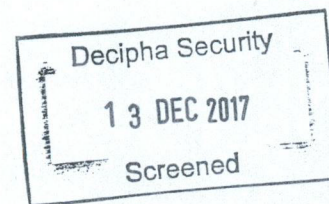


7 December 2017

The Hon. G. Berejiklian, M.P.
Premier
52 Martin Place
SYDNEY NSW 2000

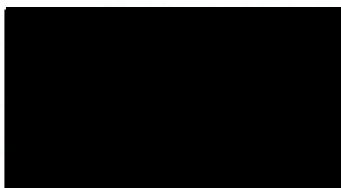


Dear Premier

The NSW Government has announced that it has commenced renegotiation of the Regional Forest Agreements (RFA) with the Commonwealth Government. The National Parks Association of NSW opposes the remaking of the RFA and has developed a plan to transition NSW from native forest logging to alternative ways of producing hardwood and paper. This plan is outlined in our publication *Forests For All* and can be found at <http://forestsforall.org.au>

In view of the commencement of the renegotiation of the RFAs it is important that the consequences of native forest logging are understood by our elected members and the community in general. NPA has developed a briefing paper on the impacts of native forest logging on water supply and quality. A copy of this briefing note is attached. Should you have any questions about its content or NPAs *Forests For All* plan, please contact me on 9299 0000.

Yours sincerely



Alix Goodwin
Chief Executive Officer

Native forest logging is threatening our water supplies

What's happening?

Regional Forest Agreements (RFAs) are 20-year agreements between the State and federal governments that remove the federal government from day-to-day regulation of native forests by providing accreditation for logging under the *Environmental Protection and Biodiversity Conservation Act 1999*. There are three RFAs in NSW: North East, Eden and Southern, and they expire between 2019 and 2021. The NSW Government is currently considering the future of forest management after the RFAs. Since the RFAs were signed, lots of research has taken place that can help inform decisions on forest management so that all benefits of forests are considered, not just timber values. Forested catchments are our best water supplies, and water is one of the most valuable forest benefits. As climate change is predicted to alter rainfall patterns, which threatens the reliability of water supplies to people and industry, we must urgently recognise that forests are our best water sources and that water is the most important forest product.

The RFA aims that are relevant to water supplies from forests are:

1. [Providing] for the ecologically sustainable management and use of forested areas in the regions;
2. [Having] regard to studies and projects carried out in relation to principles of Ecologically Sustainable Forest Management.

Ecologically Sustainable Forest Management (ESFM)

Native forest logging is supposed to adhere to ESFM. The principles of ESFM, as defined by Australia's National Forest Policy Statement¹ are:

1. Maintaining the ecological processes within forests (the formation of soil, energy flows and the carbon, nutrient and **water cycles**);
2. Maintaining the biological diversity of forests and;
3. Optimising the environmental, economic and social benefits to the community within ecological constraints.

Current logging practices do not conform to ESFM due to impacts on (among others) the water cycle, as demonstrated in this briefing. Failing to consider this violation of ESFM when considering the future of forest management post-RFA risks locking in damaging logging practices against the public interest.

Forests are important for water supply around the world

Globally one third of the world's largest cities rely on forested areas for their water supply—including metropolises such as Mumbai, Tokyo, New York, Rio de Janeiro and Los Angeles. Sydney, Perth and Melbourne also rely on forested catchments to deliver reliable, clean water supplies², as do many smaller settlements on the eastern seaboard of Australia. However, only in the case of Perth is the forested area entirely protected in a national park: mining is permitted in the Sydney catchment and much of the Melbourne catchment is available for logging. Logging has documented impacts on both the quantity and quality of water supplies. This has serious implications for many settlements on the Australian coastal fringe where logging occurs as most Australian streams and rivers have their headwaters in forested catchments which are, in many cases, open to logging³. **We must urgently recognise that forests are our best water sources.**

The impact of logging on water quantity

Given Melbourne's reliance on forested catchments for water supplies, about half of which are logged, lots of the research on water yields from logged catchments has taken place in the mountain ash (*Eucalyptus regnans*) forests of the Victorian Central Highlands RFA region. Here, catchments covered in old-growth stands of forests yield about twice the volume of water on an annual basis than those catchments covered in regrowth younger than 25 years⁴. The reason for this is that older forests, because they have fewer trees which are not growing vigorously, transpire less water which is then available to enter creeks as stream flow^{*1}. In addition, the canopy is less dense (the leaf-area index is lower) which results in less rainfall being interception by the canopy⁴. Logging reduces water yield from 1939

*¹<https://mickresearch.wordpress.com/2012/12/21/effects-of-timber-harvesting-on-water-yield-from-mountain-ash-forests/>

regrowth forests by 29%, while logging old-growth reduces water yield by 48%⁵ (Figure 1). **Logging reduces the water yields from forests, which threatens the reliability of drinking water supplies.**



Figure 1: Proportional changes in water yield from regrowth (orange line) and old-growth (green line) following logging in mountain ash forests of the Victorian Central Highlands. Source: Keith et. al. 2017.

Immediately following logging, water yield increases because there are few live trees (they have been cut down) and water enters creeks and rivers easily. As the time since logging increases beyond about two years, there is a sharp decrease in water yield as the rapidly regrowing forest uses lots of water and decreases water yield. After approximately 25 years, self-thinning (competition between trees that results in some trees dying) begins to occur which lowers stem density and water use and increases water yield. But recovery of water yields to pre-logging levels takes two centuries for old-growth forests, and 80 years for regrowth. **Logging leaves a legacy that our great-grandchildren will still encounter.**

In the Goulburn Broken catchment of Victoria, modelling has shown that ending logging would deliver an increase of 3807 gigalitres (1 gigalitre = 1 billion litres) of water over 100 years—six times the annual water use of Melbourne, or 165 times the annual water use of Bendigo. This water was valued at \$1.68 billion, and was worth over twice the estimated timber value over the same period⁶. A recent evaluation of forest benefits in the Central Highlands showed that the economic value of water was worth many times more than timber, and that the water lost via logging was worth \$2.5 million per year. **There are hidden costs to logging that are worth more than the value of timber.**

Does this pattern apply in NSW too?

Increases in stream flow following logging have been documented in NSW forests⁷ and models predicting a similar initial water yield decrease followed by a steady increase in yield post-logging⁸ have been supported by field observations in non-mountain ash eucalypt forests in NSW⁹. The intensification of logging¹⁰, and the removal of a greater proportion of trees across larger areas, will exacerbate the impacts of logging. **The precautionary principle should be applied and industrial logging halted to ensure water supplies are maximised.**

The impact of logging on water quality

Soil compaction resulting from logging decreases water infiltration rates, increases runoff rates and therefore increases erosion¹¹. Because the 'duplex soils' (those with contrasting textures in the soil profile) of south-eastern Australia are particularly prone to sealing (becoming impermeable) when vegetation is removed and they are exposed to rain, the risk of erosion is greater in south-east Australia than for other areas³. Logged areas may contribute up to five times more sediment to water bodies than undisturbed catchments¹² and runoff from cable logging in Tasmania (not currently practiced in NSW) has been shown to increase fine sediment loads in streams which takes five or more years to recover¹³. Road building associated with logging practices can also increase turbidity in streams in certain circumstances¹⁴. **Logging increases erosion vulnerability and reduces water quality.**

Climate change predictions are for increasing temperatures, more frequent droughts and decreased rainfall¹⁵ in south-eastern Australia. The Government has a responsibility to future generations to ensure reliability of water quality and

yield by protecting forested catchments. Water should be a priority consideration in the management of public native forests following the expiry of the RFAs.

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