Friends of the Box-Ironbark Forests (FOBIF)

Castlemaine, Victoria 3450

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Date: 11th March 2026

Forest Fire Management Victoria
Department of Energy, Environment and Climate Action
Victoria

Submission: Campbells Creek – Stephensons Track Planned Burn (239 ha)
Castlemaine Diggings National Heritage Park, Central Victoria

Executive Summary

The proposed Campbells Creek – Stephensons Track planned burn (239 ha) is located within a biologically significant Box–Ironbark forest landscape south of Castlemaine, within the Castlemaine Diggings National Heritage Park. The area supports high biodiversity values, important recreation opportunities and significant cultural and historical heritage associated with the Castlemaine goldfields.

Of particular concern is the presence of the Eltham Copper Butterfly (*Paralucia pyrodiscus lucida*), which is listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Numerous records occur within the proposed burn footprint. However, the current distribution of the species is uncertain because surveys are several years old and the butterfly is known to shift locations over time as new stands of its host plant, *Bursaria spinosa*, are colonised. Planned burning therefore presents a clear risk of impacting currently occupied but undocumented habitat.

The burn area also supports several species listed under the Victorian Flora and Fauna Guarantee Act 1988, including the Castlemaine Spider-orchid (*Caladenia clavescens*), Emerald-lip Greenhood

(*Pterostylis smaragdyna*), Brown Toadlet (*Pseudophryne bibronii*), Speckled Warbler (*Pyrrholaemus sagittatus*) and Brush-tailed Phascogale (*Phascogale tapoatafa*).

FOBIF is also concerned that there is limited evidence demonstrating that planned burning in these forest types delivers sustained reductions in fuel hazard. In a meeting held in Taradale in 2025, Forest Fire Management Victoria (FFMV) staff confirmed that local planned burn sites are not routinely subject to follow-up fuel hazard assessments in the years after burning to determine whether the treatment has successfully reduced risk. Without such monitoring, it is difficult to demonstrate that planned burns are achieving their primary objective of bushfire risk reduction.

Independent fuel hazard assessments conducted by FOBIF at recent FFMV burn sites in nearby Box–Ironbark forests, including Kalimna Park and Irishtown Track, indicate that fuel hazard ratings can be equal to or higher than adjacent long-unburnt forest within two to three years of burning. These assessments suggest several consistent patterns: bark fuels associated with stringybark species often remain largely unaffected by planned burns; shrub recruitment can result in denser elevated fuels within a few years; and surface fine fuels frequently return to pre-burn levels within approximately twelve months due to post-burn leaf fall.

Taken together, these findings raise serious questions about whether broad-scale planned burning in these forest ecosystems provides meaningful or lasting reductions in bushfire risk, particularly when weighed against the potential impacts on threatened species and ecological values.

Given the high biodiversity values of this landscape, the presence of nationally and state-listed threatened species, and the burn's location outside Castlemaine's primary bushfire risk interface, FOBIF recommends that the proposed burn be reconsidered. At minimum, targeted ecological surveys and a clearer evaluation of fuel hazard outcomes should be undertaken before any burning proceeds.

FOBIF also intends to refer the potential impacts on the Eltham Copper Butterfly (*Paralucia pyrodiscus lucida*) to the Commonwealth Department of Climate Change, Energy, the Environment and Water under the EPBC Act.

EPBC Act Considerations – Eltham Copper Butterfly

The Eltham Copper Butterfly (*Paralucia pyrodiscus lucida*) has one of the most specialised life histories of any butterfly species in Australia. Larvae feed exclusively on the native shrub *Bursaria spinosa* and maintain a mutualistic relationship with ants of the genus *Notoncus*. Fire that substantially reduces *Bursaria* density or alters soil and litter conditions has the potential to disrupt this ecological relationship. According to the *EPBC Act Significant Impact Guidelines*, actions that reduce habitat critical to the survival of a threatened species or disrupt ecological processes essential to its life cycle may constitute a significant impact.

For this reason, targeted surveys should be undertaken prior to any burn to determine the current distribution of the Eltham Copper Butterfly within the proposed burn footprint. Exclusion zones must then be established around *Bursaria* stands to prevent direct or indirect impacts. FOBIF will be referring this matter to the Commonwealth Department of Climate Change, Energy, the Environment and Water for assessment under the *EPBC Act*.

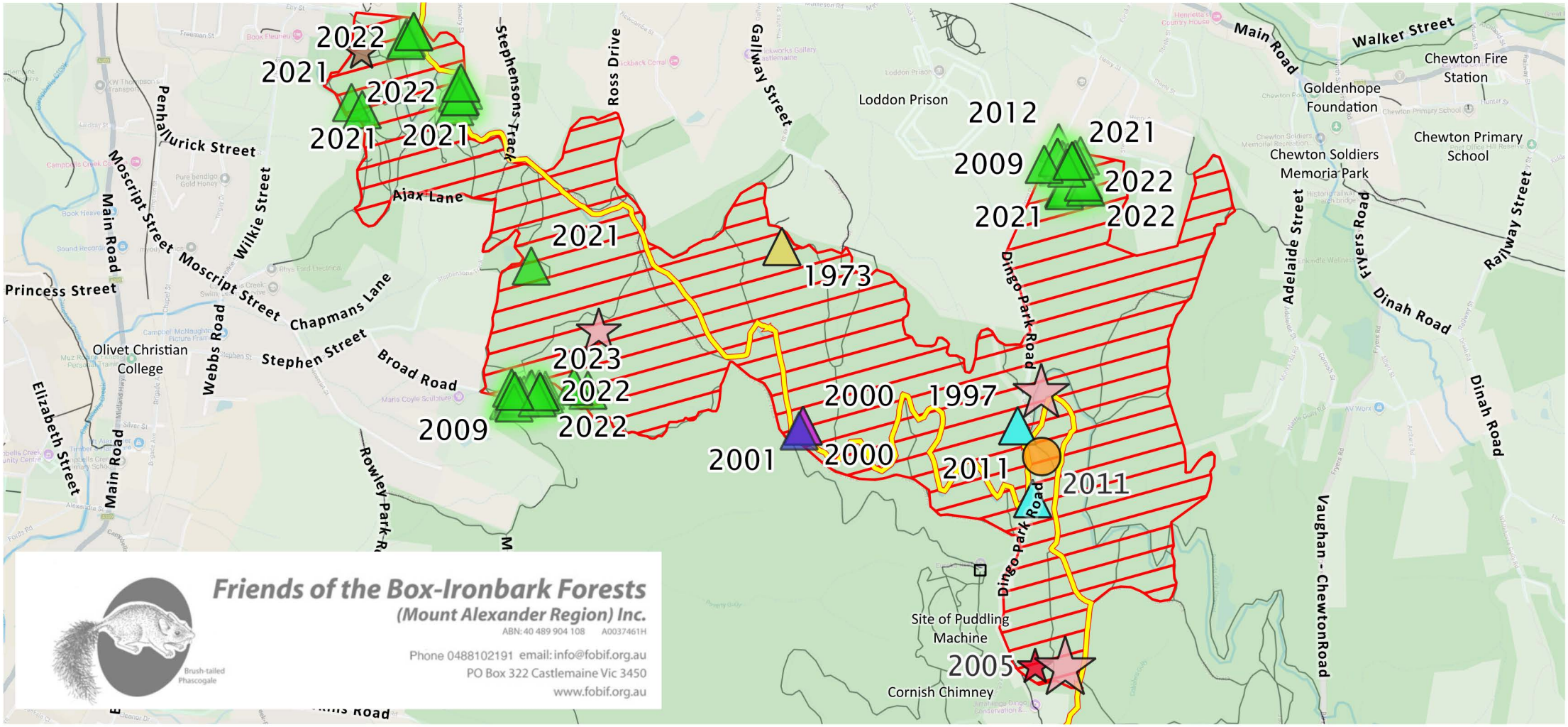
Threatened Flora – Orchid Ecology and Fire

Terrestrial orchids such as *Caladenia clavescens* and *Pterostylis smaragdyna* depend on highly specific mycorrhizal fungi for seed germination and growth.

These fungal networks occur within the soil profile and are sensitive to disturbance. High-intensity fire or repeated burning may alter soil microclimate and disrupt these fungal communities, potentially reducing orchid growth and recruitment.

In landscapes where threatened orchids are known to occur, it is generally recommended that fire be applied cautiously and at appropriate intervals to avoid long-term population decline. We have observed that *Caladenia clavescens* has declined substantially across the region in the last 15 years and DEECA no longer conduct monitoring or recovery works for the species. The proposed burn has the potential to cause further serious decline.

Figure 1 Castlemaine Spider-orchid (Caladenia clavescens), Dingo Park Road



Legend

2026 Fuel Reduction Burn Area

- Campbells Creek - Stephensons Track burn

Other

- Parks and Reserves
- Goldfields Track

Threatened Species Records^

- Brown Treecreeper*
- Brush-tailed Phascogale
- Eastern Bent-winged Bat
- Eltham Copper Butterfly
- Speckled Warbler
- White-throated Needletail
- Emerald-lip Greenhood
- Castlemaine Spider Orchid [8-35 records]*
- Crimson Spider Orchid*

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^Threatened species records are from the Victorian Biodiversity Atlas. The year the species was recorded is included in the label.
*The exact location (within a 2.8km grid) of these records are restricted in the VBA for conservation reasons

Hollow-Bearing Trees and Fauna Habitat

Species such as the Brush-tailed Phascogale (*Phascogale tapoatafa*) rely on tree hollows for nesting and shelter. Tree hollows in eucalypts often require well over a century to develop, meaning the loss of mature hollow-bearing trees represents a long-term reduction in habitat availability for many woodland species.

It is the collective experience of FOBIF members, based on many years of observing planned burns in Box-Ironbark forests, that the limited number of old hollow-bearing trees present in these landscapes are frequently killed during burns when fire enters existing hollows, causing internal burning that can ultimately lead to structural failure and collapse.

Planned burning that causes basal scorching, canopy scorch, or internal burning of hollows may therefore contribute to the delayed mortality of mature trees. FOBIF recommends that all hollow-bearing trees be mapped and protected through localised fuel management prior to any burn being undertaken.

Figure 2 Old growth hollow-bearing tree killed by an FFMV planned burn off Irishtown Track, Fryerstown in 2024

The Monk – Butterfly Hilltopping Habitat

The Monk is a prominent rocky hilltop within the proposed burn footprint and is known locally as an important butterfly hilltopping site. Hilltopping occurs when male butterflies congregate on prominent landscape features to intercept females for mating. These sites often function as reproductive nodes within fragmented landscapes. Vegetation height, solar exposure and wind patterns can strongly influence the suitability of hilltops for this behaviour. The proposed planned burn is likely to impact the structure and diversity of the Monk hilltop, impacting numerous species of butterfly.

Fire Ecology of Box–Ironbark Forests

Evidence from ecological studies suggests that Box–Ironbark forests historically experienced relatively infrequent fires that produced a heterogeneous mosaic of burnt and unburnt patches. Such patchiness creates refuges for fauna and allows plant communities to recover over extended periods.

Large uniform burns may simplify vegetation structure and reduce habitat heterogeneity. In areas supporting threatened species, fine-scale mosaic burning is generally considered more appropriate than broad landscape burns.

Fuel Hazard

We request further information on how fuel risk reduction from planned burns is being assessed and evaluated. In a meeting held in Taradale in 2025, FFMV staff confirmed that local planned burn sites are not routinely subject to follow-up fuel hazard assessments in the years after a burn to determine whether the treatment has actually reduced fuel hazard. This is deeply concerning. Without post-burn monitoring, it is impossible to determine whether the burns are achieving their stated objective of reducing bushfire risk.

We have undertaken our own fuel hazard assessments at several FFMV burn sites, including Kalimna Park and Irishtown Track. These assessments found that fuel hazard ratings were higher than in adjacent long-unburnt bushland within two to three years after the planned burns. Several consistent patterns were observed:

• Stringybark bark fuels: The presence of stringybark species is often the main factor elevating fuel hazard ratings to Very High or Extreme. Under the fuel hazard assessment method, reducing this hazard rating requires scorching more than 50% of the trunk. However, this level of bark consumption is rarely achieved in local planned burns. Red Stringybark trunks in particular are difficult to ignite compared with Messmate Stringybark, meaning that burns frequently fail to substantially reduce bark fuel loads. This suggests that the hazard posed by these trees may be overstated within the assessment framework, and that planned burns are often ineffective at reducing this component of fuel risk.

• Elevated fuel layers: Planned burns frequently stimulate dense shrub recruitment. Within two to three years, the elevated fuel layer can become denser than pre-burn conditions, resulting in higher fuel hazard ratings.

• Surface fine fuels: Surface fuels (leaf litter) commonly return to pre-burn levels within approximately 12 months. This appears to occur because canopy scorching during burns triggers substantial leaf fall, rapidly replenishing the litter layer.

Taken together, these observations raise serious questions about whether planned burns in these forest types are delivering meaningful or lasting reductions in fuel hazard.

Tourism and Landscape Amenity

The Castlemaine Diggings Track passes directly through the proposed burn area and represents a significant tourism and recreation asset within the Castlemaine Diggings National Heritage Park. The track forms part of an extensive network of walking and cycling routes that attract visitors to the region and contribute to the local tourism economy.

Large-scale planned burning has the potential to significantly alter the visual character of this historic landscape for a number of years following the burn. Blackened forest, scorched understorey vegetation and the loss of mature trees can diminish the aesthetic and heritage values that attract visitors to the Diggings landscape.

In addition, planned burning may create safety hazards along the track corridor. Fire damage to mature trees can lead to delayed structural failure, increasing the likelihood of falling limbs or tree collapse in the months and years following the burn. This presents a potential risk to walkers and cyclists using the track and may require track closures or ongoing hazard tree management.

Given the importance of the Castlemaine Diggings Track as both a heritage and tourism asset, careful consideration should be given to the potential impacts of broad-scale burning on landscape amenity, visitor experience and public safety within this section of the park.

Bushfire Risk Context

The proposed burn area is located south of Castlemaine and is not situated within the town's highest bushfire risk interface. Under typical severe and catastrophic fire weather conditions in central Victoria, bushfires are most likely to spread from the north-west toward the south-east. As a result, landscapes immediately south of Castlemaine are generally less likely to generate large fire runs that threaten the township compared with forests located to the north-west.

Alternative approaches, including more targeted fuel management in areas closer to assets, may therefore provide a more balanced outcome between bushfire risk reduction and biodiversity conservation.

Recommendations

- **Undertake targeted ecological surveys prior to any burning** to determine the current distribution of threatened species within the burn footprint, including the Eltham Copper Butterfly (*Paralucia pyrodiscus lucida*), Castlemaine Spider-orchid (*Caladenia clavescens*), Emerald-lip Greenhood (*Pterostylis smaragdyna*), Brown Toadlet (*Pseudophryne bibronii*), Speckled Warbler (*Pyrrholaemus sagittatus*) and Brush-tailed Phascogale (*Phascogale tapoatafa*).

- **Map all known and newly detected locations of threatened species** and incorporate these records into burn planning to ensure appropriate avoidance and protection measures are implemented.
- **Establish exclusion zones around all Eltham Copper Butterfly habitat**, particularly areas supporting *Bursaria spinosa* stands, to prevent impacts to larval food plants and associated *Notoncus* ant colonies that are essential to the butterfly's life cycle.
- **Map and protect all hollow-bearing trees within the burn area**, and implement localised fuel management around these trees to minimise the risk of fire entering hollows and causing delayed tree mortality.
- **Undertake systematic post-burn fuel hazard monitoring:** All planned burn sites should be subject to follow-up fuel hazard assessments (e.g. at 6 months, 1 year, 2 years and 3 years post-burn) using a standardised method such as the Overall Fuel Hazard Guide, and the results should be used to evaluate whether planned burns are delivering sustained reductions in bushfire risk in Box–Ironbark forests. This infromation should be made publicly available.
- **Exclude The Monk hilltop from planned burning** due to its importance as a butterfly hill-topping site and the potential for fire to alter vegetation structure and microclimatic conditions required for this behaviour.
- **Maintain protective buffers along the Castlemaine Diggings Track** to preserve landscape amenity, reduce visitor safety risks associated with fire-damaged trees, and minimise impacts to this important tourism and recreation asset within the Castlemaine Diggings National Heritage Park.
- **Avoid large uniform burns in areas supporting high biodiversity values**, and where fire is considered necessary, apply smaller-scale mosaic burning that retains unburnt refuges and maintains habitat heterogeneity.
- **Reassess whether the proposed burn is necessary in this location**, given the high conservation values present and the burn's position outside the primary bushfire risk interface for Castlemaine.
- **Prioritise fuel reduction activities closer to residential areas and critical assets**, where such works are more likely to reduce bushfire risk to life and property while avoiding unnecessary impacts to high-value conservation areas.

Yours sincerely,

Friends of the Box-Ironbark Forests