PRESCRIBED BURNING FACT SHEETS

South-West Forests Defence Foundation Inc

Volume 2 February 2026

Front cover photos:

Top: *Blue Holes prescribed burn (ignited 30 October 2024). Source: Bart Lebbing, Denmark Environment Centre.*

Bottom left upper: *Styx block prescribed burn (November 2023). Source: Bart Lebbing, Denmark Environment Centre.*

Bottom left lower: *Fallen tree following Giants East prescribed burn (December 2024). Source: Luscombe-Pedro (2025) Giants Prescribed Burn FRK_111 Tree Fall Assessment.*

Bottom middle: *Burnt tingle trees following Giants East prescribed burn (December 2024). Source: Luscombe-Pedro (2025) Giants Prescribed Burn FRK_111 Tree Fall Assessment.*

Bottom right upper: *Dwelling destroyed by escaped Margaret River prescribed burn. Source: Report on "Investigation of the house losses in the Margaret River Bushfire 23 November 2011", Department of Fire & Emergency Services, October 2012.*

Bottom right lower: *A critically-endangered ringtail possum after Warrungup Spring prescribed burn in 2018. Source: Allison Dixon.*

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PREFACE

The Western Australian Department of Biodiversity, Conservation and Attractions (DBCA) carries out an ongoing, industrial-scale, statewide prescribed burning program. In 2024-25, it burnt 115 962 hectares in the south-west forest regions and a total of 5 056 369 hectares statewide.

Recent independent research shows that, with the increased frequency of severe fire weather, the program is failing to achieve its routinely-stated main objectives - to protect human life and property against wildfire, and to conserve and enhance biodiversity.

In August 2024, the South-West Forests Defence Foundation Inc published a booklet 'Prescribed Burning Fact Sheets', a collection of nine, fully-referenced papers exposing the false claims DBCA uses to support its continued burning program in the south-west forests and the many serious, harmful impacts of the practice. If the public was aware of the true facts, there would be outrage.

This is Volume 2. It more closely examines the serious impacts of the burning program on biodiversity, the net greenhouse gas emissions that result from excessive post-burn tree falls and some of the program's unintended societal costs.

Australia has one of the highest rates of species extinction in the world; we have lost more mammal and plant species over the past 200 years than any other country. A recent scientific publication revealed that 72% of Western Australia's threatened animal species are at risk from adverse fire regimes.

For too long, the Government has heeded only the self-serving advice provided by vested prescribed burning interests within DBCA, maintaining annual funding of over $60 million. A comprehensive, independent scientific review of prescribed burning into its effectiveness and its impacts on biodiversity, human health and greenhouse gas emissions is urgently required and long overdue.

FACT SHEETS

The South-West Forests Defence Foundation Inc. respectfully acknowledges the Noongar peoples, their Elders past and present, who have lived amongst and cared for the forests and woodlands of south-western Australia for tens of thousands of years.

We understand that their long and deep relationship with their country has given them the knowledge, skills and wisdom to manage these lands and the exceptional and unique biodiversity they contain. We further understand that this knowledge exists nowhere else.

We applaud the Noongar peoples for actively preserving their knowledge and passing it down to emerging Elders, and for their generosity in sharing their knowlege and wisdom with the wider community.

It is therefore our sincere hope that Noongar peoples now be ernestly listened to and urgently given better opportunities to share their knowledge and once again be a key part of forest management.

10 PRESCRIBED BURNING IN FORESTS WASTES MONEY

FACTS ABOUT PRESCRIBED BURNING AND WILDFIRE IN SOUTH-WEST FORESTS

The Department of Biodiversity, Conservation and Attractions' (DBCA's) prescribed burning regime in the south-west forest regions is based on false economics.

Prescribed burning strategies range between two quite different alternatives:

1. '**landscape treatments**', which maintain a burnt patchwork generally over the entire forest region so that wildfires will be easier to suppress, in moderate conditions, when they reach a recently-burnt area with low fuel load
2. '**wildland-urban interface (WUI) treatments**', which reduce fuel loads in areas close to the assets requiring protection.

Landscape treatments are cheaper per hectare due to large burn areas. WUI treatments, carried out closer to the infrastructure requiring protection, are more expensive due to the care required.

Florec *et al.* computer-modelled these two strategies and their potential effect on wildfire occurrence at different rates of annual adoption (0%, 5%, 10%, 15% and 20% burnt) in DBCA-managed land in the South West Forest Region (1 880 000 ha; as defined by Florec *et al.*) and calculated the cost for each scenario. Florec *et al.*'s costs included:

- the prescribed burning cost
- the wildfire suppression cost
- the wildfire damage cost to urban areas, plantations, agriculture, mining and ecosystems.[1]

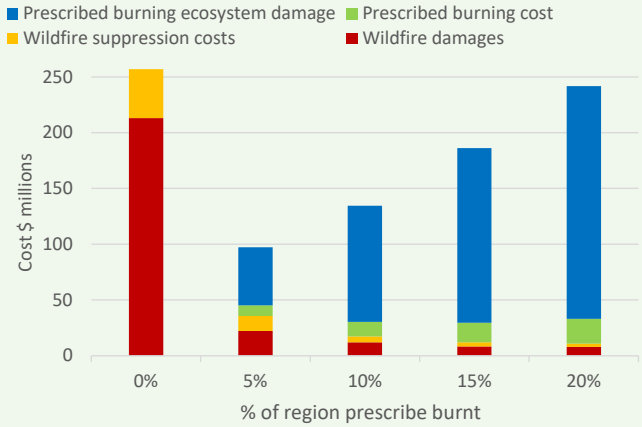
The total costs of each scenario were compared to determine the most cost-effective prescribed burning regime. Florec *et al.* showed that landscape treatment at 15% adoption rate was the most cost effective regime **when the cost of ecosystem damage from the prescribed burning was ignored**. This is similar to DBCA's current practice.

However, many prescribed burns are very damaging to ecosystems, and the damage caused by burning large forest areas remote from infrastructure cannot be ignored (see Fact Sheet 3).[2]

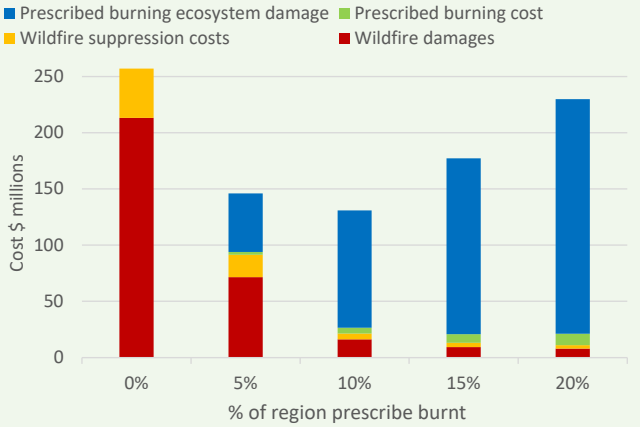
In the Perup prescribed burn, March 2021, 22% of burn area had complete loss of green material.
Source: Kingsley Dixon.

Forests provide myriad ecosystem services that are essential to human survival and wellbeing. The figures below show Florec *et al.*'s estimated costs for each scenario (in red, orange and green), and the costs of the ecosystem damage from prescribed burning (blue), taken to be the loss of an ecosystem service: *atmosperic regulation by temperate forests* (from Taye *et al.*; and adjusted to the same Australian dollar value as Florec *et al.*'s study; $1320 /ha/year).[3] This damage cost is an underestimation as it does not include other ecosystem services related to biodiversity conservation and water catchments.

1) Wildland-urban interface treatment



2) Landscape treatment



Costs from Florec *et al.*'s study of different adoption rates of prescribed burning 1) close to assets requiring protection (wildland-urban interface treatment) and 2) further from assets requiring protection (landscape treatment), and estimated cost of prescribed burning ecosystem damages.

Including the prescribed burning damage cost for loss of atmospheric regulation results in the most cost-effective scenario being to burn the smallest of the areas considered (5%) close to the assets requiring protection. As the prescribed burning ecosystem damage cost has been underestimated, it is likely that the most cost-effective scenario would be to burn even less of the WUI area. This analysis demonstrates that, for the greatest economic benefit, prescribed burning or other bushfire mitigation strategies should be done close to the assets requiring protection not in remote areas.

As most ignitions occur close to human habitations it is also sensible to concentrate wildfire risk mitigation in the WUI to reduce the chances of these ignitions turning into large wildfires.[1]

Other studies deduced that prescribed burning treatments close to the settlements and other assets requiring protection achieve a greater reduction in damage and risk to houses and assets than treatments remote from infrastructure (as currently favoured by DBCA).[4,5,6] In eight of the 11 areas in Penman *et al.*'s study of prescribed burning cost effectiveness, '**do nothing**' was the most cost-effective approach.[6]

All the studies reinforce the finding that taking preventative action close to the assets needing protection is most beneficial, and burning in conservation areas is a waste of money.

Campbell *et al.*deduced that the effectiveness of DBCA's current prescribed burning regime in reducing subsequent wildfire area has been small (leverage of 50:1; that is, needing to burn 50 ha in order to prevent 1 ha of wildfire; see Fact Sheet 2).[7] So, over the six years to 2022/23, the average annual area burnt of 179 049 ha would have prevented on average 3600 ha of wildfire. The average annual cost of the prescribed burning in the south-west forest regions was $5.53 million ($52.4 million statewide).[8] It may be cheaper to tackle wildfires as they occur, rather than continuing the current ineffective prescribed burning regime.

Prescribed burning far from the assets requiring protection should cease, and treatments should be undertaken close to the infrastructure and settlements requiring protection as this is the more effective strategy. Although increased forest flammability in the medium term may require a greater fire suppression effort, the costs in the longer term will be less.

The benefits of this strategy, besides benefitting the forest ecosystem, are increased ecosystem services: e.g. atmospheric regulation and oxygen production, fewer human health and water quality impacts and less greenhouse gas emission.

The costs here do not include the multi-million dollar annual health costs attributed to smoke from prescribed burns or the economic losses it causes to honey and wine producers and the tourism industry.

Conclusions

DBCA appears to put no value on the ecology and biodiversity of the south-west forest regions when planning prescribed burning regimes.

DBCA burns large areas remote from the assets requiring protection because this is the cheapest possible burning regime.

This approach is having little effect on subsequent wildfire area, and causing immeasurable ecological damage **so it wastes taxpayer resources, money that could be better spent elsewhere**.

The most effective way to reduce wildfire risk and damage is to reduce fuel loads close to the assets requiring protection, NOT in remote areas.

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A new approach to wildfire risk management is needed.

11 PRESCRIBED BURNING DESTROYS BIODIVERSITY

FACTS ABOUT PRESCRIBED BURNING AND WILDFIRE IN SOUTH-WEST FORESTS

Although fire is a threat to biodiversity, the Department of Biodiversity, Conservation and Attractions (DBCA) claims that its prescribed burning program in the south-west forest regions enhances biodiversity. This fact sheet examines some to the claims that DBCA makes about biodiversity conservation and prescribed burning.

In prescribed burning plans, DBCA claims, *"The department uses prescribed burning to maintain biodiversity ...."* and applies *"... planned fire as a management tool to maintain and enhance the natural environment."*[1,2] In the DBCA video 5 *Managing Bushfire Risk*, former DBCA officer Dr Neil Burrows says of prescribed burning: *"This will enable us to both reduce fuels to provide some protection to communities, but also to ensure that our prescribed burning program is not harmful to plants and animals, in fact it is beneficial to plants and animals."*[3]

PRESCRIBED BURNS KILLS UNKNOWN NUMBERS OF PLANTS AND ANIMALS, INCLUDING THREATENED SPECIES.

The Minister for Environment through Section 40 of the *Biodiversity Conservation Act 2016* gives DBCA permission to kill threatened species during in its prescribed burns. For example, in authorisation number TFA 2324-0111, which applies to 21 prescribed burns, the Minister authorised DBCA to take (kill) or disturb any number of 21 threatened species, including the critically-endangered Woylie and Western Ringtail Possum. The purpose of this taking/disturbance was stated as "*Frankland District prescribed burning in 2023-2024 for the purpose of bushfire, silviculture and **biodiversity** management*."

Humane International Australia analysed the wildlife toll of prescribed burning practices in south-west Australia.[4] Its conclusions included:

- *"Where prescribed burning impacts restricted, discontinuous or rare habitats, there is a high probability of species loss and irreversible changes to biodiversity."*
- *"The number of animals impacted across south-west Western Australia in each fire season is very high – conservatively in the tens of thousands of individuals."*
- *" ...prescribed burning is unequivocally resulting in reductions to biodiversity values."*

A critically-endangered Western Ringtail Possum after Warrungup Spring prescribed burn in 2018. The prescribed burn killed 17 of the 22 individuals being monitored. Source: Allison Dixon.[8]

"DBCA does not measure annual mortality of mammals, reptiles, and birds in areas where prescribed burning has been undertaken or in areas impacted by bushfire." (Answer to Legislative Council Question in Parliament No. 1454 of 2023.)

PRESCRIBED BURNS ARE TOO FREQUENT TO MAINTAIN BIODIVERSITY OR MAINTAIN AND ENHANCE THE NATURAL ENVIRONMENT.

Prescribed burning return intervals in jarrah and karri forests are 5–7 and 8–11 years respectively, compared with historical wildfire return intervals of around 80 years in jarrah and even longer in karri.[5] This means that plant and animal species with long recovery times after fire (see table) will be in exponential decline in burn areas because they won't have recovered from the last prescribed burn before the next burn occurs. The current 'mosaic' burning strategy leaves only about 1% of the south-west forest region with time-since-burn of more than 30 years and about 6% with time-since-burn of more than 20 years.[6] This is insufficient habitat for plants and animals that have long recovery times after fire. Long unburnt forest, the most important for mammal conservation, is less flammable than recently-burnt forest.[7]

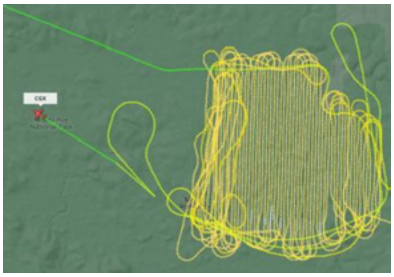
Minimum time for recovery after fire for some fauna species:[9]

Species	Recovery time (years)	Status
Western Ringtail Possum	> 11	CE
Tammar Wallaby	25–30	
Woylie	25–30	CE
Honey Possum	26	
Quokka	30–40	V
Numbat	25–30	E
Splendid Fairy-Wren	> 12	
Red-winged Fairy-Wren	> 12	
Mallee Fowl	20– >55	V

V = vulnerable; E = endangered; CE = critically endangered

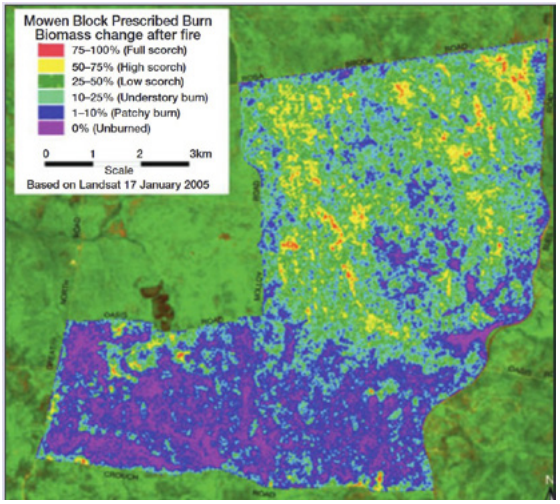
MANY PRESCRIBED BURNS ARE TOO BIG, TOO INDISCRIMINATE OR TOO SEVERE TO MAINTAIN BIODIVERSITY OR MAINTAIN AND ENHANCE THE NATURAL ENVIRONMENT.

DBCA ignites many prescribed burns from aircraft, as this is the most effective way to burn a large area when ambient conditions are suitable. Igniting prescribed burns from the air by dropping incendiaries on a grid pattern 100–200 metres apart means that animals have difficulty escaping because there is no natural firefront and they are likely to encounter fire in every direction. Mammals are most affected by this practice because many are too large to take refuge in natural shelters.[10]

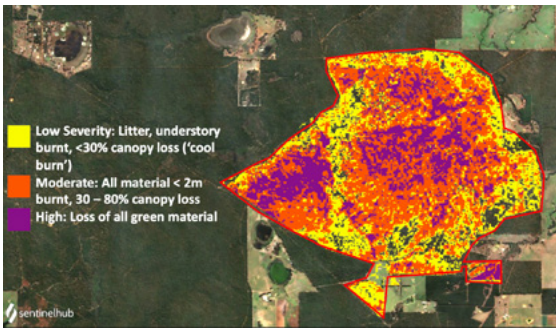


Ignition of Clear Hills, Walpole Wilderness (FRK_086) 9344 ha prescribed burn on 14 October 2023. Incendiaries were dropped 100 m apart on gridlines with 200 m separation.
Source: Flight Radar 24.

Many individual prescribed burns cover thousands of hectares (e.g. Ordnance FRK_017 is 14 733 ha). Because they are not controlled at ground level, these fires are often hot and have severe impacts, many being as damaging as wildfires. This is despite DBCA messaging that prescribed burns have low severity.[3,6] Compare, below, the fire severity map published by DBCA[6] (top map) with the one from Dr Tristan Campbell, Curtin University (bottom map).



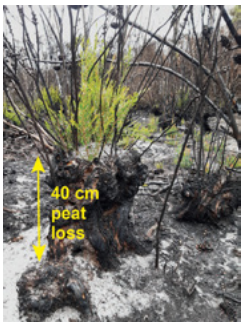
Fire severity of Mowen Block prescribed burn: Only a small area with 50–100% scorch. Source: Burrows & McCaw.[6]



Fire severity of Perup March 2021 prescribed burn: 22% of area had loss of all green material. Source: Tristan Campbell.

Because prescribed burns are not controlled at ground level, they burn all ecosystems in their path including those on granite outcrops and in riparian zones, wetlands and peatlands. Peatlands can smoulder for months, and even years releasing huge amounts of carbon dioxide into the atmosphere, posing severe bushfire risk and destroying unique threatened ecological communities.

Karara block, Frankland District. A November 2020 prescribed burn continued to burn a large peat swamp for approximately 5 – 6 months including through summer. Source: Fire & Biodiversity WA *Icon to Ashes*.[11]



Sharpe Block Frankland District November 2021 prescribed burn. 40 cm peat loss represents a loss of at least 5000 years of peat accumulation. Source: FaBWA *Icon to Ashes*.[11]

DBCA IGNITES MOST PRESCRIBED BURNS IN SPRING, THE WORST TIME OF YEAR FOR ECOSYSTEMS AND THE NATURAL ENVIRONMENT.

Wildfires occur naturally in summer, the hottest and driest time of the year. DBCA ignites most prescribed burns in spring, the worst possible time for burning as it kills nesting birds and plants that flower in spring. Spring burns deprive surviving fauna of food and shelter until regrowth occurs with the next rains.

PRESCRIBED BURNS DAMAGE TREES, CAUSING THEM TO COLLAPSE.

One of the easily-observed impacts of frequent prescribed burning is the loss of older trees. Fire burns unevenly into the bases of trees. Once this process has started, successive fires readily increase the damage until the tree's base and roots are weakened to the point that it falls down. The structural damage to trees is cumulative so that there will be increasing numbers of tree falls if prescribed burning continues in its current form.

Nesting hollows for animals, particularly the endangered black cockatoo, are lost with the loss of mature trees. Johnstone *et al.* noted the loss of 60–80% of known nest trees for forest red-tailed black cockatoos in their Perth Hills study areas.[12] It takes a minimum of 150 years for a tree to develop nesting hollows. As many as 180 mature trees, including

400–1000-year-old tingles, were estimated to have fallen as a result of a December 2024 prescribed burn in Giants Block in Walpole Wilderness.[13]

Mature tree with base burnt out that has fallen over due to structural weakness (Styx FRK_062), November 2024.

PRESCRIBED BURNS DAMAGE ECOSYSTEMS AND MAKE THEM LESS RESILIENT TO WILDFIRE.

Using a large amount of data from the eastern states, South Australia and the Stirling Ranges in Western Australia, Driscoll *et al.* showed that burning damages ecosystems and makes them susceptible to worse impacts when wildfires occur.[10] The two conditions that contributed most to worsening wildfire impact on biodiversity were related to antecedent burning. Two or more antecedent burns during the previous 40 years, and a time of 10 years or less since the most recent fire led to much greater biodiversity impact than less frequent or longer than 10 years since burning. Of all the taxa considered, mammals were the most affected by burning.

PRESCRIBED BURNING IS DRIVING SOME PLANT SPECIES TO EXTINCTION.

DBCA states that some Australian plant species require fire to complete their life cycle and this is one of their main justifications for so-called '*biodiversity conservation*' burns.[6] In the video *History of Fire in Western Australia*, Burrows states, "*Many plants and animals depend upon fire at certain intervals and certain times of the year for their persistence.*"[3]

For trees such as banksias and hakeas that store seeds for many years in the canopy, a trait known as serotiny, it is widely believed that the seeds are only released by fire. These species are referred to as obligate fire followers. However, many banksia and other serotinous species release seed over time if a fire does not occur. Whether there are in fact any plant species that fail to reproduce in the absence of fire is not known.[5] Bradshaw *et al.* cited a 'pyrogenic' orchid, *Pyrorchis nigricans* that flowers only after fire in the south-west of Western Australia, but flowers without fire in the south-eastern part of its range, near Ravensthorpe.[5]

Obligate seeders are badly affected by frequent fire because the mature plants may be killed by the fire, and the young plants that germinate following the fire do not reach maturity before the next fire occurs. The red flowering gum (*Corymbia ficifolia*), an obligate fire follower with limited natural range in the Walpole Wilderness, is being severely impacted by prescribed burns.[11] Experimental studies on small plots with repeated burning at 3–4-year intervals have shown significant reductions in the abundance of key obligate seeder species such as *Acacia browniana* and *Crowea angustifolia*.[14] The vulnerability of banksias, the primary food source of Honey possums, was highlighted by a study of flowering and fruiting of *Banksia baueri, B. nutans* and *B. baxteri* in Kwonkgan heathland on the southwest coast of Western Australia in which all three were extinguished from an area burnt twice during an interval of nine years. Burning on a four-year cycle in Kings Park in central Perth led to the demise of Banksia trees and the abandonment of the practice.[15] Some believe that the frequent prescribed burning in south-west forest regions will drive all obligate seeder species to extinction.[16] Karri trees (*Eucalyptus diversicolor*) are fire sensitive for up to 25 years after burning[5] and in jarrah (*Eucalyptus marginata*) and other forests, research suggests prescribed burning on a 5–7 year rotation is likely to permanently simplify the litter microbes, fungi and invertebrate fauna, with far-reaching effects on forest health.[17]

OVER THE PAST 25 YEARS THERE HAS BEEN A DECREASE IN BIODIVERSITY.

DBCA's own data show that since 1999, 51 plant and 24 animal species from south-west Australia have been added to WA's threatened species list.[18,19,20] However, DBCA claims that there has been no decrease in biodiversity. Former DBCA officer Roger Armstrong in *Evidence for Prescribed Burning*: "*We've been monitoring biodiversity across our south-west forests for some 40–50 years and we have yet to detect any decrease in biodiversity.*"[3] He offers no evidence to support this statement.

Fire is recognised as a *key threatening process* under the *Environment Protection and Biodiversity Conservation Act 1999* for many south-western Australian threatened species and ecosystems (Granite Banksia (*Banksia verticillata*), Eastern Stirling Range Montane Heath and Thicket, *Banksia* Woodland, *B. montana*, as well as the animals, Western Ground parrot, White-cheeked honeyeater, Woylie and Gilbert's Potoroo).[21] Three-quarters of threatened species in the south-west forest regions are at risk from fires of increased size, frequency and/or intensity.[22] Changed fire regimes are recognised, world-wide, as a threat to biodiversity.[23] Fire destroys native animal habitats and favours introduced species such as foxes, cats and pigs.[10]

THE CURRENT PRESCRIBED BURNING REGIME IS RELATIVELY INEFFECTIVE IN ITS MAIN PURPOSE OF PROTECTING PEOPLE AND THEIR ASSETS.

A study using data from 1952–2020 from across the whole south-west forest region showed that on average every 50 ha of prescribed burning has prevented a mere 1 ha of wildfire.[24] So the current regime of burning 200 000 ha annually, has prevented only about 4000 ha of wildfire per year. It is also apparent that, from an economic viewpoint, DBCA's current prescribed burning program is a waste of money. The cost of the prescribed burns and the consequent ecosystem damage costs, in terms of loss of ecosystem services, outweigh the potential savings in wildfire suppression and infrastructure damage costs (see Fact Sheet 10). This is without factoring in the tens of millions of dollars spent annually on addressing the health and other unintended impacts of prescribed burning (see Fact Sheet 14).

DBCA DEPICTS ITS PRESCRIBED BURNING PROGRAM AS SIMILAR TO BURNING BY INDIGENOUS PEOPLES.

In *Managing Bushfire Risk* (video 5), Burrows states: "*We can't control the weather, but we can manage the accumulation of flammable vegetation and we can do this by prescribed burning, pretty much the same way as Aboriginal people managed the bushland for thousands of years.*"[3] There are few if any similarities between DBCA's prescribed burning and Aboriginal burning. DBCA ignites many prescribed burns from the air on grid points 100–200 metres apart (other than at the perimeter). The fire is then not controlled at ground level; it burns all ecosystems at an intensity and severity determined by the ambient conditions. The Noongar peoples ignited fires in limited locations at ground level and controlled them at ground level. The strong spiritual connection that Indigenous peoples have for their lands ensured that their burning practices did not harm plants and animals.

DBCA DOES NOT COMPLY WITH THE CONSERVATION AND PARKS COMMISSION DOCUMENT, *POSITION STATEMENT: PRESCRIBED BURNING ON VESTED LANDS*,[25] whose primary objectives of fire management for conserving biodiversity are: "*protect fire-sensitive and fire-dependent ecosystems and niches, including riparian zones, aquatic ecosystems, and peat wetlands.*"

It is clear that DBCA's prescribed burning regime is destroying biodiversity, not conserving it.

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12 PRESCRIBED BURNS ARE JUST AS SEVERE AS WILDFIRES

FACTS ABOUT PRESCRIBED BURNING AND WILDFIRE IN SOUTH-WEST FORESTS

The Department of Biodiversity, Conservation and Attractions (DBCA) routinely maps the severities of prescribed burns and wildfires from satellite imagery using the severity classes in Table 1.[1] Burn severity maps are not generally available to the public. However, in the June 2025 community meetings, DBCA presented burn severity maps for the 2024-25 prescribed burns and wildfires in the Frankland and Donnelly districts.[2]

The adjacent figure shows the burn severity for the Giants East burn (FRK 111) undertaken in December 2024. The success criteria for this burn were:

1. a minimum of 80% burnt by prescribed fire
2. no more than 10% of mature tingle/karri forest canopy to be defoliated
3. crown scorch in dominant and co-dominant trees within tingle/karri forest not to exceed 40%
4. known intact peat systems have a soil probe reading at or above 12% prior to ignition.[3]

The burn severity map, using the legend from Table 1, can be used to assess the first two criteria. The burnt area was 99%, so criterion 1, which is a measure of whether the burn has achieved its purpose of fuel reduction, was met. However, in high and very high severity areas, which were 40.6% and 1% of the forested area within the burn perimeter, canopy crown defoliation was greater than 75% and greater than 95% respectively. Over the whole forested area, crown defoliation was greater than 31%, so criterion 2 was grossly exceeded. This fire damaged the forest, as manifested by the large number of tree falls.

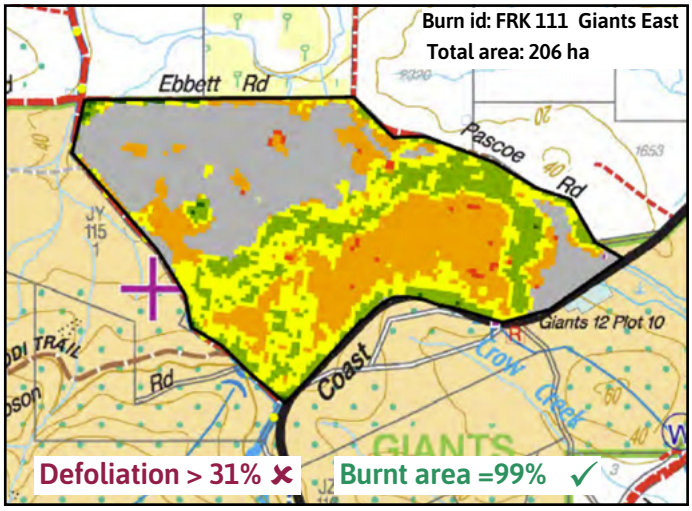


Figure 1: Giants East burn severity map.

Burn severity	%burn area	%forest burnt
Unburnt	0.78%	1.2%
low	15.83%	24.0%
Medium	21.86%	33.2%
High	26.79%	40.6%
Very high	0.68%	1.0%
Burnt heath	34.06%	

Many prescribed burns have success criteria listed as:

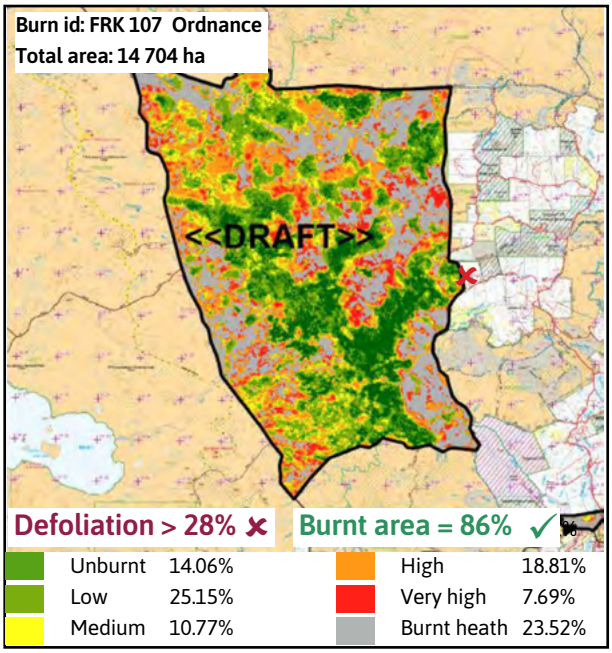
1. More than 80% of area burnt
2. Less than 10% crown defoliation
3. No more than 40% crown scorch
4. Nice mosaic.

On the following pages the burnt areas (criterion 1) and per cent forest crown defoliation (criterion 2) are estimated from burn severity maps.

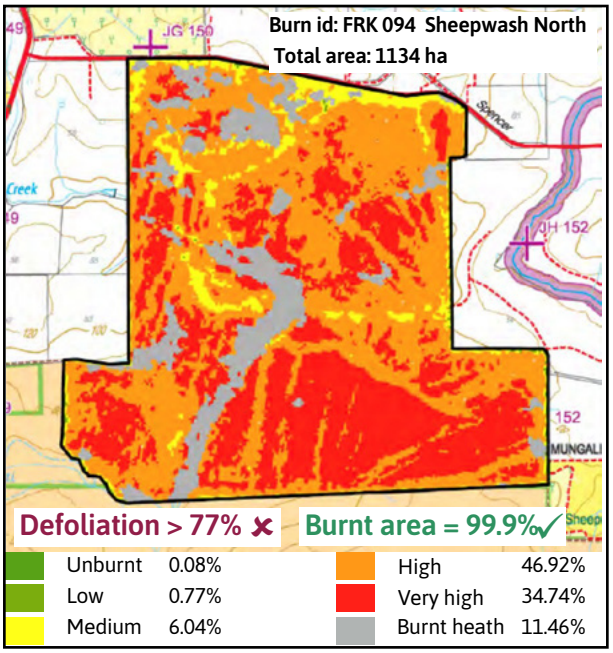
Table 1: Severity classes and corresponding forest characteristics from Table 3 in Densmore et al.[1]

	Burn severity				
Measurements in 20 m radius	**Unburnt**	**Low**	**Medium**	**High**	**Very high**
Canopy crowns	>90% intact	>90% intact	>50% intact	<25% intact	>95% defoliated
Post-fire litterfall	na	<90% area	50–90% area	30–70% area	<20% area
Bark char on canopy trees	No fresh char	≤25% tree height	25–50% tree height	50–75% tree height	>75% tree height
Midstorey crowns	>90% intact	>75% intact	25–75% intact	<25% intact	<5% intact
Char on midstorey trees	No fresh char	≤50% tree height	≤75% tree height	50–100% tree height	>75% tree height
Elevated crowns	>90% intact	>25% intact	10–25% intact	5–10% possibly intact	<5% intact
Area unburnt	>75% unburnt	<25% unburnt	>90% unburnt	>90% unburnt	>90% unburnt
Duff remaining	>50% unburnt	Thin to deep char	>10% consumed	Duff only in depressions	All consumed or duff only in depressions

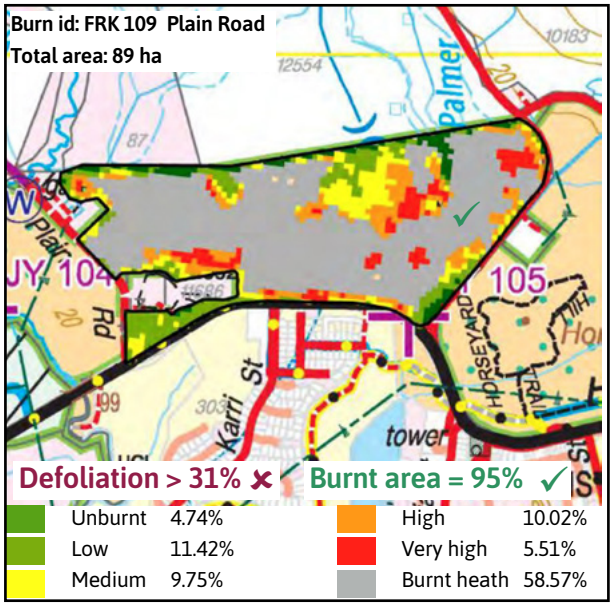
Frankland District prescribed burns



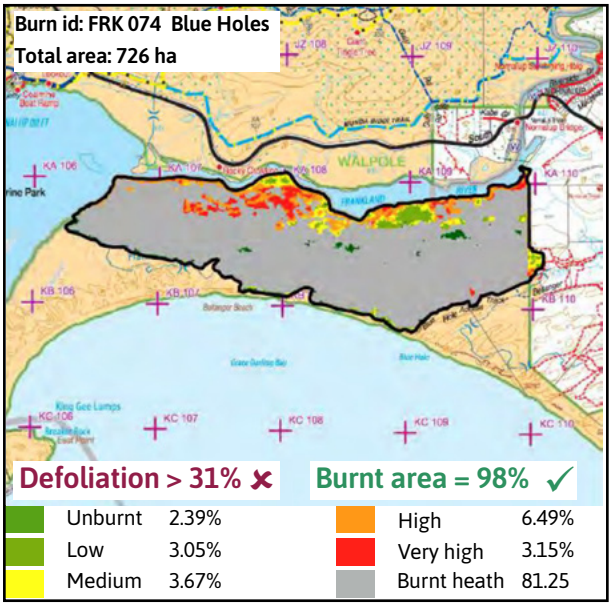
Unburnt	14.06%	High	18.81%
Low	25.15%	Very high	7.69%
Medium	10.77%	Burnt heath	23.52%



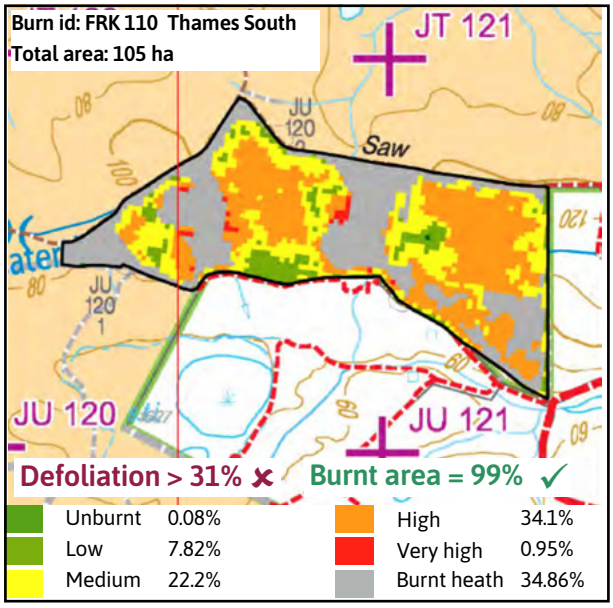
Unburnt	0.08%	High	46.92%
Low	0.77%	Very high	34.74%
Medium	6.04%	Burnt heath	11.46%



Unburnt	4.74%	High	10.02%
Low	11.42%	Very high	5.51%
Medium	9.75%	Burnt heath	58.57%



Unburnt	2.39%	High	6.49%
Low	3.05%	Very high	3.15%
Medium	3.67%	Burnt heath	81.25



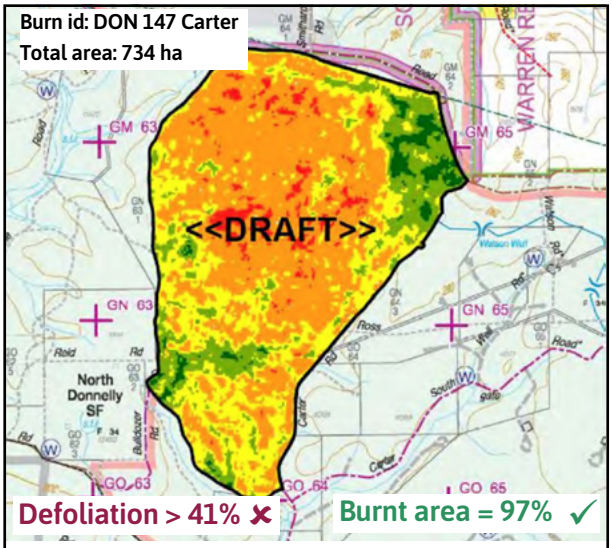
Unburnt	0.08%	High	34.1%
Low	7.82%	Very high	0.95%
Medium	22.2%	Burnt heath	34.86%

Blue Holes prescribed burn (ignited 30 October 2024). Source: Bart Lebbing, Denmark Environment Centre.

What community assets were protected?

Donnelly District prescribed burns

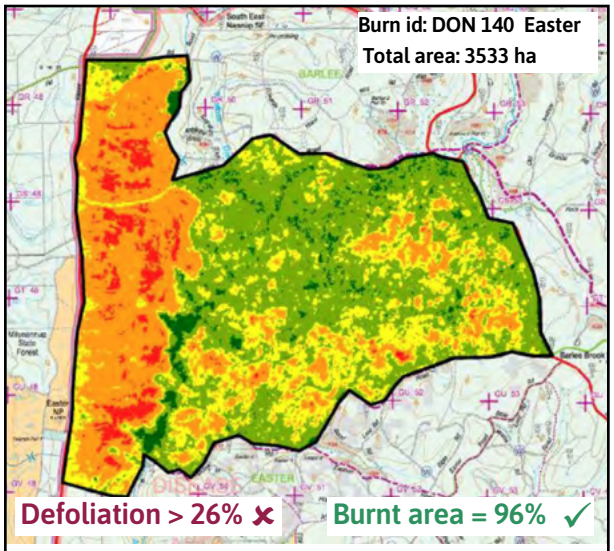
Burn id: DON 147 Carter
Total area: 734 ha



Defoliation > 41% ✘ **Burnt area = 97% ✓**

Unburnt	3.29%	High	50.19%
Low	14.93%	Very high	4.09%
Medium	27.49%	Burnt heath	0%

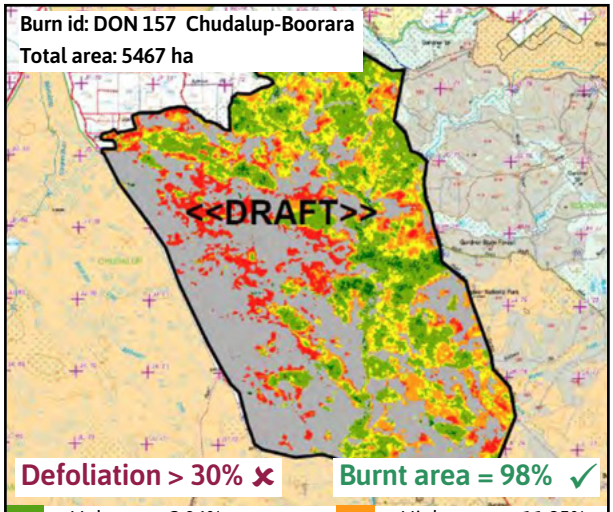
Burn id: DON 140 Easter
Total area: 3533 ha



Defoliation > 26% ✘ **Burnt area = 96% ✓**

Unburnt	4.31%	High	29.08%
Low	39.48%	Very high	4.67%
Medium	22.47%	Burnt heath	0%

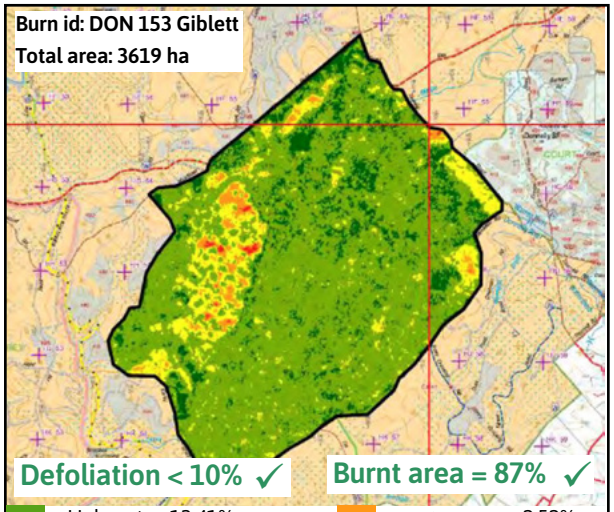
Burn id: DON 157 Chudalup-Boorara
Total area: 5467 ha



Defoliation > 30% ✘ **Burnt area = 98% ✓**

Unburnt	2.06%	High	11.85%
Low	22.47%	Very high	9.28%
Medium	12.4%	Burnt heath	41.93%

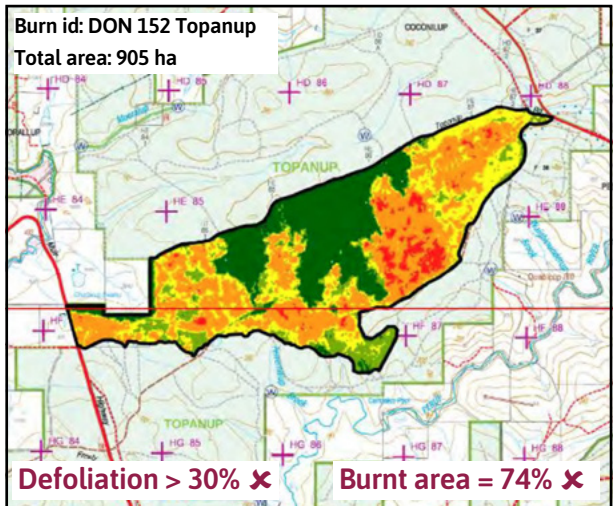
Burn id: DON 153 Giblett
Total area: 3619 ha



Defoliation < 10% ✓ **Burnt area = 87% ✓**

Unburnt	13.41%	High	2.52%
Low	73.71%	Very high	0.23%
Medium	10.14%	Burnt heath	0%

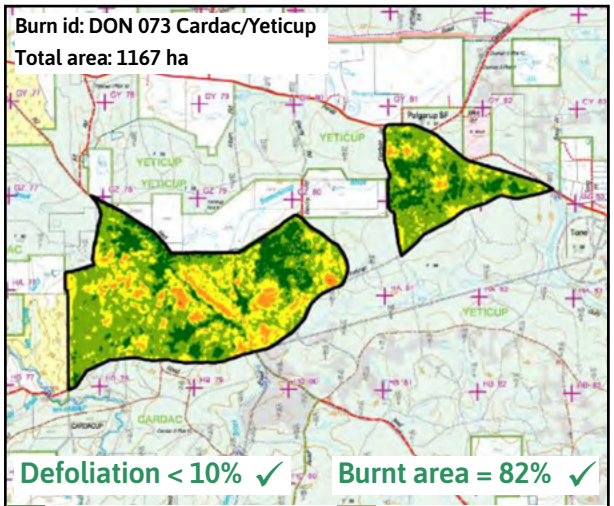
Burn id: DON 152 Topanup
Total area: 905 ha



Defoliation > 30% ✘ **Burnt area = 74% ✘**

Unburnt	25.72%	High	35.8%
Low	12.91%	Very high	4.28%
Medium	21,29%	Burnt heath	0%

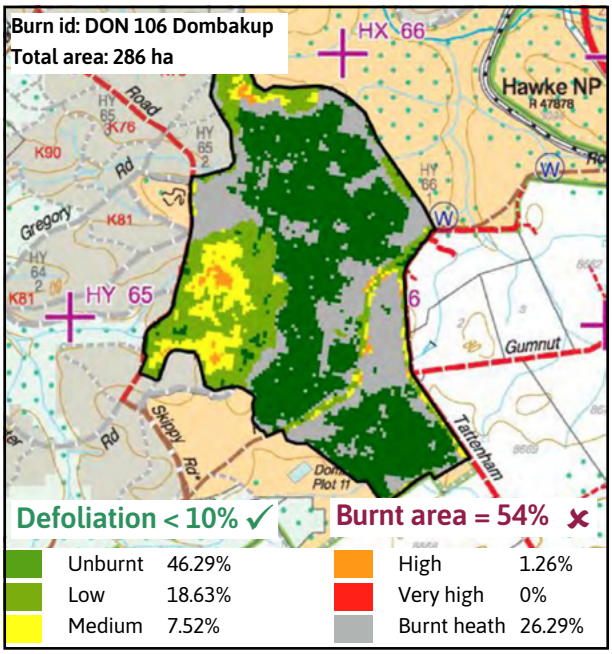
Burn id: DON 073 Cardac/Yeticup
Total area: 1167 ha



Defoliation < 10% ✓ **Burnt area = 82% ✓**

Unburnt	18.48%	High	5.82%
Low	50.7%	Very high	0.03%
Medium	24.97%	Burnt heath	0%

Donnelly District prescribed burns (cont.)



Frankland and Donnelly District wildfires

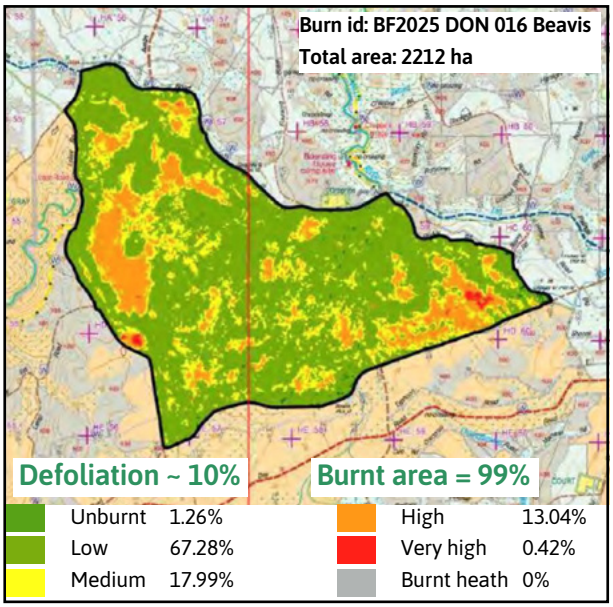
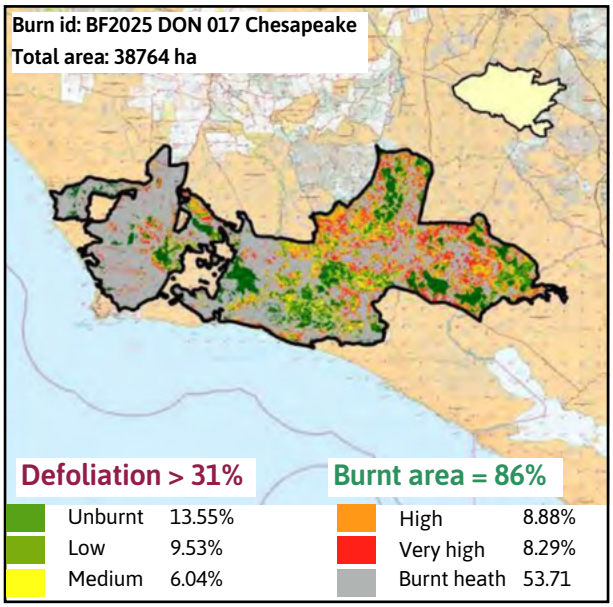


Table 2: Summary of success criteria 1 and 2. Failures are red.

Prescribed burns:	Criterion 1: burn area > 80%	Criterion 2: crown defoliation < 10%
Frankland District		
Giants East	99%	>32%
Ordnance	86%	>28%
Plain Road	95%	>31%
Thames South	100%	>31%
Blue Holes	98%	>31%
Sheepwash North	100%	>77%
Donnelly District		
Topanup	74%	>31%
Cardac/Yeticup	82%	<10%
Carter	97%	>55%
Giblett	87%	<10%
Chadulup-Boorara	98%	>31%
Easter	96%	>26%
Dombakup	54%	<10%
Wildfires:		
Beavis	99%	~10%
Chesapeake	86%	>31%



All of the six Frankland District prescribed burns failed to meet the success criteria because they had too much crown defoliation, generally more than three times the allowable 10% (Table 2).

Of the seven Donnelly District prescribed burns, two met the success criteria: Cardac/Yeticup and Giblett.

Of the two wildfires: Beavis pretty much met the prescribed burn success criteria. Chesapeake had burn severity about the same as the average prescribed burn.

DBCA's inability to comply with their stated prescribed burning success criteria indicates the urgent need for change. The current severe prescribed burns are having biodiversity impacts similar to wildfires. However, the larger annual area of prescribed burns and their cumulative impacts results in ecosystem damage far worse than that of wildfires.

Recent prescribed burns have been just as severe as wildfires.

References

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2 https://www.dbca.wa.gov.au/news/2025/bushfire-management-discussed-community-meetings

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13 TREE FALLS

FACTS ABOUT PRESCRIBED BURNING AND WILDFIRE IN SOUTH-WEST FORESTS

It has long been known that prescribed burning increases tree-fall rates in south-west forests.[1,2] But they are not factored in when considering the costs of the prescribed burning program.

Most of the 2024-25 prescribed burns in the Frankland and Donnelly districts had crown defoliation more than three times DBCA's specified criterion of 10%. (see Fact Sheet 12).[3] The prescribed burns had similar or worse severities than the two wildfires in the same districts, making a mockery of DBCA's claim that its prescribed burning saves the environment from the worse impacts of wildfire.

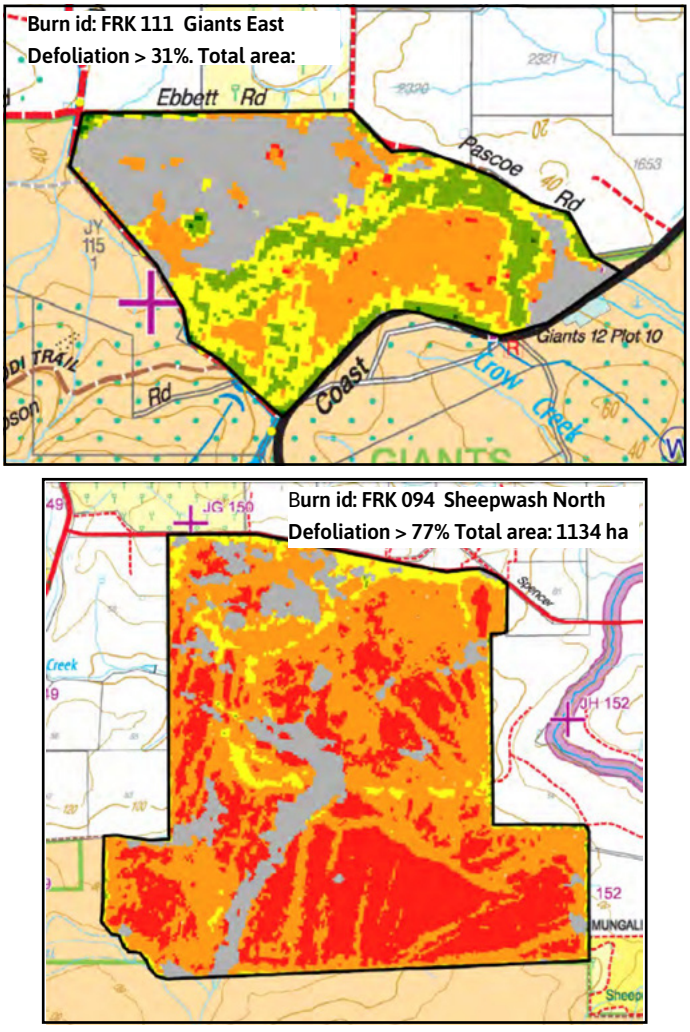
DBCA does not routinely monitor tree-fall rates following prescribe burns, but citizen scientists concerned about the large numbers did so following some burns in the Frankland District. Luscombe-Pedro observed a tree-fall rate of 2.14 trees/ha in Giants East, and another citizen deduced an even higher rate following the Sheepwash North prescribed burn.[4]

Fallen tingle tree following Giants East prescribed burn Source: Luscombe Pedro.[4]

Broken tree following Giants East prescribed burn, Source: Luscombe Pedro.[4]

The devastation from the Giants East burn in tingle forest in December 2024 was so great that it received national news coverage. Subsequently, DBCA did its own survey and deduced a tree-fall rate lower than Luscombe-Pedro's.[5]

Despite the few data points, it is clear that more severe burns lead to greater numbers of tree falls, which means future prescribed burns are likely to have even worse impacts as they are likely to be even hotter and more severe due to the warming and drying climate.



DBCA burn severity maps for Giants East (December 2024) and Sheepwash North (December 2024) prescribed burns.

Impacts of tree falls

Increased tree falls will change the forest structure with the loss of older, bigger trees, creating forest with a greater proportion of smaller trees. This will lead to loss of habitat for arboreal mammals and birds, particularly those that need nesting hollows, e.g. the three threatened black cockatoo species.[6]

As old growth forest uses less water than re-growth and 'younger' forest, the juvenilisation of the forest will increase the forest water use and reduce runoff into water catchment dams. Macfarlane & Silberstein estimated annual water use by overstorey trees in jarrah forest was ~200 mm/year in old-growth and~420 mm/year in regrowth forest (17% and 35% of annual rainfall, respectively).[7]

Macfarlane & Silberstein also commented that forests evolve to optimise carbon gain per unit water use. The greater basal area of old-growth forest and lesser water use complicates the assessment of relative carbon sequestration rates of old and young forest. Though, the ability of old-growth forest to sequester more carbon than regrowth forest has been observed by other researchers.[8,9]

Trees naturally senesce and die, so there is a 'natural' tree-fall rate. Tree falls at rates above the 'natural' rate contribute to the ecosystem damage discussed above as the large, old trees lost are not replaced for many decades or centuries. Due to the current and future hotter and drier conditions, it is likely that some species, e.g. tingle and karri will never regrow.

Potential greenhouse gas (GHG) emissions from tree falls above the background 'natural' rate (i.e. emissions from the decay or subseqent burning of the fallen tree) should be considered as net emissions and included in Western Australia's (WA's) annual GHG emission accounts.

Assuming a tree-fall rate similar to that observed by DBCA following the Giants East burn, of 1.25 trees/ha, and a background fall rate of 0.5 trees/ha (from the Trial Tingle Burn, January 1997) over the whole 2024-25 prescribed burn area gives a conservative estimated number of tree falls of about 87 000.[5,1] Using allometric equations to calculate tree biomass and the shadow carbon price, the total emissions and offset cost can be calculated:[10,11,12]

Area burnt (ha)	115 962
Tree fall rate above 'natural' (trees/ha)	0.75
Number of fallen trees	87 000
CO_2-e emissions per tree (tonnes/tree)	15
Total CO_2-e emissions (M tonnes)	1.3
Per cent WA's annual emissions[13]	1.5%
Carbon price ($/tonne)	70
Offset cost (A$ millions)	91

This huge offset cost, A$91 million, is a measure of the climate cost of the increased tree falls from DBCA's prescribed burning.

Burning of peatlands adds further to net GHG emissions and the climate impacts of DBCA's prescribed burning program.

Tree falls above the 'natural' background rate:

- **Cause loss of habitat, particulary nesting hollows**
- **Reduce the forest's ability to sequester carbon**
- **Contribute large net GHG emissions.**
- **'Juvenilise' the forest leading to greater water use and less runoff to water catchment dams.**

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14 THE COLLATERAL COSTS OF DBCA'S PRESCRIBED BURNING

FACTS ABOUT PRESCRIBED BURNING AND WILDFIRE IN SOUTH-WEST FORESTS

Costs and losses from prescribed burning:

1. **Human health costs**
2. **Losses to the agricultural industry**
3. **Losses to the tourism industry**
4. **The carbon cost of greenhouse gas emissions**
5. **Ecosystem damage costs**

The *Conservation and Land Management (CALM) Act 1984* gives the Department of Biodiversity, Conservation and Attractions (DBCA) the power to undertake planned burns on the lands controlled by the *Act* but does not mandate it. There is no legislation that compels DBCA to prescribe burn but planned burning is one of the functions of the director general. The *CALM Act 1984* exonerates people and the State from any liability for damage caused by fire management and prescribed burning.

The *Walpole Wilderness and Adjacent Parks and Reserves Management Plan 2008* (a statutory instrument under the *CALM Act 1984*) states that in wilderness areas prescribed burning can only be undertaken for biodiversity conservation.[1] In prescribed fire plans for burns in Walpole Wilderness, DBCA typically states, for example in the FRK 099 prescribed fire plan, '*This burn will provide Nornalup townsite, surrounding rural properties and Munda Biddi Trail users protection from bushfire.*'[2] Thus, prescribed burns in Walpole Wilderness do not comply with the *CALM Act 1984*. DBCA is also authorised by its Minister (or delegate) to 'take' (kill) or 'disturb' any number of listed threatened fauna and flora during prescribed burns. The current prescribed burning program is devastating ecosystems and adding to Western Australia's greenhouse gas emissions.

This fact sheet discusses economic losses due to prescribed burning, including the costing of some of the environmental impact.

Hollowed out tingle tree still burning two weeks after completion of prescribed burn.

Source: Luscombe-Pedro.[3]

1. **Human health costs**

Borchers Arriagada, in his PhD, estimated deaths, hospital admissions and emergency department attendance due to poor air quality from prescribed burns over the period 2002–2017 to be:

- ~21 premature deaths
- ~140 hospitalisations for cardiovascular and respiratory problems
- ~63 emergency department visits with asthma.[4]

The estimated annual health cost for 2017 for excess hospital admissions and emergency department attendance was $24.1 million ($30.1 million in 2024 dollars).[4] This does not include the cost of human suffering and loss of life.

2. **Losses to the agricultural industry**

Such losses might be a crop burnt by an escaped prescribed burn, a crop tainted by smoke or, in the case of beekeeping, degradation of forest leading to reduced income.

Beekeeping

In Western Australia, beekeepers reported concerns that prescribed burning is often conducted at the wrong time of year, is done too frequently and is not communicated sufficiently with the beekeepers.[5] Beekeepers suggested that current practices result in the destruction of valuable honey production sites as prescribed burns can damage or destroy flowering plants that are critical for honey production and the effects can last for many years.[5] For example, beekeeper 3 stated, "*in the face of a changing and drying climate, I genuinely believe we need a complete rethink of whether prescribed burning is even appropriate*", and suggested that "*prescribed burns should be limited or eliminated in areas far from human habitation or major assets.*"[6]

White & Day observed that the single biggest factor depressing the value of DBCA apiary sites is prescribed burning. Their models estimated a 26% reduction in value of apiary sites in jarrah forests that had undergone prescribed burning in a 10-year period compared with those that had not.[7] Their research showed that the industry is probably losing about $30 million per year (about 30% of its revenue; $35.8 million in 2024 dollars) to prescribed burning, and recommended an adaptive burning policy

that avoids burning when high-value flowering events occur, such as jarrah (*Eucalyptus marginata*) flowering (typically November to January).

Some beekeepers provide pollination services to horticultural industries as well as canola growers, mainly on the Swan Coastal plain, and in the jarrah forest and Warren regions. The pollination industry is at least as profitable as honey production, but accurate losses from prescribed burning could not be estimated due to insufficient data.[7]

Wine production

In south-west Western Australia, grapevines flower around November and the grapes grow over summer until harvested between February and May. Smoke sensitivity is low around flowering, low–medium from when grapes are pea-sized to veraison (when the grapes start ripening) and high after veraison. Smoke taint can lead to the loss of entire crops. There have been notable losses in revenue in the eastern states and Western Australia, with an estimated $1.6 billion lost from smoke taint from prescribed burns and wildfires during the last 20 years.[8,9]

In 2012 two vineyard owners tried unsuccessfully to sue the Department of Conservation and Land Management (now DBCA) for damage to wine grapes caused by smoke from a prescribed burn in the Warren National Park between veraison and harvest (the most sensitive period for smoke taint). The appeal was lost because two of the three judges found that no duty of care was owed by the respondents (CALM) to the appellants. In this case the vineyard owners had lost their entire crop valued at $620 000 ($870 000 in 2024 dollars).

Despite the advances in understanding the impact of smoke on grapes, data to determine the losses due to smoke taint from WA's prescribed burns are not available. Similarly, data on losses in other agricultural enterprises are also not available.

Prescribed burning in NSW caused millions of dollars of losses to wine producers https://www.abc.net.au/news/2025-03-26/winemaker-says-hazard-reduction-burn-destroyed-grapes/105096772

3. **Losses to the tourism industry**

Smoke from prescribed burns near Walpole around the New Year in 2025 caused tourists to cancel their accommodation resulting in losses to accommodation providers and other tourism operators.[10] Commercial walk tour operators have reported cancelling planned walks because the walk area was prescribe burnt. However, no data are available to quantify the losses to tourism.

4. **Carbon cost of greenhouse gas (GHG) emissions**

GHG emissions from prescribed burns are not included in reported emissions because it is assumed that the carbon emitted will be re-absorbed as the vegetation recovers and regrows (Fact Sheet 7). This is not the case for GHG emissions from burning peatlands or excessive tree falls following prescribed burns. Fact Sheet 13 reported estimates of about 87 000 trees, in excess of natural attrition, falling following 2024-25 prescribed burning in the south-west forest regions (115 962 ha) with consequent GHG emissions of approximately 1.3 Mt. Using the shadow carbon price of $70/tonne, this amounts to a carbon cost of A$91 million.[11] Estimates of the area of peatland burnt by prescribed burns are not available, so GHG emissions from peatland burns cannot be estimated.

5. **Ecosystem damage cost**

Damage to forest ecosystems leads to loss of biodiversity and ecosystem services, such as atmospheric regulation and water catchment protection that are critical to human wellbeing and survival.[12]

Taye *et al*. undertook a meta study to estimate the value of the ecosystem services provided by forests.[13] The average value for secondary (disturbed) forests was of the order of 100 000 USD/ha/year (in 2017 dollars; equivalent to 130 470 AUD/ha/year in 2024). Taye *et al*. give conservative estimates of ecosystem services. In particular they do not include estimated damage costs for biodiversity losses. Considering the recent annual prescribed burn areas of more than 100 000 ha in the south-west forest regions (101 632 ha in 2023-24 and 115 962 ha in 2024-25), it reasonable to assume that the ecosystem service damage cost, using Taye *et al*.'s estimates would amount to hundreds of million dollars each year while the forest is recovering from the prescribed burn.

Prescribed burns have serious impacts on biodiversity, compromising forests for decades, as observed by beekeepers among others, and pushing threatened species closer to extinction.[5,6,7] The value for biodiversity loss cannot be estimated.

Collateral costs of prescribed burning in the south-west forest regions

	A$millions (2024)
Health costs	
Hospital admissions & emergency department attendance	30.1
Agricultural industry losses	
Honey producers	35.8
Pollination services	~30
Wine producers	nd
Tourism industry losses	nd
Carbon cost of excessive tree falls	91
Ecosystem service damage cost	>100

nd = not enough data to estimate cost

Prescribed burning causes tens of million dollar losses to agriculture and tourism, increases WA's health costs as well as damaging ecosystems and contributing to climate change.

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Tree falls in south-west forests following prescribed burns lead to millions of tonnes of GHG emissions as the trees rot or are burnt in successibe fires.[3]

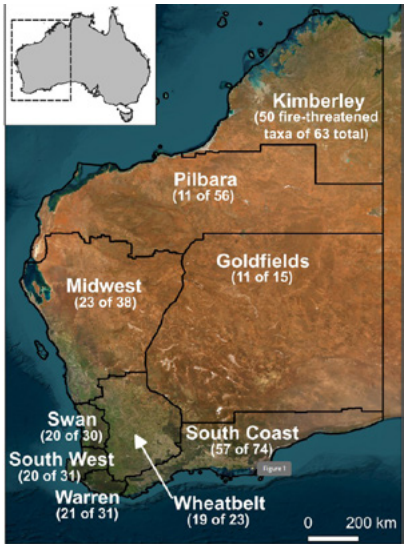
Peat burns in WA release millions of tonnes of GHG emissions.[14]

15 WHY DOES DBCA BURN THREATENED SPECIES?

FACTS ABOUT PRESCRIBED BURNING AND WILDFIRE IN SOUTH-WEST FORESTS

Despite the large number of threatened species that are at risk from fire, the Department of Biodiversity, Conservation and Attractions (DBCA) continues to prescribe burn large areas of the state.

Doherty and 27 others, recently published: *Animal taxa threatened by adverse fire regimes in Western Australia*.[1] They considered all WA's threatened animal taxa. Of the 212 taxa reviewed 153 (72%) are considered at risk from adverse fire regimes: 100% of amphibian (3), 91% of mammal (29), 71% of invertebrate (85), 67% of fish (6), 63% of reptile (10) and 61% of bird (20) taxa. All fire-threatened taxa are considered at risk from i**ncreased fire size, frequency or intensity**, while three are also at risk from lack of fire. The management region that has the highest per cent of taxa at risk is the Kimberley (79%) followed by the South Coast (77%). In the south-west forest regions (Swan, South West and Warren) the number of threatened animal taxa at risk from adverse fire regimes is 36 of the 48 (75%). This includes six threatened mammals: the western ringtail possum, woylie, numbat, black-flanked wallaby, quokka and chuditch and four threatened birds: the forest red-tailed, Baudin's and Carnaby's black cockatoos and the Australasian bittern.[1]



DBCA management regions with number of taxa considered at risk from adverse fire regimes and total number of threatened animal taxa in that region from Figure 1 Doherty *et al.*[1]

Despite distance to unburnt vegetation being key to recovery following fire, DBCA burns some incredibly large areas e.g. DBCA 2025-26 Burn Options include WKM_021 in the West Kimberley (6 189 822 ha).[4,5]

Given the large number of threatened species that are at risk from increased fire frequency, why does DBCA prescribe burn so frequently?

Many plants and animals take decades to recover from fire. Prescribed burning return intervals in jarrah and karri forests are 5–7 and 8–11 years respectively, compared with historical wildfire return intervals of more than 80 years.[6]

Given that so many threatened species are at risk from increased fire intensity, why does DBCA indiscriminately ignite prescribe burns from the air and not control them at ground level to reduce intensity and severity and to protect sensitive areas?

Recent prescribed burns have been just as severe as wildfires (see Fact Sheet 12). Only three of DBCA's 13 prescribed burns in 2024-25 in the Frankland and Donnelly districts met DBCA's success criterion for crown defoliation. Most had crown defoliation more than three times the allowable 10%.

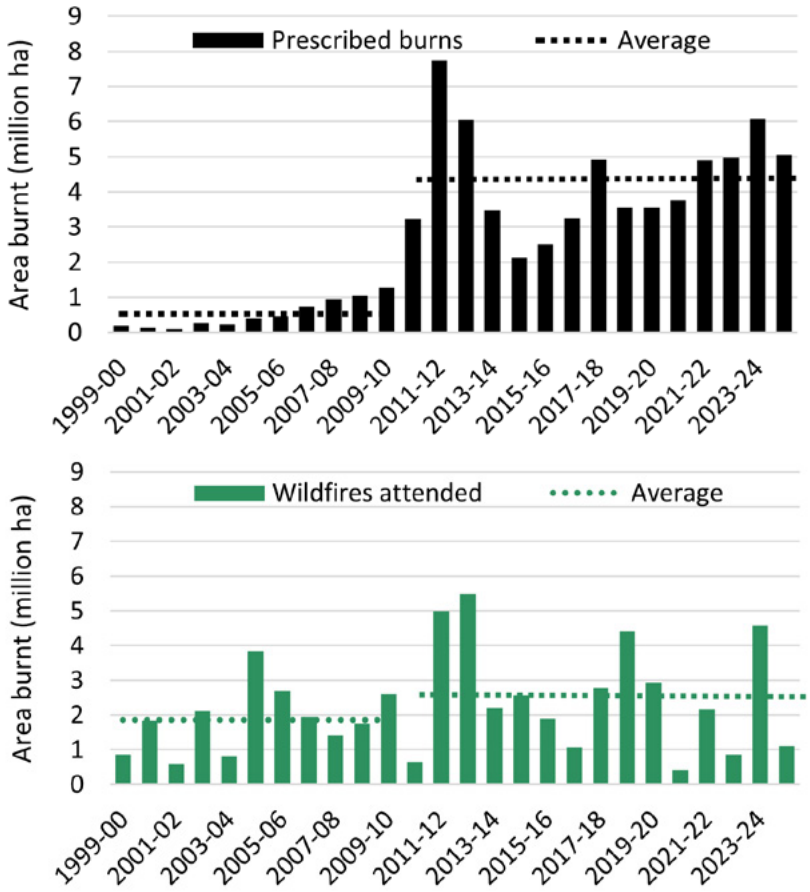
Despite recognising the importance of conservation reserves for biodiversity conservation, DBCA routinely burns them. Why?

DBCA states: "*Western Australia's conservation reserve system is the cornerstone of biodiversity conservation where species, communities and natural processes are offered protection from many external threats and pressures. Conservation reserves provide large areas of intact ecosystems that buffer environmental changes and support resilience in the face of a changing climate.*"[5]

For example, the Willmott Quindinillup burn (15 108 ha; FRK_112) in Mount Roe National Park in the Frankland District was ignited from the air in November 2025. The burn went ahead despite Noongar elders and the Denmark Environment Centre warning DBCA and the government that the burn contained cultural heritage sites and posed a high risk to ecological values.[6] The burn provided no protection for the towns of Denmark, Mt Barker and Frankland as they were more than 30 km away. The West Kimberley Walyarta Conservation Park (230 000 ha) will be burnt this year (2026; part of WKM_021).

While infrequent wildfire is a natural component of the Australian landscape, prescribed burning is not. DBCA's prescribed burning program is a huge and immediate threat to conservation reserves, much greater than climate change, and it contributes greenhouse gas emissions that perpetuate and worsen climate change and its future impacts.

Statewide prescribed burning has increased massively while wildfire area is much the same



Annual statewide prescribed burn and wildfire areas (million hectares) from Department of Conservation and Land Management, Department of Environment and Conservation, Department of Parks and Wildlife and DBCA annual reports.

What is the purpose of prescribed burning such large areas when it is not reducing wildfire area?

Before 2005 DBCA did negligible burning outside of the south-west forest regions. Over the last four years DBCA has burnt on average 5.1 million hectares per year in the remote areas of the state. These areas have never experienced prescribed burning at this scale. Traditionally, Aboriginal people moved seasonally throughout the landscape and lit small, patchy fires for hunting, regenerating food and medicinal plants or 'cleaning up country'. The ecosystems will be changed forever, species will be lost and the burning will worsen climate change.

This year (2026) DBCA plans to burn Walyarta Conservation Park (230 000 ha; aerial ignition), a West Kimberley Ramsar wetland, that provides habitat for threatened species listed nationally and/ or internationally, including migratory birds.

There should be an immediate moratorium on DBCA's prescribed burning in remote areas

Prescribed burns drive plant and animal species closer to extinction

- Statewide 72% of threatened species are at risk of extinction from fire of increased size, frequency and/or intensity. [1]
- Fire is recognised as a *key threatening process* under the *Environment Protection and Biodiversity Conservation Act 1999* for many Western Australian threatened species and ecosystems.[7]
- Woinarski *et al.* quantified threat factors to Australian mammal species.[8] After feral cats, inappropriate fire regimes are the second greatest threat, followed by foxes.
- Changed (unnatural) fire regimes are recognised, world-wide, as a threat to biodiversity.[9]
- Fire destroys native animal habitats and favours introduced species such as foxes, cats and pigs.[2]

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16 CHANGES NEEDED TO BALANCE COMMUNITY PROTECTION & BIODIVERSITY

FACTS ABOUT PRESCRIBED BURNING AND WILDFIRE IN SOUTH-WEST FORESTS

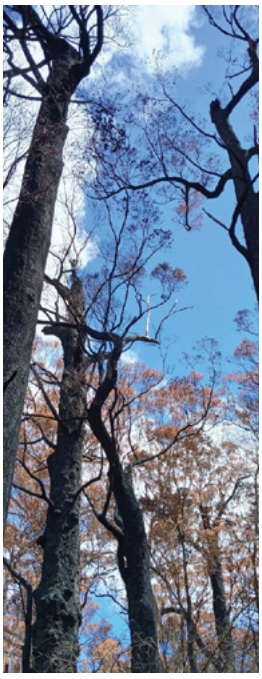
Prescribed burning can have a role in reducing wildfire risk, particularly close to assets requiring protection. However, there is an urgent need for a major re-evaluation of how it is undertaken in Western Australia. South-west forests should be managed to protect their biodiversity and the ecosystem services they provide, including their role in water catchment protection and climate moderation.[1]

The Department of Biodiversity, Conservation and Attractions' (DBCA's) prescribed burning regime is degrading forest ecosystems and impacting biodiversity as well as contributing to the climate crisis through significant greenhouse gas emissions. The collateral ('unintended') damage costs of the current regime are rarely discussed, but amount to hundreds of millions of dollars annually (Fact Sheet 14). There is also contested science around the effectiveness of prescribed burning in reducing wildfire risk and impacts, hence an urgent need for an independent scientific review of prescribed burning as recommended by the Environmental Protection Authority in its assessment of the *draft Forest Management Plan 2024-2033*.[2] Besides more clarity around the science, there is also a need for broader community discussion around wildfire risk and the trade-offs between community and environmental protection. Active negotiation about the values and priorities of wildfire risk mitigation to facilitate socially acceptable trade-offs is urgently needed. Until the government initiates an open and frank discussion around prescribed burning and other aspects of wildfire management, the current acrimony between the community, environmental groups, the government and the DBCA will continue.

While an acceptable long-term position is sought, the South-West Forests Defence Foundation recommends that the following changes are immediately implemented.

CHANGES NEEDED:

- No prescribed burning target for burn area or fuel age anywhere.
- No burning of long unburnt forest as it is less flammable than recently-burnt forest.[3,4,5,6]
- No burning in Land Management Zone C, more than 11 km from settlements.[7] Burning forest far from towns does not decrease the wildfire risk to towns.[8,9,10,11,12]
- No aerial ignition. Prescribed burns should be ignited and controlled at ground level.
- No burning of, and fire exclusion from, sensitive environments such as tingle forests, riparian zones, peatlands and granite outcrops.[13]
- Incorporation of Indigenous knowledge and burning practices.[14,15]
- Active education programs to reduce arson.
- Transparency in DBCA's decisions around prescribed burning, including: access to burn planning documents, before and after biodiversity monitoring data, and burn severity mapping for both prescribed burns and wildfires.
- State-of-the-art wildfire detection and suppression systems.[16,17,18]



Achieving current prescribed burning targets does not reduce bushfire risk

DBCA uses *the proportion of Department-managed lands in the south-west forest regions that is less than six years since last burnt* as an annual indicator of the **effectiveness** of its prescribed burning program in mitigating bushfire risk and the *average cost per hectare* as a **key performance indicator**.[19] This drives a program that burns the largest possible area for the cheapest possible cost, that is, forest areas remote from people and infrastructure. This strategy does not protect people and infrastructure from wildfires.[8,9,10,11,12]

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