

## Statement on Prescribed Burning and Fire Management.

### Nature Conservation Margaret River Region

Destructive bushfires occur regularly in Western Australia including in the Margaret River Region. State and local government policies are designed to reduce the incidence and risk from such fires and to respond effectively to extinguish them. Across Australia authorities are warning that the threat from bushfires is getting worse. Climate change is increasing the frequency and intensity of bushfires while the frequency of unseasonal fires is also increasing, and fire seasons are longer. At the same time, more people are living in fire prone areas, so the risk to lives, properties and infrastructure is increasing and the pressure on fire authorities to mitigate risk is rising.

Prescribed (or controlled) burning, the major tool routinely used for over 60 years to reduce fire risk in WA., originated in U.S. forestry practice. The underlying assumption is that such burning reduces fuel load and minimises the likelihood and impact of subsequent bushfires. Until recently, the policy specified overall targets for areas to be burned (200,000 hectares in Parks and Wildlife managed lands per annum) and desired rotations – for the south-west forest regions the target is for 45% of department managed land to have a fuel age less than 6 years since the last burn. Recently, a DBCA fire officer, Brodie Selby<sup>1</sup>, was quoted as saying that the 200,000 limit no longer applies but rather “we have some targets that we are aiming for.”<sup>2</sup> Even if it is assumed that such burning is effective, the targets on public land make little sense in an area like the Leeuwin Naturaliste ridge where the majority of bushland is in private ownership. In southwest forests, aerial ignition – dropping incendiaries into the forests on a grid pattern - is frequently used, allowing extensive areas to be burned at relatively low cost. However, there is credible science which raises questions about whether prescribed (controlled) burning, particularly as currently practised, is the optimal technique for reducing fires and fire risk. Indeed, there is good evidence that alternative approaches might produce better results with fewer adverse consequences.<sup>3</sup>

A reconsideration of the policy is made more pressing by a growing body of research which reveals the adverse effects of regular burning on native plants and animals.<sup>4</sup> Official justification for such burning has often rested on claims that the bush requires regular burning to remain healthy, an assumption that is increasingly challenged by botanists and ecologists.<sup>5</sup> Climate change is also making prescribed burning more difficult, with more extreme weather events, shorter windows to burn, drier vegetation, more vulnerable populations of native plants and animals and an increased risk from prescribed burns getting out of control. People in the Margaret River region experienced first-hand the devastation caused by an “escaped” prescribed burn in November 2011. Over several days the fire burnt through more than 3,400 ha of coastal heathland and bush, 32 houses, including historic Wallcliffe House, nine chalets and four outbuildings. In Gnarabup the large swathes of

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<sup>1</sup> Subiaco Post, April 18, 2026, p 68.

<sup>2</sup> We have yet to ascertain what these targets are for the MR region.

<sup>3</sup> NSW Bushfire Inquiry 2020 | Final progress report. [bushfire-inquiry-final-progress-report.pdf](#)

<sup>4</sup> Bradshaw, D. (2025) To Burn, or Not to Burn: A Critical Perspective, CCWA.

<sup>5</sup> Bradshaw S D, Dixon K W, Hopper D S, Lambers H & Turner S R (2011). Little evidence for fire-adapted traits in Mediterranean Climate regions. Trends in Plant Science, 16, 69-76.

coastal heathland burned destroying the habitats of varied populations of birds, reptiles and invertebrate fauna. Further from the coast, the fire razed peppermint forests, the preferred habitat of the critically endangered Western ringtail possum, resulting in significant injury and death of the possums and other animals.

While we acknowledge that prescribed burning policy often sparks heated debate, we believe this makes it even more critical to examine the policy in the light of the best available evidence, including evidence about alternative perspectives and approaches to bushfire mitigation. Contemporary scientific findings should inform responses to the key questions surrounding prescribed burning:

- What are the risks and benefits of controlled burning as currently practiced?
- Should the policy be modified, particularly in the light of climate change and evidence from recent severe bushfires, and, if so, in what ways?
- Are there realistic alternatives or additional measures which could reduce the incidence of and damage from bushfires?

We accept that the key objective of prescribed burning (and any bushfire mitigation programs) is to reduce the severity and spread of bushfires and to prevent injury, loss of life and property. However, the effects of such regular (and often hot) burns on native animals and plants and the impact on human health should also be central to deliberations about policy options. There are several questions which should be considered in assessing the effectiveness, success and costs of the current policy and developing better alternatives:

### **1. Absolute efficacy**

Does prescribed burning reduce the frequency and severity of bushfires? Does efficacy vary with location and circumstance? Does it reduce the likelihood of deaths, injuries and/or destruction of property and infrastructure? Does it make bushfires “easier, safer and cheaper to control”?

### **2 Comparative efficacy**

Is prescribed burning superior to other forms of vegetation management designed to reduce fuel load/ fire risk? Does forest flammability increase or decrease with the unburnt age of the forest? Is this true in every case? Is prescribed burning cost effective compared to available alternatives? Is a regime of rapid response to any fire more effective in reducing fire impacts?

### **3 The effects of prescribed burning on the natural environment**

What are the effects on plants and wildlife, particularly in the long term? Do we understand the relationship of our native flora and fauna to regular burning? Does such regular burning result in the loss of habitats and species? Are there other adverse environmental consequences e.g., increased carbon emissions; weed infestation, incursion by feral animals? Are some areas or species more vulnerable than others?

### **4 Climate change effects**

Is the changing climate making prescribed burning more difficult and/or less effective because of more extreme weather, shorter windows to burn, drier vegetation, increased risk of prescribed burns getting out of control and native vegetation and wildlife becoming more vulnerable?

## **5 Indigenous cultural burning**

What are the lessons for current policy of indigenous fire practice of small scale, low heat, carefully timed burns based on detailed local knowledge of plants and animals and people's needs?

## **6 Detrimental effects on human (and animal) health**

What are the health consequences of frequent exposure to air pollution from prescribed burns (compared to wildfires) and what are the associated health costs? Should we take account of adverse human health effects in undertaking prescribed burns – particularly respiratory and cardiovascular illness and deaths resulting from burns near built up areas?

### **The evidence**

We believe that a rigorous assessment by government of these and other questions around the effectiveness of prescribed burning in reducing fire frequency, severity and impact is long overdue. However, there is already strong evidence that:

- Burning near developed areas is more effective than burning in more remote conservation areas. The NSW government inquiry following the catastrophic 2019-20 bushfires concluded that prescribed burning did not appear to stop the majority of wildfires destroying homes. A comprehensive analysis by researchers at ANU<sup>6</sup> of house losses, including in the Gnarabup fire, showed that “current patterns of burning had little effect on reducing house losses during subsequent wildfires” and that “reducing woody vegetation within 40 m of houses had a stronger and more certain effect on reducing house losses than prior burning.”
- The physical removal, slashing, maintenance of fire trails and targeted burning taking account of local conditions and environmentally sensitive areas produce better results than burning according to targets. For example, authors of the ANU study concluded that their results, “cast doubt over the effectiveness of prescribed burning as currently practised in southern Australia”. To minimise the effects of wildfires on houses and lives, they suggested that in addition to or instead of prescribed burning other strategies should be employed: modifying vegetation close to houses, house design, building houses in areas of lower risk, and early evacuation.
- Increasing the frequency or area of prescribed burns does not necessarily reduce bushfire risk.<sup>7</sup> Researchers at Melbourne University have shown that in extreme

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<sup>6</sup> Gibbons, Philip & Gale, Matthew & Moritz, Max & Cary, Geoffrey. (2025). The effectiveness of prescribed burning for protecting houses during wildfires in Australia. *Fire Ecology*. 21. 10.1186/s42408-025-00413-z.. p 12.

<sup>7</sup> Price, O.F., Penman, T.D., Bradstock, R.A., Boer, M.M. and Clarke, H. (2015), Biogeographical variation in the potential effectiveness of prescribed fire in south-eastern Australia. *J. Biogeogr.*, 42: 2234-2245. <https://doi.org/10.1111/jbi.12579>

conditions, reduced fuel loads achieved through prescribed burning do not appear to significantly moderate bushfire behaviour.

- Available models for strategic planning (e.g. Phoenix and Australis) rely on assumptions that exaggerate the effectiveness of prescribed burning, and typical cost-benefit analyses often omit the impacts on nature and the costs to human health.
- The assumption that forest flammability increases with the unburnt age of the forest is open to serious question. In fact, the reverse appears to be true. Changes to vegetation following burns may make sites more flammable – with increased thickets and weeds. We may be burning forests at their most flammable stage/age, hence prescribed burning perversely creates a heightened fire risk that requires high frequency burning in perpetuity.<sup>8,9</sup> The NSW Inquiry concluded that “over a certain level of fire weather, fuel load and fuel age does not have a significant influence on fire intensity or spread” and that “fuel reduction has less influence than weather on the extent of unplanned fire”.
- Ecosystem and species destruction occurs if prescribed burns are too extensive, too hot, too frequent, in the wrong locations and in the wrong season. e.g. Hot fires penetrate deep into the soil and destroy the ecosystem at a microbiological level. They also burn up into the trees and destroy the canopy. Prescribed burns have resulted in severe damage to the Tingle forests and peatlands in Walpole Wilderness area. An escaped control burn near Manjimup incinerated many Numbats – WA’s animal emblem and an endangered species. According to Bradshaw, for the 21 prescribed burns in the southwest forest regions in 2024, the responsible Minister authorised DBCA to kill an unspecified number of 21 listed threatened species, including numbats, quokkas, woylies, Western ringtail possums, chuditch and cockatoos. The numbers killed are rarely assessed because of the failure to conduct surveys before and after burns.
- In the southwest global biodiversity hotspot (of which the Margaret River Region is a part), there is a particularly high risk to species and ecosystems which have limited evolutionary resilience to the current regime of frequent prescribed burning especially in springtime – the breeding and flowering season for many species. Decline in many plant and animal species when the forest is burned every 6 years has been documented. Long-unburnt areas are needed to avoid the extinction of some species such as Banksias.<sup>10</sup> Particularly important in the Margaret River region is the finding that in jarrah (*Eucalyptus marginata*) and other forests, prescribed

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<sup>8</sup> Zylstra P, Bradshaw S D & Lindenmayer D B (2022). Self-thinning forest understoreys reduce wildfire risk, even in a warming climate. *Environmental Research Letters*, 17 044022.

<sup>9</sup> Zylstra, P., Wardell-Johnson, G., Falster, D., Howe, M., McQuoid, N., & Neville, S. (2023). Mechanisms by which growth and succession limit the impact of fire in a south-western Australian forested ecosystem. *Functional Ecology*, 37, 1350–1365. <https://doi.org/10.1111/1365-2435.14305>

<sup>10</sup> S. J. Wooller, R. D. Wooller, K. I. Brown, Regeneration by three species of Banksia on the south coast of Western Australia in relation to Zire interval. *Australian Journal of Botany* 50, 311-317 (2002).

burning on a 5–7-year rotation permanently simplifies the flora in the forest litter and reduces the populations of invertebrate fauna.<sup>11</sup>

- Studies have documented degradation and ecological simplification to vegetation and species complexity resulting from frequent prescribed burning; diversity is affected by the faster recovery of some species.
- Indigenous cultural burning has important lessons for current policy: '*selectivity rather than ubiquity*' means prescribed burning practices that reflect the needs of people, particularities of place and respect of indigenous care for country. Cultural burning is typically small scale, low heat, carefully timed, and based on detailed local knowledge of plants and animals and people's needs.

### **We recommend**

An urgent revision of the current policy to take account of contemporary, peer reviewed science, particularly around the efficacy of prescribed burning in reducing the severity and damage of subsequent fires and the health and environmental impacts of regular burning of native vegetation. We suggest two main strategies which could be immediately adopted to reduce the impact of prescribed burning on the ecosystems in our region while reducing the risk from uncontrolled bushfires.

1. Significantly modifying prescribed burning practices so that the impact on native plants and animals and human health is minimised.
2. Employing alternative firefighting methods which use new technologies to enable a rapid fire response, thus reducing the need for prescribed burning as a preventive tool.

There are several Important points to note in relation to the first strategy - designing ways to minimise the impact of prescribed burning on native plants and animals:

- Prescribed burning should only take place in the autumn months, although this also poses risks for some species. Burning in spring is particularly detrimental since this is a peak period for most animals' nesting and reproduction and plants' seed production. Spring and summer burns, especially where canopy is removed, allow light to fall on previously shaded ground. Weeds grow and smaller shrubs spring up, thus increasing the fuel load in the following years. Animals also take longer to recover after a spring/summer burn, and some populations may never recover.
- Summer burning should never be carried out due to the elevated risks from the extremely high temperatures generated. High temperature burning goes deep into the soil and destroys the ecosystem at a microbiological level. It also burns up into the trees and destroys canopy. The likelihood of rapid, uncontrolled spread is also increased.
- If burns are needed, they should be cool, managed on site and targeted at areas where homes and infrastructure are at risk. Indiscriminate, large scale aerial ignition should be avoided.

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<sup>11</sup> A. York, Long-term effects of frequent low-intensity burning on the abundance of litter-dwelling invertebrates in coastal blackbutt forests of southeastern Australia. *Journal of Insect Conservation* 3, 191-199 (1999)

- In addition to or instead of prescribed burning, other strategies should be employed: modifying vegetation close to houses, improving house design to ensure greater fire proofing, building houses in areas of lower risk, and early evacuation.

In relation to an early detection and rapid response strategy, it is important to note that it is now far easier to undertake than when the prescribed burning policy was first adopted and may provide better protection of people, their homes and the environment. In particular,

- AI cameras used around the world have met with considerable success in enabling rapid responses to fire.<sup>12</sup> Trials in the Margaret River area have already proved that the cameras are extremely effective, but the relevant authorities - DFES and DBCA – have yet to employ them.
- In these trials, once smoke is spotted, a location can be pinpointed within minutes of a fire starting. Fire fighters can then be deployed to confirm the fire and develop the response plan.
- If a fire starts in a remote location, drones can be used to confirm the fire and determine its size. (The drones would be grounded once the alarm is raised and air attack aircraft are en route.)
- When there are multiple fires, as in lightning strikes, the AI system would allow rapid decisions about which fires should be extinguished first, giving priority to those in proximity to homes and town sites.

## Conclusion

Prescribed burning is not a panacea, but one of many possible tools to mitigate fire risk. Used indiscriminately and carelessly it can be damaging to human health and the natural world, while doing little to reduce fire risk; especially in extreme conditions. It requires nuance in implementation and should be based on careful stewardship of the land and its people.

Policy and practice should take account of the intricate complexities of our ecosystems, the vulnerabilities of various species and ecologies. Prescribed burning should no longer be formula based but needs to be guided by the specifics of site – the vegetation and animal species; soil types and ecologies; fuel load, moisture levels, extent and continuity of vegetation types; atmospheric conditions: humidity, wind speed and direction; previous burning regimes and cycles. It should also be cognisant of human health effects and avoid damage to industries such as grape growing, bee keeping and tourism. We acknowledge that although small, targeted fires associated with assets are less destructive and will promote native plant health and survival, they will probably cost more to manage than the current large scale, uniform burning. It is also likely that some local employment may be lost, but funding could be diverted to undertake other hazard reduction and fire preparedness activities such as clearing, mowing, and mechanical treatments near assets and homes.

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<sup>12</sup> [Artificial intelligence detects fires early, protecting people and infrastructure | ASCE](#)

It will take many years for our forests to recover from the extensive and repetitive burning that has taken place over many decades, but with cool burning practices in the autumn months and the use of AI fire detection, there is hope that a better balance may be achieved that still protects lives and assets, but also allows the forest to flourish into the future.