodchip operations have been banned by government policy in Queensland and largely shifted out of native forests into existing plantations in Western Australia. A crucial policy shift is urgently required to deal with the seriousness of this issue in Tasmania.

1.2.2 Converting Native Forests to Plantations

Approximately 80,000 hectares of public and private forests have been unsustainably converted to plantations since the signing of the Tasmanian RFA. This means that in proportion to its size, Tasmania has one of the highest rates of land clearing in the world (higher than in Queensland prior to the recent decision to end land clearing in that state).

This is one of the most serious biodiversity issues facing the state. Using a loophole in the RFA, timber companies and Forestry Tasmania identified that they could clear a potential 640,000 ha over the 20 year life of the agreement. An attachment to the RFA called "Maintaining a Permanent Native Forest Estate" and subsequent interpretation by Tasmania set benchmarks for clearing. Timber companies have used this to clear forest vegetation communities requiring 100% protection and in fact targeted these communities immediately following the signing of the RFA. Some of the stark facts of clearing since the RFA was signed include the loss of:

- 24% of *E. regnans* in the Ben Lomond bioregion;
- 14% of total *E. regnans*;
- 7.6% of DSC (complex lowland forest found in the central north); and,
- endangered communities requiring 100% reservation.

A review of this policy was required as part of the broader 5 yearly RFA Review, neither of which have been completed. While endangered forest communities are under moratorium from conversion they can still be logged, burnt and then grazed. Both public and private forests are still being cleared at unprecedented rates and adequate reporting mechanisms are still not in place (Cadman, 2003)[19].

The primary reason for this rate of landclearing is further plantation establishment. Yet Tasmania already has an extensive and under-utilised plantation estate. In 2003, it had 222,745 hectares of hardwood and softwood plantations.

Tasmania received preferential Commonwealth assistance for softwood plantation establishment under the Softwood Forestry Loan Scheme (Tasmania received higher per capita grants than any other state). Today, there is no equity or economic argument for further Commonwealth subsidies to Tasmania for plantation establishment.

It is economically irrational to be promoting the establishment of further plantations in this industry context.

Further conversion can and should be stopped under the current Review of the Permanent Native Forest Estate in Tasmania.

[19] Cadman, S. (2003). Landscape Change in the Meander Valley: A Case Study for Monitoring and Reporting of Land Use Modification, Vegetation Condition and Biodiversity Loss. Report to Meander Valley Council and Environment Australia. Bushcare Tasmania. http://www.deh.gov.au/land/publications/meander/pubs/meander-valley.pdf

A reasonable but modest compensation package for private landholders supported by legislative change will be required. On public land a simple change in government policy (preferably backed by legislation) is all that is required.

1.2.3 Reducing the Legislated Supply of High Quality Sawlogs

The decision not to reduce the allowable cut of category 1 and 3 sawlogs to take account of the 57,000 hectares of 'high productivity' forests withdrawn from logging by the RFA, has resulted in intensification of logging operations in the remaining unprotected native forests. This was a perverse and highly undesirable outcome of the Tasmanian RFA.

To avoid this risk, we have clearly identified the need to reduce the allowable cut of premium grade sawlogs to reflect the impact of reserving 'highly productive' areas of forest.

1.2.4 Improving Forestry Management

In addition to tackling the key market drivers outlined above, it will be important for the Federal government to assist Tasmania to achieve a truly independent and publicly accountable forest management system. Concern in the Tasmanian community about the failure of the current system is widespread. These valid concerns relate to both native forests and plantation management and establishment issues.

Community and scientific concerns have focused on forestry operations which completely remove the native forest cover (clearfelling and conversion), kill wildlife, and which lead to significant soil erosion and siltation of waterways with stream flow impacts. Little has been done to protect rare, threatened and endangered animals or vegetation communities. Extremely hot regeneration burns produce a range of environmental problems.

Increasing concerns about catchment management have placed the impact of logging and plantation establishment on water supply and water quality issues firmly in the spotlight.

In Victoria, "logging has been clearly shown to reduce water yield from forested areas by up to 50%, 30 years after logging and is projected to take 150 years to return to pre-logged levels.[20]

The water loss results because mature forests use very little water, allowing large amounts of water to flow into streams and catchments, while a new growing forest after logging uses large amounts of water, leaving little left over into streams and water supplies".[21] Considerable work needs to be undertaken in Tasmania on this issue.

There is also widespread concern that current practices will result in the demise of the specialty timber sector, a sector which produces very high value products on a minimal resource base.

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[20] 1. Kuczera G (1985) Prediction of water yield reductions following a bushfire in ash -mixed species eucalypt forest. Melbourne and Metropolitan Board of Works.
2. O'Shaughnessy P & Jayasuriya M (1991) Water supply catchment hydrology research- status report. Melbourne Water.

[21] Doctors for Forests, Victoria (2002) *Logging and Water: Implications for Melbourne*

1.2.5 Reform of the Regulatory Framework

While much of the reform needed can only occur at a state level, the federal government has considerable leverage to facilitate change (for example through the stalled and incomplete RFA review process). There is also a strong argument in light of the many breaches and failings of the RFA to remove the exemptions of forestry operations under the federal Environment Protection and Biodiversity Conservation Act.

Forestry Tasmania's operations are exempt from a suite of Tasmanian environmental legislation, *viz*. the Threatened Species Act, the Freedom of Information Act and the Resource Management and Planning System.

Fundamental to improving forestry management is a shift away from self-regulation. The Tasmanian Division of the Planning Institute of Australia and the Environmental Defenders Office at a joint conference convened in 2002 adopted a number of resolutions which would ensure that forest practices in Tasmania would be brought under the control of the Resource Management and Planning System. The principles of these resolutions - an independent authority such as the Resource Planning and Development Commission, removal of forestry exemptions from all planning and threatened species protection requirements and full public consultation and third party appeal rights - should underpin a process of significant reform.

Such reform should also address the significant inefficiencies and resource waste currently in the industry. For example, there is no independent assessor of log segregation to ensure sawlogs or specialty species logs are not lost to the woodchip pile.

A scientifically based and socially acceptable forestry code of practice and system is urgently required.

There is a significant need to create a system and culture of transparency and accountability within the forestry sector.

1.2.6 Certification for Plantations

As noted above, problems with establishment and management of plantations are a matter of growing community concern in Tasmania. The high water consumption of plantations on short rotation is already being seen to affect natural water flows in surrounding areas. The long term ecological impacts have not been adequately assessed.

The potential effects on human and animal health from current aerial spraying practices have been highlighted in a report prepared by Dr Marcus Scammell entitled 'Environmental Problems Georges Bay, Tasmania'.[22] This report links failures of the Forest Practices Board to adequately regulate spraying with recent massive oyster mortality, increasing mortality among Tasmanian Devils and a range of human health problems.

These issues need to be independently investigated and strong encouragement should be given to have all plantation management achieve Forest Stewardship Certification (FSC) Standards.

[22] Dr Marcus Scammell, Marine Ecologist, July 2004, *Environmental Problems, Georges Bay, Tasmania*, http://www.tfic.com.au/scammell_report_07.04.htm

1.2.7 Managing Forests for high value forest products

By shifting woodchip production from native forests to plantations and ending conversion to plantations, it would be possible to focus native forest management on the production of low-volume, high quality products, such as specialty timbers, honey production and pollination for horticulture. This would require managing some areas on long intervals between logging operations as well as the planting of suitable species on private land.

1.3 Ban the use of 1080 poison

The use of 1080 poison to reduce native wildlife in areas established for plantations should be banned.

1080 is a fatal poison laid in large amounts across Tasmania following clearfell logging to minimize the loss of regenerating tree seedlings to native browsing animals. Targetted wildlife includes the Tasmanian Pademelon, Bennett's Wallaby, and brushtail and ringtail possums. They suffer a painful and inhumane death.

The poison also unwittingly targets other native species - predators such as the Tasmanian Devil, Spotted and Eastern Quolls and the Wedge- tailed Eagle who feed on the poisoned carcasses. These latter species are all listed as threatened in Tasmania. The cumulative impact on these species is unclear.

Of particular concern is the potential, as yet uninvestigated, for an additive effect of 1080 on Tasmanian Devils weakened by the recently recognised cancer-producing viral infection rife in Devil populations across the State.

Hundreds of thousands of native animals die unnecessarily each year after ingestion of 1080-laced carrots in Tasmania's forests. This does not need to occur. 1080 poisoning could be replaced immediately by other equally commercially- effective browsing minimization strategies such as fencing and protection of individual seedlings with ‘socks’.

In response to widespread community concern, Forestry Tasmania (FT) has recently commenced trials using these and other alternative methods. FT appears to be on a path to phase out this practice and should be encouraged to do so as quickly as possible.

1.4 Burning Forests for Electricity Generation

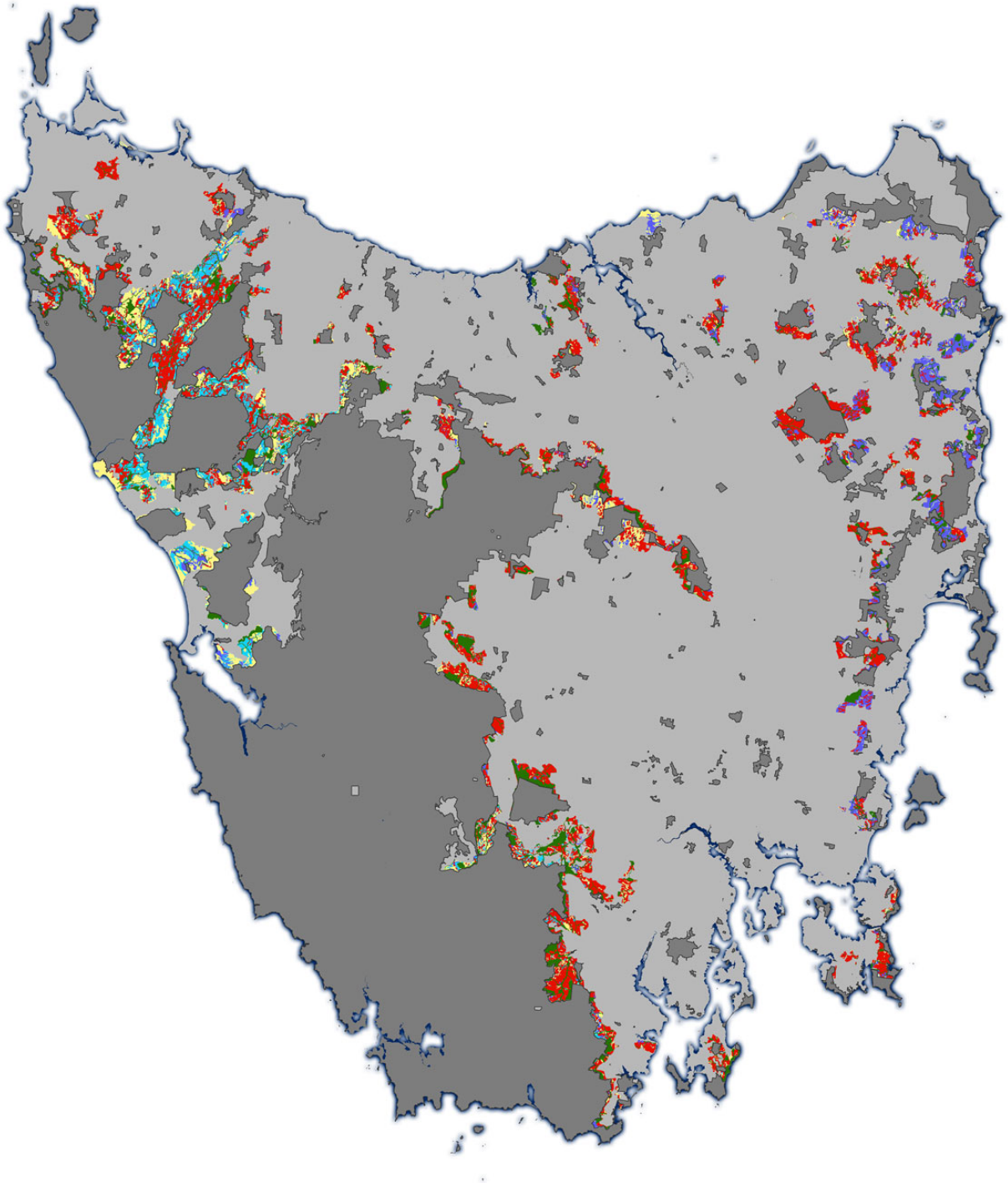
There are three firm proposals in Tasmania to burn native forests as 'green power' to supply mainland Australia (via Basslink).

If this new market for native forests becomes established it will result in an even greater level of destruction of old-growth and wilderness forests than at present. Areas of forest with lower commercial wood value will become economic to log.

There is overwhelming community opposition to using native forest material of any kind for power generation. In 2001 a Morgan Poll commissioned by The Wilderness Society showed that 88% of the Australian community would not support proposals to build wood-fired power plants to produce energy from Australia's native forests.

In the face of overwhelming community opposition every mainland state has ruled out native forest based wood-fired power plants.

Burning native forests for power should be ruled out through amendments to the Federal Mandatory Renewable Energy Target (MRET) legislation.



Public land proposed for reservation

Within proposed reserves:

- **High-productivity forests** (including tall rainforest & blackwood)
- **Low-productivity forests**
- **Non-commercial forests**
- **Informal reserves**
- **Non-forest ecosystem**

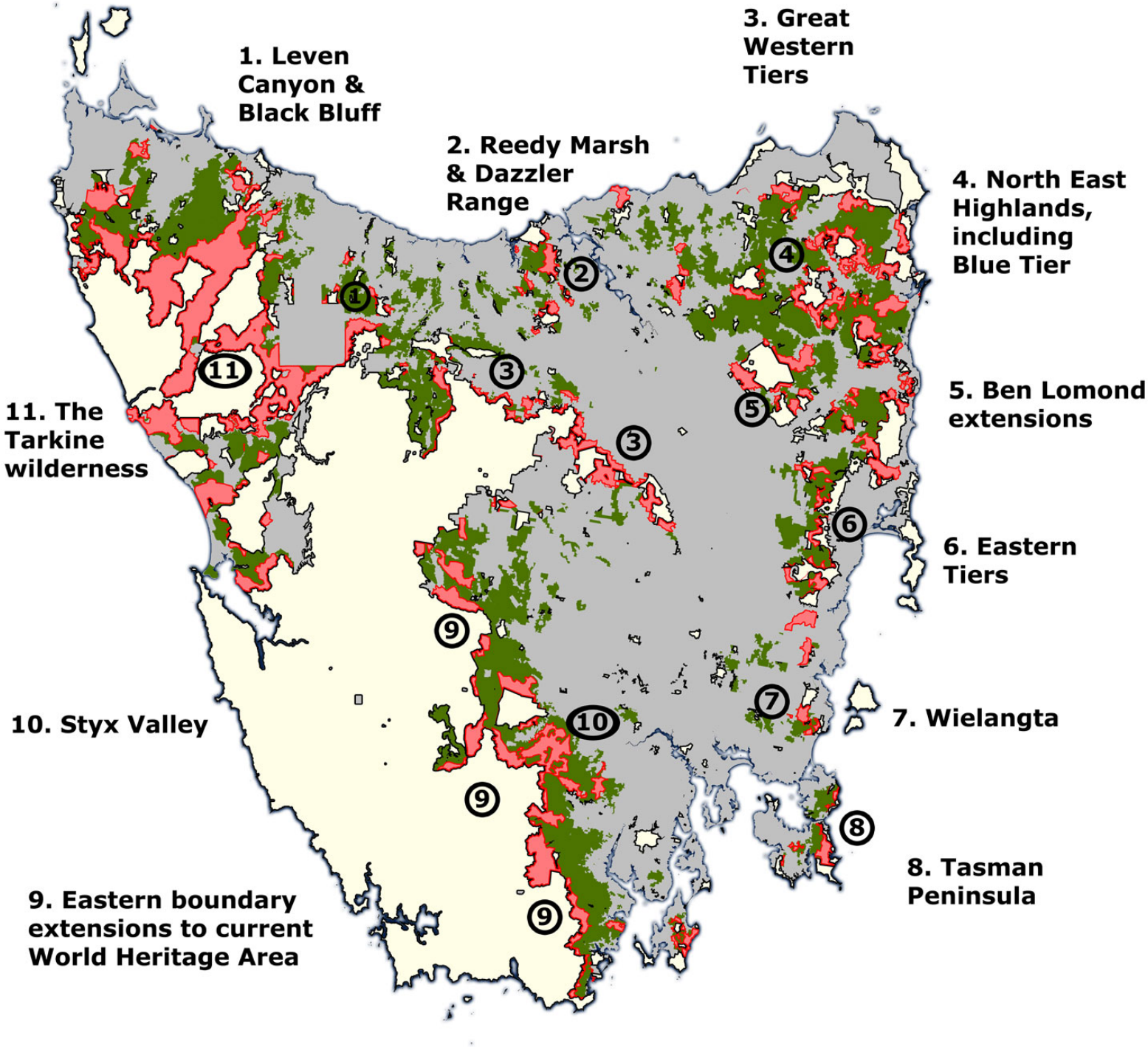
Outside proposed reserves:

- **Existing formal reserve**
- **All other land tenures**

THE WILDERNESS SOCIETY

Map 1

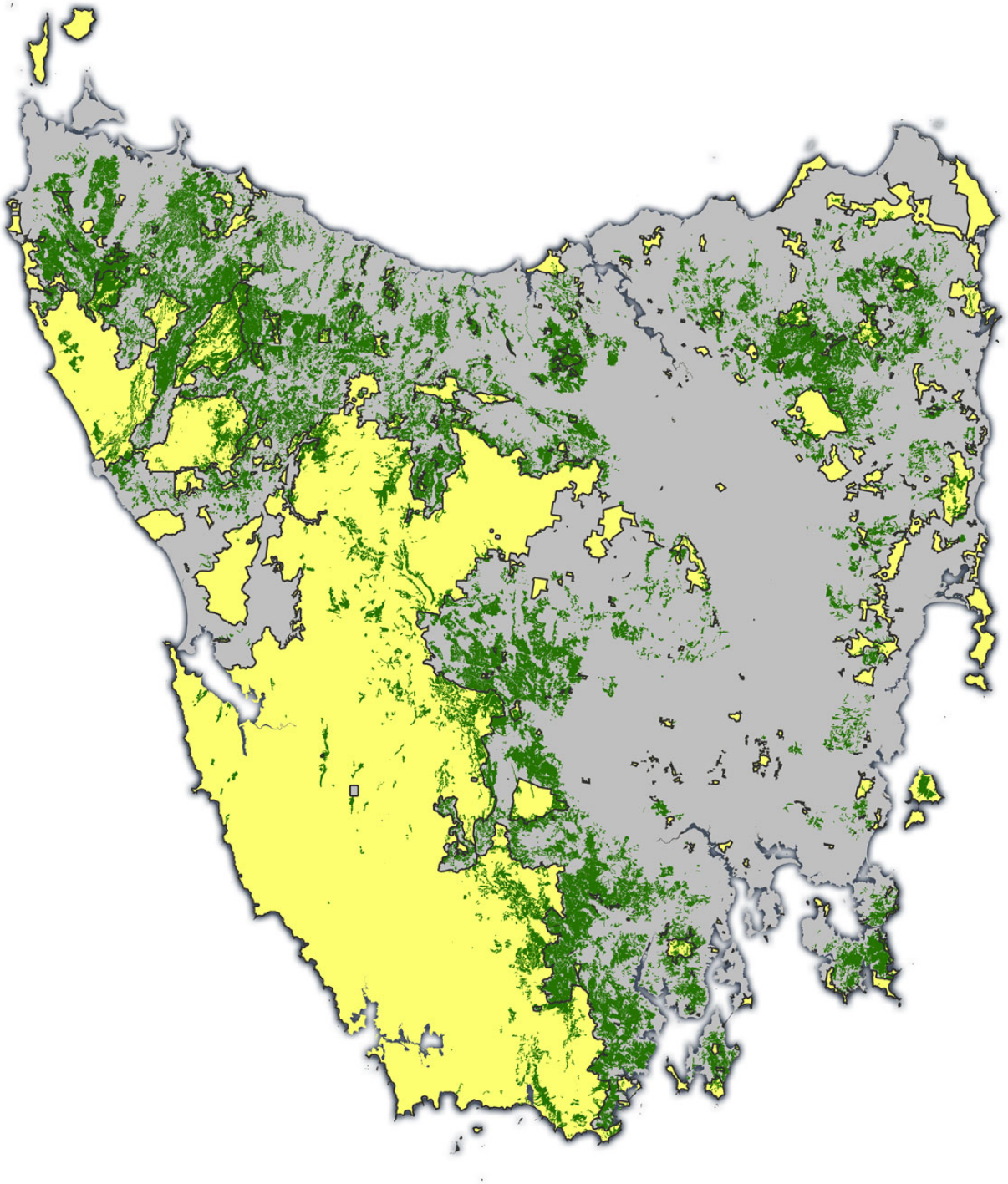
Proposed new reserves



Map 2

THE WILDERNESS SOCIETY

Tall forests



Tall, high productivity forests

Existing formal reserves

All other tenures

THE WILDERNESS SOCIETY

Map 3

2.1..Introduction

For decades the Tasmanian forestry industry has operated in a climate of uncertainty and controversy. Despite Commonwealth and Tasmanian government agreements and significant subsidies from Commonwealth and Tasmanian taxpayers over the last ten years, the picture has been one of declining jobs, spiralling low value woodchip exports and a persistent balance of payments deficit.

A Report to the Tasmanian Government in 1977,[23] showed that 10,434 persons were employed in forest and forest based industries. At this point 249 sawmills were registered in Tasmania. From that point forward it can be demonstrated by consulting the Tasmanian Yearbook that many sawmills have disappeared, and with them have gone sawmilling jobs.

According to the Australian Bureau of Statistics there are currently 5,548 jobs in the forestry sector- and almost half of these are in the plantation sector (2,132). In 1993, research noted that only four jobs per $1million of sales were generated for woodchips, compared with 19 jobs for joinery and boards.[24]

Against this backdrop, scientific and community concern about forest destruction and the impacts of land clearing (or conversion) of native forests to plantations has continued to escalate. A plan is urgently needed that can deliver certainty both for Tasmania's precious forests as well as for forest dependent industries.

The conservation proposals outlined in this report to create additional forest reserves will have an impact on wood supply. Based on an analysis by Gillespie Economics, it is estimated that the allowable cut of high quality native forest sawlogs (category 1 and 3) may need to be reduced by up to 100,000 m^3 per year. This is less than half of one percent of the volume of timber consumed by the Australian forest industry each year, nonetheless it equates with an estimated 320 jobs.[25]

Hence, this report proposes solutions that create jobs while advancing those industries, products and market segments that represent sustainable growth possibilities for Tasmania.

The logging industry in Tasmania has operated in an environment of government subsidies and tax incentives where costs are externalized and natural assets have been run down. Government native forest operations are not required to account for land value or opportunity costs and treat the existing forest as a windfall gain. This contrasts with private plantations which are subject to land costs, rates and a long lead time before product returns.

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[23] Report of the Board of Enquiry into Private Forestry Development in Tasmania. 1977. Journals of the House of Assembly. Paper 25.

[24] *Costs of Production, Constraints, Valuation and Future Organisation of the Forestry Commission of Tasmania: Report to the FFIC.* March 1993. *Op. cit.* 6.

[25] Gillespie Economics, July 2004, Protecting Forests, Growing Jobs: Review of the Australian Conservation Foundation an dThe Wilderness Society Proposed 5 Year Investment in Tasmanian Forests and Jobs Growth, consultancy report for the Australian Conservation Foundation and The Wilderness Society, August 2004.

The Regional Forest Agreement has not created resource security. Environmental conflict over old-growth forest logging is well understood and recognized by global timber companies and customers. While ever there is community conflict, significant capital investment will not occur.

Transitions to regrowth and plantations have been occurring in many parts of the globe. In Australia this has been the trend, to varying degrees, in Western Australia, Queensland, NSW and Victoria.

This solutions package has adapted models that are already in place in forest areas in other states and which the environment movement played a major role in developing. It seeks to set a new economic direction while reducing those aspects that have caused the most social and environmental conflict.

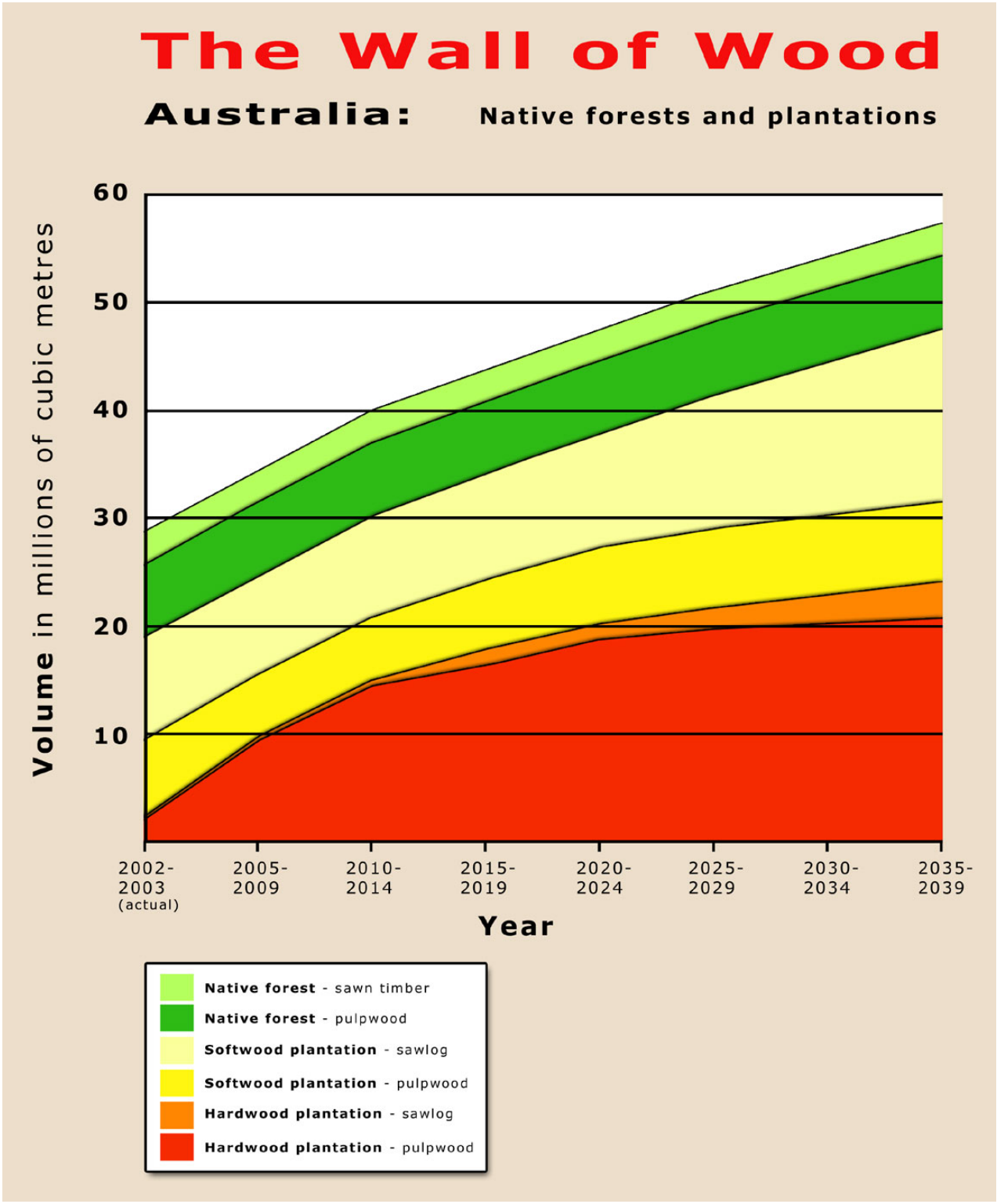
2.2 Supply of Plantation Wood Products

Over the past 30 years, the forest industry has invested significantly in the establishment of softwood and hardwood plantations. Last year, industry investment of $500 million established another 80,000 hectares across Australia mostly in eucalypts for woodchips

(1). Australia will soon have close to 1.75 million hectares of plantations. The plantings have been on a massive scale relative to existing supplies, with current plans for 3 million hectares by 2020.

(2). Plantation grown timber now supplies two-thirds of the Australian timber supply. In the next five to ten years, experts are anticipating a 'wall of wood'. The predicted supply of plantation based saw and pulp logs is expected to transform the industry and creates a valuable opportunity to dramatically reduce the scale of native forest logging.

As a world commodity, future investment and profitability in timber and forest products will be influenced by the global market. With unprecedented volumes of eucalypt from South African and Chilean plantations now entering the market the wall of wood is a global phenomenon. Other eucalypt plantations on a major scale exist in countries such as Brazil and Thailand.

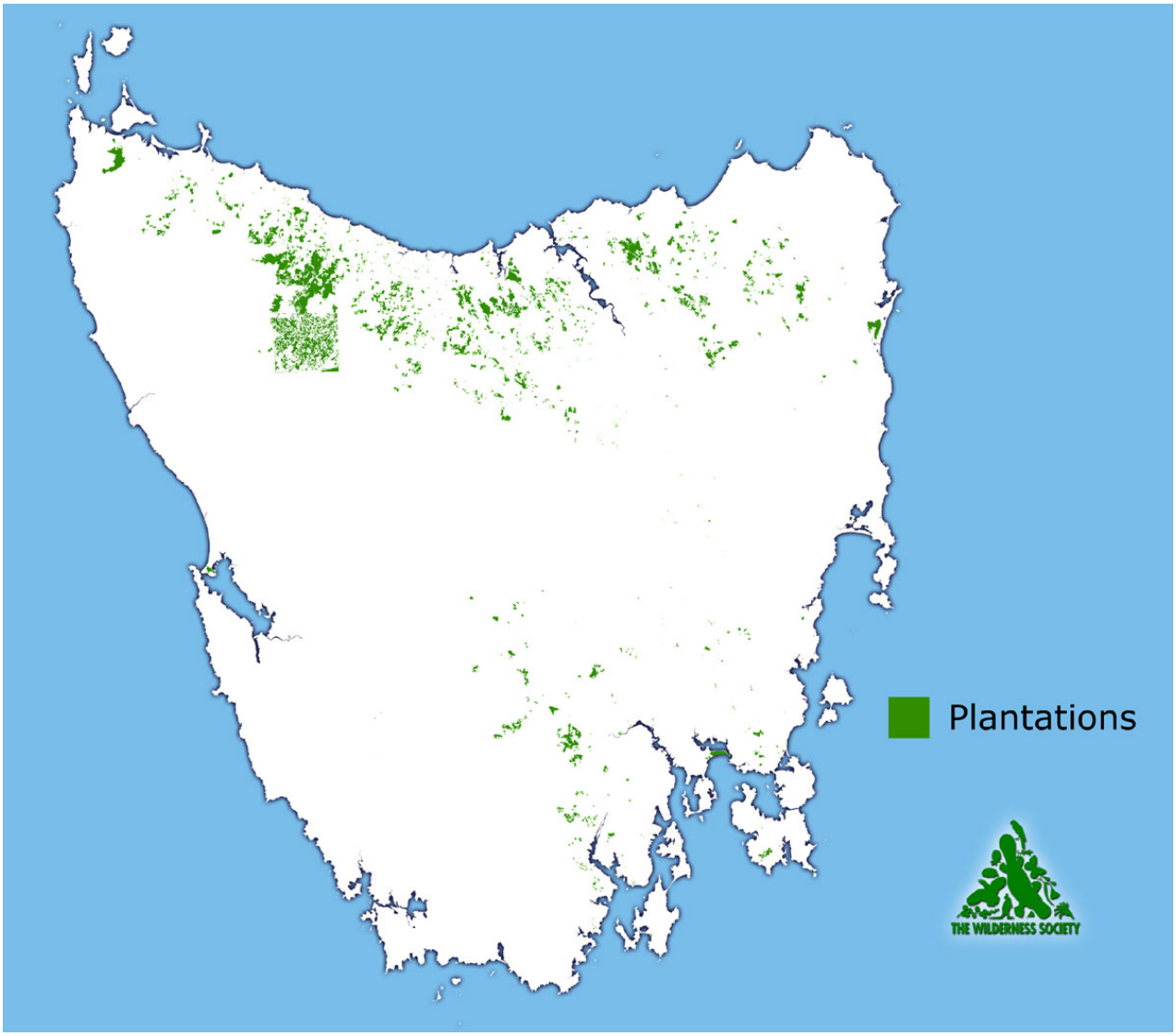

The Wall of Wood
Australia: Native forests and plantations
Volume in millions of cubic metres
60
50
40
30
20
10
2002-2003 (actual)
2005-2009
2010-2014
2015-2019
2020-2024
2025-2029
2030-2034
2035-2039
Year
Native forest - sawn timber
Native forest - pulpwood
Softwood plantation - sawlog
Softwood plantation - pulpwood
Hardwood plantation - sawlog
Hardwood plantation - pulpwood

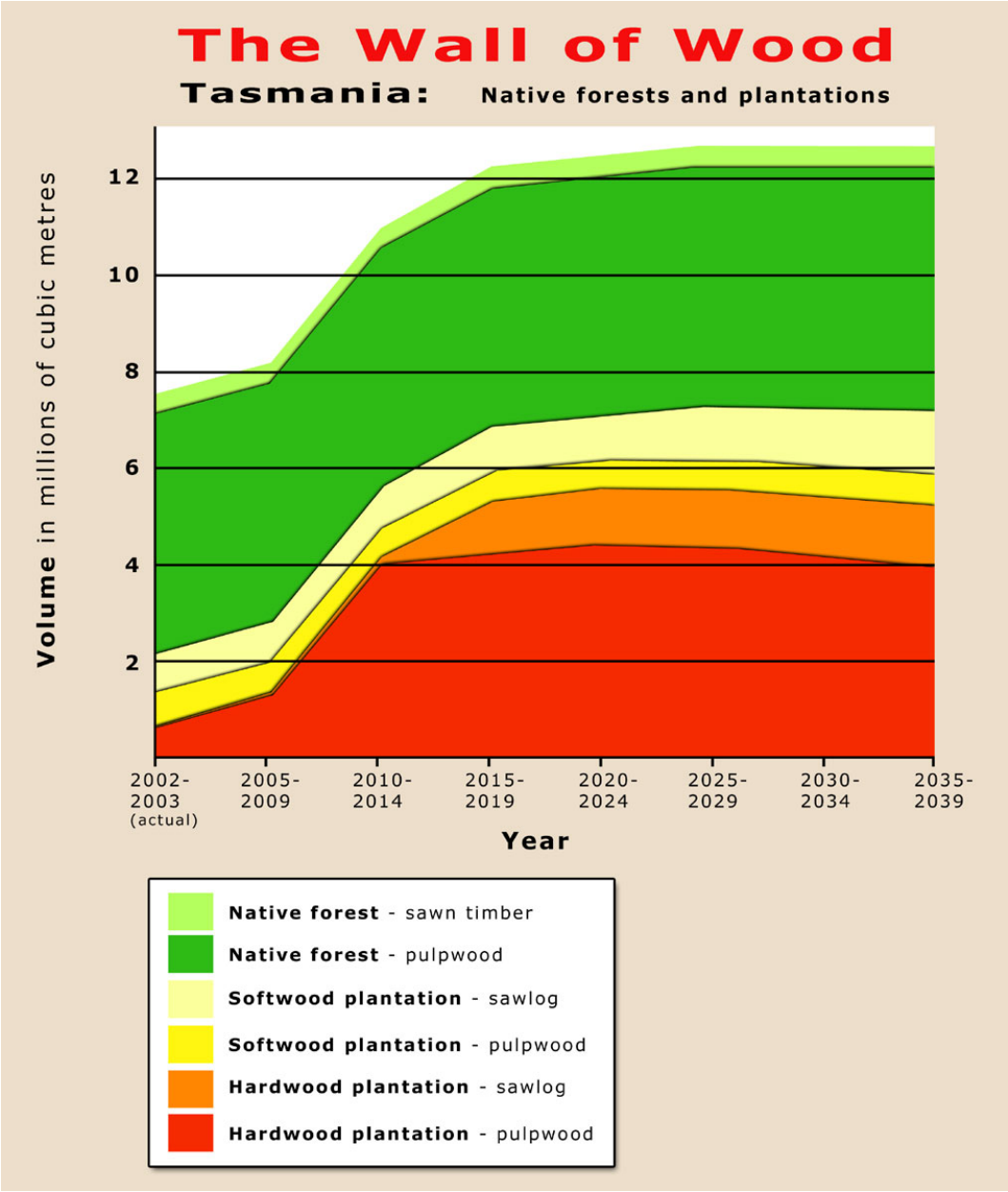
Tasmania already has an extensive and under-utilised plantation estate. Currently there are over 223,000 hectares of established hardwood and softwood plantations, which accounts for much of the anticipated wood supply increases in Graph 1.

Tasmania received preferential Commonwealth assistance for softwood plantation establishment under the Softwood Loan Scheme, the first of which were planted in the 1960s.

Traditionally most of Tasmania's sawn timber for building was met by native forests. Now it is primarily met from softwood plantations. By 2005-2009, 830,000m^3 per annum of softwood sawlogs will be available from Tasmania. An unprecedented 1 million m^3 pa of hardwood plantation sawlogs from existing plantations will come on stream after 2015. This will mean almost 2 million m^3 pa of sawlogs coming into a market that currently cannot use all of the native forest and plantation sawlog supply and compares with the current extraction of 3 million m^3 pa of sawlogs from native forests nationally.

Plantations in Tasmania





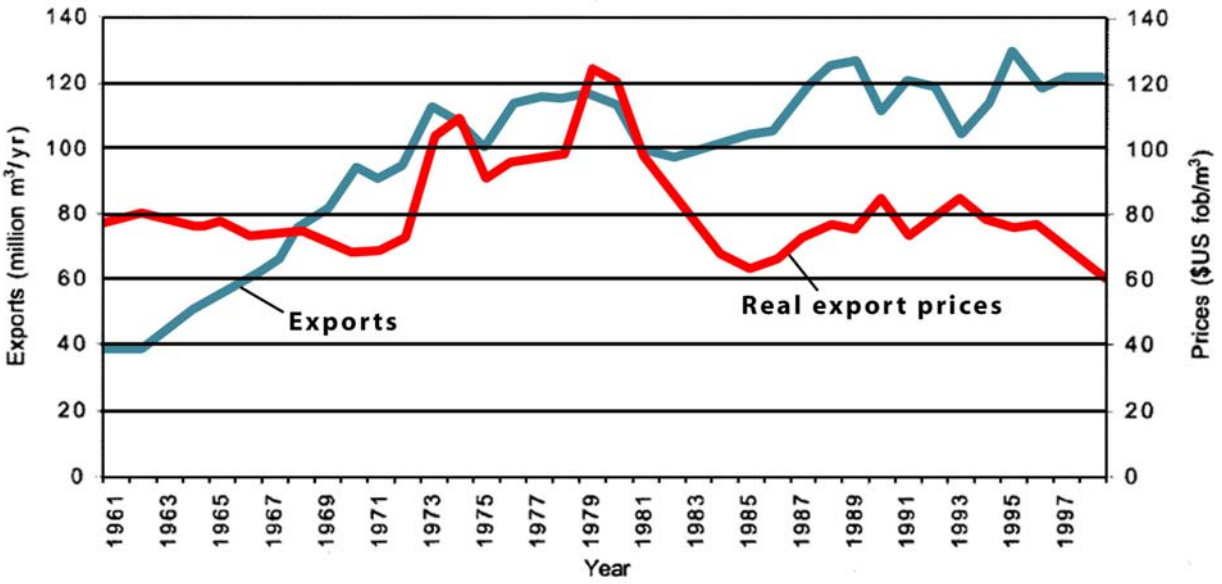
2.3 Demand for plantation wood products

Australia currently supplies one third of the world market in native woodships, sent almost exclusively to Japan.

Australia's market share of the Japanese hardwood woodchip industry has been relatively constant over many years. This reflects the markets desire for secure and consistent supply from a diversity of sources. Japanese companies have made direct investments in plantations, not just in Australia. However these are a small proportion of those established.

Future demand for wood products typically moves at the same rate as GDP. Over the last thirty years prices have not grown faster than inflation.

The real (inflation adjusted) price of a tonne of hardwood chips is about the same as it was in 1972. Paper consumption grows at about the rate of GDP – but the wall of wood is growing much faster. Tasmania can anticipate real export prices for hardwood chips beginning to fall.



Clark, Judy. 2001. The Global wood market, prices and plantation investment: an examination drawing on the Australian experience. *Environmental Conservation* **28** (1). Pages 53 – 64.

The major Japanese customers for Australian woodchips all have policies to cease using old-growth and dramatically increase their use of plantation wood and recycled fibre. This reflects both a target to move away from old growth forest and the reality of the supply of plantation wood. The remaining question is how soon the transition will occur.

This package for the Tasmanian forests recognizes the market trend and plots a course that endeavours to capitalise on the situation. Failure by the industry to address this trend will lead to continued loss of employment in the forestry sector and reduced returns on existing plantation investments.

2.4 Employment in the Tasmanian Wood and Wood Products Industries

In an industry that employs around 5500 people, the effects on employment from satisfying conservation needs will be minimal. This is because most of Tasmania's large forestry employers already rely on plantations and/or regrowth forests. There are a small number of operations that rely on old-growth, which would be affected if no alternative could be found.

The table below highlights the estimated 320 jobs reliant on logging oldgrowth forests.

	Old growth jobs[26]	Other native forest jobs	Plantation jobs[27]	Other jobs	TOTAL JOBS[28]
Forestry and logging (includes cartage and woodchipping)	205	1635	410	-	2250
Sawmilling and timber dressing	100	790	460	-	1350
Other product manufacturing	20	180	600	-	800
Paper and paper products manufacturing	-	156	662	3302	1148
TOTAL	325	2761	2132	3302	**5548**

Gillespie Economics, (The Financial Costs of an End to Logging, in 'Tasmania Together' Forests 2004)**, calculated the impact of withdrawing 100,000 m^3 p.a. of category 1 + 3 sawlogs associated with protecting 240,000 hectares of 'highly productive' forests at 320 jobs.**

[26] G. Green, 2002, Tasmanian Timber Industry Jobs. See http://www.twff.com.au/tijobs.pdf
[27] Banks and Clark, 1997, Tasmania's Plantation Processing Industry: Job Opportunities Now and in the Future.
[28] ABS Catalogue 8221.6

2.5 Five Year Investment in Jobs

The following proposed solutions would offset any effect on employment from the establishment of new reserves. It is not intended or expected that all of these would be implemented – they represent the menu of possibilities that state and federal governments could seek to fund and develop – immediately or in the future.

2.5.1 Tourism and Parks Development

Tourism Infrastructure Development **60 Direct New jobs for 5 years**	**Upgrade tourist roads to new parks and attractions** These funds are directed to local councils and the State's parks service for construction and development of appropriate access for tourism to the expanded reserve areas. It is anticipated that this program will provide immediate employment for displaced forestry workers.	**$40,000,000**
	Local minor facilities upgrade These funds would be targeted toward local government as capital to enable them to benefit at a local level from tourism growth.	**$4,000,000**
Parks and World Heritage Funding **50 Direct New jobs for 5 years**	**Rangers, Construction and General duties workers** New staff required for infrastructure development and park management functions.	**$15,000,000**
	Parks operating costs Funds required to meet equipment and material needs.	**$10,000,000**
Tourism Programs **20 direct new jobs for 5 years**	**Nature-based tourism program** These funds would be used to develop the ability within the Tasmanian Parks Service to present Tasmania's unique natural environment to international tourism.	**$10,000,000**
	Local tourism strategies implementation These funds also would be targeted toward local government programs to benefit at a local level from tourism growth.	**$4,000,000**

Private Forests **40 Direct New jobs for 5 years**	**Private Forests Reserves Program** These funds are intended to enhance the RFA's Private Forest Reserve Program.	**$30,000,000**
	Land purchase/covenant/resale program* (***** To prevent conversion of private native forests to plantations) This funding is directed to the purchase, protective covenanting and resale of around 30,000 ha of private forested land that has been approved for clearing. It is intended to cover any change in property value.	**$10,000,000**

2.5.2 Structural Adjustment and Industry Development Assistance

Tasmanian Forest Industry Structural Adjustment Package - FISAP		
1. Industry Development Assistance **Up to 20 New jobs created**	**New Resources - Plantation Hardwood Sawlog Program** High prune an additional 14,000 ha of existing hardwood plantations for High Quality saw logs. 100,000m^3/annum.[29] It is anticipated that this program will provide immediate employment for displaced forestry workers.	**$32,000,000**
Up to 900 direct new jobs created	**Incentives for Higher Value Downstream Processing** More productive, sustainable and responsible utilization – Retool mills and encourage investment in downstream processing of existing plantations [30] [31] Create sawn timber, veneer, laminated veneer lumber (LVL), various particle boards inc. MDF, pulp & paper, based on world's best practice environmental processes. Incentives for selected projects - It is anticipated that this program will provide immediate higher employment for displaced sawmill workers.	**Up to $48,500,000**

[29] 1. CSIRO provide resource volume potential for hardwood plantations.
2. CSIRO WA Blue gum milling trial - feature article
www.ffp.csiro.au/downloads/media/WA%20Blue%20gum%20milling%20trial%20feature%20story.pdf
3. CSIRO New cut boosts 'shining gum's' market potential
www.csiro.au/index.asp?type=mediaRelease&id=Prshining
4. The RIRDC Joint Ventre Agro-forestry Program gives further details.
Pruning Eucalypts – the biology and silviculture of clear wood production in planted eucalypts. RIRDC 2003.
www.rirdc.gov.au/reports/AFT/02-152.pdf
5. Gunns Plantations Limited Woodlot Project 2004 for the 2003/2004 financial year indicates costs of intensive plantation management for sawlog production.

2 Ensure a Speciality Timber Supply **Up to 100 direct new jobs created.**	**For artisan and other high value/low volume users.**[32] These include speciality processors, furniture designers/makers, craft workers, timber splitters, wooden boat builders etc. To support employment in wood skills centres and support participation in wood-skills industries such as boat building and furniture making.	**$ 5,000,000**
Worker and Business Exit Assistance **320 jobs restructured**	**Worker and Business Exit Assistance** Worker and Business Exit assistance to minimize impacts of industry changes.[33] Based on successful forest industry structured programs in New South Wales and Victoria, this package supports retraining and reskilling or business exit assistance for those affected by changes in the timber supply. While we believe many of the 320 employees affected by the proposal will be able to be employed almost immediately in jobs listed above, this line item covers potentially affected employees.	**Up to $41,500,000**

TOTAL New Jobs in Tourism and Parks Development, and Structural Adjustment and Industry Development Assistance

TOTAL FUNDS (over five years) $250,000,000

[30] Plantations North East 2004
www.plantationsnortheast.com.au/regional/markets/#Table13-1
[31] AFFA 1996, Chapter 6
[32] Timber Workers for Forests (5.3 page 21)
http://www.twff.com.au/tijobs.pdf
[33] The Financial Costs of an End to Logging in 'Tasmania Together' Forests (Gillespie Economics, 2004)

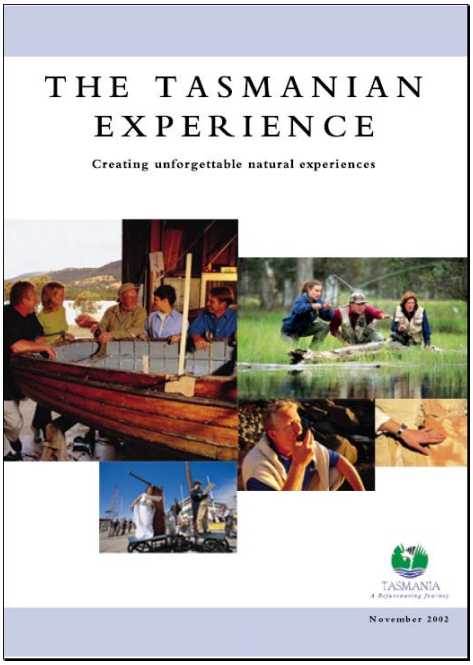
2.5.3 SOLUTION 1 Expand Park, Tourism, Road and Track Infrastructure

Tourism is well understood to be the success story of Tasmania, with growth in tourism creating strong growth in construction.

Much of the strategic work for the medium term development of the tourism industry has been done by governments, local councils and industry, and to an excellent standard. It is well recognized that nature-based tourism is one of the major and unique attractors for Australia and Tasmania in particular. Identification of key drivers for the industry; segmentation of potential visitors; and action plans from the national to the local level have all been prepared. The industry in Tasmania has grown rapidly and shown itself to be highly entrepreneurial. This solutions package therefore focuses on government's proper role of providing basic infrastructure, public land management and generic marketing.

The Government has an opportunity to convert the newly proposed reserves (national parks) into accessible, marketable attractions. This will include: new tourist roads, new tourist facilities, funding for state, regional and local tourism development plans and jobs in the parks themselves. This creates an immediate boost to blue collar employment and injects the funding directly into the regions and communities most affected by protection of old growth forests.

A comparison between the logging industry and tourism industry highlights the importance of investment in the latter. The timber industry employs 5,548 Tasmanians of which only 325 are reliant on old growth logging and employment has been declining for the past 14 years (from 9,180 jobs). By comparison, the tourism industry employs around 36,000 Tasmanians and employment is growing at 17.6% pa. Currently 16% of the Tasmanian workforce depends on tourism. Tourist numbers in Tasmania are booming with a 30% increase in 2003-04 over the previous year.



2.5.4 SOLUTION 2 Prune More Existing Plantations for High Quality Sawlogs

Forestry Tasmania has a high quality plantation sawlog program to meet part of the future 300,000m^3 High Quality Sawlog commitment.

Current Reports from CSIRO and the RIRDC Joint Venture Agro-forestry Program indicate that a much higher rate of high quality sawlog production could be achieved.

The Reports, "The technical and financial feasibility of processing full-rotation pruned plantation-grown blue gum" by Dr Russell Washusen, CSIRO-Forestry and Forest Products. 2003 and "Plantation blue gum trial excites forest products industry" CSIRO 2003 confirm that intensively managed stands of "high pruned' *E. globulus* or *E. nitens* eucalypts will produce high quality sawlogs at as early as 20 years growth.

By increasing the area of plantations that is intensively managed by 14,000ha, this would conservatively deliver an additional 100,000m^3 of Category 3 high quality sawlogs each year.

Forestry Tasmania currently has 33,000 hectares of eucalypt hardwood plantations on public land, as well as additional plantations on its private lands. No additional land acquisition is required for this initiative – only the management and production costs for the additional area.

The current sustainable yield strategy under the RFA expects high quality sawlogs and veneer logs from plantations on state forest to be a major part of the state forest log supply by 2020. In fact, the supply of veneer logs from 'low pruned' plantations is predicted to rise to nearly 1 million tonnes per annum (which is completely untested in terms of the capacity of the market to absorb it).[34]

If high quality sawlogs are going to be needed in these volumes, they can be provided by pruning existing plantations of their lower branches. In this process, there are three prunings and one or more thinnings in the first ten years to create clearwood up to the first six metres. These are labor intensive operations.

[34] Low pruning to 3 metres produces veneer peeler logs; high pruning to 6 metres produces equivalent of a category 3 high quality sawlog.

2.5.5 SOLUTION 3 Process Sawlogs Domestically Instead of Exporting Them

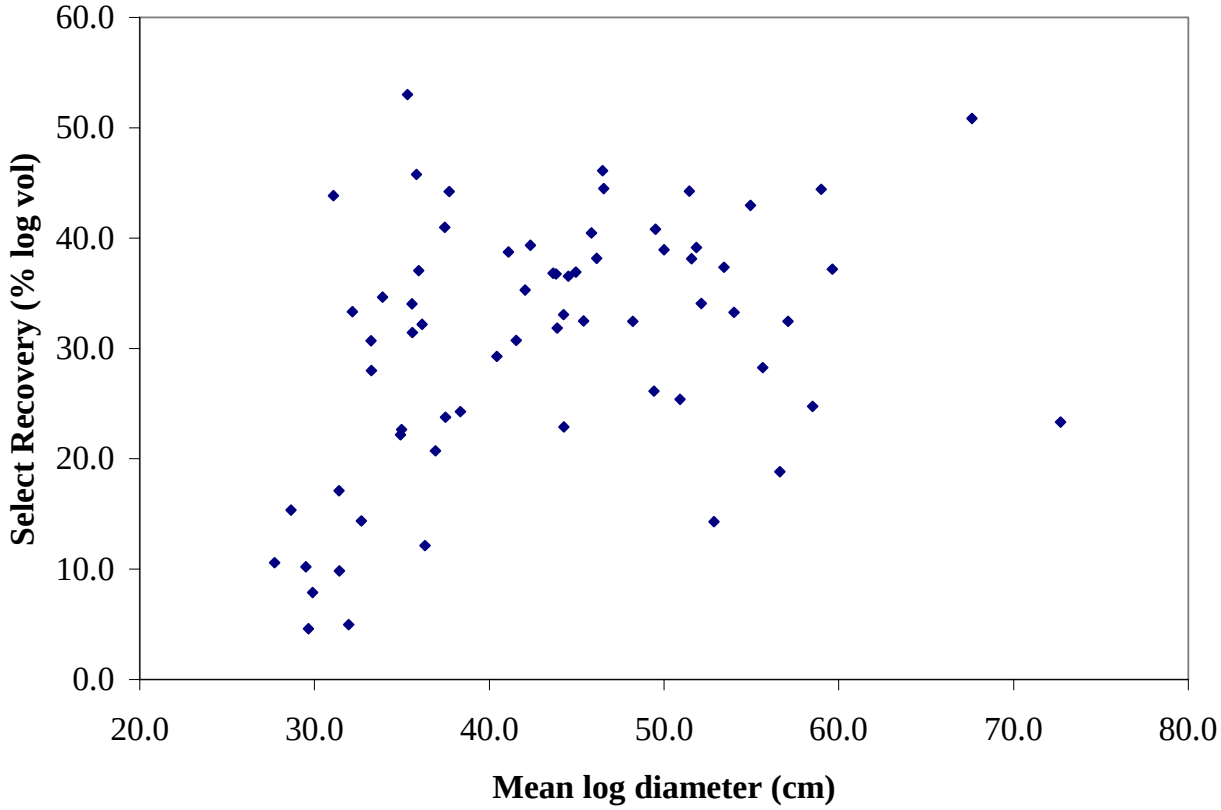
During 2001-02 and 2002-03, in the order of 200,000 m^3 of whole logs (hardwood and softwood) were exported for veneer production overseas per year. Forward estimates for 2003-04 was 283,000 m^3 of whole logs. This volume of whole logs going to export is approaching levels similar to the high quality sawlog volume guaranteed in the RFA and represents significant potential employment opportunities going offshore. Fortunately, some operations in Tasmania are retooling to make more use of these logs. Government incentives will assist in facilitating greater domestic processing of this resource.

	Exported hardwood veneer logs (m^3)	Exported softwood logs (m^3)	Exported native forest woodchips (m^3)
2001/02	**85,000**	**124,000**	**5,500,000**
2002/03	**125,000**	**64,000**	**? (data withheld)**

2.5.6 SOLUTION 4 Recover More Usable Timber From all Classes of Log

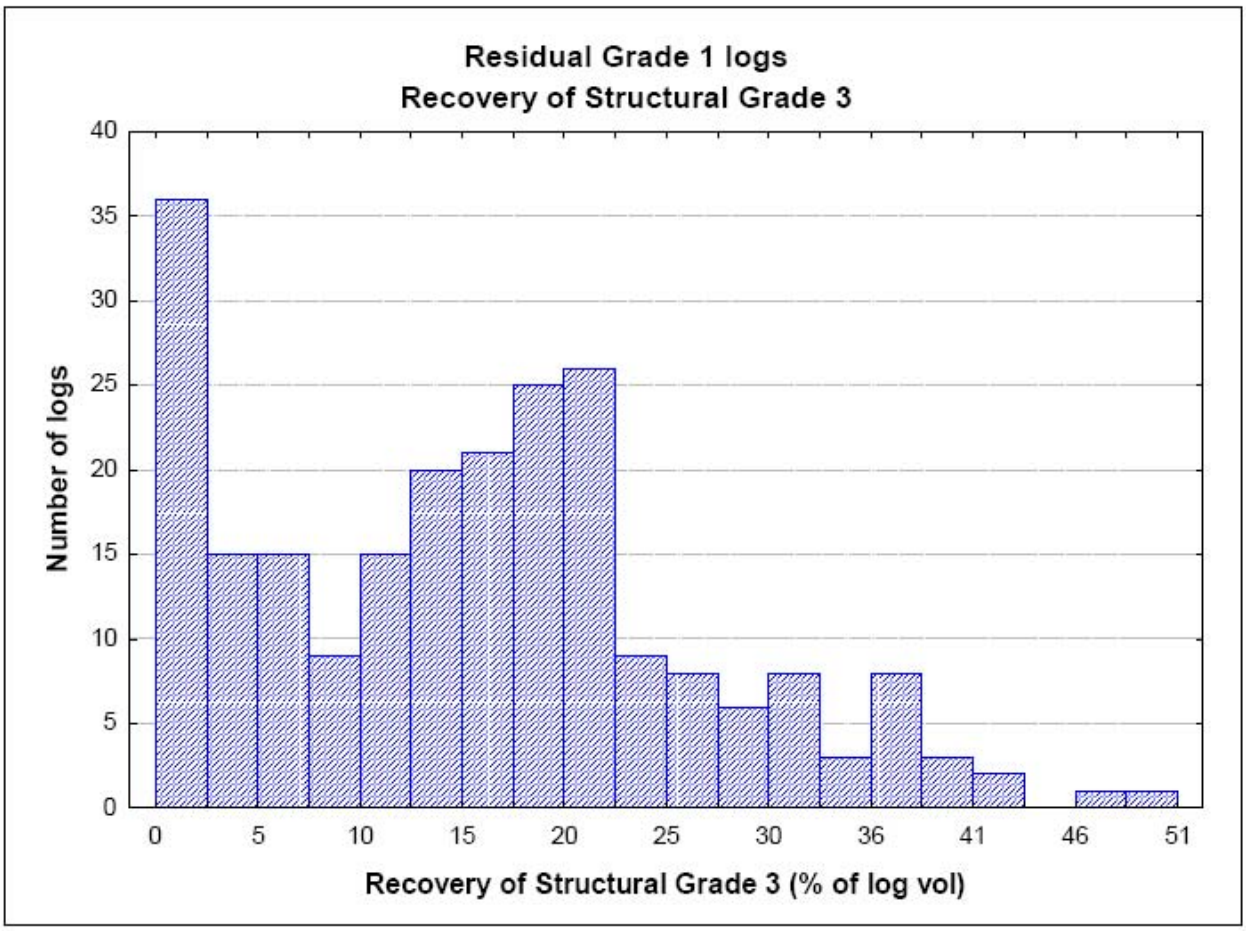
Mills in other parts of Australia have been changing their operations to enable processing of regrowth and plantation wood. The technology has been developed and the economics proven. There is ample scope in Tasmania to retool mills to achieve a higher recovery of timber from the wood, in turn increasing employment and financial returns.

This graph demonstrates the capacity to mill sawn timber from plantation logs of varying sizes.



Washusen, Russell. 2003. 22 Year old *E. globulus* plantation: The technical and financial feasibility of processing full-rotation pruned plantation-grown blue gum. Forest to Mill Centre, CSIRO – Forestry and Forest Products. Presentation to Creswick Forestry School, 31/12/2003.

A study sampling 449 logs classed as residual grade (i.e. not sawlog quality) found that up to 30% of the log volume was recoverable as usable construction grade timber. This package proposes structural adjustment funds necessary to enable effective retooling.



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Find the full document at:
http://www.fwprdc.org.au/content/pdfs/log%20grading%20WEB.pdf

2.5.7 SOLUTION 5 Retool Sawmills if Required

In other states, structural adjustment funds have been used to retool mills to efficiently saw regrowth and plantation wood, and to set up manufacturing processes that make better use of wood.

We believe the funds available in this package will be more than sufficient to facilitate change. Note that Gunns in its various operations processes approximately 80% of the sawlogs from native forests. Therefore the biggest player in the native forest sector has the greatest flexibility in terms of log supply.

Sawmills currently utilizing category 1 & 3 sawlogs can be retooled to use category 2 & 8, and/or plantation logs.

For example, in NSW the Forest Industry Structural Adjustment Programme provided $55 million for:

- 88 projects;
- Peeling lathe lines;
- Solar kilns;
- Parquetry production;
- Vacuum and microwave drying lines; and
- Finger jointing and glue laminating.[35]

[35] Gillespie Economics, March 2004, Financial Costs of and End to Logging in Tasmania Together Forests.

2.5.8 SOLUTION 6 Create More Jobs Through Downstream Processing

There have been numerous reports into the further processing opportunities in Tasmania over many years, highlighting significant investment opportunities. Notably, there are many mid range (approximately $20 million– $100 million) wood processing options that represent a lower risk to investors, can be 100% plantation based and can offer significant employment.

Most of the processing that is already undertaken in Tasmania fits this category:

- **Auspine Scottsdale: 140 jobs.** Sawmilling and preservative treatment plant;
- **Frenchpine Scottsdale: 147 jobs.** Sawmill;
- **Norske Skog Boyer: 435 jobs.** Plantation-grown radiata pine, regrowth eucalyptus, as well as recycled fibre and draft pulp;
- **Paperlinx – Wesley Vale: 290 jobs.** Two pulp mills and a paper machine; 40,000 tonnes of pulp and 135,000 tonnes of paper;
- **Paperlinx – Burnie: 232 jobs.** Imported pulp. Produces 128,000 tonnes of paper per year; and,
- **Carter Holt Harvey – Bell Bay: 120 jobs.** Particleboard and flooring to medium density fibreboard (MDF) and mouldings. 180,000 cubic metres of panel per annum.

The table outlines a range of downstream processing operations which could be promoted to utilise growing wood supplies and create employment.

Processing type	**Wood input required** (m^3/annum)	**Capital expenditure** (AU$ millions)	**Required plantation area** (ha)	**Jobs**
Laminated veneer; lumber/softwood ply mill	120,000	50	12-20,000	110
Softwood sawmill	400,000	85	35-40,000	240
Medium density fibreboard or particleboard	300,000	150	20-35,000	200
Kraft linerboard	1,200,000	550	80-150,000	? (Tumut has 150)
Non-chlorine closed loop pulp mill	3,000,000	1,100	125-250,000	300+

Margules Pöyry. 1999. Investment in the plantation based forest industry in the North East Region of Victoria. Plantations North East Inc.
See: http://www.plantationsnortheast.com.au/regional/markets/#Table13-1
Reference for "300+" figure: Media Release, Gunns Ltd., June 25 2004.

Media focus on downstream processing tends to focus on proposals for a world scale pulp mill. From an environmental, jobs and risk perspective, the mid range investments would be preferable to a new large scale pulp operation.

However, even for mid-range investments, overall environmental management standards would need to be high. As there has been little growth in value-adding relative to the volumes of timber now being exported, it is anticipated that government support will be needed to attract such investment.

2.5.9 SOLUTION 7 Manage Native Forests to Produce High-value, Low-volume Products

Special species timber in Tasmania comprise Myrtle, (*Nothofagus cunninghamii*), Sassafras (*Atherosperma moschatum*), Blackwood (*Acacia melanoxylon*) and Celery Top Pine (*Phyllocladus aspleniifolius*). Leatherwood (*Eucryphia lucida*) also occurs and is most significant as an attractor to bees, which results in the famous Tasmanian Leatherwood honey produced only in Tasmania. These timbers are prized for joinery, craft and boat building. Timber Workers for Forests (TWFF) in 2002 researching a logging coupe in southern Tasmania estimated that,

> "Just 1% of the combined special species timbers was removed by the harvesting contractors. The remainder of the timber in the coupe, largely myrtle, celery top pine and sassafras has either been felled and left behind, or piled into windrows awaiting to be burned in the regeneration fire planned for March 2003".

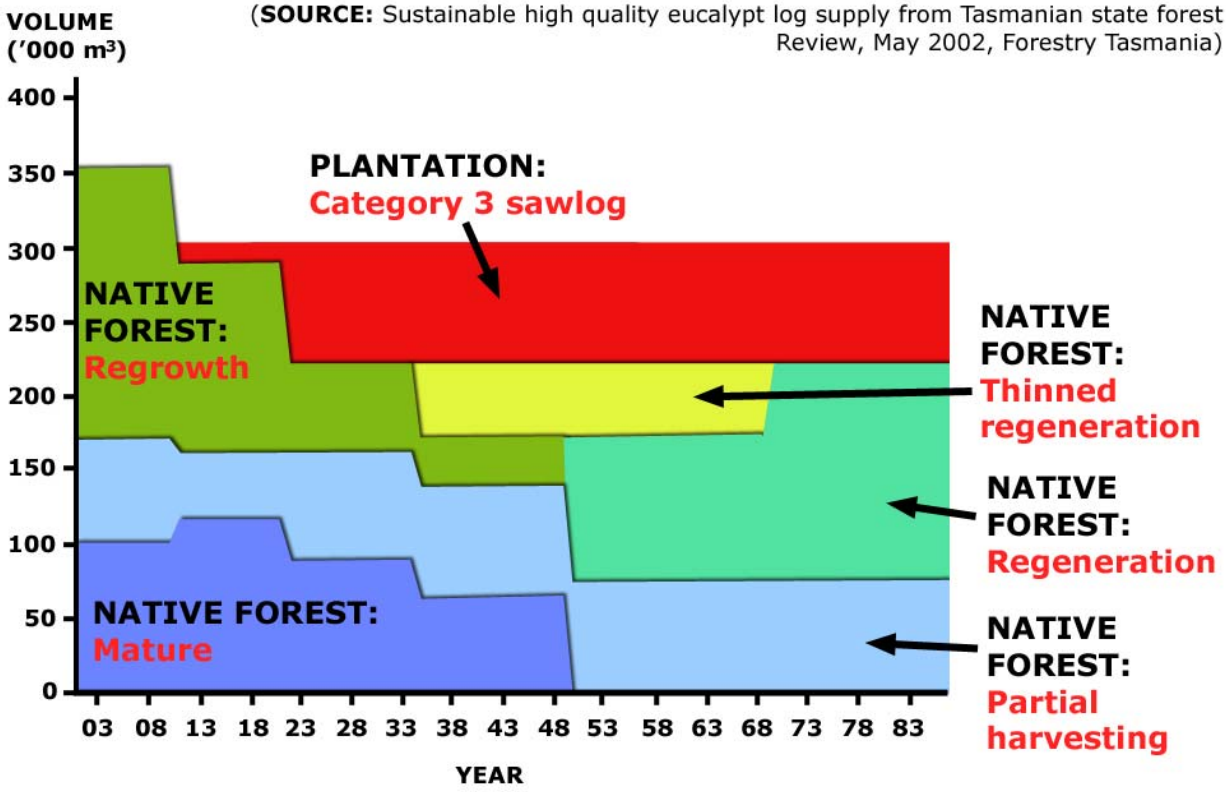
Labor intensive boat building, fine furniture and craft based timber industries use relatively tiny volumes of special species timber (18,500m^3 p.a.) and employ approximately 650 people (TWFF survey). Further industry development and access to specially managed forests would see this industry grow.

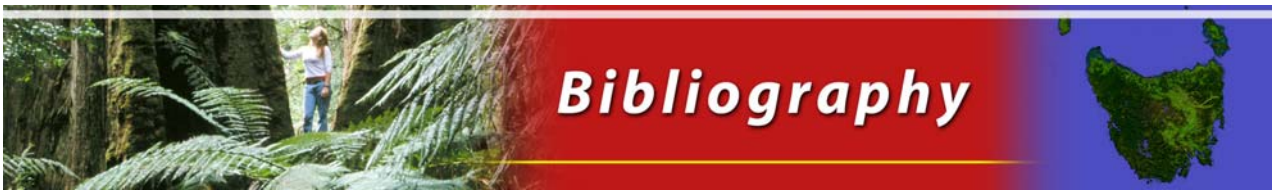
2.5.10 SOLUTION 8 Rearrange Logging Plans Over the Claimed 90 Year Rotation

The annual allocation of high quality sawlogs guaranteed in the RFA is currently sourced from logging of both mature and regrowth native forests. This has been based on a claimed 90 year rotation. Over the coming years, an increasing number of these sawlogs can be sourced from existing plantations.

Through a combination of: creating more high quality plantation hardwood sawlogs (by high pruning plantations); bringing forward logging plans for regrowth areas, and; logging less mature forest, it is technically possible to protect all our identified old-growth and high conservation value forests immediately and to make a quick transition to processing currently exported whole logs.

(**SOURCE:** Sustainable high quality eucalypt log supply from Tasmanian state forest Review, May 2002, Forestry Tasmania)





Research for the jobs growth proposals contained in this report included the following sources:

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Corbet, Alan. Proposal to Forestry Tasmania. Corbet Timber, Gympie, QLD.
Email: corbets@bigpond.com.au

Green G. (2002) Tasmanian timber industry jobs. http://www.twff.com.au/tijobs.pdf

Ferguson I.S, Fox J, Baker T, Stackpole D & Wild I (2002) Plantations of Australia: Wood Availability 2001-2044. Consultant's Report for National Forest Inventory, Bureau of Rural Sciences, Canberra.

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Pricewaterhouse Cooper and URS forestry (2001) Investment memorandum : opportunity to develop a kraft pulp mill and veneer mill. On behalf of the Southern Grampians and Glenelg shire councils.
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Tasmanian State Government (2002) The Tasmanian Experience: Creating unforgettable natural experiences. http://www.tourismtasmania.com.au/tasind/t_experience/index.html

Tourism Tasmania web site.
http://www.tourismtasmania.com.au/tasind/tourism21/2004/index.html

Sustainability indicators for Tasmanian forests 1997 to 2001.
http://www.rpdc.tas.gov.au/public_land_use/plu_dwnl/RFA03_sustainability.pdf

Inadequacies of JANIS as Applied to Forest Conservation in Australia

Conservation assessment in Australia has become dominated by criteria developed for the Regional Forest Agreement, the so-called JANIS-CAR criteria.

During and subsequent to the RFA process, two components of the JANIS-CAR criteria remain influential. First, the forest is classified into a relatively small number of types. Second, the potential habitat of selected threatened animal species is modelled. Conservation planning aims to ensure that a specified percentage of each forest type and potential habitat is located within a protected area. As discussed below, such simple-minded use of these criteria cannot be scientifically justified. As applied, the criteria fail to recognise the bulk of forest biodiversity and ignore the role forests play in ecosystem services.

1. Forested landscapes are an order of magnitude more biodiverse than recognised by standard methods of forest classification and mapping where forest types are based on dominant canopy vegetation. Rather, these vegetation data must be complimented by analysis of the presence and abundance of all vertebrate animal and vascular plant species, plus at least an indicative account of the invertebrate fauna. Assumptions of covariance between coarsely defined forest types and biodiversity are false (eg the 15% benchmark applied to broad forest types adopted by JANIS).

2. There is no scientific basis to the percentage targets set for the protection of forest types. Targets specified to date in terrestrial ecosystems usually range from 10-20%. Specified targets are of a political nature only as they reflect perceived or calculated social/economic tradeoffs.

3. The JANIS-CAR criteria ignore geographic variation in site productivity. All other factors being equal, sites with an intrinsic higher rate of net primary productivity generate higher levels of biomass. Thus, high productivity sites generate more food for herbivores, carnivores and detritovores. Such sites have been found to support higher levels of species richness and abundance.

4. The disturbance history of sites is not factored into the forest typing exercise. Thus, for example, a stand dominated by 20 year old regeneration is considered equivalent to a 350-year-old mature forest stand. Ignoring ecosystem dynamics in this way is ecologically nonsensical.

Mature forested landscapes provide significantly different ecological services compared with young, regenerating stands in three key respects. First, the role of mature forests in hydrological flows has been well established (for example, in the mountain ash forests of the Victorian Central Highlands). These catchment-based studies highlight the hydroecological benefits and significance of mature forests.

Second, mature, unlogged forest subject to natural disturbance regimes store on average three times more carbon than forest stands that are commercially logged on an 80 year harvesting cycle.

Third, the habitat resources provided by mature forest stands have been thoroughly established as being fundamentally different to young regenerating stands.

5. The JANIS-CAR criteria ignore the fact that landscape ecosystems, however defined, provide habitat for many more species on a seasonal and *ad hoc* basis than are permanently resident. Rather, landscape ecosystems are connected at a distance by the large scale movement of a large number of biological organisms, especially bird species that are seasonal migrants or whose movement patterns are more dispersive in response to year-to-year variability in food and other habitat resources.

6. The JANIS-CAR criteria ignore climate change. Human forced climate change is now an accepted scientific reality. Given the magnitude of projected future climate, the only viable conservation planning response is to ensure large scale connectivity at regional scales.

Statement From Concerned Scientists

Statement of Support for Change on Tasmania's Forests

The Tasmanian Regional Forest Agreement (RFA) is widely perceived in the scientific community to have failed to deliver the intended protection for environmental, wilderness and heritage values that state and federal governments committed to when they signed the National Forest Policy in 1992.

The scientific processes in the Tasmanian RFA were overwhelmed by political compromises. Established criteria for forest conservation were not fully applied. There are large areas of high-value conservation forest that would have been reserved if the RFA criteria for forest conservation had been fully applied.

Logging practices and the conversion of native forests to plantations have intensified in the seven years since the signing of the RFA, resulting in record volumes of export wood chip production. This intensification, combined with the well-documented inadequacies of the conservation reserve system (exemplified by the unprotected, large areas of unlogged *Eucalyptus regnans* tall open-forest) has produced highly modified forested landscapes with diminished landscape values.

There is an urgent need for Australian government intervention to significantly improve the forest reserve system and to adequately protect landscape values. We believe that the conversion of native forests to plantations is highly undesirable, and is contrary to the spirit of the RFA, the National Plantations Policy, the Forest Stewardship Council and the Australian Forestry Standard.

In light of the extensive changes that have occurred in many of the most productive forest ecosystems in Tasmania, we believe that the reserve system should be significantly extended to include all high-value conservation forests.

Signed,

Dr Sahrah Bekessy, School of Social Science and Planning, RMIT University, Melbourne

Professor Tim Bonyhady FAAH, FSSA, Director, Australian Centre for Environmental Law, The Australian National University

Professor Mark Burgman, Environmental Science, The School of Botany, The University of Melbourne.

Professor Richard J. Hobbs FAAS, Deputy Head, School of Environmental Science, Murdoch University.

Professor Peter Kershaw, Head of the School of Geography and Environmental Science, Monash University.

Professor Jamie B. Kirkpatrick AM, Head of School, School of Geography & Environmental Studies, University of Tasmania.

Professor Charles Krebs, Honorary Research Fellow, CSIRO Sustainable Ecosystems

Dr Peter McQuillan, Centre for Environmental Studies, School of Geography & Environmental Studies, University of Tasmania.

Professor Tony Norton, Head, Geospatial Science, RMIT University.

Professor Harry Recher AM, Emeritus Professor, Edith Cowan University.

Dr. Debbie Bird Rose, Senior Fellow, Centre for Resource and Environmental Studies, The Australian National University.

Dr Libby Robin, Fellow, Centre for Resource and Environmental Studies, The Australian National University.

Values of Proposed Extensions to the Tasmanian Wilderness World Heritage Area

Scientifically Documented World Heritage Values of Proposed Extensions to the Eastern Boundary of the Tasmanian Wilderness World Heritage Area

1. Context

Western Tasmania is one of the world's great temperate wilderness areas. Approximately two thirds of this wilderness has been inscribed on the World Heritage List. It is one of the few places listed that satisfies both natural and cultural World Heritage criteria.

The natural values for which Western Tasmania has been listed include the mountains and lakes that have been fashioned by glaciers; the ancient forms of alpine and sub-alpine vegetation such as King Billy and Pencil Pines; rare and threatened species such as the Orange-Bellied Parrot; large areas of primeval forests, including rainforest and tall-eucalypt forest; a range of superlative natural phenomena, including a rugged and convoluted coastline, deep riverine gorges and some of Australia's deepest and longest caves; and the great variety of landscapes, from jagged mountains to sweeping lowland moorlands.

The Tasmanian Wilderness World Heritage Area has been listed for cultural values that hinge on its occupation over many thousands of years by the Tasmanian Aboriginal people. The record of their habitation can be found in coastal middens and in caves such as those on the lower Franklin (Kuti Kina and Deena Reena Caves), Maxwell (Ballawine Cave) and Weld (Bone Cave) valleys. Their floors contain deposits from thousands of years of campfires, wallaby bones and stone tools. Some the walls of these caves have been decorated with paintings in the form of hand stencils. Carbon dating of the deposits in the floors of these caves indicate that the occupation occurred during the last Ice Age between 8000 and about 24,000 years ago when the Tasmanian Aboriginal people were the most southerly group of people on Earth.

Unfortunately, major parts of Tasmania's wilderness have been excluded from the World Heritage Area (WHA) due to pressure from resource-extractive industries. Such areas include many of the tall-eucalypt forests along the eastern boundary of the WHA (pressure from the logging industry), and rainforests, moorlands and mountains outside the western boundary (pressure from the mining industry). The large area of moorlands and rainforest known as the Tarkine, which lies to the north-west of the WHA, has also missed out on World Heritage nomination (as an extension to the existing WHA) because of pressure from both loggers and miners.

Such areas have documented World Heritage values. This paper focuses only on the proposed eastern and northern extensions to the WHA – those areas threatened by logging. It identifies those values

and summarises the scientific documentation of those values that has been built up over the past 20 years. It also tabulates the calls that have been made by numerous local, national and international experts for the extension of the WHA, as well as the warnings that have been made about the impending adverse impacts of proposed logging operations during that time.

The major reference used is the report carried out by the Department of Parks, Wildlife and Heritage in 1990 entitled 'The Appropriate Boundaries of a World Heritage Area in Western Tasmania' (The Appropriate Boundaries Report). This report itself is based largely on the evidence placed before the Helsham Inquiry in 1987 and on which the successful (albeit incomplete) extension of the Tasmanian Wilderness World Heritage Area was based in 1989. The tragedy is that these recommendations were not fully implemented either at that time or in the formulation of the Tasmanian Regional Forest Agreement in 1997.

The Appropriate Boundaries Report contains over 170 individual references and was itself refereed by Peter Hitchcock, one of Australia's foremost experts on World Heritage. It is a comprehensive record of the biological and physical riches of this extraordinary wild area.

2. Threatened Forests with Documented World Heritage values

The forests concerned are amongst some of Tasmania's best-known wild places, from the Great Western Tiers to the high-altitude woodlands near Lake St Clair and the deep forested valleys of the Styx and Huon. They include viewfields from famous walking trails such as the South Coast and Huon Tracks; from peaks such as Mt Rufus, Mt Picton, Hartz Mountains, Mt Field West and the Snowy Range; and from tourist roads such as the Lyell Highway and Gordon River Road.

Threatened forests of World Heritage value immediately adjacent to the Tasmanian Wilderness World Heritage Area include:

- parts of the Great Western Tiers and Upper Mersey;
- the Navarre forests near Lake St Clair;
- the Derwent / Counsel River areas south of Lake St Clair;
- the forests of the lower Florentine and Blue Creek at the foot of Wylds Craig;
- the Upper Florentine Valley;
- Mt Wedge;
- Forests adjacent to the Mt Field National Park;
- The Styx valley;
- The slopes of the Snowy Range;
- The Weld valley;
- The Middle Huon;
- The Picton Valley;and,
- The Lune / Hastings / Esperance area.

Despite many years of unconstrained logging in Tasmania, most of these places are intact. Some boundary modifications are required – largely at the fringes.

Many of these areas occur as gulfs or cuts into the World Heritage Area. That is because the WHA's boundaries were deliberately drawn in a convoluted way so as to protect unloggable high mountains or buttongrass plains and to exclude loggable forests.

3. Documented Values of Threatened Forests

None of the proposed extensions to the Tasmanian Wilderness World Heritage Area should be considered in isolation from the WHA itself. They are all part of one of the world's great temperate wilderness areas. For many years, conservationists have been arguing that this area should be treated as a unified whole, rather than as a sum of disparate parts.

Nevertheless, each extension contains values in its own right. Those values are listed below.

Value	Area displaying the value	Reference
Karst	Middle Huon	
	Styx	Calver 1989, Eberhard 1986, Clarke 2001
	Esperance / Lune (protected in 1997 RFA)	
	Weld	Butt 1987; Fulton 1987; Household and Davey 1987
	Mt Field	Kiernan 1971, Goede 1973, Household and Davey 1987
	Upper Florentine	
	Great Western Tiers (protected in 1997 RFA)	
Glaciation	Picton	Kiernan 1987
	Middle Huon	Colhoun and Goede 1979
	Snowy Range slopes	Kiernan 1987
	Mt Field	
	Mt Wedge	Kiernan 1987
	Counsel-Derwent	Kiernan 1985, 1987
	Navarre	Kiernan 1985
	Upper Mersey	Hannan 1989, Hannan and Colhoun 1987
Tall-eucalypt old-growth	Esperance	Parks, Wildlife and Heritage 1990
	Picton	Kirkpatrick 1986
	Middle Huon	Kirkpatrick 1986
	Weld	Kirkpatrick 1986
	Snowy Range slopes	
	Styx	Kirkpatrick 2004
	Upper Florentine	RFA World Heritage Panel 1997
	Blue Creek	Kirkpatrick 1986
	Counsel-Derwent	Kirkpatrick 1986, Kirkpatrick et al 1988
Huon Pine	Picton	Gibson 1986
	Huon	Gibson 1986
Other botanical	Picton	Whinam et al 1989
	Mt Wedge	Jarman et al 1984, Kirkpatrick and Dickenson 1984
	Navarre	Ireson and Greenslade 1989/90
Scenic	Middle Huon	Williamson 1987
	Mt Wedge	Parks Wildlife and Heritage 1990
	Upper Florentine	Parks Wildlife and Heritage 1990
	Navarre	Parks Wildlife and Heritage 1990
	Great Western Tiers	Parks Wildlife and Heritage 1990
Aboriginal heritage	Middle Huon	Recent discovery – Tas Aboriginal Land Council 2002
	Upper Florentine	Jones and Cosgrove 1987, Cosgrove 1989

4. Significance of areas for integrity of the Tasmanian Wilderness World Heritage Area

All of the above areas are important in their own right. However, some also have importance for maintaining the integrity of the existing World Heritage Area. Such integrity issues are as follows:

Loss of wilderness
The Tasmanian Wilderness World Heritage Area relies on the remoteness and naturalness of its natural and cultural assets to maintain its integrity. In many areas, the boundary of the WHA does not protect wilderness even within the WHA. Examples of this occur down the eastern fringe, particularly in the Picton, Weld, Huon, Counsel and Upper Florentine valleys.

Threats from forestry burning operations along the boundary
After wet-eucalypt forests are logged, the remains of the forest are burnt. These regeneration burns are carried out during early autumn. Forestry authorities have recorded numerous examples of such burns escaping into forest, plantations or farmland downwind of the fire. Sometimes these escapes have burnt adjacent parts of the Tasmanian Wilderness World Heritage Area (1988 at Lune River, 1989 at Clear Hill and Lune River).

The Commonwealth Department of the Environment (1993), Kirkpatrick (1994) and Blake *et al* (1995) have identified this as a threat to the integrity of the WHA, particularly where the WHA occurs downwind and/or up-slope from forestry operations.

One area where regeneration burning was identified as a particular threat was the East Picton. In January 2003, a fire that was caused by the logging operation itself burnt up-slope to within a few hundred metres of the WHA. Other areas where regeneration burning has been identified as a major problem include the Mersey because of the proximity of such operations to the Walls of Jerusalem National Park, part of the WHA.

There has been no systematic survey of threats to the integrity of the WHA from forestry operations or from other activities. The reports referred to above were carried out in response to specific proposals to log specific coupes, mainly in the Huon and Picton valleys. However, The Appropriate Boundaries Report has identified that threats to integrity from forestry operations occur in other areas such as Mt Wedge and the Upper Florentine.

Specific reports relating to integrity are listed below.

Report	Relevant areas
Commonwealth Department of the Environment 1993	Picton and Huon valleys
Kirkpatrick 1994	Picton, Huon and Mersey valleys
Blake *et al* 1995	Picton, Huon and Mersey valleys

5. Official reports on the Tasmanian Wilderness World Heritage Area relating to extensions or integrity

Following the nomination of Lemonthyme and parts of the Southern Forests as an extension to the TWWHA in 1988, a number of authorities have reported on the appropriateness or otherwise of the proposed or actual boundaries of the Tasmanian Wilderness World Heritage Area. The table below summarises those reports.

Report	Issues raised	Outcome	Current situation
IUCN Technical evaluation of the WH nomination 1989	Recommends inclusion of Counsel, Florentine, Styx, Weld, Picton, Huon. Concerns about integrity of WHA.	Small part of the Weld and Tiger Range added in 1989.	Most of identified areas still available for timber extraction.
World Heritage Bureau 1989	As above	As above	As above
World Heritage Committee 1989	As above	As above	As above
Department of Parks, Wildlife and Heritage 1990	Upper Mersey, Great Western Tiers, Navarre, Derwent-Counsel, Blue Creek, Mt Wedge, Upper Florentine, Mt Field, Snowy Range slopes, Styx, Weld, Picton, Huon, Esperance	Report ignored by state and Commonwealth governments	Forestry operations proceeding or planned in many areas. Most still available for timber extraction.
Forest and Forest Industry Council Panel of Experts 1990	Issues of integrity raised as well as WH values in Upper Mersey, Great Western Tiers, Navarre, Derwent-Counsel, Blue Creek, Mt Wedge, Upper Florentine, Mt Field, Snowy Range slopes, Styx, Weld, Picton, Huon, Esperance	Small areas at Hartz, SE Cape and Navarre added to national-park system. Most of report ignored	As above
IUCN 1990	Call for extensions along eastern boundary	Call ignored by Commonwealth Government	As above
Commonwealth Dept of the Environment 1993	Concerns about WHA integrity due to forestry operations in Picton and Huon	Ignored by Commonwealth Government	As above
IUCN 1994	As above	As above	As above
World Heritage Centre 1994	Concerns about WHA integrity due to forestry operations in Picton and Huon	Government refers concerns to RFA process	As above
World Heritage Bureau 1994	As above	As above	As above
Kirkpatrick 1994	Concerns about WH integrity due to forestry operations in Huon, Picton and Mersey valleys	Referred to woodchip-export-licence renewal process	As above

Commonwealth Dept of the Environment 1994	Concerns about WHA integrity in Picton, Huon, Mersey and Mt Field.	Moratoriums placed on some coupes	As above
Blake *et al.*	Concerns about WH integrity due to forestry operations in Huon, Picton and Mersey valleys	Referred to DFA process	As above
Commonwealth Dept of Environment 1995 (DFA process)	Concerns about WHA integrity in Picton, Huon and Mt Field	Moratoriums placed on some coupes for duration of RFA process	As above
Tasmanian Conservation Trust 1997	World Heritage values identified in all proposed extensions to WHA	Part of RFA process	See below
RFA Panel on World Heritage 1997	World Heritage values in own right identified in Upper Florentine and Derwent/Counsel	Small parts of Upper Mersey and Great Western Tiers protected from logging by 1997 RFA. Small parts of Huon, Derwent-Counsel, Upper Florentine, Picton and Esperance added to national-park system by 1997 RFA.	Most areas still available for logging. Currently an unofficial moratorium on logging in Middle Huon due to karst and Aboriginal heritage

Statement by Professor Jamie Kirkpatrick

1. The Tasmanian Regional Forest Agreement (RFA) was not a scientific process. It was a political decision negotiated between State and Commonwealth bureaucrats. Scientific criteria for forest conservation were not fully applied - they were compromised for wood production.

2. There are large areas of native forest, old growth and otherwise, that would have been reserved if flexibility provisions were not attached to the RFA criteria for forest conservation. These almost certainly would have included the large area of old growth *Eucalyptus regnans* tall open-forest in the Styx Valley. If the RFA conservation targets had been met this area would have been totally or largely reserved.

3. There are large areas of Tasmanian native forest that I believe should be protected for their landscape values (beauty, wilderness, outstanding natural phenomena), and are not. These include the remaining large areas of unlogged *Eucalyptus regnans* forest, such as the Styx Valley, and the rainforests in the pipeline corridor of the Tarkine.

4. I believe that the replacement of native forests by forest plantations is highly undesirable, and is outside the spirit of the RFA and the National Plantations Policy. Thirty-five thousand ha of all tall wet eucalypt forest, including 11,000 ha of *Eucalyptus regnans* forest have been cleared, or approved for clearance, in Tasmania since 1997 (Forest Practices Board data to 2002/2003). Five thousand hectares of rainforest has met the same fate (Forest Practices Board data to 2002/2003). Almost all of this clearance has been for plantations.

Statement by Dr Peter McQuillan

Appreciation of the biological values of the Styx valley is hamstrung by a lack of systematic survey of its biodiversity.

Biodiversity values in the Styx are likely to be at least equal to those of nearby forests such as those in Mt Field National Park, which has outstanding biodiversity values including high numbers of endemic species arranged in diverse communities.

Given the size and diversity of vegetation communities present, the Styx could be expected to be home to almost 1,000 species of native moths and probably more than 1,500 species of beetles alone.

The Styx Forests contain populations of extraordinary species such as the ancient Hairy Cicada[36], a mute Tasmanian cicada which is an ancestor of all the world's modern cicadas. Recent research on this species by Professor M. F. Claridge, University of Wales, has yielded important insights into the behaviour of some major pests of rice in Asia.

The broad range of habitats represented over a large altitudinal range from less than 200m to the alpine zone serves to enhance the biodiversity of the region and has particular value as a conduit to allow species to adjust their distribution in response to climate change, improving their likelihood of survival.

The adjacency of the Styx to the World Heritage Area reinforces the conservation value of both areas through the effect that larger areas have more species and larger areas are more robust against the loss of species.

[36] Claridge, M.F., J.C. Morgan, and M.S.Moulds. 1999. Substrate-transmitted acoustic signals of the primitive cicada, *Tettigarcta crinita* Distant (Hemiptera, Cicadoidea, Tettigarctidae). *Journal of Natural History* 33: 1831-1834.

Attachment F

PROTECTING FORESTS, GROWING JOBS

July 2004

REVIEW OF THE AUSTRALIAN CONSERVATION FOUNDATION AND THE WILDERNESS SOCIETY PROPOSED 5 YEAR INVESTMENT IN TASMANIAN FORESTS AND JOBS GROWTH

A CONSULTANCY REPORT PREPARED

FOR

AUSTRALIAN CONSERVATION FOUNDATION

and

THE WILDERNESS SOCIETY

BY

GILLESPIE ECONOMICS

AUGUST 2004

1.0 INTRODUCTION

The Australian Conservation Foundation (ACF) and The Wilderness Society are committed to the "immediate protection from logging of 240,000 ha of Tasmania's high conservation value and old growth public forests and expansion of forest based and tourism employment. Other high conservation state lands that do not contain high productivity forests but are essential to achieving a sound reserve system should also be protected"

To achieve this vision ACF and TWS are proposing a five year program of investment in jobs growth in the following areas:

- Tourism and parks development;
- Structural adjustment and industry development assistance.

Gillespie Economics was engaged to consider the robustness of the employment estimates associated with each of the components of the investment strategy. In the following section of the report, ACF and TWSs estimates are reviewed together with any additional analysis available to Gillespie Economics.

The 240,000 ha protected are assumed to be high productivity mature forests resulting in the potential withdrawal of supply of approximately 100,000 m3 per annum of high quality sawlogs. This has been estimated to have an impact on the employment of approximately 320 workers. (Gillespie Economics 2004)

2.0 REVIEW OF EMPLOYMENT ESTIMATES

2.1 Tourism and Parks Development

Tourism Infrastructure Development

Proposal

Upgrade tourist roads to new parks and attractions.	$40,000,000
Local minor facilities upgrade	$4,000,000

60 Direct New jobs for 5 years

Comment
Spending on infrastructure would result in stimulation of the *Other Construction* sector of the Tasmanian economy. This sector comprises businesses associated with a range of non residential construction activities including site preparation services, non residential building construction, landscaping and a range of trades such as bricklaying, concreting, roofing, structural steel erection, plumbing, electrical.

The level of direct employment involved with level of expenditure can be estimated from input-output tables of regional and state economies. Gillespie Economics is not in possession of such a table for Tasmania. However, models of regional economies in NSW suggest from 4 jobs per $1M expenditure in this sector for a single LGA up to 10 jobs per $1M expenditure for larger region such as Newcastle/Hunter Valley.

An estimate of 60 jobs for $8.8M per year expenditure sits in the middle of this range i.e. 6.8 jobs per $1M and would appear reasonable.

Parks and Work Heritage Funding

Proposal

Rangers, construction and general duties workers (50 new jobs)	$15,000,000
Park operating costs	$10,000,000

50 Direct New jobs for 5 years

Comment

An additional 240,000 ha of protected areas would require additional parks and wildlife service staff to manage it.

In NSW in 2002/03 the NPWS spent $138M on recurrent employment expenses and $93.5M on other operating expenses to manage an estate of 5.4M ha. Average expenditure per ha was therefore in the order of $25 employment expenses and $17 for other operating expenses. Applying these averages to the proposed 240,000ha of additional conservation reserves for Tasmanian forest would equate to annual employment expenses of $6M and other operating expenses of $4.1M pa. At an

average wage rate (including superannuation, leave loading, workers comp etc) of $60,000 this would give in the order of 100 employees.

However, these are average figures. The marginal costs and marginal employment required to service the extra 240,000 ha of land are likely to be less than the average costs e.g. additional head office costs are likely to minimal while most resources will be required in the field.

For instance, out of the 1937 staff employed by NPWS in 2003 only in the order of 890 could be considered field staff (260 rangers, 77 district managers, 9 interpretative assistants and 544 field officers) i.e. 46%. If field staff are the considered the marginal employment cost then an additional 47 or so would be required for 240,000 ha at a cost of in the order of **$**3M pa i.e. $15M over 5 years. Similarly pro-ratering other operating costs gives an additional $2M pa of operating costs i.e. $10M. These are consistent with ACF and TWS's estimates.

Tourism Programs

Proposal

Nature based tourism program	$10,000,000
Local tourism implementation strategies	$4,000,000

20 direct new jobs for 5 years

Comment

There is little information on which to make an assessment of this. However, 20 jobs @ $60,000 would equate to $1.2M pa, leaving $1.6M for other expenditure items.

Private Forests

Proposal

Private forests reserve program	$30,000,000
Land purchase/covenant/resale program	$10,000,000

40 Direct New jobs for 5 years

Comment

The Private Forest Reserve Program commenced with a budget of $30M in July 1998 and currently has $15M left. It has achieved 30,000 ha of conservation to date with the remaining money estimated to achieve conservation of an additional 25,000ha, 45,000 ha short of the original target and 110,000ha short of the ACF and The Wilderness Society's target of 165,000 ha.

Allowing for interest generated from the original lump sum, annual expenditure on the program has been in the order of $3M for both conservation and operating costs including 16 full time staff and 7 contract negotiators.

An allocation of an additional $6M dollars per annum is likely to almost double current employment levels (although again marginal employment increases are likely to be less than average employment increases although the difference is not likely to be as great as for a larger organisation such as for a national parks service). Hence, a reasonable estimate would be say 25 fulltime jobs.

Trust for Nature, Victoria operates a revolving fund of $3M. In addition to operating the revolving fund it also purchases land which it manages via establishing management committees or gives to the Crown. Annual operating cost for the Trust is in the order of $1.5M, including employment of 25 extension staff (16 full time equivalents).

An allocation of $2.5M into a revolving fund and $1.5M pa operating costs for five years may generate the same order of magnitude of employment as Trust for Nature Victoria i.e. 16 (assuming that no similar fund exists already to which this allocation would added).

Total direct employment of these components of the proposal may therefore be in the order of 41. This is consistent with the ACF and TWS estimate.

2.2 Structural Adjustment and Industry Development Assistance

Worker and Business Exit Assistance

Proposal
Worker and Business Exit Assistance to minimise impacts of industry changes

$41,500,000

320 Jobs Restructured

Comment

The estimates made by Gillespie Economics for a SAP were as follows:

- $12.8M for worker assistance for 320 employees
- $28.7M for business exit assistance; and
- $41.5M for industry development assistance.

Hence in the order of $41.5M ($12.8M plus $28.7M) is required to restructure 320 timber related jobs. The estimate provided is consistent with the Gillespie Economics report

Industry Development Assistance

New Resources – Plantation Hardwood Sawlog Program

Proposal

High prune 14,000ha of existing hardwood plantations for High Quality saw logs - 100,000m3/annum

$32,000,000

20 direct new jobs

Comment

Cost of high pruning is quoted at $730 per ha (Gunns Plantations Limited Woodlot Project 2004) and is reported to be labour costs only i.e. there is no mechanisation of this process (ACF and TWS comments). 14,000 ha is proposed to be high pruned over a 35 year rotation i.e. 400 ha per annum. 3 prunes are required for any area over this 35 year rotation and hence assuming a mixed aged stand 1,200ha will be receiving a prune in any particular year i.e. 400 ha receiving its first prune, 400 ha receiving its second prune and 400 ha receiving its third prune.

Hence the annual pruning costs would be $730 times 1,200 ha i.e. $876,000. At a labour cost of $45,000 this equates to in the order of 20 jobs.

The cost quoted i.e. $32,000,000 is for the entire 35 year rotation rather than just 5-years which is the basis for other estimates in the ACF and TWS proposal.

The generation of additional timber volumes in the future e.g. 100,000m2 pa, would also result in additional employment in the longer term. Based on average employment ratios for logging and haulage contractors and hardwood sawmilling this volume of additional sawlogs could results in an additional 47 jobs in logging and haulage and in the order of 260 jobs in sawmilling.

Incentives for Value Added Downstream Processing.

Proposal

Create sawn timber, veneer, laminated veneer lumber, various particle boards, inc. MDF, pulp and paper, based on world's best practice environmental processes. Incentives for selected projects.

up to $48,500,000

Up to 900 new jobs created

The 900 new jobs created essentially assumes that the future developments envisaged by AFFA, 1996 would be encouraged by the incentive monies allocated i.e. plywood mill, chemical pulp, mechanical pulp, woodfree paper and mechanical printing. Should the incentive money lead to these developments then the employment estimates seem reasonable based on AFFA estimates. However, factors other than

available capital may be restricting development of these projects including world demand, timber supply etc. and hence the availability of incentive money may not result in the stimulus of these projects. Nevertheless, the encouragement of even one of these developments envisaged by AFFA (1996) would result in considerable employment e.g. plywood mill (150 jobs), chemical pulp (370 jobs), woodfree paper (200 jobs), mechanical printing (264 jobs). Additional potential developments not referred to by AFFA include laminated veneer lumber (LVL). .

Ensure Specialty Timber Supply for Artisan and other High Value/Low Volume Users

Proposal
Ensure specialty timber supply for artisan and other high value/low volume uses including speciality processors, furniture designers/makers, craft workers, timber splitters, wooden boat builders.

$5,000,000

Up to 100 new jobs created

Comment

Gillespie Economics has no data on which to make an assessment of this. Overall the money proposed for Industry Development Assistance components of the proposal is in excess of that previously estimated by Gillespie Economics.

3.0 CONCLUSION

Generally, the employment outcomes suggested by the ACF and The Wilderness Society's proposed 5 year investment in Tasmanian forests and jobs growth, would appear to be robust.

Due to the absence of information, two areas, Tourist Programs and Specialty Timber Supply, were unable to be commented on in any detail.

Furthermore, as noted in this report, the creation of up to 900 jobs from incentives for greater downstream processing is dependent on incentive money stimulating future developments in the industry that were envisaged by AFFA in 1996. Nevertheless, the encouragement of even one of these developments envisaged by AFFA (1996) would result in considerable employment e.g. plywood mill (150 jobs), chemical pulp (370 jobs), woodfree paper (200 jobs), mechanical printing (264 jobs).