



Regional Fire Management Plan 2025 – 2030

Acknowledgement of Country



*Dhawura nguna ngurumbangu gunangu Ngunnawal.
Nginggada dindi dhawura Ngunnawalbun yindjumaralidjinyin.
Mura bidji mulanggaridjindjula.
Naraganawaliyiri yarabindjula.*

*This country is Ngunnawal ancestral and spiritual homeland.
We all always respect elders, male and female, as well as Ngunnawal country itself.
They always keep the pathways of their ancestors alive.
They walk together as one.*

The ACT Government acknowledges the Ngunnawal people as traditional custodians of the ACT and recognise any other people or families with connection to the lands of the ACT and region. We acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

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Letter from the Land Custodian

Yuma (Hello in Ngunnawal),

I am pleased to present the Regional Fire Management Plan, a comprehensive framework developed to guide bushfire risk management across our ACT region. This plan reflects our commitment to protecting lives, property, and the environment through initiative-taking and collaborative fire management strategies.

As we face increasingly complex fire seasons, it is essential that we adapt our approaches to meet evolving challenges. The Regional Fire Management Plan outlines key priorities, including risk reduction, ecological protection, and coordinated response efforts. It has been shaped by extensive consultation with land managers, emergency services, community stakeholders, and scientific experts.

Our goal is to ensure that fire management is not only effective but also sustainable and inclusive. By working together, we can build resilience across landscapes and communities, safeguard our natural assets, and reduce the impact of bushfires.

I encourage you to engage with this plan, share your insights, and participate in the ongoing efforts to strengthen fire management in our region. Your involvement is vital to its success.

Thank you for your continued support and commitment to a safer, more resilient future.

Michaela Watts
ACT Parks and Conservation Service
Land Custodian



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Glossary

Asset Protection Zone (APZ): A designated area near assets where fuel loads are reduced to protect life and property from bushfire.

Adaptive Management: A structured, iterative process of robust decision-making in the face of uncertainty, with an aim to reduce uncertainty over time via system monitoring.

Bushfire Operational Plan (BOP): Annual plans detailing specific fire management activities such as prescribed burns, slashing, and trail maintenance.

Burn Severity: A measure of the ecological and physical impact of fire on vegetation and soil.

Cultural Burn: Fire practices led by First Nations communities for cultural, ecological, and land stewardship purposes.

Catchment Health Impact: The effect of fire and fire suppression activities on water quality and hydrological systems.

Directorate-managed Land: Land under the custodianship of ACT City Presentation and Parks and Conservation Service.

Ecological Guidelines: A set of standards guiding fire and fuel management to protect ecological assets.

Ecological Resilience: The capacity of ecosystems to recover from disturbances like fire while maintaining essential functions.

Elevated Fuels: Vegetation such as shrubs and lower tree branches that can carry fire from the ground into the canopy.

Fire Behaviour Analyst (FBAn): A specialist who models and interprets fire spread and intensity to inform suppression strategies.

Fire Regime: The pattern, frequency, and intensity of fire that characterizes an area over time.

Fuel Hazard Score: A rating of the potential fire risk posed by vegetation structure and density using the Overall Fuel Hazard Assessment Standards.

Fuel Management: Techniques used to reduce or modify vegetation to lower bushfire risk.

Growth Stage Diversity: The range of vegetation age classes (e.g., juvenile, mature, senescent) across a landscape, used to assess ecological health.

Helipad Classification: Standards for helicopter landing sites based on rotor diameter and operational requirements (Light, Medium, Heavy).

Landscape Fire Management Zone (LFMZ): Areas managed for ecological outcomes using fire, often with longer fire intervals and patchy burns.

Monitoring and Evaluation Framework: A system for assessing the effectiveness of fire management strategies using ecological and operational indicators.

Phoenix Rapid Fire: A bushfire simulation tool used to model fire spread and assess residual risk.

Prescribed Burn: A planned fire conducted under controlled conditions to reduce fuel loads and manage ecological values.

Residual Risk: The remaining bushfire risk to life and property after mitigation activities have been implemented.

Right Way Evaluation: A First Nations-led approach to monitoring and evaluation that reflects cultural values and priorities.

Strategic Bushfire Management Plan (SBMP): The overarching ACT-wide fire management strategy guiding regional and operational plans.

Strategic Firefighting Advantage Zone (SFAZ): Areas where fuel management enhances suppression capability and reduces fire spread.

Strategic Green Fire Break: Vegetated areas maintained with low fuel loads and canopy to support fire suppression and reduce fire intensity.

Tolerable Fire Interval (TFI): The minimum and maximum time between fires that supports ecological health and biodiversity.

Acronyms & Abbreviations

AFAC – Australasian Fire and Emergency Service Authorities Council

ANU – Australian National University

BOP – Bushfire Operations Plan

CED – City and Environment Directorate

EPSDD – Environment, Planning and Sustainable Development Directorate

ESA – Emergency Services Agency

FMU – Fire Management Unit

IW – Icon Water (utility provider)

ISO – International Organization for Standardization

LCC – Lower Cotter Catchment

MHAC – Multi Hazard Advisory Council

NP – National Park

ONC – Office of Nature Conservation

PCS – Parks and Conservation Service

RAD – Resist–Accept–Direct (climate adaptation framework)

RFMP – Regional Fire Management Plan

RFS – Rural Fire Service

SBMP – Strategic Bushfire Management Plan

SFAZ – Strategic Firefighting Advantage Zone

TFI – Tolerable Fire Interval

1. Vision, Scope, Objectives, and Underpinning Principles

Vision

A reduced fire risk in the ACT for the period 2025-2030 through a strategic and planned approach to fuel management, utilising advances in risk modelling and supporting ecological adaptation to a changing climate.

Scope

The Regional Fire Management Plan (2019-2029) was presented to the community and accepted by all relevant stakeholders in 2018, and again after a revision in 2020 following the Orroral Valley bushfire. This document represents a mid-cycle update at five years to ensure that the plan evolves with best research, major fire events, and climate change. The timeframe for this plan has been extended to 2030 to align with the Strategic Bushfire Management Plan and to account for delays in the development of this review.

While ACT fire risk modelling adopts a nil-tenure approach, the Regional Fire Management Plan (2025–2030) specifically addresses bushfire risk reduction strategies for land managed by the ACT City and Environment Directorate (the Directorate). For the purposes of this document, ‘Directorate-managed land’ refers collectively to areas under the custodianship of City Presentation (formally Transport Canberra and City Services) and the Parks and Conservation Service (PCS).

The Regional Fire Management Plan (RFMP) recognises the vital role of First Nations knowledge and guidance in fire management practices. It also acknowledges the limited representation of First Nations outcomes in the current strategic framework. A commitment of this planning cycle is to ensure meaningful and inclusive engagement with First Nations communities in the development of future iterations. This commitment is already underway through the drafting of the revised Nature Conservation Strategy and is echoed in the Strategic Bushfire Management Plan Version 5, which also affirms the importance of incorporating First Nations knowledge into future planning.

The RFMP outlines prescribed burning across the ACT landscape, incorporating both large-scale landscape mosaic burning and small-scale burning closer to the urban interface in urban reserves. Ecological burns and cultural burns remain essential for maintaining biodiversity, preserving cultural values, and supporting sustainable land management. However, their implementation is influenced by dynamic external factors—such as ecological suitability, fuel condition, weather, and community involvement—which require flexible, adaptive planning. As a result, ecological and cultural burns are

not included in the spatial products of this plan, but they are reported annually through the Bushfire Operations Plan (BOP) and remain a key component of the broader fire management strategy.

The RFMP balances operational, environmental, and cultural priorities with the overarching goal of protecting life, property, and the environment. It prioritises water catchment areas vital to the ACT's drinking supply, and safeguards cultural heritage and ecological values.

Objectives

1. Continue to reduce residual bushfire risk on Directorate-managed land, minimising bushfire spread across the landscape and enhancing community safety.
2. Promote ecosystem resilience to bushfires by managing for a diversity of vegetation growth stages across the landscape and minimising adverse effects of bushfire mitigation activities on ecological values.
3. To update and review strategic assets which aid in the suppression of bushfire on Directorate-managed land. Investigate strategies to manage residual risk due to movement of bushfire across the NSW/ACT border.
4. Plan for climate adaptation through targeted monitoring and adaptive management trials to mitigate bushfire risk to ecological and cultural values.

Underpinning Principles

- Balance the protection of life, property, and the environment,
- Research utilisation and best practice fire modelling,
- Planning for the impacts of climate change,
- Adaptive management,
- Collaborative approach with stakeholders,
- Transparency with ACT public,
- Ecologically, economically, and socially sustainable systems.

2. Context and Key Issues

Bushfire Management in the ACT

Bushfires are an inevitable part of living in the ACT. Canberra is described as the bush capital for good reason, with forest and grassland both surrounding and woven throughout urban areas. Along with the rural areas and the mountainous forested landscape to the west and south, living in the ACT means we live in or near an environment where bushfire is a natural occurrence.

The Strategic Bushfire Management Plan (SBMP) is the overarching document that guides bushfire management throughout the Australian Capital Territory. The preparation of the SBMP is the responsibility of the ACT Emergency Services Agency (ESA) and is a requirement of the *Emergencies Act 2004*. Figure 1 indicates how the SBMP, RFMP and BOPs fit into the ACT Bushfire Management Planning Framework.

The RFMP is informed by the SBMP and outlines how bushfire fuel management and access management will be conducted on Directorate-managed land.

The annual and more detailed BOPs are drawn from the information contained in the RFMP. The annual BOP includes a range of activities and fuel treatments such as prescribed burning, fire trail maintenance, slashing, physical removal, chemical treatment and grazing to reduce grass fuels. The RFMP balances fire fuel management with all the other values that the conservation estate is managed for in the ACT.

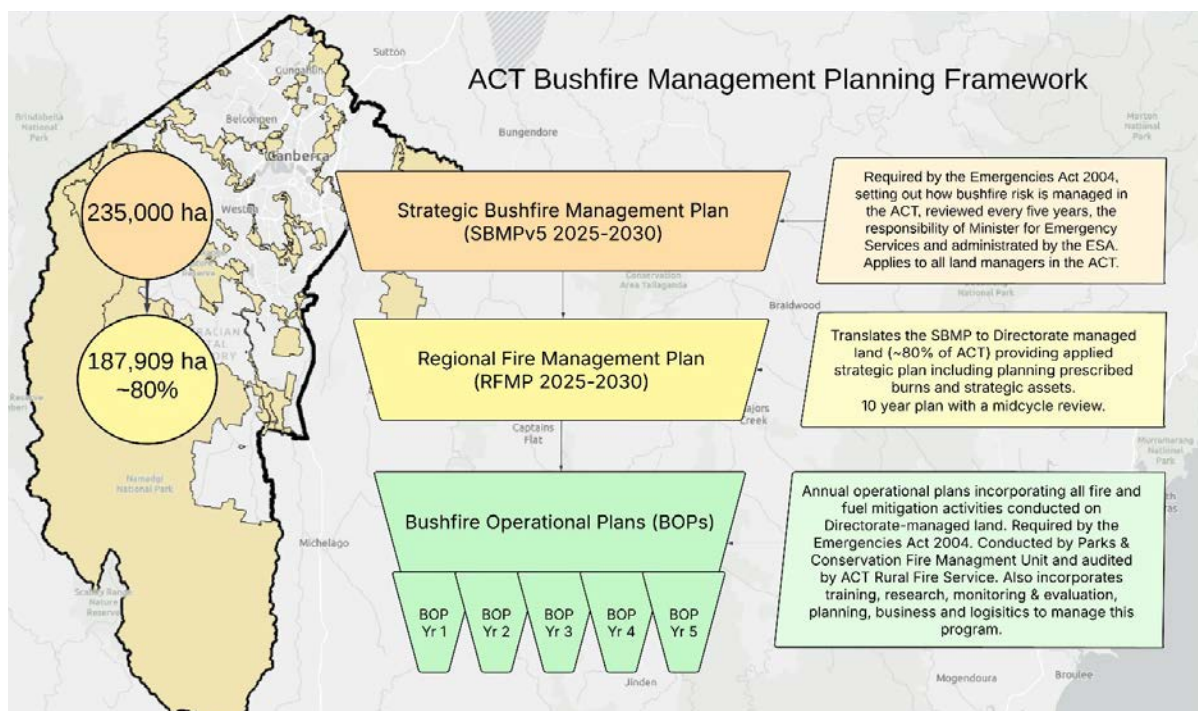


Figure 1: ACT Bushfire Management Planning Framework showing the relationship between the SBMP, the RFMP and the annual BOPs.

Residual Risk

The ACT uses a ‘residual risk’ methodology which is considered best practice nationally for land managers (including Victoria, South Australia, and Tasmania) and incorporates the International Standard Organisation methodology for risk management.

Historically, fuel management effectiveness was measured in the annual total of hectares of land treated. Measuring residual risk instead, focusses on the strategic placement of different fuel management types in the landscape and then evaluates these treatments with simulated bushfire ignitions across the landscape. ‘Residual risk’ refers to the remaining threat to life and property after fuel management activities have been completed. This remaining residual risk is managed through fire suppression, early fire detection, firefighter training and community education.

Phoenix Rapid Fire was used to simulate bushfire behaviour and assess residual risk within the Regional Fire Management Plan (RFMP). Over 6,500 ignition points were modelled across the ACT and surrounding NSW regions under the fifty worst historical fire weather scenarios. A fire catchment area was defined as the zone where ignitions could pose a threat to property. Various fuel treatment strategies were then simulated to evaluate their effectiveness in reducing residual risk. By balancing risk reduction benefits with operational feasibility and ecological considerations, an optimal suite of proposed prescribed burns was identified to best meet the objectives of the RFMP.

Current Fuel Management Approach

The Directorate implements a strategic, risk-based fuel management approach to reduce bushfire risk across the land it manages. This involves modifying the amount and structure of vegetation in fire management zones to meet the standards defined in the ACT Bushfire Management Standards. These standards are set by the ACT Emergency Services Agency and illustrated in Figure 3.

A range of techniques are used to manage fuel including prescribed burning, grazing, slashing, chemical treatment, physical removal, and access vegetation (Figure 2). These activities are guided by assessing contribution to bushfire risk, fire history, vegetation type, overall fuel hazard and the overarching goal of protecting life, property, and environmental values.

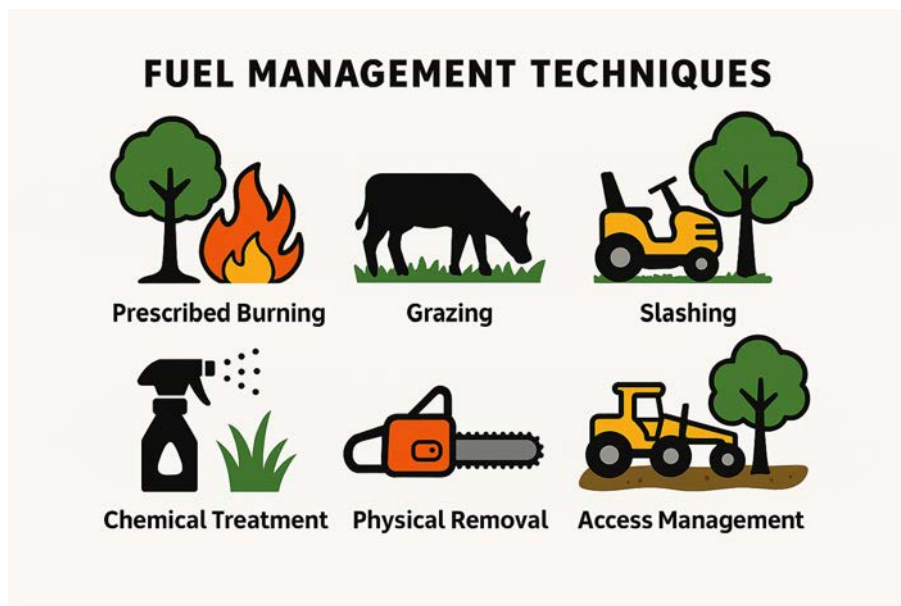


Figure 2: Fuel management techniques used on Directorate-managed land to address bushfire risk. (Source: ACT Government)

Prescribed Burning

Prescribed burning involves the planned ignition of fires under pre-determined environmental conditions to reduce bushfire risk. It is primarily applied in Asset Protection Zones (APZs) and Strategic Firefighting Advantage Zones (SFAZs) to modify fuel loads, and in Landscape Fire Management Zones (LFMZs) to maintain ecological values. As the most effective method for treating large or inaccessible areas, prescribed burning provides longer-lasting results in forested areas compared to grasslands, which require more frequent treatment.

Grazing

Grazing uses livestock such as cattle, sheep, or horses to consume and compact fuels, primarily in grassland environments. It may occur year-round or seasonally, depending on vegetation growth. Infrastructure such as fencing and access to water is required prior to implementation. Approximately 4,200 hectares of Directorate-managed land are currently managed through grazing.

Slashing and Mowing

Slashing reduces grass height and promotes decomposition using several types of machinery. While typically limited to grasslands, larger mulching and tritter machines may be used in forested areas. Slashing is restricted to slopes under 20 degrees and areas with low rock and tree density, making it most suitable along strategic linear features such as fire trails and roads. It is most effective when grass is approximately 70% cured. Physical removal of obstacles is often required to facilitate slashing operations.

Chemical treatment

Chemical treatment supports fire management by targeting specific vegetation types or invasive species that contribute to fuel loads. Herbicides are used to suppress regrowth, control weeds and reduce flammable biomass. This is often used as a follow up treatment in combination with other fuel management techniques.

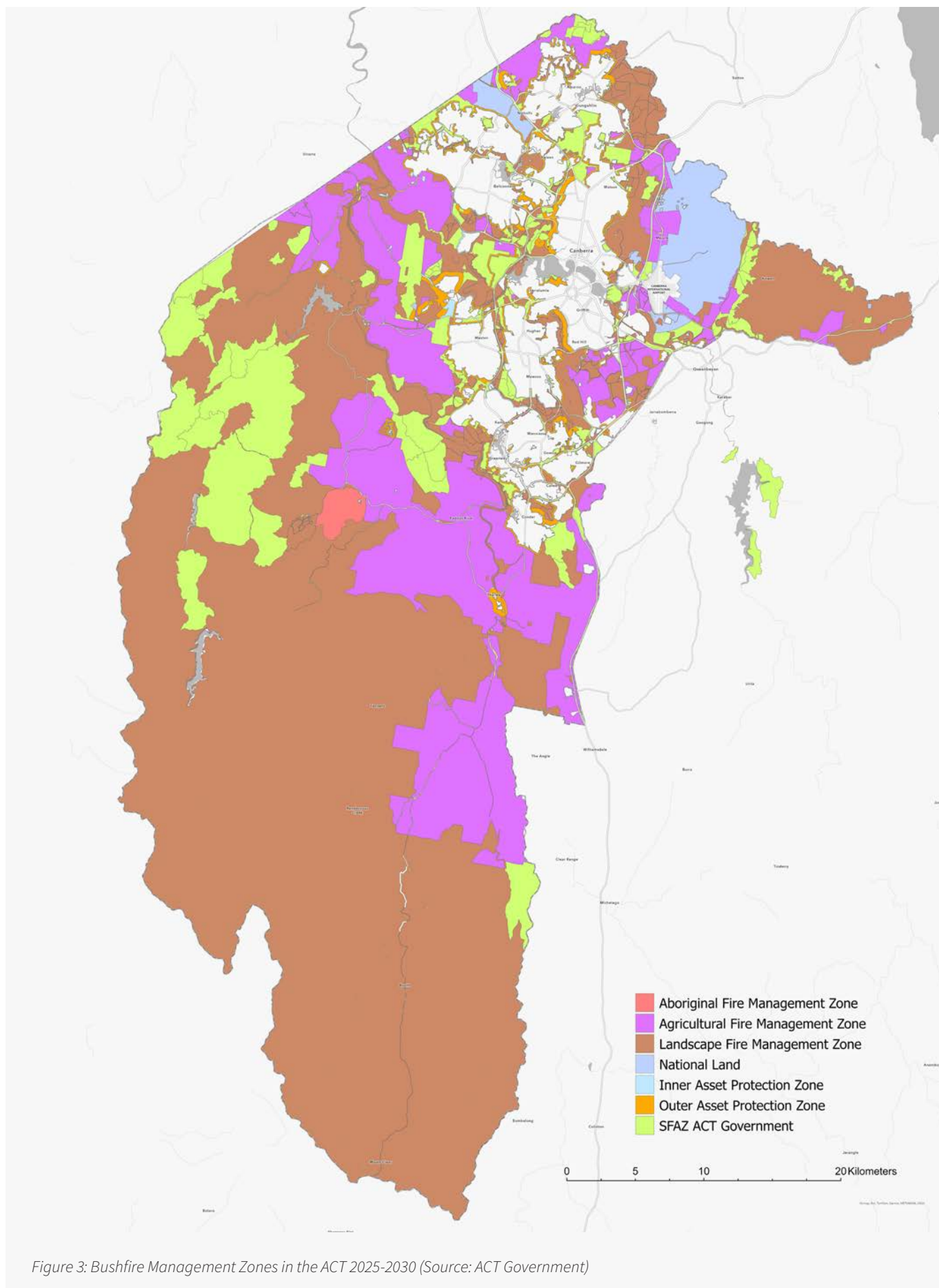
Physical Removal

This technique involves the manual or mechanical clearing of vegetation using tools or machinery. It encompasses activities such as thinning shrubs, removing weeds, pruning trees, and managing debris—either by chipping, burning, or transporting it off-site. While commonly applied to small-scale areas like asset protection zones or around infrastructure, physical removal can be scaled up in specific contexts, such as pine plantations or where other fuel reduction methods (e.g. prescribed burning) are unsuitable due to environmental or safety constraints. This method tends to be more costly due to the significant labour hours and machinery expenses involved in manual and mechanical vegetation removal.

Access Management

Maintaining fire trail networks and managing verge vegetation is essential for ensuring safe, reliable access for firefighting operations. This work supports rapid response, asset protection, and operational readiness in line with the ACT Bushfire Management Standards. Vegetation management typically involves slashing, pruning, and physical removal, while road maintenance is carried out using heavy plant machinery. Techniques such as tritter operations or manual clearing are used to manage vegetation effectively, with ecological impact assessments conducted to ensure sensitive environments and species are accounted for.

For a practical example of integrated fuel management, refer to Appendix A: Narrabundah Hill Case Study.



New Strategic Bushfire Management Plan (2025-2030)

The Strategic Bushfire Management Plan (SBMP) 2025-2030 Version 5 “provides a refined and adaptive strategic framework to help the ACT continue enhancing and evolving its bushfire protection strategies in response to challenges of a changing climate”.¹

The six themes outlined in the SBMP include:

1. Community resilience and awareness,
2. Bushfire Risk planning and land management,
3. Firefighting capability and management,
4. Land use planning and development,
5. Bushfire research,
6. Bushfire recovery.

Although all themes are relevant to the role of the Directorate in mitigating bushfire risk, the most pertinent in the updated RFMP are themes two, five and six. When approaching the RFMP mid-cycle review, these themes have been integrated into the setting of objectives and refinement of the strategic planning approach.

2020 Orroral Valley bushfire

The Orroral Valley bushfire in January 2020 burnt around 88,000 hectares comprising large portions of Namadgi National Park and the southern region of the Cotter Catchment, Canberra’s primary water supply. Over 22% of this area was burnt with high fire severity; resulting in impacts to cultural heritage, public safety, biodiversity, water quality, erosion and built asset damage. Approximately 90% of the area burnt by the Orroral Valley bushfire was previously burnt in the 2003 bushfires, further compounding the ecological impacts across the landscape.

- To allow for initial recovery of flora and fauna, prescribed burning was excluded for five years from within the footprint of the Orroral Valley fire. For the remainder of this plan, the reintroduction of fire in areas which were severely burnt in the Orroral Valley bushfire will only be on an experimental basis to determine if the application of fire can support the transition of vegetation from thick, shrubby elevated fuels to an open woodland or dry forest structure with mature canopy. Any experimental burning would be conducted at small scale and consider other ecological factors noting this practice would be conducted below the Tolerable Fire Interval (TFI).
- Fuel loads will be monitored in areas of the landscape within the Orroral Valley fire footprint which represent an elevated risk to life and property (such as Clear Range), and fuel mitigation activities will be considered if required.

A technical appendix was prepared in parallel with the RFMP to provide a comprehensive reconstruction of the Orroral Valley bushfire. This reconstruction documents the sequence of events, weather and fuel conditions, suppression activities and highlights the key role of prescribed burning prior to the bushfire in reducing intensity and spread. This reconstruction, in conjunction with the *Inquiry into the Orroral Valley Fire [2025] ACTCD 4*,² yielded several key learnings:

- **Prescribed Burning:** Demonstrated its effectiveness in reducing bushfire intensity, reinforcing its strategic importance in proactive fuel management.
- **Cross-Border Coordination:** Highlighted the need for a unified, multi-jurisdictional approach to managing fire movement across state and territory boundaries.

1 Strategic Bushfire Management Plan 2025-2030, ‘Purpose of the Plan’, Page 4

2 *Inquiry into the Orroral Valley Fire [2025] ACTCD 4* (Coroner’s Court of the Australian Capital Territory, Walker CJ, 13 June 2025).

- **Operational Capability:** Revealed critical gaps in specialist roles including Fire Behaviour Analysts, Air Operations personnel, and Fire Tower Operators, and underscored the need for enhanced training and resourcing for ACT Rural Fire Service volunteers.
- **Early Fire Reporting:** Reinforced the importance of immediate reporting of any unintended ignitions to enable rapid response and containment.
- **Post-Ignition Response:** Emphasised the value of timely and effective suppression actions following ignition to improve operational outcomes.
- **Interagency Collaboration:** Identified the need to strengthen the Australian Defence Force's capacity to integrate with ACT Government emergency services during joint operations.
- **Water Catchment:** The Orroral Valley bushfire had a severe impact on Corin and, to a lesser extent, Bendora sub-catchments. The event highlighted vital lessons in managing firefighting chemicals within sensitive water catchment areas, protecting critical infrastructure such as dam walls and pipelines, and implementing effective post-fire recovery and mitigation strategies.

Engagement and Consultation Summary

The following stakeholders have been critical in the development of this RFMP update:

- ACT Emergency Services Agency
- ACT Rural Fire Service
- ACT Parks and Conservation Service districts.
- City Presentation (formerly Transport Canberra and City Services)
- Office of Nature Conservation
- City and Environment (formerly EPSDD) Traditional Custodian Engagement
- ACT Parks and Conservation Service Forestry
- NSW National Parks and Wildlife Service
- ACT Government City and Environment Directorate Communications Team
- NSW Rural Fire Service (Smiths Road Brigade, Snowy Monaro Bushfire Council, Yass Valley & Snowy Valleys, and Queanbeyan-Palerang)
- Rural landholders (ACT/NSW)
- Multi Hazard Advisory Council (MHAC)
- Icon Water
- Department of Energy, Environment and Climate Action (Victoria)
- Natural System Analytics (consultant: Owen Salkin)

3. RFMP Objectives

Objective 1:

Continue to reduce residual bushfire risk on Directorate-managed land, minimising bushfire spread across the landscape and enhancing community safety.

Setting a target

‘Residual risk’ is the amount of bushfire risk which remains to life and property after bushfires and fuel management activities have reduced fuel, as shown in Figure 4 below. This approach is an improvement on the previous ‘annual hectares treated’ reporting methodology. Using a ‘residual risk’ target instead of ‘annual hectares treated’ allows public land managers to prioritise bushfire fuel management where they will have the greatest strategic impact.

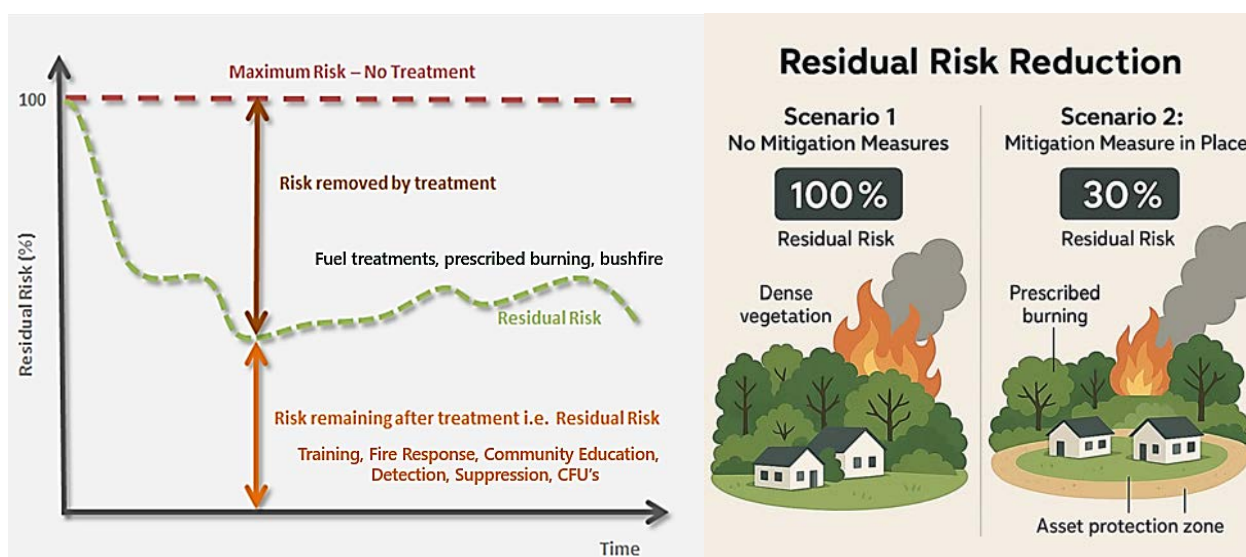


Figure 4: Residual Risk Explained (Source: ACT Government)

The Directorate aims to maintain the residual risk for Directorate-managed lands between 33% and 47%³ for the life of the 2025-2030 RFMP. This represents treating between 3–5% of Directorate-managed land annually from 2025 – 2030, which is approximately between 2,500 -4,200 hectares per year.

This residual risk target considers the concept of ‘diminishing return on investment’ in terms of the effectiveness of treatments. Figure 5 illustrates the relationship between the percentage of Directorate-managed land treated and the resulting reduction in residual risk, along with the corresponding area (in hectares) required to achieve those outcomes. The Directorate believes this target is sustainable, both operationally and ecologically, and provides the best available balance of all land management objectives to maintain an acceptable range for residual risk for the ACT.

³ The current strategic key performance indicator for CED/EPsDD residual risk remains 35-45%.

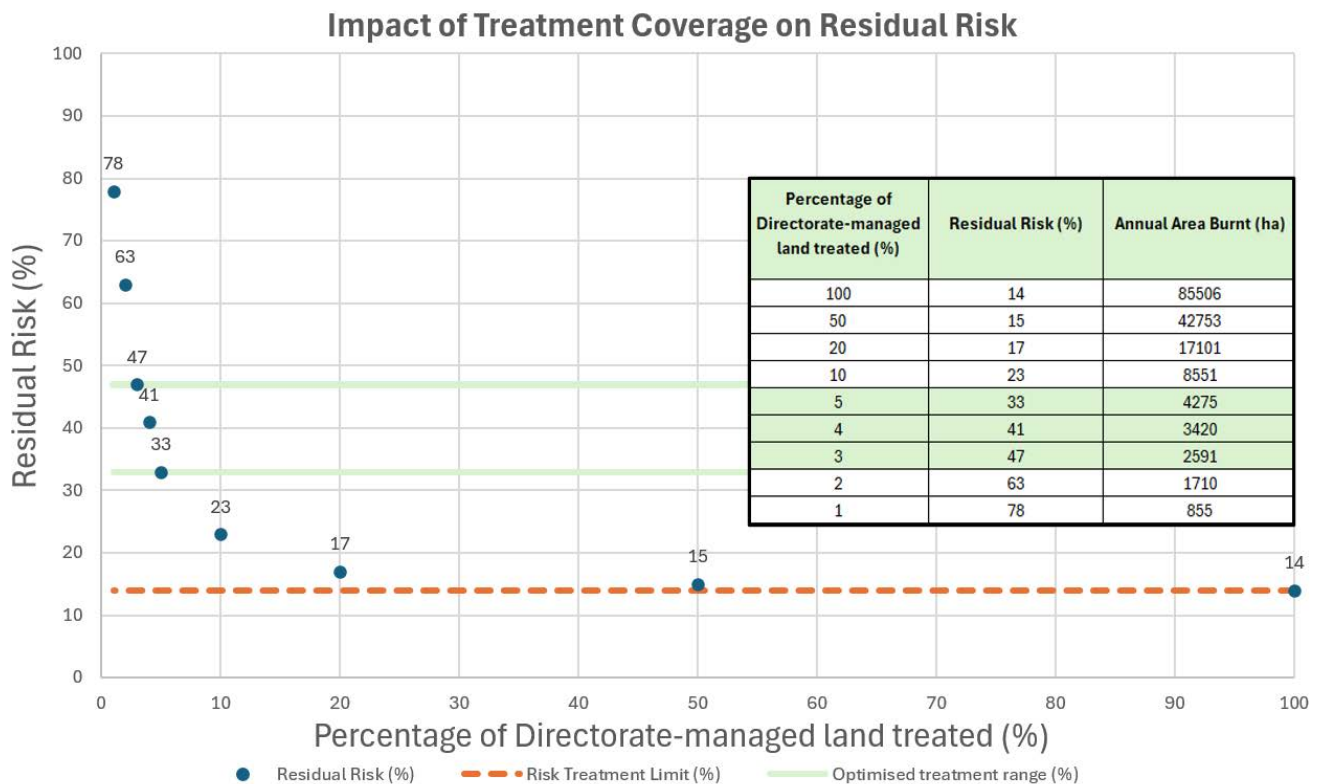


Figure 5: Assessment of the effectiveness of percentage treated upon residual risk reduction in the ACT.

Residual risk over time

Modelling using fire history data for prescribed burns and bushfires, and vegetation accumulation, allows us to track residual risk over time. Figure 6 shows the residual risk on Directorate-managed land over time and highlights that residual risk was significantly reduced due to the 2003 Bushfires. The figure also demonstrates that without any fuel treatment in the landscape, the residual risk will continue to steadily rise as fuels accumulate over time (in orange). Managing residual risk below the optimised range of 33-47% places ACT residual risk well below the risk levels before these catastrophic fires.

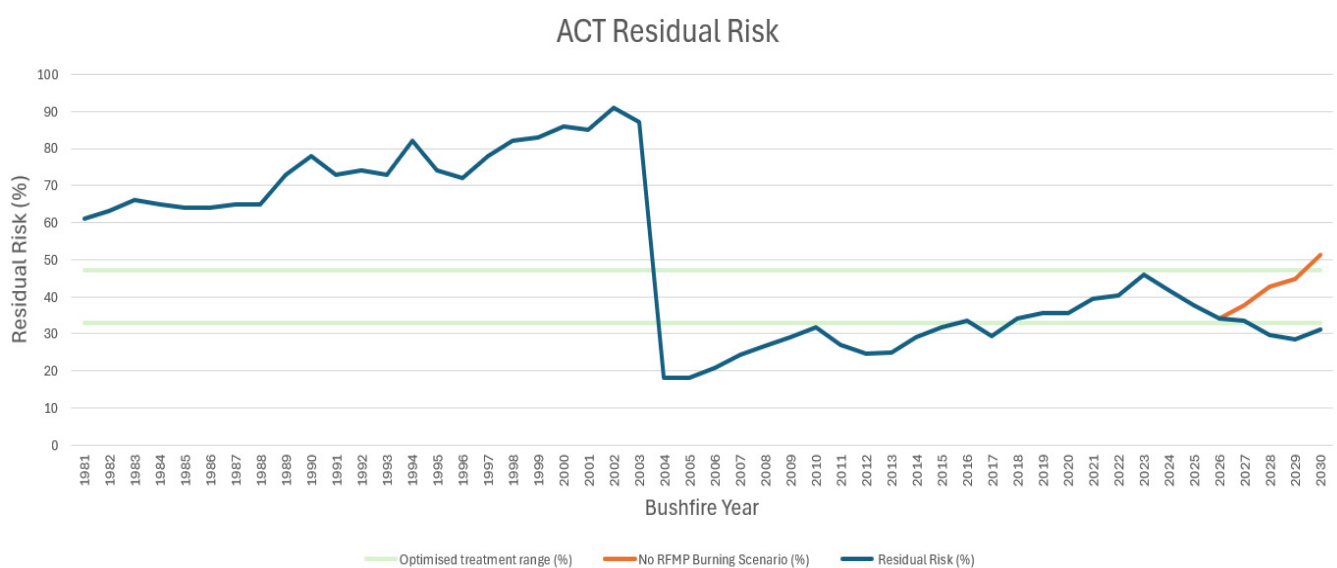


Figure 6: Residual risk for ACT past and future (Source: ACT Government)

The concept of residual risk represents the complex, evolving nature of fire risk management. It is influenced by interdependent factors including vegetation accumulation, weather variability, long-term climate trends, major bushfire events, ecological constraints, new housing developments and resource availability. These influences often interact in non-linear and compounding ways, making it necessary to understand residual risk in the context of these other factors.

FACTORS AFFECTING RESIDUAL RISK

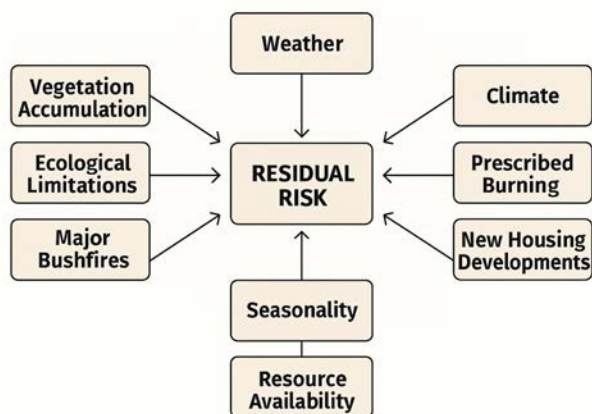


Figure 7: Factors influencing residual risk

Rather than focusing on small percentage shifts, the Directorate monitors long-term trends in residual risk. Due to the complex uncertainties in modelling inputs, minor fluctuations often fall within the margin of error and should not be overinterpreted. **Analysing trends over time** offers a more reliable and meaningful measure of mitigation effectiveness and reflects the Directorate's capacity to adapt to changing conditions. Ongoing enhancements to our residual risk modelling significantly improve our ability to assess and respond to bushfire risk with greater accuracy. The model is continuously refined as new techniques emerge and better data becomes available, ensuring our approach remains adaptive, evidence-based, and strategically focused.

Several key enhancements have been made to the residual risk model to improve accuracy for this mid-cycle review. These updates include:

- **Enhanced vegetation modelling:** Delivers a more accurate representation of fuel loads across vegetation layers and types within the ACT and adjacent NSW areas.
- **Refined fire history datasets:** Incorporates high-resolution mapping of burnt areas using a nil-tenure approach to better reflect past fire activity.
- **Improved house loss estimation:** Uses precise asset location data, including non-residential structures like sheds, to improve the accuracy of impact assessments.
- **Multi-stream weather ensemble integration:** Simulates the ACT's fifty most severe historical fire weather days, significantly improving upon previous single-scenario models.
- **Updated debris-flow analysis:** Re-run to assess the impacts of fire more effectively on catchment health.

Together, these improvements enhance the accuracy of residual risk modelling, enabling more realistic predictions of ignition likelihood and potential impacts on assets. The refined model supports more detailed assessments of fuel management strategies proposed in planning processes and strengthens the foundation for evidence-based policy, strategic planning, and operational decision-making in bushfire management. Figure 8 and Figure 9 show outputs of residual risk modelling which are used to guide the planning of prescribed burns across the landscape.

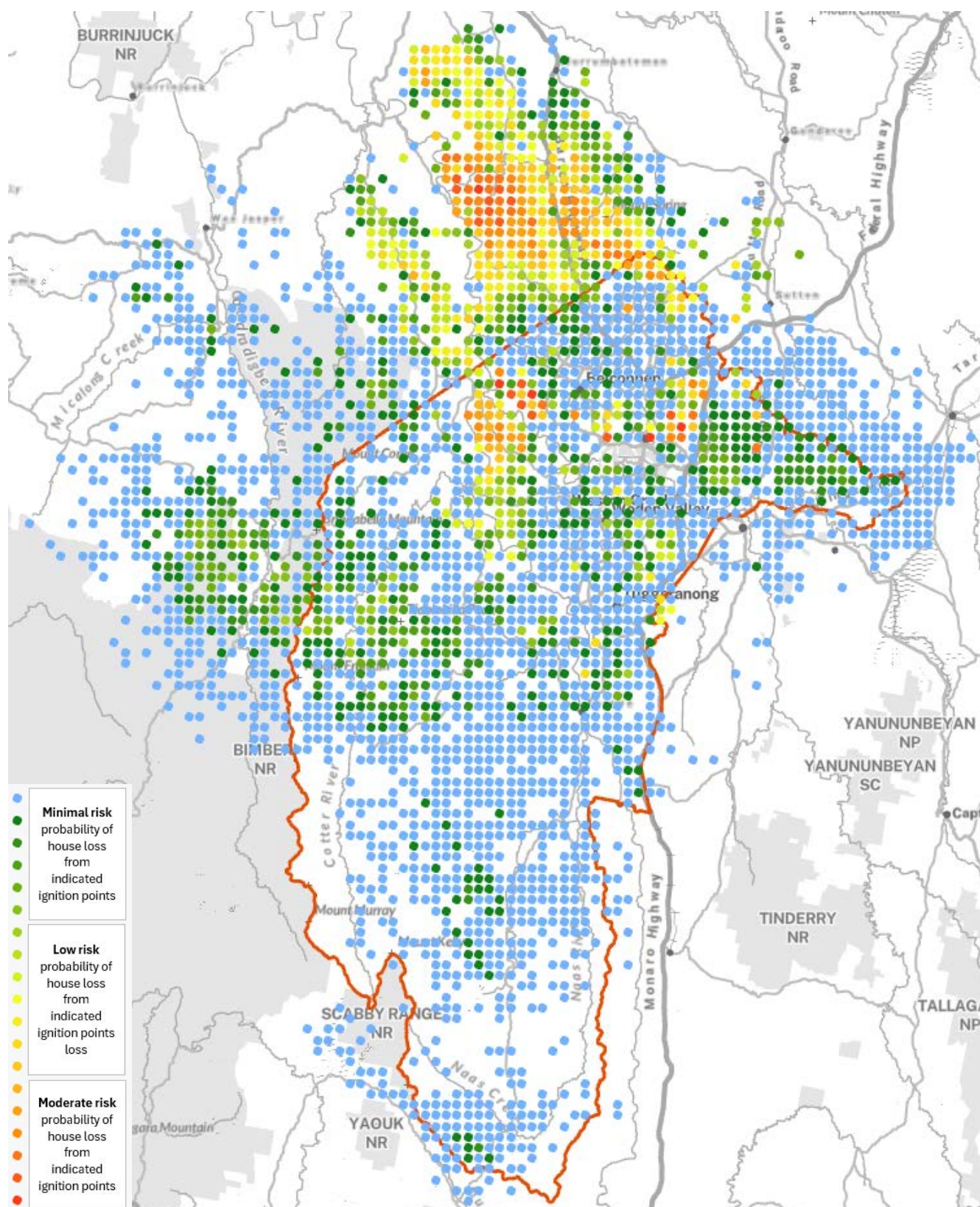


Figure 8 illustrates simulated ignition points across the landscape, each represented by a coloured dot. The colour gradient—from blue to red—indicates increasing risk to life and property, with red signifying the highest threat. This visualisation helps land managers identify priority areas for fuel treatment, focusing efforts where potential fire impacts on ACT property assets are greatest.

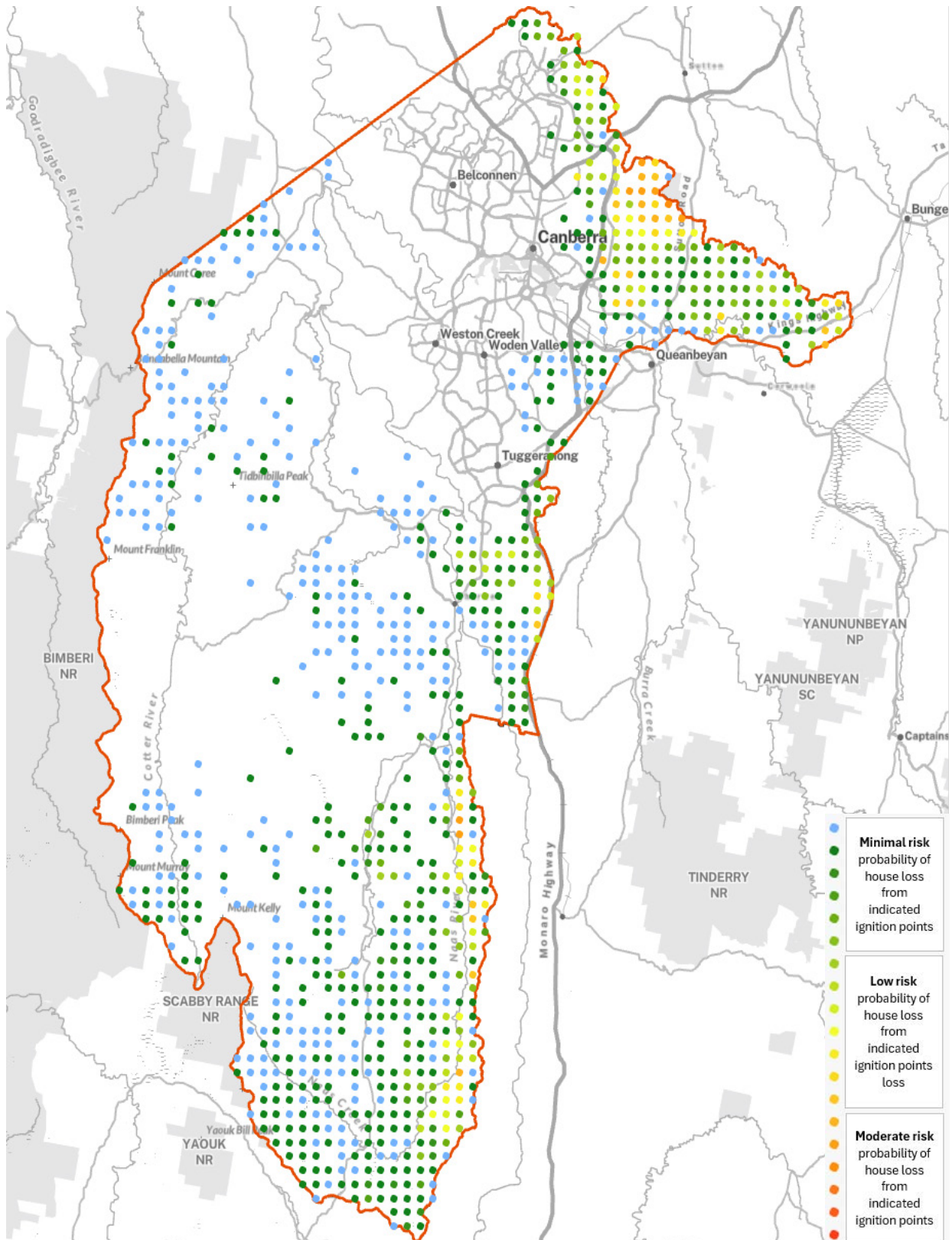


Figure 9: Modelling highlighting areas of the ACT landscape (nil-tenure) which represent risk to life and property in NSW.

Figure 9 displays simulated ignition points across the landscape, each marked by a coloured dot. The colour gradient—from blue to red—indicates increasing risk to life and property, with red signifying the highest threat for NSW assets. This spatial representation enables land managers to prioritise fuel treatments by identifying ignition locations within the ACT that post the greatest potential impact on NSW property.

Updated prescribed burning

Fuel management activities including burning, are conducted to reduce and manage fuel loads, including vegetation structure and fuel continuity. Appropriate management of vegetation reduces the incidence, size, speed, suppressibility and intensity of bushfires.⁴ These risk reduction effects can persist in the landscape up to 15 years⁵ as well as reducing the impacts bushfires have on vegetation, soil, water⁶ and scale of greenhouse gas emissions.⁷

Prescribed burning involves the planned lighting of fires in specific locations under predetermined environmental conditions. Prescribed burning is used to modify fuels (especially within Asset Protection Zones and Strategic Firefighting Advantage Zones) and to maintain vegetation communities within ecological thresholds, particularly within Landscape Fire Management Zones. Prescribed burning is the primary practical means of modifying fuels over large or inaccessible areas.

Figure 10 provides the proposed areas for treatment through prescribed burning to mitigate bushfire risk over the next five-year period (2025-30). This map also highlights the completed burns from the first five-year period of the RFMP and scheduled burns being conducted in NSW that affect residual risk in ACT.

Managing risk in plantation forests

ACT Parks and Conservation Service Forestry manages a plantation forest estate of around 11,600 ha with a net planted area of ~8,000 ha for forestry production. The major plantations are Kowen, Pierces Creek, and Uriarra, with smaller forests at Corin, Gigerline, Miowera, Ingledene, Stromlo, Majura, Tuggeranong, Fairbairn, and Isaacs. Prescribed burning is unsuitable within plantation forest stands due to their dense, uniform fuel loads and high flammability, which make controlled burns risky and technically challenging. Economic considerations, narrow operational windows, and ecological sensitivities further limit its feasibility, despite the bushfire risk these areas present.

The Directorate manages the risk posed by fires originating in or burning through plantations by thinning and lifting of stands (removal of some immature trees to increase space, and removal of lower branches from trees to reduce ladder fuels), targeted weed management, maintenance of fuel breaks around plantations, and standup arrangements on days of elevated fire danger. Plantations are managed in even-aged compartments of about 15 to 20 hectares in size with roads forming most compartment boundaries. Every year 250-280 hectares of plantation are harvested (clear-fell) at around 30 years of age and replanted within 12-months. A similar area of plantation is thinned each year. This results in a changing mosaic of fuel structure across the plantation estate. The Directorate maintains and improves the plantation estate's road network for forestry operations, which supports rapid access and enhanced response capability for firefighting operations, particularly on days of elevated fire danger. The combination of these strategies addresses some risk to plantations and adjacent land whilst also reducing pressure on adjacent land to carry all risk reduction.

⁴ Incidence and extent reduced: Boer et al. 2009; McGaw 2013, Suppression: McCarthy et al. 2012, Intensity: McCaw et al. 2012, McCaw 2013.

⁵ McCaw et al. 2012

⁶ Certini 2005

⁷ Volkova et al. 2014

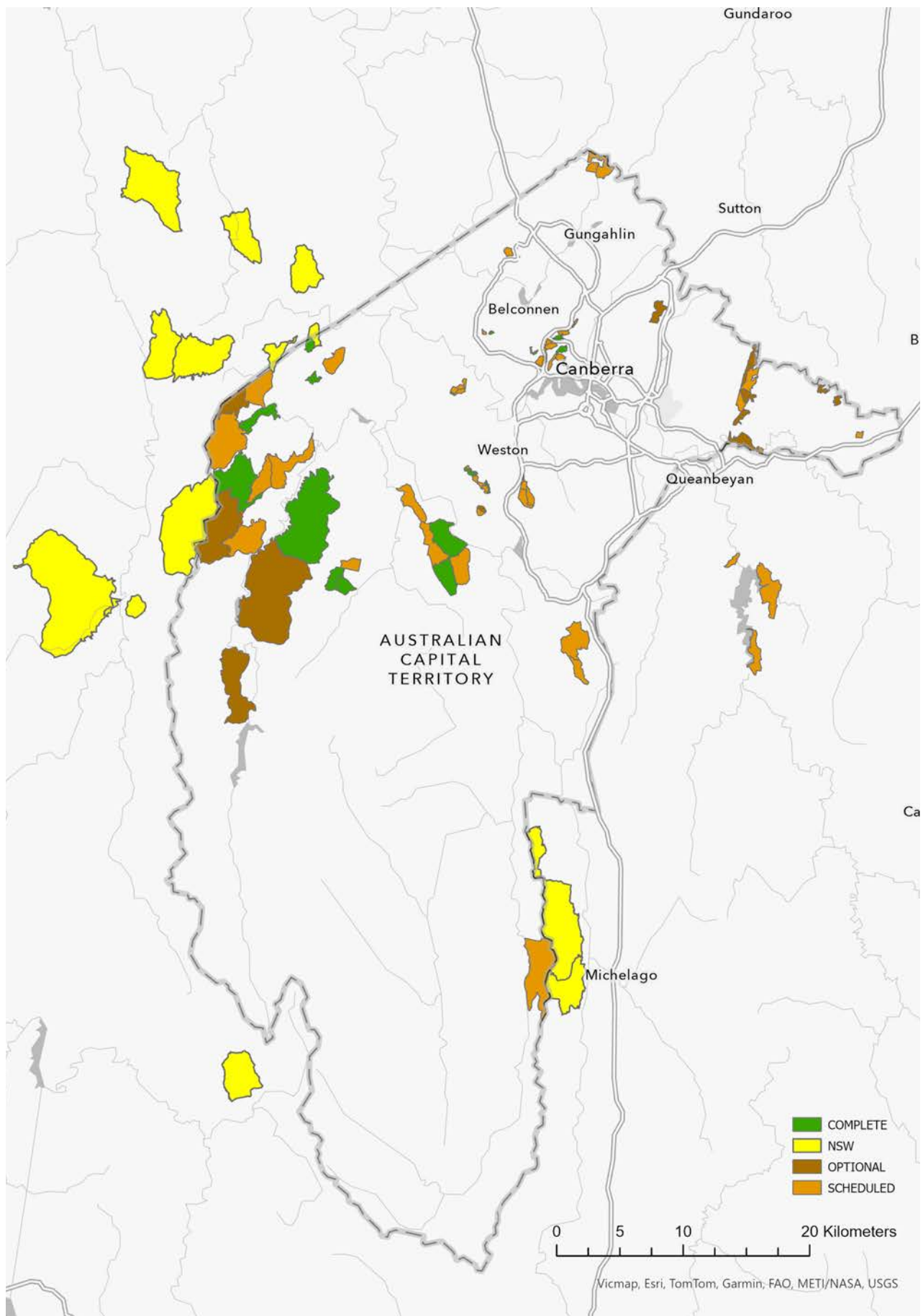


Figure 10: Prescribed Burns 2025-2030

Objective 2:

Promote ecosystem resilience to bushfires by managing for a diversity of vegetation growth stages across the landscape and minimising adverse effects of bushfire mitigation activities on ecological values.

Background - Fire in the Environment

Fire is an integral component of the landscape of south-eastern Australia. Fire has long been a part of the environment with lightning strikes causing naturally occurring ignitions before any human occupation of the continent. For time immemorial First Nations communities across Australia have and continue to use fire as part of their land management practices.⁸ While current fuel management burns are quite different from First Nations practices, today land managers recognise fire as an integral tool for managing vegetated landscapes and biodiversity. Appropriate use of fire can promote the health of the environment and support plant and animal species that need periodic fire for their survival. Conversely, fire that is poorly timed, too frequent, too intense, too large, or not patchy enough (especially in sensitive ecosystems) can damage habitats and harm the plants and animals that rely on them.⁹

Ecosystems and species vary in their sensitivity to fire and the types of fire that can have positive or negative impacts on their ecology. Further, the long-term health of any ecosystem will be shaped not just by individual fires but by the combinations of fires experienced over time – the ‘fire regime’ – a term that encapsulates the frequency, intensity, season and types of fire that occur at a location.¹⁰ It is the full variation in the fire regime over the landscape that contributes to the variation in ecosystem structure, function and composition and hence the biodiversity supported by that landscape. Resilient ecosystems support a diversity of flora, fauna, and microorganisms, which are vital for ecosystem functions such as delivering clean air, fresh water, and healthy soils.

2a. Within Landscape Fire Management Zones (LFMZs) fire management activities enable maturation of ecosystems so that post-fire age classes across the landscape move towards an ecologically desirable state, except where residual risk analyses indicate areas as high priority for treatment to protect built and natural assets.

Characterising fire regimes across the landscape helps us assess the health of our ecosystems and can be done at a landscape scale by describing the pattern of post-fire age classes using two broad approaches, Tolerable Fire Interval (TFI) status and Growth Stage Diversity.

By assessing these two aspects of vegetation communities we can measure the effects of fire across the landscape. These measures can inform fire management planning, reduce adverse effects of bushfires and planned fire, and promote ecosystem resilience.

8 ‘Indigenous Fire Management,’ Australia: State of the Environment Report 2021, soe.dcceew.gov.au

9 ‘Bushfires and wildfires,’ Australia: State of the Environment Report 2021, soe.dcceew.gov.au

10 Guidelines for Ecologically Sustainable Fire Management, NSW Biodiversity Strategy 2004

Tolerable fire intervals

Tolerable fire intervals define the optimum period for fires to occur to maintain species diversity and minimise species loss. We use these intervals together with other measures, such as fire severity mapping, and fire seasonality as a guide for when it may be ecologically suitable to re-introduce fire into the environment.

- The **minimum TFI** is the period between fires required to avoid a loss of plant biodiversity. This period is based on the time it takes fire-sensitive plant species to grow to reproductive maturity and produce adequate viable seed banks. Frequent burning below minimum TFI can lead to localised loss of these fire-sensitive species and can also prevent the development of key habitat features required by some fauna such as mature overstorey, tree hollows, and the accumulation of leaf litter and logs. Minimum TFI can further be classified into high severity and low severity categories, based on how severely the area has burned in the past.
- The **maximum TFI** is the maximum period between two successive fires required to avoid a loss of plant biodiversity. Many native vegetation communities not exposed to fire for extended periods can have reduced viability of shorter-lived plant species which require fire to germinate seeds. Lack of fire may also result in a decline of key habitat features required by some fauna species such as dense mid-storey vegetation, or open spaces between grass tussocks.

Extensive areas of the ACT uplands such as in Namadgi National Park and Tidbinbilla Nature Reserve are currently below minimum TFI high severity because of the 2003 and 2020 Canberra bushfires which burnt 90% and 80% of Namadgi, respectively. These upland ecosystems typically have longer minimum TFI and were still in an early recovery stage when they were extensively burnt again in 2020. With appropriate planning and monitoring, low-intensity burns can be safely implemented in these areas.

In contrast, many areas of the ACT lowlands and on the lower margins of the uplands are within TFI or even above maximum TFI. These vegetation types that are above maximum TFI are native grasslands and grassy woodlands, which are more tolerant and adapted to more frequent fire. In areas above maximum TFI, the Directorate will explore treatments over the five-year period for the use of low intensity fire in these areas to increase the health of these fire-dependant species where it may achieve risk reduction and support ecological function. Fuel management for these vegetation types can incorporate fuel management methods of grazing, slashing, physical removal in addition to low intensity burning, where they support ecological objectives.

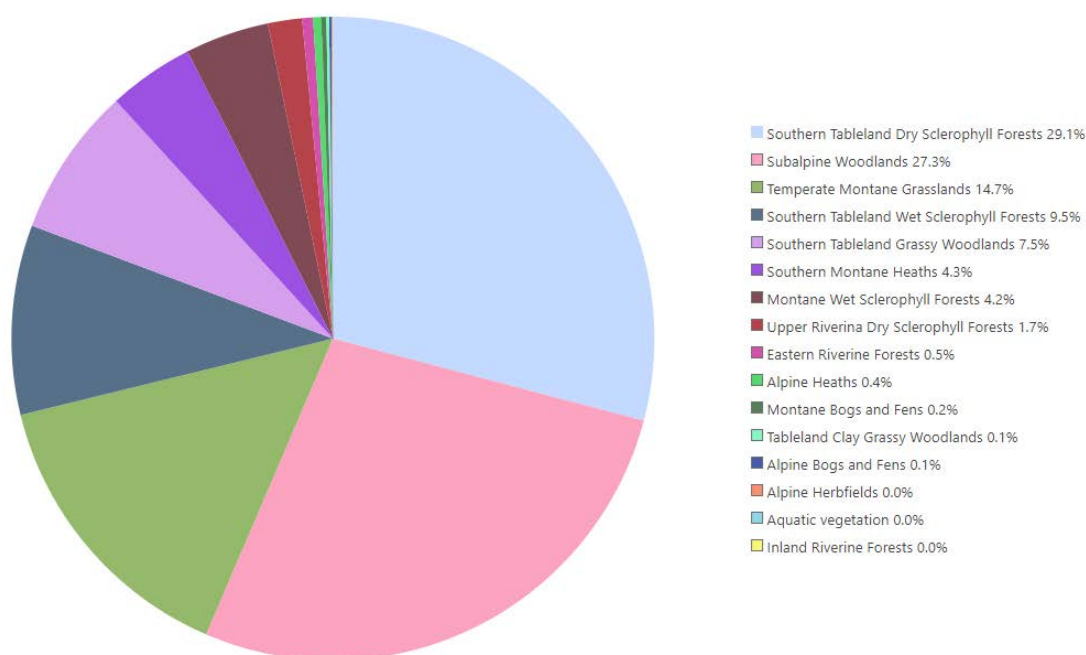


Figure 11: Vegetation Types across the ACT in total area (all land tenures)

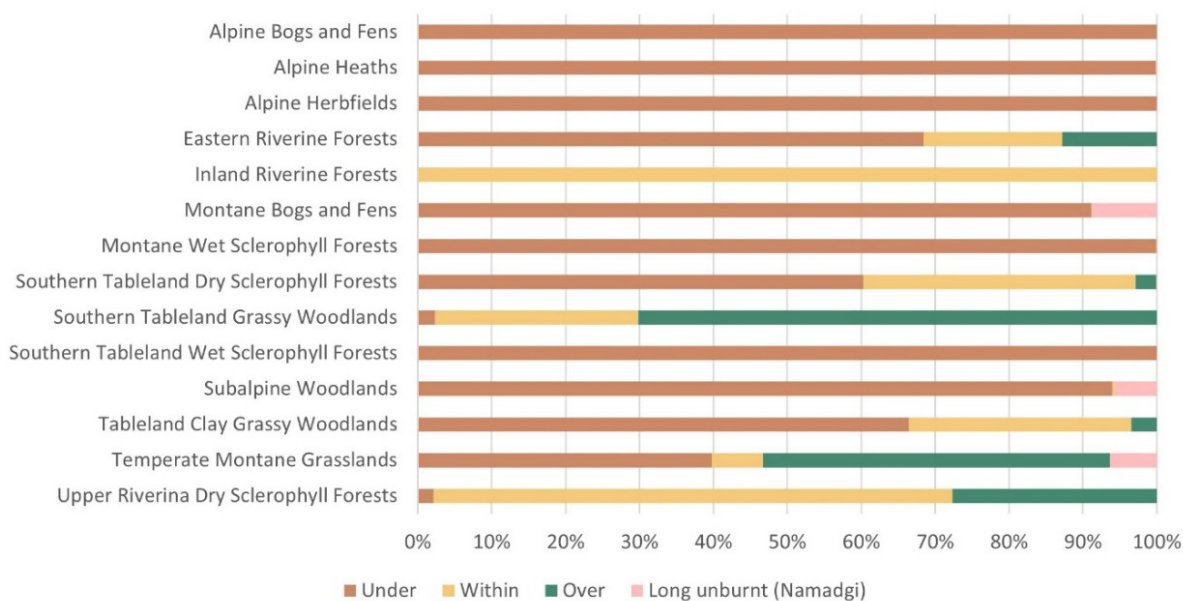


Figure 12: Chart of the status of ACT vegetation communities with respect to Tolerable Fire Intervals in 2025

Growth Stage Diversity

Tracking vegetation post-fire growth stages is a way to measure progress towards an ecologically desirable mix of vegetation age-classes (juvenile, adolescent, mature, senescent) across the landscape. Each growth stage reflects changes in the availability of habitat components for plants and animals (e.g. tall shrubs, mature tree canopy, large old hollow-bearing trees) and can be a useful indicator of the types of species likely to be present. Aiming for a diversity of growth stages across each ecosystem and across the wider landscape maximises the biodiversity and resilience of our natural areas. Through planned fire regimes, we aim to promote and maintain an optimal mix of vegetation growth stages to support species requirements across the landscape.

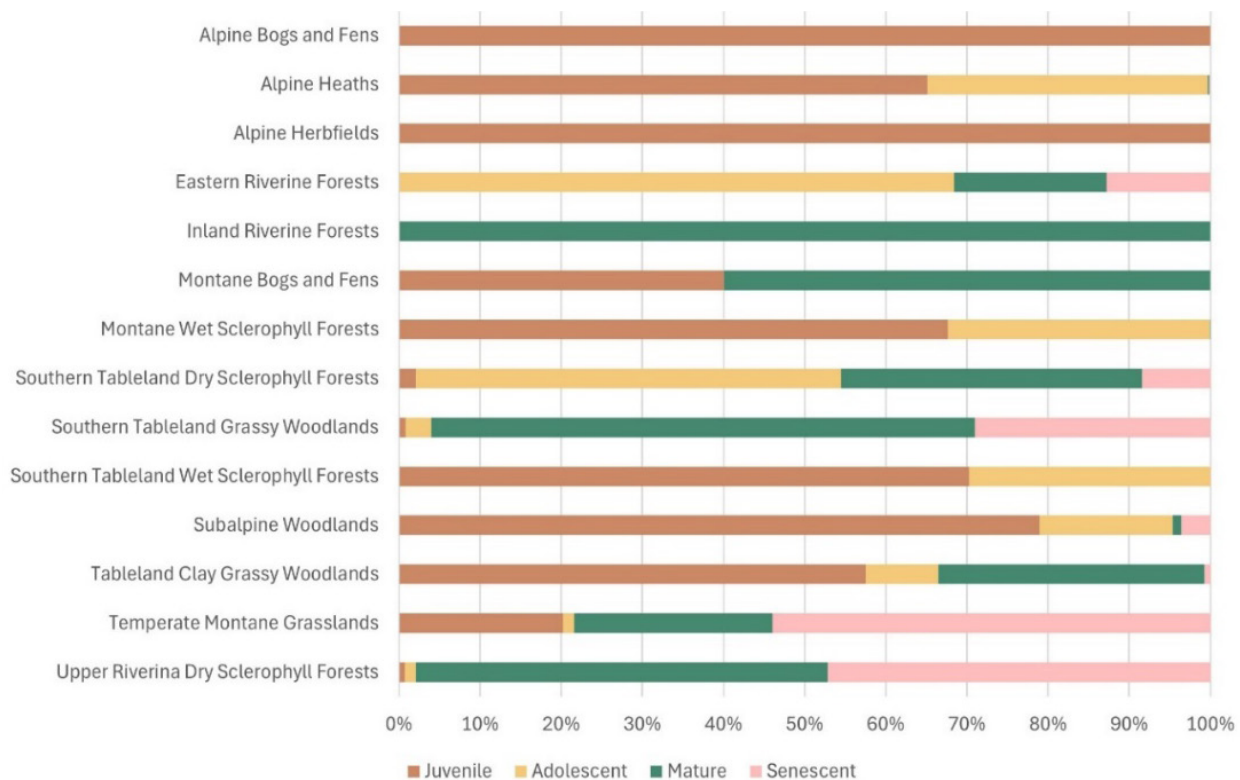


Figure 13: Chart of Growth Stage Diversity across ACT vegetation communities in 2025.

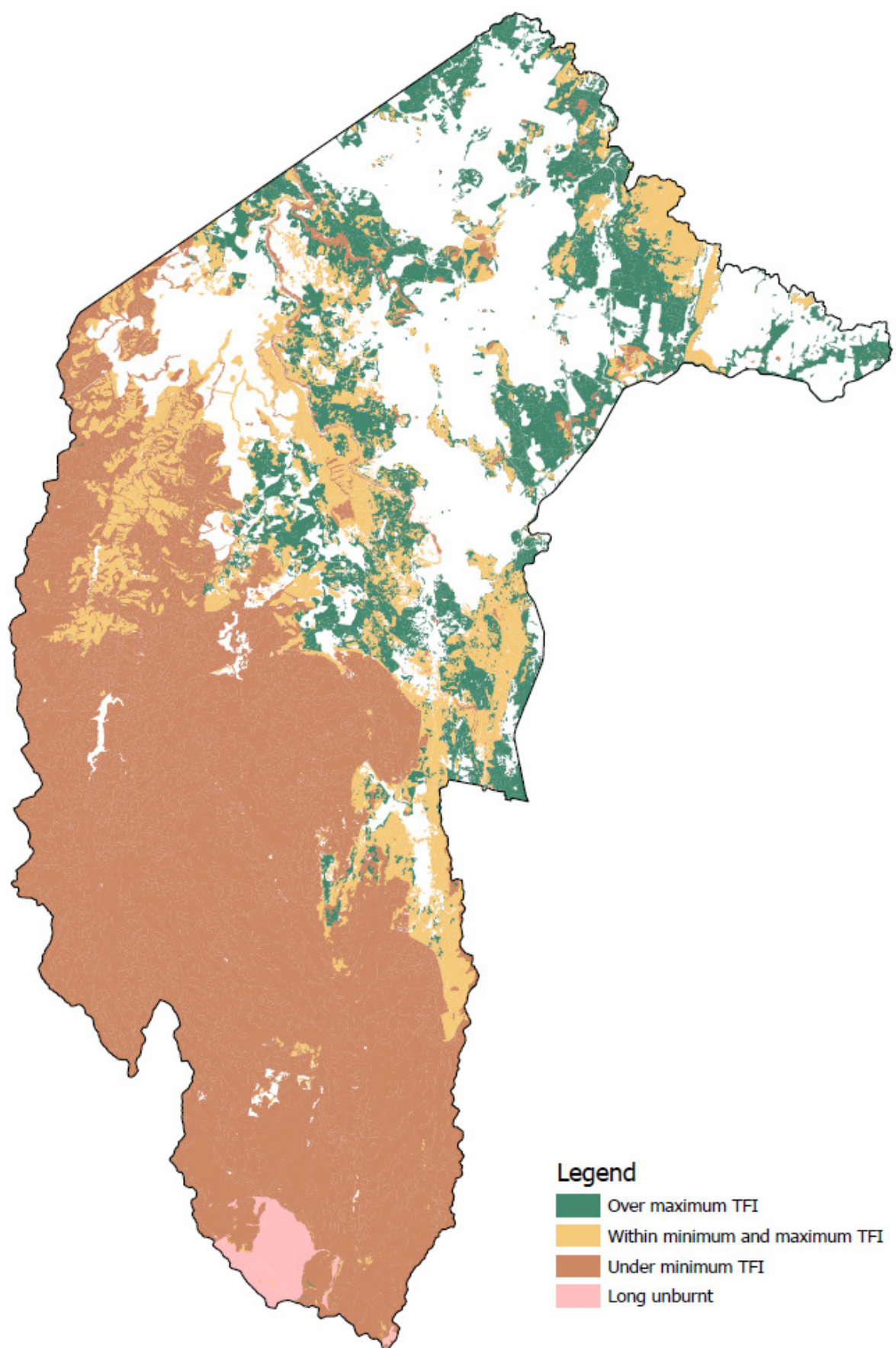


Figure 14: Map of the status of ACT vegetation communities with respect to Tolerable Fire Intervals in 2025

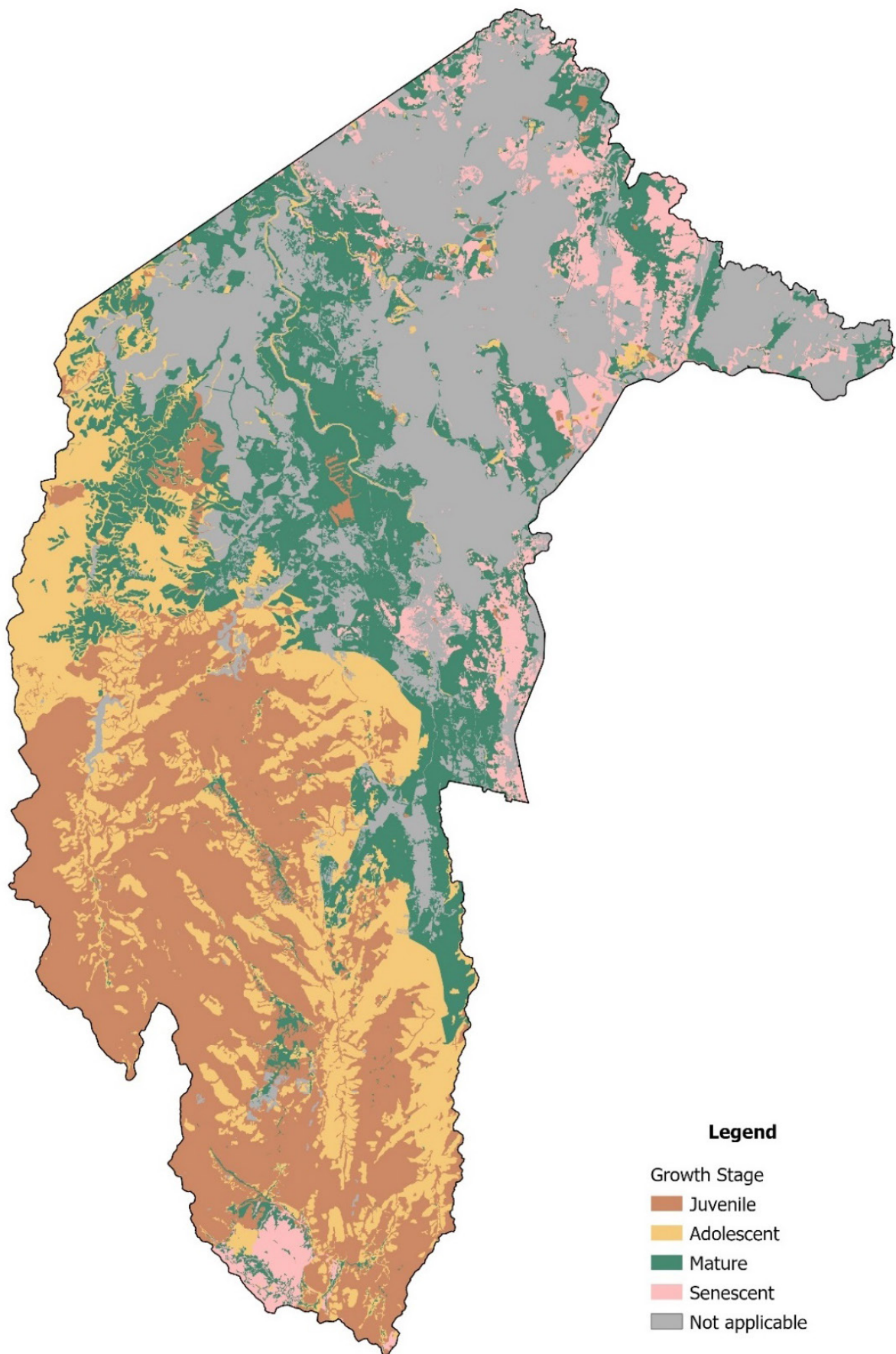


Figure 15: Map of Growth Stages across ACT vegetation communities in 2025.

2b. Long unburnt areas are protected from planned and unplanned fire for the life of the plan.

Following the bushfires that impacted Namadgi National Park in 2003 and again in 2020, only a small portion of the landscape remains long unburnt—having escaped both major fire events and with no recorded history of prescribed burning. This area, approximately 2,500 hectares, or 2% of the park, primarily consists of Subalpine Woodland and Montane Grassland, and serves as a critical ecological refuge while the broader landscape continues its recovery.

To preserve the integrity of this long unburnt vegetation, prescribed burning will be excluded from this area for the duration of the plan—except in cases where asset protection burning is required or where burning is undertaken to achieve specific ecological outcomes, such as improving vegetation condition. Where feasible, active fire suppression will be used during bushfire events to protect this area, recognising its value as an important ecological asset.

2c. Bushfire mitigation activities are conducted in alignment with the Ecological Guidelines wherever feasible and are informed by an evolving understanding of high conservation priority ecological values.

The Ecological Guidelines for Fire and Fuel Management (Ecological Guidelines) provide recommendations to guide the conservation of the ACT's ecological assets during the implementation of the annual Bushfire Operational Plan (BOP). The Ecological Guidelines provide advice on fuel treatment and access including prescribed burning, slashing, grazing, chemical application, physical removal, mechanical removal (including trittering) and fire trail maintenance.

Preparation of the Ecological Guidelines has been through the City and Environment Directorate (CED) Office of Nature Conservation (ONC) and are endorsed by the ACT Conservator of Flora and Fauna. ONC provides scientific advice to land managers, policy makers and other decision makers on the environment of the ACT with a particular emphasis on biodiversity including declared species and communities. The compilation of the Ecological Guidelines is a synthesis of research knowledge at the time of publication from the ecologists within ONC and other best practice knowledge available through research networks or peer-reviewed publications.

In addition to the Ecological Guidelines, collaboration with ONC allows for identification and protection of other high conservation priority ecological assets into the planning and implementation of prescribed activities. This includes values such as fire sensitive species and communities, species or communities with restricted spatial extent, small mammals, and other non-listed high priority species.

2d. Alternative fuel management techniques to landscape burning will be used to reduce fire risk where necessary to balance ecological values and community safety.

To reduce bushfire risk while balancing ecological values and community safety, the Directorate will implement alternative fuel management techniques in place of established landscape burning where appropriate. These methods will be particularly important in ecologically sensitive areas where prescribed burning may not be preferred.

The Directorate is committed to investigating, trialling, and developing policies that support the use of alternative fuel management strategies. In vegetation communities dominated by Red Stringybark (*Eucalyptus macrorhyncha*) and other rough-barked species, bark fuels significantly influence overall fuel hazard scores. This often leads to bushfire management zones exceeding target fuel hazard thresholds more frequently than is desirable under current Tolerable Fire Intervals (TFIs).

In other areas, elevated mid-storey vegetation—including shrubs, juvenile trees, and mallee/multi-stem forms—can disproportionately contribute to fuel hazard levels. Two examples of alternative techniques include bark candling and the physical removal of shrub growth, both of which show promise for targeted fuel management. These methods can reduce fuel hazards below target thresholds without the need to burn entire areas, and they often provide ecological benefits despite being more labour-intensive than prescribed burning.

Throughout the life of this RFMP, the Directorate will continue to trial and refine policies that guide the use of these alternative techniques. Policy development will consider resource requirements, environmental impacts, and the potential benefits of extending prescribed fire intervals.

2e. An evaluation framework is established in the first 12 months.

An evaluation framework for the performance of the RFMP will be developed within the first 12 months of the review being finalised.

A detailed proposed monitoring and evaluation framework commitment is outlined in Monitoring and Evaluation section of this document.

Objective 3:

To update and review strategic assets which aid in the suppression of bushfire on Directorate-managed land. Investigation of strategies to manage residual risk for movement of fire across the NSW/ACT border.

Strategic Assets

There are three classifications for strategic assets within the Directorate-managed land incorporated into this Regional Fire Management Plan. These include:

1. Strategic Road & Fire Trail Network,
2. Helipads for Remote Area Firefighting Team access, and
3. Strategic Green fuel breaks.

3a. Strategic Road & Fire Trail Network

Strategic Roding Review

The roding review is currently underway and centres on improving both the usability and resilience of the existing road network. This will be accomplished through:

- i. Assessing practical vehicle capacities: evaluate the medium-term vehicle capacities across the network, considering landform constraints as well as ecological and heritage considerations.
- ii. Developing maintenance guidelines: produce updated manuals and guidelines to standardise road maintenance practices and determine appropriate maintenance intervals.
- iii. Addressing road vulnerabilities: identify areas of trafficability and road surface weakness within the network and establish best-practice strategies for remediation.
- iv. Improving contract management: improve contract management processes by incorporating performance auditing against updated manuals for accountability and efficiency.
- v. Building staff capability: invest in the capacity and expertise of staff to support effective implementation and long-term maintenance efforts.

Following this road review the Directorate may further evaluate which roads are strategically important for fire response and implementation of suppression tactics, noting this further evaluation stage exceeds the scope currently for this project.

Fire access management

Fire access includes a range of vehicular tracks, roads, and walking tracks. These features reduce the response time to fires and make it safer to undertake bushfire suppression operations. Together, this increases the range of weather conditions under which fire containment and suppression is likely to succeed. In addition, vehicular tracks, roads, and walking tracks provide potential control lines for containing bushfires and for conducting prescribed burns. All fire access management works planned, approved, and undertaken as part of the annual BOP include associated works plans, maps, and risk assessments. The current strategic fire trail network is illustrated in Figure 16.

Fire access management is divided into four areas: maintenance, upgrade, construction, and vegetation removal.

Maintenance

Fire trail maintenance often involves the use of earth-moving machinery (graders and bulldozers) to maintain the condition of the running surface, earth-moving machinery (backhoe or small excavator) to maintain culverts and machinery, hand tools and herbicides to maintain roadside vegetation clearances. Fire access trail standards are outlined in the ACT Bushfire Management Standards (2023).¹¹

Scheduling of fire access management activities will vary depending on factors such as frequency of use, surface type (natural, sealed, grass), gradient and weather. A formalised roading maintenance schedule will be developed throughout the next five-year period of the RFMP. In addition to these works, the Directorate continues to undertake repair activities funded through insurance claims following major storm and fire events of 2019/20 onwards.

Upgrade and Construction

Construction and upgrades of the strategic fire trail network and other infrastructure will be undertaken to meet operational needs. These are identified through asset audits and monitoring. Areas of focus over the next five years include: Gudgenby Creek Crossing, Blue Range Road, and Clear Range.

11 ACT Bushfire Management Standards URL: [https://esa.act.gov.au/sites/default/files/2023-12/ACT Bushfire Management Standards.pdf](https://esa.act.gov.au/sites/default/files/2023-12/ACT_Bushfire_Management_Standards.pdf)

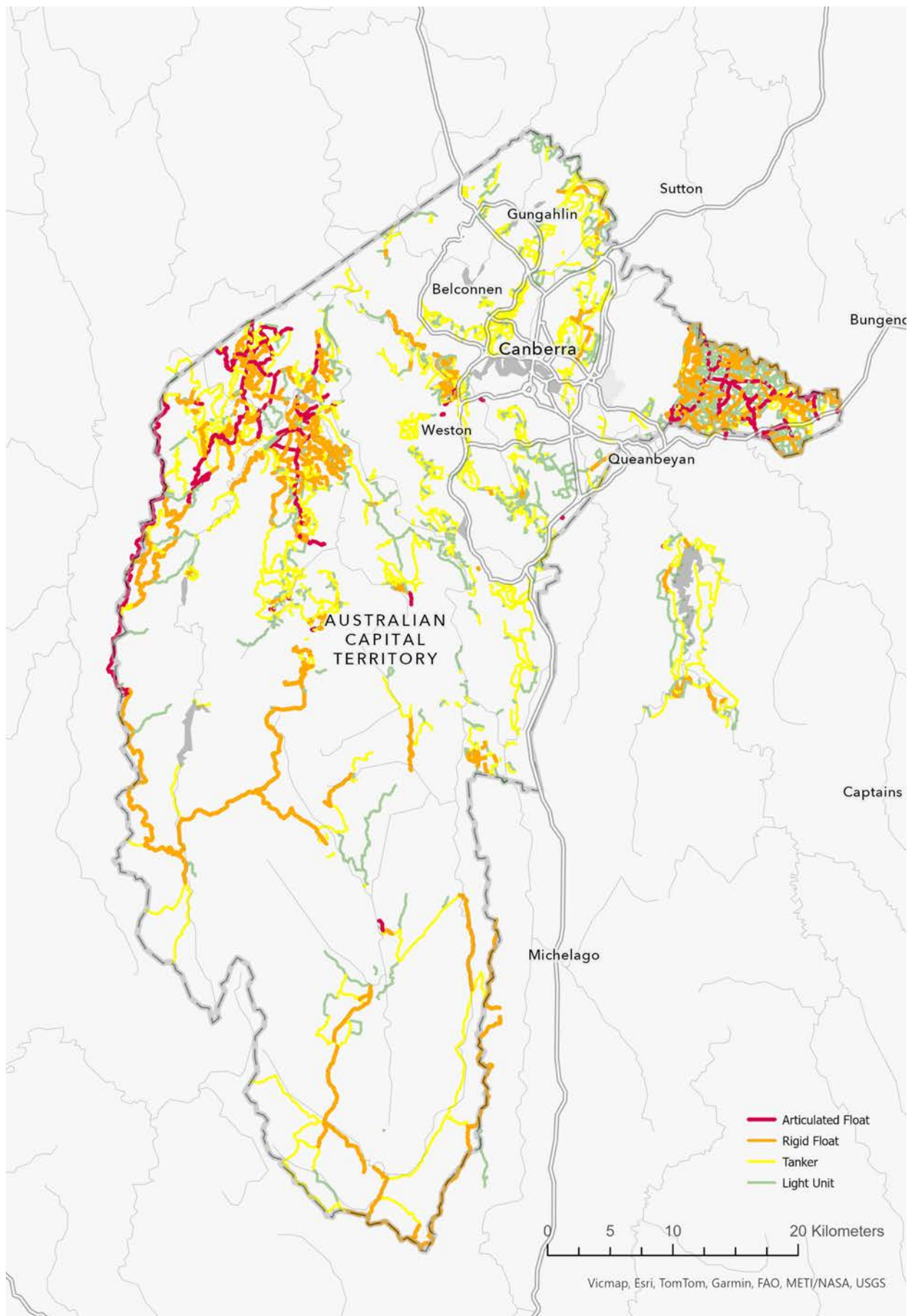


Figure 16: Current strategic fire trail network.

3b. Helipads

Helipads are constructed features where helicopters may safely land and are in addition to naturally occurring landing sites that are located throughout the ACT. Helipads provide closer access for firefighters to remote area fires, and locations from which helicopters may operate during bushfire suppression and prescribed burning operations.

Helipads are classified according to the size of helicopter that may safely land on them. The helipads identified on the map will be maintained at their current standard. Maintenance works may involve the use of earth-moving machinery (if the helipad is adjacent to an access road) and/or hand and power tool work to remove regenerating shrubs and trim selected trees. Helipads will be inspected annually to determine those requiring maintenance works. Identified helipads will be maintained at the following standards:

Table 1: Required helipad standards

Helipad standards	Light	Medium	Heavy
Example helicopter	Jet Ranger, Squirrel	BELL 412	Sky crane
Rotor Diameter	<12m	<15m	<21m
Overall length	<13m	<18m	<21m
Lift off area	7m x 7m	10m x 10m	15m x 15m
Final approach and take off cleared of vegetation	14m	20m	35m
Final approach area reduced of vegetation	25m	35m	50m
Approach & departure angles	40 degrees in one or more direction		

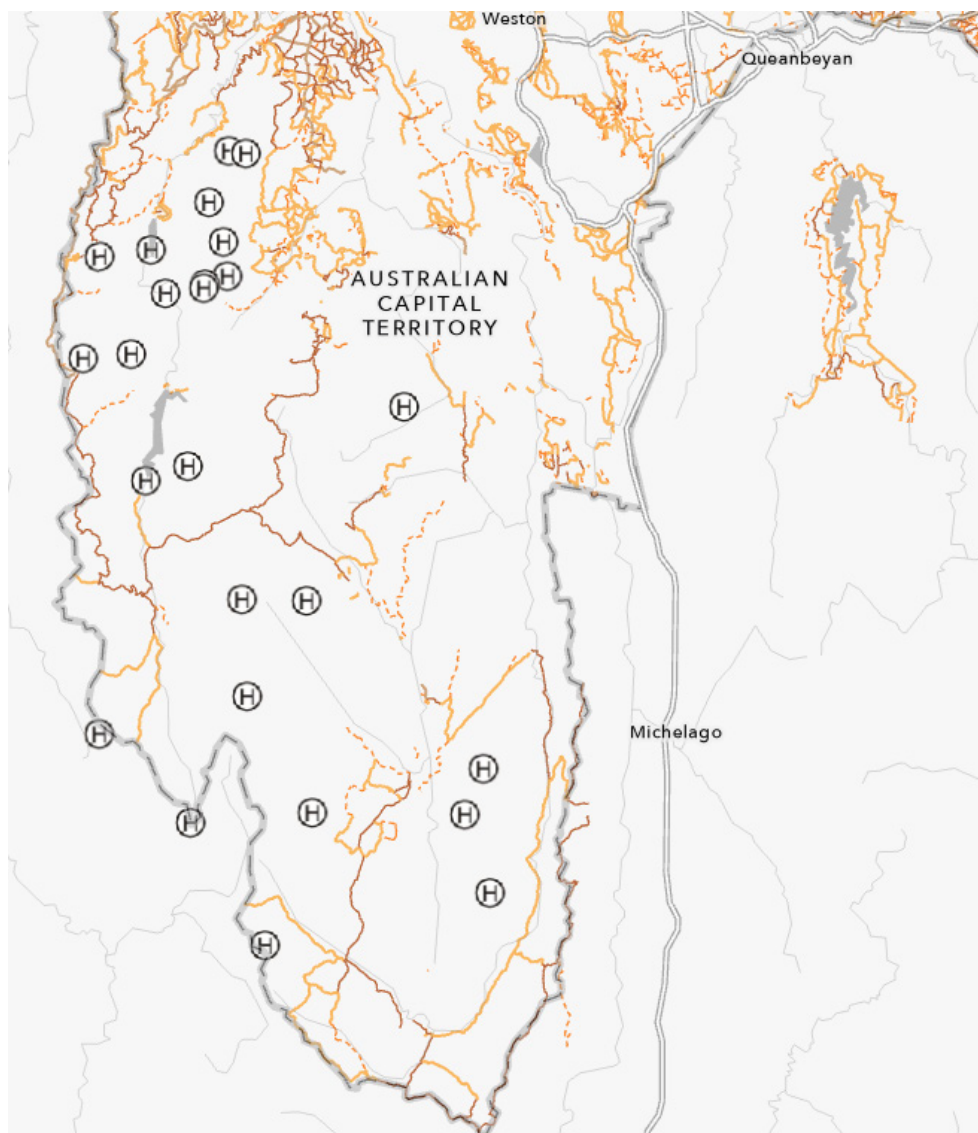


Figure 17: Remote Area Firefighting Helipad locations.

3c. Strategic Green Fuel breaks for defensible space

Strategic green fuel breaks are usually located between assets and surrounding vegetated areas or bushland. Strategic green fuel breaks typically consist of an area of variable width next to an existing track or road where fuels are maintained at lower levels. In certain fire weather conditions¹², the lower fuel levels within these breaks result in reduced fire behaviour. In this way, they provide a defensible space in which fire fighters may work with increased safety and speed to protect assets, usually associated with back-burning activities during fire suppression operations. They also provide an opportunity to ‘break-up’ fire runs, assist with prescribed burning operations, and in high-value catchments can reduce runoff and erosion risk from bushfires¹³. The Directorate has adopted the term Strategic Green Fuel break to differentiate these features from fire breaks, where all vegetation and combustible material is removed back to mineral earth.

¹² Under the Australian Fire Danger Rating System, strategic green fire breaks are effective under Moderate to Extreme Fire weather conditions, however not in Catastrophic level weather conditions.

¹³ Cawson et al. (2020) ‘Runoff and erosion after prescribed burning: Is there a risk?’ p.132

Strategic green fuel breaks were planned in the RFMP 2019-2028 for areas that have often been disturbed in the past, either through land management activity (e.g. pine plantations), existing road and trail construction, or through previous fire-fighting operations. Green fuel breaks are established using a range of techniques, including physical (crew-based manual) or mechanical removal. Fuel breaks are primarily maintained through slashing and with herbicide application being used where appropriate. In general, green fuel break upgrade activities will be restricted to areas with slopes less than 20 degrees. The intention is to remove the near surface, and elevated fuels (shrub layer and lower canopy) whilst keeping the herbaceous surface ground cover and grasses as well as mature canopies in treated areas. Follow-up maintenance treatments on established areas need to be maintained as part of the program.

The feasibility of new and upgrading existing fuel breaks will be subject to assessments and relevant environmental approvals. The assessments will consider the role of fuel breaks in building suppression capability in specific areas, the impacts to the environment, the ongoing operational costs and management arrangements. Sections of strategic green fire breaks that are assessed as appropriate for establishment will be included in the annual Bushfire Operations Plan (BOP) process and are subject to further assessment and individual approved works plans which describe in detail the requirements and operational directions.

Through the remainder of the RFMP 2025-2030, the initial implementation work conducted in the Lower Cotter Catchment (LCC) will be reviewed and assessed. Additional areas of strategic green fire break implementation will be researched and proposed for implementation in the next planning cycle.

Cross Border focus areas for risk reduction

Residual Risk modelling identifies the potential for impacts on properties in border regions of NSW. Modelling as seen in Figure 9 shows ignitions originating in the ACT or burning through the ACT from NSW have a higher potential to impact properties in the locations shown in warmer colours. Areas with greater risk considered include, Yaouk, Shannon's Flat, Smiths' Road, Michelago, Bredbo, Bumbalong, Rob Roy, Wamboin, and Sutton.

The Directorate will collaborate with partner agencies in NSW to address risk in these areas. The updated burn map shown in Figure 10 includes scheduled prescribed burn areas from NSW National Parks and Wildlife Service and NSW Rural Fire Service where burns have been included in those agencies risk plans. The Directorate will support the implementation of these burns due to the multiple benefits including risk reduction, area familiarisation, inter-agency collaboration, growing and maintaining skills and experience of fire fighters. Clear Range has been identified as a key focus area for cross-border bushfire risk reduction, with proposed burns highlighted Figure 18. The Directorate also contributes to the maintenance of trails along the border as these are necessary for the implementation of burns, access for fire suppression, and for land management activities.

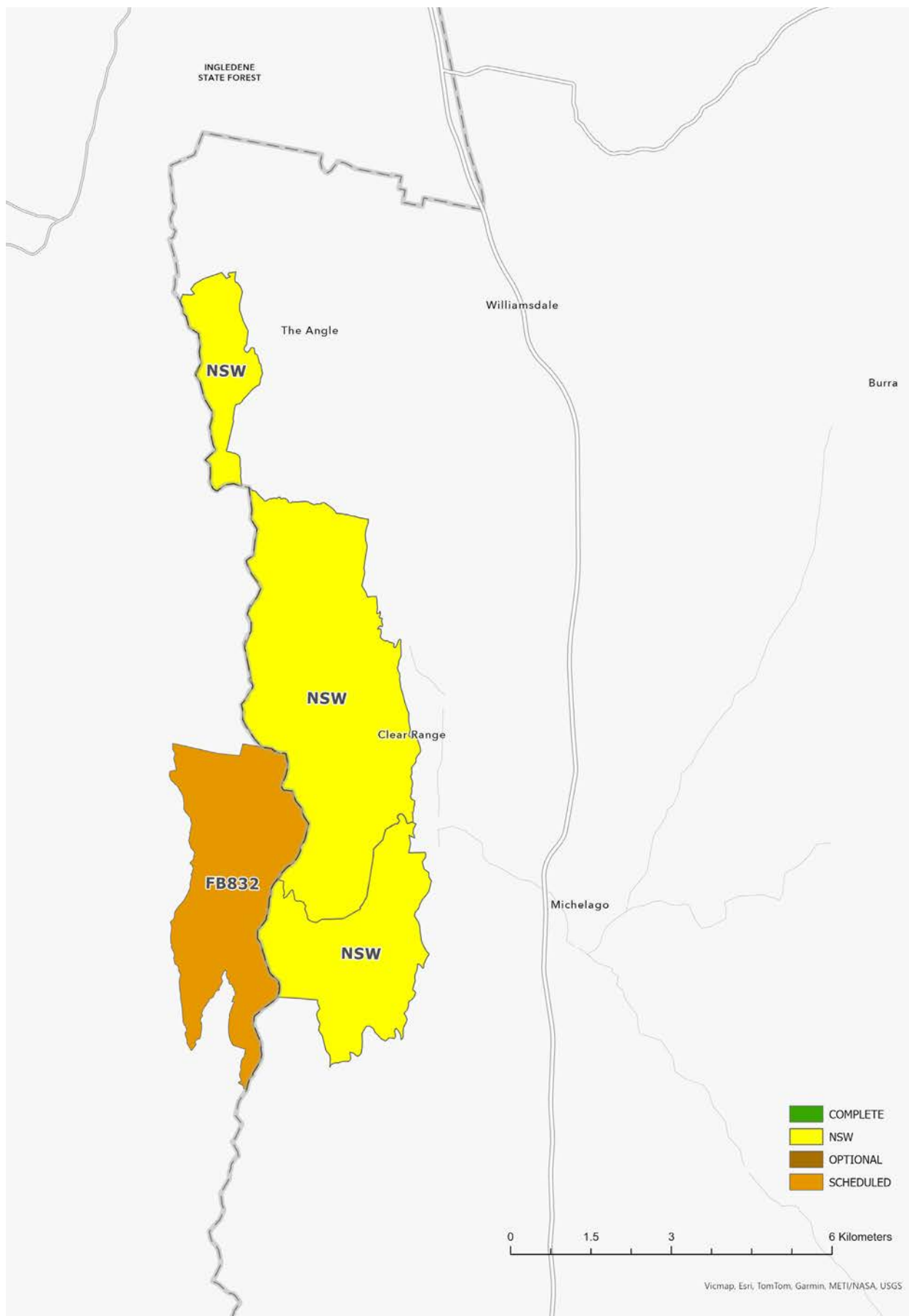


Figure 18: ACT/NSW Cross Border focus area with Snowy Monaro

Objective 4:

Plan for climate adaptation through targeted monitoring and adaptive management trials to mitigate bushfire risk to ecological and cultural values.

Ecological and heritage asset protection measures

With the future climate change outlook predicting increasing fire frequency and fire severity, this update of the RFMP incorporates adaptation strategies with the aim of reducing bushfire risk to key values in the landscape. This initiative supports the Bushfire Risk and Planning and Land Management theme of the Strategic Bushfire Management Plan (SBMP) Version 5, aligning with the success indicator: 'Pre-suppression plans for selected priority assets developed.'

Foundational data such as climate refugia modelling and fire modelling will guide the application of interventions across the Resist–Accept–Direct (RAD) spectrum. These strategies include the planning and trial of bushfire risk mitigation activities to protect identified key values. This could include consideration of treatments within targeted areas of the Orroral Valley fire footprint when supported by fuel monitoring.

Other strategies will be scoped for mitigating bushfire impacts including pre-incident suppression plans and recovery planning for priority ecological values and sites. In the long-term and beyond the scope of this RFMP, significant heritage assets (both Traditional Custodian and European) could be included in this type of analysis.

Table 2: Significant environmental assets to be explored for protection measures.

Value	Location	Potential strategy
Ginini Wetland Complex	Mt Franklin Road	Fuel reduction activities in adjacent woodland areas.
Mature Alpine Ash stands, especially those forecasted to persist with future climate change	Various including Sentry Box Mountain, Bogong Creek,	Monitoring fuels within and adjacent to stands. Explore feasibility to burn within mature stands or in the surrounding dry forest.
Long-unburnt areas in Namadgi National Park	Southern border of the ACT	Fuel reduction activities in adjacent woodland and dry forest areas.
Core habitat for threatened species such as Southern Greater Gliders and Northern Corroboree Frogs.	Various	Investigate options for protection of core habitat for certain upland threatened species.



Figure 19: Alpine Ash Forest on the slopes of Sentry Box Mountain (L) and old growth Snow Gums in long-unburnt woodland on the ACT's southern border (R). Areas such as these represent relatively rare age classes for these communities and are important for long-term conservation of Alpine Ash old growth Snow Gums in the ACT. Photo: EPSDD.

Monitoring Snow Gum woodland and planning for experimental burn plots.

Severe infestations of the Ringbarking Longicorn (*Phoracantha mastersi*) and associated tree decline across the Australian Alps appear to be linked to both climatic variability and localised stand disturbances. The emergence of this phenomenon in the ACT and NSW aligns both spatially and temporally with the distribution of the 2003 bushfires. Anecdotal evidence

suggests that trees which experienced crown scorch—but retained live upper branches that later regenerated—were the first and only individuals infested and killed by *P. mastersi* during its initial outbreak in 2007–08. This pattern indicates that fire may play a significant role in triggering irruptive infestations.



Figure 20: *Phoracantha mastersi* impacts (L) and beetles (R). (Photo: Matt Brookhouse / ANU)

The 2020 bushfire and anticipated future application of planned fire in Namadgi National Park offer several opportunities to examine the interaction between *P. mastersi* infestations and the impact of fire. Recent evidence suggests *P. mastersi* initiate infestations in trees with damaged bark tissues. Bark splits adjoining live cambium may be favoured by female beetles as oviposition sites. Damage to bark tissue associated with desiccation/scorching may, then, offer a location for infestation to commence.

P. mastersi is only known to affect two subspecies of *Eucalyptus pauciflora* in the ACT: *Eucalyptus pauciflora* subsp *debeuzevillei* and *Eucalyptus pauciflora* subsp *niphophilla*. An area on Mt Franklin Road near Snowy Flats has been identified as having a gradient of fire severities, fire history and borer infestation. The CED Office of Nature Conservation (ONC) will continue to work with ANU and the CED Fire Management Unit (FMU) to undertake monitoring and look at the possibility of small-scale experimental fire.

Developing climate change adaptation approaches

The Directorate will monitor climate adaption science and look to incorporate any emerging best-practice research into the RFMP climate adaption strategy.

4. Monitoring and Evaluation

Proposed Monitoring and Evaluation Framework Commitment

The Directorate will develop a fit-for-purpose monitoring and evaluation framework to track progress toward the objectives outlined in the Regional Fire Management Plan (RFMP). This framework will promote transparency, accountability, and continuous improvement in fire management practices.

At its core, the framework will include clearly defined metrics aligned with the RFMP's goals, supported by a robust understanding of the data requirements needed to inform them. A key foundation will be the *Prescribed Burning Performance Measurement Framework*, developed through the AFAC National Burning Project (2018), which outlines twenty-one nationally agreed indicators for evaluating prescribed burning operations.

These indicators cover the following key areas:

- Financial performance,
- Program planning and coordination,
- Burn implementation,
- Fuel management outcomes,
- Residual risk reduction,
- Greenhouse gas abatement,
- Adverse impacts.

To ensure a more comprehensive and locally relevant evaluation, additional ACT-specific ecological indicators will be developed and integrated alongside the national measures. This combined approach will provide a more nuanced understanding of both operational effectiveness and ecological outcomes within the ACT's unique landscape.

To complement the measures in the AFAC Prescribed Burning Performance Measurement Framework, the RFMP will also adopt a 'Right Way Evaluation' approach to support community-led cultural burning. This approach recognises the importance of First Nations knowledge, leadership, and values in fire management. It will guide the development of strength-based metrics that reflect cultural priorities and tell a meaningful story of change—one that benefits and belongs to the community.

Over the life of the RFMP, the Directorate commits to:

- Collecting appropriate data to support the selected metrics, ensuring relevance across ecological, operational, cultural, heritage and community safety dimensions.
- Establishing a clear timeline and allocating resources for the evaluation process, ensuring timely reporting that informs the development of the next RFMP.
- Publishing the evaluation report, making it publicly accessible to promote transparency and stakeholder engagement.

This approach will ensure that the RFMP remains adaptive, evidence-based, and responsive to both ecological needs and community expectations.

Overview of the first five-year period of RFMP (2019 – 2024)

The following is a brief overview of the first five years of the RFMP period with a primary focus on prescribed burning. A case study on the multiple land and fire management treatments used by ACT Parks & Conservation at Narrabundah Hill is provided in Appendix A: Narrabundah Hill Case Study.

Prescribed Burning Program Overview (2019/20 – 2023/24)

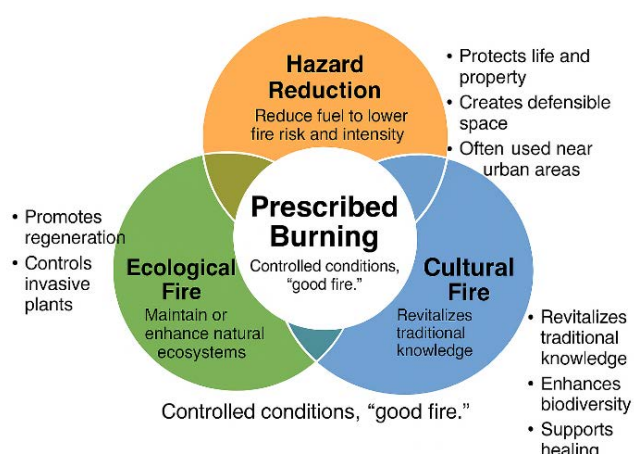
The following tables present a summary of treatment areas included in the prescribed burning program outlined in the Regional Fire Management Plan (RFMP) for the period 2019/20 to 2023/24. The data is categorised by the number of burns conducted, the type of burn, and both the proposed and actual treatment areas.

It is important to note that the RFMP identifies mapped polygons in the landscape as the maximum area available for treatment. However, the treatable area within these polygons is often smaller due to various considerations, including:

- Safe containment options,
- Topography,
- Vegetation type,
- Presence of built and natural assets, and
- Specific burn objectives.

Additionally, burn areas should not be interpreted as uniformly treated zones. Fire behaviour is influenced by factors such as fuel moisture, vegetation structure and continuity, and prevailing weather conditions, resulting in non-uniform fire spread across the landscape. To achieve a broad range of land management objectives, a deliberate degree of patchiness and variation in fire intensity is often sought. This approach supports biodiversity and habitat resilience while still contributing to fuel hazard reduction.

The prescribed burning program is divided into distinct burn types for annual reporting, as each type involves specific planning processes. However, these categories often overlap in practice. For instance, a prescribed burn may primarily aim to reduce fuel hazards, while also delivering ecological benefits—such as controlling invasive species—and protecting culturally significant sites.



Similarly, a burn classified as ecological will focus on achieving ecological outcomes rather than fuel reduction but may still incorporate traditional cultural methods. Cultural fire refers to burns conducted on culturally significant sites or initiated at the request of the Traditional Custodian community as part of caring for Country. These burns may also reduce fuel, support ecosystems or specific species, and play a vital role in maintaining cultural connection to Country. The term 'RFS burn' refers to a specific subclass of prescribed burning, coordinated by the ACT Rural Fire Service on land managed by the Directorate.

Figure 21 highlights the benefits between each of these burn types.

Burn Completion Summary (2019-2024)

Table 3: Burn Completion Summary (2019-2024)

RFMP Year Cycle - Season	Prescribed Burning treatment area (ha)	Number of burns	Delivered Treatment area variation from plan
1 – 2019/20	5289	9	-27%
2 – 2020/21	1707	22	-19%
3 – 2021/22	334	14	-76%
4 – 2022/23	982	20	-24%
5 – 2023/24	3400	24	-9%

Implementation by Burn Type Proposed and Completed (2019-2024)

Table 4: Implementation by Burn Type Proposed and Completed (2019-2024)

RFMP Year Cycle - Season	Burn Type	Proposed Activities	Proposed Ha.	Actual Activities	Actual Ha.	Difference	% var
1 - 2019/20	Prescribed Burn	16	7091	6	5270	1821	27
	Cultural	4	17	1	4	13	
	Ecological	15	179	2	15	164	
	RFS Burn	0	0	0	0	0	
2 - 2020/21	Prescribed Burn	13	1957	10	1561	396	20
	Cultural	3	10	3	10	0	
	Ecological	14	161	9	136	25	
	RFS Burn	0	0	0	0	0	
3 - 2021/22	Prescribed Burn	12	1139.5	4	214	925.5	76
	Cultural	4	16	2	9	7	
	Ecological	18	224.25	7	102	122.25	
	RFS Burn	3	20.5	1	9	11.5	
4 - 2022/23	Prescribed Burn	13	1071	9	858	213	24
	Cultural	4	19	1	6	13	
	Ecological	16	163	9	117	46	
	RFS Burn	5	43.5	1	1	42.5	
5 - 2023/24	Prescribed Burn	15	3498	9	3197	301	9
	Cultural	1	3.5	1	4	-0.5	
	Ecological	18	210	11	169	41	
	RFS Burn	4	40	3	30	10	

5. Implementation Plan

Table 5: Implementation plan for the 2025-2030 RFMP

Objective	2024/5	2025/6	2026/7	2027/8	2028/9
Continue to reduce residual bushfire risk on Directorate-managed land, minimising bushfire spread across the landscape and enhancing community safety.	- Burn areas reviewed and assessed. - Additional border treatments added. - Residual risk model development: vegetation, house loss equation, fire history and weather stream improved. - Residual risk training for team. - Residual risk model incorporates weather ensemble.	- Incomplete burns carried over and scheduled. - Residual risk model run for existing treatments, assessment of any changes; capability built inhouse. - Develop / participate in a residual risk community of practice. - Establish cultural burning relationships and implement Ngunnawal Community led burning. - Support the training of First Nations fire practitioners to Bushfire Firefighter qualification.	- Incomplete burns carried over and scheduled. - Prescribed burning program reporting delivered. - Residual risk model run for existing treatments assessment of any changes; capability built inhouse. - Transition to Spark modelling for residual risk. - Hiring of Technical Officer Indigenous Burning identified position.	- Incomplete burns carried over and scheduled. - Residual risk model run for existing treatments assessment of any changes; capability built inhouse. - Commencement of RFMP (2030-2040) development and planning. - Review cultural burning program and develop strategies for expansion - Explore cultural objectives of next RFMP cycle led by Ngunnawal community.	- Incomplete burns carried over and scheduled. - Residual risk model run for existing treatments assessment of any changes; capability built inhouse. - Consultation with community on RFMP (2030-2040) development. - Develop Ngunnawal community priority cultural burn area mapping for future RFMP implementation. Including review of Aboriginal Fire Management Zone in SBMP.
Promote ecosystem resilience to bushfires by managing for a diversity of vegetation growth stages across the landscape and minimising adverse effects of bushfire mitigation activities on ecological values.	- Ecological assessment of annual BOP activities. - Reporting of growth stages and tolerable fire intervals. - Updating Ecological Guidelines.	- Ecological assessment of annual BOP activities. - Conduct evaluation of prescribed burning program using Prescribed Burning Performance Measurement Framework. - Development of evaluation framework for ecological values including targets and indicators for environmental performance such as TFI status and growth stage diversity.	- Ecological assessment of annual BOP activities. - Conduct evaluation of prescribed burning program using Prescribed Burning Performance Measurement Framework.	- Ecological assessment of annual BOP activities. - Conduct evaluation of prescribed burning program using Prescribed Burning Performance Measurement Framework. - Development of next RFMP ecological objectives responsive to lessons learnt and assessment of diversity measures.	- Ecological assessment of annual BOP activities. - Conduct evaluation of prescribed burning program using Prescribed Burning Performance Measurement Framework. - Reporting of growth stages and tolerable fire intervals. - Updating of Ecological Guidelines.

5. Implementation Plan

Objective	2024/5	2025/6	2026/7	2027/8	2028/9
To update and review strategic assets which aid in the suppression of bushfire on Directorate-managed land.	- Hiring of Assistant Director for Roding. - Helipad infrastructure maintained and assessed. - Investigation of strategic green fire breaks and residual risk modelling.	- Strategic Roadwork Framework Review developed. - Strategic Roding dataset audited and monitored, SOPs developed to meet framework review. - Helipad infrastructure maintained and assessed. - Trial and project scoping for strategic green firebreaks (for example three locations implemented).	- Initial assessment and implementation of strategic roadwork review - Roding maintenance schedule development. - Helipad infrastructure maintained and assessed. - Assessment of initial study of impact, cost, and implementation of example green firebreaks.	- Actions for next RFMP developed for strategic roadwork framework. - Continued implementation of strategic roadwork review. - Helipad infrastructure maintained and assessed. - Trial of additional green firebreaks based on assessment and review (additional three locations implemented)	- Consultation with community on strategic assets and next RFMP. - Stage 1 of Strategic Roadwork Framework complete. - Business case developed for ongoing funding model (strategic roding) - Assessment and planning of implementation of strategic green fire breaks across the landscape and resourcing estimates.
Investigate strategies to manage residual risk due to movement of bushfire across the NSW/ACT border					
Plan for climate adaptation through targeted monitoring and adaptive management trials to mitigate bushfire risk to ecological and cultural values.	- Identify areas of climate refugia. - Identify areas to conduct climate adaption experiments and re-introduction of fire.	On-ground assessments of fuel within and surrounding key environmental values (Alpine Ash, Ginini Wetland Complex).	- Planning and implementation of Subalpine Woodland borer beetle/fire trials. - Planning and implementation of fuel mitigation activities within/ around key environmental assets.	Planning and implementation of fuel mitigation activities within/ around key environmental assets.	Revisit climate refugia modelling and update with latest climate predictions.

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Appendix A: Narrabundah Hill Case Study

Using diverse land management techniques to reduce fire risk

Executive Summary

The reduction of fuel to reduce fire risk can be conducted through a range of techniques. The following case study explores the range and evolution of treatments for Narrabundah Hill, Australian Capital Territory during the period 2019 to 2024. The purpose of this study is to highlight the adaptive approach used in fire land management, and to advocate for the regular review and adaptation of techniques. This ensures the best outcomes for fuel reduction whilst balancing ecological considerations. This case study recommends the utilisation of the full suite of land management techniques, not only the primacy of prescribed burning.

Introduction

Fire-prone landscapes along the ACT's urban interface are managed using a suite of fuel reduction techniques. This case study examines the application of these methods at Narrabundah Hill over the first five years of the current Regional Fire Management Plan (RFMP), highlighting outcomes and demonstrating the value of a multifaceted approach by ACT Parks and Conservation's Fire Management Unit.

While prescribed burning remains a key tool, a range of complementary techniques—such as slashing, grazing, physical removal, and chemical treatment—are essential for a holistic, cost-effective, and conservation-focused fire management strategy. This case study aims to raise awareness of these integrated methods in a local context.

It includes a brief fire history of Narrabundah Hill, a timeline of treatments, and a discussion of outcomes, including resource requirements and lessons learned. Presented as part of the RFMP's five-year review, this case study contributes to ongoing monitoring and evaluation and supports future strategic planning. It also helps build community understanding of best-practice fire management in the ACT.

Narrabundah Hill

Context of Narrabundah Hill

Narrabundah Hill is directly west of the suburb Duffy in Canberra's urban South-East and is designated bushfire-prone land. This area is classified as Strategic Firefighting Advantage Zone (SFAZ) according to the ACT Bushfire Management Standards, with areas of Outer and Inner Asset Protection Zones bordering Eucumbene Drive.

Fire History

During the January 2003 Canberra bushfires, the suburb of Duffy on the eastern side of Narrabundah Hill lost 221 houses shown in Figure 22 to Figure 24. This was the hardest hit suburb from the bushfire, and a further eleven homes were damaged. The conditions experienced in Duffy included 'fierce winds uprooted trees, downed powerlines, blew in house windows, stripped tiles from roofs and even embedded pot plants in house roofs ahead of the fire front.' (Canberra Bushfires Fieldwork, 2003)



Figure 22: Narrabundah Hill burnt bordering Duffy with significant house loss Jan 2003 (Source: National Library of Australia Greg Power)

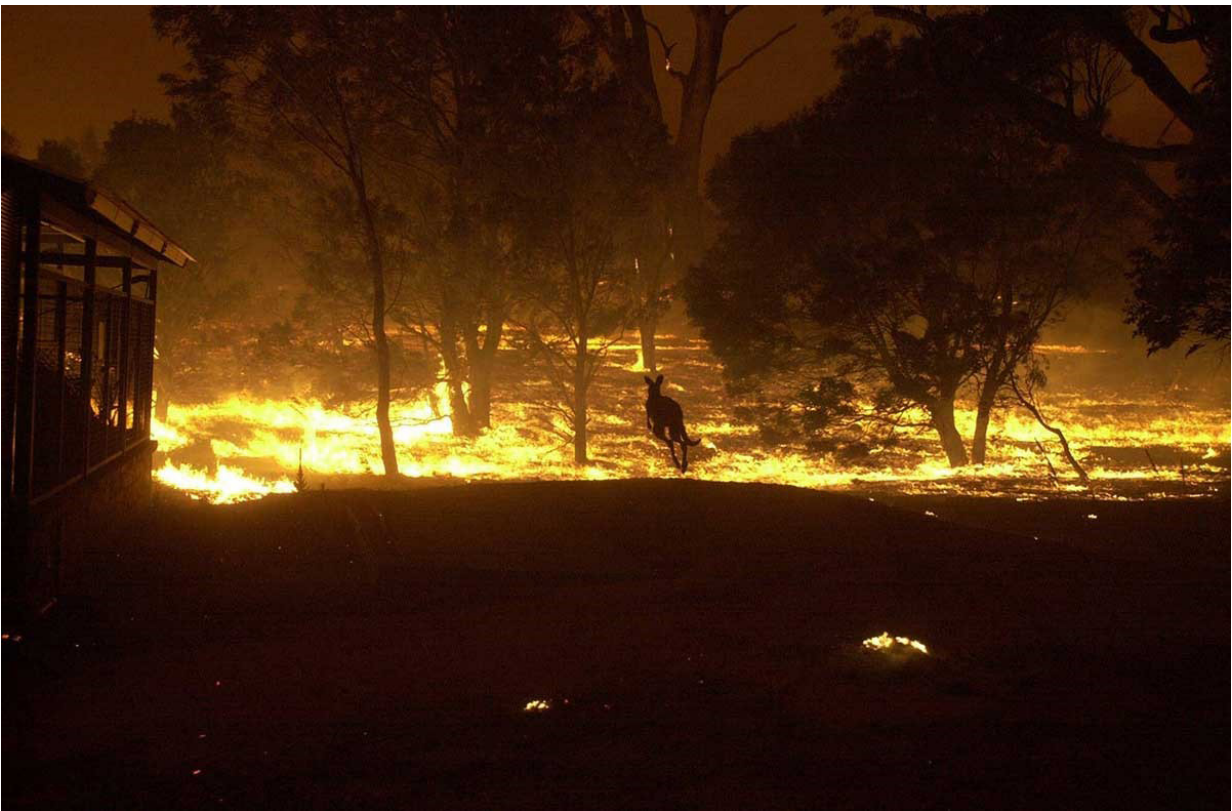


Figure 23: Kangaroo flees the fire front Jan 2003 (Source: National Museum Australia)



Figure 24: Homes destroyed in Duffy looking towards Eucumbene Drive (Source: National Museum Australia)

After the 2003 wildfires, a series of four prescribed burns were implemented in October 2003 on Narrabundah Hill. There have also been prescribed burns of smaller areas in October 2012 (FB540), November 2016 (AFB001) and adjacent to Rivers RFS in 2021-2024 (shown in Figure 25).

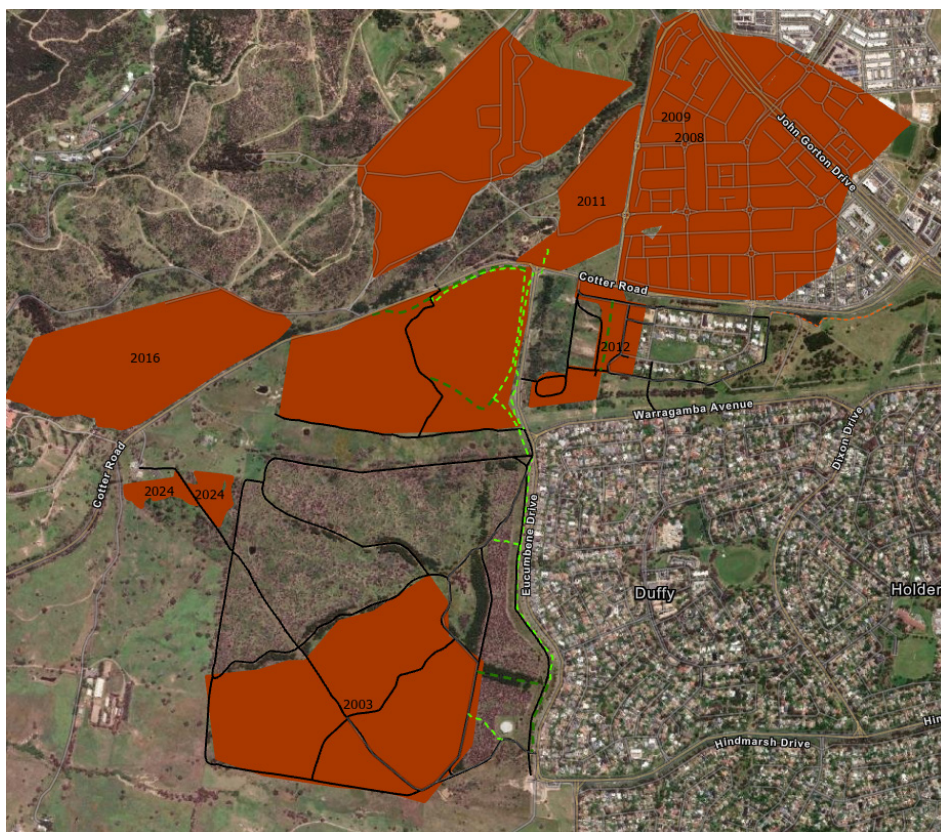


Figure 25: Fire History of Narrabundah Hill Prescribed Burning indicated by brown polygons.

Fuel management Techniques.

ACT Parks & Conservation uses a range of methods to manage bushfire fuels through reduction, removal, or conversion to less flammable fuel types. The following diagram shows the range of treatment activities that are used by the PCS Fire Management Unit to manage and reduce fuel loading according to the ACT Bushfire Standards. Often prescribed burning gets the most attention from the public, but the reality is, all the techniques below are used in coordination with each other to reduce fuels.

Timeline of Fuel Management Techniques (2019-2024)

The following table outlines the evolution of treatment types being utilized to manage the fuel loading of Narrabundah Hill from 2019 to 2024, as well as forecasting planned activities in the Bushfire Operations Plan for the 2024/25 season. A full itemised list of Bushfire Operations Plan jobs from 2019-2025 including description of treatment, area, estimated cost and duration of work is listed in Case Study Appendix.

Table 6: Narrabundah Hill treatments from 2019 - 2024

Treatment Type	2019/20	2020/21	2021/22	2022/23	2023/24	Going forward 2024/25
Prescribed Burning	x	x	FB889 (rolled over)	FB889 (rolled over)	FB889	FRB002
Physical Removal	x	x	FP1179 (rolled over)	FP1179	FP1179b FB1217	FP1179c FP1217
Slashing	FS418 FS909	FS418 FS909	FS418 FS909	FS418 FS909	FS418 FS909	FS418 FS909
Grazing	FG089 FG161	FG089 FG161	FG089 FG161	FG089 FG161	FG089 FG161	FG089 FG161
Chemical	x	x	x	x	x	FC211
Access Vegetation	x	x	x	x	AV314 (rolled over)	AV314
Access Maintenance	x	x	x	AM696	x	AM945

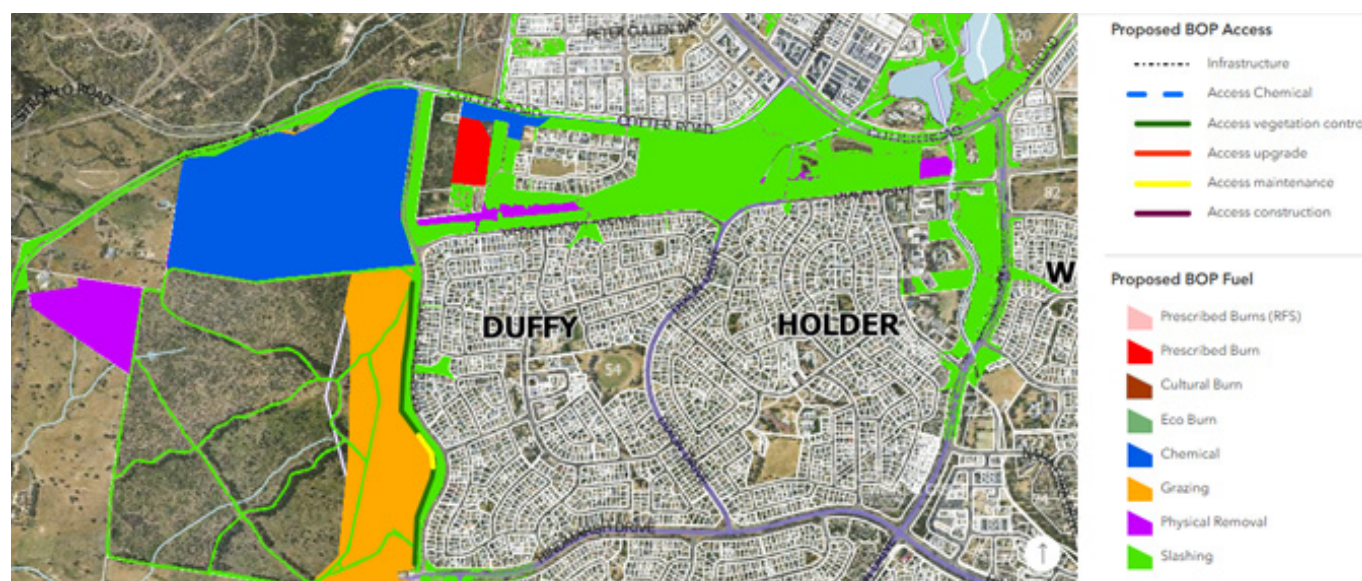


Figure 26: Map of treatments planned for 2024/2025 BOP.

Outcomes of techniques

Physical Removal



Figure 27: FP1179b Before / After – significant amount of elevated and near surface fuel reduction.



Figure 28: FP1179c Before / After - significant amount of elevated and near surface fuel reduction.

Access Maintenance



Figure 29: AM696 Before / After – large ruts removed from road, drainage redirected, regraded.

Grazing

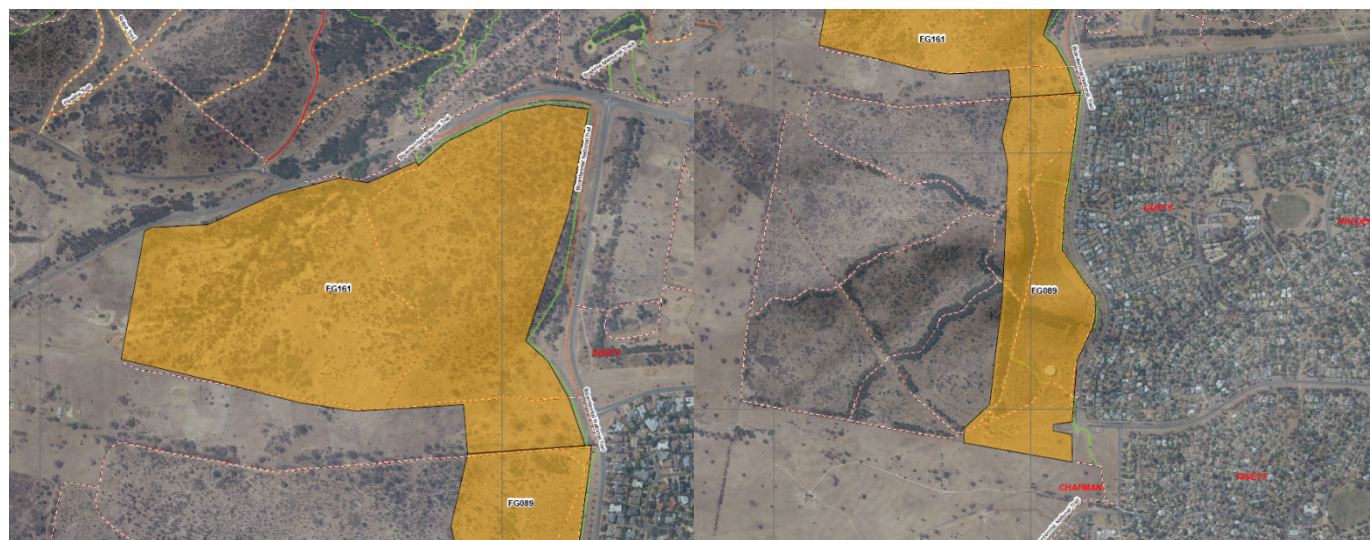


Figure 30: FG089 Annual Grazing coverage and FG161 Annual Grazing coverage.

Grazing Audits 2019/2020

FG089 – Post treatment Grass Fuel Hazard Score at 2.4. Grass height 4cm with 60% coverage. This represents the required standard as outlined in the ACT Bushfire Management Standards.

FG161 – Post treatment Grass Fuel Hazard Score at 2.4. Grass height 3cm with 80% coverage. This represents the required standard as outlined in the ACT Bushfire Management Standards.

Discussion

The range of fuel management techniques evolved from 2019 to 2024, through an adaptive management approach. It was identified through the annual fuel hazard assessment monitoring program that the key driver for the fuel hazard for Narrabundah Hill was the significant amount of elevated fuel. In this stratum, the most prevalent species was large tightly packed areas of mono-cultured wattle. Although prescribed burning was a treatment used on this area previously, it is known that the density and prevalence of wattle would only increase with prescribed burning.

Through fuel hazard assessments from the Fire Management Unit, it was found that the fuel loads within the treated area were discontinuous. If prescribed burning were used in this context; fire severity would be highly variable, there could be potential ecological impacts that outweighed the level of risk reduction, and there was a minimal longevity of the treatment due to the known grow back rates of wattle.

For this reason, the Fire Management Unit used physical removal to specifically target the elevated fuels and treat the dominant wattle stands. Although more costly and time consuming, this resulted in a reduced elevated fuel hazard score. Follow up treatments were then scheduled by the Fire Management Unit with chemical treatment through spraying and physical removal to reduce the impact of weeds and invasive species, particularly blackberry.

As a result of the significant reduction of elevated fuels, and the subsequent chemical treatment of invasive weeds, Narrabundah Hill has over a four-year period returned to a condition where grazing licenses can be renewed to manage the surface fuels to within ACT Bushfire Management Standards.

Conclusion

- The ongoing fuel hazard monitoring and the adaption of the full range of fuel management techniques is necessary to make long lasting land management decisions that can create sustainable fuel reduction solutions.
- Narrabundah Hill is an example of the numerous techniques used by the Fire Management Unit to reduce the fire risk in a fire-prone landscape.
- An adaptive management approach was used to determine the best treatment options to effectively target vegetation to be reduced.
- Prescribed burning is a useful tool in land management but should be used in conjunction with other land management techniques to produce the best outcomes.

Case Study References

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Accessed:12/3/25

Case Study Appendix

SEASON	BOP ID	Treatment	Description	Area	Estimated Cost	Days
19/20	FG089	Grazing	Graze eastern side of Narrabundah Hill to maintain grass fire hazard < 35	45 ha	Not listed	2
19/20	FS909	Slashing	Where possible, slash along internal management trails on Narrabundah Hill as mapped to maintain grass fuel hazard < 50 3-6m wide	16 ha	Not listed	4
19/20	FS418	Slashing	Undertake slashing relevant to fire management in the suburb of Duffy as mapped to maintain grass < 200mm	50 ha	Not listed	2
19/20	FG161	Grazing	Undertake grazing at the intersection of Cotter Road and Eucumbene Drive to maintain grass fuel hazard < 50.	55 ha	Not listed	2
20/21	FG089	Grazing	Graze eastern side of Narrabundah Hill to maintain grass fire hazard <35.	42 ha	Not listed	2
20/21	FS909	Slashing	Where possible, slash along internal management trails on Narrabundah Hill as mapped to maintain grass fuel hazard < 50 3-6m wide	16 ha	Not listed	3
20/21	FP1152	Physical Removal	Remove wattle, woody weeds, and regrowth to improve IAPZ	4.5 ha	\$10,000	183
20/21	FS418	Slashing	Undertake slashing relevant to fire management in the suburb of Duffy as mapped to maintain grass < 200mm.	50 ha	Not listed	2
20/21	FG161	Grazing	Undertake grazing at the intersection of Cotter Rd and Eucumbene Drive to maintain grass fuel hazard < 50	47 ha	Not listed	2
21/22	FB889	Prescribed Burn	Undertake a prescribed burn adjacent to Rivers RFS Station to reduce OFH ≤High	11 ha	Not listed	5
21/22	FG089	Grazing	Graze Eastern side of Narrabundah Hill to maintain grass fire hazard < 35	42 ha	Not listed	2
21/22	FP1179	Physical Removal	Use tritter to Reduce elevated fuels, remove woody weeds. BOP Crew to lift mature trees	20 h	\$30,000	105
21/22	FP1182	Physical Removal	Thin and lift elevated fuels to OAPZ standard	10.5ha	Not listed	155
21/22	FS909	Slashing	Where possible, slash along internal management trails on Narrabundah Hill as mapped to maintain grass fuel hazard < 50 3-6m wide	12 ha	Not listed	Not listed
21/22	FS418	Slashing	Undertake slashing relevant to fire management in the suburb of Duffy as mapped to maintain grass < 200mm	54 ha	Not listed	Not listed
21/22	FG161	Grazing	Undertake grazing at the intersection of Cotter Rd and Eucumbene Drive to maintain grass fuel hazard < 50.	47 ha	Not listed	2
22/23	FG089	Grazing	Graze eastern side of Narrabundah Hill to maintain grass fire hazard <35	42 ha	Not listed	
22/23	FP1179	Physical Removal	Use tritter to reduce elevated fuels, remove woody weeds. BOP crew to lift mature trees	20 ha	\$30,000	105
22/23	FS909	Slashing	Where possible, slash along internal management trails on Narrabundah Hill as mapped to maintain grass fuel hazard < 50 3-6m wide	12 ha	Not listed	1

SEASON	BOP ID	Treatment	Description	Area	Estimated Cost	Days
22/23	FB889	Prescribed Burn	Undertake a prescribed burn adjacent to Rivers RFS to reduce OFH < High	11 ha	Not listed	5
22/23	AM696	Access Management	Maintain road pavement of Narrabundah Hill trails	11 ha	Not listed	3
22/23	FS418	Slashing	Undertake slashing relevant to fire management in the suburb of Duffy as mapped to maintain grass < 200mm	54 ha	Not listed	2
22/23	FG161	Grazing	Undertake grazing at the intersection of Cotter Road and Eucumbene Drive to maintain grass fuel hazard < 50	47 ha	Not listed	Not listed
23/24	FG089	Grazing	Graze eastern side of Narrabundah Hill to maintain grass fire hazard < 35	42 ha	Not listed	Not listed
23/24	FG161	Grazing	Undertake grazing at the intersection of Cotter Road and Eucumbene Drive to maintain grass fuel hazard < 50	47ha	Not listed	Not listed
23/24	FP1179b	Physical Removal	Use tritter to reduce elevated fuels, remove woody weeds. BOP crew to lift mature trees	2 ha	\$30000	105
23/24	FS909	Slashing	Where possible, slash along internal management trails on Narrabundah Hill as mapped to maintain grass fuel hazard < 50 3-6m wide.	12ha	Not listed	1
23/24	FS418	Slashing	Undertake slashing relevant to fire management in the suburb of Duffy as mapped to maintain grass <200mm.	54 ha	Not listed	2
23/24	FP1217	Physical Removal	Remove woody weeds, thin and lift to improve slasher access	26 ha	Not listed	205
23/24	FB889	Prescribed Burn	Undertake a prescribed burn adjacent to Rivers RFS Station to reduce OFH < H	11 ha	Not listed	7
23/24	AM945	Access Management	Maintain drainage structures and pavement of trails as mapped	0.5 ha	Not listed	7
23/24	AV314	Access Vegetation	BOP crew to prune vegetation in line with current standard	1.3 ha	Not listed	15

2024-2025 BOP

BOP ID	Treatment	Description	Area	Estimated Cost	Days
AM945	Access Management	Repair rutting in trails	0.15 km	Not listed	5
AV314	Access Vegetation	Vegetation obstructs tanker trail, not to required standards	1.24 km	Not listed	13
FC211	Chemical	Follow up broadacre chemical treatment from FP1179	47.17 ha	\$20,000	5
FG089	Grazing	Graze Eastern side of Narrabundah Hill to maintain grass fire hazard < 35	42 ha	Not listed	Not listed
FG161	Grazing	Undertake grazing at the intersection of Cotter Road and Eucumbene Drive to maintain grass fuel hazard <50	47 ha	Not listed	Not listed
FS909	Slashing	Where possible, slash along internal management trails on Narrabundah Hill as mapped to maintain grass fuel hazard < 50 3-6m wide.	12 ha	Not listed	3
FS418	Slashing	Undertake slashing relevant to fire management in the suburb of Duffy as mapped to maintain grass <200mm	54 ha	Not listed	1
FP1179c	Physical Removal	Mechanical removal of elevated fuels to reduce OFH < Very High	10.62 ha	\$50,000	101
FP1217	Physical Removal	Remove woody weeds, thin and lift to improve slasher access	26 ha	Not listed	202
FRB002	Prescribed Burn	Undertake a prescribed burn adjacent to Rivers RFS Station to reduce OFH < H (previous FB889) Prerequisite works of FP1179c to reduce fuel load	11 ha	Not listed	5

Related Technical Documents

2020 Orroral Valley Bushfire Reconstruction

Pheonix Rapid Fire Simulation Documentation

Fire History Update Report

ACT Phoenix Fuel / Vegetation Review

Fire in the Environment – future release from Office of Nature Conservation



