

WA Forest Alliance Submission

29th November 2019



Climate Change in Western Australia – Issues Paper

Department of Water and Environmental Regulation Consultation, 2019.

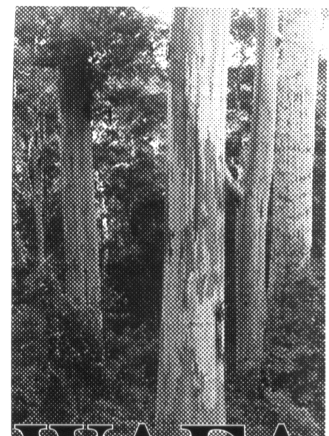
Climate Change Consultation

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***Forests are a vital ally in the climate crisis -
we must prioritise their conservation.***



WAFA
WESTERN AUSTRALIAN
FOREST ALLIANCE

1. Introduction

WA Forest Alliance appreciates the opportunity to comment on the DWER Climate Change in Western Australia – Issues Paper. WA Forest Alliance is the peak forest conservation community organisation in WA. We have been working to protect native forests in WA since 1990. In 2016, we launched the Forests For Life plan for transitioning the timber industry and delivering multiple co-benefits for landcare, biodiversity, climate and farming productivity and amenity.

We wholeheartedly endorse the Conservation Council of WA's comments on the Climate Change in Western Australia – Issues Paper. We agree that the Issues Paper lacks the ambition and vision needed and that it is absolutely critical that a legislative framework be developed to ensure the necessary steps are taken to get WA on a rapid trajectory towards net zero carbon emissions by 2050 at the very latest.

WA needs a clear pathway, entrenched in legislation to:

1. Stop burning fossil fuels
2. Protect and restore native forests and other biodiverse carbon stores
3. Implement a transition to a decarbonised society that leaves no one behind
4. Make climate justice a normative factor in every decision across every area of government
5. Fund communities to mitigate and adapt to climate change at a local government level.

There is a major oversight in the Climate Issues Paper that WAFA specifically focuses on in this submission.

Native forests store and draw down huge volumes of carbon from the atmosphere and currently deforestation and forest degradation are major drivers of climate change.

Forest protection is essential if we are to keep the average global temperature increase below 1.5 degrees Celsius.

2. Accounting for the role forests play in mitigating and adapting to climate change

The latest IPCC report found that, "Reducing deforestation and forest degradation rates represents one of the most effective and robust options for climate change mitigation, with large mitigation benefits globally". (Seymour and Gibbs, 2019; IPCC, 2019)

Business-as-usual practices will lock in 1.5 °C of global warming within 10 years, with catastrophic impacts. As well as stopping emissions, CO₂ withdrawal from the atmosphere is essential (IPCC, 2018).

Australia can play a significant direct and leadership role in reducing global warming by protecting and restoring our extraordinarily carbon dense and biodiverse forests. This offers a practical and effective way for us to act locally for substantial local and global benefits.

But, before we can do this, we need significant policy change. Right now forests are being logged, cleared and burnt with massive impacts on climate, water, wildlife and communities, releasing huge volumes of carbon into the atmosphere, and degrading a vital carbon sink.

Forests are a part of the climate system: they draw down carbon from the atmosphere, store it in their trees and roots and move it down into the soil. They cool the globe and they make and attract rainclouds. They are part of the climate system.

Because of the lag time between emissions and temperature increases, global warming will continue even after we stop burning fossil fuels. We need to draw carbon out of the atmosphere as a matter of urgency and, to do this, forests and other major bio-carbon sinks are our best hope.

Net emissions from land use change and forestry account for about one third of accumulated atmospheric CO₂ and are currently around 13% of total annual emissions (Global Carbon Project 2018).

Stopping deforestation and allowing secondary forests to grow would yield cumulative negative emissions between 2016 and 2100 of about 440 billion tonnes CO₂ globally (Houghton and Nassikas 2018). – about the same as the remaining global carbon budget for 1.5 degrees of global warming (IPCC 2018).

Native forests, especially ancient forests, store carbon, longer and more securely compared to logged and plantation forests (Keith et al. 2015), and Australian eucalyptus forests are among the most carbon dense in the world (Keith et al. 2009). The loss of irreplaceable primary forests, including ancient forests, is particularly alarming given that they serve as invaluable carbon sinks (NYFD 2019).

Australia's forests are an especially important ally in the climate and ecological crises we face. Australia's tall wet forests, including the mountain ash (*Eucalyptus regnans*) forests of Victoria and Tasmania have been extensively studied are among the most carbon dense forests in the world. (Keith, Mackey and Lindenmayer, 2009).

Intensive, industrial logging such as the current clear-felling and burning of forests is not compatible with a 'forests for climate' approach. Industry lobbyists in Australia are trying to co-opt the IPCC message and science more broadly, and it is important for us to be aware of the facts so that we can successfully advocate sensible, scientifically robust forest policies.

3. Local resilience and adaptation

Forest protection and restoration offer critical improvements in our local resilience and adaptation to global warming. It has been established that up to 62% of the rainfall decline in the South West can be attributed to land-clearing (Andrich and Imberger, 2013). Forests make and bring rain, create shade and reduce temperatures, protect soils and riparian zones.

Regrowth forests (following clearing and intensive logging) use up to twice as much water than old-growth and other mature forests (Macfarlane and Silberstein, 2010). Protecting mature forests and allowing regrowth forests to mature reduces pressure on groundwater and riparian systems and reduces the drought sensitivity and flammability of the forests.

4. Taking action

We must:

1. Protect native forests as biodiverse carbon stores
2. Restore cleared and degraded areas to native forest ecosystems
3. Transition the timber industry to sustainably managed plantations and farm forestry

4. Develop a strategic approach to prescribed burning by abandoning the annual burning target; burning small, strategic areas close to town-sites and infrastructure to keep fuel levels low and allowing low-fuel level, long-unburnt ecosystems to develop
5. Rule out native forest bioenergy

Key points:

1. **Mature, biodiverse, ecologically intact forests capture and store the most carbon.** They are more resilient and reliable carbon sinks than logged and plantation forests are, even accounting for the carbon stored in wood products (Keith et al, 2014; Keith et al. 2015).
2. **Old trees draw down more carbon than young trees** (Stephensen, 2014) and it takes at least 150 years for a clear-felled forest to reach 90 per cent of the carbon carrying capacity of an old forest (Roxburgh, 2006).
3. **The vast majority of logs sold from native forests each year (in WA, 85 per cent) become paper, fuel-wood and sawdust, which quickly release their carbon to the atmosphere.** (Dean, Wardell-Johnson and Kirkpatrick, 2012). Massive volumes of carbon are also released in the forest when the branches and reject logs are burned after the logging operation (Lindenmayer and Mackey, 2015).
4. **At a local climate level, forest protection and restoration can provide climate resilience and adaptation we desperately need in the South West.** Even as global warming accelerates, forest protection and restoration are vital to local resilience and adaptation. Land-clearing in south-western Australia has caused up to 62 per cent of the region's rainfall decline (Andrich and Imberger, 2013). Protection and restoration of forests offer the best promise of rain.
5. **Forests are a part of the climate system, so the feedback goes both ways.** Forests are critical in our efforts to adapt to and mitigate dangerous climate change. However, they also suffer from the effects of a changing climate. Increased temperatures and reduced rainfall are increasingly putting tall forests under stress. The increasing severity of fires is having major impacts on forests here and around the world. We need to look after the forests and give them the best chance of adapting to climate change for their own sake, and so that they can do the best possible job of mitigating dangerous climate change for the all of the creatures and ecosystems on the planet.

REFERENCES (Also see <http://forestsforlife.org.au/climate-and-the-forests> for further reading)

Andrich, M. & Imberger, J. 2013 The effect of land clearing on rainfall and fresh water resources in WA: A multi-functional sustainability analysis. *International Journal of Sustainable Development and World Ecology*. 20:6, 549 – 563.

Dean, C. & Wardell-Johnson, G. 2010. Old-growth forests, carbon and climate change: Functions and management for tall open-forests in two hotspots of temperate Australia. *Plant Biosystems - An International Journal Dealing with all Aspects of Plant Biology*, 144: 1, 180 — 193, First published on: 03 March 2010 (iFirst) <http://dx.doi.org/10.1080/11263500903560751>

Dean C, Wardell-Johnson GW & Kirkpatrick, JD. (2012). Are there any circumstances in which logging primary wet-eucalypt forest will not add to the global carbon burden? *Agricultural and forest meteorology* 161: 156 -169.

Keith, Heather, Brendan G. Mackey and David B. Lindenmayer. 2009. *Re-evaluation of forest biomass carbon stocks and lessons from the world's most carbon-dense forests*. Proceedings of the National Academy of Sciences Jul 2009, 106 (28) 11635 11640; DOI: 10.1073/pnas.0901970106 <https://www.pnas.org/content/106/28/11635>

Keith, Heather; David Lindenmayer; Brendan Mackey; David Blair; Lauren Carter; Lachlan McBurney; Sachiko Okada and Tomoko Konishi-Nagano. 2014. *Managing temperate forests for carbon storage: impacts of logging versus forest protection on carbon stocks*. *Ecosphere* June 2014, 5:6, 1 – 34. <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1890/ES14-00051.1>

Keith, Heather; David B. Lindenmayer; Andrew Macintosh and Brendan Mackey. 2015. “Under What Circumstances Do Wood Products from Native Forests Benefit Climate Change Mitigation?” *PLoS ONE* 10(10). <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0139640>

Lindenmayer, D & Mackey, B. 2015. *Native Forests can help hit Emissions Target if we Leave Them Alone*. The Conversation. <https://theconversation.com/native-forests-can-help-hit-emissions-targets-if-we-leave-them-alone-44849>

Houghton RA, Nassikas AA (2018) Negative emissions from stopping deforestation and forest degradation. *Global Change Biol* 24:350-359

IPCC (2018) Summary for Policy Makers

https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf

Macalpine, C., Syktus, J., Seabrook, L. 2016. *Stopping Land Clearing and Replanting Trees Could Help Keep Australia Cool in a Warmer Future*. The Conversation.

<https://theconversation.com/stopping-land-clearing-and-replanting-trees-could-help-keep-australia-cool-in-a-warmer-future-63654>

Macfarlane, Craig and Silberstein, 2010, *Water Use by Regrowth and Old Growth Jarrah Forests at Dwellingup in Western Australia*. Water Corporation and CSIRO.

<https://library.dbca.wa.gov.au/static/FullTextFiles/625450.pdf>

Mackey, B., Keith, H. Berry, S., Lindenmayer, D. 2009. *A Green Carbon Account of Australia's South-Eastern Eucalypt Forests, and Policy Implications*. The Fenner School of Environment & Society, The Australian National University. http://leadbeaters.org.au/leadbeaterspossumreturns/wp-content/uploads/2009/05/green_carbon_text08_small.pdf

New York Declaration on Forests, 2019.

<https://forestdeclaration.org/images/uploads/resource/2019NYDFReport.pdf>

Ore. A. 2014. *Big old trees grow faster, making them vital carbon absorbers*. The Conversation.

<https://theconversation.com/big-old-trees-grow-faster-making-them-vital-carbon-absorbers-22104>

Roxburgh, S.H., Wood, S.W., Mackey, B.G, Woldendorp, P., Gibbons, P. 2006. Assessing the carbon sequestration potential of managed forests: a case study from temperate Australia. *Journal of Applied Ecology* 43:6, 1149 – 1159. <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2664.2006.01221.x/full>

Seymour, Francis and David Gibbs. 2019. Forests in the IPCC Special Report on Land Use: 7 Things to Know. <https://www.wri.org/blog/2019/08/forests-ipcc-special-report-land-use-7-things-know>

Wardell-Johnson G, Neldner J, Balmer J (2017) Chapter 12. Wet Sclerophyll Forests. In 'Vegetation of Australia' 3rd edition (Ed D. Keith) pp 281-313, Cambridge University Press, Cambridge.