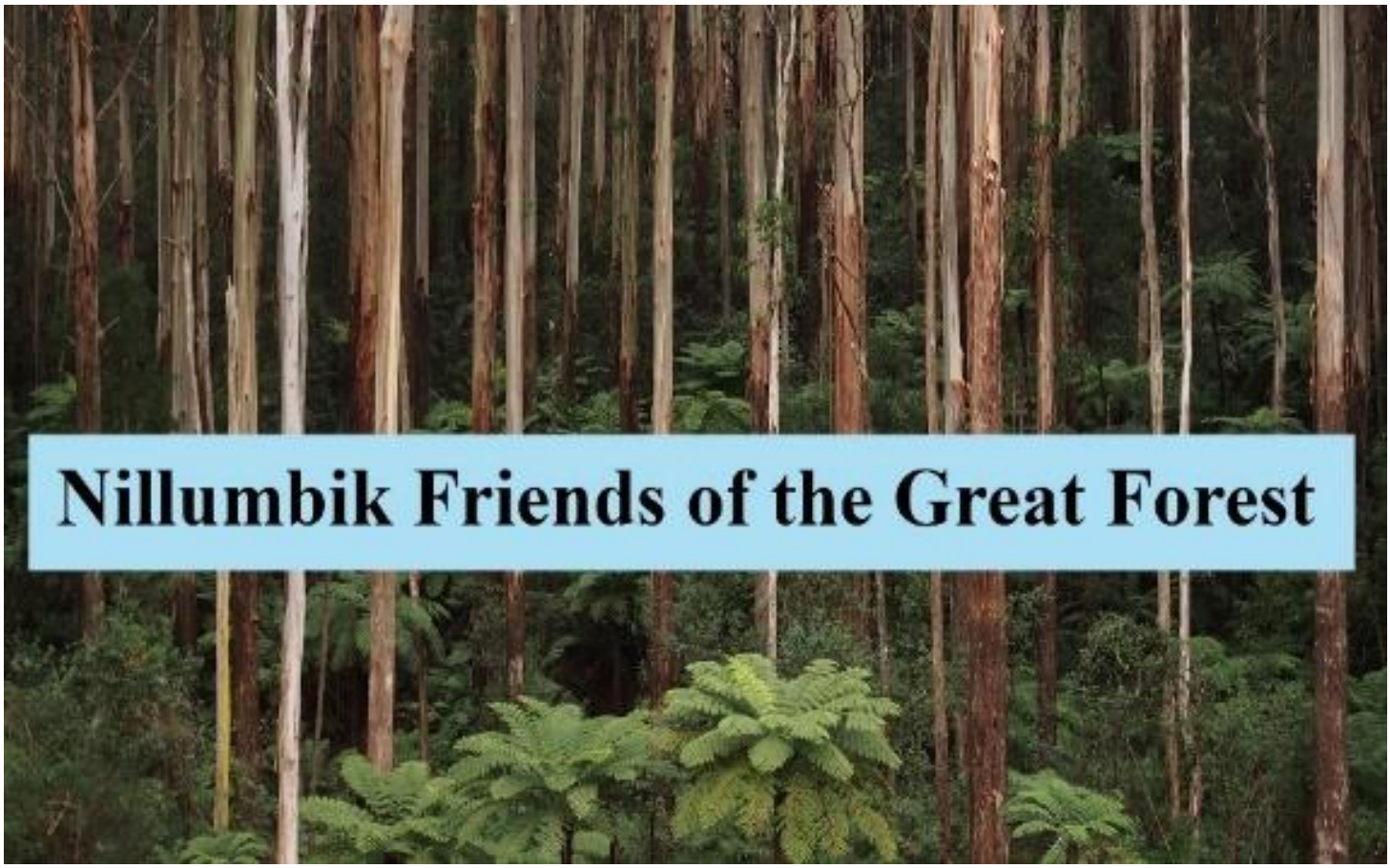


Submission in response to Victoria Clean Air Statement

Prepared by Nillumbik Friends of The Great Forest 24 June 2018

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## About Nillumbik Friends of The Great Forest

Nillumbik Friends of the Great Forest, NFGF, is a community group established to advocate for the Great Forest National Park. We share information with local residents, mainly residents of the Nillumbik Shire area about the current management of the native forests in the Central Highlands Area.

The NFGF takes an active interest in the impacts of the management of the native forests of the Central Highlands on the health and wellbeing of our local community.

# Introduction

The Nillumbik Friends of the Great Forest, NFGF, welcomes the opportunity to provide a submission to the Victorian Air Quality Statement.

Residents in the Nillumbik area have been impacted over this Autumn and Winter by smoke from logging burns which have diminished the Air Quality of our area.

The NFGF submit the following changes to the Air Quality Statement and provide rationale for each change below.

## Nillumbik Friends of the Great Forest submit that:

## The Air Quality Statement:

1. Include information statements specifically about particulate matter with post- industrial- logging burns listed as a source

2. Ensure that particulate pollution categories, cautionary health advice levels, and smog alert levels will continue to be in accord with current World Health Organisation Guidelines or Best Practice Levels

3. Exclude reference to cost or cost effectiveness of air quality control and include the objective of zero deaths and zero illness caused by air pollution. Cost efficiency of air pollution reduction need to be addressed by the emitter

4. Ensure all areas of Victoria have monitoring stations, which consistently report hourly data, daily data and cumulative weekly and monthly data. This data be included in the State-wide community information system (currently called AirWatch)

5. Increase portable monitoring activities to ensure local pollution events are monitored, reported and included in the State-wide community information system (currently called AirWatch). A number of community members over the State should be issued with Air Quality Monitors to assist with comprehensive cover

6. The Air Quality Statement should prescribe changes to emergency management to include community warnings when cautionary health advisory level is expected or reached, and action advice

7. Specify that daily air pollution forecasts will be made readily available to community

8. Should include emission control days when cautionary health warnings are forecast.

9. Ensure that the EPA agency is proactive in monitoring government agencies, industry and community activities and equipped with appropriate legislation and staff to investigate and enforce breeches of the air quality regulations

10. Air pollution should be avoided or minimised at the source.

11. Prohibit logging burns as part of the commitment of Government to use clean technologies and emissions reduction

12. Prohibit clear-fell logging as part of the commitment of Government to use clean technologies and emissions reduction

13. Ensure all Government funded processes, projects, and proposals meet best practice emissions control practices.

## Explanation of Recommendations

### 1. Include information statements specifically about particulate matter with post- industrial-logging burns listed as a source

The adverse health impacts of particulate matter from smoke is not widely known. The Air Quality statement should include a statement that there is adverse long term and acute impact on health from exposure to airborne particulate matter PM10 and PM2.5.

It should be noted that there is no level of particulate pollution that has been shown to cause no harm

The World Health Organization states in its most recent publication on air pollution, that 'the evidence on airborne PM and public health is consistent in showing adverse health effects at exposures experienced by urban populations in cities throughout the world, in both developed and developing countries. The range of effects is broad, affecting the respiratory and cardiovascular systems and extending to children and adults and to a number of large, susceptible groups within the general population. The risk for various outcomes has been shown to increase with exposure, and there is little evidence to suggest a threshold below which no adverse health effects would be anticipated. In fact, the lower range of concentrations at which adverse health effects has been demonstrated is not greatly above the background concentration, which has been estimated at 3–5 µg/m. in the United States and western Europe for PM2.5. The epidemiological evidence shows adverse effects of particles after both short- and long-term exposures.'1

**Australian research shows the adverse health impacts of particulate matter from smoke from fires. Studies by Richard A Broome et al concluded that "14 premature deaths (95% confidence interval [CI], 5e23), 29 cardiovascular hospitalisations (95% CI, 5e53) and 58 respiratory hospitalisations (95% CI, 0e124) were attributable to smoke from hazard reduction burning on the six smoky days.[1]**

The Victorian EPA cautions against particulate matter from smoke;
'Smoke from bushfires, planned burns and other sources can impact air quality. Small particles in smoke usually cause the most concern.1

Sources such as post-industrial-logging burns should be included specifically in these examples due to the high levels of smoke caused by these burns

[1] Richard A Broome[1], Fay H Johnston[2], Joshua Horsley[3], Geoffrey G Morgan[3] *A rapid assessment of the impact of hazard reduction burning around Sydney,* May 2016

2. **Ensure that particulate pollution categories, cautionary health advice levels, and smog alert levels will continue to be in accord with current World Health Organisation Guidelines or Best Practice Levels**

The Air Quality statement Have Your Say document states that "the government wishes to discuss the merits of potential actions such as… increasing the government's own use of clean technologies and emission reduction practices"

We welcome this discussion and include a recommendation in accord with this potential action ( see recommendation 14)

Any relaxation of advisory levels and categories can be avoided by including this association in the Statement.

Such inclusion is in accord with the Government's commitment to use clean technologies and emissions reduction as stated in the Air Quality Clean Air for all Victorians Review publication

3. **Exclude reference to cost or cost effectiveness of air quality control and include the objective of zero deaths and zero illness caused by air pollution. Cost efficiency of air pollution reduction need to be addressed by the emitter.**

The Andrews Government has set greenhouse emissions targets and road toll targets without reference to costs of these targets. Air Quality targets also need to be set without reference to costs.

Cost efficiency needs to be addressed by the emitter, and not compromise the objectives of the Air Quality Statement.

While medical costs of acute and chronic illness and death caused by air pollution can, and should be calculated, the impact of air pollution- caused-illness on quality of life, and the emotional suffering of those affected including their families cannot.

Across Australia, poor urban air quality causes about 3000 premature deaths each year

The cost of Air Quality needs to be borne by the emitters in reducing emissions at the source, not by the community and the Health Department treating the symptoms.

Across Australia, poor urban air quality causes about 3000 premature deaths each year[2] around 2.5 times the number of lives lost on Australia's roads in 2017[3]. Trauma caused by death and lifelong disability of Air pollution is more widespread than that of road trauma.

Just as the TAC have a strategy of Towards Zero, the Air Quality Statement should include the objective of zero deaths and zero illness caused by air pollution

[2] * https://soe.environment.gov.au/theme/ambient-air-quality/topic/2016/health-impacts-air-pollution

[3] 1226 motor vehicle deaths occurred in Australia in 2017 (Bureau of Infrastructure, Transport and Regional Economics)

4. **Ensure all areas of Victoria have monitoring stations, which consistently report hourly data, daily data and cumulative weekly and monthly data. This data be included in the State-wide community information system (currently called AirWatch). Additional data required should be more easily accessible.**

The current number of monitoring stations is insufficient. Regional areas of Victoria and many outer suburbs of Melbourne do not have monitoring stations yet are impacted by high air pollution levels from prescribed burns, logging burns, domestic fires, residential burns, agricultural stubble burns, and dust.

The Air Watch page needs to include readings of all recorded air pollutants for all stations at all times. Cautionary health warnings are based on PM2.5 so this value is particularly important yet it has been noticed that many critical PM2.5 recordings are missing for the Mooroolbark Station history during a recent high pollution event.

*Smoke from post-industrial logging burn Toolangi 2018*

We are concerned that the period from 7am, April 28th 2018 to 3pm May 1st 2018 contains no PM2.5 data for the Mooroolbark station. This was a period of Very Poor Air Quality so was particularly important. The reason provided by EPA for these omissions was a power outage. For such critical infrastructure, emergency power generators should be a part of each station.

During this time there was a significant air pollution event where the Air Quality index reached 900.

At 3pm on May 1st 2018, when the AQI had dropped significantly, the PM2.5 level was reported as 154 ug/m3; indicative of a Cautionary Health Advice of Very Unhealthy for All at this time.
It should also be noted that on April 30, three out of the 12 planned burns in the nearby area were post-industrial-logging burns. These 3 logging burns would have contributed to around one-third of the total biomass burned. (see recommendation 9 for references to biomass burnt in industrial logging burns compared to fuel reduction burns). Post industrial logging burns burn at such high intensity that the plume of smoke moves through the inversion layer. The next morning this smoke settles on the community.

Weekly and Monthly averages should be reported

5. **Increase portable monitoring activities to ensure local pollution events are monitored, reported and included in the State-wide community information system (currently called AirWatch). A number of community members over the State should be issued with Air Quality Monitors to assist with comprehensive cover**

   Air pollution can be seasonal and locations vulnerable to high air pollution levels can vary over the years due to changes in location of post industrial logging burns, prescribed burns, agricultural burns, etc. Portable devises will ensure comprehensive cover and reporting.

   Individuals with portable devises could alert the EPA of unexpected events where permanent or portable stations have not been installed

6. **The Air Quality Statement should prescribe changes to emergency management to include community warnings when cautionary health advisory level is expected or reached, and action advice**

   As described in the Clean Air for All Victorians Air Quality Statement review document; "The Australian Institute of Health and Welfare estimates that, across Australia, poor urban air quality causes about 3000 premature deaths each year.

   This number is well above the number of deaths caused by bushfires yet emergency warnings for bushfires are more widely publicised than those for air pollution.

   Action advice should be included to inform community of measures required for personal safety which may include staying indoors or evacuation.

7. **Air Quality Statement should include the daily publication of air pollution forecasts for each area**

   As described in the Air Quality Statement Review document, there is a current development, with CSIRO, the Bureau of Meteorology and universities, of an air quality forecasting system that predicts smoke distribution and concentration from bushfires and planned burns. This development will need to include pollution form agricultural burns and post logging burns

   As for weather and bushfire risk warnings, these forecasts need to be publicised on a daily basis.

8. **Should include emission control days when cautionary health warnings are forecast.**

   Currently onus is on the community to protect themselves as best they can from high pollution events. The Cautionary Health Advise addresses the actions people can take to attempt to minimise personal health impacts of air pollution, but not any requirement to reduce the emissions.

   Just as severe weather forecasts trigger State-wide or regional fire ban days, severe pollution forecasts should trigger state-wide or regional emission control days.

Many emissions causing processes can be postponed-. Government agencies and some industries and agricultural concerns can facilitate this with procedures to ensure planned emissions events such as post logging burns, prescribed burns, agricultural burns, and residential burn offs are postponed as soon as cautionary levels are reached or forecast for any area.

9. **Ensure that the EPA agency is proactive in monitoring government agencies, industry and community activities and equipped with appropriate legislation and staff to investigate and enforce breeches of the air quality regulations and;**

10. **Air pollution should be avoided or minimised at the source.**

Satellite imagery shows where emissions are sourced

EPA should respond to community alerts but not rely on these. Direct and proactive determination of emissions sources is required.

EPA should be the enforcement agency for all air quality controls and regulations rather than having Council hold some control, and EPA other controls.

All emissions sources need to be regulated. Effective regulation requires maximum limits of pollutants.

Just as pollution is monitored and regulated as it exits industrial manufacturing plants, pollution needs to be monitored and regulated as it is emitted from industrial logging burns

Monitoring processes need to be set up so that emissions from each source can be separately monitored at the source and assessed against maximum limits. It is not sufficient to monitor air pollution some distance away as this creates doubt about source of pollution and difficulty in enforcement.

> As discussed in the recommendation 1 discussion above Studies by Richard A Broome et al concluded that "14 premature deaths (95% confidence interval [CI], 5e23), 29 cardiovascular hospitalisations (95% CI, 5e53) and 58 respiratory hospitalisations (95% CI, 0e124) were attributable to smoke from hazard reduction burning on the six smoky days.[1]

Environmental laws need to facilitate enforcement of emissions regulations by the EPA.

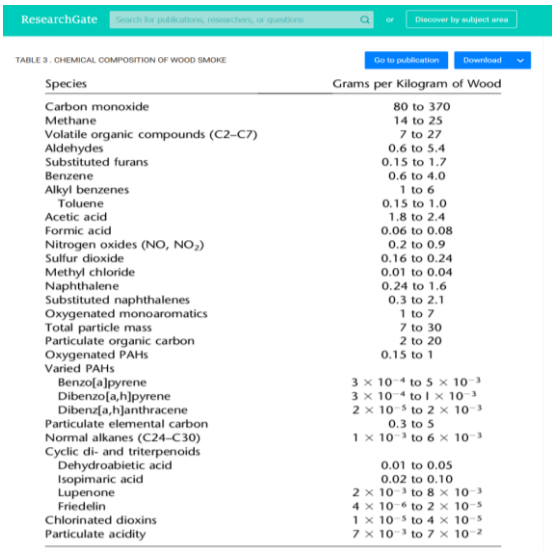
## 11. Prohibit logging burns as part of the commitment of Government to use clean technologies and emissions reduction

Post logging burns should be prohibited in the same way as incinerator use and burning off in inner suburbs is prohibited.
The impact of smoke on community is significant and cleaner technology is available to revegetate areas which have been clear-fell logged
The Air Quality statement Have Your Say document states that the government wishes to discuss the merits of potential actions such as… increasing the government's own use of clean technologies and emission reduction practices"

Eucalypt germination by burning is highly polluting in terms of particulates and greenhouse gases.

According to a report 4completed for the National Carbon Accounting System, clear-fell logging burns consume, on average, 130 t/ha of slash in mixed-species forest and 140 t/ha of slash in Mountain Ash forests. Approximately 3500 Ha of clear-felled forest is burnt per annum resulting in significant airborne particulate burden and greenhouse emissions.

Other toxins (see table)5 are included in wood smoke and should be considered in this decision. In addition, incendiaries add to the pollution burden by contributing additional toxins




| Species | Grams per Kilogram of Wood |
|---|---|
| Carbon monoxide | 80 to 370 |
| Methane | 14 to 25 |
| Volatile organic compounds (C2–C7) | 7 to 27 |
| Aldehydes | 0.6 to 5.4 |
| Substituted furans | 0.15 to 1.7 |
| Benzene | 0.6 to 4.0 |
| Alkyl benzenes | 1 to 6 |
| Toluene | 0.15 to 1.0 |
| Acetic acid | 1.8 to 2.4 |
| Formic acid | 0.06 to 0.08 |
| Nitrogen oxides (NO, $NO_2$) | 0.2 to 0.9 |
| Sulfur dioxide | 0.16 to 0.24 |
| Methyl chloride | 0.01 to 0.04 |
| Naphthalene | 0.24 to 1.6 |
| Substituted naphthalenes | 0.3 to 2.1 |
| Oxygenated monoaromatics | 1 to 7 |
| Total particle mass | 7 to 30 |
| Particulate organic carbon | 2 to 20 |
| Oxygenated PAHs | 0.15 to 1 |
| Varied PAHs | |
| Benzo[a]pyrene | $3 \times 10^{-4}$ to $5 \times 10^{-3}$ |
| Dibenzo[a,h]pyrene | $3 \times 10^{-4}$ to $1 \times 10^{-3}$ |
| Dibenz[a,h]anthracene | $2 \times 10^{-5}$ to $2 \times 10^{-3}$ |
| Particulate elemental carbon | 0.3 to 5 |
| Normal alkanes (C24–C30) | $1 \times 10^{-3}$ to $6 \times 10^{-3}$ |
| Cyclic di- and triterpenoids | |
| Dehydroabietic acid | 0.01 to 0.05 |
| Isopimaric acid | 0.02 to 0.10 |
| Lupenone | $2 \times 10^{-3}$ to $8 \times 10^{-3}$ |
| Friedelin | $4 \times 10^{-6}$ to $2 \times 10^{-5}$ |
| Chlorinated dioxins | $1 \times 10^{-5}$ to $4 \times 10^{-5}$ |
| Particulate acidity | $7 \times 10^{-3}$ to $7 \times 10^{-2}$ |

[4] Raison, R.J.; Squire, R.O., Editors CSIRO Research Publications Repository, Publisher Australian Greenhouse Office, 2008

[5] https://www.researchgate.net/figure/CHEMICAL-COMPOSITION-OF-WOOD-SMOKE_tbl3_5226126

Alternative method of revegetation after logging is Hand planting of forest species. This process was a forced result of community pressure on VicForests to not burn a logged forest area on Silvia Creek Rd Toolangi. Revegetation has thus been proven to be a cleaner and viable alternative in the forest area which was clear-fell logged on Silvia Creek Rd Toolangi.

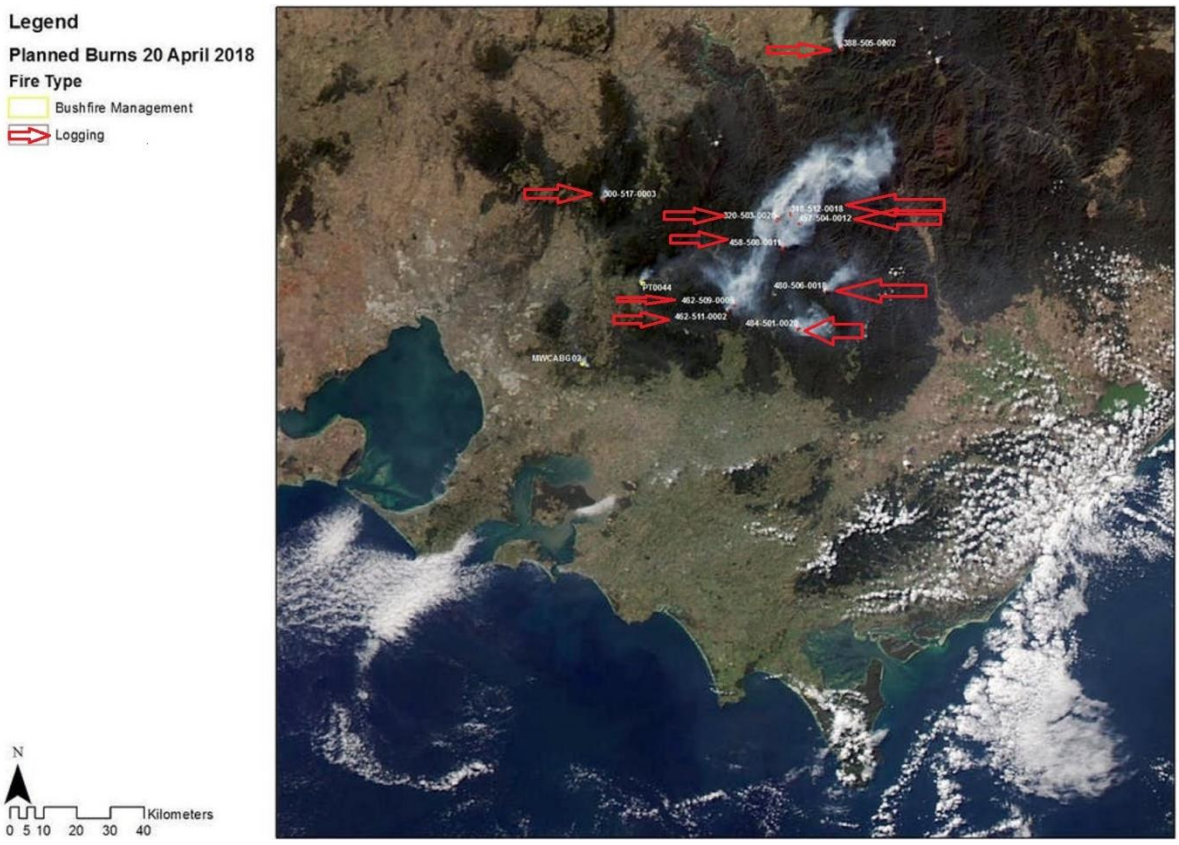
Eucalypt germination by burning has failed in several forest areas where dense wattle copses made up the entire regrowth after the burn. These areas have been slashed and burnt a second time, and in some cases, a third time in attempts to get eucalypts to germinate. Such revegetation failures add even more to the polluting nature of eucalypt germination by burning.

Several days this year had levels of pollution which were very poor in many Melbourne suburbs.

One occurrence was the day after April 20 this year, where 10 out of 12 planned burns were observed as occurring on logging coupes. Using a simple calculation based on average biomass consumption (referenced above), fuel loads and burn coverage for logging and fuel reduction burns, it is estimated that up to 99% of biomass burnt most likely occurred on logging coupes.

Satellite image shows extent of smoke from these burns, logging burns marked with an arrow

April 2018 had many poor to Very Poor air pollution days. On April 20th, 9 out of 11 burns were industrial logging burns



The Air Quality data from EPA Air Watch shows the very poor pollution levels in Melbourne's suburbs the following day:

# Historic air quality data table

Disclaimer | Siting | Planned burns

This table is for viewing historic air quality data. To see current air quality information, please go to EPA AirWatch.

To search for historic air quality data, please select 'choose'. Then enter **a date, an hour and click 'GO'.**

**EPA air quality hourly update: April 21, 2018 10.00 pm - 11.00 pm**

*Please note that current data may not be shown for some air quality monitoring stations. Measurements are made continuously at air monitoring stations, but there may be temporary technical issues with the collection and display of data.*

**Hour:** current | next | previous | choose... **Show:** data readings | index values

| | | Data readings | | | | | | | Air quality index | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Region** | **Station** | **Carbon Monoxide** | **Ozone** | **Nitrogen Dioxide** | **Sulfur Dioxide** | **Particles as PM2.5** | **Particles as PM10** | **Visibility Reduction** | **AQI** | **Summary** |
| | **Units** | **ppm** | **ppb** | **ppb** | **ppb** | **ug/m3** | **ug/m3** | **none** | | |
| EAST | Macleod | | | | | | | | | |
| | Brighton* | | | | | 38.2* | | | 153 | VERY POOR |
| | Box Hill | | | | | | | | | |
| | Alphington | 0.5 | 0 | 35 | 2 | 26.9 | 76.4 | 4.17 | 177 | VERY POOR |
| | Mooroolbark* | | 0 | | | 30.1* | 43.9 | 3.32 | 141 | POOR |
| | Melbourne CBD | | | | | 34.6 | | | 139 | POOR |
| | Dandenong | | 0 | 33 | | | 39.1 | 3.69 | 157 | VERY POOR |
| WEST | Melton* | | 1 | | | 33.3* | | | 133 | POOR |
| | Brooklyn | | | | | | 37.8 | 4.56 | 194 | VERY POOR |
| | Pt. Cook* | | 8 | | | 41.7* | | 4.44 | 189 | VERY POOR |
| | Altona North | | | 23 | 1 | | | | | N/A |
| | Footscray | 0.3 | 1 | 28 | | 27.2 | 38.9 | | 109 | POOR |
| GEELONG | Geelong Sth. | 0.3 | 14 | 13 | 1 | 23.9 | 43.7 | 3.83 | 163 | VERY POOR |
| LATROBE VALLEY | Morwell Sth. | 0.4 | 8 | 12 | 0 | 10.1 | | 1.30 | 55 | GOOD |
| | Morwell East | 0.2 | | | 0 | 10.7 | | 0.74 | 43 | GOOD |
| | Traralgon | 0.2 | 8 | 11 | 0 | 9.8 | 13.5 | 0.79 | 39 | GOOD |
| | Moe | | | | | 11.0 | | | 44 | GOOD |
| | Churchill | | | | | 11.1 | | | 44 | GOOD |
| REGIONAL VICTORIA | Wangaratta* | | | | | 18.4* | | | 74 | FAIR |

View the hourly air quality interactive map.

Air quality index

Very good 0–33 | Good 34–66 | Fair 67–99 | Poor 100–149 | Very poor 150+

Print this record

Another occurrence of very poor Air Quality clearly linked with logging coupe burns was on May 1st 2018.

The Air Quality Index, AQI, reading in Mooroolbark was 900 on May 1st 2018

**EPA air quality hourly update: May 1, 2018 5.00 am - 6.00 am**

*Please note that current data may not be shown for some air quality monitoring stations. Measurements are made continuously at air monitoring stations, but there may be temporary technical issues with the collection and display of data.*

**Hour:** current | next | previous | choose... **Show:** data readings | index values

| | | Data readings | | | | | | | Air quality index | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Region** | **Station** | **Carbon Monoxide** | **Ozone** | **Nitrogen Dioxide** | **Sulfur Dioxide** | **Particles as PM2.5** | **Particles as PM10** | **Visibility Reduction** | **AQI** | **Summary** |
| | **Units** | **ppm** | **ppb** | **ppb** | **ppb** | **ug/m3** | **ug/m3** | **none** | | |
| EAST | Macleod* | | | | | 6.2* | | | 25 | VERY GOOD |
| | Brighton* | | | | | 28.2* | | | 113 | POOR |
| | Box Hill | | | | | | | | | |
| | Alphington | 0.6 | 2 | 13 | 0 | 11.4 | 59.9 | 4.65 | 198 | VERY POOR |
| | Mooroolbark | | 6 | | | | 219.8 | 21.18 | 901 | VERY POOR |
| | Melbourne CBD | | | | | 12.9 | | | 51 | GOOD |
| | Dandenong* | | 3 | 16 | | 66.5* | 173.9 | 15.41 | 656 | VERY POOR |
| WEST | Melton* | | 0 | | | 3.6* | | | 14 | VERY GOOD |
| | Brooklyn | | | | | | 43.4 | 0.66 | 54 | GOOD |
| | Pt. Cook* | | 0 | | | 6.8* | | 0.65 | 28 | VERY GOOD |
| | Altona North* | | | 23 | 2 | 6.9* | | | 28 | VERY GOOD |
| | Footscray | | | | | 9.7 | | | 39 | GOOD |
| GEELONG | Geelong Sth. | 0.4 | 1 | 13 | 0 | 7.7 | 11.3 | 0.55 | 31 | VERY GOOD |
| LATROBE VALLEY | Morwell Sth. | 0.2 | 0 | 6 | 0 | 3.7 | | 1.43 | 61 | GOOD |
| | Morwell East | | | | | 7.5 | | 0.47 | 30 | VERY GOOD |

The PM2.5 reading was up to 66.5 ug/m3 in Dandenong

No level for PM2.5 was released in the Air Watch website in the worst area – Mooroolbark.

To give an indication of how severe this day was for residents, EPA classifications are:

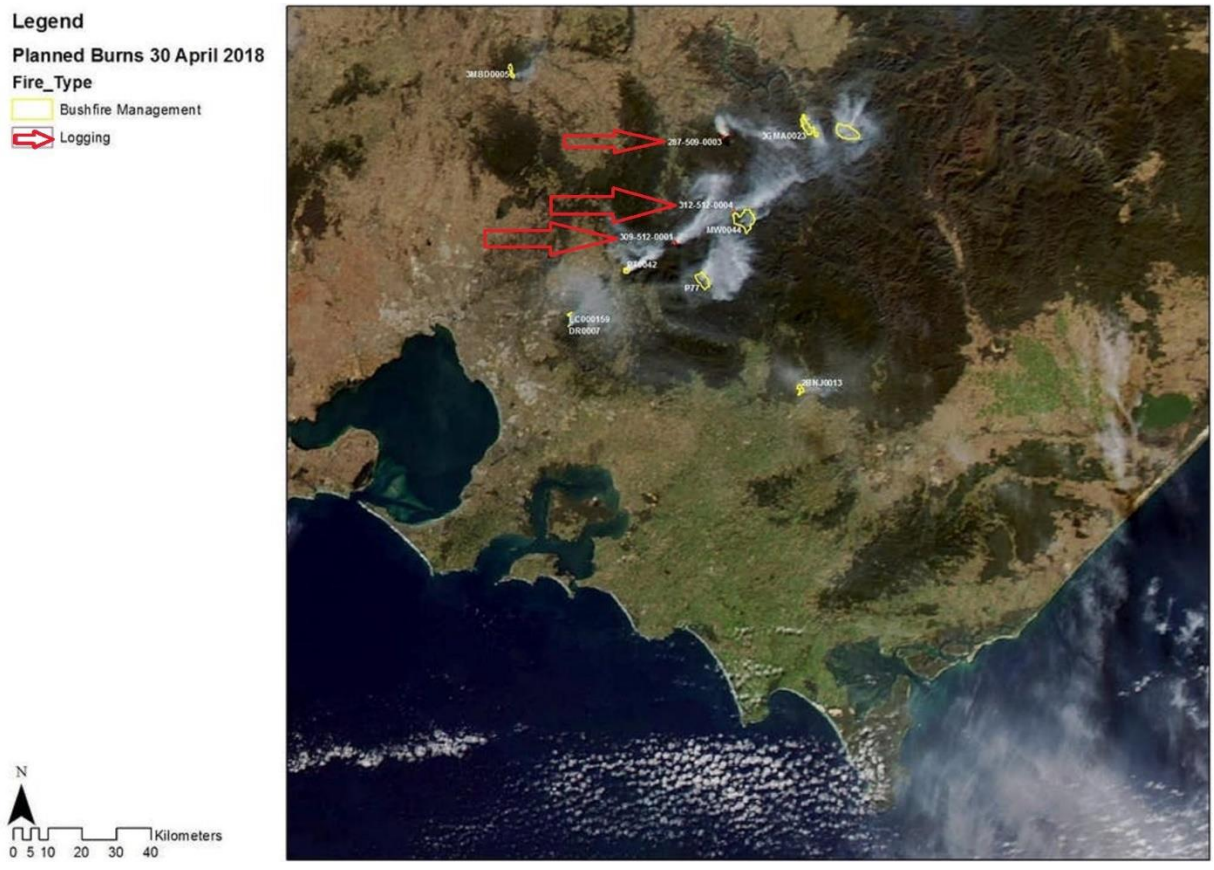
PM2.5 of 9 - 29 ug/m3 is "moderate"

PM2.5 of 26 - 39 ug/m3 is "unhealthy for sensitive people"

PM2.5 of 40 - 106 ug/m3 is "unhealthy for all" ...at this level; EPA advises that:

> "Excessive smoke levels can not only aggravate existing heart or lung conditions, but may also cause members of the community to experience irritated eyes, coughing or wheezing.
> Everyone should reduce prolonged or heavy physical activity.
> People over 65, children 14 years and younger, pregnant women and those with existing heart or lung conditions should avoid prolonged or heavy physical activity altogether.
> Anyone with a heart or lung condition should take their medication as prescribed by their doctor
> People with asthma should follow their asthma management plan."

Satellite images show the dense plumes of smoke released from the logging burns of the previous day. On April 30th, only three out of 12 planned burns were observed as occurring on logging coupes, but they may have contributed to around one-third of the total biomass burned.:



## 12. Prohibit clear-fell logging as part of the commitment of Government to use clean technologies and emissions reduction

Carbon Dioxide emissions

Research on the Mountain Ash Forests of the Central Highlands shows that "changing forest management policy to avoid emissions from logging contributes to the global objective of reducing atmospheric carbon dioxide emissions and to national targets for reducing emissions. A forest managed on a typical commercial logging rotation can never regain
the initial carbon stock of the old growth forest, even including the stock in wood products and landfill.[6]

The same research showed that logged montane ash forests contained 55% of the carbon stock in old growth forests. Emissions from logging are not drawn down by regrowth as the resultant forest does not return to its established forest carbon density before it is logged again.

Carbon is not stored in the end products of native forest logging as most of the biomass felled is burnt as slash or used to make short lived paper. Only 4 % of the biomass felled becomes reasonably long lived (30 – 90 years) furniture or building products.[7]

> "With the current imperative to address the problem of climate change, it is widely recognized that maintaining and increasing stocks of carbon in forests is an important component of a comprehensive approach to mitigation (Nabuurs et al. 2007, Mackey et al. 2013). Forest management offers opportunities to store more carbon on the land than occurs currently. Protecting native forests avoids emissions" (Keith et al)

In contrast, a cleaner technology is the plantation process. Stored carbon levels of plantations are restored when regrown so the net loss effect of logging native forest is avoided. Longer lived products are made from plantation timber as the trees are pruned and managed to suit the milling industry.

Professor David Lindenmayer and Andrew Macintosh from the Australian National University showed in a brief[8] for the Federal Environment Minister, Hon Greg Hunt that the estimated additional net abatement of emissions from stopping native forest harvesting in the Central Highlands is:

21.0 – 22.5 Mt CO2 over the period 2014 – 2020 … (3.0 – 3.2 Mt CO2 per year)
65.3 – 69.7 Mt CO2 over the period 2014 – 2033 … (3.3 – 3.5 per year)

**Carbon Credits from the Cessation of Harvesting in the Central Highlands**

**Brief for Federal Environment Minister, Hon Greg Hunt**

Andrew Macintosh and David Lindenmayer, Australian National University

**Additional abatement from stopping logging of Victoria's Central Highlands**

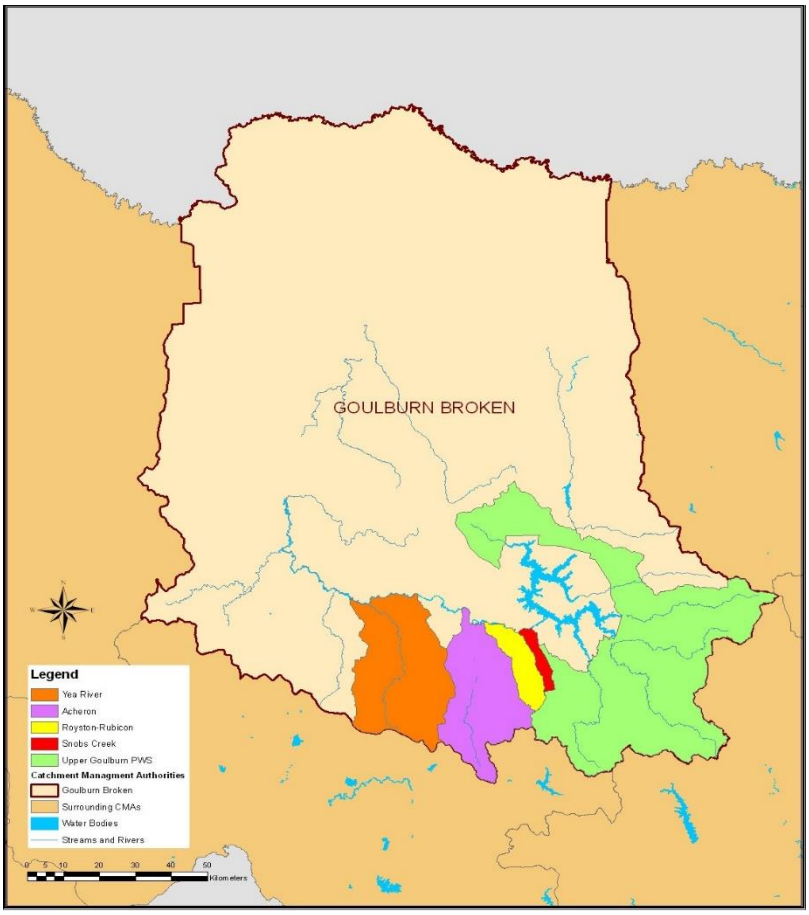
| Source | Carbon Abatement 2014–2033 | Value at $14 /T |
|---|---|---|
| Government Method (Fullcam) | $3.5 MT pa | $49 M pa |
| ANU (on ground measurements) | $3.3 MT pa | $46.2 M pa |
| Vic Forests | $6 –7 M T pa | Over $84 M pa |

[6] Managing temperate forests for carbon storage: impacts of logging versus forest protection on carbon stocks HEATHER KEITH,1,_ DAVID LINDENMAYER,1 et al, 2014

[7] Managing temperate forests for carbon storage: impacts of logging versus forest protection on carbon stocks HEATHER KEITH,1,_ DAVID LINDENMAYER,1 et al, 2014

[8] Carbon Credits from The Cessation of Harvesting in The Central Highlands. Brief for the Federal Environment Minister, Hon Greg Hunt, http://www.abc.net.au/cm/lb/6626080/data/carbon-credits-from-the-cessation-of-harvesting-in-the-central--data.pdf

Water – Dust potential impact of Clear-fell Logging

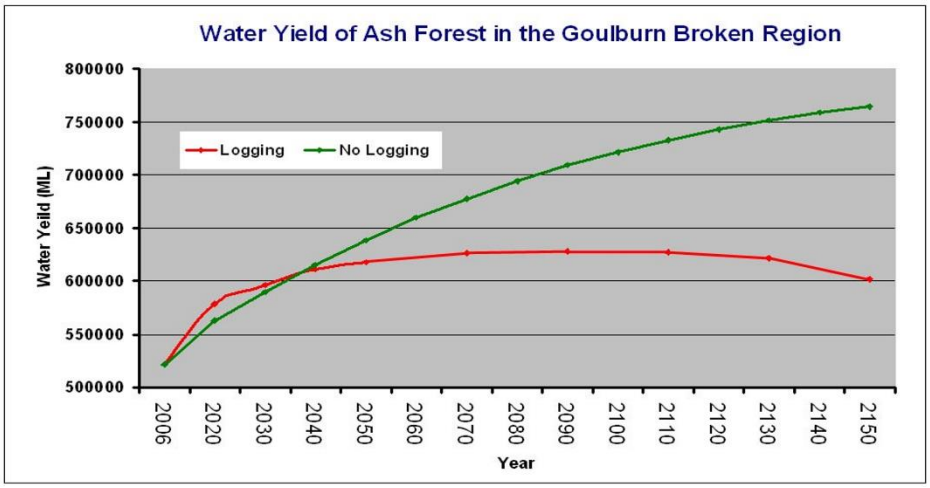



Clear- fell logging impacts on our water supply, reducing water quantity available to Melbourne and the Goulburn Broken Catchment Area including the Food Bowl region.

The viability of agricultural businesses in the Food Bowl region of the Goulburn Broken Catchment are reliant on water supply. Any reduction in water supply caused by clear-fell logging of the Catchment may result in increased dust pollution as crops fail. Reductions in water availability may result also in decisions by farmers to not sow paddocks previously cleared of native vegetation for cropping. Dust from bare paddocks or failed crops may increase dust pollution in these areas and can be spread over the State by storms.

Modelling that shows if logging ceased in the wet montane catchments there would be an additional water yield of 3,807 GL over the next 100-year period with the rate of gain continuing to increase beyond that time.[9]

The report finds that if logging in the study area stopped tomorrow, an additional water yield of 3,807 gigalitres would be delivered into the Goulburn River over the next 100 years. This is more than six times Melbourne's annual average water use and around 165 times the amount of water the City of Bendigo uses in a single year. The economic value of this water would be $1.68 billion.




[9] Woodchipping Our Water, Australian Conservation Foundation 2009 http://forestsandclimate.org.au/cms/wp-content/uploads/woodchipping-our-water-acf-report.pdf

**13. Ensure all Government funded processes, projects, and proposals meet best practice emissions control practices.**

Ensuring a clean air future means that all government funded proposals - processes, projects, and infrastructure need to have expected emissions publicly declared at initial proposal stage. These expected emissions must be included in the assessment of the viability of the proposal. EPA need to be a reporting agency for new proposals.

**Nillumbik Friends of the Great Forest looks forward to the Government making real changes now and ensuring that future processes move the State towards zero deaths and zero illness caused by Air Pollution**

## References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