



# **BUSHFIRE RISK MANAGEMENT PLAN 2025-2027**

**Local Emergency Management  
Arrangements**

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# 1. Administration

## Endorsement Bushfire Risk Management Plan

The *Bushfire Risk Management Plan* has been developed in accordance with Section 41 of the *Emergency Management Act 2005*, and forms part of the *Local Emergency Management Arrangements* for the Shire of Dardanup and as such should not be read in isolation. The approval of the *Bushfire Risk Management Plan* by Shire of Dardanup Council signifies support of the plan's implementation and commitment to working with risk owners to manage bushfire risk. Approval does not signify acceptance of responsibility for risk, treatments or outcomes on land that is not managed by the Shire of Dardanup.

The development, implementation and revision of this plan is the responsibility of the Shire of Dardanup in consultation with the Office of Bushfire Risk Management, the Local Emergency Management Committee, and other key stakeholders in accordance with the *Emergency Management Act 2005*.

This Bushfire Risk Management Plan has been endorsed on **insert date when endorsement provided** by the Office of Bushfire Risk Management as consistent with the standards detailed in the *Guidelines for Preparing a Bushfire Risk Management Plan 2023*.

This plan is supported by the Office of Bushfire Risk Management, the Shire of Dardanup Local Emergency Management Committee, and endorsed by Council.

**Shire President**

Shire of Dardanup

Chair Local Emergency Management Committee

Date:

**Chief Executive Officer**

Shire of Dardanup

Date:

*Disclaimer: This plan has been produced by the Shire of Dardanup in good faith and is derived from sources believed to be reliable and accurate at the time of publication. Nevertheless, the reliability and accuracy of the information cannot be guaranteed and the Shire of Dardanup expressly disclaims liability for any act or omission done or not done in reliance on the information and for any consequences, whether direct or indirect arising from such omission.*

## Document Availability

A copy of this plan is available for free at:

- Shire of Dardanup Administration Offices  
(during normal business hours)
  - Council Drive, Eaton
  - Little Street, Dardanup
- Online
  - [www.dardanup.wa.gov.au](http://www.dardanup.wa.gov.au)

## Publication information

Wherever a third party holds copyright in material presented in this publication, the copyright remains with that party. Their permission may be required to use the material.

## Amendment Record

Suggestions and comments from the community and stakeholders can help improve the plan.

Feedback can include:

- What you do and don't like about the plan
- Unclear or incorrect expression
- Out of date information or practices
- Inadequacies
- Errors, omissions or suggested improvements

To forward feedback copy the relevant section, mark the proposed changes and forward it to:

Chief Executive Officer  
Shire of Dardanup  
PO Box 7016  
Eaton WA 6232

or email to:

[records@dardanup.wa.gov.au](mailto:records@dardanup.wa.gov.au)

## History of Amendments

No	Amendment date	Details	Amended by
1	July 2019	2019-2024 Final	Ben Anderson Bushfire Risk Planning Coordinator
2	September 2024	Update to Office of Bush Fire Risk Management template	Melissa Howard Bushfire Risk Management Coordinator
3	November 2024	Review of content and alignment of template with Local Emergency Management Arrangements	Stephen Loiterton Coordinator Health, Emergency and Ranger Services

## 2. Introduction

### Background

This Bushfire Risk Management Plan provides contextual information to inform a structured approach to identifying, assessing, prioritising, monitoring and treating bushfire risk. This plan has been prepared by Shire of Dardanup, encompasses all land within the local government area, and has been written on behalf of all stakeholders within that area. The plan is informed by consultation and communication with land and asset managers that has occurred throughout its history to ensure an informed and collaborative approach to managing bushfire risk.

This plan has been prepared with due consideration of the requirements stated in the *Guidelines for Preparing a Bushfire Risk Management Plan* (the Guidelines) published by the Office of Bushfire Risk Management including the principles described in *ISO 31000:2018 Risk Management*.

The Bush Fire Risk planning program supports local governments to reduce the risk posed by bushfire. This plan will contribute to achieving the objective of the program by:

- Guiding and coordinating a cross-tenure, multi-stakeholder approach to bushfire risk management planning.
- Facilitating the effective use of the financial and physical resources available for bushfire risk management activities.
- Supporting integration between risk owners, strategic objectives and tactical outcomes.
- Documenting processes used to monitor and review the implementation of treatments to ensure risk is managed to an acceptable level.

### Aim

The aim of this plan is to reduce the risk of bushfires in the Shire of Dardanup.

### Objectives

The objectives of this plan are to:

- Document the Shire of Dardanup bushfire risk management
- Identify sources of bushfire risk, and options for reducing the risk
- Provide basis for monitoring and reviewing implementation of treatments to ensure treatment plans are adaptable and risk is managed to an acceptable level
- Provide evidence in support of applications for Mitigation Activity Fund grants

# Legislation, policy and standards

This plan was prepared in compliance with the following legislation, policy and standards.

Appendix A provides a more comprehensive list of other legislative, policy or standards documentation that may have provided guidance used in the development of this plan, or on implementing provisions of the plan.

## Emergency Management Act 2005

An Act to provide for prompt and coordinated organisation of emergency management and the management of COVID-19 in the State, and for related purposes. Section 13 of the Act established the State Emergency Management Committee, and Section 18 of the act provides the State Emergency Management Committee authority to prepare State emergency management plans. Of relevance is the State Hazard Plan – Fire.

Section 41 of the Act requires local governments to ensure that arrangements for emergency management in the local government's district are prepared. This plan is one component of the Shire of Dardanup's *Local Emergency Management Arrangements*.

## State Hazard Plan – Fire

The *State Hazard Plan – Fire* places an obligation on local governments to develop and maintain a *Bushfire Risk Management Plan* where the local government area is identified as having a high or extreme bushfire risk. The Shire of Dardanup is identified in the *State Hazard Plan – Fire* as requiring a *Bushfire Risk Management Plan*<sup>1</sup>.

## Bushfire Risk Management Planning Handbook

The handbook provides strategic advice on the management of bushfire risk. The handbook lists a range of legislation, policy and standards that are applicable in the development and implementation of this *Bush Fire Risk Management Plan*<sup>2</sup>.

## Guidelines for Preparing a Bushfire Risk Management Plan

This *Bushfire Risk Management Plan* was prepared using the guidance provided in these Guidelines.

## AS/NZS ISO 31000:2018 Risk Management: Principles and Guidelines

This standard provides guidance applied throughout this plan concerning the risk management approach used.

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<sup>1</sup> Appendix G to SEMC. (2024). *State Hazard Plan – Fire*. [Online]  
<https://www.wa.gov.au/government/publications/state-hazard-plan-fire>

<sup>2</sup> Appendix 1 to Department of Fire and Emergency Services. (2024). *Bushfire Risk Management Planning Handbook*.



## 3. Risk Management Process

The bushfire risk management planning process is a cycle guiding the understanding of the context and assessing and treating risks (see Figure 1). Each of these steps is informed by communication and consultation and supported by monitoring and review. The three products produced during the process are the *Bush Fire Risk Management Plan*, *Asset Risk Register* and *Treatment Schedule*.

Further details on the guiding principles and process for the development of this plan can be found in Chapter 2 of the Guidelines.

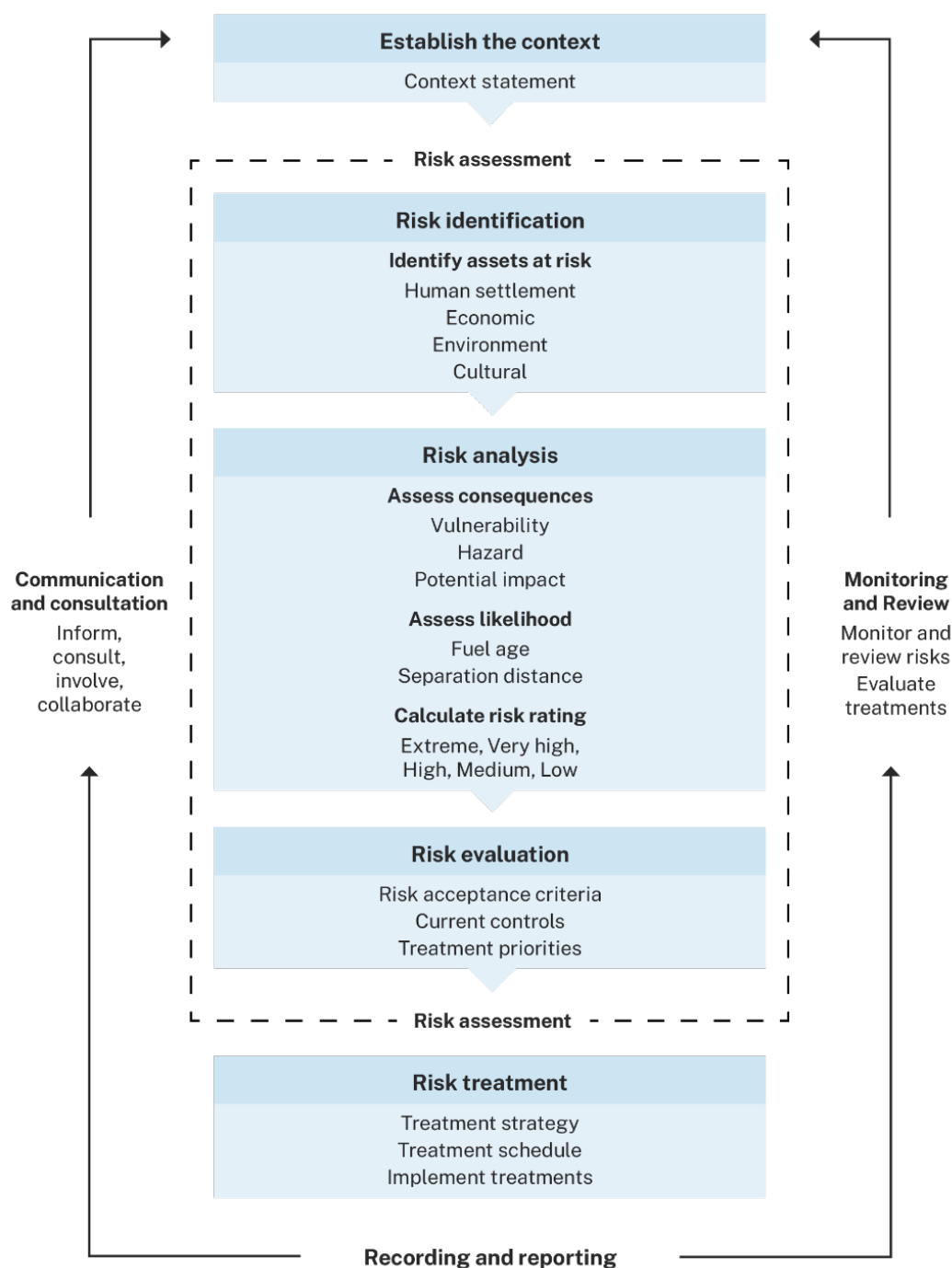


Figure 1: The Bushfire Risk Management planning process

# Roles and responsibilities

The roles and responsibilities of the key stakeholders involved in the development of this plan are outlined in Table 1.

*Table 1 – Roles and responsibilities in the Bushfire Risk Management planning process*

Stakeholder	Roles and Responsibilities
Local Government	<p>Custodian of the plan.</p> <p>Coordinate the development and ongoing review of the plan.</p> <p>Undertake bushfire risk assessment of local government area.</p> <p>Submit the draft plan to Office of Bushfire Risk Management for review and endorsement.</p> <p>Develop and implement a Treatment Schedule for local government managed land.</p> <p>Encourage risk owners to treat identified risks.</p> <p>Maintain and manage Bush Fire Brigades to assist in bushfire mitigation.</p>
Department of Fire and Emergency Services	<p>Contribute to the development and implementation of the plan.</p> <p>Facilitate involvement of state and federal government agencies in the planning process.</p> <p>Undertake treatments on Unmanaged Reserves and Unallocated Crown Land within gazetted town sites.</p> <p>By agreement, implement treatment strategies for other land managers.</p> <p>Endorse Bushfire Risk Management Plans as consist with the Guidelines, Bushfire Risk Management Program and dynamic risk environment.</p> <p>Administer the Mitigation Activity Fund Grants Program.</p>
Department of Biodiversity, Conservation and Attractions	<p>Contribute to the development of the Bushfire Risk Management Plan.</p> <p>Implement their treatment program on Department of Biodiversity, Conservation and Attractions managed land.</p> <p>Provide advice on environmental assets and appropriate treatment strategies for their protection.</p>
Department of Planning, Lands and Heritage	<p>Identify managed assets.</p> <p>Provide advice on management of Aboriginal Cultural Heritage.</p>
Other State and Commonwealth Government agencies and public utilities	<p>Identify managed assets.</p> <p>Provide advice on current risk treatment programs.</p> <p>Contribute to the development of Bushfire Risk Management Plans.</p> <p>Undertake treatments on lands they manage</p>

# Bushfire Risk Management System

This *Bushfire Risk Management Plan* is supported by the *Bushfire Risk Management System*. The system is an online tool developed by the Department of Fire and Emergency Services to support local governments and stakeholders to effectively manage and mitigate bushfire risks within their jurisdictions. The system provides a structured framework for identifying assets at risk, assessing the level of risk, and mitigation actions to reduce the risks.

The system will map assets that are vulnerable to bushfire. Such assets may range from residential and commercial properties to critical infrastructure, cultural heritage sites, and community resources. The mapping feature facilitates an understanding of asset proximity to bushfire-prone areas, enabling a more strategic approach to risk management. It allows the Shire to prioritise mitigations to protect assets based on the assessed risk level, community importance, and economic, social, or environmental value.

The system also tracks and records mitigation treatments implemented to reduce the risk and impact of bushfires on assets. These treatments are determined through application of this plan and ensure proactive measures are in place to mitigate identified risks.

Key bushfire mitigation treatments that are recorded in the *Bushfire Risk Management System* include:

- **Prescribed Burning**  
The burning of vegetation in a controlled and scheduled manner in designated areas to lower fuel loads and minimise the spread of severe fires.
- **Mechanical Fuel Reduction**  
The physical removal or thinning of vegetation using machinery, especially in areas where prescribed burning is not feasible.
- **Chemical Application**  
The use of chemicals to suppress or eliminate flammable vegetation, particularly in firebreaks or around key infrastructure.
- **Firebreaks**  
The establishment of vegetation-free strips to act as barriers that inhibit the spread of fire from one area into another.
- **Fire Access Tracks**  
The establishment and maintenance of tracks through bushland to ensure emergency services can access reserves in an incident or for prescribed burning.
- **Gates and Fencing**  
The installation of gates and fences to limit unauthorised access to bushfire-prone areas, such as bushland reserves.

## Communication and consultation

Communication and consultation are fundamental to the development, implementation and review of the *Bushfire Risk Management Plan*. A *Communication Plan* describing communication with relevant stakeholders at each stage of the bushfire risk management planning process is at Appendix C.

## 4. Establishing the context

This section describes how the characteristics of the Shire of Dardanup that influence bushfire risk and its management. As such, information shown here only relates to the identification, assessment or treatment of bushfire risk. For a more detailed picture of the Shire's emergency management context refer to the *Local Emergency Management Arrangements*.

### Strategic and corporate framework

The Shire of Dardanup's vision is to be a healthy, self-sufficient, and sustainable community—connected, inclusive, and proud of its culture and innovation. This vision is supported by the Shire's [Strategic Community Plan 2020-2030](#), which is built around five performance areas: Community, Environment, Amenity, Prosperity, and Leadership.

Bushfire risk management aligns strongly with these goals, particularly in ensuring a safe and resilient community and protecting environmental and economic values. The Bushfire Risk Management (BRM) Plan integrates into the Shire's broader emergency management and planning frameworks to help achieve these outcomes.

#### Integration with Emergency Management Structures

The BRM Plan is a support plan to the Shire's *Local Emergency Management Arrangements* and is overseen by the Local Emergency Management Committee (LEMC) and the Bush Fire Advisory Committee (BFAC). These committees provide strategic oversight and community input, ensuring the plan is locally relevant and coordinated across agencies.

The Shire's Coordinator Health, Emergency and Ranger Services leads the development of the plan, while the Bushfire Risk Management Coordinator is responsible for implementing treatment strategies—particularly those funded under the Mitigation Activity Fund Grant Program (MAFGP).

#### Responsibilities and Accountabilities

Overall responsibility for this Plan rests with the Chief Executive Officer, who ensures its ongoing sustainability and effectiveness. The Chief Executive Officer may delegate responsibility for elements of the plan to relevant officers. While the Shire does not hold responsibility for managing all bushfire risks across all land tenures, it plays a central role in facilitating coordinated risk management and supporting the broader community's safety.

#### Link to Land Use Planning

Bushfire risk management is also integrated into land use planning through the Shire's Local Planning Strategy and Town Planning Scheme, which reflect State Planning Policy 3.7: Planning in Bushfire Prone Areas and other relevant guidance. These frameworks require bushfire hazard level assessments, BAL assessments, and Bushfire Management Plans where applicable, supporting long-term risk reduction through development controls.

By embedding bushfire risk management into both emergency management structures and land use planning, the Shire of Dardanup is building a more resilient and safer community in line with its long-term vision.

## Community demographics and values

There were 14,686 persons in the Shire of Dardanup during the 2021 census. Aboriginal or Torres Strait Islanders account for only 3% of the population. The median age of Shire of Dardanup residents was 40. The sex ratio was 0.4% in favour of females.<sup>3</sup>

Australia was the most common country of birth for Shire residents, with England, New Zealand, South Africa, Philippines and India being the next most common birth countries. Other than English the most common spoken languages at home were Afrikaans, Mandarin, Tagalog, Malay and Italian.<sup>3</sup>

There are 4,080 families residing in the Shire, with an average of 1.9 children each. Single parent families accounted for 14% of the population. Couples without children represented 42% of residents.<sup>3</sup>

There were 6048 private dwellings, with an average of 2.6 persons per household. There were on average 2.1 vehicles per dwelling.<sup>3</sup>

Arthritis, Asthma, Cancer, Dementia and Diabetes were the most common long-term health conditions afflicting Shire of Dardanup residents. With 6.8% having two long-term health conditions, and 3.1% having two or more.<sup>3</sup> People with such common long-term health conditions are more likely to have less resilience to bushfires, or the flow on consequence, such as service disruptions.

The Shire of Dardanup community demonstrates a range of understanding and attitudes toward bushfire risk, largely influenced by residents' backgrounds and experiences. Long-term rural residents and farmers typically have a strong awareness of fire behaviour and preparedness, while newer residents, particularly in areas like West Dardanup and Ferguson Valley, where large farms have been subdivided into semi-rural properties, often have less familiarity with bushfire risks and responsibilities. Local Fire Control Officers often have to provide more advice and guidance to these residents to ensure they meet compliance with the [Shire of Dardanup Fire Prevention Order](#).

Community support for mitigation activities is generally positive, especially when communication is clear and early. However, planned burns can attract complaints due to concerns about smoke, safety, and perceived ecological impact. As a result, there is often a stronger preference for mechanical treatments such as slashing, mulching, and selective clearing, especially in residential or high-use areas.

Despite some reservations around certain methods, there is a growing awareness of the need for proactive mitigation. Local initiatives such as the Bushfire Ready Group in Wellington Mills are helping to foster greater community engagement, preparedness, and resilience. These community-led efforts, combined with ongoing education and transparent planning, are key to strengthening local support for bushfire risk management across the Shire.

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<sup>3</sup> Australian Bureau of Statistics. (2021). Dardanup: 2021 census all persons quickstats. [online] <https://abs.gov.au/census/find-census-data/quickstats/2021/LGA52660>

## Cultural heritage

The Shire of Dardanup is rich in both Aboriginal and European history. The name 'Dardanup' is derived from that used by the original Aboriginal inhabitants, meaning low lying ground by the water. The Noongar Nation is acknowledged as the traditional custodians of the land. In caring for the land the Noongar people burned country as they moved through to promote growth and attract game.

There are eight places listed in the *Aboriginal Cultural Heritage Register* that are within or adjacent to the Shire of Dardanup<sup>4</sup>. They are listed in Table 2. None of the sites are identified as being a restricted place or have identified cultural sensitivities.

*Table 2: Aboriginal Heritage Register sites in Dardanup*

Reference	Place
4875	A place with artifacts/scatter (intersection of Boyanup-Picton Rd and Bunbury Outer Ring Road)
4880	A place with artifacts/scatter (intersection of Boyanup-Picton Rd and Bunbury Outer Ring Road)
16713	Collie River Waugal. A place of creation/dreaming narrative and water source.
19795	Preston River. A place of creation/dreaming narrative.
19796	Ferguson River. A place of creation/dreaming narrative.
31463	A place with artifacts/scatter <i>Lot 302 Giumelli Rd (N of Paradise River)</i>
38797	Vindictive Drain. A place of creation/dreaming narrative. (watercourse from Taverner Rd to Hynes Rd). <i>Reserve R36868. Lot 5761.</i>
40579	At the end of Chaimberlain Grove. The site is simply referred to as "Testing1". <i>Reserve R47537 (lots 444 &amp; 2001), Forrest Hwy verge, and a number of residents between Greenough Pl and Chamberlain Gr.</i>

The Shire of Dardanup has a working relationship with the cultural custodians, and elders in our area from both the Keipa Boodja Aboriginal Corporation<sup>5</sup> and the Gnaala Karla Booja Aboriginal Corporation<sup>6</sup>.

European settlement in Dardanup began with Thomas Little who farmed cattle and grew grain, eventually becoming a wine producer<sup>7</sup>. As a staunch Catholic, Thomas donated land for the construction of a church. Built in the 1850s, the Church of Immaculate Conception was the first Catholic Church built outside the metropolitan area. This has since been rededicated, becoming Thomas Little Hall.

<sup>4</sup> <https://espatial.dplh.wa.gov.au/ACHIS/index.html?viewer=ACHIS>

<sup>5</sup> <https://www.keipaboodja.org.au/>

<sup>6</sup> <https://gkb.org.au/>

<sup>7</sup> See <https://dardanupheritagecollective.org.au/stories-of-people/thomas-little/>

There are 60 places that are identified by the Heritage Council of Western Australia<sup>8</sup> of which four are listed on the *State Heritage Register*, namely:

- St Mary's Anglican Church, Dardanup
- Thomas little memorial Hall
- Former Dardanup State School (now Don Hewison Centre)
- Wellington Dam

## Land use and tenure

The Shire of Dardanup is a medium-sized local government based in the South West of Western Australia, 185km south of Perth and covering 528 km<sup>2</sup>.

The district is bordered by the Shire of Harvey to the north, Shire of Collie to the North East, Shire of Donnybrook-Balingup to the South East, Shire of Capel to the South West, and with the City of Bunbury to the West (see Figure 2). The Shire, being located in the South West Region of Western Australia, is part of the Bunbury Wellington sub-region.

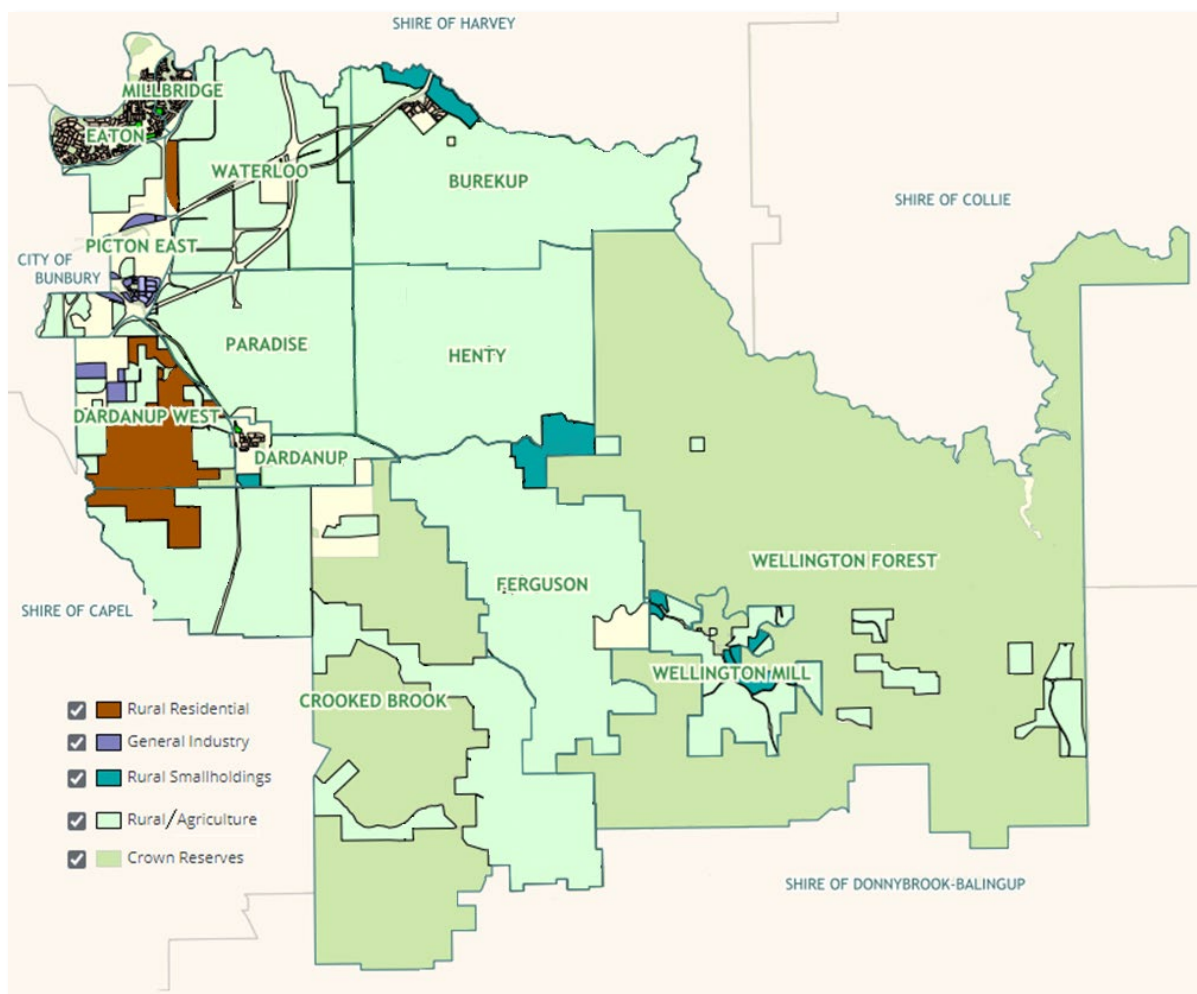


Figure 2: Map of the Shire of Dardanup

<sup>8</sup> <https://inherit.dplh.wa.gov.au/Public/Search/Results?newSearch=True&lgaContains=Dardanup>

Within the Shire there are the four main townships of Eaton, Millbridge, Dardanup and Burekup. Rural residential locations of Crooked Brook, Dardanup West, Henty, Waterloo and Wellington Mill make up the remainder of the Shire.

Half of land in the Shire of Dardanup is privately owned, and is used for horticulture, grazing (primarily for beef cattle) and rural living. Crown reserved account for 45% of the Shire. The remainder is a complex mosaic of land tenures with crown land and private land occurring closely, this means that fires often impact on multiple tenures and move through various land uses. It is also noted that the Shire has limited powers and responsibility to enforce compliance on land not under its control, in particular State Government tenured land.

*Table 3: Summary of land management within the Shire of Dardanup*

<b>Land Manager</b>	<b>Local Government Area (%)</b>
Private	52.4
Department of Biodiversity, Conservation and Attractions	44.8
Local Government	0.7
Main Roads	0.4
Water Corporation	0.4
Forrest Product Commission	0.3
South West Development Commission	0.3
Department of Planning, Lands and Heritage	0.2
Other agencies	0.5
Total	100

### Shared Responsibility

A significant portion of the Shire of Dardanup is designated as Bushfire Prone under [the Map of Bushfire Prone Areas](#), which highlights land across Western Australia that may be at risk of bushfire. In these areas, land use plays a critical role in shaping bushfire risk. For residential and commercial landholders, specific safety requirements apply, such as the need to complete a Bushfire Attack Level (BAL) assessment and prepare a Bushfire Management Plan. These requirements ensure buildings are designed and constructed to withstand bushfire conditions, thereby improving safety and resilience.

Various land uses within the Shire contribute differently to bushfire risk. Forestry and conservation areas, such as Wellington Forest and Crooked Brook Forest, contain large areas of native vegetation and plantations that can accumulate heavy fuel loads. The Department of Biodiversity, Conservation and Attractions addresses this through its [Fire Management Strategy](#), with prescribed burning being a key mitigation tool in these landscapes. The Departments current burn program is available [online](#).

The Department of Fire and Emergency Services also plays a vital role in bushfire mitigation, especially on unmanaged crown land (UCL) and unmanaged reserves (UMR), where it conducts treatments and maintains data on fuel age and fire history. Industrial land uses, including facilities



that store dangerous goods, carry elevated bushfire risks due to the potential for hazardous material incidents. DFES manages the Fire and Emergency Services Emergency Response Guide (FES-ERG), which supports safe emergency response to such sites. In the Shire of Dardanup, FES-ERG-registered sites include Wespine Industries, Wren Oil, Hexton, Preston Chipping, and Laminex.

### **Vulnerable Infrastructure**

Key infrastructure in the Shire of Dardanup, including the Forrest Highway, South Western Highway, and Wandinman Highway, plays a crucial role in transportation, emergency access, and the regional economy. Due to their proximity to dense vegetation, these highways are highly vulnerable to bushfire risks. A bushfire-induced closure of these roads would disrupt the movement of goods and people, severely impacting industries such as forestry, agriculture, and manufacturing. Road closures would also lead to significant economic losses, limit access to essential services, and hinder tourism, underscoring the importance of effective bushfire risk management to protect these vital routes.

Several other critical sites in the Shire are also exposed to bushfire risks, which could have major impacts on the community. Bethanie Fields, a retirement village, and Eaton Community College both are situated near natural wetland reserves. The dense, flammable vegetation surrounding these areas heightens fire risk, and any disruption could affect the local community.

The Dardanup Pony Club, designated as the Shire's Animal Welfare Evacuation site, is particularly vulnerable to bushfire due to its location next to bushland. If key infrastructure such as stalls, the clubhouse, and the cross-country course were damaged or destroyed, it would significantly affect the local equestrian community and compromise the site's ability to support animal evacuation efforts during emergencies.

Additionally, the popular boardwalks along the Collie River are at risk. Damage to these recreational areas would disrupt community access and impact local tourism, leading to economic losses for businesses reliant on these attractions.

These risks emphasize the need for strong bushfire preparedness and mitigation strategies to safeguard both the safety of the community and the resilience of critical infrastructure.

## Economic activities and industry

In 2023 the Bunbury Geopraphe Region, of which the Shire of Dardanup is a part, was estimated to have received 834,000 domestic and international visitors, staying for a total of 2,982,000 nights<sup>9</sup>. Visitors are at greater risk during bushfires given their unfamiliarity with the environs and local risk profile, and, in the case of international visitors, potential language difficulties in conveying risk during a bushfire emergency.

A number of events are held each year with the largest being the annual Bull and Barrel Festival and the Eaton Foreshore Festival. A wide range of other music, cultural and sporting events are held at other times of the year and all bring visitors into the area.

Data from the last census indicated that in the Shire of Dardanup 63% of the population was in the labour force, with 56% in full-time and 33% in part-time employment. Industries in which the community were employed include hospitals, primary education, supermarket/grocery stores, alumina production, iron ore mining.<sup>10</sup>

One of the largest integrated softwood milling and processing plants in Australia is located in the Shire of Dardanup, Wespine Industries, employing 238 staff and generating a total revenue of \$130.8 million. If impacted by fire, a disruption to Wespine's operations could have substantial economic consequences at a regional, and potentially even state-wide, level.

The Shire is also home to other major industrial facilities including Wren Oil and Hexion. Both industries play a role in the region's economy by supporting local jobs and contributing to the broader industrial and manufacturing sectors.

The Shire of Dardanup is home to a variety of plantations, primarily focused on timber and agricultural products. This industry plays a key role in the local economy by providing employment opportunities in areas such as forestry, processing, and management. It also supports a network of local businesses, including transport companies that facilitate the movement of raw materials and finished products via the Bunbury Port.

The Forest Industry Federation of WA and DFES have developed [Guidelines for Plantation Fire Protection](#) to manage fire risk and maintain operational safety.

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<sup>9</sup> Tourism Western Australia. (2023). *The Bunbury Geopraphe Region: Overnight visitor factsheet 2023*. [online] <https://www.tourism.wa.gov.au/Publications%20Library/Markets%20and%20research/2023/RDC%20and%20sub-region%20factsheets/Sub%20Region%20Visitor%20Factsheet%202023%20-%20BunGeo.pdf>

<sup>10</sup> Australian Bureau of Statistics. (2021). Dardanup: 2021 census all persons quickstats. [online] <https://abs.gov.au/census/find-census-data/quickstats/2021/LGA52660>

## **Topography and landscape features**

The eastern portion of the Shire of Dardanup is shaped by the Darling Scarp, a prominent landform running north to south along the Darling Fault. Elevations range from 330m at Mount Lennard to 120m at Dardanup Conservation Park, then descend westward to about 60m where the Scarp merges with the Swan Coastal Plain. The Ferguson River is the Shire's main watercourse, flowing from south-east to north-west before joining the Preston River near Picton. Its undulating topography, with slopes of 10–30% in the eastern reaches, significantly limits vehicle access and poses challenges for bushfire suppression. Crooked Brook and Henty Brook also feature steep eastern slopes with similar limitations for emergency access and firefighting.

The underlying geology of the Shire is divided into two systems described by the Department of Primary Industries and Regional Development (1996): the Lowden and Goodwood Valley Systems. The Lowden Valley features dissected terrain with valleys mostly 40–180m deep, exposing fresh rock, moderate to steep slopes, and a mix of loamy earths, gravels, and alluvial sands. In contrast, the Goodwood Valley has shallower valleys ranging from 20–50m deep, with side slopes of 3–25% gradients, covered in gravels and sands. These valleys also include alluvial river terraces, swampy depressions, and raised flats, much of which remain covered in forest or bushland.

This complex terrain contributes to bushfire risk by influencing fire behaviour particularly rate of spread and intensity and by limiting access for mitigation and suppression. Steep slopes create localised wind effects, making fires harder to predict and control. They also reduce opportunities for mechanical fuel reduction due to erosion risk. As such, topography is a critical consideration in bushfire planning and response strategies, particularly in areas adjacent to river systems and conservation reserves.

## **Climate and weather**

Both weather and climate have a significant impact on bushfire risk, promoting the growth of fuel and then the drying of the fuel as well as the chances of fire ignition. Once a fire has started the weather will have significant influence over bushfire behaviour.

The Shire of Dardanup climate is described as Mediterranean, with distinct wet and dry seasons. Rainfall ranges between 800 and 1,250mm across the Shire, while the evaporation range is 300mm to 1,400mm. Winter rainfall comes predominately from rain-bearing, low-pressure systems moving in an easterly direction with an average annual rainfall of around 912mm (based on 83-year data records). Summers are very dry, with December to February receiving a monthly average of less than 16mm of rain.

Rainfall in the Shire has decreased by 10–14% compared to long-term averages, with the most significant drop seen over the past decade. While pastures may not be heavily impacted, the decline poses challenges for water harvesting and the plantation industry. Drier soils also contribute to increased fire intensity and spread, heightening bushfire risk.

The fire season runs from October to May (and peaks between December and March). The Southern WA fire season is typically from November through to April, with the Shire of Dardanup's gazetted Restricted Burning Periods and Prohibited Burning Periods being:

- |                                 |                                      |
|---------------------------------|--------------------------------------|
| • 1st November to 13th December | Restricted Period (permits required) |
| • 14th December to 15th March   | Prohibited Period                    |
| • 16th March to 15th May        | Restricted Period (permits required) |
| • 16th May to 31st October      | Unrestricted Period                  |

The above dates can be adjusted by the Shire of Dardanup to reflect the seasonal weather conditions.

Climate change is expected to result in higher average temperatures, reduced rainfall and general drying of the landscape. Interestingly climate change will not be uniform across the State and the Bunbury Geopraphe Growth Plan<sup>11</sup> suggests that the impact on the area will be less than the impact on Perth, promoting greater tourism and migration into the area. Both scenarios raise bushfire risk, together they represent a potential for significant risk elevation as climate change continues to impact.

Seasonal conditions have a predictable impact on bushfire hazard mitigation. Prescribed burns are limited to Autumn and Spring due to fire risk or higher precipitation. Excessive rainfall in winter can impact mechanical works if vehicular access is impacted. The Shire is focusing on 3-year planning cycle for mitigation, focusing on current risks. While climate change will impact long term risks it has limited impact on short term mitigation.

## **Vegetation and fuel**

Different types of vegetation significantly influence the behavior of bushfires, which is closely related to the fire triangle consisting of fuel, heat, and oxygen. For example, dense, highly flammable vegetation such as dry grasslands can cause fires to spread rapidly across the ground, generating intense surface fires. In contrast, woodlands or forests with trees like jarrah or pine can contribute to more intense fires due to their high oil content, which can lead to fast-moving crown fires where flames move through the canopy, making them harder to control. On the other hand, low-lying shrubs or wetland vegetation may slow the spread of fire, though if they dry out, they can still contribute to fuel loads.

The arrangement of vegetation, such as whether it's densely packed or more scattered, also affects fire intensity; thicker vegetation tends to trap heat, increasing the likelihood of higher fire severity. Understanding how various types of vegetation affect the fire triangle is crucial in managing and mitigating bushfire risks.

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<sup>11</sup> Bunbury Geopraphe Economic Alliance. (2016). *Bunbury Geopraphe: Regional Growth Plan, Part 1 – strategy* [online] [https://bgea.com.au/wp-content/uploads/sites/35/2020/06/Bunbury-Geopraphe-Growth-Plan\\_PART-1-STRATEGY\\_FINAL\\_20161103.pdf](https://bgea.com.au/wp-content/uploads/sites/35/2020/06/Bunbury-Geopraphe-Growth-Plan_PART-1-STRATEGY_FINAL_20161103.pdf)

## Types

The Shire of Dardanup manages a range of green spaces, including street trees, parks, and bushland reserves. Key bushland areas like Wellington and Crooked Brook Forests are managed by DBCA, while local parks and open spaces serve recreational, environmental, and social purposes. Bushland reserves often protect remnant or ecologically significant vegetation and habitats, contributing to conservation and biodiversity within the Shire.

The major vegetation types within the Shire include Jarrah – Marri - Blackbutt forests, Jarrah, Eucalyptus, Marri woodland, and low woodlands of paper bark & tea tree. Areas of the Shire cleared of forest are predominantly agricultural grassland pastures for farming of cattle and milk production. Agricultural lands are predominantly grazed with minimal to no cropping.

Table 4: Major vegetation types

Vegetation Community	Area (ha)	% of Total Area
Cleared Land	26,479.9	50%
Bare areas, Freshwater Lakes	606.03	1%
Low Woodland or open low woodland (Acacia, Banksia, Melaleuca, Agonis species)	4,435.14	8%
Medium Woodland, Jarrah, Eucalyptis, Marri, Tuart, Banksia & Wandoo	7,417.43	14%
Forrest, Jarrah, Marri, Blackbutt	14,021.33	27%
Total	52,660	100%



Figure 3: Cleared grass land, Ferguson Valley

**Cleared Land (50%)** - Grassland fires spread rapidly, are highly wind-driven, and can threaten rural properties, infrastructure, and escape routes, especially in rural areas like Burekup, Henty and Ferguson Valley. Mitigation focuses on reducing fine fuel loads through slashing, grazing, plus firebreaks to help lower fire intensity and asset protection.





*Figure 4: Paperbark / Tea tree, Watson Reserve, Eaton*

**Low Woodland (8%)** – Low woodlands in the Shire of Dardanup, mainly consisting of paperbark and tea tree species, are prone to intense fires due to their dense understorey, high oil content, and accumulation of fine fuels like leaf litter. These vegetation types are commonly found in low-lying areas along the Collie River and in natural reserves in Eaton, Waterloo and West Dardanup. In summer, fires can ignite and spread quickly in these areas, with the potential to escalate rapidly under the right conditions. During winter, certain areas become waterlogged, hindering the ability to dry out and complicating planned burning. To reduce bushfire risk, mitigation strategies include selective thinning of the understory, fine fuel reduction, and creating hazard separation zones between woodlands and nearby assets for protection and emergency access.



*Figure 5: Paperbarks, Hamilton Road, Eaton*





*Figure 5: Banksia Woodland, Hale St, Eaton*

**Medium Woodland (14%)** – Banksia/ Jarrah woodlands can be found from Eaton to Waterloo due to the low laying topography of the land. can produce moderate to intense fires due to their flammable foliage, woody seed pods, and build-up of fine fuels. Fire can sustain at the surface and occasionally reach the canopy in severe conditions. Mitigation focuses on reducing understory fuels via prescribed burns and maintaining firebreaks while protecting the ecological value of these habitats.



*Figure 6: Controlled burn in a Banksia Woodland - Hale St, Eaton*





*Figure 3: Jarrah in the Wellington Forest, Ferguson*

**Jarrah/ Marri Forests (27%)** – Jarrah and Marri forests are a dominant vegetation type within the Shire and present a significant bushfire risk due to their structure and fuel characteristics. These forests typically support fast-moving surface fires that can become intense, especially during hot, dry, and windy conditions. The open canopy and dense understorey, along with a deep layer of leaf litter and bark fuels, allow fire to move quickly across the landscape.

Spotting is a common behaviour in Marri woodlands, where embers are carried ahead of the fire front, igniting new fires and increasing the difficulty of suppression. Under severe conditions, fire can transition into the canopy, resulting in crown fires that are harder to control and more damaging to the environment and nearby assets.

Mitigation in these forests includes the creation of strategic firebreaks, maintenance of low fuel buffers, and planned burns where conditions and ecological sensitivities allow. These measures aim to reduce fuel loads, limit fire spread, and protect surrounding infrastructure and communities.

The Shire of Dardanup's [Local Biodiversity Strategy Discussion Paper](#) provides detailed maps of native vegetation and wetlands and identifies biodiversity planning precincts for the purposes of conservation in the future.



## Important species and communities

Many of the flora and fauna identified in bushfire-prone areas are highly vulnerable to fire, particularly species in Threatened Ecological Communities or those reliant on **understory** and riparian habitats. The Department of Biodiversity, Conservation and Attractions provides a [database](#) of threatened species and communities for Local and State Government agencies that can be used for informing mitigation strategies.

To reduce bushfire risk while protecting environmental values, mitigation works must be carefully planned and implemented using low-impact methods. These can include targeted removal of fine fuels, mechanical works that avoid habitat disturbance, and strategic prescribed burning. These treatments aim to reduce fire intensity and spread without compromising critical habitats, ensuring that both biodiversity and community safety are preserved. The Shire's Environmental Officer also plays a key role in providing expert advice and is consulted for mitigation activities, ensuring that both environmental and bushfire risks are effectively managed.

## Historical bushfire occurrence

The past history of fires is a source of valuable information on bushfire risk and lessons for the future, however, factors such as climate change, population growth, changing land usage and other factors leads to an argument that past fires are not a reliable indicator of future risk/fires.

Over the past 5 years the cause of ignition for bushfires that have occurred within the Shire was investigated by the Department of Fire and Emergency Services. A summary of this data is presented in table 7.

*Table 7 – Causes of bushfire over previous 5 years*

	19/20	20/21	21/22	22/23	23/24	Total
Unreported	5	4	7	5	10	31
Suspicious/Deliberate	8	6	9	4	3	30
Burn off fires	11	5	4	3	1	24
Power lines (incl. electrical distribution)	9	0	0	4	5	18
Weather (incl. lightning, high winds, natural combustion)	2	0	4	7	3	16
Campfires/bonfires/outdoor cooking	5	2	0	2	0	9
Reignition of previous fire	5	2	0	1	0	8
Undetermined	2	2	0	3	0	7
Cigarette	0	3	1	1	1	6
Vehicles (incl. Farming Equipment)	2	0	1	0	2	5
Hot works (grinding, cutting, drilling)	0	1	1	1	1	4
Other cause	1	0	0	0	2	3
<b>Total</b>	<b>50</b>	<b>25</b>	<b>27</b>	<b>31</b>	<b>28</b>	<b>161</b>

Human error is responsible for the majority of fires. The accidental ignition or accidental spread of a fire account for 30% of all fires. Such causes include: escaping a planned burn, campfires that get out of hand, cigarette butts, vehicles and farm equipment, and hot works. The most common single cause of bushfires are those suspicious/deliberately lit (19% of all fires).

A particularly notable fire was the Wellington Mill fire of 1950. At the time it was the most significant fire to impact the Shire of Dardanup. Many properties were destroyed, roads cut, and livestock lost, drawing fire fighters from neighbouring areas.<sup>12</sup> As this fire occurred over 75 years ago and the original town and mill were destroyed, those who lived and worked in the area are no longer present. However, the memory of the fire does live on in the next generation and taken seriously with the Wellington Mills Volunteer Bushfire Brigade consisting of more than 50% of local population. The brigade actively support the Shire's prescribed burns and are well organised and enthusiastic.



*Figure 7: Wellington Mill in operation before the fire in the early 1900's*

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<sup>12</sup> The West Australian. (15 April 1950). *Valley Devastated by Bushfire*. [Online]  
<https://trove.nla.gov.au/newspaper/article/47841614>

# Current bushfire risk management controls

Local Government Wide Controls for reducing bushfire risk are listed in Appendix B.

## Bush Fire Brigades

The Shire of Dardanup has eight Bush Fire Brigades with approximately 330 registered volunteers. Also located in the Shire is the Eaton Volunteer Fire and Rescue Brigade. Figure 6 shows the locations of the fire brigades within the Shire of Dardanup and their primary area of responsibility.

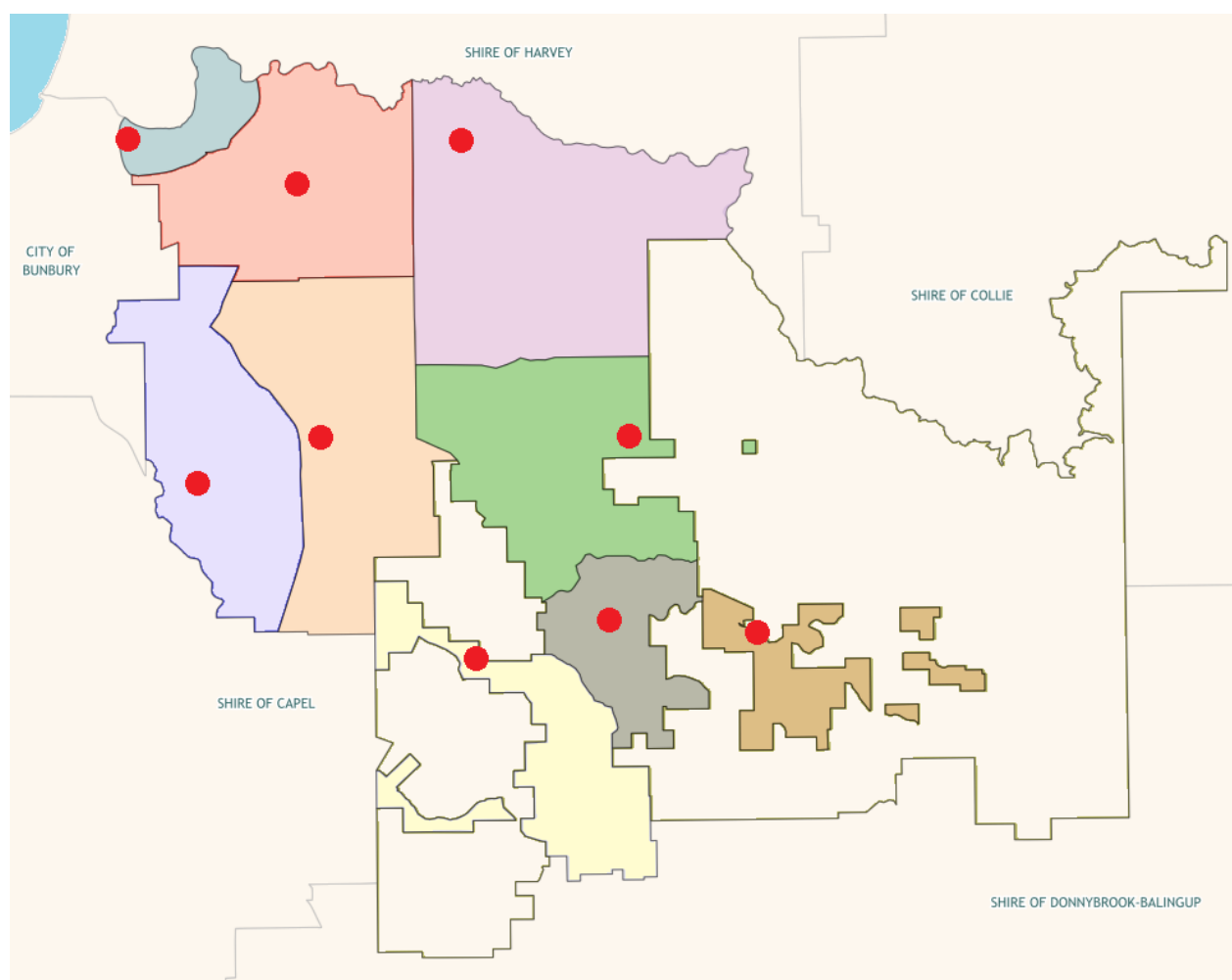


Figure 6: Location map of Volunteer Bushfire Brigade Stations

These brigades are supported by:

- 1 x 3,000 litre 4-wheel drive (3.4) Fire truck
- 2 x 2.4 Fire trucks
- 3 x 1.4 Fire trucks
- 3 x Light Tankers

The Department of Fire and Emergency Services, based on assessments of fire risk, may supplement the brigade vehicles with additional 'high-season' vehicles, hosted at Brigades during the fire season. The Shire has hosted 1 or 2 high-season vehicles over several fire seasons.

In addition, the Department of Fire and Emergency Service Volunteer Fire and Rescue has one country pump and one light tanker to the overall resources.

## Fire Control Notice

Section 33 of the *Bush Fires Act* 1954 states that local government may require the occupier of land to plough or clear a fire-break. Landowners must be provided written notice of this requirement through publication of the notice in the *Government Gazette* and a local newspaper. The Shire of Dardanup does required the clearing of fire breaks on properties that meet the criteria.

The notice is reviewed mid-year by the Bush Fire Advisory Committee and published in August.

A process is in place to exempt landowners who present suitable reasons why the construction of a fire break is not required in all, or part, of their property. Applications for exemption are assessed by the local Fire Control Officer and endorsed by the Bush Fire Advisory Committee for Council approval. Exemption may be for one or three years.

The Shire of Dardanup Rangers patrol rural properties to determine that fire breaks have been constructed, and to a suitable standard. Patrols are conducted throughout the period when fire breaks are required per the Fire Control Notice. Notices to improve the standard of fire break construction, or infringements, may be issued for sub-standard or absence of fire break respectively.

## Mitigation Activity Fund

The Shire of Dardanup has sought and received funding over several years from the Department of Fire and Emergency Service's Mitigation Activity Fund. The funding is provided to enable local governments to undertake important bushfire mitigation on Crown Lands that they manage on behalf of the State.

The grant is managed by the Bushfire Risk Management Coordinator, a position shared with the Shires of Collie and Capel.

The bushfire mitigation works include:

- Planned fuel reduction burns
- Mechanical fuel reduction/alteration
- Chemical treatments
- Installation of fire access tracks to enable better access to high risk areas and/or better assist residents evacuate in the event of a fire

The history of treatments funded by the mitigation activity grants program include:

- 43 treatments in 2019/20 using grant of \$209,615
- 39 treatments in 2020/21 using grant of \$492,880
- 21 treatments in 2021/22 using grant of \$337,295
- 13 treatments in 2022/23 using grant of \$178,877
- 27 treatments in 2024/25 using grant of \$242,350

## Roadside Verges

The Shire endeavours to undertake verge maintenance on its roads within the limitations of its available resources. Where possible, the Shire undertakes mitigation strategies targeting high risk areas in consultation with local brigades, including controlled burns, slashing and spraying to minimise hazards.

In accordance with the Shire of Dardanup *Activities in Thoroughfares and Public Places* Local Law, a person shall not burn part of a thoroughfare without first obtaining a permit or unless acting under the authority of any other written law.

## Map of Bushfire Prone Areas

The Department of Fire and Emergency Services assesses land based on numerous factors to determine bushfire prone areas<sup>13</sup> and reviews the map periodically. The Shire of Dardanup is consulted on the assessment of the land within its boundaries when the map is reviewed. Much of the shire is designated to be Bushfire Prone.

## Responsible Development

The WA Government's *Bushfire Prone Planning Policy* aims to implement effective risk based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure.

The *State Planning Policy 3.7 – Planning for Bushfire Prone Areas* ensures bushfire risk is given due consideration in all future planning and development decisions. As the policy does not apply retrospectively, this plan focuses on identifying existing bushfire risk and establishing an effective treatment plan to manage unacceptable community risks.

The Shire issues Planning and Building approvals in accordance with standards as set out in *Planning Policy 3.7 Planning in Bushfire Prone Areas* and the Building Commission.

## Community Consultation

The Shire has limited resources to conduct extensive bushfire focused community consultation. However, bushfire risk and impacts are raised at general community consultation sessions.

The Shire's Communications Team regularly issue social media updates regarding bushfire risk, fire bans, burn restrictions. Expanding on this messaging is an option to be explored in more detail.

When planning a treatment for an identified risk the local community are informed of the work and feedback encouraged.

The Dardanup Volunteer Bushfire Brigades play a vital role in raising community awareness about bushfire preparedness through station open days, school visits, and participation in community festivals and agricultural shows. Additionally, Wellington Mills has a highly active Bushfire Ready Group, a community-driven program supported by DFES and the Shire dedicated to enhancing local resilience to bushfire risk.

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<sup>13</sup> See <https://www.wa.gov.au/service/community-services/emergency-services/view-map-of-bush-fire-prone-areas>

## Street Trees/Reserves

Mitigation strategies for street trees, parks and open spaces and bushland reserves are summarised in Table 8.

*Table 8: Bushfire Controls*

<b>Streetscapes</b>	<ul style="list-style-type: none"> <li>• Maintain health of trees</li> <li>• Street sweeping (to remove leaves and other detritus)</li> <li>• Spacing between trees to ensure canopy separation</li> <li>• Use of native trees</li> <li>• Assessment of power lines near trees</li> </ul>
<b>Parks and Open spaces</b>	<ul style="list-style-type: none"> <li>• Prescribed burning</li> <li>• Maintain health of trees</li> <li>• Land use planning</li> <li>• Trees planted in isolated pockets within parks</li> <li>• Mowing/slashing grassed areas in and around parks</li> <li>• Irrigation</li> </ul>
<b>Bushland reserves</b>	<ul style="list-style-type: none"> <li>• Prescribed burning</li> <li>• Fire restrictions and prohibitions</li> <li>• Fire access tracks and fire breaks</li> <li>• Litter removal</li> <li>• Weed reduction (spraying or mechanical works)</li> <li>• Arson prevention strategies</li> </ul>

Native trees have a reputation for being susceptible to fire, and may not be an obvious choice to reduce bushfire risk. Indeed, the eucalyptus oil in many gum trees is flammable and can exacerbate a fire. However, many native trees also have characteristic that increase resistance to fire, e.g. thicker barks. Native trees also have characteristics that enable them to recover quickly from bushfires that would kill non-native trees. Some native trees have leaves that can offer shielding from radiant heat or capture wind blown embers<sup>14</sup>.

Non-native trees may be susceptible to drought conditions that native trees can cope with and may die when stressed, contributing to fuel loads.

<sup>14</sup> For example see <https://www.orterra.com.au/2024/05/29/planting-in-bushfire-areas/>



## 5. Asset identification and risk assessment

Assets at risk from bushfire in the Shire are recorded in the *Asset Risk Register* in the *Bushfire Risk Management System*. Assets are divided into four categories: human settlement, economic, climate, and cultural. Each asset has been assigned a bushfire risk rating between low and extreme based on the risk assessment methodology described in the Guidelines and Handbook.

### Identifying and assessing systemic risk

Systemic risk refers to the potential impacts of a particular hazard (in this case bushfire) on interconnected systems and networks that sustain communities. It recognises that a single bushfire event can set off a chain reaction with impacts that extend beyond the fire's location. These may affect the social fabric, economy, and environment of the district and can persist long after the fire has been extinguished.

Systemic risks will be considered by the *Local Emergency Management Arrangements*, given that systemic risks span all-hazards, not just bushfire.

### Local government asset risk profile

A summary of the risks assessed is shown in Table 8. This table shows the proportion of assets at risk from bushfire in each risk category at the time this plan was endorsed. This table was correct at the time of publication but may become outdated as risks are treated or additional risks are identified and assessed. A report may be generated from the *Bushfire Risk Management System* to provide the most current risk profile.

Table 9 – Local Government Asset Risk Summary

		Risk Rating				
		Low	Medium	High	V. High	Extreme
Asset Category	Human Settlement	6%	29%	9%	10%	25%
	Economic	1%	4%	4%	4%	2%
	Environment	0%	0%	1%	3%	0%
	Cultural	0%	1%	0%	0%	0%

## 6. Risk evaluation

### Risk acceptance criteria

The acceptable level of risk for each asset category is shown in Table 10. A risk that is assessed as exceeding these limits will be considered for treatment.

Table 10 – Risk acceptance criteria for bushfire risk

Acceptable risk level	Asset category			
	Human settlement	Economic	Environmental	Cultural
	Medium	Medium	High	High

Risks below the acceptable level do not require treatment during the life of this plan. They will be managed by routine Local Government wide controls and monitored to detect any increase in their risk rating.

### Treatment priorities

The treatment priority for each asset is automatically assigned by the *Bushfire Risk Management System*, based on the asset's risk rating. Table 11 shows how consequence and likelihood combine to give the risk rating and subsequent treatment priority for an asset. The treatment priority assigned in system will help inform decision making for risk acceptability and development of the treatment strategy and schedule.

Table 11 – Treatment priorities

		Consequence			
		Minor	Moderate	Major	Catastrophic
Likelihood	Almost certain	High (3D)	Very High (2C)	Extreme (1C)	Extreme (1A)
	Likely	Medium (4C)	High (3A)	Very High (2A)	Extreme (1B)
	Possible	Low (5A)	Medium (4A)	High (3B)	Very High (2B)
	Unlikely	Low (5C)	Low (5B)	Medium (4B)	High (3C)



## 7. Risk treatment

The purpose of risk treatment is to reduce the potential impact of bushfire on the community, economy and environment. This is achieved by implementing treatments that modify the characteristics of the hazard, the community or the environment to make bushfires less likely or less harmful.

### Treatment Strategy

The *Treatment Strategy* describes the overall approach to managing bushfire risk in the medium to long term. The strategy is shaped by factors such as the distribution of risk in the landscape, the community's values and objectives, stakeholders' mitigation programs and constraints on treatment options. The *Treatment Strategy* helps guide the development of integrated annual treatment schedules.

#### Policy

- *Bush Fires Act 1954* Section 33 notices, including applicable fuel management requirements, firebreak standards and annual enforcement programs
- Declaration and management of Prohibited Burn Times, Restricted Burn Times and Total Fire Bans for the local government
- Public education campaigns and the use of Department of Biosecurity Conservation and Attractions and Department of Fire and Emergency Services state-wide programs, tailored to suit local needs
- State-wide arson prevention programs developed in conjunction with WA Police and Department of Fire and Emergency Services
- State planning framework and local planning schemes, implementation of appropriate land subdivision and building standards in line with Department of Fire and Emergency Services, Department of Planning, Lands and Heritage and Building Commission policies and standards
- Monitoring performance against the *Bushfire Risk Management Plan* and reporting annually to the local government council and Office of Bushfire Risk Management
- The Department of Fire and Emergency Services is responsible for the management of fire prevention of unallocated crown land and unmanaged reserves within gazetted town site boundaries under a memorandum of understanding with the Department of Planning, Lands and Heritage
- Department of Biodiversity, Conservation and Attractions annual mitigation works program (includes mechanical works and prescribed burns that may not directly influence level of risk to a specific asset or group of assets)
- Western Power annual vegetation management and asset inspection activities in Extreme and High Bushfire Risk areas completed by 30 November
- All Fire Management Plans including but not limited to, land developments and estates. Plans are available through the Planning Department at the Shire
- The Shire of Dardanup annual hazard reduction works program (includes, burning, spraying, slashing and pruning in and around established town sites and on strategic rural

reserves). Priority is given to populated town sites first (known works will be captured in the Bushfire Risk Management treatment schedule)

- Water Corporation Bushfire Risk Mitigation Program
- Community “Bushfire Ready” groups facilitated by local resident’s injunction with the Department of Fire and Emergency Services are being developed

### Asset Specific

Asset-specific treatments are implemented to protect an individual asset or group of assets, identified and assessed in this plan as being at risk from bushfire. There are six asset specific treatment strategies:

- **Fuel management**  
Treatment reduces or modifies the bushfire fuel through manual, chemical and prescribed burning methods.
- **Ignition management**  
Treatment aims to reduce potential human and infrastructure sources of ignition in the landscape.
- **Preparedness**  
Treatments aim to improve access and water supply arrangements to assist firefighting operations.
- **Planning**  
Treatments focus on developing plans to improve the ability of firefighters and the community to respond to bushfire.
- **Community Engagement**  
Treatments seek to build relationships, raise awareness and change the behaviour of people exposed to bushfire risk.
- **Other**  
Local government-wide controls, such as community education campaigns and planning policies, will be used to manage the risk. Asset-specific treatment is not required or not possible in these circumstances.

## Treatment Schedule

The *Treatment Schedule* is a list of bushfire risk treatments recorded in the *Bushfire Risk Management System*. It is developed with regard to the outcome of the risk assessment process and treatment strategy and in consultation with stakeholders.

The *Treatment Schedule* covering the Shire of Dardanup has been entered to *Bushfire Risk Management System*. The *Treatment Schedule* will be regularly updated throughout the life of this plan.

Land managers are responsible for implementing agreed treatments on their own land. This includes any costs associated with the treatment and obtaining the relevant approvals, permits or licences to undertake an activity. Where agreed, another agency may manage a treatment on behalf of a land manager.

## Systemic risk treatment

The treatment strategies for systemic risks will be considered as a part of the *Local Emergency Management Arrangements*, given the multi-hazard complications presented by systemic risk.

## 8. Monitoring and review

Monitoring and review processes are in place to ensure that this plan remains current and considers the best available information.

### Monitoring and review

The Shire of Dardanup will monitor the plan and *Bushfire Risk Management System* data to identify any need for change. The plan and data will be reviewed at least every two years to ensure they continue to reflect the local context, assets at risk, level of risk and treatment priorities.

### Reporting

The outcomes of biennial reviews of this plan will be reported to the Office of Bushfire Risk Management. This is required to maintain endorsement of the plan.

Data and information about their Bushfire Risk Management Program will be collated to contribute to the annual Office of Bushfire Risk Management's *Fuel Management Activity Report*.

# Appendix A: References

## Glossary

Asset	Something of value that may be adversely impacted by bushfire. This may include residential houses, infrastructure, commercial, agriculture, industry, environmental, cultural and heritage sites.
Asset category	There are four categories that classify the type of asset – Human Settlement, Economic, Environmental and Cultural.
Asset risk register	A component within the Bushfire Risk Management System used to record the consequence, likelihood, risk rating and treatment priority for each asset identified in the <i>Bushfire Risk Management Plan</i> .
Bushfire	Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective.
Bushfire risk management	A systematic process to coordinate, direct and control activities relating to bushfire risk with the aim of limiting the adverse effects of bushfire on the community.
Bushfire risk	The chance of a bushfire igniting, spreading and causing damage to the community or the assets they value.
Consequence	The outcome or impact of a bushfire event.
Landowner	The owner of the land, as listed on the Certificate of Title; or leaser under a registered lease agreement; or other entity that has a vested responsibility to manage the land.
Likelihood	The chance of something occurring. In this instance, it is the potential of a bushfire igniting, spreading and impacting on an asset.
Risk acceptance	The informed decision to accept a risk, based on the knowledge gained during the risk assessment process.
Risk analysis	The application of consequence and likelihood to an event to determine the level of risk.
Risk assessment	The systematic process of identifying, analysing and evaluating risk.
Risk evaluation	The process of comparing the outcomes of risk analysis to the risk criteria in order to determine whether a risk is acceptable or tolerable.
Risk identification	The process of recognising, identifying and describing risks.
Risk treatment	A process to select and implement appropriate measures undertaken to modify risk.

Systemic risk	The impacts of bushfire on the interconnected systems and networks that support community function. It is a product of the disruption caused by fire to the community and its effects may be felt far from the direct impacts of the fire in both time and space.
Treatment objective	The aim to be achieved by the treatment. Treatment objectives should be specific and measurable.
Treatment priority	The order, importance or urgency for allocation of funding, resources and opportunity to treatments associated with a particular asset. The treatment priority is based on an asset's risk rating.
Treatment Schedule	A report produced within the <i>Bushfire Risk Management System</i> that details the treatment priority of each asset identified in this plan and the treatments scheduled.
Treatment Strategy	The general approach that will be taken to managing bushfire risk, in consideration of the local government context and objectives.
Treatment type	The specific treatment activity that will be implemented to modify risk, for example a planned burn.

# Abbreviations and Acronyms

This plan has been written so as to avoid the use of acronyms and abbreviations, however, other related documents or correspondence may not. Hence, below are a list of relevant acronyms and abbreviations that may be encountered.

AFAC	Australasian Fire and Emergency Services Authorities Council
BFAC	Bush Fire Advisory Committee
BRM	Bushfire Risk Management
BRM Branch	Bushfire Risk Management Branch (an organisational element of the Department of Fire and Emergency Services)
BRM Plan	Bushfire Risk Management Plan
BRMS	Bushfire Risk Management System
DBCA	Department of Biodiversity, Conservation and Attractions
DFES	Department of Fire and Emergency Services
DPLH	Department of Planning, Lands and Heritage
LEMC	Local Emergency Management Committee
OBRM	Office of Bushfire Risk Management (an organisational element of the Department of Fire and Emergency Services)
SEMC	State Emergency Management Committee
SoD	Shire of Dardanup
TEC	Threatened Ecological Community
UCL	Unallocated Crown Land
UMR	Unmanaged Reserve
WA	Western Australia

## **Related Documents**

### **Legislation:**

- Aboriginal Heritage Act 1972
- Biodiversity Conservation Act 2016
- Building Act 2011
- Bush Fires Act 1954
- Conservation and Land Management Act 1984
- Country Areas Water Supply Act 1947
- Emergency Management Act 2005
- Environmental Protection Act 1986
- Environmental Protection and Biodiversity Conservation Act 1999
- Fire Brigades Act 1942
- Fire and Emergency Services Act 1998
- Heritage of Western Australia Act 1990
- Metropolitan Water Supply, Sewerage and Drainage Act 1909
- Wildlife Conservation Act 1950

### **Regulations:**

- Emergency Management Regulations 2006
- Planning and Development (Local Planning Scheme) Regulations 2015

### **State Policies, Plans and Procedures:**

- State Emergency Management Policy
- State Emergency Management Procedures
- State Hazard Plan for Fire
- State Planning Policy 3.7: Planning in Bushfire Prone Areas

### **Standards and Guidelines:**

- AS/NZS ISO 31000:2009 Risk management – Principles and guidelines
- AS 3959-2018 Construction of Buildings in Bushfire Prone Areas
- Guidelines for preparing a Bushfire Risk Management Plan
- Guidelines for Planning in Bushfire Prone Areas and Appendices
- National Emergency Risk Assessment Guidelines (NERAG)
- Guidelines for the safe use of pesticides in non-agricultural workplaces
- A guide to the management of pesticides in LG pest control programs in WA
- A Guide to the Exemptions and Regulations for Clearing Native Vegetation
- A Guide to the Assessment of Applications to Clear Native Vegetation



- A Guide to Burning Under the Native Vegetation Clearing Provisions
- A Guide to Grazing of Native Vegetation
- Guidelines for Plantation Fire Protection
- A Guide to Preventing and Suppressing Bushfires on Organic and Acid Sulfate Soils
- Managing Phytophthora Dieback in Bushland
- A Guide to Constructing and Maintaining Firebreaks
- Building Protection Zone Standards
- National Strategy for Disaster Resilience
- Public Service Circular No.88 Use of Herbicides in Water Catchment Areas
- Code of Practice for Timber Plantations in Western Australia
- Western Australian Emergency Risk Management Guide

# Appendix B: Local government wide controls

Control		Action or activity description	Lead agency	Other stakeholder(s)	Notes and comments
01	Shire of Dardanup, Local firebreak and hazard reduction laws ( <i>Bush Fires Act 1954</i> )	Annual Fire Prevention Order	Local Government	Fire Control Officers, brigades and land owners	Firebreak Order reviewed annually and adopted by Council. Its purpose is to ensure land owners understand and comply to firebreak specifications as well as appropriately reducing fuel load and risk on their properties. Notice reviewed annually. Rangers inspect compliance to the notice and fines apply if non-compliant.
02	Shire of Dardanup Prohibited and Restricted burning times ( <i>Bush Fires Act 1954</i> )	Annual Fire Prevention Order	Local Government	Chief Fire Control Officer, Rangers and the public.	Prohibited and Restricted burn times are designed to reduce the risk during very high to catastrophic fire danger rating days. Notice reviewed annually and dates can be subject to change as required by the Chief and Deputy Fire Control Officers.
03	Shire of Dardanup mitigation works	The Shire’s Operations / Works / Parks & Environment team has annual works programs to reduce fuel load and remove hazards.	Local Government	Public (reporting hazards and concern of risk) Shire Parks and Gardens staff Shire Rangers	Shire Operations / Works / Parks & Environment team targets work on strategic risk areas with particular attention paid to past fire incidents or as identified by this <i>Bushfire Risk Management Plan</i> . Work includes, slashing, spraying, mulching, pruning and other mechanical treatments.
04	Department of Fire and Emergency Services unallocated crown land/unmanaged reserve land management	Preparedness, mitigation work conducted on lands owned by Department of Planning, Lands and Heritage and managed by Department of Fire and Emergency Services under a memorandum of understanding	Department of Fire and Emergency Services (Lower South West office)	Department of Biodiversity, Conservation and Attractions, Local Government, Local brigades	Annual budgeting has been completed to include mitigating risk on unallocated crown land/unmanaged reserve land. Lowers South West Bushfire Risk Management Officers have these plans included in their scope of work.
05	Shire of Dardanup, <i>Draft Burn Program</i> (annual indicative plans)	Local Government is working on an annual burn plan for Shire owned or vested reserves.	Local Government	Department of Fire and Emergency Services, Department of Biosecurity, Conservation and Attractions, Local brigades, Public	The Shire’s Operations / Works / Parks & Environment team is tasked with Bushfire Mitigation on Shire reserves. Annual burn plans are being produced. The <i>Bushfire Risk Management Plan</i> will now prioritise the reserves for hazard reduction burns. The <i>Bushfire Risk Management System</i> will be recording information.
06	Department of Biodiversity, Conservation and Attractions <i>Master Burn Plans</i>	The Department of Biodiversity, Conservation and Attractions have a 6 season burn program that is published on their website. Yearly plans are available.	Department of Biodiversity, Conservation and Attractions	Local brigades, Department of Fire and Emergency Services, Local Government	The plans can be accessed via their website, by sharing shape files (Geographic Information Systems) and are communicated at Local Bushfire Advisory Committee, Regional Operating Advisory Committee and other various meetings.
07	Department of Biodiversity, Conservation and Attractions mitigation works	Department of Biodiversity, Conservation and Attractions conduct mulching and other mechanical treatments to reduce fuel load or provide fire access.	Department of Biodiversity, Conservation and Attractions	Department of Fire and Emergency Services, Local Government	No formal plan exists however works are completed as required, upon request or when identified.
08	Water Corporation Bushfire Risk Management Program	Bushfire Risk Management Plan. A Bushfire Risk Management Project is under way for the Water Corp.	Water Corporation	Department of Fire and Emergency Services, Local Government	A plan is currently being developed. High risk areas are identified and treatments planned then completed. Treatments and risk assessments are available through Water Corporation. Some high-risk areas have been identified in the Shire to date.

<i>Control</i>	<i>Action or activity description</i>	<i>Lead agency</i>	<i>Other stakeholder(s)</i>	<i>Notes and comments</i>	
09	Western Power annual asset inspection and vegetation management program	Western Power Bushfire Plan	Western Power	Department of Biosecurity, Conservation and Attractions, Department of Fire and Emergency Services, Local Government	Annual vegetation management and asset inspections are completed to ensure risk is managed. Full asset inspections are completed every four years.
10	Land sub-division & building (WA Planning Commission)	Requirement for estate, sub-division, and other Fire Management Plans	Local Government	Local Brigades, contractors and Fire Control Officers	Land developers are required to implement a <i>Fire Management Plan</i> to ensure risk is managed and other controls implemented and monitored.
11	Planning in Bushfire Prone Areas	Planning in bushfire prone areas. E.g. State Planning Policy 3.7 and standards.	WA Planning Commission	Department of Biosecurity, Conservation and Attractions, Department of Fire and Emergency Services, Local Government, land owners	Foundation for land use planning. Directs how land use should address bushfire risk management in WA. It aims to preserve life and reduce impact on property and infrastructure. The Shire aligns its policy and standards with SPP 3.7. Bushfire Attack Level assessments are required.
12	Pine Plantation Fire Management Plans	The Forest Product Commission has implemented fire management plans for plantation.	Forest Product Commission	Department of Biosecurity, Conservation and Attractions, Department of Fire and Emergency Services, Local Government	Minimum requirements and controls have been committed to within the plan.
13	State-wide arson prevention programs	Education and awareness campaigns exist across the state for arson.	WA Police	Department of Fire and Emergency Services, Local Government	Participation as required. The Shire participates in campaigns for arson prevention.
14	Bushfire Ready Groups and street meets	Public preparedness and education campaign	Department of Fire and Emergency Services	Local Government, local brigades, Department of Fire and Emergency Services	Bushfire ready facilitators are within the Shire. Working together with Department of Fire and Emergency Services and local government community engagement teams to better prepare the community for bushfire events. Street meets and phone trees have been implemented as a result as well as safe winter burn demonstrations and workshops.

# Appendix C: Communication Plan

This *Communication Plan* supports the development, implementation and review of the Shire of Dardanup *Bushfire Risk Management Plan*. It should document:

- the Communication objectives.
- Roles and responsibilities.
- Key stakeholders engaged in the development of the *Bushfire Risk Management Plan* and *Treatment Schedule*.
- the implementation and review of the plan including: target audiences and key messages at each project stage; communication risks and strategies for their management; and communication monitoring and evaluation procedures.

## Communication objectives

The communication objectives for the development, implementation and review of the *Bushfire Risk Management Plan* are as follows:

- Key stakeholders understand the purpose of the *Bushfire Risk Management Plan* and their role in the planning process.
- Stakeholders who are essential to the bushfire risk management planning process, or can supply required information, are identified and engaged in a timely and effective manner.
- Relevant stakeholders are involved in decisions regarding risk acceptability and treatment.

## Roles and responsibilities

The Shire of Dardanup is responsible for the development, implementation and review of the *Communication Plan*. Key stakeholders support the local government by participating the *Communication Plan* as appropriate. An overview of communication roles and responsibilities follows:

- The Chief Executive Officer is responsible for requesting that the Office of Bushfire Risk Management endorse the *Bushfire Risk Management Plan*.
- Director Sustainable Development and Media Team are responsible for communication of the *Bushfire Risk Management Plan* to the community.
- Bushfire Risk Management Coordinator is responsible for communication between the local government and the Department of Fire and Emergency Services.

## Key Stakeholders for Communication

The following table identifies key stakeholders in bushfire risk management planning process, its implementation and review. These are stakeholders that are identified as having a significant role or interest in the planning process or are likely to be significantly impacted by the outcomes.

Stakeholder	Role or interest	Impact of outcomes	Engagement
Shire of Dardanup	Significant role in plan development, implementation and review. Significant interest as a land manager.	High	Inform, consult, involve, collaborate and empower.
Department of Fire and Emergency Services	Significant role in plan development, implementation and review. Support role In treatment Implementation.	High	Regular engagement & Consultation.
Department of Biodiversity, Conservation and Attractions	Treatment plans, land management, asset identification	High	Regular engagement, Consultation and kept informed.
Local Community and Private Land Owners	Role in plan development, implementation and review. Significant interest as a land manager.	High	Inform, consult and involve
Utility Companies Water Corporation Telstra Western Power	Role in plan development, implementation and review. Significant interest as a land manager. Critical infrastructure interest.	Medium	Inform, consult, involve and collaborate
Leschenault Catchment Group	Role in plan development, implementation and review	Medium	Inform, consult and involve
Leschenault Biosecurity Group	Role in plan development, implementation and review	Medium	Inform, consult and involve
Bush Fire Advisory Committee	Role in plan development, implementation and review	Medium	Inform, consult and involve
Local Emergency Management Committee	Role in plan development, implementation and review	Medium	Inform, consult and involve
Office of Bushfire Risk Management	Significant role in plan development and review	Medium	Inform, consult and involve
Chief Bushfire Control Officer	Role in plan development, implementation and review	High	Inform, consult and involve

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Bushfire Brigades and Emergency Services Volunteers	Role in plan development, implementation and review	Medium	Inform, consult, involve, collaborate and empower.
Traditional Owners	Role in plan development, implementation and review	Medium	Inform, consult, involve, collaborate and empower.
Department of Planning Lands and Heritage	Treatment plans, land management, asset identification	High	Regular engagement, Consultation and kept informed.
Main Roads	Treatment plans, land management, asset identification	High	Regular engagement, Consultation and kept informed.
Department of Environment, Water and Regulation	Treatment plans, land management, asset identification	High	Regular engagement, Consultation and kept informed.