REPRESENTATION TO THE PRODUCTIVITY COMMISSION'S INQUIRY INTO BARRIERS TO CLIMATE CHANGE ADAPTION






South East Forest Rescue 2011


INTRODUCTION

South East Forest Rescue takes a firm stand on environmental protection of the native forest estate and expresses deep alarm at the welfare of forest-dependent threatened species and the cumulative impacts of industrial degradation of native forests that are exacerbating extinction rates and destroying soil, water, and carbon capacity, and we welcome the invitation to provide comment.

This submission is informed by active monitoring and auditing of the ongoing operations of native forestry management since the *Forestry and National Park Estate Act 1998* (NSW) ("FNPE Act") was voted through the NSW Legislative Council by the Labour government and Coalition opposition. That evening in November 1998 marked the point where the community lost the right to affect what happened to its native forest environment.

These conclusions are based on extensive research and on-ground examination of the Regional Forest Agreements ("RFAs") and Integrated Forestry Operations Approvals ("IFOAs") on unprotected native forest mainly in the Southern and Eden regions, but also the whole of New South Wales, Victoria, and Tasmania since the year 2000.

There is much uncertainty on the effects of climate change, but one of the certainties is that deforestation is one of the biggest causes.

> The loss of natural forests around the world contributes more to global emissions each year than the transport sector. Curbing deforestation is a highly cost-effective way to reduce emissions; large scale international pilot programmes to explore the best ways to do this could get underway very quickly.[1]

The Stern Review goes on to state in Annex 7f:[2]

> Deforestation is the single largest source of land-use change emissions, responsible for over 8 $GtCO_2$/yr in 2000. Deforestation leads to emissions through the following processes:
>
> The carbon stored within the trees or vegetation is released into the atmosphere as carbon dioxide, either directly if vegetation is burnt (i.e. slash and burn) or more slowly as the unburned organic matter decays…The removal of vegetation and subsequent change in land-use also disturbs the soil, causing it to release its stored carbon into the atmosphere.[3]

While there has been an overall downward trajectory on native forest logging in Australia this has not materialised in the public native forests of the south coast of NSW. Forests are being cleared at an ever

---

[1] The Stern Review on the Economics of Climate Change, < http://webarchive.nationalarchives.gov.uk/+/http:/www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm>.

[2] The Stern Review, 'Emissions from the Land-Use Change and Forestry Sector' above n 1.

[3] Houghton J T, 'Tropical Deforestation as a Source of Greenhouse Gas Emissions' (2005) in *Tropical Deforestation and Climate Change*, Moutinho and Schwartzman [eds]; see also Intergovernmental Panel on Climate Change 'Climate change 2001: the Scientific Basis, Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change' Houghton JT, Ding Y, Griggs DJ, et al (eds), (Cambridge University Press, 2001); Food and Agriculture Organization of the United Nations 'State of the World's Forests' Washington, DC: United Nations, 2005.

expanding rate to feed the wood supply agreement between Forests NSW (FNSW) and Nippon Paper/South East Fibre Exports woodchip mill. Current FNSW native forest logging practices Single Tree Selection, Australian Group Selection and Modified Shelterwood are indistinguishable from deforestation.

Clearing of native vegetation still contributes 13% of Australia's greenhouse gas emissions. It is and will be counterproductive to create economic incentives to reduce emissions without introducing complementary measures to cease native forest logging.

As an adaptation measure Australia should change the tenure of State native forests into National Parks which the CSIRO estimate would save 11 Mt CO2e per year.[4] New Zealand is already way ahead of Australia on this in that they ceased logging of their native forests in 2002. This measure should be coupled with biodiversity plantings which must be undertaken as they have a natural competitive advantage over plantation forests. The carbon stock of native forests is higher on average than the carbon stock of plantations. Biodiversity plantings are also self-regenerating and are therefore more resistant to climate variability.

Science now states that it will be next to impossible for Australia to achieve the scale of reductions required in sufficient time to avoid dangerous climate change unless it also undertakes biodiversity plantings which removes carbon from the atmosphere and stores it in vegetation and soils. The power of terrestrial carbon to contribute to the climate change solution is immense.

Trying to account for GHGs from native forest logging or wriggle out of real accounting will not solve the problem. Australia being able to gain carbon credits or not gain carbon credits is not the solution. Inflated baselines or historical baselines – these are just a fake climate adaptation measure - a 'great big blast of hot air' which may look good on paper but do not provide any real solution. These are merely political and technical charades that undermine any efforts at true mitigation and adaptation measures.

SEFR support the measure of the Commonwealth Governments Clean Energy Future plan to protect native forests by amending the Renewable Energy Target regulations to ensure that renewable energy certificates are not issued for biomass from native forests. However the native forest and woodchipping industry should pay for emissions from logging and off-road vehicles and machinery.

Further, due to the vast amount of kilometres travelled, the emissions from the log trucks should be paid for and there should be no exemption by treating them as off-road vehicles.

[4] CSIRO *Analysis of Greenhouse Gas Mitigation and Carbon Biosequestration Opportunities from Rural Land Use,* Sandra Eady, Mike Grundy, Michael Battaglia and Brian Keating (eds), Queensland Premiers Climate Council, 2009.

ESD

Before proceeding, erroneous and mistaken definitions of Ecologically Sustainable Development ("ESD") must be clarified. The definition of ecologically sustainable development had its origins in the report of the World Commission on Environment and Development, *Our Common Future.*[5] Development was defined as sustainable if:

> *It meets the needs of the present without compromising the ability of future generations to meet their own needs.*

In the international community the term is 'sustainable development'. In Australia Bob Hawke had need to place the word 'ecological' in front of the phrase as developers believed they now had carte blanche to demolish the environment.[6] Thus the term is now defined in Australia as development that is 'ecologically' sustainable. The definition currently in place in NSW is contained within the *Protection of the Environment Administration Act* at s 6(2).

The principles of ESD are now widely accepted through the signing of the Rio Declaration: the *Convention on Biological Diversity.*[7] Commonwealth, State and Local governments became bound by the *Intergovernmental Agreement on the Environment 1992,* which contains the ratified principles.[8] We have observed that these principles are being systematically ignored by Forests NSW.

The RFAs state that their object is to provide for the ecologically sustainable management and use of forested areas in the regions,[9] however there is an obvious disjuncture between what the native forestry industry consider to be 'best practice' and what independent scientists, academics and eighty per cent of the community believe is sustainable. Forests NSW seem to be oblivious to the word 'ecologically'. The loss of species yet to be discovered and carbon sinks will affect future generations. Given what is now known on greenhouse gas emissions and forest degradation Forests NSW would have difficulty arguing that their practices are sustainable.

Relevantly the objects of the Forestry Commission are:

> *(a) to conserve and utilise the timber on Crown-timber lands and land owned by the commission or otherwise under its control or management to the best advantage of the State,*
>
> *(c) to preserve and improve, in accordance with good forestry practice, the soil resources and water catchment capabilities of Crown-timber lands and land owned by the commission or otherwise under its*

---

5 The World Commission on Environment and Development, 'Our Common Future' *The Bruntland Report*, (1987), 8.

6 Harris and Throsby, 'The ESD Process: Background, Implementation and Aftermath' (1997) a paper presented at a workshop 'The ESD Process Evaluating a Policy Experiment' Hamilton and Crosby [eds] Academy of Social Sciences in Australia; Hawke R J, 'Our Country Our Future' (1989) (Statement on the Environment by the Prime Minister of Australia), Canberra: Australian Government Publishing Service.

7 The Rio Declaration, *Convention on Biological Diversity,* Rio de Janeiro, 5 June 1992, Entry into force for Australia: 29 December 1993; Australian Treaty Series 1993 No 32.

8 *National Environment Protection Council (New South Wales) Act 1995* (NSW), Schedule 1.

9 *Regional Forest Agreement for Southern New South Wales between the Commonwealth of Australia and the State of New South Wales* April 2001, Recital B (b).

control or management.[10]

However the legislation that enables native forest logging makes no mention of climate change and has had no review. In our view there can be no effective adaptation to climate change whilst native forest logging continues. In describing the situation in Australia the 2011 UN State of the Forests Report provided that:

> Oceania also experienced a negative trend … since 2000 and caused it to register the largest annual loss of any country in the region between 2000 and 2010.[11]

BACKGROUND

Regional Forest Agreements

> The RFAs are 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.[12]

One of the main barriers to effective climate change adaptation and mitigation is the Regional Forest Agreements. The Regional Forest Agreement process constituted an abandonment by the Commonwealth of its responsibilities for forests. Under s 38 of the *Environment Protection Conservation and Biodiversity Act 1999* (Cth) ("EPBC Act") the Commonwealth undertook to refrain from exercising its environmental legislative powers for the duration of the Agreements (until 2023 if no extensions are granted).

RFAs were endorsed by the Commonwealth on the basis that the States had conducted a thorough environmental assessment of their forests. Reviews of the data used for the Comprehensive Regional Assessments ("CRAs") reveals the data was either flawed, hastily cobbled together, or non-existent. Areas that fell under these RFAs were made exempt from the EPBC Act on the basis that environmental assessments had already been undertaken and that environmental considerations were contained in the RFAs.

However, the RFA 'negotiations' were flawed. Scientists became increasingly concerned when a political decision was made to further modify the RFA measures so that scientifically-based criteria were no longer independently applied as a first step in establishing an 'Ecological Bottom Line'. This was a crucial decision as it was very unlikely that any RFA would deliver Ecologically Sustainable Development, as the modified criteria allowed ecological values to be traded off against economic values.[13]

---

[10] The *Forestry Act 1916* (NSW) s 8(a)1.
[11] See *State of the World's Forests,* UN Food and Agricultural Organization, (Rome, FAO, 2011), 9 (online) <http://www.fao.org/docrep/013/i2000e/i2000e.pdf>.
[12] Bekessy S, Bonyhady T, Burgman M, Hobbs R, Kershaw P, Kirkpatrick J, Krebs C, McQuillan P, Norton T, Recher H, Rose D B, and Robin L, 'Statement From Concerned Scientists: Statement of Support for Change on Tasmania's forests' (2004) Protecting Forests, Growing Jobs, Hobart, The Wilderness Society, 601.
[13] Mackey B, 'Regional Forest Agreements – Business as Usual in the Southern Region?' (1999) 43 *National Parks Journal* 6.

As an example of industry subterfuge, in Victoria members of the Victorian government bureaucracy removed crucial chapters of a state government commissioned report *Ecological Survey Report No.46 - Flora and Fauna of the Eastern and Western Tyers Forest Blocks and Adjacent South-Eastern Slopes of Baw Baw National Park, Central Gippsland, Victoria* which recommended the protection of the Baw Baw plateau and escarpments. The removal of these chapters ensured that one of the world's most significant ecosystems remained available for clearfell logging.[14] Ten years later scientists find that these type of forests are more effective carbon stores than much of the international forests.[15]

The regulation defining Regional Forest Agreements requires that all RFAs:

> (a) identifies areas in the region or regions that the parties believe are required for the purposes of a comprehensive, adequate and representative national reserve system, and provides for the conservation of those areas; and
>
> (b) provides for the ecologically sustainable management and use of forested areas in the region or regions; and
>
> (c) is expressed to be for the purpose of providing long-term stability of forests and forest industries; and
>
> (d) is expressed to be a Regional Forest Agreement for the purposes of these Regulations;
>
> Having regard to studies and projects carried out in relation to all of the following matters that are relevant to the region or regions:
>
> (e) environmental values, including old growth, wilderness, endangered species, national estate values and world heritage values;
>
> (f) indigenous heritage values;
>
> (g) economic values of forested areas and forest industries;
>
> (h) social values (including community needs); and
>
> (i) principles of ecologically sustainable management.

There arises the factual question in all cases as to whether Forests NSW have complied with these requirements. The conditions which are required for RFAs have not been met. There is significant on-ground, historical and contemporaneous evidence available to demonstrate this.

The legislation is nefarious to the conservation and ecological health of the native forests under its domain. It is now in breach of domestic and international obligations. The *Regional Forest Agreement Act 2002* (Cth) should be repealed as should amendment 75 2 (B) of the *Environment Protection Biodiversity and Conservation Act 1999* (Cth) be repealed and part 3, section 38 of the EPBC Act to be reinstated.

The notion that the CAR Reserve System is genuinely based on the principles of Comprehensiveness, Adequacy

---

[14] See Mount Baw Baw Report, <http://www.tcha.org.au/Baw_Baw_Report/Baw_Baw_Report.html>.

[15] Heather Keith, Brendan G Mackey, and David B Lindenmayer, 'Re-Evaluation of Forest Biomass Carbon Stocks and Lessons from the World's Most Carbon-Dense Forests' (2009) 106(28) *Proceedings of the National Academy of Sciences* 11635, (online) <www.pnas.org/cgl/dol/10.1073/pnas.0901970106>.

and Representativeness is false as the declining populations of forest-dependent threatened species do not support the Government's argument. The output of the CAR was deeply biased towards industry objectives and as such is a flawed document.[16]

> Serious flaws in the information and scientific process underpinning the RFAs undertaken to date have been identified.[17]

Most of the assessments conducted depended largely on the then existing incomplete information, out-dated maps and not on localised, on the ground information about particular areas. In many cases the science underpinning the assessments was uncertain and based on ad hoc information.[18] Moreover, the assessments were not conducted based on ecological criteria but on state boundaries.[19] As a result, contiguous areas on various state borders were categorised as separate regions despite clear ecological connections.

The *Threatened Species Legislation Amendment Act 2004* (NSW) has enabled government departments to turn a blind eye to the full extent of the species decline throughout the state. Conversely it has enabled Forests NSW to view the IFOA licence conditions as able to be broken with impunity at a significant cumulative detriment to the forest-dependent threatened species of the state, as long as it was 'an accident', which is reportedly seventy eight per cent of the time. The community was assured by government that:

> The NSW RFAs provide for environmental protection in respect of forestry operations through management prescriptions and the CAR reserve system.[20]

What the community has seen is that this statement is erroneous. The environment in the areas covered under the NSW RFAs is in drastic decline as evidenced by the ever growing list of threatened species, the lack of water in all rivers where logging is occurring in their catchments, and the closure of oyster farmers business due to siltation.

> It can be estimated that the annual sediment export from the catchment in an undisturbed condition would be of the order of 1,056 tonnes/year, and 2,640 tonnes/year for the existing catchment logging land use scenario.[21]

As recently as 16 Aug 10 it was reported from the northern forests that:

> A recent NEFA audit of Girard State Forest, near Drake, found numerous breaches of 45 logging prescriptions and the destruction of a stand of high quality old growth forest.

---

[16] Compliance with the criteria meant that the protected reserves had to cover the full range of forest community types, be sizeable enough to allow for species survival and reflect the diversity of the individual communities see Hollander R, 'Changing place' Commonwealth and State Government Performance and Regional Forest Agreements' Paper presented to the Australasian Political Studies Association Conference, University of Adelaide, (2004).

[17] See McDonald J, 'Regional Forest (Dis)agreements: The RFA Process and Sustainable Forest Management' (1999) 11 *Bar Law Review* 295; Redwood J, 'Sweet RFA' (2001) 26 *Alternative Law Journal* 255.

[18] Hollander R, 'Changing place?' above n 16.

[19] Mackey B, above n 13.

[20] A Draft Report on Progress with Implementation of the New South Wales Regional Forest Agreements, Resource and Conservation Unit, NSW Department of Environment and Climate Change NSW, Sydney, (2009), 45.

[21] McAlister T, and Richardson D, 'Wonboyn Lake and Estuary - Estuary Processes Study' (2004) <http://www.begavalley.nsw.gov.au/environment/estuaries/pdfs/Wonboyn_Processes_Study.pdf>.

> They did not even comply with standard logging prescriptions, let alone any special ones. This is a disgrace and unacceptable treatment of what was meant to be a "Special Prescription Zone" contributing towards our national reserve system.
>
> Recent audits have exposed illegal logging of rainforest, wetlands, endangered ecological communities and now old growth forest. These are what the Regional Forest Agreement was meant to protect. And this is only the tip of the iceberg.[22]

This mirrors the situation in the southern forests. In our view unlawful and weakly regulated native forest logging under the RFAs is one of Australia's greatest barriers to effective climate change adaptation and mitigation.

Report on the RFAs

The long-awaited *Final Report on Progress with Implementation of NSW Regional Forest Agreements: Report of Independent Assessor* confirmed observations that the Regional Forest Agreements are failing to meet their transparency and sustainability obligations.

If as stated, the NSW RFAs were to provide for the 'conservation of areas, for Ecologically Sustainable Forest Management and twenty year certainty for native forest industries', then the results of this report show clearly that the agreements have failed dismally on all accounts.

The report, dated November 2009, was actually due several years prior to coincide with the RFA reviews, which the report acknowledges. The report states:

> However, fundamentally, the first reviews should have been completed in the 2004-2006 period, i.e. five years from their initialisation. The fact that these reviews have been delayed 3-4 years is of considerable concern, has reduced public confidence in the outcomes and seriously distorts the process for the future.

And:

> Timeframes were included in the RFAs for a reason and the failure to deliver in any reasonable timeframe could have a major impact on both public confidence in the process and the achievement of the basic objectives if the RFAs. Even if it is accepted that, in an undertaking of this nature, some delays are inevitable, delays of three to four years and in at least one case 9 years, indicate a basic problem or problems.

The report goes on to state:

> …the significant delays for the Southern and Eden regions reviews (3 years behind schedule) need to be addressed as soon as possible to minimise uncertainty and to allow an accurate picture about sustainability of

[22] Pugh D, North East Forest Alliance media release 15 August 2010.

current harvesting to emerge…No real reason is provided for the delays.

In reply additional information was provided to the independent assessor by Forests NSW which stated:

> Monitoring designed to assess performance at a much finer scale (at an operational level) and/or to determine the causes of detected variation (via post-harvest assessment) would be prohibitively expensive and would involve unsatisfactory occupational health and safety risks.

Forests NSW seems to be arguing that entering post-logged forest to monitor their operations is prohibitively expensive and unsafe for their trained employees. If it is unsafe for Forests NSW employees to enter post-logged forest it must be equally expensive and unsafe for their employees to enter forest while logging operations are underway therefore, if it is so expensive and unsafe, Forests NSW should heed conservationists call and end native forest logging.

Compliance to the Regulations

There is now substantial evidence indicating that the Integrated Forestry Operations Approvals are inoperable, unenforceable, and systemically riddled with non-compliance.[23] The non-compliance register at the Forests NSW Batemans Bay office is only available to 2009 being only one instance among many.

Compliance milestones have not been taken seriously by Forests NSW. Non-compliance is situation normal. Auditing reporting on a public level might be provided in the FA and IFOA reports but because these documents are either not tabled or consistently late they are effectively not in the public domain.

Recent evidence from South Brooman State Forest Cpt 62, Bodalla Cpt 3043 and Bermagui Cpt 2001 plainly shows that the Rainforest Identification protocols are in no way being adhered to. Documented evidence suggests rainforest breaches are systemic in daily logging practices.

Currently in NSW illegal logging is occurring.[24] Illegal forest activities have far-reaching economic, social and environmental impacts including ecological degradation and exacerbation of climate change. On the South Coast there are varying forms of State-sanctioned land clearing. From farmers wanting to obtain more land for their commercial purposes, as they, or past owners have degraded their land to such an extent that they cannot grow crops on it (climate change being a mitigating factor), to Forests NSW desperately trying to sustain twenty year wood supply agreements with the woodchip mill and Boral.[25]

Although codes of practice are generally 'aspirational' they may be recognised as legal instruments and accorded formal stature as legislative instruments. Where they set out standards for compliance then they create

[23] All correspondence between SEFR and OEH from 2001.
[24] See all correspondence SEFR to OEH 2001-2010.
[25] On the south coast logs from private native forestry make up 10% of the total volume that goes to the Eden chipmill, URS Environmental Assessment Eden Biomass Power Station; on the north coast the estimated annual volume of private native forest timber harvested is 270,000 m3.

enforceable obligations. We would suggest the IFOAs are such instruments.

Forests NSW, or any other person is subject to the conditions of the IFOAs including the terms of the relevant licences.[26] Under the Private Native Forestry Code ("PNF Code") forestry operations under an approved Property Vegetation Plan ("PVP") must be conducted in accordance with all provisions of the Code.[27] Both the IFOA and the PNF Code contain the precautionary principle and principle of inter-generational equity.

In *Environment East Gippsland Inc v VicForests* Forrest J provided:

> I am not persuaded that the reference to the precautionary principle is, at least on the analysis required for this application, simply a statement of objective or lofty principle… It is the terms of the Code and the emphasis on the mandatory nature of the obligation on VicForests both before and during operations that satisfies me that there is a prima facie case that it was obliged to comply with the Code in relation to both the application of the precautionary principle and the consideration of expert evidence relevant to the area the subject of logging.[28]

The case as it stands is that in practice either the logging contractors are not reading the legislation or the drive for financial gain outweighs the need to comply with regulations.[29] This combined with the threat of enforcement and monetary loss being minimal could be a compelling factor for non-compliance. As Forests NSW and contractors are currently out of control when it comes to regulation and compliance there is therefore little hope that the legislation will have the desired affect regardless of adequacy.[30]

Unsustainable

A barrier to effective climate change adaptation and mitigation is the use of clear-fell logging which converts multi-aged forests into regrowth which precludes the maintenance of forest values in perpetuity and breaches criteria for ecological sustainability. The 'sustained yield' volumes included in the IFOA were not based on a legitimate run from the FRAMES software, but were merely derived by applying an inflated mean volume per hectare figure. Data shows that the estimation process that FRAMES was based on which was predicting alternate coupe volumes from logged coupes, has become increasingly unreliable, and has not been updated to account for this fact. The specified annual 'sustained yield' volumes have been consistently overcut by Forests NSW in breach of the Forest Agreements and RFAs. Each of these four factors is addressed in detail below.

---

[26] *Forestry and National Park Estate Act 1998 Integrated Forestry Operations Approval for the Eden Region 1999*; the new unreviewed amended IFOAs make no mention of this clause.

[27] *Private Native Forestry Code of Practice for Southern NSW 2008* cl 1(2).

[28] *Environment East Gippsland Inc v VicForests* [2009] VSC 386 Forrest J, [80].

[29] See *Minister for the Environment & Heritage v Greentree (No 2)* [2004] FCA 741; for the classic "I thought I didn't need approval", and "the clearing was routine agricultural management activities"; see also Appellants 'outline of argument' (online) <http://www.envlaw.com.au/greentree13.pdf>; and see also *Director-General, Department of Environment and Climate Change v Walker Corporation Pty Limited (No 2)* [2010] NSWLEC 73; Shoalhaven Council are seemingly at the forefront of action compared to Bega and Eurobodalla Councils, (online) <http://www.shoalhaven.nsw.gov.au/council/pubdocs/soe/region/indicator%20results%2005/Vegetationclearing%2005.htm>.

[30] See Smith J, 'Making Law Work: Compliance and Enforcement of Native Vegetation Laws in NSW' (2009) 88 *Impact* 3; for an insightful history of the 'Redgums decision' see Flint C, 'River Red Gum: Barking Owls and Broken Laws on the Murray River' (2009) 88 *Impact* 6.

Conversion of Multi-Aged Forests to Regrowth

In the period 1997-2019 'the majority of the timber volumes will come from the multi-aged forests of the region with the transition from 2016 onwards to full regrowth.' Multi-aged forests are clear-felled in the Eden region in 10-100 hectare coupes, in a practice which Forests NSW refers to as 'Modified Shelterwood harvest system'.

The Resource Assessment Commission in 1992 stated that even though some silviculture systems, which include the Modified Shelterwood harvesting system, retain habitat and seed trees these systems are still classified as clear-fell logging.

This conversion of multi-aged forests into regrowth forests is against the principles of ESFM and sustainable yield. The Eden region is the only region in NSW that the multi-aged forest is officially stated as to be converted to a regrowth forest. It is questionable how this management strategy is to maintain all forest values in perpetuity.

One very important forest value is the ability of the forest to sustain biodiversity. The loss of hollow bearing trees has been listed as a Key Threatening Process ("KTP") in New South Wales. The conversion of multi-aged forests into regrowth results in a massive reduction of hollow bearing trees from a sub-optimal 13+ per hectare to 2-6 per hectare. This will have a severe impact on hollow dependent fauna into the future.

The volume per hectare for the Department Position is 0.15018m^3/ha. Applying this to the Actual Reserve Outcome position of 137,510ha results in an estimate sustained yield of 20,651m^3.

This shows that the RFA timber allocation of 23,000m^3 is completely unsustainable by approximately 2,350m^3 per annum. As this situation has been in effect for 10 years approximately 23,500m^3 has been extracted from the region which is more than 1 year of supply at the sustainable yield of 20,650m^3. These figures are extremely conservative as they do not take into account the volume reduction from increased FMZ 3b areas.

Unreliable FRAMES Estimation Without Proper Review

FRAMES timber volumes have reported confidence limits of +-30%. However, there is evidence to suggest that the differences between estimated yields and actual yields are in fact far greater than this.

FRAMES relies on actual timber volumes logged in cut coups to estimate likely timber yields in uncut coups. However, the Eden FRAMES report 1998 noted that post 1994 the yield relationship between cut and uncut coups starts to break down with a subsequent decline in actual volume/ha compared to the estimated volume. The FRAMES report recommended investigation into the declining yields since 1994 as this could have important ramifications to sustainable yield calculations. However, there has been no investigation nor any

change in sustained yield estimations in response to this information.

Possible causes for the decline in yield could be increased tree mortality due to Drought Associated Dieback, climate change or Bell Minor Associated Dieback. Even if BMAD or DAD are not the reason for the past decline they will become a concern for future timber volumes as the area of forest affected is increasing. The impact of climate change on future timber yields was not accounted for in the CRA process.

Consistent Overcut of Committed Yields

SEFR sent a report to OEH on 8/9/08 regarding the over cutting of committed timber yields by Forests NSW being in breach of the NSW FA, RFA and IFOA. The information detailed in the legislation section of this report and in the breach report establishes the principles of ESFM and especially sustainable timber yield. SEFR stands by its opinion that Forests NSW is in breach of the NSW FA, RFA, ESFM plan and the *Forestry Act 1916* by the over cutting of sustainable timber yield.

While the RFA/FA state 'a minimum of 23,00m^3 from the Eden Region' this has to be taken in the context of ESFM and sustainable yield. In both the RFA/FA it also states any increase to these volumes has to be sustainable and consistent with FRAMES. There has been no recalculation of sustainable yield to date for the Eden Region, and so although it says minimum, the 23,000m^3 is also a maximum. The whole concept of sustainable yield is the maximum volume that can be harvested each year in perpetuity; any other interpretation is completely untenable in the context of ESFM and sustainable yield.

OEHs interpretation of clause 5(3) of the Eden IFOA as to why Forests NSW are not in breach of over cutting is shallow reasoning, against one of the core concepts of ESFM, against all other Acts and Agreements and is also demonstrably in error.

While clause 5(3) does seem to negate any limitations on timber volumes there are other clauses in the IFOA which also need to be taken into account and this is what is meant by shallow reasoning on behalf of OEH.

Eden IFOA

> PART 2 – Provisions applying to forestry operations generally
>
> 7. Ecologically sustainable forest management
>
> (1) In carrying out, or authorising the carrying out of, forestry operations SForests NSW must give effect to the principles of ecologically sustainable forest management as set out in Chapter 3 of the document entitled, "ESFM Group Technical Framework" (Ecologically Sustainable Forest Management Group, New South Wales and Commonwealth Governments, July 1999).

This clause states that Forests NSW must give effect to the principles of ESFM. These principles are in Attachment 14 of the RFA:

PRINCIPLES OF ECOLOGICALLY SUSTAINABLE FOREST MANAGEMENT (ESFM)

Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate

Aims for values include

B The productive capacity and sustainability of forest ecosystems

Ensure the rate of removal of any forest products is consistent with ecologically sustainable levels.

Again this reinforces the concept of sustainable yield which Forests NSW must give effect to. Clause 7(2) requires Forests NSW to monitor the indicators for ESFM. As stated earlier indicator 2.1(b) is to report on actual yield against sustainable yield. Clause 7(3) states Forests NSW 'must have regard to any data or information' from the monitoring of indicators. This monitoring should have told Forests NSW and OEH, as OEH writes the annual ESFM reports, that over cutting of sustainable yield was occurring.

PART 7 - Miscellaneous

44. Most restrictive requirement to be complied with

(1) If, in a particular set of circumstances:

(a) more than one requirement applies to the carrying out of forestry operations, and

(b) by complying with the most restrictive of those requirements, all of the requirements will be satisfied, then the most restrictive of the requirements is the one which must be complied with.

(2) A requirement for the purposes of this clause is a requirement imposed by a term of this approval (including a term of a licence set out in this approval) or a document with which this approval requires compliance.

This clause also needs to be taken into account. As there are obviously differing requirements and inconsistency between the IFOA and other Acts and Agreements and also within the IFOA itself then clause 44 must have effect and enforce compliance with the concept of sustainable yield.

The FNPE Act 1998 requires provisions with respect to sustainable timber supply. SEFR finds it hard to accept that Forests NSW are not in breach of the IFOA when they are in breach of the FNPE Act which enables the granting of IFOAs.

Since sending the breach report and waiting almost a year for a reply there has been an additional cl 24 annual volume report obtained by SEFR. Updating the data in the breach report shows Forests NSW are still logging at an unsustainable level.

Section 3.3 Timber Supply Arrangements states 'Continuation of arrangements under existing agreements to allow for the carrying forward into subsequent years of volumes of under cut and over cut'. This clause allows slight variations of over or undercut each year to give some flexibility due to operational constraints. While

there are no values for these arrangements for Eden all other IFOA regions have the same specified values and these are applied in this analysis.

It is clear the intent of all the various Acts and Agreements is the establishment of an ESFM framework as the core principle for the management of the forest estate of NSW. It is also clear that sustainable timber yield is a cornerstone of ESFM which is being neglected. Timber volumes that are unsustainable will have negative implications for not only the environmental values of forests but also for future socio-economic values.

The timber volume of 23,000m^3 is a maximum volume. If this volume is taken as a minimum then there can be absolutely no claim that forestry operations are conducted in accordance with the principles of ESFM and sustainable yield.

The timber volume allocated in the NSW FA/RFA for the Eden region is not derived from FRAMES and is not a sustainable yield volume. The allocated volume is at least 2,350m^3 above sustainable yield which over the past ten years has seen several years of future timber volume already harvested. When combined with the actual over cutting of timber volume above that allocated in the NSW FA/RFA, the future timber supply has been severely compromised.

This situation should have been rectified 8 years ago when the review of sustainable yield was due to be conducted with an updated FRAMES, and if OEH enforced compliance with the allocated timber volumes being harvested by Forests NSW. It is indicative of the failure of the NSW FA and RFA process and outcomes to deliver truly sustainable forest management.

Forests NSW is claiming that timber supply is tight and that they have long term timber contracts to fulfill as to the reasons why they have to log. The real reasons are that the long term contracts are based on unsustainable yields and that Forests NSW have mismanaged the forest by over cutting. For 2010/2011 FNSW state they supplied 380 000 tonnes pa to the SEFE woodchip mill.

Even if Forests NSW log the contentious areas it will not solve the long term problems that have already been inflicted. Therefore the NSW Government needs to cease all operations due to the unsustainability of these forestry operations. Statistics on historic yields show that since 1995 Forests NSW wood production moved increasingly from native forest to plantation. The plantation estate has been the main timber provider prior and during the RFA period. Thus there is no real impediment to industry buyouts which are required immediately to protect the remaining multi-aged forests. This would go some way to lifting barriers to effective climate change adaptation and mitigation. However legislation must be amended to affect this.

ONE OF THE GREATEST IMPEDIMENTS to EFFECTIVE CLIMATE CHANGE ADAPTION: LEGISLATIVE FRAMEWORKS

> To tell deliberate lies while genuinely believing in them, to forget any fact that has become inconvenient, and then, when it becomes necessary again, to draw it back from oblivion for just so long as it is needed, to deny the existence of objective reality and all the while to take account of the reality which one denies—all this is indispensably necessary.[31]

International Obligations

Foresters have eagerly endorsed part of Principle 1 of the UN *Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests* which states:

> (a) States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies…

But the Principle goes on to state:

> And have responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.[32]

It is recognised in the *United Nations Framework Convention on Climate Change* ("UNFCCC") that mismanagement of forests is having a significant impact on the course of climate change in the twenty-first century.[33] The Convention contains responsibilities for mitigation of climate change in an intergenerational equity context and requires parties to take measures to enhance greenhouse gas sinks and reservoirs.[34] It contains provisions for third party dispute mechanisms.[35] Member states are obliged to conserve and enhance carbon sinks and reservoirs.[36]

---

[31] Orwell G, *Nineteen Eighty-Four,* (1949) Penguin Books, England, (reprint 1980), 171.

[32] *Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests* (Rio de Janeiro, 3-14 June 1992) A/CONF.151/26 (Vol. III) emphasis added.

[33] *United Nations Framework Convention on Climate Change* (New York, 9 May 1992), (entry into force generally and for Australia: 21 March 1994) Australian Treaty Series 1994 No 2, ("UNFCC Convention"); the host uses the Global Environment Facility (GEF), a separate institution but guided by the terms of the Convention.

[34] *UNFCC Convention*, art 2, art 4.2(a).

[35] *UNFCC Convention*, art 8.

[36] *UNFCC Convention* art 4.1(d); Promote sustainable management, and promote and cooperate in the conservation and enhancement…of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems; for clarification to comply with sustainable forest management the seven elements for data compilation ESFM must be complied with; these are stated as being (i) extent of forest resources; (ii) forest biological diversity; (iii) forest health and vitality; (iv) productive functions of forest resources; (v) protective functions of forest resources; (vi) socio-economic functions of forests; and (vii) legal, policy and institutional framework; all seven elements must be present and complied with, see Criteria And Indicators For The Conservation And Sustainable Management Of Temperate And Boreal Forests, (2007) (the "Montreal Process"); see also Regional Forest Agreement for the Eden Region of New South Wales between the Commonwealth of Australia and the State of New South Wales August 1999, Attachment 14 cl 44.

The *Kyoto Protocol* mirrors UNFCC stating that each party shall implement Protection and enhancement of sinks and reservoirs.[37] The Protocol also contains an important clause which has wide implication for forestry law, particularly in the context of native forest logging agreements currently being negotiated. The parties agree to:

> (v) Progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions and subsidies in all greenhouse gas emitting sectors that run counter to the objective of the Convention and application of market instruments;[38]

The Montreal Process at Criteria 7.1 provides for the legal, institutional and policy framework for forest conservation and sustainable management and:[39]

> Provides for the management of forests to conserve special environmental, cultural, social and/or scientific values.[40]

Criteria 7.5 requires member states to provide for:

> Enhancement of ability to predict impacts of human intervention on forests; and
>
> Ability to predict impacts on forests of possible climate change.[41]

And at 7.2e is the requirement to 'Enforce laws, regulations and guidelines'.[42]

Under international law liability for the state arises from the failure of the state to carry out its own responsibilities. States can be liable for the failure of the contractor to meet their obligations if it can be proven that there is a link between the liability or obligation of the state, the state's failure to meet its obligation to ensure compliance by the sponsored contractor or company, and the failure of the sponsored contractor or company to comply with their obligations, thereby causing damage.[43] For liability under torts in international law to attach to the parent company, the failure of supervision must be framed as a failure to provide

---

[37] *Kyoto Protocol To The United Nations Framework Convention On Climate Change* Kyoto, 11 December 1997(signed for Australia: New York, 24 April 1998, entered into force generally: 16 February 2005, ratified by Australia on 12 December 2007 entered into force for Australia: 11 March 2008) Australian Treaty Series [2008] 2, art 2(1)(a)(ii); this Convention also contains third party participation at COPs as observers 'Any body or agency, whether national or international, governmental or non-governmental, which is qualified in matters covered by this Protocol and which has informed the secretariat of its wish to be represented at a session of the Conference of the Parties serving as the meeting of the Parties to this Protocol as an observer, may be so admitted unless at least one third of the Parties present object' *Kyoto Protocol* art 13(8); further at art 26 no reservations may be made which is important in a litigation sense in that under the doctrine of reciprocity if a country has made reservations to a treaty when there is a dispute the other party may choose to invoke this, 'a defendant state against which a proceeding is brought may invoke an exclusion or other reservation not stipulated in its own declaration but included in the declaration of the plaintiff state' see Donald K Anton, Jonathan I Charney, Philippe Sands, Thomas Schoenbaum and Michael Young, 'The Nature and Sources of International Environmental Law' Ch3 in *International Environmental Law: Cases, Material, Problems* (LexisNexis Matthew Bender, 2007).

[38] This clause has strong resonance, predominantly as it is stated that the native forestry industry is one of the most heavily subsidised and exempted industries in Australia; see NSW Auditor-Generals Reports 2001 – 2010, (online) <http://www.audit.nsw.gov.au>.

[39] Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests '*The Montréal Process'* Third Edition, December 2007, (online) <www.rinya.maff.go.jp/mpci/>.

[40] *The Montréal Process,* Crit 7.1 a) c) d) e).

[41] The authors have had many conversation with Forests NSW officers who truly believe there is no such thing as climate change.

[42] The Montreal Process also states at 7.4 Capacity to measure and monitor changes in the conservation and sustainable management of forests, including: 7.4.a Availability and extent of up-to-date data, statistics and other information important to measuring or describing indicators associated with criteria 1-7; 7.4.b Scope, frequency and statistical reliability of forest inventories, assessments, monitoring and other relevant information; 7.5.b Development of methodologies to measure and integrate environmental and social costs and benefits into markets and public policies, and to reflect forest-related resource depletion or replenishment in national accounting systems; of which have not been adhered to by Forests NSW.

[43] Case No17, *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area Advisory Opinion No17*, Seabed Disputes Chamber of the International Tribunal for the Law of the Sea, 1 February 2011, [173].

supervision to the subsidiary to prevent environmental harm.[44] Liability may be attributed to these overseas parent companies as a form of transnational harm by proxy.

A state can also be held responsible for the breach of an international obligation if this can be attributed to an act, or omission, of one of its agencies. By approving activities that result in GHG emissions, or by failing to put restrictions into place that prevent harm to other countries, governments are responsible for the resulting transboundary pollution and non-compliance with the no-harm rule.[45]

Australia is liable to meet its various international obligations, and has failed to meet these obligations to ensure compliance by the sponsored contractors, agencies and companies. The sponsored companies and contractors have failed to comply with their obligations, thereby causing damage.[46]

The activity of logging of native forests is sanctioned by Australia. The Forestry Commissions, although trading as Corporations Sole (Forests NSW, VIC Forests or Forestry Tasmania), are state-run agencies.[47] The activity is conducted without restrictions on GHG emissions. There is strong clear evidence of the failure by the Forestry Commission to ensure contractors adhere to obligations. Therefore there is a clear direct line from Australia to the Forestry Commission to their contracted logging companies, which includes South East Fibre Exports, and contractors to the environmental harm of public forests, including greenhouse gas emissions, caused by logging.[48] Thus the state is responsible for the breach of obligations by its sponsored company, by its agencies and by the logging contractors resulting in environmental harm. Therefore Australia could be seen to be in breach of customary law, its obligations under international law and the no-harm rule.[49]

Domestic Legislation

The strict statutory obligations of the *Environment Planning and Assessment Act 1979* (NSW) ("EPA Act"), the *Protection of Environment Operations Act 1997* (NSW) ("POEO Act"), the *Threatened Species and Conservation Act 1995* (NSW) ("TSC Act"), *National Parks and Wildlife Act 1974* (NSW) ("NPW Act 1974")

[44] International Law Association, *Transnational Enforcement of Environmental Law, Second Report* (ILA, 2004); Carl Bruch, and Elizabeth Mrema, *Manual on Compliance with and Enforcement of Multilateral Environmental Agreements*, UNEP (2006).
[45] Christoph Schwarte and Ruth Byrne, 'International Climate Change Litigation and the Negotiation Process' (2008) Foundation for International Environmental Law and Development, (online) <http://www.field.org.uk/files/FIELD_cclit_long_Oct.pdf>.
[46] In the Eden region of New South Wales South East Fibre Exports ("SEFE") contract the logging companies directly, with Forests NSW 'supervision'; there is perceived failure of SEFE to ensure adherence by contractors to obligations to prevent environmental harm, therefore the Japanese multinational Nippon Paper Group, the parent company, has failed to provide supervision to the subsidiary, SEFE, to prevent environmental harm, thus there is a direct line of responsibility from Australia, and the exemptions it affords to SEFE to Nippon Paper Group; in the Southern region the contractors are directly employed by Forests NSW; 95% of the forests of both regions go to the chipmill.
[47] Forests NSW is the name used by the Forestry Commission of New South Wales, a statutory corporation established by the *Forestry Act 1916*, (NSW) s 7.
[48] In 2010 this was calculated to be approximately 26 million tonnes CO^2e per year on the south coast of NSW.
[49] *The Tacna-Arica Arbitration (Chile v Peru)* 2 RIAA (1925) 921 established that it is only material breach which justifies termination or suspension; article 33 of the *Responsibility of States for Internationally Wrongful Acts 2001* sets out the scope of international obligations; 'The obligations of the responsible State … may be owed to another State, to several States, or to the international community as a whole, depending in particular on the character and content of the international obligation and on the circumstances of the breach; at art 33 (2) 'This Part is without prejudice to any right, arising from the international responsibility of a State, which may accrue directly to any person or entity other than a State'.

and the *Environment Protection Biodiversity and Conservation Act 1999* (Cth) ("EPBC Act") are such that, arguably, anyone contemplating illegal activities against native flora, fauna or the environment does so at their peril.[50] Not so the Forestry Commission, trading as Forests NSW, for areas covered under the IFOAs and RFAs.

Commonwealth, State and Local governments are governed by the obligations of the *Intergovernmental Agreement on the Environment 1992* which states:[51]

> The parties consider that the adoption of sound environmental practices and procedures, as a basis for ecologically sustainable development, will benefit both the Australian people and environment, and the international community and environment. This requires the effective integration of economic and environmental considerations in decision-making processes, in order to improve community well-being and to benefit future generations.[52]

Despite numerous legitimate breaches referred to OEH there has been no prosecution for breaches of the EPLs on the South Coast since the signing of the RFAs, and there has only been one prosecution in the whole of NSW.[53] Nevertheless, the output to date of regulatory enforcement actions in no way reflects the rate of non-compliance. On ground assessment evidence suggests that non-compliance rates are now running at four per hectare of forest logged, that is, over ten percent of all areas logged are in breach. The Draft Implementation Report states breaches can run up to ninety one per audit.[54]

Commonwealth Legislation

The Regional Forest Agreements Act 2002 (Cth) ("RFA Act") removes RFA areas from the scope of the *Export Control Act 1982* (Cth) and other associated regulations. Operators are not required to obtain a yearly licence to export woodchips and there are no limits on the amount of woodchips which can be removed.[55] The significance of this is that currently over eighty five percent of south coast native forest is turned into woodchips.

The RFA Act also reinforces those provisions of an RFA agreement which require the Commonwealth to compensate a State.[56] Under an RFA when the Commonwealth takes any action to protect environmental or heritage values in native forests, which prevents or limits the use of land for any forestry operations, compensation is required.

---

[50] Macintosh A, 'Why the Environment Protection and Biodiversity Conservation Act's Referral, Assessment and Approval Process is Failing to Achieve its Environmental Objectives' (2004) 21 *Environment and Planning Law Journal* 288.
[51] *National Environment Protection Council (New South Wales) Act 1995 (NSW), Schedule 1, InterGovernmental Agreement on the Environment 1992.*
[52] For an in-depth analysis on inter-generational equity see Dr Laura Horn**,** 'Climate Change Litigation Actions for Future Generations' (2008) 25 *Environment and Planning Law Journal* 115.
[53] See title page of this report.
[54] See A Draft Report on Progress with Implementation of the New South Wales Regional Forest Agreements, above n 20.
[55] Note: The *Export Control Act 1982* regulates the export of 'prescribed goods'; in 2008 SEFE exported 977,074 tonnes of green wood and recorded a record profit of $10,907,529.
[56] *Regional Forest Agreements Act 2002* (Cth) s 8.

Section 6 removes forestry operations conducted on land covered by an RFA from being subject to the environmental impact assessment provisions in the EPBC Act. This means that no environmental impact assessment under Commonwealth legislation is required.[57]

The EPBC Act effects public participation in environmental law enforcement in a number of ways.[58] The Act states that Part 4 does not apply to forestry operations. Part 4 contains requirements for environmental approvals of activities with a significant impact on a declared World Heritage property, a National Heritage place, a declared Ramsar wetland, a listed migratory species, and actions on listed threatened species or endangered communities are prohibited without approval. It also contains the offences and penalties for breaches of these sections.

The *Amendment Act* 2006 (Cth) reduced rights of the public to participate in decision making processes under the EPBC Act. The public cannot request an emergency listing on the National Heritage list and there is no longer a right to appeal to the Administrative Appeals Tribunal against various decisions by the Minister under Part 13A or s303CC(5), s303FN, s303FO and s303FP.[59]

The greatest threats to Australia's biodiversity are caused by broad-scale land clearing and forestry operations including establishment of plantations and fire management practices, yet these industrial forestry practices continue to remain exempt from legislation because of the RFA regime.[60]

NSW State Legislation

The *Forestry and National Park Estate Act 1998* (NSW).

There are many exemptions for the Forestry Commission under the FNPE Act. The Act states at s 36 that if logging or roading is in an area covered under the IFOAs that Part 5 of the *Environmental Planning and Assessment Act 1979* (NSW) does not apply, an environmental planning instrument under the EPA Act cannot 'prohibit, require development consent for or otherwise restrict forestry operations' and in (5): this applies to an environmental planning instrument made before or after the commencement of this section.[61]

An order under Division 2A of Part 6 of the EPA Act does not have effect, any approval of forestry operations that is in force under Division 4 of Part 5 of the EPA Act has no effect during any period that Part 5 of that Act does not apply to the forestry operations, and any development consent for forestry operations that is in force

---

[57] *Regional Forest Agreements Act 2002* (Cth) s 6 (4).

[58] For discussion on the effectiveness of the EPBC Act in protecting the environment see McGrath C 'Swirls in the Stream of Australian Environmental Law: Debate on the EPBC Act' (2006) 23 *Environment and Planning Law Journal* 165; and see also Macintosh A, and Wilkinson D, 'EPBC Act – The Case for Reform' (2005) 10 *Australian Journal of Natural Resource Law and Policy* 1, p139; see also Macintosh A, 'Environment Protection and Biodiversity Conservation Act An Ongoing Failure' The Australia Institute, July 2006; section 38 is the corresponding section to s36 in the *Forestry and National Park Estate Act 1998* (NSW).

[59] *Environment Protection and Biodiversity Conservation Act 1999* (Cth) s 303GJ.

[60] See The National Strategy for the Conservation of Australia's Biological Diversity (1996).

[61] *Forestry and National Park Estate Act 1998* (NSW) s 36 (1).

under Part 4 of the EPA Act has no effect during any period that development consent under Part 4 of that Act is not required for the forestry operations.[62]

Stop work orders and interim protection orders of the NPW Act and the TSC Act do not apply.[63] An order under section 124 of the *Local Government Act 1993* does not have effect.[64] At s 39 an area in which forestry operations authorised by an IFOA may be carried out cannot be proposed or identified as, or declared to be, a wilderness area under the *Wilderness Act 1987* (NSW) or the NPWA Act.

At s 40 proceedings may not be brought if the breach is:

> a breach of the FNPE Act (including a breach of any forest agreement), a breach of an IFOA (including a breach of the terms of any licence provided by the approval), a breach of an Act or law that arises because any defence provided by any such licence is not available as a result of a breach of the licence, the Act that includes the statutory provision (including a breach of an instrument made under that Act) if the breach relates to forestry operations to which an IFOA applies.[65]

Section 40 also exempts the Act from:

> ..a provision of an Act that gives any person a right to institute proceedings in a court to remedy or restrain a breach (or a threatened or apprehended breach) of the Act or an instrument made under the Act, whether or not any right of the person has been or may be infringed by or as a consequence of that breach.

A contravention of the terms of a relevant licence makes the person carrying out the forestry operations liable for offences for which the licence provides a defence (eg. damage to critical habitat of threatened species under the NPW Act; offence of polluting waters under the POEO Act 1997.[66]

Sheahan J held in *EPA v Forestry Commission (1997)* that:

> The Forestry Commission, although gaining a profit from its activities, carries out a function in the public interest, and the public looks to the public body involved in the industry to set some standard. [67]

Mr Justice Sheahan also held that:

> The forestry industry must be persuaded to adopt preventative measures because the potential for harm to the environment is great, and is a public concern reflected in the relevant legislation.

Section 25b of the FNPE Act states the purpose of the IFOAs are:

> …for the protection of the environment and for threatened species conservation.

---

62 *Forestry and National Park Estate Act 1998* (NSW) s 36(2), (2A), (3), (4).
63 *National Park and Wildlife Act 1974* (NSW) s 37 Part 6A; the *Threatened Species Conservation Act 1995* (NSW) Division 1 of Part 7 (*Forestry and National Park Estate Act 1998* (NSW) s 37).
64 *Forestry and National Park Estate Act 1998* (NSW) s 38.
65 *Forestry and National Park Estate Act 1998* (NSW) s 40 (2)(a), (b), (c), (d); *Forestry and National Park Estate Act 1998* (NSW) 40 (1) also contains exemption from s 219, s 252, s 253 of the *Protection of the Environment Operations Act 1997*.
66 *Forestry and National Park Estate Act 1998* (NSW) note on p21.
67 *EPA v Forestry Commission of NSW* [1997] NSWLEC 96, Sheahan J.

It was a condition under the FNPE Act that the EPA, now OEH 'continue to enforce the conditions' of the Act. When the legislation was introduced by the government the community was given assurances that:

> The agencies which currently have enforcement and compliance powers will continue to have those powers and continue to use them to ensure that the licences are adhered to.[68]

The protection of native forests and the mitigation of climate change impacts is definitely in the public interest. Yet responses to forest auditing breaches have resulted in an apparent unenforceability and lack of compliance with the FNPE Act.

This situation is wholly due to the IFOA being riddled with grey-wording, myriad loopholes and allowances the forestry industry has white-anted into the prescriptions, making conservation bottom priority and DPI output high priority. The promised maintenance of the enforcement of the FNPE Act has not materialised and has been budgeted to redundancy status. In Mogo State Forest for example OEH took no further enforcement action against Forests NSW for a breach when told by Forests NSW that:

> Forests NSW did acknowledge that whilst some of the trees marked for retention did not strictly meet the requirements of hollow-bearing, an adequate number were retained across the landscape when unmarked trees were included in the count.[69]

There is no clause in the Southern Region IFOA allowing unmarked trees to be used in habitat tree retention counts.

The NSW Scientific Committee made a determination in 2007 that the loss of hollow-bearing trees is a key threatening process. During forestry operations thousands of hollow-bearing trees per week are routinely destroyed. Representations have been made to the relevant Ministers recommending changes to forestry operations prescriptions to ameliorate this environmental impact but no change has been made to on-ground forestry activities to prevent this on-going loss.[70]

Even though the RFAs are not law, they are merely agreements, they act as a licence and Forests NSW still must comply with its obligations under the RFAs in order to get an exemption from the EPA Act and TSC Act's requirements. In *Brown v Forestry Tasmania* Marshall J ruled that as Forestry Tasmania had not complied with the RFA it was not exempt from the EPBC Act and the judgment still stands.[71] If the Federal Court decision could be brought down in NSW at this time, then all NSW forestry operations would have to cease.

---

[68] Minister Yeadon, *NSW Legislative Assembly Hansard*, 12 November 1998.
[69] Letter: OEH to T Whan (SEFR) 16/2/09.
[70] This also applies to the Key Threatening Process of removal of dead standing trees.
[71] See *Brown v Forestry Tasmania and Others* [2006] FCA 1729, Marshall J.

Threatened Species Conservation Act 1995 (NSW)[72]

Forests NSW hold licences granted by the Director-General of National Parks and Wildlife. The licence holder must comply with conditions and requirements of the licence. The person carrying out the forestry operations is liable for an offence under the NPW Act.[73] The licence holder is not authorised to harm endangered populations or communities, pick plants that are part of those communities, damage critical habitat or damage the habitat of endangered populations or communities.

As is standard with forestry operations there is a loophole:

> It may be a defence to a prosecution for an offence if the accused proves that the offence was authorised to be done, and was done in accordance with a general licence or was the subject of a certificate issued under s 95 (2) of the TSC Act.[74]

The damage caused by the forestry worker's interpretation of the IFOA Threatened Species Licence prescriptions is systemic and across the board.[75] Despite numerous legitimate breaches referred to the OEH by many NGO and independent forest auditing groups, there has only been two prosecutions for breaches of the TSLs since the signing of the RFAs.[76]

Garth Riddell sums up the TSC Act succinctly:

> After 10 years in operation the TSC Act has not met its primary objectives. Although it has made a small contribution to the conservation of biological diversity and the promotion of ecologically sustainable development, it has not gone far enough. The Act's protections are procedural rather than substantive, its provisions are placatory rather than effective and its operation has been hampered by a lack of funding, lack of will and widespread misunderstanding of the concepts underlying it.[77]

Coastal Protection Act 1979 (NSW)

It is acknowledged that the NSW coastal zone is an environmentally fragile region under increasing pressure from development, and climate change.[78] It is well recognised globally that land-based pollution contributes a

---

[72] Farrier D, 'Fragmented Law in Fragmented Landscapes: the Slow Evolution of Integrated Natural Resource Management in NSW' (2002) 19 *Environment and Planning Law Journal* 89; Farrier D, Kelly AHH, Comino M and Bond M, 'Integrated Land and Water Management in New South Wales: Plans, Problems and Possibilities' (1998) 5 *Australian Journal of Natural Resource Law and Policy* 153.

[73] *National Park and Wildlife Act 1974* (NSW) s 118A.

[74] *National Park and Wildlife Act 1974* (NSW) s 3 (a), s 3(a1).

[75] For example the Southern Brown Bandicoots original prescription was an exclusion zone of 200 hectares around each record of the species but in the latest harvest plan from Nadgee State Forest there is no prescription (Forests NSW Harvest Plan for Compartments 80/81 2009); Forests NSW logged grey-headed flying fox habitat with immunity while the bats were breeding (Cpt 62 Sth Brooman, NSW); Yellow-Bellied Gliders of the Bago Plateau were listed as an endangered population in 2008, in November 2011 FNSW successfully had the IFOA prescriptions changed so they could log with immunity.

[76] *Director-General, Department of Environment, Climate Change and Water v Forestry Commission of New South Wales* [2011] NSWLEC 102; *Director-General, Office of Environment and Heritage v Forestry Commission* [2011] NSWLEC November.

[77] Garth Riddell, 'A Crumbling Wall: The Threatened Species Conservation Act Ten Years On' (2005) 22 *Environment and Planning Law Journal* 446.

[78] Rothwell, Donald R and Baird R, 'Australia's Coastal and Marine Environment' Ch1 in *Australian Coastal and Marine Law*, (Federation Press, 2011); see also Bates G, *Environmental Law in Australia*, 7th ed, (LexisNexis Butterworths, Australia, 2010); House of Representatives Standing Committee on Climate Change, Water, Environment and the Arts, *Managing Our Coastal Zone in a Changing Climate- the Time to Act is Now*, Commonwealth of Australia 2009.

greater percentage to coastal and marine degradation than pollution by maritime sea-dumping and transport.[79] Further it is well recognised that:

> Land clearance for forestry results in significant increases in catchment run-off. This run-off is a major source of elevated sediment and nutrient loadings in estuaries and coastal waters.[80]

Accounting for 40% of the NSW coastline, spanning a distance of 730 km, the Southern Rivers Region covers 2972 km of ocean, of which 33.3% is within marine protected areas.[81] The region comprises the Batemans and Twofold Shelf bioregions. Many state forest compartments are bordered by a saltwater watercourse and 63 state forest compartments are within the Southern Rivers coastal zone. Forests NSW is in effect both the proponent and the determining authority.

The NSW and Commonwealth governments have adopted diffuse land-based marine pollution strategies.[82] However while private activities that occur in the NSW coastal zone are subject to close scrutiny the NSW strategy provides that 'sources that are already formally regulated, including public forestry operations,' will not be covered by the strategy. Conversely the State of the Catchments Report 2010 provides the NSW government's goal to be that 'by 2015 there is no decline in the condition of marine waters and ecosystems'. [83]

In our view these legislation exemptions are not 'rightly framed' and are classic examples of 'flawed legislation'.[84] They are in breach of international obligations on the environment and human rights, they are inequitable and unjust.

FNSW 'Modified Shelter Wood': Gnupa State Forest

[79] Stated as being 80%; see Group of Experts on the Scientific Aspects of Marine Environmental Protection, *Anthropogenic Influences on Sediment Discharge to the Coastal Zone and Environmental Consequences*, UNESCO-TOC: Paris, 1994; Farnsworth K L, and Milliman J D, Effects of Climatic and Anthropogenic Change on Small Mountainous Rivers: the Salinas River Example' (2003) 39 *Global and Planetary Change* 53.
[80] Edgar G J, Barrett N S, and Graddon D J, *A Classification of Tasmanian Estuaries and Assessment of Their Conservation Significance Using Ecological and Physical Attributes, Population and Land Use*, Tasmanian Aquaculture and Fisheries Institute, University of Tasmania, Technical Report No 2, (1999).
[81] Department of Environment, Climate Change and Water (NSW), *State of the Catchments 2010*: Marine Waters and Ecosystems, Southern Rivers region, 2010.
[82] Office of Environment and Heritage (NSW), (online) <http://www.environment.nsw.gov.au/resources/water/09085dswp.pdf>.
[83] National Oceans Office 'Impact From The Ocean/Land Interface' (online) <http://www.environment.gov.au/coasts/mbp/publications/south-east/pubs/impact-ocean-land.pdf>.
[84] Sax J L, *Defending the Environment*, Vintage Books, (1971), Ch 6, 155-156.

CLIMATE CHANGE

> It is somehow wrong to despoil the environment, to act in ways that waste natural resources and wildlife, and to gratify pleasures of the moment at the expense of living creatures who are no threat to us.[85]

Perhaps a barrier to effective climate change adaptation and mitigation is that, while millions upon millions of taxpayer dollars were funnelled into consultants and workshops to produce a plethora of reports aiming to provide an alleged 'up-to-date snapshot' of the whole issue of native forest conservation and timber production, they make no mention of climate change. The timeframe for the CRAs meant that comprehensiveness became a misnomer and the quality of the reports produced left much to be desired from a scientific and social point of view. Besides the fact that all reports begin with a disclaimer that the information therein cannot be relied upon as factual, the key conclusion from the bulk of the reports was that there was not enough scientific knowledge available about forests. For example:

> The modelling project has highlighted some significant areas or species where there still exist gaps in quality data. In the future, it is recommend that further effort is put into systematic targeted surveying of these priority species to enable better presence-absence modelling.[86]

And:

> The previous report concluded that the methodology for estimating the effects of logging management on catchment water yield provided a reasonable "best guess" that was unlikely to be much improved even with the expenditure of considerable effort. This statement applies equally well to this study. Within the limitations of current data availability the methodology represents the current best understanding of the different factors that influence water quantity and quality from forested catchments. However, the absolute magnitude of the estimates are subject to considerable uncertainty.[87]

It is notable that this latter report makes no mention of climate change, even though nine years earlier the Intergovernmental Panel on Climate Change completed its report on the greenhouse effect.

The effects and rate of human-induced climate change have increased dramatically since the RFAs were signed in 1998. Climate change was not considered at all during the CRA process. Further, the significant carbon and water storage aspects of native forests have been inadequately or not addressed at all.

Numerous nationally-listed species in NSW are increasingly threatened by climate change, including species such as the Spotted-tailed Quoll, but the exemptions to the EPBC Act leaves things frozen in time, stopped at 1998, when climate change was not considered.

---

[85] D'Amato A, 'What Obligation Does Our Generation Owe the Next? An Approach to Global Environmental Responsibility' (1990) 190 *American Journal of International Law*.

[86] 'Modelling Areas of Habitat Significance for Vertebrate Fauna and Vascular Flora in the Southern CRA Region' project number NS 09/EH February 2000 NSW NPWS.

[87] ESFM Project: 'Water Quality and Quantity for the Southern RFA Region' project number NA 61/ESFM November 1999 Sinclair Knight Merz.

Climate change will dramatically increase other threats to species in the region, through increased spread of invasive species, increased fire frequency and severity, increased spread of forest dieback, and reduced stream flows. The cumulative impact of all these threats, plus industrial logging operations operating under an exemption to the EPBC Act and the RFAs, have resulted in a major impact on nationally-listed species.

Conditions placed on logging to ameliorate impacts as a result of the RFAs are increasingly inadequate as climate change escalates. Forest authorities accounting and information systems fail to assess the true value of carbon and water resources that are stored in native forests.

Young people from four hundred and fifty nations gathered in Bonn for the UN Talks on Climate Change. Their declaration states:

> World leaders and negotiators of the climate deal, our survival is in your hands. We trust that you will take immediate action to stop deforestation, and industrial logging of the world's biodiverse forests. We are depending on you to protect our forests and provide us with a healthy, ecologically sustainable, low carbon future.

They called for:

- Immediately end deforestation, industrial scale logging in primary forests, the conversion of forests to monoculture tree crops, plantations;
- Protection of the world's biodiverse forests including primary forests in developed countries (e.g. Australia, Canada and Russia) and tropical forests in developing countries;
- Respect for the rights of women, Indigenous peoples and local communities and allow them to lead healthy and sustainable lives whilst stopping deforestation and industrial logging of primary forests in their country, and;
- To not allow developed countries to use forest protection and the avoiding deforestation and industrial scale logging of primary forests in other countries as an offset mechanism for their own emissions.

Galaxy Research conducted a public opinion poll in July 2009. The question was:

> The Australian National University has found that Australia's native forests contain a large amount of carbon that would be protected by ending forest clearance. In your opinion, do you agree or disagree that the Rudd government should stop the logging of native forests?[88]

The results were:

Strongly Agree: 43%	Agree: 35%	Total Agree: 78%	
Strongly Disagree: 3%	Disagree: 11%	Total Disagree: 14%	Don't know/refused: 8%

[88] Galaxy Research, Sample: 1100 Australians, 24-26 July, 2009, <http://www.galaxyresearch.com.au/index.php?page=galaxy-omnibus>; Galaxy Poll, Galaxy Research- 28/30 May 2010, Job:100502A.

In 2010 Galaxy conducted another poll. Three in four (77%) Australians want the government to stop the logging of native forests and almost three in four (72%) Australians favoured the Federal Government assisting logging contractors to take redundancies, retrain or move permanently to a plantation based industry.

Given what is now known, and all that is still yet to learn, about native forest ecosystems and about the effects of climate change, the non-enactment of the precautionary principle verges on the criminal.

Maintaining the Forest Global Carbon Pool

> The Government's land-use policy frame is fundamentally erroneous. Native forests, the less efficient resource for forestry industry competitiveness, are tagged for wood production with lost opportunities for the job they do best: carbon storage. Plantations, the less efficient and less reliable resource for carbon storage, are tagged for carbon storage with lost opportunities for the job they do best: wood supply.[89]

Both the State and Federal Governments have expressed the need to have full and frank regard for the urgency of action on climate change. One of the practices that must change is the degradation of the native forest estate.

> With Australia's existing plantations able to meet virtually all our wood needs, whether for domestic consumption or export, native forests are available for immediate climate change mitigation.[90]

Conditions placed on logging native forests to ameliorate impacts as a result of the RFAs are increasingly inadequate as climate change escalates. Forest authorities' accounting and information systems fail to assess the true value of carbon and water resources that are stored in native forests. There is no reporting on total native forest ecosystem biomass, the figures provided are for plantations only. The value of these stored resources in native forests far exceed the royalties received from logging operations, even when carbon is conservatively valued at a price of twenty dollars a tonne.

Brendan Mackey et al states:

> Forest protection is an essential component of a comprehensive approach to mitigating the climate change problem for a number of key reasons. These include: For every hectare of natural forest that is logged or degraded, there is a net loss of carbon from the terrestrial carbon reservoir and a net increase of carbon in the atmospheric carbon reservoir. The resulting increase in atmospheric carbon dioxide exacerbates climate change.[91]

And

> The remaining intact natural forests constitute a significant standing stock of carbon that should be protected from carbon emitting land-use activities. There is substantial potential for carbon sequestration in forest areas

---

[89] Ajani J, 'Australia's Transition from Native Forests to Plantations: The Implications for Woodchips, Pulpmills, Tax Breaks and Climate Change' (2008) 15 *Agenda: A Journal of Policy Analysis and Reform* 3.

[90] Ajani J, 'Time for a Coherent Forest Policy - Finally' (2008) Centre for Policy Development, (online) <http://cpd.org.au/article/time-coherent-forest-policy-finally>.

[91] Mackey B, Keith H, Lindenmayer D, Berry S, 'Green Carbon: The Role of Natural Forests in Carbon Storage, Part 1, A Green Carbon Account of Australia's South-eastern Eucalypt Forest, and Policy Implications' ANU E Press, (2008), (online) < http://epress.anu.edu.au/green_carbon_citation.html>.

> that have been logged if they are allowed to re-grow undisturbed by further intensive human land-use activities. Our analysis shows that in the 14.5 million ha of eucalypt forests in south-eastern Australia, the effect of retaining the current carbon stock (equivalent to 25.5 Gt CO_2 (carbon dioxide)) is equivalent to avoided emissions of 460 Mt CO_2 yr for the next 100 years.[92] Allowing logged forests to realize their sequestration potential to store 7.5 Gt CO_2 is equivalent to avoiding emissions of 136 Mt CO_2 yr-1 for the next 100 years. This is equal to 24 per cent of the 2005 Australian net greenhouse gas emissions across all sectors; which were 559 Mt CO_2 in that year.[93]

The report goes on to state:

> We can no longer afford to ignore emissions caused by deforestation and forest degradation from every biome (that is, we need to consider boreal, tropical and temperate forests) and in every nation (whether economically developing or developed). We need to take a fresh look at forests through a carbon and climate change lens, and reconsider how they are valued and what we are doing to them.[94]

In NSW Forest degradation in 2006 created over seventeen percent of NSWs greenhouse gas emissions.[95] Ending native forest logging would assist in reducing the greenhouse gas emissions of the State.

> The clearing of native forests and woodlands and their degradation - mainly through logging - generates a conservatively estimated 18 per cent of Australia's annual greenhouse gas emissions.[96]

Professor Peter Wood and Professor Judith Ajani indicate that at CO_2 prices of just ten to fifteen dollars per tonne, which is less than the Garnaut Review's recommended starting price for carbon pollution permits, hardwood plantation owners will receive more money from growing carbon than wood.[97]

In the Garnaut Report 2011, Transforming Rural Land Use, the CSIRO estimated that if native forest harvesting were to cease, there is a technical potential for abatement of 47 million tonnes of carbon dioxide each year from 2010 to 2050.

Australia is very fortunate, by letting previously logged native forests regrow to their natural carbon carrying capacity, the ANU scientists estimate that they would soak up around 7500 million tonnes of CO_2-e over the coming one hundred to two hundred years.[98]

---

92 Gigatonne (Gt) equals one billion or 1.0 x 109 tonnes; Megatonne (Mt) equals one million or 1.0 x 106 tonnes.
93 Mackey et al, above n 91.
94 Mackey et al, above n 91, 13.
95 Department of Climate Change 2008 *Australia's National Greenhouse Accounts 2006 State and Territory Greenhouse Gas emissions*, 17; the figure is 17.2%.
96 Blakers M, 'Comments on Garnaut Climate Change Review: Issues Paper 1 Land-use – Agriculture and Forestry' (2008).
97 Wood P J and Ajani J, Submission to the Commonwealth Government on the Carbon Pollution Reduction Scheme Green Paper + Addendum, (2008).
98 Ajani J, above n 90.

Native Forest Woodchip and Pellets are not 'Waste'

> ***re•new•able /r{I}'nju:{shwa}bl; NAmE 'nu:/ adj.***
>
> 1. capable of being renewed. 2. (of energy or its source) not depleted when used. 3. [usually before noun] (of energy and natural resources) that is replaced naturally and can therefore be used without the risk of finishing it all: renewable sources of energy such as wind and solar power.[99]

Background

As stated approximately 35 per cent of greenhouse gases in the atmosphere are due to past deforestation, and an estimated 18 per cent of annual global emissions are the result of continuing deforestation.[100] In accordance with the *Rio Declaration,* the *Montreal Process* and the *Intergovernmental Agreement on the Environment 1992,* the *Heads of Agreement on Commonwealth and State Responsibilities for the Environment 1997* stated:[101]

> The Commonwealth has a responsibility and an interest in relation to meeting the obligations under the United Nations Framework Convention on Climate Change, in co-operation with the States, through specific programmes and the development and implementation of national strategies to reduce emissions of greenhouse gases, and to protect and enhance greenhouse sinks.[102]

Following this a nationally ratified policy on reducing greenhouse gases ("GHGs") was laid out in the National Greenhouse Strategy 1998 and yet, since these agreements, New South Wales has not furthered mechanisms to assess and arrest Forests NSW forest degradation or to reduce greenhouse gas emissions of native forest logging.[103] Rather, the increase in hectares of native forest logged and burnt on the south coast over the last two years suggests a 'red-light' mentality, the fear that the woodchipping industry has come to the end of its shelf life, driving the felling of forests at an ever increasing industrial rate.[104]

These industrial logging practices contribute significant and continuing emissions of carbon dioxide into the atmosphere which reduce the stock of carbon stored in the ecosystem.[105] On the south coast of NSW logging

---

[99] Oxford English Dictionary.

[100] Stern N, The Stern Review above n 1; Houghton J T, above n 3; Intergovernmental Panel on Climate Change, *Climate change 2001* above n 3; see also Food and Agriculture Organization of the United Nations above n 3.

[101] The Rio Declaration, *Convention on Biological Diversity,* Rio de Janeiro, 5 June 1992, entry into force for Australia: 29 December 1993, Australian Treaty Series 1993 No 32; the *Intergovernmental Working Group in Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests (Montreal Process).*

[102] Council of Australian Governments, November 1997, Matters of National Environmental Significance, Attachment 1, Part II (8) (online) <http://www.environment.gov.au/epbc/publications/coag-agreement/index.html>.

[103] In fact, despite these agreements, the State and Federal governments introduced legislation in 1998, the *Forestry and National Park Estate Act 1998* (NSW) and the subordinate Regional Forest Agreements that made logging exempt from environmental impact statements and civil litigation and made no mention of climate change or greenhouse gases.

[104] In 2004/05 Forests NSW logged 7592ha, in 2005/06 10 709ha, in 2006/07 13 811ha and 2007/08 14 388: NSW Forest Agreements Implementation Reports 2005/2006, 2006/2007: Upper North East, Lower North East, Eden and Southern regions, Resource and Conservation Unit, NSW Department of Environment and Climate Change NSW, Sydney; Digwood FOI figures 4 Feb, 2008 p; it is stated that FNSW has only 80 000ha as total land tenure in the Southern Region..

[105] Mackey B et al, above n 91; see also *The Stern Review on the Economics of Climate Change*, Summary of Conclusions, (online) <http://webarchive.nationalarchives.gov.uk/+/http:/www.hmtreasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm>.

operations in mixed-age, mixed-species forest removes approximately 60% to 90% of existing crown cover.[106]

In addition to this, road construction and post-logging burning is resulting in extensive accumulated damage to the environment and the atmosphere.[107] There is little evidence of regeneration after FNSW logging, or care of the health of residual trees. Trees are selected for removal based on wood supply agreements to Boral, Blue Ridge Sawmill and SEFE woodchip mill.

The Carbon Neutral Myth

Another barrier to effective climate change adaptation and mitigation is that the accounting now used in Australia for assessing CO_2 emissions drawn from the *Kyoto Protocol* contains a flaw that severely weakens greenhouse gas reduction goals. CO_2 emissions from chimneys of biomass power stations when 'bioenergy' is used are discounted.[108] This accounting erroneously treats all bioenergy as carbon neutral regardless of the source of the biomass, which causes large differences in net emissions. The clearing of long established native forests to burn wood or to grow energy crops is counted as a 100% reduction in energy emissions, despite causing large releases of carbon and despite international protocols against logging of native forests.[109]

At issue is the methodology that CO_2 released during combustion of biomass equals that taken up during growth and the basing of all GHG calculations on this. Eucalypt forests recovery for removal of CO_2 from the atmosphere can take more than a 100 years.[110] On average the recovery rate is 53 years for 75% carrying capacity and 152 years for 90% carrying capacity.[111] Currently logging rotations are sometimes barely five years.[112] Forests NSW state:

> Harvesting cycles vary between native forest types with a typical cycle of 5-30 years for native forest.[113]

Therefore the assumption that there are near-equilibrium conditions (synchrony) in native forest logged by Forests NSW on the south coast is erroneous.[114] Forests NSW do not replant after logging native forest, have

---

[106] Often residual crown cover is approximately 10% or less, particularly in the Eden region; this is illegal under the Southern Region IFOAs which state contractors must leave 55% of net basal area under Single Tree Selection: see Forests NSW Harvest Plan Compartment 186: Mogo, Batemans Bay.

[107] For photographic evidence see (online) <http://www.flickr.com/photos/southeastforestrescue/>; <http://www.chipstop.forests.org.au/>; <http://www.serca-online.org>; <http://www.acr.net.au/~coastwatchers/>; <http://www.fiveforests.net>.

[108] *Kyoto Protocol* art 3 (7).

[109] Mackey et al, above n 91; 'For every hectare of natural forest that is logged or degraded, there is a net loss of carbon from the terrestrial carbon reservoir and a net increase of carbon in the atmospheric carbon reservoir. The resulting increase in atmospheric carbon dioxide exacerbates climate change.'

[110] Roxburgh S H, Wood SW, Mackey B G, Woldendorp G, and Gibbons P, 'Assessing the Carbon Sequestration Potential of Managed Forests: a Case Study from Temperate Australia' (2006) 43 *Journal of Applied Ecology* 1149.

[111] Dean C, Roxburgh S, Mackey B, 'Growth Modelling of Eucalyptus regnans for Carbon Accounting at Landscape Scale' in Amaro A, Reed D, and Soares P, [eds] *Modelling Forest Systems*, CAB International 2003.

[112] For example Compartment 62 (Sth Brooman) logged in 1972, 1973, 1978, 1982, 1990, 2002, 2009.

[113] Forests NSW Consolidated Annual Financial Report, Year ended 30 June 2007, 18-19.

[114] Performance Audit 'Sustaining Native Forest Operations' *Auditor-General's Report*, 2009: this statement was made concerning the North Coast RFA areas, Forests NSW had not provided data on the Southern and Eden areas, 'reviews of yield estimates for the southern region, due in 2004 for Eden and 2006 for Tumut and the south coast, have not been completed'.

only 23,000 hectares available for sequestration and rarely do regeneration surveys.[115]

> For Forest Land, synchrony is unlikely if significant woody biomass is killed (i.e., losses represent several years of growth and C accumulation), and the net emissions should be reported. Examples include: clearing of native forest.[116]

As ocular evidence suggests, currently on the ground, the native forests logged are not regrowing nor are they being replanted. If the forest regrew and was not logged with such frequency then this theory might hold, and perhaps holds in EU countries where this system was developed, and where the main source of wood is from plantations.[117]

Also at issue is Forests NSW claim that emissions from actual logging operations is separate and the responsibility of the contractors and therefore Forests NSW have no liability to count them. SEFE claim that the emissions from logging are indirect and they have no liability to count them. The definition of impact and direct and indirect effects of greenhouse gas emissions has been well defined in several jurisdictions of Australian Courts. In the *Nathan Dam* case Black CJ, Ryan and Finn JJ held that 'impact' is not confined to direct effects but includes effects that are or would be a consequence of the action.[118] In both the *Hazlewood* case and the *Anvil Hill* case it was held that the impacts of Scope 1, 2 and 3 emissions must be considered.[119] In *Gray v The Minister* it was held that environmental assessments must also consider the emissions from the use of the product.[120] Of course these findings were made in their particular statutory contexts however:

> Carbon accounts for industrialized forests must include the carbon emissions associated with land use and associated management, transportation and processing activities.[121]

Forests NSW also claim there is a lack of full scientific data on land use change and this makes it difficult to calculate GHG emissions. Although it seems widely acknowledged that Land Use Change and Forestry accounting is difficult and uncertain, given the great deal of data, including LandSat images and records kept in Arc View, ESRI and Forests NSW own office records on past compartments logged, it would seem this argument is alio intuitu.[122] Article 3 of the *Kyoto Protocol* states at (3) that:

---

[115] SEFR requested these surveys from Forests NSW and received a five line five column table that stated there had been four surveys conducted but there was no documentation, pers com to author from Daniel Tuan, Forests NSW Batemans Bay; see the aptly titled Sustain Greenhouse Gas Consultation Paper Submission, Forests NSW, Nick Cameron, 1/5/2008.

[116] *2006 IPCC Guidelines for National Greenhouse Gas Inventories*, Vol 4: Agriculture, Forestry and Other Land Use, Chapter 2: Generic Methodologies Applicable to Multiple Land-Use Categories, 2.4; the figures used for boreal forests in the IPCC document are from research published in 1998 which has now been superseded by more current data (online) < www.ipcc-nggip.iges.or.jp>.

[117] *2006 IPCC Guidelines for National Greenhouse Gas Inventories,* above n 116; in Germany and throughout most of Europe foresters are employed to count and measure at dboh every tree in the plot.

[118] *Minister for the Environment and Heritage v Queensland Conservation Council Inc* (2004) 134 LGERA 272, [288]; see also *Re Australian Conservation Foundation* [2004] VCAT 2029.

[119] *Re Australian Conservation Foundation* [2004] VCAT 2029; *Gray v the Minister for Planning* [2006] NSWLEC 720.

[120] Rose A, '*Gray v Minister for Planning*: The Rising Tide of Climate Change Litigation in Australia' (2007) 29 *Sydney Law Review* 725; if calculations were made on the cardboard and paper that is made, used, then thrown away, from the woodchips of native forests, then the totals of GHG calculations would be much higher.

[121] Mackey et al, above n 91.

[122] For example Forests NSW has logged 182 528 hectares of native forests in the south east alone since 1990; it is possible to compare Google Earth images with past LandSat images.

> The greenhouse gas emissions by sources and removals by sinks associated with those activities shall be reported in a transparent and verifiable manner.

The total CO_2 emissions caused by native forest logging on the South Coast for 2006/07 were computed to be 26 383 239tCO_2e.[123] On these figures it is estimated that for every hour of logging of native forest on the south coast more than 11 451 tonnes of CO_2 released. This is the equivalent of 6.3 million cars with an estimated social cost of $2.1billion.

The SEFE woodchip mill is situated in Eden at Twofold Bay. Twofold Bay provides important habitat for endangered and threatened marine life, cetaceans and migratory birds. Many bird species are listed under JAMBA or CAMBA and known to occur in the area.[124] The SEFE land is foreshore land that also adjoins the Ben Boyd National Park, Towamba River and Twofold Bay estuary. It is an iconic tourist destination for whale watching. Twofold Bay is the only ocean embayment in the Twofold Shelf bioregion and the area has recently been declared a Marine Park.[125]

The economic downturn in the export woodchip market signalled that perhaps there was hope for the protection of the remnant native forest of the south east.[126] Prices for woodchips dropped, mills in Japan closed and the Eden chipmill closed for three weeks, reopening on a four day timetable.[127] Then came the news that SEFE had submitted a development proposal to Bega Valley Shire Council for a pellet factory, to be built on the site of the chipmill, using 'waste'. The proposed site is less than three kilometres directly south of Eden on the other side of Twofold Bay.

SEFE allege pellets are considered to be carbon-neutral technology when compared to other systems that burn

---

[123] Data is from Forests NSW Implementation Report 2004/05 and 2006/07, 2006/07 Forests NSW Harvest Plans; ESRI; Digwood FOI info 2009; ocular evidence; on Forests NSW data it seems one vehicle uses 110L of fuel per year.

[124] *Japanese Australian Migratory Bird Agreement* Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment (Tokyo, 6 February 1974) Entry into force: 30 April 1981 *Australia Treaty Series 1981* No 6*; Chinese Australian Migratory Bird Agreement* Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment (Canberra, 20 October 1986) Entry into force: 1 September 1988 *Australia Treaty Series 1988* No. 22; the hooded plover (*Thinornis rubricollis*) and the shy albatross (*Diomedea cauta*), black-browed albatross (*Diomedea melanophrys*), sooty albatross (*Phoebetria fusca*) and pied oystercatcher (*Haematopus longirostris*) beach stone curlew, bush stone curlew, humpback whales (*Megaptera novaeangliae*) southern right whales (*Eubalaena australis*) and blue whales (*Balaenoptera musculus*) as well as other cetaceans including dolphins and pilot whales, the short-tailed shearwater (*Puffinus tenuirostris*), australian reef egret (*Egretta sacra*), white-bellied sea-eagle (*Haliaeetus leucogaster*) and grey plover (*Pluvialis squatarola*) little tern (*Sterna albatross*), black bittern (*Lybrychs flavicollis*), sooty oystercatcher (*Haematopus fuliginous*), pied oystercatcher (*H longirostris*), sanderling (*Calidris alba*) and lesser sand plover (*Chardris mongolus*). Fish such as black cod, seahorses, benthic organisms, poseidon seagrass populations and habitat; the power station will have two process water requirements. Boiler make-up water will be required to replace blow-down water at the rate of 1 – 1 ½ % of the steam flow rate, or about 275 litres per hour and sea water will be used to dissipate the heat and be pumped from a point on SEFE's wharf, through the heat exchanger and returned to the sea some 15 – 20 degrees warmer; Giant Kelp has receded to Tathra because of warming ocean temperature levels, Dr Alan Miller.

[125] Breen D A, Avery R P, and Otway N M, *Broadscale Biodiversity Assessment of Marine Protected Areas in the Batemans Shelf and Twofold Shelf Marine Bioregions* (2005) Final Report, NSW Marine Parks Authority; an ocean embayment is a semi enclosed bay that is a transitional zone between estuaries and the oceans, which provides habitat for communities of both environments.

[126] Possibly due to the GFC, a number of hardwood and softwood plantations coming on line and a disease in Canada that forced the mass culling of trees creating a glut on the market; the introduction of the amendments to the *Lacey Act* in America has already had a significant impact on the import of woodchips in that country, importers are now required to declare species, country of origin, value and volume of the plant or plant products see *Amendments to the Lacey Act from H.R.2419 2008* (US), Sec 8204, *The Lacey Act*, Chapter 53 of Title 16, United States Code, ss3371 - 3378.

[127] ABARE Australian Forest and Wood Products statistics, March and June Quarters 2009; there was a seven per cent fall in the value of woodchip exports, which fell below $1 billion, the volume of woodchip exports also fell, with a decrease of 15 per cent; (online) < http://www.abare.gov.au/publications_html/news/news/news.html>; yet the rate of logging did not decrease.

fossil fuels and have minimal greenhouse gas emissions but as the woodchipping industry has a high GHG emission output therefore neither the industry nor the pellet factory can be classed as carbon neutral.[128]

Climate change and pollution mitigation measures are currently great matters of public interest. Given the evidence on climate change, the adverse impacts of native forest logging's GHG emissions, the effect on water supply, the loss of biological diversity, the loss of ecological integrity and the pollutants wood-fired power stations emit, it would therefore be difficult to argue that this project will have positive environmental outcomes and certainly does not fit the definition of zero emission technologies.

The alleged premise of using native forest 'waste' is to help the State government meet renewable energy targets at least-cost. As there are only labour and transport costs the least-cost philosophy has been superficially applied. With closer investigation it seems the subsidisation of the woodchipping industry is the hidden enabler. Without these subsidies woodchipping and pellet making is not competitive with other fossil-based industries because of high capital cost and large logging and transportation emissions.[129]

Further without native forest being logged there would be no 'waste'. The material to be used for the pellets is not "waste" and could not exist if over one million tonnes of trees, equating to a figure of almost 19,000 hectares of forest, were not logged each year to supply the chipmill. Further the logging of native forest provides an economic incentive to produce more woodchips.

While this proposed factory is alleged to be small, it is described as a pilot project and could easily expand. This is analogous to when woodchipping was first proposed for Eden, where the proposed amount of feed stock (native forest) was to be 5,000 tonnes a year for just 5 years. That figure is now over a million tonnes every year.

All of the logs that go to the chipmill has current economic benefit to SEFE. These logs are called 'Pulp' which the industry call waste, however they are in actual fact whole logs, the chipping machine cannot use branches and leaves which is left on the forest floor.

The *Renewable Energy General Regulations 2001* (Cth) states:

---

[128] In SEFE's original proposal to Bega Valley Shire Council they stated the project would not emit any GHGs.

[129] See Santisirisomboon J, Limmeechokchai B, Chungpaibulpatana S, 'Impacts of Biomass Power Generation and CO_2 Taxation on Electricity Generation Expansion Planning and Environmental Emissions' (2001) 29 *Energy Policy* 975; Palmer K, and Burtraw D, 'Cost-Effectiveness of Renewable Electricity Policies' (2005) 27 *Energy Economics* 873; Spinellia R, Ward S M, Owendec P, 'A Harvest and Transport Cost Model for Eucalyptus spp. Fast-growing Short Rotation Plantations' (2009) 33 *Biomass and Bioenergy* 1265; see also Commission of the European Communities, Brussels, 7.12.2005 COM(2005) 627 Final Communication from the Commission 'The Support of Electricity from Renewable Energy Sources' {SEC(2005) 1571}: this analysis sheds light on international effectiveness of biomass energy, (online) <http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc>; Forests NSW sell logs to SEFE a $6.90/tonne; the NSW and Victorian governments subsidised the Eden chip mill by approximately $8 million in 2006-2007.

For section 17 of the Act, biomass from a native forest is not an energy crop.[130]

The REG Regs restricts the type of wood 'waste' that qualifies as eligible renewable energy source.[131] Offcuts, waste from woodchipping and sawmill waste are included in this restriction.[132] Prohibited material specifically includes waste arising from woodchipping.[133] To qualify in RFA areas the forest must be logged for a purpose other than biomass for energy production and:

1. be a by-product of logging that is carried out **in accordance** with Ecologically Sustainable Forest Management principles;
2. be a by-product where forests are logged for the **primary purpose** of a high value process.[134]

The REG Regs state that the term 'waste' does not apply to wastes originating from:

(a) forestry or broadacre land clearing for agriculture, silviculture and horticulture operations;

Also, in our view, SEFE must also specify the source of the woodchips or pellets and must prove that no native forest will be felled for the particular purpose of feeding the pellet factory.[135] Further if there is more than one source SEFE must specify tonnes from each source. They must declare if any of the sawmills use logs from native forests and attach a report specifying the ratio of sawmill residue production to timber production for each sawmill.[136]

We have strong clear evidence that the logging in the Southern and Eden regions is not carried out in accordance with ESFM. We have strong clear evidence that the logging is not carried out for the primary purpose of a high value process.

Australia is only now, slowly, coming in from the cold. After eleven years of ridicule from international

[130] *Renewable Energy Electricity Regulations 2001* (Cth).
[131] *Renewable Energy Electricity Regulations 2001* (Cth) r 8.
[132] For thorough analysis see Prest J, 'Forests Law' Ch 13, in Environmental Law Handbook 5th Ed, Farrier D and Stein P (eds), Redfern Legal Centre Publishing, 2011.
[133] *Protection of the Environment Operations (General) Regulation 2009* (NSW) cl 96.
[134] *Renewable Energy Electricity Regulations 2001* (Cth) div 2.2 (6)-(9).
[135] *Renewable Energy Electricity Regulations 2001* (Cth) div 2.2 cl 8; 97% of logs in Eden are processed by SEFE; as clearfelling and logging for pulp is disallowed FNSW call these operations Modified Shelter-wood, Australian Group Selection and thinnings; currently 85% of all native forest logged goes to the chipmill using this rationale, of the 15% that goes to sawmills 50% ends up chipped and sent to SEFE; in 2002 when the NSW Government was pushing for a charcoal plant at Mogo the Minister stated "No tree will be cut for the sole purpose of charcoal production. All timber supplied is a by-product of sawlog harvesting";SEFE too is no stranger to mendacity. The company has already faced an ACCC prosecution over their use of the words 'Green Power' on promotional material. They have been disallowed from falsely misleading the public and have since modified their promotional material to read 'green energy'.
[136] Greenhouse Gas Emissions from Electricity Supplied in NSW Workbook October 2000 *Electricity Supply Act 1995* (NSW) Reporting of Greenhouse Gas Emissions from Electricity Supplied in NSW *Assigned Generation Declaration* sB; sawmill residue is defined as being from sawmills and not woodchip mills found in the *Export Control (Hardwood Wood Chips) Regulations 1996* (Cth) Part 1 (3); and at (b) rejection by a veneer mill, sawmill or other processing plant (other than a wood chipping plant) of a log found to be defective for the purposes of producing a commercial timber product, where the defect could not have been found on any reasonable inspection of the log before its arrival at the plant for processing, however if mechanical harvesters are used the primary product becomes woodchips: see Connell M J, *Log Presentation: Log Damage Arising From Mechanical Harvesting or Processing* Project no: PN02.1309, Report Prepared for Commonwealth Forest and Wood Products Research and Development Corporation, CSIRO Forestry and Forest Products, 2003.

quarters the government has the chance to gain international respect if the right decisions are made. The governmental practice of decrying Indonesia's illegal logging while sanctioning illegal logging in Australia has not gone unnoticed by the rest of the world.[137] Thus it appears that the governmental sanctioning of native forest logging endorses the huge amounts of GHG emissions released.[138]

Until Australia and in particular NSW, remove the civil litigation exemptions from legislation, use separate accounting practices for native forest and plantation estates, conduct both pre and post-harvest audits, prepare environmental impact statements for the compartments and discontinue clearfelling practices, the native forest industry will continue to operate outside the law and be a permanent barrier to effective climate change mitigation and adaptation.[139]

Further if the definition of renewable technologies are that they do not release greenhouse gases and utilise zero carbon resources then, as the industrial patch clearfelling of the south east is the antithesis of renewable, to continue to class native forest logging as carbon neutral seems willfully negligent and transparently disingenuous.[140]

Biodiversity

It is well recognised that climate change will dramatically increase other threats to species in the region, through increased spread of invasive species, increased fire frequency and severity, increased spread of forest dieback, and reduced stream flows. The cumulative impact of all these threats compounded by industrial logging operations operating under an exemption to the EPBC Act and the RFAs, have resulted in a major impact on threatened species and again is a barrier to effective climate change adaptation and mitigation.

The numbers of threatened species, threatened populations and ecological communities increased significantly since the RFAs were signed and many threatened and endangered flora and fauna species are at extreme risk from current logging operations. The Reserve system gazetted to date, along with the off-reserve protection measures of the IFOAs, are neither comprehensive, representative, or adequate to meet the needs of threatened species survival. The number of threatened plant and animal species, and the number of endangered ecological communities in NSW between 2001 and 2009, threatened animal species increased by 21% in that time to reach 353 species, the number of threatened plant species grew by 23% to 663 species and the number of endangered

---

[137] Australia won the Fossil Award in 2009; see also *Forestry Commission v Daines* 1/12/2009 Deniliquin Local Court where the Magistrate made a clear finding on the evidence that a Part 3A approval under the *Environmental Planning and Assessment Act 1979* (NSW) is required for the Barmah/Millewa logging operation and had not been obtained; he concluded, therefore, that the logging was unlawful.

[138] 'The laws of nature that account for the global carbon cycle operate irrespective of political boundaries, therefore, a unit of carbon emitted due to deforestation and forest degradation in Australia, the United States, Canada or Russia has exactly the same impact on atmospheric greenhouse gas levels as a unit of carbon emitted from deforestation and degradation of forests in Indonesia, Papua New Guinea, the Congo Basin or Brazil' Mackey et al, above n 91.

[139] See *Forestry and National Park Estate Act 1998* (NSW) ss38-40.

[140] Woolf T and Biewald B, 'Efficiency Renewables and Gas: Restructuring as if Climate Mattered' (1998) *Electricity Journal* January/February 64.

ecological communities grew by 115% so that there were 101 threatened communities in 2009.[141]

The Scientific Committee's figure for NSW species, populations or ecological communities threatened with extinction in 2009 was 1035.[142] This figure, when compared to the 1998 figure of 868 is the most indicative of the RFAs effect on our environment.[143]

A recent report by Professor Richard Kingsford, Professor Brendan Mackey and a think tank of thirteen eminent scientists stated that:[144]

> Loss and degradation of habitat is the largest single threat to land species, including 80 percent of threatened species.[145]

As evidenced the greatest threats to Australia's biodiversity are caused by broad-scale land clearing and forestry operations including establishment of plantations and fire management practices, yet these industrial forestry practices continue to remain exempt from legislation and will remain a barrier to effective climate change adaptation and mitigation until either these exemptions are lifted or native forest logging ceases.[146]

Forest Classification

The older a forest is the more effective a carbon sink. It is well recognised that trees pull carbon out of the atmosphere. Even if the trees die they still store carbon, in some forests up to 2000 tonnes per ha. However it takes at least 80 years to store carbon. Biodiversity makes the forest a more stable carbon sink and a more resilient store than a monoculture. However all observations made to date of forestry operations under the RFAs have shown that logging old-growth is a high priority, indeed it is generally recognised that the Forests NSW achievement of finalising the removal of unprotected old-growth is less than three years away in the Eden region. Information showing the effect on forest type by area and growth stage (under Forests NSW Research Note 17 classification) on the State forest estate is not publicly available. There is a lack of informative data on what type of forest is used as classification and again we assert that classification by growth stage is not classifying by forest type.

> Unfortunately, RFAs have developed and utilised relatively simple forest ecosystem classifications - note that in my professional estimation even classifications with 100-150 types are inadequate to assess comprehensiveness.[147]

---

[141] See Talina Drabsch, 'A Statistical Portrait of the Environment in NSW' NSW Parliamentary Library Research Service, February 2011, (online) <http://www.parliament.nsw.gov.au/Prod/parlment/publications.nsf/0/5ED2A6066A06121ECA257839007C6E6B/$File/Environment+Paper.pdf>.

[142] For 2008 figures see OEH (online) <http://www.threatenedspecies.environment.nsw.gov.au/index.aspx>.

[143] For 2000 and 2003 figures see OEH (online) <http://www.environment.nsw.gov.au/soe/soe2003/chapter6/chp_6.3.htm#6.3.69>; and for 2006 figures OEH (online) <http://www.environment.nsw.gov.au/soe/soe2006/chapter6/chp_6.3.htm#6.3.71>.

[144] See OEH (online)<http://www.threatenedspecies.environment.nsw.gov.au/index.aspx>; two examples illustrate this point: firstly, in relation to the endangered Hasting River Mouse, the conditions contained in the Integrated Forestry Operations Approval for this species have recently been weakened for certain core areas for the Hasting River Mouse at the behest of the Forests NSW to increase access for logging; secondly, in relation to the endangered Spotted-tailed Quoll, Forests NSW were found illegally logging a Spotted-tailed Quoll exclusion zone in Forestland State Forest in Upper and Lower North East NSW; they admitted the fact, but claimed it was a 'mistake'.

[145] Kingsford R T, Watson J E M, Lundquist C J, Venter O, Hughes L, Johnston E L, Therton J A, Gawel M, Keith D A, Mackey B G, Morley C, Possingham H P, Raynor B, Recher H F, and Wilson K A, 'Major Conservation Policy Issues for Biodiversity in Oceania' (p 834-840), Published Online: (2009), (online) <http://www3.interscience.wiley.com/journal/118487636/home?CRETRY=1&SRETRY=0>.

[146] See The National Strategy for the Conservation of Australia's Biological Diversity (1996).

[147] Mackey B, above n 13.

Regeneration

The white elephant in the room is the regeneration of native forest after industrial logging. Forests NSW do not 'replant' native forest. Once logged and burned the forests may take decades to regenerate or they might not regrow at all and they are altered inexorably.[148] Further replanting is not sufficient to offset the biodiversity losses created by clearing because of lags in species becoming established and sustained differences in species composition. This is a considerable barrier to effective climate change adaptation and mitigation.

The meaning of Forests NSW statement that there is a hundred percent regeneration target set for harvested native forest is obscure. The research and data that the forest does regrow after industrial logging and burning is inadequate. The Forests NSW publicly available data is cursory to say the least, and even what little forest was surveyed did not equal 'one hundred percent regenerated'.

From the period 2001 to 2006 the number of surveys for the Southern region was twenty one covering a total of 2,176 hectares.[149] There is no information provided by Forests NSW or the RFA regime on the effectiveness of regeneration.

> The vascular floristics about a decade after harvesting operations differed significantly from the floristics of similarly aged forest regenerating after wildfire. In clear-felled areas, weed and sedge species occurred more frequently than on wildfire sites and Acacia dealbata was much more abundant, whereas resprouting shrubs, tree ferns and most ground-fern species were more abundant in wildfire regeneration sites. The low survival rate of resprouting species reported in an increasing number of studies suggests that soil disturbance is likely to be a major contributor to differences.[150]

The one hundred percent regeneration rate for Southern in 2005-06 stated in the Draft Report is not only erroneous but highly incredible given that there were no regeneration surveys undertaken in the Tumut subregion in that period. There is no data given showing how much area was assessed, except:

> In 2005–06 there were no regeneration surveys in the UNE or Eden regions.[151]

Information from Forests NSW concerning Southern Region regeneration assessments for the period 2001-02 to 2005-06 stated that a total of 2019 hectares had been surveyed in the southern sub-region, and only 167 hectares in the Tumut sub-region.[152] The analysis reports that 'are available' on this clause 52 data are actually unavailable. The assessment report completed by 31 December 2006 is similarly 'unavailable'. There is a lack of comprehensive information available showing the full extent of regeneration surveying efforts and the results thereof.

---

[148] Forests NSW burned 23,000 hectares in the South East alone in 2007, Forests NSW Annual Report 2007.
[149] Southern IFOA Clause 52 Assessment of Regeneration Report 20/6/07, Forests NSW Batemans Bay; this 'report' is a thin five line by five column table.
[150] Ough K, 'Regeneration of Wet Forest Flora a Decade after Clear-felling or Wildfire - Is There a Difference?' 49(5) *Australian Journal of Botany* 645, (online) <http://www.publish.csiro.au/paper/BT99053.htm>.
[151] A Draft Report on Progress with Implementation of the New South Wales Regional Forest Agreements, above n 20.
[152] 'Southern IFOA Clause 52 Assessment of Regeneration', Forests NSW Batemans Bay Office, 20/6/07.

Comparisons to other reporting is incongruous in relation to effective regeneration. For example, in the State of the Forests Report 2008 ("SOFR") at Table 37 on page 67 it is noted that in 2005-06 NSW had 3 870 hectares effectively regenerated; meanwhile in the Draft Report on Implementation on page 129 there were no regeneration surveys in Upper North East and Eden Regions; noted above Tumut also had zero surveys for the year; which means that 3 438 hectares must have been assessed solely in the Lower North East region that year. This seems like an incredible focus of regeneration surveying for the year 2005-06.

Based on the state and territory listings the largest increases in numbers of threatened taxa nationally are occurring on the south coast of New South Wales. Change in status of listed taxa in New South Wales is concentrated in subregions along the east coast. All species have as reasons for listing or decline, habitat loss, fragmentation due to road construction, intensive timber harvesting and altered fire regimes.[153]

Ecosystem Health and Vitality as a Tool Against Climate Change

If ecosystem health and vitality of a native forest becomes severely affected this then creates a barrier to effective climate change adaptation and mitigation. The biggest and most common 'negative agents' to the health and vitality of ecosystems are logging contractors and the Forestry Commission. The ecosystem health and vitality of a native forest becomes severely affected once logged and burnt.

> Commercially logged forests have substantially lower carbon stocks and reduced biodiversity than intact natural forests, and studies have shown carbon stocks to be 40 to 60 per cent lower depending on the intensity of logging.[154]

We note that most reports and FNSW manage to evade mention of climate change, whereas it was stated in the SOFR 2008 that climate change will have a profound effect on forests.

Fire

Another barrier to effective climate change adaptation and mitigation is Forests NSW rampant fire practices. The fire regime practiced by Forests NSW is anachronistic and below standard. Although fire may be a natural disturbance, periodical post logging burning can alter both long and short-term ecological processes, and irreversibly affect ecosystem diversity and productivity. In particular, prescribed burning may affect natural succession, organic production and decomposition, nutrient and water circulation, and soil development.[155] Current scientific opinion is in conflict with Forests NSW fire practices.[156]

---

[153] *Assessment of Australia's Terrestrial Biodiversity 2008*, Biodiversity Assessment Working Group of the National Land and Water Resources Audit for the Australian Government, Canberra, Department of the Environment, Water, Heritage and the Arts 2009.

[154] Mackey B, et al, above n 91.

[155] See 'Reserve Adequacy and the Management of Biodiversity' Land Assessment Unit, National Parks and Wildlife Service, A Supplement to the Reserve Design Report, A Project Undertaken as Part of the NSW Comprehensive Regional Assessments, Project Number NA 43/EH, July, 1999, quoting Ovington J D, 'Ecological Processes and National Park Management' National Parks, Conservation and Development: 'The Role of Protected Areas in Sustaining Society' Proceedings of the World Congress on National Parks, Smithsonian Institution Press, Washington D C, (1984).

[156] Driscoll D, Lindenmayer D B, Bennett A, Bode M, Bradstock R, Cary G, Clarke M F, Dexter N, Fensham R, Friend G, Gill M, James S, Kay G, Keith D A, MacGregor C, Russell-Smith J, Salt D, Watson J, Williams R J, York A, 'Fire Management for Biodiversity Conservation: Key Research Questions and our Capacity to Answer Them' (2010) 143 *Biological Conservation* 1928.

For example in 2005-06 seven percent of State forest was burned in wildfire and 38,008 hectares were burned as 'hazard reduction' for a total expenditure of over eight and a half million dollars.[157] This is a waste of taxpayers' money given the concerns citizens are expressing over climate change and biodiversity impact. Further the State of the Environment Report provides:

> In autumn, when most forest fuel-reduction burns occur, some areas, including metropolitan centres, can experience significant particulate pollution. A final broad source of diffuse pollution (with origins outside urban areas) is planned burning for purposes such as agriculture, forestry operations and land management. If not well planned, timed and executed, such burns can trigger health problems and loss of amenity in surrounding rural areas and urban centres.[158]

An example of these 'mitigation measures' is the incident of 27 August 2009. A post-logging fire that was started by Forests NSW in compartments west of Gulaga Mountain, jumped containment lines and 'got away' burning out of control up the mountain and continued burning down the eastern flank threatening the two Tilba villages.[159] Previously communities had called for no burns on the mountain and requested Forests NSW to extinguish this fire. This fire had been burning for two weeks. Forests NSW ignored community concerns and the severe drought weather conditions. Homes were threatened, sacred sites burned, rainforest decimated and threatened species like the Long Nosed Potoroo in extreme danger if not exterminated.

The Rural Fire Service states:

> In southern NSW (generally from the Illawarra south) bush fire hazard reduction burning is typically conducted in autumn. Burning in spring (after fuels have dried out sufficiently following winter rainfall) is usually avoided because there is potential for re-ignition in summer when rainfall is lowest and conditions are hot and dry. Spring burning in the south should only be carried out by, or with the assistance of, very experienced burning crews and should be avoided in years of below average rainfall.[160]

This is not an isolated incident. There have been numerous instances of fires 'getting away' from Forests NSW and burning out of control.

> There is a perception among forest fire management that prescribed burning is simply lighting fires to burn-off the undergrowth and that this can be carried out with only a basic understanding of fire behaviour…Indeed where burning off has been carried out this way the results have been less than favourable and has resulted in injury and death. In the eastern states prescribed burning is largely carried out using rules of thumb based on a MacArthur's

---

[157] Forests NSW Seeing Report 2005-06, 28.
[158] State of the Environment 2011 Committee. *Australia state of the environment 2011. Independent report to the Australian Government Minister for Sustainability, Environment, Water, Population and Communities*. Canberra: DSEWPaC, 2011, p154.
[159] 13/08/2009 Eurobodalla, Mountain Rd, Bodalla State Forest CENTRAL TILBA, Forests NSW, (online) < http://www.rfs.nsw.gov.au/dsp_more_info.cfm?CON_ID=7929&CAT_ID=689 >.
[160] NSW Rural Fire Service, 'Standards for Low Intensity Bush Fire Reduction Burning' s5, (online) <http://www.rfs.nsw.gov.au/file_system/attachments/State08/Attachment_20060131_C4C3FB83.pdf>.

original burning guide for dry eucalypt forests produced in the 1960s.[161]

Forests NSW administrative breaches might seem insignificant but they can result in damaging consequences. For instance Forests NSW 'Southern Region Burning Proposals 2007' contains Burning Plan Number 07BAN3053 (the one that 'got away') further stating that the areas last burn was in 1996, yet on the adjoining Burning Plan Number 07BAN3048 parts of the area are mapped as last burned in 2000, 2001 and 2005. These areas have been heavily logged which leaves incredibly high amounts of tree heads, leaves, tree butts and bark. For example post logging fuel loads are said to be fifty to one hundred and fifty tonnes per hectare of logging slash and ten to twenty tonnes per hectare in between tree heads.[162]

Forests NSW states it is committed to the RFA ESFM practices and will ensure that Forests NSW will:

> Minimise adverse impacts on the environment; Minimise the risk of escape causing wild fire; and Monitor the impacts on the environment.[163]

Forests NSW has not performed its duty to these principles.

> Clearfelling and burning, which is likened by forest industries as akin to the natural disturbance of a high intensity bush fire, causes even-aged forest regrowth, and has been shown to be detrimental to those organisms that rely on successional growth.[164] This is especially true for those organisms that rely on the retention of tree hollows.[165]

Further, to use 'grazing' as a fire mitigation measure is definitely ingenious.[166] The development of cows that eat sticks and leaf litter must be a world first.

> The change in species composition of ecosystems due to the preferential grazing of palatable species is only one effect from grazing. Cloven-hoofed animals have contributed to soil compaction and general degradation of ecological processes by causing the loss of leaf litter and the associated loss of soil micro-organisms and available carbon, reduced soil water infiltration rates and an increase in soil erosion.[167] These effects are particularly pronounced in temperate woodlands.[168]

Post Fire Recovery and Research

It is well recognised that the risk of fire will increase as the effects of climate change increases. However the roll out of RFAs throughout the State's forested zones was the first step to increasing fire risk for NSW:

---

[161] Submission from CSIRO to House Select Committee on the Recent Australian Bushfires, (2003), Sub No.434 (online) <http://www.aph.gov.au/House/committee/bushfires/inquiry/subs/sub434.pdf>.
[162] Wandera Cpts 584,585,586 Harvesting Plan, approved 1/5/08, 35.
[163] ESFM Plan, Southern Region 2005.
[164] Lindenmayer D B, and Franklin J F, 'Managing Stand Structure as Part of Ecologically Sustainable Forest Management in Australian Mountain Ash Forests' (1997) 11 *Conservation Biology* 1053; see also Lindenmayer D B, and Franklin J F, 'Re-inventing the Discipline of Forestry - a Forest Ecology Perspective' (1997) 60 *Australian Forestry* 53; and Lindenmayer D B, Norton T W, and Tanton M T, 'Differences Between Wildfire and Clearfelling on the Structure of Mountain Ash Forests of Victoria and Their Implications for Fauna Dependent on Tree Hollows' (1990) 53 *Australian Forestry* 61.
[165] See 'Reserve Adequacy and the Management of Biodiversity' above n 155.
[166] The NSW Forest Agreements Implementation Report (2001/2002) published in 2006, 63.
[167] See NSW Forest Agreements Implementation Report, above n 166.
[168] See 'Reserve Adequacy and the Management of Biodiversity, above n 155.

> One of the major planning constraints associated with thinning is *the higher level of fuel present after the operations*. It is not considered feasible in Tasmania to carry out fuel reduction burns in thinned coupes because of the high fuel loads and the sensitivity of the retained trees to fire. The location of thinned coupes amongst conventionally logged coupes is problematic, as it is not recommended that any regeneration burn take place within two kilometres of areas with high levels of flash fuel within two years of harvest (Cheney 1988).

And:

> Tree crowns (heads), bark, and other harvest residue make up the fuel load. The climate on the floor of the forest is altered by thinning, with higher wind speeds and temperature, lower humidity, and lower moisture content in the fuel itself. Understorey vegetation characteristics change because of these changes to the microclimate, especially increased light. Bracken ferns and cutting grass may grow vigorously, each having a far higher flammability than the replaced woody species (Cheney and Gould 1991).

Strangely this is from the Forestry Commissions own data but is only now coming to light and certainly was not mentioned in 1998, when the RFAs were signed.

Native forests can take hundreds of years to recover from Forests NSW mismanaged and very hot post logging burns. This combined with the actual logging is creating a travesty of a landscape.

Soil and Water Resources

The most fundamental resources of a forest environment: soil and water.[169]

As reported, in the State of the Forests Report 2008, NSW has about 200,000 hectares managed specifically for water supply. This equates to 0.24% of the land area of the state, or 0.76% of the NSW native forest area.[170]

Many studies have shown that microbial biomass decreases following forest harvesting, and that these changes occurred before measurable changes in soil organic matter quantity were found. The decline of microbial Carbon and Nitrogen following tree removal ranged between twenty seven percent and sixty four percent. When bacterial and fungal biomass were determined separately, it was found that fungal biomass declined more sharply than bacteria. The often rapid decrease in fungal biomass may be explained by a reduction in ectomycorrhizal fungi, which decline sharply once the root system of cut stems can no longer support them.

> Conventional practices in intensive forest use such as short rotations, use of heavy machinery, harrowing and high intensity burning of slash can be viewed as detrimental to soil health. After burning, the organic content of forest soils can be transformed into ash and mineralised nutrients. This may result in an intense pulse of nutrients that can change the soil pH and can easily be leached, leaving a nutrient and humus poor soil, with a significantly different structure from the original condition.[171]

---

[169] *Australia's State of the Forests Report 2008*, Montreal Process Implementation Group for Australia (2008), Bureau of Rural Sciences, Canberra, 87.

[170] Ibid, 7, 89.

[171] Green D, and McQuillan P, 'The Soil Mites of Warra and their Recovery Under Modern Forestry Practices' (2004) (online) <http://www.warra.com/warra/research_projects/research_project_WRA103.html>.

Research by the CSIRO states:

> Timber harvesting and its associated activities cause drastic changes in soil physical structures and hydraulic properties. In situ changes of surface soil hydraulic properties using a newly developed disc permeameter are assessed. Five forest sites, two radiata pine forests near Oberon and three native eucalypt forests near Eden NSW, were investigated for the impact of timber harvesting on soil structure and hydraulic properties. On most sites, there was an increase in soil bulk density and a declining trend in sorptivity and hydraulic conductivity associated with logging. Changes in hydraulic properties suggest that the logging and associated activities had resulted in soil compaction, attributable mainly to redistribution of soil pore sizes and with a decrease mostly in pores greater than 3mm in diameter. This reduction in macroporosity suggests a reduction in aeration and a change of water retention characteristics.[172]

A majority of forestry operation non-compliances reported are on EPL breaches and how they relate to soil and water protection practices. One CRA report stated that all impacts of logging were significant at only buffer widths of less than 30 metres.[173]

Currently all unmapped, first and second order streams have less than thirty metre buffers, which suggests that current logging adjacent to these streams is having a significant impact. This report went on to say that the methodology used for the EPLs is not scientifically defendable. Even more recent research found in the SOFR 2008 suggests that twenty metre buffers need to be retained to generally reduce turbidity levels.[174]

Forestry machinery compacts soil, preventing absorption of rainwater. When it rains the run-off carries a significant amount of sediment into streams. Movement of this machinery and other logging-related vehicles along forest roads raises a large volume of dust (30 -90 tonnes per year for every hectare of unsealed road, compared to 0.3 tonnes for unsealed roads in undisturbed forests). Erosion is the largest contributor to turbid water in Australia.

A study of the Eurobodalla catchments in NSW showed that approximately 905 tonnes of sediment were transported through the river in one four-day storm. This is compared with thirteen tonnes for the previous six-month period.[175] Significant sediment loads have also been identified as coming from the 50,000 kilometres of unsealed roads within state forests and reserves.[176] Suspended sediment loads in inland waters caused by gully erosion and degraded flow paths, can have significant impacts such as siltation of river channels, infilling of wetlands, reduced light penetration inhibiting photosynthesis, and loss of habitat and spawning sites for gravel-

---

[172] Hung J (CSIRO, Division of Soils); Lacey ST (State Forests of New South Wales); Ryan PJ (CSIRO, Division of Forestry) 'Impact of Forest Harvesting on the Hydraulic Properties of Surface Soil' (1996) 161(2), *Soil Science* 79-86.

[173] From CRA report 'Water Quality and Quantity for the UNE, LNE and Southern RFA Regions' (1998) Project NA61/ESFM, 54.

[174] See the State of the Forests Report 2008, above n 169, 109.

[175] Drewry J J, Newham L T H, Greene R S B, Jakeman A J and Croke B F W, 'An Approach to Assess and Manage Nutrient Loads in Coastal Catchments of the Eurobodalla Region, NSW, Australia' (2005), MODSIM 2005 International Congress on Modelling and Simulation, 2658-2664.

[176] Drewry J J, Newham L T H, and Greene R S B, 'An Index-Based Modelling Approach to Evaluate Nutrient Loss Risk at Catchment-Scales' (2008) Integrated Catchment Assessment and Management Centre, The Australian National University, Canberra, (online) <http://www.mssanz.org.au/modsim07/papers/43_s47/AnIndex-Baseds47_Drewry_.pdf>.

bed dependent fish.[177]

Water costs have soared since the CRA analysis was done. The price per kilolitre in the Eurobodalla in 2000 was $0.80.[178] It is currently $2.40 per kilolitre and $3.60 for consumption of over one hundred fifty kilolitres. When forests are logged, the amount of water flowing in creeks and rivers, after a short initial increase, can decrease by up to fifty percent. It may even cease to flow in dry periods. Regrowth needs much more water to grow than mature trees.

In 1999 it was estimated that the cost of water lost by the logging of 2000 hectares of native forests in the Eurobodalla catchments in one year to be over ten million dollars. This amount is compounded each year that these catchment forests continue to be logged.[179] Therefore there is a need to independently reassess the economic costs of the RFA as it applies to water quantity and security.

The severity of the prolonged drought and inclement climate change conditions is readily portrayed by the flow recordings of the three rivers, the Tuross, Deua, and Buckenboura, in the Eurobodalla Shire. The Shire's water supply depends upon these rivers. Logging in these catchments is continuing to compound the negative effects of this form of land use on catchment hydrology. Since the last minor flood peak in February 2008 these rivers have been extremely low.

Private Native Forestry

Despite much scientific knowledge about the value of healthy forests as habitat conservation and carbon sinks, native forests in New South Wales can be logged with approval in varying ways depending on land tenure.[180] Conservationists have for some time lobbied strongly for conservation of both public and private lands, effective regulation and regulatory response to native vegetation degradation and land clearing, and advocated for stronger legislation governing native forest management.[181]

Over-logging of public forests has seen private forests, once envisioned as reservoirs of conservation, targeted, particularly in Northern regions, to supplement government wood supply agreements. Fortunately traditional distinction of conservation on land tenures within the wider community is changing. Due to increasing public knowledge on climate change it is understood there needs to be considerably more conservation, both on public

---

[177] See Monitoring and Evaluation Trials, New South Wales Region, Southern Catchment, Phase 1 Report, (2004) National Land & Water Resources Audit, (online) <http://lwa.gov.au/files/products/national-land-and-water-resources-audit/er050846/er050846.pdf>; and also NSW Diffuse Source Water Strategy, DECC 2009/085, (online) <http://www.environment.nsw.gov.au/resources/water/09085dswp.pdf>.

[178] See the Eurobodalla Shire Council, Water Use and Allocation in the Eurobodalla, (online) <http://www.esc.nsw.gov.au/site/plans/Documents/Archive/1999/SOE/SOERd/TheReport/Eurobodalla/IndicatorResults/WaterDemandManagement.htm>.

[179] Atech Group, 'Southern Forests Catchment Values and Threats' (1999) (online) <http://www.atechgroup.com.au>.

[180] Steffen W, Burbridge A A, Hughes L, Kitching R, Lindenmeyer D, Musgrave W, Stafford Smith M and Werner P A, *Australia's Biodiversity and Climate Change: a Strategic Assessment of the Vulnerability of Australia's Biodiversity to Climate Change,* A Report to the Natural Resource Management Ministerial Council commissioned by the Australian Government, CSIRO Publishing, (2009); see Park H, *Biodiversity: Regulatory Frameworks Briefing Paper 3/2010*, New South Wales Parliamentary Library Research Service (2010).

[181] For one example of lobbying of government to enact regulations on private land see National Park Association, (online) < http://www.npansw.org.au/web/journal/200604/logging.htm > viewed 23 July 2010.

and private land.[182]

Both State and Commonwealth legislative instruments regulating conservation have thus far proved inadequate to meet international and scientific benchmarks of nature conservation. The statutes and delegated legislation is inadequate and there is lack of compliance and enforcement.

In New South Wales logging on private land is allowed through the NV Act's delegated legislation, the Private Native Forestry Code of Practice ("PNF Code").

Improving and Maintaining?

Under the PNF Code broadscale clearing for purposes of private native forestry 'improves and/or maintains environmental outcomes' if it complies with requirements of the Code.[183] The PNF Code provides that any area cleared must be allowed to regenerate and not subsequently cleared 'except where otherwise permitted'.[184] A landowner can also seek development consent to undertake private native forestry outside provisions of the Code under the *Native Vegetation Act 2003* (NSW) ("NV Act").[185] Landowners must prepare a property vegetation plan ("PVP"), then a Forest Operation Plan ("FOP") which must contain recorded locations of any listed populations or endangered ecological communities.[186]

While the FOP must contain details of flora and fauna management actions, it is not required to mention impacts logging will have on those species. Further, if there are records of species in adjoining areas of public land, species can be ignored for FOP preparation if it can be demonstrated that species have been protected and conditions of the relevant TSLs or IFOAs have been met.[187]

The PNF Code provides that if there are not enough hollow bearing trees, that extra recruitment trees from the 'next cohort' must be retained, so total numbers of hollow bearing and recruitment trees retained in each two hectare area is 20.

As discussed earlier in this report the loss of hollow bearing trees has been listed as a Key Threatening Process

---

[182] Galaxy Poll, Galaxy Research- 28/30 May 2010, Job:100502A, almost three in four (72%) Australians favour the Federal Government assisting logging contractors to take redundancies, retrain or move permanently to a plantation based industry.

[183] For a comprehensive background and critique see Prest J, 'The Forgotten Forests: the Environmental Regulation of Forestry on Private Land in New South Wales between 1997 and 2002' Phd Thesis, Centre for Natural Resources Law and Policy, University of Wollongong, (2003), available (online) < http://ro.uow.edu.au/theses/413 >; under the *Native Vegetation Conservation Act 1997* (NSW) regional committees were formed, to produce regional vegetation management plans allegedly to designate areas of high conservation value; the *Native Vegetation Act 2003* (NSW) did not come into effect until 2005.

[184] *Private Native Forestry Code of Practice for Southern NSW 2008* Introduction, 1.

[185] *Private Native Forestry Code of Practice for Southern NSW 2008*; the Silvicultural Guidelines state it is 'heavily based' on Florence RG, *Ecology and Silviculture of Eucalypt Forests,* CSIRO Publishing, Melbourne, 2004, which was prepared for use with the *Native Vegetation Conservation Act 1997*, yet there is no mention of climate change or its effects in this work; Florence stated in his 1984 thesis "When an mature, mixed eucalypt-rainforest community is felled and the debris burned, massive Acacia regrowth may develop very rapidly from soil-stored seed" in Florence R G, and Marsh J P, 'Soil Factors Limiting the Establishment and Vigour of Spotted Gum Regrowth' (1984) Department of Forestry, ANU Research Project.

[186] Listed under schedules of the *Threatened Species Conservation Act 1995* (NSW) and in the Listed Species Ecological Prescriptions for Southern NSW Forests.

[187] *Private Native Forestry Code of Practice for Southern NSW 2008* cl 2.1; the PNF Code also contains provisions for Australian Group Selection ("AGS") despite the finding that this patch clear felling has significant impact on species and their habitat.

since 2007.[188] A lengthy discussion of conservation measures to maintain hollow bearing trees has been discussed since 1999.[189] There has been a priority action statement produced for this KTP, yet habitat to recruitment tree ratio in the PNF Code is still one to one.[190] This is despite the Expert Panels findings.[191]

Rotation time definitions in the PNF Code seem parlous and seem dependent on a basal area count to assess the stocking rate of the stand.[192] Of note is the inclusion of the out-dated native forest logging industry catchphrase 'promote regeneration through disturbance'.[193] This terminology is in conflict with much scientific knowledge. Many scientists doubt the success of what is called 'natural seeding' after logging for eucalypt species.[194] If this argument held true there would be no burgeoning issue of lack of supply.[195]

It seems on analysis that prescriptions for habitat protection and conservation contained in the PNF Code are inadequate. Due to lack of available data it is difficult to know whether prescriptions are being met on private land.[196] Given that requirements for species 'protection' under the TSLs or IFOAs are not being met on public land, due to non-compliance of legislation and delegated legislation, if logging has occurred on adjoining State forest land it would be difficult to argue that species have been protected.[197]

A comparison of public and private forestry codes shows the PNF Code is modelled on the IFOAs that allegedly apply to public State forests which fall under RFA areas. Under IFOAs many severe breaches are being classed

---

[188] *Threatened Species Conservation Act 1995* (NSW) Sch 3 s8; see OEH (online) <http://www.environment.nsw.gov.au/determinations/LossOfHollowTreesKtp.htm>.

[189] See 'Review of Protective Measures and Protective Measures and Forest Practices - Biodiversity Workshop Southern Region' Ecologically Sustainable Forest Management Group, July 1999, Project No. NA45/ESFM p176-177.

[190] *Threatened Species and Conservation Act 1995* (NSW) s74 and s90A; a threat abatement plan sets out recovery and threat abatement strategies that must be adopted for promoting the recovery of each threatened species, population and ecological community to a position of viability in nature and for managing each key threatening process.

[191] Review of Protective Measures, above n 189; see also Goldingay R, 'Characteristics of Tree Hollows used by Australian Birds and Bats' (2009) 36 *Wildlife Research* 394; see also Gibbons P, Lindenmayer D B, 'Issues Associated with the Retention of Hollow-Bearing Trees Within Eucalypt Forests Managed for Wood Production' (1996) 83 *Forest Ecology and Management* 245.

[192] Lindenmayer D B, Franklin J F, Fischer J, 'General Management Principles and a Checklist of Strategies to Guide Forest Biodiversity Conservation' (2006) 131 *Biological Conservation* 433.

[193] Bizarrely the PNF Code provides at cl 3.3: The minimum stand stocking…must be achieved within 24 months of a regeneration event; and at (2) In this clause, regeneration event is a harvesting or thinning operation.

[194] See Fischer J, Lindenmayer D B, 'The Conservation Value of Paddock Trees for Birds in a Variegated Landscape in Southern New South Wales: Species Composition and Site Occupancy Patterns' (2002) 5 *Biodiversity and Conservation* 807.

[195] Bauhus J, McElhinny C, and Alcorn P, 'Stand Structure and Tree Growth in Uneven-Aged Spotted Gum (Corymbia maculata) Forests: Some Implications for Management' (2002) 75 *Forestry* 451, 'only a small proportion of trees are growing at an acceptable rate'; the forests in the Southern region have been targeted for woodchip production as there is a predominance of Spotted gum, Stringybark, Silvertop Ash and Brown Barrel forests. This is because they are blonde wood. Spotted gum is particularly targeted as it is a softwood. 10-15 years after heavy logging a quarter of a compartment will have no Spotted Gum regrowth at all, and in the remaining area any Spotted Gum will be relatively weak and usually dominated by more vigorous Acacias. Where Spotted Gum seedlings become established, they lack the early vigour of Acacia and other shrub species. The more vigorous Acacia regrowth often overwhelms eucalypt seedlings, because unlike the hard-coated Acacia seed, eucalypt seed will only remain viable for a short time in the soil, probably no more than 6-12 months.

[196] The *Annual Report on Native Vegetation 2008* provides that in New South Wales in 2008, 2060ha of land was legally cleared under approved private Harvesting Plans, while overall there was a total reduction of over 48 193ha of 'native woody vegetation'; *NSW Annual Report on Native Vegetation 2008,* Department of Environment Climate Change and Water, p2; a condition of the *Native Vegetation Regulations* at s12: The Minister is to make publicly available on the Internet: (a) the Global Positioning System ("GPS") coordinates of the location of land that is the subject of a development consent or PVP that provides for broadscale clearing of native vegetation on the land; of note is that the reporting of private native forestry on the regulators website is grossly inadequate, the map coordinates for PVPs are erroneous and there are no figures for actual logging events or area logged; if calculated on the PVP register for Southern 1097ha were logged in 2010, however without data, analysis is impossible, this is indicative of the secrecy that surrounds PNF.

[197] Of interest the 'business as usual' approach by State forestry is causing some concern among landowners post logging, the main concerns seem to be badly eroded snig tracks and the amount of debris left behind; for a Queensland example see Ryan S, Taylor D, 'A Methodology for Private Native Forest Extension in South East Queensland' (2001) The Regional Institute, (online) <http://www.regional.org.au/au/iufro/2001/ryan.htm>.

as 'technical' by the regulator. This is often without the regulator viewing the breach. While the regulator has instigated proceedings on land clearing enacted without approval there seems to be some reticence to enforce compliance of the PVPs.[198]

Issues for auditors hinge on access. Gaining access to audit public State forest can be difficult for non-government auditors. Gaining access to audit private forest logging operations is nearly impossible. A breach with proof of actual harm is not leading to civil penalty or injunction, what chance a breach without proof. While some law is better than none, if law is inadequate and not backed up with appropriate regulatory response it is dormant law.[199]

Logging Endangered Ecological Communities

The erroneous statement that broad scale land clearing can in any way be improving environmental outcomes, particularly in the context of logging endangered ecological communities ("EECs"), is indicative of the whole native forest logging industry publicity spin. If the point of listing a community is that it is endangered then to allow logging in endangered ecological communities seems in complete conflict with everything known about biodiversity, climate change and the link to forest degradation. It is also in tension with other legislative instruments.

For example the Guidelines breach the EPBC Act by opening up federally listed EECs for logging in areas both inside and outside RFA regions.

> Logging can occur in endangered ecological communities as part of an approved 'Ecological Harvesting Plan' if approved by OEH.[200]

Commercial logging does not 'maintain or improve' the environment under any circumstances - it is a recognised threat to the environment. This erroneous assumption would hold if 'environmental outcomes' are furthering species to extinction and increasing degradation of native forest.

Logging under so called Ecological Harvest Plans will not improve forest structure of the Endangered Ecological Community, particularly when it is 80% of the total EEC. This is more Forests NSW spin on an already flawed piece of delegated legislation. The Guideline refers to 'thinning' operations, but there is already a 'thinning' pathway under Property Vegetation Plans ("PVPs"). In the Southern and Eden regions the term thinning is synonymous for clearfelling or patch clearfelling.

---

[198] See *Director-General of the DECC v John Rae* [2009] NSWLEC 137; *Director-General, Dept of Environment and Climate Change v Calman Australia Pty Ltd; Iroch Pty Ltd; GD & JA Williams Pty Ltd t-as Jerilderie Earthmoving* [2009] NSWLEC 182; *Director-General of the Department of Environment and Climate Change v Hudson* [2009] NSWLEC 4; *Department of Environment and Climate Change v Olmwood Pty Limited* [2010] NSWLEC 15; for examples of south coast loggers guilty on private land see *Director-General Department of Environment and Climate Change v Wilton* [2008] NSWLEC 297; *Director-General, Department of Environment Climate Change and Water v Vin Heffernan Pty Ltd* [2010] NSWLEC 200.

[199] Gunningham N, 'Environmental Auditing: Who Audits the Auditors?' (1993) August *Environmental and Planning Law Journal* 229 "If the audit is conducted, particularly internally, by the firm's own employees, then the internal auditors may come to share the same corporate goals".

[200] *Private Native Forestry Code of Practice for Southern NSW 2008* cl 4 Table C.

The authors are absolutely opposed to the PNF Guidelines. We call for their immediate withdrawal. The PNF Code opens a massive loophole in the native vegetation laws and further entrenches the 'cut and run' mentality of the native forest logging industry.

CFI and REDD

Current carbon offsetting and trading language has little regard for the ecological and social realities of climate change.

REDD

REDD was set up as a result of the infamous "Australia clause" negotiated at the last minute by Australian UNFCCC negotiators at the Kyoto COP, which they then refused to ratify. The clause allowed Australia to effectively do nothing on climate change by claiming that their industrial emissions were mitigated by avoided deforestation (land use, land use change and forestry, or LULUCF), and was based on erroneous figures which did not take into account NSW deforestation.

Under the current CDM and REDD rules, most projects would fail the test of additionality, which states that you cannot generate credits for something that would have happened anyway. 73% of CDM credits already fail the additionality test, according to the International Rivers Network. The "Australia clause" at the time only benefited Australia because it was one of the only countries where land-use change would make a significant different to their greenhouse accounts. Today, REDD is being rolled out all over the world, with significant social, ecological and human rights impacts.[201]

Apart from the fact that the introduction of LULUCF into the UNFCCC framework was a political outcome based on national interest rather than borne out of a genuine motivation to mitigate climate change, there are serious fundamental flaws with using avoided deforestation to claim emissions reductions.

- The methodology for carbon accounting is constantly changing and a very uncertain science. Five years ago, research at ANU found that soil carbon in old-growth forests could store twenty times as much carbon as previously thought. Five years from now that research could be updated again.

- Most human greenhouse emissions are created from moving billions of tonnes of stored carbon from the lithosphere (which has a carbon cycle of millions of years) into the atmosphere. Carbon "stored" in forests is actually stored in the biosphere, which has a constant interchange of carbon between the biosphere and the

[201] See Friends of the Earth (online) <http://www.foe.org.au/resources/chain-reaction/editions/112/pricing-carbon-in-rural-australia>; see also <http://skymoney.org.au/>.

atmosphere, and has a carbon cycle of thousands of years. Forests are actually critical as carbon sinks. Because there is already too much carbon in the atmosphere, we need to stop emitting greenhouse emissions and allow forests to draw down excess carbon from the atmosphere.

- Forests naturally burn, and climate change is causing forest fires to become more frequent. If we continue to increase our greenhouse emissions and "offset" them by avoided deforestation, many of those "credits", or forests, will become source of greenhouse emissions themselves, creating a feedback effect leading to runaway climate change.

- Forests are complex systems, having complex biodiversity, water, soil, and human benefits. To manage forests purely on the basis of their carbon values can lead to serious ecological problems and human rights abuses. Such abuses have already been seen in REDD projects around the world, such as in Brazil and Indonesia. (www.carbontradewatch.org). The best form of protection for forests is to be protected and managed through national parks for all the benefits they provide. However, REDD projects effectively privatise forests and turn them into commercial ventures for corporations.

It is tempting to try to use carbon trading and REDD schemes as a quick fix to the problem of native forest logging. This is again the grab for the lowest hanging fruit. Perhaps a more helpful way of approaching the problem is to use climate change as an important reason to protect carbon sinks, rather than selling them as credits.

CFI

SEFR does not consider that the Carbon Farming Initiative (CFI) will work towards protection for native forest and may in fact be counter-productive. The Carbon Farming Initiative should be replaced with a comprehensive suite of policies designed to protect and restore Australia's native forests as a matter of urgency, recognising their vital role in securing a safe climate for future generations.

The CFI is plagued with even more problems than the REDD scheme. It involves non-Kyoto-compliant credits that would fail the eligibility and additionality tests of the CDM and REDD. Compatible carbon accounting drives both the CFI and international forest carbon offset programs. Forest carbon 'stocks' and carbon emissions from state forest logging degradation are the first elements to be accounted for in Australia's critical land sector.

Although CFI offsets could be sold in international forest carbon offset programs as "compatible", there are two main reasons why they are not. The first, already mentioned, is that CFI offsets are not necessarily compatible

with the Kyoto protocol. The second, more important reason is that the domestic and international schemes use different baseline years. Domestic credits need to demonstrate that they are resulting in reduced emissions based on 2000 levels (or 1990 levels in the UNFCCC). International offsets need to prove no such thing – instead, they are based on "business-as-usual" baselines. This means that a company generating an offset speculates how many emissions would have been created by 2090 if the world ignored climate change, and then subtracts from that the emissions that their "cleaner" project will generate. The difference becomes carbon credits, which can be sold on the international market as actual emissions reductions.

In a world where we critically need to reduce our greenhouse emissions, such ghost emissions reductions are a serious distraction at best, and fraudulent at worst. In fact, it is in a company's interest to overestimate the carbon credits generated from a project, and most independent audits of the reliability of carbon credits demonstrate that the overwhelming majority of carbon offset programs cheat.

CFI credits could end up rescuing the seriously unviable native forest logging industry. If Forests NSW and other state logging agencies enter this carbon market it could prevent the native forest logging industry from dealing with the inevitable and resuscitating a dying industry. SEFR certainly cannot support a situation where already weak RFAs are modified to allow state governments to mitigate through the CFI, REDD or other programs. Native forest logging and woodchipping industries stand to benefit from not being fully transparent in their operations and delaying the implementation of honest carbon accounting.

In our view any form of native forest logging would place this activity in the Negative List. The Negative List, under s 56 of the *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth), makes provision for the exclusion of activities from the CFI 'if there is a material risk that they will have a material adverse impact on one or more of the following, relevantly:

- *the availability of water*
- *the conservation of biodiversity*
- *the local community*

Therefore as logging has a well-documented material adverse impact on the availability of water, the conservation of biodiversity and the local community it should be disallowed.

Further plantations need to be properly managed with care paid to soil and water management if there is to be a complete shift to a plantation based industry. Using carbon and timber as the only values of a plantation undermines this necessity. Rather than "internalising the cost" of these values through approximate allocations of economic value to ecology, these forests should be protected through regulation, rather than making

damaging forests a more expensive option.

Addressing climate change effectively means that the hardest steps should be taken as a priority, otherwise the cost of action increases over time. However ending the unviable logging of native forests through regional approaches is an easy possibility. In fact, although price-based mechanisms require the consent of parliament, and are extremely unpopular, conventional logging phase-outs are within the reach of the Minister and government alone.

The majority of the south coast community is disaffected by native forest logging and feel disempowered and dispossessed. In the Southern and Eden regions there are approximately 325 workers in the native forest logging industry (this is including one crew from Tasmania and one crew from East Gippsland Victoria) and 79 Forests NSW staff:

South Coast NF Employment Figures[202]

Place of employment	employees
Blue Ridge	55
Boral Nowra	55
Boral Batemans Bay	17
Boral Narooma	20
South East Fibre Exports	75
Eden logging workers	21
Southern logging workers	32
Log truck drivers	50
Total	**325**

Tourism on the South Coast in 2009 provided $1.9 billion dollars in revenue and employs 58 463 people, a higher than average proportion of the workforce.[203] The oyster industry provided over $2M. Both of these industries are dramatically and adversely affected by native forest logging which employs approximately 325 people throughout both Eurobodalla and Bega Shires and is running at a $14.6M loss. ($232M before tax)

Therefore the industry is being sustained for a small minority and damaging the environment against the wishes of the majority to enable a wholly Japanese owned company to make a large profit:

> Sometimes legislation arises to further the interests of one group or another, against other interest groups and sometimes the entire society.[204]

---

[202] These figures are pers comm to author, however on ocular evidence there is never more than 10 or 11 cars parked at Batemans Bay, 11 at Narooma, 20 at Blue Ridge and 20 at Nowra therefore it would be interesting to find out what the real figures are; there is one crew in the Southern region Bodalla SF Cpt 3043 who are from Tasmania and should not be counted when considering a NSW payout; the truck driver figures are a conglomerate of Victorian and NSW truck drivers.

[203] Tourism NSW, Travel to South Coast NSW region, Year ended March 2009, (online) <http://corporate.tourism.nsw.gov.au/Sites/SiteID6/objLib18/South%20Coast%20NSW%20TOTAL%20REGION%20YE%20Mar%2009.pdf > ; O'Neill J, *Review Into Tourism in NSW: Final Report for the Premier of NSW 2008*,(online) < http://www.atec.net.au/review_into_tourism_in_nsw___john_o_neill_ao.pdf >.

[204] See Chambliss W and Seidman R, *Law, Order and Power*, 1982, Addison-Wesley Pub Co, (1982), pp77-78.

HRAFF Inquiry

The bias of the Federal House of Representatives report 'Inquiry into the Future of the Australian Forestry Industry' is unconscionable. The Committee's refusal to consider the effects of climate change, environmental degradation, biodiversity loss, timber supply crisis, the over-logging of NSW public forests and the unlawfulness of activities is indefensible.

Most of the evidence presented in many submissions were ignored by the inquiry on the grounds that it 'criticised the industry'. Further what was not ignored was misrepresented. In our view it is inexcusable, that an inquiry dealing with native forestry has completely ignored the crisis and recommended to the Commonwealth Government that the government should condone and support the unlawful and unsustainable native forest logging and woodchipping industry in direct conflict with international obligations.

'Waste' to the woodchip mill

SUBMISSION CONCLUSIONS

Climate change policies must protect the carbon stored in native forests and allow them to grow or recover to their full age and carbon carrying capacity if adaptation and mitigation measures are to be effective.

The disclaimer at the beginning of most of the documentation of Forests NSW is apt:

> While every reasonable effort has been made to ensure that this document is correct at the time of printing, the State of NSW and the Commonwealth of Australia, its agents and employees, do not assume any responsibility and shall have no liability, consequential or otherwise, of any kind, arising from the use of or reliance on any of the information contained in this document.

'Reasonable effort' for establishment of fact has not been taken by the drafters of Forests NSW documentation. All criteria in every report reviewed are lacking in up-to-date verifiable scientific data, or in fact any data, to support any of the claims.

It is difficult to see how broadscale clearing of native forest can equate to improving environmental outcomes.[205] Or how a logging event can be defined as regeneration. Carefully avoiding the word sustainable, the objects of the PNF Code are stated as ensuring a:

> supply of timber products from privately owned forests at a regular rate that can be maintained indefinitely for present and future generations while at the same time maintaining non-wood values at or above target levels considered necessary by society for the prevention of environmental harm and the provision of environmental services for the common good.[206]

Due to failure to enact principles of ESFM, principles of inter-generational equity in meeting the above objective seems in doubt. Further due to current logging practices it is difficult to argue that maintaining environmental values at or above target levels can be achieved. Given current knowledge on causes and effects of climate change it would be difficult to argue that continuance of logging could maintain these levels given the amount of environmental harm caused. Certainly with regard to climate change and extinction of species it would be very difficult to argue that logging was 'for the common good'.

Thus far legislative instruments regulating conservation have proved inadequate to meet standards of nature conservation. Regulatory response has proved inadequate to deter offenders. The combination of non-compliance, inadequate legislation and lack of appropriate regulatory response could ensure that extinction of species is a certainty.

---

[205] *Private Native Forestry Code of Practice for Southern NSW 2008,* 1; see Gibbons P, Briggs S V, Ayers D, Seddon J, Doyle S, Cosier P, McElhinny C, Pelly V, Roberts K, 'An Operational Method to Assess Impacts of Land Clearing on Terrestrial Biodiversity' (2009) 9 *Ecological Indicators* 26.

[206] *Private Native Forestry Code of Practice for Southern NSW 2008,* 1.

On the south coast the distinction between conservation in protected areas in public ownership and conservation on privately owned land is becoming wider as more private native forestry is undertaken. It seems, while there is no guarantee of survival in the coming years, there is more chance for species if they are resident in National Parks, threats of habitat being consumed by 'reduction burns' aside.

Political will is crucial to improving forest law compliance and ensuring that measures taken have positive outcomes for conservation that are long-lasting. As there has been no compliance and continuous over-logging, the only positive outcome for conservation would be to end native forest logging. The challenge now for public native forest conservation is to pressure political will to transfer all State owned land to National Parks co-managed with traditional owners.

The anticipation is that, with increasing knowledge of the link between climate change and forest degradation, landowners and Government will cease logging of native forest. Until then the planet is reliant on political will and the care of developers, farmers, loggers and multinationals.

SUBMISSION'S FINDINGS

That the Forest Agreements, RFAs, IFOAs and other legislation did not consider the critical issues of climate change or water and are therefore inadequate instruments to determine forest management or assist in any form of adaptation top the effects of climate change. The native forestry and woodchipping industry argues that we should substitute fossil fuels and emission-intensive products with native forest wood because trees re-grow however ecological and other scientists oppose this view, highlighting the current and potential carbon stocks in native forests and their biodiversity values.

Logging native forests releases large amounts of carbon which take 80 - 100 years to recover.
A major shift is essential in the way Australia views native forests in its climate change policy.

Australia's 'carbon neutral' accounting and policy position for native forest logging is an undesirable 'time neutral' position.

Continuing native forest logging means continuing large carbon emissions at this most crucial time which is estimated to be within the next 9 years. The Critical Decade Report states that time is critical in climate change policy.

Global carbon accounting frameworks also need to specifically account for the fact that native forests and plantations are fundamentally different ecosystems.

Finally, with native forest sawn timber now a declining remnant market share and chip exports now being rapidly displaced by Australia's hardwood plantations, we can afford to keep our native forests out of the bioenergy market.

The Regional Forest Agreements and IFOAs are severely inadequate to protect forest species and forest habitats. The conservation targets of almost all nationally-listed fauna species and many nationally-listed flora species were not achieved and substantial additional conservation action is still required to meet minimum benchmarks. Using the NSW government's own conservation analysis and data produced during the CRA, it is evident that only one of the twenty nationally-listed forest fauna species met their conservation targets after the RFAs, and many nationally-listed flora species have fallen dramatically short of their targets. The number of threatened and endangered species has risen since the RFAs were signed and many threatened and endangered flora and fauna species are at extreme risk from current logging operations. Current logging practices do not adequately protect Australia's native flora and fauna. The threat of native forest logging must be considered a matter of national significance.

In the south east of NSW, that fall under the Eden and Southern RFAs, the annual net areas logged have rapidly increased and yields have fallen. In other words, the industry has to log ever greater areas to maintain the same levels of production. Demonstrably unsustainable timber volumes were committed for twenty years, and these even extend beyond the term of the RFAs. The 'FRAMES' industry modelling system used to derive these volumes substantially over-estimated available timber volumes. Consequently, after the twenty year period of the RFAs, there will be a dramatic short-fall in timber. Royalties in South East NSW are now less, in real terms than they were fifteen years ago and Forests NSW is making less in royalty revenue than it expends in managing woodchipping operations.

The industrial logging practices in Australia's native forests by Forests NSW, VicForests and Forestry Tasmania are unsustainable, economically, culturally and environmentally. The outcomes are not sustainable, even from a timber-production perspective.

Private lands were not assessed as part of the RFAs, but they are being logged with very weak regulation at an alarming rate under an EPBC Act exemption. Current prescriptions and legislation to protect native forests on private land are extremely inadequate.

The almost complete consensus of public opinion is the requirement to leave the land in a better state than it was found, and to eliminate or drastically reduce all native forest logging immediately. In concurrence with the Garnaut Report, the Stern Report and the Mackey Report, action to avoid further deforestation should be an urgent priority. Accordingly, if no action is taken, the health of native forests and therefore the Australian public will be severely detrimentally affected.

The RFAs have not been properly implemented, review timeframes have not been met and key components have not been conducted. The conditions on logging under legislative regimes, on which the RFAs rely to deliver 'ecologically sustainable management', are inadequate, frequently breached and very poorly enforced. While there is weak on-paper protection it is barely regulated. In addition, third party appeal rights have been removed in NSW and there is no avenue for the community to enforce the law directly, despite the transparent failure of the NSW Government to enforce it properly itself. There should be no exemption for RFA forestry operations which are demonstrably unsustainable, for which key agreements relating to sustainability reviews have been ignored and/or wood supply contracts signed outside the timeframe of the RFAs.

If Forests NSW can prove it has adhered to the RFAs and IFOAs management obligations then the RFAs and IFOAs must be inadequate and flawed instruments with which to protect the environment and the communities interests. If, on the other hand, the RFAs and IFOAs are found to be delivering positive environmental outcomes then Forests NSW must be found to be mismanaging the native forest estate to a serious degree.

Forests NSW, VicForests and Forestry Tasmania has shown themselves to be complete economic and environmental failures. The RFAs have not been found to be durable, the obligations and commitments that they contain are not ensuring effective conservation, and suffer chronic under-performance in the achievement of critical action milestones.

The RFA regime has already effectively postponed inevitable environmental protection measures for thirteen years. As a matter of urgency these measures can no longer remain in limbo. There are significant economic, environmental and social benefits to support ending native forest logging and to ensure a swift transition of logging operations into the existing plantation estate.

Further clause 8 of the RFAs has been triggered. This is giving effect to ending the RFAs as the mode of native forest management and the end to native forest logging as a whole.

State and Federal Governments needs must have full and frank regard for the urgency of action on climate change and biodiversity protection by ending the degradation of the native forest estate.

It would seem, if assumptions are correct, that no matter what measures are put in place by either Federal or State governments the native forest logging and woodchipping industry will be in tension with those measures. Therefore while there might be some mitigation there will be less effective mitigation to the effects of climate change.

In light of these findings South East Forest Rescue calls for indigenous ownership of all public native forest, a

complete stop on logging of EECs, the complete transfer from native forest wood product reliance to the plantation timber industry and salvage recycled hardwood timber industry, a single authority for national native forest stewardship and an immediate nation-wide program of catchment remediation and native habitat re-afforestation.

RECOMMENDATIONS

- **The creation of a genuine comprehensive, adequate, representative and resilient reserve system covering the Southern and Eden Regions of native forests which would entail the creation of jointly managed national parks.**

- **Remedial work by undertaking biodiversity plantings which removes carbon from the atmosphere and stores it in vegetation and soils.**

- **Real incentives for conservation of private native forest.**

- **Exit assistance to be provided to support the native forest/woodchipping industry to adapt to a true and real ecologically sustainable plantation based industry.**

FNSW 'Modified Shelterwood': Nullica State Forest