

Submission
No 229

**INQUIRY INTO LONG TERM SUSTAINABILITY AND
FUTURE OF THE TIMBER AND FOREST PRODUCTS
INDUSTRY**

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Please accept this submission to the Inquiry into the long-term sustainability and future of the timber and forest products industry. My key points are present here in relation to the following Terms of Reference:

(b) the impact of external influences on the timber and forest products industry, including but not limited to drought, water, fire, regulatory structures, habitat protection and local, state and federal policies regarding climate change and plantation establishment,

(c) projections for softwood and hardwood supply and demand over the next 30 years, and

(g) the environmental impact and sustainability of native forest logging, including following the 2019/20 bushfire season.

1. The different Importance and functions of plantation forests and native forests

1.1 It is critical to make the distinction between the contributions of plantations and native forests to the timber and forest products industry. Australia has a total of 134 million hectares of forest of which 132 million hectares are native forests and only 1.95 million hectares are commercial plantations. Yet, 88% of Australia's wood supply is sourced from these commercial plantations which are only 1.5% of the total forest area¹. In NSW, the figure is 86% of wood supply. It is clear that the future of the industry resides in plantations and related manufactured wood products.

1.2 Recent research is revealing insights into the Total Economic Value of native forests based on all their ecosystem services include their role in carbon retention, clean water supply, and biodiversity conservation, among other things. A global meta-analysis found that the aggregate economic value of these non-extractive forest ecosystem services is greater than their timber value².

¹ *Australian forest and wood products statistics*; <https://www.agriculture.gov.au/abares/research-topics/forests/forest-economics/forest-wood-products-statistics>

² Taye F.A. et al. (2021) The economic values of global forest ecosystem services: A meta-analysis. *Ecological Economics* 189 (2021) 107145.

External influences

A critical external influence on the timber and forests product industry is *climate change* in terms of both (a) the urgent need to mitigate greenhouse gas emissions and (b) managing climate change impacts and projected risks.

2. Mitigation

2.1 Human-induced climate change is an established scientific fact. Limiting global warming to the Paris Agreement target of well below 2 °C above pre-industrial levels (the main metric used to gauge climate change) requires rapid and deep cuts in carbon dioxide emissions from fossil fuels and forest management for commodity production, among other sources of greenhouse gases. The recent report of the Intergovernmental Panel on Climate Change³ has made it clear that that “net zero emissions” will need to be reached by around 2030 if we are to avoid exceeding 1.5 °C.

2.2 A significant contribution to Australia’s mitigation efforts therefore can come from the conservation of native forests as this will (i) avoid emissions from the logging that would otherwise occur and (ii) enable ongoing removals of atmospheric CO₂ by ongoing natural forest growth. The conservation management of native forests is therefore a superior mitigation strategy compared to forest management for commodity production. This is true even when the carbon in wood products and substitution factors are taken into account⁴.

2.3 It has been argued that burning forest biomass for energy is “carbon neutral” or “climate friendly”, however this is not true⁵. When biomass is combusted as an energy source, CO₂ emissions are released into the atmosphere, adding to the stock of atmospheric carbon, thereby increasing the atmospheric concentrations of greenhouse gases - the driver of human induced climate change. The emissions from burning biomass are instantaneous, but their removals from atmosphere are not. Rather, there is a significant time lag with the critical factor being the "cumulative net emissions", i.e., the additional CO₂ emitted and accumulated in the atmosphere by burning biomass over time compared to its alternative fate of being left to remain incorporated into the forest ecosystem, including the component which is incorporated into the soil carbon pool.

3. Managing climate impacts and risks

3.1 The world is already experiencing 1.1 °C of global warming above pre-industrial levels. This has been associated with increased wildfire activity globally. Australia has warmed on average by > 1 °C with most warming occurring since 1950. This warming has been associated with long term declines in cool season rainfall (12% decline since 1990 in south-eastern Australia, and 20% decline since 1970 in south-

³ IPCC, 2021: *Summary for Policymakers*. In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press.

⁴ Keith H., Lindenmayer D., Mackey B. and McIntosh A. (2015) Under What Circumstances Do Wood Products from Native Forests Benefit Climate Change Mitigation? *PlosOne* DOI: 10.1371/journal.pone.0139640.

⁵ Mary S Booth (2018) Not carbon neutral: Assessing the net emissions impact of residues burned for bioenergy. *Environ. Res. Lett.* 13 035001

western Australia); increasing daily maximum temperatures; and increasing intensity, frequency and duration of heatwaves. 2019 was Australia's warmest and driest year on record, and spring 2019 was the driest on record.

3.2 Across southern Australia, there has been an increase in extreme fire weather and the length of the fire season since the 1950s. Fire danger ratings have been revised because of the worsening fire weather conditions. When the fire danger ratings system was introduced, values ranged from 1 – 100. In 2009, the system was revised and expanded to include values above 100 and a new 'catastrophic' level was adopted ('Code Red' in Victoria). In spring 2019, Australia had record high FFDI values for this time of year in all States and Territories. On 6 September 2019, FFDI values for almost 60% of Australia were the highest on record, reaching the new catastrophic category at some locations in New South Wales.

3.3 Projected climate change will continue to increase dangerous fire weather danger over most of Australia and particularly in south-eastern Australia, with longer and more severe fire seasons, more days of high, very high, and extreme fire danger, more area burned, and increased fire control difficulty. The risk of pyroconvection (fire storms) during November and December will increase in some regions of southern Australia, particularly forested areas with rugged terrain⁶.

4. Implications for forest management

4.1 Fire weather is the most important factor determining fire severity, rate of fire spread, the area burned and the probability of containment. Dangerous fire weather will continue to increase under climate change, particularly in south-eastern Australia, and the effectiveness of fuel treatment is likely to be substantially reduced. Under these conditions, it is fuel dryness rather than load which is the critical factor. The location of fuel reduction therefore is more important at reducing asset loss than how much of the landscape is prescribe-burnt⁶. It follows that managing the increased wildfire risks from projected climate change will be best served by targeted prescribed burning to reduce fuel hazard in the close vicinity of assets. The risks to wood supply therefore can be most cost-effectively managed by focusing fire management resources and actions at plantations.

⁶ See assessment of peer reviewed publications summaries in a series of report by the joint Griffith-ANU bushfire recovery project; <https://www.bushfirefacts.org/fire-resources.html>