

## EXECUTIVE SUMMARY

Bushfire has been a constant and natural phenomenon in Australia for many thousands of years. South-eastern Australia, including Tasmania, is particularly prone to fire and is regarded as one of the most bushfire-affected regions in the world. Although fire forms an important part of the environment and remains essential for biodiversity and renewal; its effects can be catastrophic if uncontrolled. Tasmania has experienced periodic bushfire events that have caused devastating loss to life and property. While the protection of life and property remains the underpinning principle applied by agencies to combat bushfire risk, the importance of strategic fuel management regardless of land tenure has been highlighted by recent bushfire events in south-eastern Australia.

The State Fire Management Council (SFMC), as defined under Section 14 of the *Fire Service Act 1979*, is an independently chaired body which provides advice to the Minister of Police and Emergency Management about the prevention and mitigation of bushfires. In the aftermath of the 2009 Black Saturday fires in Victoria, and in response to the recommendations of the Victorian Bushfires Royal Commission Report (VBRC), the SFMC was tasked to provide advice regarding the extent and effectiveness of fuel reduction burning programs across Tasmania.

Approximately 42% of the State has vegetation that is suitable for treatment through fuel reduction burning programs. Over the past five years records for public lands show burning is undertaken at an average of 16,500 hectares per annum. Noting that additional burns may occur on private lands where records are not as well maintained, it does not necessarily follow that communities are safer due to the current burning regime. In this vein, areas of the landscape that are strategically selected for burning, based on a Statewide appreciation of bushfire risk will be more effective than broad-area burning in remote locations in creating safer communities.

To demonstrate this, SFMC conducted a strategic risk assessment where bushfire risk was assessed across the landscape, regardless of land tenure. Bushfire risk assessment models were used to describe current bushfire risk in Tasmania and to test different fuel reduction burning strategies to determine how they could reduce such risk.

PHOENIX RapidFire fire behaviour modelling indicated the potential for a high incidence of intense fires in several locations throughout the state. Under current fuel conditions, areas south of Launceston and Deloraine, between Sorell and Little Swanport, the Huon Valley, The Channel and parts of the Southwest were particularly at risk. The modelling demonstrated that there are many areas where fuel reduction burning has the potential to reduce bushfire impacts to communities. Noting that the majority of modelled bushfire impacts occurred in the Southern, Hobart and Tamar Fire Management Areas, the challenge is clearly to prioritise areas for treatment.

Moreover, impact modelling demonstrated that fuel reduction would not reduce potential bushfire impacts in some Human Settlement Areas. This confirms that fuel reduction burning will not entirely eliminate risk, but it is an effective bushfire mitigation option in many circumstances. It must therefore be seen as one of several mitigation options, including fire prevention, mechanical fuel removal, building design, fire trail and fire break maintenance, bushfire response and community engagement in promoting safety options.

Fifteen fuel reduction burning scenarios were tested for benefits in reducing impacts to Human Settlement Areas. This included how fire intensity and fire size were reduced to more manageable levels. The scenarios were based on fuel reduction burning in fire-tolerant vegetation referred to as 'treatable vegetation'; and tested the concept of: (a) burning on public land only, and (b) burning on all tenures. The use of Fire Management Zones was tested to manage fuels intensively within 6.05km of Human Settlement Areas, and one scenario also allowed fuels to accumulate with no fuel

treatment. Area-based targets were then developed based on fuel accumulation principles, scientific literature and recommendations from bushfire inquiries.

For each scenario, hypothetical five year burning programs were developed. The Bushfire Risk Assessment Model (BRAM) was used to prioritise burns based on bushfire risk. All hypothetical burning was conducted strategically to reduce bushfire risk at the Statewide and Fire Management Area scales.

The tenure-blind fuel reduction burning scenarios that burnt the largest areas had the greatest effect on reducing bushfire impacts, fire intensity and fire size. However, when considering the relative expense of their implementation, the loss of amenity and environmental costs, the feasibility of these scenarios in addressing bushfire risk reduction are questionable.

Inversely, the scenarios that confined burning to public land were considered achievable; but had very small effects on reducing Human Settlement Area impacts and fire size. From a whole-of-state perspective, the 5% public land only scenario did reduce fire intensities significantly across the landscape.

The most feasible scenario was therefore a balanced approach. Burning at least 31,000 ha of all treatable vegetation each year, including private and public land, with selection of burns based on a Statewide bushfire risk assessment (using the BRAM Risk Score) was both financially and operationally achievable, with reductions to modelled bushfire impacts greater than the public land only scenarios.

Specifically, this scenario significantly reduced the number of modelled bushfire impacts Statewide by 30%, and up to 50% in the Southern Fire Management Area. Greatest risk reductions were achieved in the Southern, Hobart and Tamar Fire Management Areas. In order to achieve these outcomes, approximately half of the area burnt was private property.

The modelling demonstrated the overall importance of strategically targeting blocks where the highest risk reduction can be realised. In 2004 the National Inquiry into Bushfire Management proposed zoning the areas around towns into asset protection zones and strategic fuel management zones as a way of implementing prevention programs. While this is appropriate for a local plan, once considered in a whole-of-landscape it becomes clear that a more nuanced approach is required. The balanced approach previously described provides for greater reductions in relative risk whilst burning fewer hectares, but only if the blocks are strategically targeted.

Implementation of a fuel reduction program involves a structured and adaptive process. Specifically, it includes bushfire risk assessment, identification of burning priorities, field checking, plan preparation, pre-burn preparation, burning, post-burn recovery and review. Experience from interstate indicates that it takes approximately three years to build up an expanded fuel reduction burning program. However, ongoing and long-term commitment is also required to effectively reduce the long-term bushfire risk.

Currently most burning occurs on public land, for purposes other than community risk reduction, and in areas that are remote from communities. Typically the burns are less complex and less expensive when compared to burning that occurs in close proximity to communities. Therefore a strategically planned fuel reduction burning program based on community risk reduction will require resourcing over and above historical levels.

For a program of this scale a comprehensive communication strategy, issues analysis and stakeholder analysis will be required. Some of the key issues that will need to be addressed may include, but will not be limited to:

- community acceptance of an expanded planned burning program

- explaining the limitations of different mitigation activities; some areas will always be prone to high bushfire risk even after all mitigation options have been implemented
- access to private lands to undertake risk mitigation activities
- smoke and public health impacts
- the effects of an expanded fuel reduction burning program on other burning programs that are regulated by smoke restrictions
- the visual impacts of smoke and charring in the landscape, including their effects on tourism
- balancing risk mitigation actions with environmental impacts; and
- workforce capacity to implement a program of this scale.

While some legislative tools and policies are already in place, an implementation program that builds on collaboration, cooperation, and a whole-of-community acceptance of bushfire risk will have the best outcome. Fire Management Area Committees, through fire protection plans, will provide the risk context for prioritising mitigation activities.

The methodology and approach taken in this report has identified a new approach to understanding bushfire risk in Tasmania. The results of the analysis can be used to identify the most effective areas for strategic mitigation programs, and to underpin Fire Management Area fire protection plans. Based on the analysis provided in the report the State Fire Management Council makes the following recommendations to Government for consideration:

1. A strategic fuel reduction burning program is developed that reduces bushfire risk to communities by strategically identifying high priority areas for treatment.
2. The Tasmanian Government supports a tenure-blind approach to fuel reduction.
3. Any fuel reduction strategy implemented must aim to reduce Statewide relative risk to below 80% within eight years.
4. A period of three years is allocated to build up to a fully implemented fuel reduction burning program.
5. A minimum of 31,000 ha of treatable vegetation on both public and private land is targeted each year, measured using a five year rolling average.
6. A long term commitment is made to implement a centrally coordinated fuel reduction burning program that incorporates the entire fuel reduction burning management process, including an ongoing commitment to improve strategic selection of burning priorities.