Independent Forestry Panel

Public submission

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rainforest information centre

Submission to the Independent Forestry Panel

We submit that the native forest timber industry in NSW is not and never has been sustainable. The industry talks about sustainable yield, but the yield is in inevitable decline. As are the other values of the forest that depend on older trees: water yield, biodiversity, habitat value, nectar production, resilience to bushfire, carbon storage.

The NSW Government must recognise that a planned transition of logging out of the public native forest estate will benefit both workers and wildlife. Our recommendations are at the end of this submission.

Introduction

The Rainforest Information Centre was formed in 1979, we are a not-for-profit organisation dedicated to the protection of the Earth's remaining rainforests in partnership with the indigenous people and local communities who depend on them. We have a long-standing interest in forest management, in particular the forests of north-east NSW, growing out of the struggle to get rainforests protected, initially at Terania Creek.

Our members have participated in all manner of forest related processes. They have made many submissions, been heard at inquiries and been members of numerous committees over the decades.

While the official position of the NSW Government and the Forestry Corporation is that rainforests are no longer logged, this is disingenuous. Rainforests are constantly being chipped away at by logging operations, damaged by road crossings and snig tracks, burnt by post-harvest burns and threatened by wildfires made more intense by the drying out of forests that occurs post logging. Climate change also threatens rainforests, but the actions of the NSW Forestry Corporation makes those threats real now. So it is very much in the interest of our organisation and for the future of rainforests that the destruction of the sclerophyll forests stop immediately.

North-east NSW is a major source of native forest hardwoods. And unlike in other States of Australia, the private sector is on a par with the public forest sector.

Over decades we have met many foresters and contractors. While some have been hostile, many others are keen to talk. More often than not they tell the same story: what is happening in the forests is wrong, it's not sustainable. Some even phone anonymously or contact third parties to express their concerns.

How did it come to this?

We have all seen the sepia photos of the giant trees that dwarfed the timber cutters. When we were formed, log trucks left the forests with only one, two or three logs per load. It is beyond shocking that old, large trees can still be cut down, but they are now as rare as hens teeth.

Before logging of rainforests officially ended, most (about 90%) of the large rainforest trees, found where the rainforest creeps out along the creeks and gullies, had been logged. Decades later, the gullies which once harboured mighty stands of Red Cedar, White Beech and Coachwoods are vine

thickets. Logging tracks from decades ago continue to erode and pollute waterways. In some parts of the region the downstream gravel resulting from past logging is a metre deep along the entire stream bed. Where are the studies of the damage done by the logging of the rainforests? It is part of some kind of amnesia that we are asked to constantly find 'balance', without ever assessing past losses?

At the end of the 1980s the Forestry Commission, as it was then called, made no bones about the fact it intended to 'liquidate' the oldgrowth. They didn't recognise oldgrowth forest. They called it over-mature /senescent trees that needed to be taken out to make way for new growth. But decades before, by the end of the 1960s it was clear that there would be grave supply issues. In the 1960s-90s there was significant investment in the establishment of the softwood plantation estate, to address the predicted shortfall in timber that the Forestry Commission knew was coming. By the 1990s it was apparent that softwood was the preferred building material for house construction. Investment in softwood plantations has not kept pace with demand, with Australia now importing softwood from New Zealand. If the money poured into propping up the hardwood (native forest) industry had been directed at softwood plantation establishment, the forests would be healthier and there would be more jobs and fewer imports.

By the end of the 1990s the supply of large logs was running out. For this reason, the definition of a high quality sawlog was changed to one with a small end diameter of 25cm. A $120m structural adjustment package saw millions of dollars given to sawmills, such as Boral Timber (now owned by Pentarch), to re-tool to be able to process the smaller logs.

This change is indicative of the problem with the native forest logging industry. The trees don't grow as fast as they are cut. The heritage trees, hundreds of years old, are mostly gone. The next largest cohort are being rapidly cut through, and in another decade or so the average tree available to the industry will have a small-end diameter of 10cm!

One significant change that has occurred over the 40 years we have been observed the logging industry, is that it has gone from chainsaws to ‘harvesting’ machines. [harvesting suggests that the trees were planted, mining is a more apt description]. Where once there were teams of men spread through a compartment cutting trees, snigging, de-barking and log-loading, now there are just a couple of people in big machines. The logging occurs much more quickly and is less dangerous for the workers, but the impact on the forest is greater and this impact has not been the subject of environmental impact assessment. Recent drone footage of a harvester suggests it can cut and move a tree in about a minute. 50 trees an hour, an average of 60 years old, 3000 years of tree growth and stored carbon, gone in an hour.

Previously logging was undertaken one forest compartment at a time, now as many as ten compartments can be included in one harvest plan. Where a compartment took months to log, now it only takes weeks.

We contend, that the most significant impact is that the machines need clear space for easy manoeuvrability. In order to access the larger trees (the sawlogs) hundreds of smaller trees need to be removed. This is the basis of the claims from DPIE that there are now massive amounts of 'residue' available from logging operations. As the DPIE 2017 report makes clear, they are discussing what are known as 'pulp logs'. Not branches, stumps or tree crowns, but small logs that are not yet big enough for a sawlog. And then there are the impacts of the heavy machinery, compressing the soil.

The major problem with removing all of the small trees in order to better access the large trees, is that the entire area is then pushed back to ground zero. There will not be even a small sawlog for about 40 years. So the logging industry is, in effect, destroying itself.

The larger mature trees are now the primary target of logging (this is specified in the harvest plans). Only trees greater than 140cm Diameter at Breast Height (DBH) get protection as Giant trees, 160 cm if the tree is a Blackbutt. So trees up to 140cm are fair game. Many of these larger trees were previously protected in riparian strips or as recruitment trees under the logging rules (IFOA) that were operational from 1998-2018. In 2018 the requirement to leave mature trees that would eventually become the next hollow bearing habitat trees was removed, and the riparian protection strips were halved.

Rules about the need for pre-logging surveys to search for Koalas were also removed as was the requirement to were those that required night time surveys for nocturnal species such as the Yellow-bellied and Greater Gliders and the large forest owls. It's a sad state of affairs that the logging rules in 2023 actually provide less protection than those in 2003.

Meantime, the rapidly growing forest is a major water user, compared to a water provider. It is also more flammable and more likely to be the subject of intense fire and crown fire. This is borne out in recently published work by Professor David Lindenmayer et al. See for example https://www.nature.com/articles/s41559-020-1195-5: '*The recent fires in southern Australia were unprecedented in scale and severity. Much commentary has rightly focused on the role of climate change in exacerbating the risk of fire. Here, we contend that policy makers must recognize that historical and contemporary logging of forests has had profound effects on these fires'* in terms of severity and frequency, and https://www.bushfirefacts.org/report-3-logging.html '*Climate, including fire weather, is the primary driver of the incidence and severity of fire. Native forest logging increases the severity at which forests burn. This is likely because such operations increase the volume of coarse woody debris, and the density of elevated and vertically oriented live fuels. In addition, by opening up the forest canopy, logging operations probably alter microclimate conditions, causing drying of soils and fuel*.'

Biomass is the new woodchipping.
In order to capitalise on the diminishing size of the forest trees, the logging industry is a leading proponent of a new biomass industry. The burning of biomass- in this case woodchips or wood pellets- in power stations to produce electricity, is constantly being spruiked by the logging industry as necessary to make their business economical.

When the biomass for electricity concept was initially classed as renewable, it was looking at cases of annual crops such as rice husks and other agricultural 'waste' products. The logic was, that the crop residues could be burnt and then the following year, those same crops would remove the carbon from the atmosphere so this could be seen as a carbon neutral outcome.

But as some of the proponents of that original position have now clarified, it was never intended to be about wood. Tim Searchinger, a senior research scholar at Princeton University and Bill Moomaw, professor emeritus at Tufts University are both recognised as forest biomass experts. They have been warning governments that forest biomass generation, transfers standing carbon into the atmosphere increasing emissions. In 2021 they were among more than 500 scientists and economists who wrote to world leaders about this issue. In part the letter read: *"We the undersigned scientists and economists commend each of you for the ambitious goals you have announced…* [They didn't write to the Australian Prime Minister, Scott Morrison], *to achieve carbon neutrality by 2050... Forest preservation and restoration should be key tools for achieving this goal and simultaneously helping to address our global biodiversity crisis...We urge you not to undermine*

both climate goals and the world's biodiversity by shifting from burning fossil fuels to burning trees to generate energy."

The letter can be found here: https://www.documentcloud.org/documents/20482842-scientist-leter-to-biden-van-der-leyden-michel-suga-moon-february-11-2021

As is clear from these links it takes centuries to millennia to re-sequester the carbon from the burnt trees. Time we don't have. This is also true for trees lost due to logging. Most of the wood remains on the forest floor and more than half of that taken off site is used as waste, and more than half of what is used, also becomes waste, and more than half of that is low grade products such as pallets. Furthermore under the changing climatic regime, there is no guarantee that forests will regrow, given the increased frequency of wild and extreme weather. These are the very decades in which the carbon must be drawn down if the climate is to be stabilised.

Internationally, the burgeoning biomass industry is contributing to deforestation, as massive areas of trees are cut to meet market demand for this 'carbon neutral' technology. Burning wood in power stations actually produces more carbon dioxide emissions than burning coal (for equivalent electrical energy produced). It leads to habitat destruction of species that are already threatened with extinction, it takes investment from genuine renewables projects that would actually lead to a net decrease in emissions and it removes trees that if left in place would continue to remove carbon dioxide from the atmosphere.

Internationally opposition to forest biomass electricity generation is growing. It would be an enormous mistake to build this industry into NSW forest management. Another in the long line of Forestry stuff ups such as the Timber Stand Improvement program, the almost complete annihilation of the rainforests, the oldgrowth liquidation policy, the MIS timber program and the over allocation of timber over many decades.

Nonetheless there is an active proposal to burn almost a million tonnes of trees a year, at the old 150MW Redbank Power Station in the Hunter Valley. The proponents have registered numerous names such as Verdant Technologies Pty Ltd in order to provide this dirty business with a green veneer.

Meanwhile, further to the north, the Condong Biomass plant modified its fuel source from woodchips to include waste construction wood, claiming that it is having trouble maintaining supply. For the last several years in its 30MW power station it has burnt wood for 6 months of the year. Most of it has come from the clearfelling of the MIS plantations that were established in the Upper Clarence catchment. The prospectuses for these plantations said they were going to produce sawlogs. Genuine mum and dad investors each lost tens of thousands of dollars, thinking they were investing in a green scheme. The plantations were sold off by the liquidators, the wood has gone up in smoke, no sawlogs have been produced. Now wood from building demolitions, that could be used to meet the demand for structural timbers or certainly designer homes, is smashed and burnt.

Government should be extremely wary of subsidising hardwood plantations. It is unlikely it can be done better or cheaper than those in South America, Africa and Asia. It is likely to be yet another example of poor forestry policy. Let the industry that needs hardwood grow its own as they do in Victoria, or else pay private landholders a premium for their trees, taken under significantly strengthened environmental controls. In 2024 engineered and composite products can meet any timber need.

Sustainability has long been a myth.

Prior to the 1990s the Forestry Commission had little consideration for threatened species despite it's legal obligation to do so. Court cases brought by North East Forest Alliance campaigner John Corkill, among others, forced the Forestry Commission to prepare Environmental Impact Statements. The adequacy of these was questionable, with several being successfully challenged in court. In the end, the EIS process was superseded by the Comprehensive Regional Assessment conducted at the end of the 1990s.

The software developed (FRAMES) by the Forestry Commission to estimate wood volumes was a hastily contrived black box. Very few people understood how it worked but what was very clear was, that if you tweaked the many assumptions, parameters and guesstimates, the outputs would change very significantly.

The system was tweaked to produce a modelled output of sufficient forest growth to satisfy the political demands of the day, but the predictions were unrealistic, and no meaningful testing of the reliability could be conducted.

Nonetheless there was no way that a sustainable timber yield could be delivered **and** a reserve system that at least ticked some of the boxes for comprehensive, adequate and representative as required by the JANIS criteria and the National Forest Policy Statement.

Forestry staff tinkered with the model's parameters, but eventually the government decided that it would adopt a scenario that maintained wood volumes for 20 years – the life of the Regional Forest Agreement- and that after that the available wood volume would crash. It also included the requirement for a review of wood volumes in 2007.

This decision, to maintain timber volumes for 20 years and then see them crash, meant that some important areas of forest were able to be protected. Places that now feature in regional tourist promotion.

In 2003 the NSW government gave additional protection via informal reserve on State Forest to much of the oldgrowth that had been identified during the CRA but not protected at the time. (Smaller areas of oldgrowth forest were not identified and have been systematically logged because 10ha was the smallest oldgrowth patch identified. Tens of thousands of hectares of oldgrowth forest that didn’t meet the threshold). Some additional iconic areas were added to the reserve system such as the remaining Whian Whian and Wollumbin forest, parts of Chaelundi- the subject of one of the initial court and blockade actions by NEFA,- part of Pine Creek state forest and Jilliby near Wyong recognised as more valuable as water catchment for the rapidly growing urban centres of the Central Coast than for its timber.

In all, an additional 65,000ha of forest was protected. The 'quid pro quo' for the industry was a number of changes to the logging rules that the Forestry Commission had estimated would provide at least an equivalent to that forgone from the new reserves, a sawmill had closed and it's quota allocation was available and the 20 year Wood Supply Agreements were extended to 2023.

The review of timber volumes in 2007 never took place.

In 2013-4 there was a stoush between Boral Timber and Forestry Corporation. The details of the legal action and settlement were never released to the public. One outcome though, was that the NSW Government bought back 50,000 cubic metres per annum of quota allocations from Boral for $8.55m and extended their Wood Supply Agreement to 2028. The volume they will receive between 2023 and 2028 is a net increase in wood over the original contracted volume. So in effect Boral got both the money and the wood. At the time other timber millers were happy saying that it would

"pave the way for increased certainty of supply.." but within a few years they were claiming that it was a better deal for Boral at the expense of the smaller regional mills.

As well as the 2014 payment to Boral, in 2006/7 12,200m^3 per annum for 16 years was bought back for $2.78 million. Boral was also paid compensation of $550,000 for 34,000$m^3$ of high quality large sawlogs the Forestry Corporation were unable to supply during 2004-2006, with another undisclosed payment for shortfalls between 2007 and 2014.

In 2022, after catastrophic losses resulting from the 2019/20 bushfires, but never accurately quantified, the then Coalition Government extended all the other Wood Supply Agreements for 5 years so they too were set to expire at the end of 2028. It is that reprehensible and irresponsible action that has landed us in the dire straits we find ourselves in today, where it appears we cannot protect the endangered Greater Gliders and Koalas because their homes have been committed as timber, in a move that was shameful and amoral, that is having devastating impacts now.

There is a serious lack of transparency about wood volumes available, long-term timber contracts, allocation shortfalls etc.

Biodiversity crisis and climate crisis

Biodiversity is in crisis. All around the globe humans are intruding into what were once wild places. The natural world is becoming fragmented, degraded, diminished, depauperate as a result. In Australia much of our wildlife and vegetation communities are falling victim to the death of a 1000 cuts. Environmental assessment processes do not consider cumulative impacts. While each 'cut' on its own doesn't mean extinction, taken together they do.

More than 1000 vegetation communities, native plants and animals are currently on the path to extinction in NSW. Many are forest dependent. Logging has a major deleterious impact on many of these species and this is recognised in the Scientific Committee's determinations as to why various plants and animals are listed as endangered, threatened or vulnerable. The Government's record on providing funding for developing and implementing species recovery or action plans has been poor. Additionally a myriad of planning and development decisions are being regularly made that increase the threat of extinction by allowing the destruction of habitat. The death of a thousand cuts is well underway. https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/help-save-our-threatened-species

The 2023 Henry Review of the NSW Biodiversity Conservation Act, found that only half the threatened species in NSW are likely to NOT BE EXTINCT, in the next 100 years. Animal species that are the result of millions of years of evolution, that have been around for tens of millions of years, and many of them will be gone forever in less than 100 years.

The lack of action on threatened species recovery is all the more appalling when we consider that north-east NSW has been globally recognised as a Biodiversity Hotspot. Likewise the eucalyptus diversity in the region qualifies for World Heritage Listing. But this opportunity, that would bring international recognition and visitors, has been completely ignored. As have potential additions to the World Heritage Gondwana Rainforests.

The biodiversity crisis is global, and Australia and NSW are playing their part in furthering it. Exacerbating it many times over is the climate crisis. Temperatures continue to rise year on year and while the impacts on many species are not yet understood, for many others it is already a nightmare scenario.

Animals that have traditionally coped with the heat such as flying foxes are dropping dead from the trees, unable to cool themselves. Flying foxes are a key pollinator of over 50 of Australia's rainforest plants. It is estimated that a single Flying Fox can disperse up to 60,000 seeds in just one night. Without them, many other species will hurtle towards extinction.
https://littleaussiebat.com.au/flying-fox-facts/ https://poi-australia.com.au/flying-foxes-of-australia/

Koalas have not needed to drink water, obtaining enough fluid to sustain them from their eucalyptus leaf diet. But with the drought and heat they have been forced to come down from the branches in search of water. This has made them more vulnerable to predation and vehicle strike. The additional stress makes them more susceptible to chlamydia.

The Comprehensive Regional Assessment process, like the assessment of wood volumes, was a snapshot in time, now 30 years ago. It was not intended to be the be all and end all of forest knowledge. Indeed the techniques of Geographic Information System data analysis, population viability analysis, habitat modelling and concepts such as Irreplaceability were then in their infancy.

When the CRAs were undertaken climate change barely rated a mention. There was no assessment of whether climate change was having or would have an impact that might need to be considered, not just on the forests and animals, but on factors such as rainfall volume and intensity. It is incomprehensible now that forests, something so significant to our climate response, and so sensitive to climate change would have its management decisions made without consideration of climate change. Even more incredible, was that the Regional Forest Agreements were renewed indefinitely without undertaking this additional work!

One outcome of the Regional Assessments was the promise of Ecologically Sustainable Forest Management. ESFM was to be the guiding principle for the non-reserve forest areas. Unlike the past, where the concept of sustainability was only applied to maintaining the yield, the 21st century was to herald a type of forest management that considered the whole ecology. Logging parameters and prescriptions were put in place. In reality they were a compromise of best estimates, and what was considered to be politically achievable at the time. But in order to determine if they actually worked and were effective, they were to be tested against new data sets. Despite this being raised by us, the belated 5 yearly assessments came and went without key work being undertaken.

For example, did the practice of leaving 6 habitat trees per hectare in the net logging area, actually ensure the persistence of species such as the Yellow-Bellied and Greater Gliders after logging? Does leaving a 10 meter buffer on 1st order streams ensure the persistence of threatened frogs, known to be sensitive to disturbance and water turbidity?

The answers to these questions and dozens of others applicable to forest dwelling species is that after more than 20 years we still don't know. We don't know because the data has never been collected. The extensive surveys across the public land estate that were conducted for the CRA have not been replicated. The localised surveys that were previously required prior to logging have not been replicated after logging to see if the animals and plants that were present beforehand are still present afterwards.

We do know that in the 20 years since the CRA both Koalas and Greater Gliders have officially been determined to have moved closer to extinction. The Greater Glider, once common in the old growth forests of the north coast is now listed as Endangered as is the Koala. Experts have estimated that the koala population had declined by 50% over the last 20 years. And this was before the fires of 2019-20.

The 2019-20 fires burnt 2.4 million hectares of north-east NSW and almost a million hectares of native forest. Untold number of animals died. Professor Chris Dickman, '... estimated that more than one billion animals nationally had so far been killed in the bushfires, with more than 800 million of those in NSW'. The Koala, it's populations already in free fall, were particularly badly hit. Unable to outrun or in many cases out-climb the fire, it is estimated that up to 50% of the remaining koalas perished.
https://www.nefa.org.au/media
https://www.forestrycorporation.com.au/operations/fire-management/fire-impact-of-2019-20
https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1920/Quick_Guides/AustralianBushfires
https://www.epa.nsw.gov.au/your-environment/native-forestry/bushfire-affected-forestry-operations/update-september-2020

Given the wave of concern that spread out across the globe about the plight of our koalas, one would have thought that the NSW Government would have had the guts to insist that every koala left was precious and that they would have taken steps to ensure that those individuals were monitored and given every opportunity to find mates and hopefully to breed.

But no, following the fires we had the unedifying display of power politics where the National Party insisted on reduced protections for Koalas and the Government conceded. What is even more galling is that the Labor Party, which cried foul when in opposition, has continued exactly the same policies now it is in Government.

Private Native Forestry
Private Native Forestry supplies around 40-60% of the timber on the north coast. It has been subject to a Code of Practice and a PNF Property Vegetation Plan was needed. There was a public register containing only the broadest details of these plans, but insufficient to allow the identification of the area subject to the PVP. The PNF PVPs no longer appear to be on the public register.

Successive governments have put millions of dollars into assisting landowner to prepare PNF PVPs. If an equivalent amount had been invested into PVPs for conservation, there might exist now a decent network of conservation corridors across the landscape. But that has not been the case.

Preparation of PVPs included noting the occurrence of any threatened species known from a private land parcel. Unfortunately there have been very few surveys for threatened species carried out on private land and so there are few records. In fact during the CRA, the logging industry representatives in the Forest Products Association publicly called on landholders to not allow surveys on their lands, in order to ensure there were as few encumbrances on logging in the future as possible. Private land logging has always operated on the principle of it's better not to know and the industry has actively and successfully resisted calls for biodiversity surveys to be undertaken prior to logging.

So most PNF PVPs have no threatened species records and thus require none of the species-specific prescriptions in the PNF Code to be applied. Government bureaucrats also assisted by identifying the areas of oldgrowth forest and rainforest that were mapped as occurring on the property. However the process for challenging these areas was facilitated and in many instances, the areas were deemed not to be oldgrowth or rainforest. So apart from a few requirements for stream buffers, habitat tree retention and basal area retention, PNF has been allowed to continue unfettered.

The protection for koalas in the PNF Code of Practice was limited to those areas identified as core koala habitat in a Koala SEPP (44) Comprehensive Koala Plans of Management. That SEPP was introduced in 1996 and for the most part, in the 25 years since, local governments have failed to

prepare KPOMs and several of those that were completed were only partial and didn't cover the whole Local Government Area. Where local governments attempted to do a good job of it, like Coffs Harbour, the Department of Planning refused to approve it because it might have led to too many areas being off-limits to PNF.

It's ok to have a process to potentially protect koalas, but if it's actually going to do that at the expense of someone making money, then there are plenty of caveats and loopholes to ensure that the koalas lose the contest. This is extremely short-term thinking.

The Great Koala National Park

Koala tourism has the potential to be a much more enduring and sustainable industry for the north coast, than logging. Professor Roberta Ryan of Newcastle University who conducted a study on the economic impact of protecting 175,000 hectares of State Forest to create the Great Koala National Park (GKNP) said that her research clearly showed that the Great Koala National Park would deliver a significant uplift in jobs and revenue for the Mid-North Coast region. https://www.newcastle.edu.au/newsroom/featured/report-australias-first-national-park-for-koalas-projected-to-generate-%241.2-billion-in-economic-output-and-9,800-jobs

The study found that over the next 15 years the GKNP was projected to generate more than 9,800 extra full-time equivalent jobs across tourism, infrastructure, and science and education, and inject $330 million in additional wages into the region. It estimated the there were less than 675 direct and related forestry full-time equivalent jobs reliant on the GKNP.

The research found that the loss of jobs in the state forest native logging industry would be more than compensated by the creation of new jobs in the management of the national park and in eco-tourism.

Professor Ryan, was also of the view that other areas of the north coast could gain similar benefits from koala-based tourism. A koala-led recovery would have real and tangible benefits for workers, wildlife and regional economies.

However for the last 18 months, stunning areas of forest, home to Koalas and Greater Gliders among other species, have been annihilated, while at the same time their environmental values are being assessed. It has been an appalling breach of trust.

Public forests must be managed for the public good.

It is the view of the Rainforest Information Centre that the public forests of NSW should be managed for the public good. That means all of us, not just the few that make a dollar from chopping them down and carting them away. It also means making provision for intergenerational equity, and ensuring that future generations can experience the awe of walking among mighty forests, revel in the beauty of the dawn chorus and have a good chance of seeing a wild Koala or spotlighting a Greater Glider. These opportunities are being hacked away -literally- by current policies. This Panel has the opportunity to envisage and recommend something better.

What is the public good that forests contribute to and should determine their management?

The forests of the north-east NSW are a key contributor to the regional water supplies of all of the main coastal towns and cities. There is no scientific dispute, that older forests are water positive. That is, that they deliver more water into the creeks and rivers than they use and regulate high and low flows. Not only that it has been shown that this is a gradual process that continues during drier times. Young trees are water negative- they use water. It can take up to 80 years after logging for

water volumes released from a forest to return to pre-logging volumes. As we move into times of increasing climate uncertainty, stable water supplies are absolutely vital to maintaining healthy stable populations.

Managing the forests back to 'oldness' for reasons of increasing and stabilising water supply is a major public good. A 2018 study of the Thomson catchment in Victoria, (a significant component of the Melbourne water catchment), conducted by scientists at the ANU Fenner School of Environment and Society found that *"past logging operations have led to an annual loss of 15,368 ML in water yield from the Thomson Catchment by 2018. Continued logging would add a further annual loss of between 15,000 ML from the Thomson Catchment by 2050, increasing it to over 35,000 ML. These changes represent an annual loss of 9% and 20% of the ash forest catchment yield for the years 2018 and 2050, respectively. Based on an estimated consumption of 161 litres of water per person per day, this loss in water yield resulting from logging equates to the lost water for nearly 600,000 people by 2050"*

They estimated that the economic value of water across all of Melbourne's catchments, is 25.5 times greater that the economic value of timber from all the native forests. https://openresearch-repository.anu.edu.au/bitstream/1885/149441/5/Resource%20Conflict%20in%20Forested%20Water%20Catchment%2020181108.pdf

Forests also filter water prior to it entering the water network and play a role in flood mitigation. A forest fact sheet from the Victorian Department of Land, Water and Planning says: *Forests, woodlands and wetlands in Victoria's parks provide valuable services. They improve water quality by naturally filtering and purifying it, reducing the amount of soil sediment, pollutants and organic matter that would otherwise reach our waterways. This benefits agricultural producers and water consumers as clean water is critical for human health....Maintaining or improving the condition of forest catchments can decrease the cost of water treatment*.

It goes on to say: *Native vegetation in forests and parks helps reduce damage from floods by helping regulate the flow of water in catchments. Healthy vegetation in forests, woodlands, grasslands and wetlands absorbs rain, regulates water movement, and releases water at more natural velocities and volumes, providing flood protection and reducing soil loss and erosion from rain events*.
https://www.delwp.vic.gov.au/__data/assets/pdf_file/0023/413096/9-Water-fact-sheet-FINAL.pdf

Deep rooted vegetation such as large trees holds the land together. This minimises erosion and soil entering waterways. Soil and gravel entering waterways leads to the clogging up of those waterways. A classic example of this is the Bellinger River. The geology of the area around Bellingen is known as the Nambucca Beds. It is subject to major mass movement of the gravel down the catchment. Bellingen was once a major ship-building location. The famous Alma Doepel was built near where the Bellingen golf course is now located. The Alma Doepel had a draught of 2.2 metres. There is no way you could get a sailing ship down the river these days it is so full of the stones and gravel that have been washed down the creeks. It is a sad irony that with each load of timber that sailed away, the river became less navigable.

The washed down sediment also means increased turbidity, decreased water quality having a deleterious effect on riparian wildlife and downstream industries that depend on clean water such as the oyster industry and the fishing industry.

Intact forests that are moving towards the multi-age stage, but with the canopy dominated by older trees, known as oldgrowth, offer the best opportunity we can provide for much of Australia's unique forest-dependent flora and fauna to survive. Most of the species that are closer to extinction, require

undisturbed older forests. The money spent on threatened species projects would be better spent buying out logging contracts. Removing this destructive practice from our publicly owned forests makes the likelihood that koalas, black cockatoos, large forest owls and gliders will persist in the wild, that much more viable.

As an aside- in the 1960s the Forestry Commission introduced a program that they called Timber Stand Improvement. This was implemented as a priority in the coastal forests and involved removing all the large old trees. As a result many of these forests are now missing the whole suite of hollow-dependent species as they have nowhere to nest, den, breed.

Intact forests with the full complexity of ground/mid-storey/over-storey are cooler. Not only do they act as a giant air conditioner that has an impact on major weather systems, but they also provide sanctuary to animals struggling to survive as the days and nights get warmer as a result of global warming.

Research has been published that intact extensive areas of forest not only act as an air conditioner, they can also attract and produce rain.

Older forests act as a major repository of carbon. Not only are massive amounts stored in their trunks, but the process of decomposition that occurs within an intact forests sees significant amount stored in the soil. Work on south-east Australian forests suggests that there can be almost as much carbon in the soil as in the living biomass. Obviously much of this is removed as a result of logging and the disturbance and post-logging fires see much of the soil carbon released to the atmosphere.

An excellent discussion of forest carbon and the amount of carbon stored in the forest soils, the impact of forest degradation and its significance for climate change is Green Carbon, the Role of Natural Forests in Carbon Storage, by Mackey, Keith et al.

From a climate change perspective, forest degradation needs to be defined to include the impact of all human land-use activity that reduces the current carbon stock in a natural forest compared with its natural carbon carrying capacity. The impact of commercial logging on natural forests must therefore also be considered when accounting for forest degradation. As discussed earlier, 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
http://press-files.anu.edu.au/downloads/press/p56611/pdf/book.pdf?referer=231

The industry likes to promote the myth that young rapidly growing forests take up more carbon than older forests. This fails to take into account that older forests have much greater carbon already sequestered. Logging sees less than half of the tree removed. The crowns and stumps are burnt in the post-logging burn. Once the tree trunk is taken, only the larger better quality logs are taken to a sawmill for processing. Of these, 40% is considered a good recovery rate. So 60% is 'waste' much of which gets burnt, releasing the carbon. Of the 40% of the log that is processed there is still a significant component that ends up as a short term product such as pallets. The small logs get taken for woodchipping and firewood.

The flush of young regrowth that occurs post-logging is often weed infested. It is also extremely fire prone. There is now evidence to show that the intensity of the fires in southern NSW in January 2020 was partly driven by the extensive areas of young regrowth resulting from decades of clearfell logging to produce woodchips for export. https://news.griffith.edu.au/2021/02/10/logging-and-thinning-of-forests-can-increase-fire-risk/

Older trees provide massively larger flows of nectar and pollen. Their mighty crowns produce thousands of flowers, compared to the sparser efforts of regrowth. (Even research by the logging apologists at DPI found that mature forests produced almost 10 times as much sugar per hectare as recently logged forest). They are vital food for numerous pollinators, from European honey bees to flying foxes along with hundred of other species of birds and insects.

Apiarists depend on the public forests to over-winter their bees, to keep them alive and healthy before they take them west to pollinate the fruit and nut crops that are major sources of employment and revenue. Logging has been reducing the available flows of nectar.

Forest tourism is a growing industry. Climbing, biking, hiking, scrambling are all in the ascendancy as people seek adventure and challenge for a low carbon emission experience. Nature appreciation, wild life observation are likewise drawing thousands of visitors to the public forest estate. There is a growing demand for cultural tourist experiences with First Nations people taking the lead in sharing their long history with the land.

In fact First Nation peoples are speaking out all across the region about their dissatisfaction with logging practices and the impact it is having on their cultural landscape. The Githabul in the north have told Forestry Corporation not to log in their country, similarly the Gumbaynggirr further south are mounting opposition to all logging in their traditional forested lands.

There is no doubt that this opposition has partly been driven by the logging practices of the last decade or so thats see most of the largest mature trees cleared with only a token lonely older tree here and there.

There is a huge future for forest/nature based education and training. Developing facilities and programs will not only create employment, but will generate savings as participants develop skills and self-reliance and become less dependent on state services.

In summary as the forest ages there is more: biodiversity, rainforest, water stored and released, carbon stored, recreation and tourism opportunities, First Nations connections and cultural heritage protected, nectar produced and pollinators supported. There are less weeds, and the forest is less flammable.

As the forest gets younger there is less: biodiversity, rainforest, water stored and released, carbon stored, recreation and tourism opportunities, First Nations connections and cultural heritage protected, nectar produced and pollinators supported. There are more weeds, and the forest is more flammable.

It’s what is called a no-brainer. We shouldn’t have to think too hard about which scenario benefits us as a society the most. And of course there are more jobs in a healthy environment, and less disaster management.

We call for an immediate end to the destructive native forest logging industry.

The Rainforest Information Centre supports the submission made the North East Forest Alliance. That more comprehensive submission covers the material in greater detail and provides numerous references that also substantiate the points made here.

Recommendations:
That the NSW Government announce the end of native forest logging on public land, by the end of 2025 at the latest.

That there be an immediate moratorium of logging in high density Greater Glider areas and identified Koala Hubs.

That a program be established to assist those workers adversely affected by the decision into alternative employment, through training and relocation packages.

That the NSW Government legislate to disallow native forest biomass from the public forest estate to be combusted for electricity generation in power stations or otherwise considered to be a carbon-neutral activity.

That First Nations people be given every assistance to identify those forests of cultural importance and where they see opportunities for employment in management and tourism they be assisted to achieve those outcomes.

That the Great Koala National Park be established immediately and every action be taken to immediately protect other koala populations where they are identified.

Seek Expressions of Interest for the development of forest/nature based education programs and facilities and develop goals that will see students in the public school system given access to learning experiences in a forest environment.

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