The Australia Institute
Research that matters.

The opportunity for Australia's native forests

Jennifer Sanger
Jamie Kirkpatrick
Russell Warman
Bill Browne
Leanne Minshull

February 2020

Summary

Scientific data suggest that logging reduces carbon storage, threatens native species and increases fire hazard.

Economic data over two decades show that native forest logging requires substantial public funding to operate.

Plantations can produce all the wood Australia needs to support a forest products industry, export of woodchips and raw timber. Specialty timber requirements can be met by salvaging submerged trees up to 1000 years old in Tasmania.[1] By protecting native forests, Australia can maintain its wood supply, rural jobs and biodiversity and in the process reduce fire hazard, species loss and greenhouse gases.

This would provide alternative employment for forestry workers and make communities safer.

Introduction

Over the 2019/20 Summer, Australia has experienced extreme and damaging bushfires. Millions of hectares have been burned and some landscapes will never be

[1] Baird (2017) *Hydrowood*, https://interia.com.au/blogs/journal/in-detail-hydrowood

the same again. Australia Institute research has shown that almost four in five Australians are worried that Australia's forests and unique wildlife will not recover.[2]

Despite this, there have been calls from some quarters for further "selective logging" of native forests,[3] with the forestry lobby calling for more funding and access to areas of national parks that had already been damaged by bushfires in order to conduct a "massive harvest and haulage operation".[4]

With millions of hectares of Australia having been burned, and proposals to compound the damage with further logging, it is time to reconsider whether native forest logging is still appropriate or necessary.

Regional employment

Employment in the Australian forestry and logging sector is small, and in decline. Most jobs are in plantation logging, not native forest logging. Jobs in fire and conservation management are likely to be viable employment alternatives for native forest logging workers.

Employment in forestry and logging in all of Australia decreased from approximately 8,700 persons in 1988 to 6,500 people in 2019.[5] There have also been large declines in employment in manufacturing activities related to wood (wood product manufacturing and pulp and paper product manufacturing).[6]

Nationally, most forestry jobs are in the plantation sector. ANU scientist David Lindenmayer estimated in 2016 that plantation jobs accounted for up to 77% of

[2] The Australia Institute (2020) *Polling - Climate change concern*, https://www.tai.org.au/content/concern-about-climate-escalates-bushfire-crisis-continues-climate-nation-polling

[3] Packham & Bashan (2020) *Forestry industry, CFMEU united on logging, burns to take fight to bushfires*, https://www.theaustralian.com.au/nation/forestry-industry-cfmeu-united-on-logging-burns-to-take-fight-to-bushfires/news-story/f890944893a1135a8896f9fcbb8cc0bc

[4] Foley & Towell (2020) *Forestry industry eyes off fire-hit national parks*, https://www.smh.com.au/politics/federal/critics-put-axe-to-forestry-industry-push-to-increase-logging-20200126-p53utg.html; see also McNaughton (2020) *Logging industry and Nationals call for burnt timber to be salvaged from national parks*, https://www.abc.net.au/news/2020-01-29/logging-industry-and-nationals-call-for-burnt-timber-salvage/11903574

[5] ABS (2019) *6291.0.55.003 - Labour Force, Australia, Detailed, Quarterly, Nov 2019*, https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6291.0.55.003Main+Features1Nov%202019?OpenDocument

[6] ABARES (2018) *Australian forest and wood products statistics: March and June quarters 2018*, pp. 12–13, https://www.agriculture.gov.au/sites/default/files/sitecollectiondocuments/abares/afwps-overview-mar-jun-2018.pdf

Victorian forestry industry jobs.[7] Similarly, only 12% of logs harvested in Australia, by cubic metre, are from native forests.[8]

Using a conservative estimate of 50% of forestry and logging jobs being in native forestry, an end to native forest logging would directly affect the employment of 3,250 workers. Fire and conservation management employment could be a viable alternative for these workers.

Native forest logging is heavily subsidised by taxes, which can be better spent on fire mitigation

Native forest logging struggles to make a profit due to declining demand. For decades, federal and state governments have provided substantial subsidies to the forestry industry to ensure its ongoing survival. The major state-run logging corporations run at a loss, including Forestry Corporation of NSW and VicForests. Most alarming is Sustainable Timber Tasmania (formerly Forestry Tasmania), which had total operating cash losses of $454 million over 20 years from 1997 to 2017.[9]

The industry has been kept afloat by numerous government grants. The Tasmanian forestry industry has received substantial government funding, with almost $1 billion dollars of state and federal grants. This has included the 2005 Tasmanian Community Forest Agreement of $203 million and the 2012 Tasmanian Forest Agreement worth $420 million.[10]

The best economic use for native forests would be to leave the forests intact and push for their inclusion in a carbon trading scheme. This way forests could provide much needed revenue for the government, which could be used to restructure the economy, help develop new industries and revitalise regional communities. For instance, native forest logging in NSW lost $79 million between 2009 and 2014, but could have made

[7] Lindenmayer (2016) *Native Forest logging: we can do better than this*, https://www.smh.com.au/opinion/native-forest-logging-we-can-do-better-than-this-20160719-gq91yx.html

[8] ABARES (2019) *Australian Forest and Wood Products Statistics*, https://www.agriculture.gov.au/abares/forestsaustralia/australian-forest-and-wood-products-statistics

[9] Lawrence (2018) *Tasmanian regional forest agreement delivers $1.3bn losses in 'giant fraud' on taxpayers*, https://www.theguardian.com/environment/2018/mar/29/tasmanian-forest-agreement-delivers-13bn-losses-in-giant-on-taxpayers

[10] Macintosh (2013) *Chipping away at Tasmania's future*, https://www.tai.org.au/content/chipping-away-tasmanias-future

$40 million yearly profit if left standing and allowed access to the Federal Government's Climate Solutions Fund.[11]

Large, old-growth trees are important for carbon capture and storage and they keep on capturing carbon for their entire life

South eastern Australia is home to the most carbon dense forests in the world.[12] Old-growth forests dominated by sizable eucalypt trees are excellent at storing large amounts of carbon in the vegetation and soil. Large, old-growth trees continue to grow over their lifetime, and absorb more carbon than younger trees.[13] The above ground carbon returns quickly to the atmosphere when the forest is harvested. Soil carbon can still be released into the atmosphere hundreds of years after forest loss.[14]

The argument is often put forward that forest products, which go into buildings and furniture, are a form of long-term storage of carbon. However, the vast majority of native forests in Australia end up as temporary products such as paper pulp, woodchips or pallets. When Victoria's native forests are logged, only 6% of the carbon remains in sawn timber, with the remaining 94% of carbon released to the atmosphere,[15] including the 60% of the carbon left on the forest floor after harvesting.[16] This remaining debris is either burnt or left to decompose, releasing it into the atmosphere.

Trees and forests are the best method that we currently have to remove and store carbon from the atmosphere. By logging forests, we are not only putting more carbon back into the atmosphere, we are also reducing a valuable carbon sink.

---

[11] Campbell & McKeon (2016) *Money doesn't grow on trees*, https://www.tai.org.au/content/money-doesnt-grow-trees

[12] Keith, Mackey, & Lindenmayer (2009) *Re-evaluation of forest biomass carbon stocks and lessons from the world's most carbon-dense forests*, https://www.pnas.org/content/106/28/11635

[13] Sillett, Pelt, Kramer, Carroll, & Koch (2015) *Biomass and growth potential of Eucalyptus regnans up to 100m tall*, https://nau.pure.elsevier.com/en/publications/biomass-and-growth-potential-of-eucalyptus-regnans-up-to-100m-tal

[14] Dean, Kirkpatrick, & Friedland (2017) *Conventional intensive logging promotes loss of organic carbon from the mineral soil*, https://onlinelibrary.wiley.com/doi/abs/10.1111/gcb.13387

[15] Taylor & Lindenmayer (2019) *Logged native forests mostly end up in landfill, not in buildings and furniture*, http://theconversation.com/logged-native-forests-mostly-end-up-in-landfill-not-in-buildings-and-furniture-115054

[16] Keith et al. (2014) *Managing temperate forests for carbon storage: impacts of logging versus forest protection on carbon stocks*, https://esajournals.onlinelibrary.wiley.com/doi/abs/10.1890/ES14-00051.1

Logging increases fire hazard in the short term

Logging in Australia mostly occurs in wet eucalypt forests. These forests are less likely to burn than drier forests, as the shady rainforest understorey helps to retain moisture in the leaf litter.[17] The understorey in these forests is often made up species which are not particularly flammable. Additionally, there is usually a large gap between the ground litter and flammable material in the canopies above, which prevents the fires from becoming intense.

When wet eucalypt forests are logged, the forests that regrow immediately after logging are very different to old growth forests. The non-flammable understorey is destroyed and replaced with a high density of young eucalypt trees and a much drier understorey. These regrowth forests are therefore much more flammable than old-growth forest. The flames can easily reach into the canopy of the forest, creating very intense fires. These crown fires tend to spread quickly and are difficult to control. Research conducted after the 2009 Black Saturday fires in Victoria showed that recently logged Mountain Ash (*Eucalyptus regnans*) forests, especially those between the ages of seven and 36 years old, burned at a much higher intensity than older forests.[18]

Many native species rely on unlogged forests

A total of 1,352 forest-dwelling plant and animal species are listed under the national Environment Protection and Biodiversity Conservation Act 1999. Forest-dwelling species, which are able to use a forest habitat for at least part of their life cycles, make up 80% of all threatened species in Australia. Forest-dependent species, that require a forest habitat for at least part of their life cycles, make up 48%.[19]

The unprecedented fires of 2019/2020 burned large parts of the ranges of many threatened species, including 272 plant, 16 mammal, 14 frog, nine bird, seven reptile, four insect, four fish and one spider species.[20] The listing status of some of these

[17] Lindenmayer, Hunter, Burton, & Gibbons (2009) *Effects of logging on fire regimes in moist forests*, https://conbio.onlinelibrary.wiley.com/doi/abs/10.1111/j.1755-263X.2009.00080.x

[18] Taylor, Lindenmayer, & McCarthy (2014) *Victoria's logged landscapes are at increased risk of bushfire*, http://theconversation.com/victorias-logged-landscapes-are-at-increased-risk-of-bushfire-30611

[19] ABARES (2018) *Australian forest and wood products statistics: March and June quarters 2018*, p. 44; Davey (2018) *Reporting Australia's forest biodiversity II: threatened forest-dwelling and forest-dependent species*, https://www.tandfonline.com/doi/abs/10.1080/00049158.2018.1510627

[20] Morton (2020) *More than 100 threatened species hit hard by Australian bushfires, pushing many towards extinction*, https://www.theguardian.com/environment/2020/jan/20/more-than-100-threatened-species-australian-bushfires-towards-extinction

species may need to be reviewed by the Threatened Species Scientific Committee once the impacts of the fires are better understood.

Nineteen percent of the 315 Commonwealth listed animal species are thought to be threatened by forestry operations (among other threats), and 13% of the listed plants.[21] These estimates do not take into account the effect of logging operations on fire regimes, which may further affect threatened plants and animals.

Timber needs can be met from existing plantations, with no need to log native forests

Australia's wood production has become increasingly plantation based. In the late 1960s, over 75% of Australia's wood came from native forests, but by 2017/18 this figure had declined to just 12%, with plantations providing the rest. [22]

Australian plantations now produce enough timber to meet their needs and support timber export industries. For the most recent year of complete data, 2017/18, Australia produced 50% more wood than it consumed (total production was 32.9 million m^3 while consumption was 21.7 million m^3). The total wood production from plantations was 28.7 million m^3, about 87%.[23]

This is the result of a long-term shift of wood production in Australia to plantations. Now there is an opportunity to capitalise on past waves of investment in plantation production and to maximise the non-wood values of native forests by finally shifting Australian wood production fully to plantations.

[21] Davey (2018) *Reporting Australia's forest biodiversity II: threatened forest-dwelling and forest-dependent species*

[22] Warman (2018) *Forest Ecosystem Management and Timber Production: Divergence and Resource Use Resilience*, https://www.researchgate.net/publication/330449362_Forest_Ecosystem_Management_and_Timber_Production_Divergence_and_Resource_Use_Resilience

[23] ABARES (2019) *Australian Forest and Wood Products Statistics*