

17 April 2020

SA Fire & Emergency Services Commission
South Australian 2019-2020 Bushfire Review
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Adelaide SA 5001
BushfireReviewSubmissions@sa.gov.au

OneFortyOne submission to the Independent review - SA 2019/20 bushfire season

To Whom it May Concern.

Thank you for the opportunity to provide a submission to the Independent review – SA 2019/20 bushfire season.

OneFortyOne is a trans-Tasman business with forests and mills in Australia and New Zealand. We operate and manage 82,000 hectares (ha) of plantation area, with most of our forests subject to a 105-year lease with the South Australian Government. We are only one of the forest growers in the region, having a 24% share of the 350,000-ha forest estate in the Green Triangle (GT) region across softwood and hardwood plantation estate. Our share of the softwood forests is approximately 50% in the region. OneFortyOne purchased Mount Gambier's Jubilee Highway Sawmill in 2018. We are majority owned by Australian superannuation and sovereign wealth funds.


OneFortyOne is committed to fire management in the GT and this season we provided support to New South Wales to help fight the catastrophic fires in that state. In South Australia and Victoria our efforts are very much enhanced through the collaborations of the forest industry as well as the Country Fire Service (CFS) in South Australia and the Country Fire Authority (CFA) in Victoria. Whilst current collaborative efforts are positive, there are additional opportunities for cooperation between State Government, local council, crime prevention and the forest and agricultural industries.

Our submission outlines key areas that we believe the South Australian government can support fire management in the State for the benefit of regional communities. We suggest that stronger prevention restrictions and measures will complement our fire suppression capability and ensure climatic and environmental conditions are not exacerbated by intentional or negligent human acts.

We have a vision for a combined regional effort to reduce fire risk and we look forward to working together to achieve that.

I'd welcome the opportunity to discuss this submission.

Yours sincerely,



Cameron MacDonald
Executive General Manager – Australia
Cameron.MacDonald@onefortyone.com

OneFortyOne and Fire Readiness

OneFortyOne prioritises fire readiness as part of its land management in forest areas. We have a dedicated team who are focussed on enhancing our fire management strategies throughout the year. Before we plant seedlings, we design the forest area with strategic breaks and setbacks from boundaries and structures. We then manage those fire breaks by slashing, ploughing, grading or spraying to maintain their effectiveness.

We train our forestry personnel in fire management and suppression techniques in the lead up to and throughout the fire season. Over the 2019/2020 season we completed 2,189 hours of fire training. A combination of spotter planes and tower networks are used for early fire detection so we can respond rapidly as soon as a blaze is detected. We own and operate seven fire trucks for the ground level response.

Green Triangle Collaboration

Forest growers across the GT support each other and have a significant number of resources including 29, 3,000 litre water tankers and 31 quick response vehicles. Since 1975 the GT Forest Owners Conference (FOC) has provided a mutual aid arrangement whereby if there is a fire threatening any plantation area the growers will respond in accordance with a pre-planned response schedule.

The GT, with its formalised FOC and Automatic Despatch arrangements, has one of the most sophisticated cooperative arrangements between forest growers in Australia. In 2017, the same forest growers developed a project to improve the efficiency and effectiveness of fire suppression, detection and prevention activities within the GT. From this project the Green Triangle Fire Alliance (GTFA) was developed. The GTFA provides a platform to move from a collaboration model of FOC to a fully coordinated model, that could encompass the centralised preparedness and operational control of first attack resources.

Fire Prevention

It is man who causes the fires in all years.
Leonard E.B. Stretton 1939¹

Since 1939 there have been 57 formal public inquiries, reviews and royal commissions related to bushfires and fire management.² The 2009 Victorian Bushfires Royal Commission, the 1983 Report of the Bushfire Committee and the 1939 Royal Commission led by Judge Leonard EB Stretton all highlight the role of people in creating fires. The findings of the 2009 Royal Commission include:

¹ Victoria. Parliament. (1939). Transcript of evidence and Report of the Royal Commission to inquire into the causes of and measures taken to prevent the bush fires of January, 1939, and to protect life and property and the measures to be taken to prevent bush fires in Victoria and to protect life and property in the event of future bush fires. Melbourne: Govt. Printer. Page 7 Available at: https://digitised-collections.unimelb.edu.au/bitstream/handle/11343/21344/112962_1939_Bushfires_Royal_Commission_Report.pdf?sequence=1&isAllowed=y

² ABC News Online *We have already had countless bushfire inquiries. What good will it do to have another?*, 16 January 2020 Available at <https://www.abc.net.au/news/2020-01-16/we-do-not-need-bushfire-royal-commission-this-is-why/11870824>

Nine of the 15 fires the Commission examined were started as a direct or indirect result of human activity; five were associated with the failure of electricity assets, and the causes of four were thought to be suspicious.³

Arson, negligence and inadequate infrastructure play a far greater role in fire disaster than naturally occurring events such as lightning strikes. The role of people in igniting fires exacerbates environmental and climatic conditions.

Reducing Bushfire Ignitions

Issue: insufficient restrictions on high fire danger days

The GT forest industry has addressed the increased risk of ignition on high fire danger days with the implementation of closures to forest operations that is commensurate with the fire danger level. However, risks outside of the industry persist. OneFortyOne seeks review of the fire restriction application system to ensure rigour and consistency across jurisdictions.

OneFortyOne advocates for the implementation of consistent restrictions on all activities during Total Fire Ban periods across all land tenures. There have been many incidents of ignitions in the GT that have occurred due to adjacent landholders conducting activities on high fire danger days. An example of restrictions that need strengthening include use of agricultural machinery.

The CFS expressly allows chainsaw, brush cutter, mower and slasher activities on Total Fire Ban days.⁴ The CFA discourages these activities on Total Fire Ban Days but still allows the activity if the individual deems the work essential.⁵ The Victorian Scotsburn bushfire which occurred on 19 December 2015 was caused by a spark from a slasher. It was an accident. The lesson we can take from this is that clear and decisive restrictions can eliminate any discretionary activity that may ignite fire.

We ask that the South Australian Government invites the forest industry to share our protocols with stakeholders to facilitate awareness and understanding of these in relevant networks. Increased uptake of these protocols will reduce risk of causing catastrophic fire. We have included the FOC Plantation Fire Protection Guidelines at Attachment A.

Issue: fuel and vegetation management

Fuel and vegetation management is a key topic of interest following the 2019/2020 bushfires. The GT forest industry has effectively managed fire risk within their estates through infrastructure and reduction of fuel loads through fuel reduction burning. However, fuel loads on non-forestry land within 5km of forestry estates influence the speed at which fire runs toward estate boundaries. There are circumstances, such as roadside vegetation, that require higher standards for management of fuel loads.

This is a complex issue that requires coordination with fire agencies and other stakeholders to identify excessive fuel loads on private property; and determine how those fuel loads are managed going forward.

Issue: detection of ignitions – lightning tracking and fire towers.

Early detection of lightning ignitions could limit extent of fires. There are several commercial lightning tracker services available. These should be made available to fire agencies, including forest industry brigades.

³ 2009 Victorian Bushfires Royal Commission: Final Report. Summary. Available at http://royalcommission.vic.gov.au/finaldocuments/summary/PF/VBRC_Summary_PF.pdf

⁴ https://www.cfs.sa.gov.au/site/bans_and_ratings/what_can_i_do_what_cant_i_do.jsp#CanIUseaChainsaw

⁵ https://www.cfa.vic.gov.au/documents/20143/80821/Can_I_or_Cant_I_brochure_nov_2016.pdf/5e14373f-e64d-3676-bb7b-2685a831a5f8

The GT has been well served by a network of fire towers that are strategically located across the landscape to quickly detect fires and enable a swift response. On the South Australian side of the border, the fire tower network has been maintained and operated by ForestrySA for many years. Unfortunately, in recent years the condition of these towers has deteriorated to the extent that, in the current season, two (out of seven) of the towers have been closed due to safety reasons.

This places an unreasonable level of risk on the local community with an inferior level of fire detection. **Government must prioritise funding to upgrade all towers to an acceptable standard and reinstate a reasonable level of fire detection.** In the longer term, government should continue to contribute into research into new technologies to enhance fire detection.

Response

Equipment and Resources

Issue: Early response – fire bombers

Early intervention with aviation resources is critical to limit the size of bushfires before they gain scale and momentum that make containment difficult. At times of peak fire activity (e.g. post lightning storm event) the availability of enough aircraft can be problematic. OneFortyOne urges the South Australian Government to investigate options for increased aircraft availability for fire-bombing activities.

Issue: Communications network & Automatic Vehicle Location (AVL).

Private radio networks are fragmented and unreliable, making it difficult to track resources on the fireground and increase the risk of an ineffective response. OneFortyOne urges increased access to the South Australian Government Radio Network to forest industry brigades. Government assistance is also required to install Automatic Vehicle Location (AVL) monitoring technology into all CFS affiliated vehicles.

Incident Management and Emergency Coordination

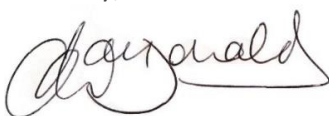
Issue: Interagency coordination and training.

Our experience in recent fires has been that there is a lack of clarity between organisations around responsibilities for control of fire. This is partly due to duplication of Incident Management resources across different agencies. OneFortyOne urges Government to take the steps necessary to develop a plan to increase integration across different agencies. This would help to clarify which organisations is in control of a fire situation depending on its proximity to ignition and forest assets.

Aligning training and communication in border areas between South Australia and Victoria. CFS and CFA have different training procedures and methods which result in different assessments and assessors. There have been instances where OneFortyOne has been unable to have trained fire fighters assessed and fire response ready due to assessors being unavailable. If training was harmonised, we would be able to have more fire fighters ready for response in a timelier fashion.

Again, thank you for the opportunity to provide a submission to the Independent review - SA 2019/20 bushfire season. OneFortyOne would welcome the opportunity to speak to these points in person.

Sincerely,



Cameron MacDonald.

Forest Owners Conference



Plantation Fire Protection Guidelines

Version 8.2, June 2017

FOREST OWNERS CONFERENCE

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1. PREAMBLE

The Forest Owners Conference (FOC) is an industry group made up of fifteen Plantation Managers and three Fire Authorities in the Green Triangle Region. The Green Triangle region is located in the South West of Victoria and the South East of South Australia. It is the largest tree farming region in Australia with approximately 350,000 ha of land managed primarily for the production of plantation timber products.

Since 1979 members have met annually to discuss fire issues of mutual interest and have developed well-coordinated fire prevention protocols and wildfire response procedures. Accordingly, FOC members form an integral part of the community fire suppression resources. Collectively the plantation companies contribute over 60 fire tankers and Quick Response Vehicles and 300 personnel to the region's firefighting resources.

In 1986, the FOC drew on its collective firefighting experience to develop Australia's first cross border plantation design guidelines. A feature of these guidelines was their simplicity and clarity. In response to a new fire cooperative initiative in the region, the guidelines have been reviewed for the 7th time in 2017 and represented in their current format. The major changes in this latest review is the inclusion of Forest Closure/Work Ban protocols in response to the risk of fire.

These guidelines have stood the test of time. Since their adoption by FOC members in 1986, these guidelines, along with other fire prevention measures have contributed to the reduction of plantation area lost in fires to less than 0.1% per annum.

With respect to the implementation of these guidelines in the field, FOC members acknowledge that when implementing these guidelines, environmental, OH&S and regulatory requirements are to be adhered to as part of any activities outlined in this document.

Justin Cook
Chairperson, Forest Owners Conference.
Dated: June 2017



Figure 1 - A 4-year-old blue gum plantation

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2. PLANTATION DESIGN GUIDELINES

2.1. Firebreaks

- 2.1.1. A firebreak is an effectively fuel-reduced area, primarily managed to retard or prevent the spread of fire but also for the protection of personnel, the public and assets.
- 2.1.2. All plantations need an external boundary firebreak, this shall consist of either;
- Softwoods:
 - a. A 20m wide break, or
 - b. A 10m wide break (external to the plantation), plus a 10m Fuel Modified Zone within the plantation (e.g. pruning to a minimum of 2m high is a commonly used fuel modification technique in softwood plantations).
 - Blue gums:
 - a. A 10m wide break.
- 2.1.3. A firebreak shall incorporate a vehicular access track (as specified in section 2.2).
- 2.1.4. A firebreak may include non-flammable strip(s).
- 2.1.5. Adjacent land, which may include that of another land holder and which is maintained in an effectively fuel reduced or bared condition, may form part of an external firebreak.
- 2.1.6. A public road or easement may be considered part of a firebreak provided the road is maintained as a firebreak.
- 2.1.7. Large plantations should be divided into units, generally not exceeding 400ha, by firebreaks as defined above.



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Figure 2 – An example of a firebreak

2.2. Access Tracks– For Fire Vehicles

- 2.2.1. All access tracks shall, where possible be a minimum of 7m wide to allow for access and the simultaneous passing of two fire trucks. Pruning or hedging may be required to achieve a minimum clearance for fire truck access to 7m in width and minimum of 4m in height.
- 2.2.2. Vehicular access tracks shall where practicable, enclose individual plantation units of such dimensions that a hose lay (200m) can reach any point in the unit. Generally, units will not exceed 40ha in size.
- 2.2.3. All access tracks shall, if possible, be aligned to provide straight through access at junctions.
- 2.2.4. If dead end tracks are necessary, they must be sign-posted and a turnaround provided.
- 2.2.5. For operations within South Australia Plantation Managers should consult the “SOUTH AUSTRALIAN FIREBREAKS, FIRE ACCESS TRACK AND SIGN STANDARDS GUIDELINES” February 2015, published by the State government.



Figure 3 – Fire Access Track in Blue Gums

2.3. Set-back of plantation edge from habitable dwellings

2.3.1. Set-back of new plantation edges from habitable dwellings should meet State planning scheme requirements.

2.3.2. Planning requirements can differ from these guidelines. Refer to local planning organisations for specific set-backs.



Figure 4 – Plantation setback from Nangwarry

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3. FIRE EQUIPMENT GUIDELINES FOR SILVICULTURE AND HARVESTING CONTRACTORS

3.1. Background

The purpose of this chapter is to prevent the ignition of fires and ensure plantation silviculture and harvesting crews have appropriate equipment to deal with fires that may occur during operations in plantations in the Green Triangle Region (Victoria and South Australia).

The guidelines will also assist contractors and Plantation Managers in meeting their contractual and legislative obligations including meet requirements for fire equipment.

There is different legislation in each State which changes from time to time, and individual companies may have requirements other than these.

Contractors should ensure that they have all the equipment listed and comply with the guidance during the Fire Danger Period. It is suggested that contractors continue to follow the guidelines outside the Fire Danger Period as the law obliges all people to prevent the spread of fire.

3.2. Legislation & Standards

All contractors should be familiar with the legislation for the State/s in which they work. Such legislation relevant to fire protection and suppression includes the following Acts and subordinate regulations:

South Australia	Victoria
<i>Fire & Emergency Services Act 2005 Fire & Emergency Services Regulations 2005 Work Health and Safety Act 2012 (SA) Work Health and Safety Regulations 2012 (SA)</i>	<i>Country Fire Authority Act 1958 Country Fire Authority Regulations 2014 Forests Act 1958 Forests (Fire Protection) Regulations 2014 Summary Offences Act 1966 OHS Regulations 2007</i>

The Australian Standards are also referred to in the regulations. The relevant standards are:

Australian Standards
<i>AS1019-2000 Internal combustion engines - Spark emission control devices AS1687-1991 Knapsack spray pumps for fire fighting AS/NZS 1841.2-2007: Portable Fire Extinguishers – Specific requirements for water type extinguishers AS/NZS 1841.5-2007: Portable Fire Extinguishers – Specific requirements for powder type extinguishers AS/NZS 1851-2012: Maintenance of fire protection systems and equipment AS1940-2004 The storage and handling of flammable & combustible liquids AS/NZS 2906-2001 Fuel containers – Portable – plastic & metal AS 5062-2016 Fire protection for mobile and transportable equipment</i>

3.3. Fire Danger Period

The Fire Danger Period is set by the relevant State Fire Authority and may vary based on fuel availability, predicted weather patterns and curing level. The introduction and cessation of the Fire Danger Period is publicised in local print media and is available from fire agency websites.

3.4. Duties of Contractors

All persons have a duty to report any unauthorised fire to the relevant fire authority (telephone 000) and take action to extinguish the fire or prevent the fire spreading if safe to do so. The contractor should also report the fire to the Plantation Manager of the land on which the fire occurred.

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The contractor must ensure that all equipment is maintained in good working order.

3.5. Daily inspections

Operators must inspect (and clean if required) machinery, fire-fighting equipment and the active operating area to ensure it is fire-safe before leaving the worksite each day.

Operators must remain on-site for at least 15 minutes after shutting down machinery or work stops on any phase of an operation to ensure that the area is fire-safe.

3.6. Contractor Training

The FOC recognises the need to ensure contractor safety.

All contractor employees will undergo internal training and be familiar with the use of fire suppression equipment to enable them to safely conduct a first attack on fire. Employees will demonstrate competency in the practical use of on-site fire suppression equipment. This training and familiarisation will be documented and audited by the relevant Plantation Manager.

Contractors need to appreciate that initial fire suppression is required but if initial attack fails or is unsafe then crews should withdraw to a safe area. Initial response includes the need to contact fire agencies as a priority.

For clarity, this section refers to those employees working in forest operations during the fire season who will be required to action a fire that ignites in the operation. It is incumbent on contractors to ensure their employees are trained to conduct an immediate first attack on fires that ignite on the site.

Those employees who will be deployed to conduct initial attack as part of a Forest Industry Brigade will undergo the appropriate training for that role.

3.7. Fire Equipment Required for Plantation Operations

All vehicles, machinery, plant, chainsaws, brushcutters and other equipment powered by an internal combustion engine must have any exhaust pipe fitted with a spark arrestor (compliant with AS1019-2000) except where it is fitted with a turbocharger or aspirated exhaust air cleaner or a system that takes all the exhaust from the engine through the silencing system.

Exhaust systems on vehicles must not come into contact with dry, flammable material.

Where fire equipment is kept in a locked compartment, it must be unlocked, at all times whilst the machine is in operation.

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Table 1 Fire equipment for plantation operations

Machinery in operation	Fire Equipment	Fire Extinguishers	
		Knapsack or Water (stored pressure) extinguisher not less than 9 l	Foam or ABE Dry Chemical
Vehicles (other than those listed below including roading machinery)	1 x rakehoe or 1 x shovel	Yes	1 x 1 kg
Trucks (not including log/chip haul trucks)	1 x rakehoe	Yes	1 x 4.5 kg
Machinery Service Vehicles	1 x rakehoe	Yes	1 x 4.5 kg
Stationary engines*, e.g. generators, etc.	1 x rakehoe	Yes	1 x 4.5 kg
Chainsaws & brushcutters	1 x rakehoe at refuelling area	Yes at refuelling area	
Agricultural Tractors	1 x rakehoe	Yes	1 x 9 kg
Chippers, debarkers, Loaders	1 x rakehoe	Yes	1 x 2.5 kg in cabin & 2 x 9 kg or 1 x 9 kg & in-built automatic (capacity ≥ 9 kg)
Harvesters, Bulldozers, Forwarders, Skidders	1 x rakehoe	Yes **	1 x 2.5 kg in cabin & 2 x 9 kg or 1 x 9 kg & in-built automatic (capacity ≥ 9 kg)

* Must also have a 4-metre clearance of all flammable material or a person in attendance at all times, equipment only required when there is a person in attendance.

** Some exemptions may exist due to equipment design not permitting room for extinguishers in the cabin.



Figure 5. Harvester in Blue Gum

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In addition to the equipment listed in Table 1, a mobile firefighting unit must be located at each harvesting operation, whilst harvesting is in progress. The mobile firefighting unit shall:

- Have a minimum capacity of 400 litres
- Have a pump with at least a 5 HP motor
- Be readily accessible and immediately mobile to respond to a fire anywhere in the operation
- Be fully charged with water at all times. If it is used for washing down machinery, it should not be emptied and must be refilled immediately.
- Have a minimum of 30 metres of 19 mm hose connected to the pump and fitted with an appropriate firefighting nozzle.
- Be capable of delivering a steady stream of water to any point where harvesting is taking place.

3.8. Communications

The contractor must have a reliable means of communicating with each crew. This should be by two-way radio or mobile phone if reception is available.

3.9. Maintenance of Machinery

All machinery must be regularly maintained and kept clean of flammable materials (including grease, oil, fuel, leaves, saw dust, chips, etc.) especially around surfaces that become heated by the motor or exhaust.

3.10. Machine Operating Temperatures

All plant used within standing plantations (e.g. harvesters, forwarders and bulldozers) shall have exhaust gas temperatures not exceeding 240 degrees Celsius, unless the equipment is actively supported by manned fire appliances.

- Each machine must be tested according to the Logging Investigation and Training Association (LITA) Exhaust Outlet Temperature procedure or equivalent.
- The testing shall be done by an independent third party recognised in the industry as possessing a sound knowledge of such procedure.

All chainsaws shall pass the summer heat and carbon tests detailed in Appendix 1.

All brushcutters shall regularly be tested and pass the carbon test detailed in Appendix 1

Testing should take place annually prior to the fire danger season or if a new machine is introduced during the fire season. If modifications are required to reduce the exhaust temperatures, the machine must be re-tested to ensure compliance, before going back into service.

3.11. Fuel Storage & Refuelling

All fuel storage must comply with AS1940-2004

Bulk fuel storage units with a capacity of over 200 litres must always, other than in transport, be located on an area cleared of all flammable material for not less than 4 metres around the unit. Such units must be capable of immediate removal from the site in an emergency, and free from leaks and accumulated debris.

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Fuel and oil containers of capacity equal or less than 25 litres must comply with AS/NZS 2906-2001.

Refuelling of all machines (including brushcutters & chainsaws) is prohibited unless:

- The space immediately around and above the appliance is clear of all flammable material to a distance of at least 3 metres; and
- There is available for immediate use a dry chemical ABE extinguisher and a rakehoe.

Chainsaws and brushcutters must not be restarted in the refuelling area.

3.12. Electrical Isolation

All mobile plant must have an electrical isolator fitted. The machine must be isolated of electrical current when it is left unattended. Unattended means no person is in sight of the machine.

3.13. Welding, Grinding, Gas cutting, Soldering, Use of abrasive tools

On Total Fire Ban days, welding, gas cutting and soldering is prohibited unless a written permit has been obtained from:

- For work in Victoria –the CFA District Office (Section 40 Permit)
- For work in South Australia – The Authorised officer of the appropriate District Council (Schedule 10 Permit.)

On Forest Work Ban days, which are not Total Fire Ban days, written permission to use welding, grinding, cutting or soldering equipment must be obtained from the relevant Plantation Manager.

Throughout the remainder of the Fire Danger Period, the use of electric welders, mechanical cutting tools, gas appliances, angle grinders, other mechanical grinding tools or soldering equipment is prohibited unless:

- the space immediately around and above the appliance is clear of all flammable material to a distance of at least 4 metres;
- a shield or guard of fire resistant material is placed or erected to prevent the emission of sparks, hot metal or slag;
- all cut-offs, electrode stubs and hot materials from the operation are placed directly in a fireproof receptacle; and
- there is available for immediate use a dry chemical extinguisher class AB(E) minimum 4.5 kg and at least a 9litre knapsack or stored pressure water extinguisher;
- accumulated flammable material has been cleared from the appliance to the maximum extent practical;
- a person who is able to control the appliance is present at all times the appliance is in use or alight, and
- on completion of the repairs, the operator must remain in the immediate vicinity for a minimum of 15 minutes prior to recommencing work.

3.14. Forest Work Bans

Each Plantation Manager has the right to restrict forest operations on their plantations. These restrictions are implemented on a risk management basis according to local

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conditions and likelihood of fire ignition. These forest work bans may or may not coincide with the declaration of Total Fire Bans.

Appendix 3 contains the details of FOC's recommended forest work ban protocols including a list of the BoM weather stations that are used in determining FDI's.

Plantation Managers are expected to use data from the closest BoM weather station for the assessment of on-site fire weather conditions. However, Plantation Managers may nominate an alternative BoM weather station that better reflects the operation's on-site weather conditions. (E.g. This may occur in operations located in close proximity to the coast which may be better represented by a weather station located near the coast although the operation is closer to an inland BoM weather station).

It is the responsibility of each Plantation Manager to assess the risk and notify their contractors. The contractors must then notify all their work crews. In most cases the Plantation Manager will endeavour to give the contractor at least 12 hours' notification of a possible work ban. However they may be implemented at short notice if conditions deteriorate significantly.

Contractors are required to shut down equipment 15 minutes prior to the scheduled closure.

A Plantation Manager may elect to implement a Forest Closure to restrict public access independent of a work ban.

3.15. Working Weekends and Public Holidays

Contractors, who wish to work on weekends and public holidays during declared fire season, must gain approval from the appropriate Plantation Manager by 1630 hrs on the last normal working day. This condition is irrespective of the forecast weather conditions.

3.16. Firefighting Plant Safety

Plant such as dozers, excavators and graders are often utilised in fire suppression activities. In Victoria, plant used at an incident must meet agreed industry standards and any requirements of the Fire Authorities.

For those equipment operators who wish to be considered for works with the CFA and FFMV (Forest Fire Management Victoria), their minimum safety requirements are established and documented by FFMV as part of their plant contracting arrangements. Plant owners should contact FFMV and register their equipment or as a minimum complete the self-assessment if they may wish to utilise their plant at an incident.

If plant meets the appropriate standards and is made available by the owner then the Fire Agencies may incorporate the item into a fire response and pay the appropriate contract rate.

If plant does not meet appropriate standards an Incident Controller or their delegate may stand down an item of plant from a fire ground due to safety concerns regardless of land tenure.

3.17. Fire Preparedness and Suppression

Plantation and Harvesting Contractors are encouraged to undertake initial attack on a fire if safe to do so and immediately report any fire to the Fire Authority using (000). Once the Fire Authority is on-scene those contractor crews not trained or equipped for fire suppression should withdraw to a safe point ensuring all crew members are accounted for and safe.

A fire within the plantation will be managed by the designated fire agency (CFA, CFS and FFMV) using the principles of AIIMS for command and control. This will include Forestry

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Industry Brigades. Contractors on-scene should make contact with the first arriving fire appliance and provide all relevant information regarding the fire. For extended fire suppression events, multiple agencies may be involved and access restricted to the area. Contact the Plantation Manager for more information regarding access and recommencement of operations.

Once the Incident Controller hands responsibility back to the Plantation Manager they are then responsible for ongoing monitoring to ensure the fire does not reignite/escape. The decision on when access can return to normal will be made by the Plantation Manager following consideration of all safety issues.

3.18. Other Requirements

All camp or billy fires are prohibited throughout the Fire Danger Period.

Smoking is only permitted in areas clear of all flammable material for a distance of 4 metres. Butts and other rubbish must be fully extinguished and safely stored until they can be removed from the Plantation. Smoking is not permitted in the open on Total Fire Ban or Forest Closure days, and individual Plantation Managers may ban smoking for longer periods during the fire season.

All roads, tracks and firebreaks bordering or within an operation must be left open to allow access for firefighting vehicles.

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4. Heap/Windrow Management



Figure 6. Burning Heap/Windrow

4.1. Introduction

There are significant reasons for proper management practices regarding the burning of bark or residue heaps/windrows. Re-ignition, smoke emissions, damage to property or ecosystems and threat to life can be minimised with the correct burning methods and follow-up.

The use of burning for site preparation is a necessary tool for the industry to operate. The industry also recognises the impacts the use of fire can have on the broader community through smoke emissions and reignition. The industry is committed to minimizing those unintended impacts of fire through changing practices (i.e. narrower windrows for burning) and utilising other practices and/or technologies for site preparation when appropriate to do so.

Within the hardwood industry there has been a move to slash retention on site to retain nutrients. The configuration, location and volume of slash must also be managed to limit fire management issues.

4.2. Heap/Windrow establishment

- Heaps/windrows should be established considering adjacent plantations, other unburnt fuel, and distance to fire breaks, access to and between heaps or rows.
- Appropriate setbacks from boundaries to plantations under different ownership and from areas of native vegetation should be made.
- It is recommended that where heaps/windrows are going to be burnt they should be no more than 10 metres wide and 4 metres high.
- Where utilising mushroom heaps (hardwood) either burning or not burning, the heaps should be created with fire safety in mind.

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- Where utilising windrows (hardwood) either burning or not burning, the rows should be in a size and configuration that considers fire safety as well as silviculture requirements.

4.3. Heap/Windrow ignition

- Any burning within the fire danger period requires a permit.
- The debris should be burned as soon after previous fire season as fuel and weather conditions permit and taking into consideration the future forecast conditions, soil dryness and length of burn time required before the heap/windrow is safe.
- Notify the appropriate Agency of the burn off and provide relevant information including estimated duration of activities. This should be done all year round to avoid false alarms.
 - Victoria – Burn-off notification **1800 668511**
 - South Australia - **1300 362 361**
- The timing of ignition should consider the impact of smoke on adjacent land users.
- Consider the actual and forecast wind direction and possible impact on visibility on surrounding roads and any signage or notification requirements.
- A register should be kept listing the location of all ignition sites.
- The aim should be to have all heaps/windrows burnt and extinguished between the completion of one fire season and the end of September of that year to minimise the risk of fire escape and possible re-ignition in summer.

4.4. Monitoring heaps/windrows

- Hot sites should be identified, patrolled and checked regularly.
- All sites should be considered hot until declared extinguished.

4.5. Confirm extinguishment

- Methods to assist in checking and extinguishing heaps/windrows include ripping or pushing with a dozer.
- All heaps/windrows should be checked to confirm that there are no remaining hot spots prior to declaring the site extinguished. Infra-red imaging or heat detection devices or other physical methods should be used to assist in completing this check.
- The status of the heap/windrow should be updated in the appropriate register.
- All heaps/windrows must be extinguished prior to the commencement of the declared fire season. A permit to maintain the fire in any site would need to be obtained if the heap/windrow has not been declared extinguished and contact made with the District or Regional Fire Authority HQ to discuss a risk management strategy.

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5. GENERAL

The above guidelines are to be viewed as additional to State and Federal Government requirements and in some cases Local Government requirements.

When applying these guidelines, Plantation Managers will conduct their activities ensuring Environmental, OH&S and regulations are met. Where these guidelines may appear to be contrary to State, Federal and local government regulations, the government regulations will apply.

For example - ETSA specifications for plantation clearance from transmission lines in SA, and those in Victoria.



Figure 7 – A 2-year-old blue gum plantation

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APPENDIX 1 - Tests for Chainsaws & Brushcutters

The tests apply to hand held chainsaws and brushcutters and are to be conducted at the beginning of, and at random times throughout the Fire Danger Period.

The saw / brushcutter to be tested must be warmed up prior to the test. If it is not in use:

- A chainsaw must be run at full power for a period of 30 seconds, making a series of cuts into a piece of green wood of at least 150 mm in diameter.
- A brushcutter must be run for at least 2 minutes cutting into vegetation similar to that which it normally cuts.

Carbon Test (Chainsaws & Brushcutters)

Once warmed up, the chainsaw or brushcutter is to continue working (chainsaw cutting green wood > 150 mm or brushcutter, typical vegetation) whilst a piece of clean white blotting paper is held in such a position that the exhaust gas is emitted directly onto it for a period of at least 30 seconds. If carbon particles are deposited on the blotting paper, the muffler must be cleaned out immediately before the temperature test proceeds.

Temperature Test (Chainsaws only)

A Thermocron or similar crayon rated at 320° C is used to make a spot on the muffler, close to the point of exhaust emission. The crayon will retain its original colour for 2 full seconds if the temperature does not exceed 320° C. If the spot changes colour at once, then the saw does not pass the test. The most common cause for failure is dirty mufflers, or lean fuel mixture.

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APPENDIX 2 – Definitions

Fire Authority: May include Country Fire Service (CFS), Country Fire Authority (CFA), Forest Fire Management Victoria (FFMV).

Fuel Modified Zone; An area of plantation that has minimal ground and ladder fuel to minimise/stop the spread of ground fire and the escalation of the fire to a crown fire. This is accomplished by:

1. The removal of lower branches and/or ground fine fuels in the zone (e.g. pruning of softwood plantations), or
2. No action required as the plantation does not exhibit potential ladder or ground fuels (e.g. first rotation bluegum plantations with branch shedding).

Plantation the whole of the area in a contiguous block managed by the one company. It includes firebreaks, roads, tracks and non-plantation land as well as the planted forest.

Plantation Manager: the company responsible for the management of forest operations within the Plantation.

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APPENDIX 3 – Forest Work Ban Protocols

Table 1. Forest Work Ban Protocols

Fire Danger Rating	Actual FFDI	Silviculture Non-motorized	Motor Manual (Silviculture & Harvesting)	Harvesting	Haulage
Low to Moderate	0-11	Normal Work			
High	12-24	Normal Work			
Very High	25-34	Normal Work			
Very High	35-40	Normal Work	No Work	Normal Work	Normal Work
Very High	41-49	Stop work at FDI 45	No Work	Stop work at FDI 45	Stop work at FDI 45
Severe	50-74	No Work			
Extreme	75-99	No Work			
Code Red	100+	No Work			

1. If a TFB is called on days with forecast FFDI < 50, it is intended that work restrictions for FFDI 50 should be enforced. Plantation Managers may direct otherwise in the event local conditions are materially different from District wide TFB and with appropriate risk management strategies (e.g. coastal operations in a district that declares a TFB which is the result of inland weather conditions).
2. When a day is forecast to be FFDI>75, work restrictions should apply from midnight until the following midnight, or conditions moderate.
3. This guideline table illustrates the maximum thresholds for Plantation Managers to base their decisions upon regarding ordering a work ban.
4. Plantation Managers do operate with different work ban protocols that are more conservative than these protocols and may restrict work earlier than indicated in this Appendix.
5. Operations can operate outside of these protocols if Plantation Managers have undertaken an appropriate risk assessment and the risk mitigation tasks are undertaken as determined by the risk assessment.
6. Notwithstanding item 5, operating in weather conditions exceeding these guidelines should occur infrequently and it is expected that Plantation Managers will plan operations such that operating in conditions that exceed the guidelines is not necessary.

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Table 2: BoM Weather Stations for the Green Triangle

State	Weather Station
South Australia	Robe Airport
	Mount Gambier
	Coonawarra
	Cape Jaffa
	Naracoorte
Victoria	Edenhope
	Kanagulk
	Mount William
	Casterton
	Hamilton
	Dartmoor
	Portland Airport
	Port Fairy

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APPENDIX 4 – Contact list

AKD Softwoods	7-15 Forest St Colac 3250	(03) 5231 9100
Australian Bluegum Plantations (ABP)	PO Box 425 Hamilton 3300	(03) 5572 3970
Country Fire Authority District 4 (Victoria)	PO Box 207 Casterton 3311	(03) 5581 1114
Country Fire Service Region 5 (South Australia)	PO Box 8 Naracoorte 5271	(08) 8762 2311
Forest Fire Management Victoria (FFMV)	PO Box 217 Heywood 3304	(03) 5527 0444
ForestrySA	PO Box 162 Mt Gambier 5290	(08) 8724 2887
Green Triangle Forest Products Ltd (GTFP)	PO Box 2249 Mt Gambier 5290	(08) 8724 8044
Green Triangle Plantation Forests Limited (GPFL)	3/2 Gawler St Portland 3305	(03) 5523 3466
HVP Plantations Pty Ltd	PO Box 1650 Mt Gambier 5290	(08) 8724 6700
Insignis Forestry	PO Box 965 Bacchus Marsh 3340	(03) 5367 0484
Logging Investigations and Training Associations Inc	PO Box 9172 Mount Gambier 5290	(08) 8735 1457
Macquarie Forestry Services	PO Box 9655 Mount Gambier West 5291	(08) 8725 9700
Midway Afforestation Ltd	PO Box 44 Casterton 3311	(03) 5581 2176
OneFortyOne Plantations	152 Jubilee Hwy E Mount Gambier 5290	(08) 8724 2700
PF Olsen (Aus) Pty Ltd	PO Box 278 Hamilton 3300	(03) 5551 1000
SFM Forest Products	20 Penola Rd Mount Gambier 5290	(08) 8778 1236
Timberlands Pacific	PO Box 30 Mount Gambier 5290	(08) 8724 2000