

## Bushfire Planning Profile

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I developed the 'Bushfire Planning Profile' below to assist with evidence based fire and emergency management planning using lessons learnt from previous major bushfires. This is particularly important when we consider the potential implications from the effects of Climate Change. The profile, whilst using a scenario of 25t/ha fuel load and flat ground, it provides a concept based on worst case scenarios of how fires could behave under certain Forest Fire Danger Ratings (FFDRs). It is intended to be thought provoking and to generate discussion.

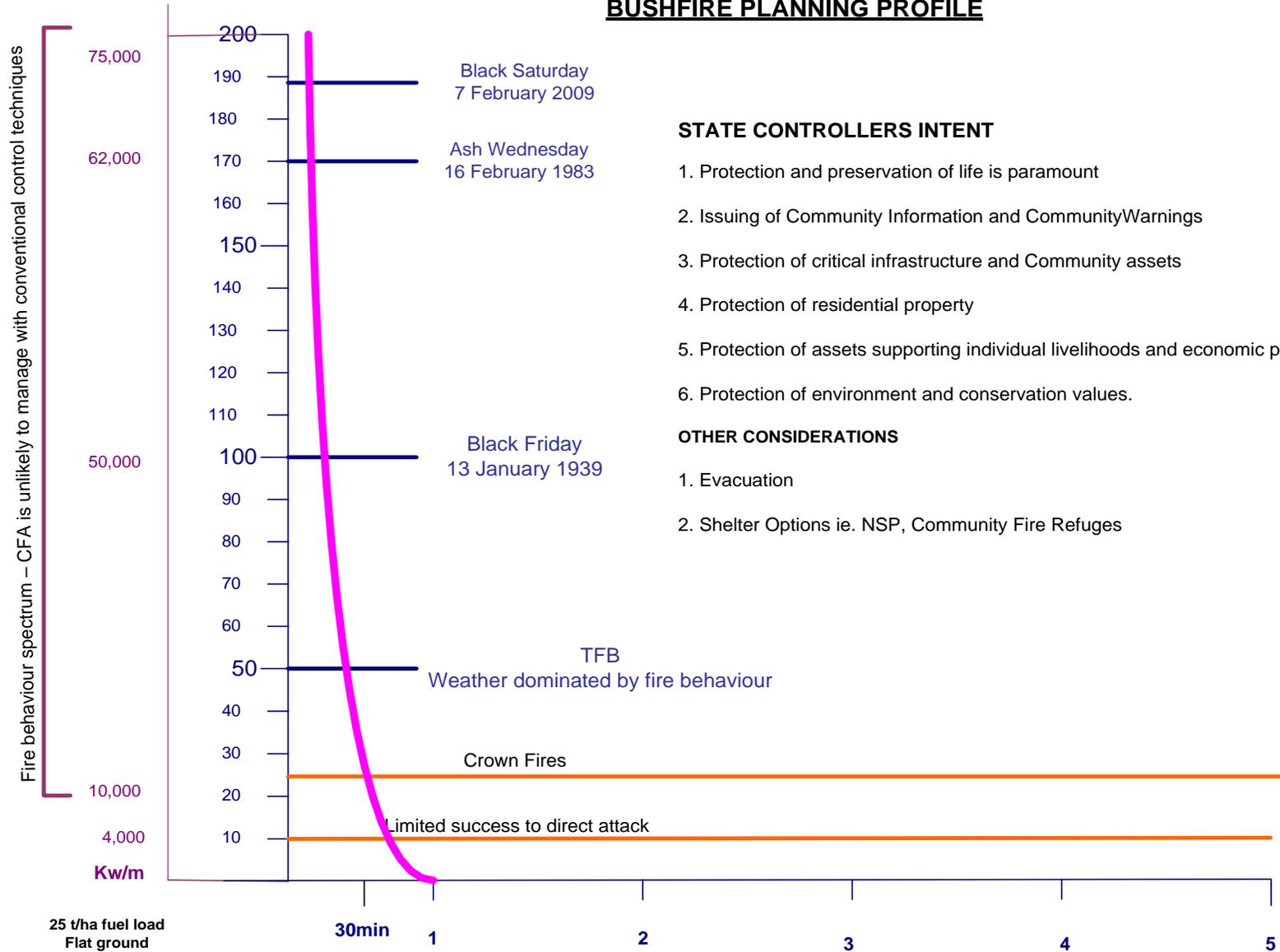
### Points of interest:

- Direct attack by conventional firefighting techniques is restricted to fires of radiant heat intensity between 3500 to 4000 kilowatts per metre (kW/m). This level could produce flame heights of just a couple of metres.
- In his evidence to the 2009 Victorian Bushfires Royal Commission (Interim Report) Dr Kevin Tolhurst made the following comment: *"even with our best firefighting equipment, basically about 3500kW/m to 4000kW/m is really the upper limits and that doesn't matter whether we are talking about an air-crane or whether its people on the back of a fire tanker, people on the ground with a rake hoe would only be limited to probably about 1000kW/m, beyond 4000 Kw/m you are basically restricted to indirect attack approaches. You can't do a direct attack on a fire more than 3500 kW/m"*.
- Dr Tolhurst, also made the following statement of evidence to the question 'What do you mean by a going fire' Answer: *"Well it may take 30 minutes or an hour for a fire to actually get to its peak rate of spread, so a going fire is a fire that has reached its peak of spread. But a fire starts off more slowly than what its potential is' and 'even though we are saying there's 12 hours where the fire is uncontrollable, there will still be a lot of fires controlled because the suppression forces have got there quickly and been able to stop the fire while its small'".*
- After the passage of a cold front, approximately 80% of the overall area is burnt as a result of the change, this is because it is burning on a wide front. This may only last 2 to 4 hours, but because it has such a wide front it will burn a very large area quickly.
- During the Black Saturday fires, it was identified that trees snapped as a consequence of the winds created by the size and intensity of the fire. They snapped off at around 3 to 4 metres above the ground. To get this sort of damage would need winds in the vicinity of 120 km/h or more.
- The 'bushfire planning profile' demonstrates that, as FFDR increases or by adding fuel load and slope, the time it will take to become uncontrollable will be reduced. The J curve should be viewed as a sliding scale with increases or decreases based on the risk factors of FFDR, slope, vegetation type and fuel loads.

### Discussion Points:

1. The profile shows the importance of adopting a fast and concentrated first attack to bring the fire under control quickly before it reaches the critical uncontrollable intensity threshold (*peak of spread*).
2. Once a fire exceeds this threshold and first attack fails, extreme fire conditions can occur at FFDR below 50. At this point, the State Fire Controllers Intent must be the priority. Those listed on the profile should be viewed as examples only for discussion purposes.
3. If we use this scenario, the fire services will have up to 1-hour window (less under more extreme conditions) to achieve first attack success before the fire becomes uncontrollable. The result, a fire could spread for up to 12 hours including a change which, depending on its strength, could have a catastrophic effect and impact.
4. **The key point for discussion is whether Government and the Emergency Services have the balance right between regulation and policy setting and investment that achieves both building self-reliant and resilient community / businesses and ensuring effective agency operational readiness and response**

## BUSHFIRE PLANNING PROFILE



### STATE CONTROLLERS INTENT

1. Protection and preservation of life is paramount
2. Issuing of Community Information and Community Warnings
3. Protection of critical infrastructure and Community assets
4. Protection of residential property
5. Protection of assets supporting individual livelihoods and economic production
6. Protection of environment and conservation values.

### OTHER CONSIDERATIONS

1. Evacuation
2. Shelter Options ie. NSP, Community Fire Refuges