



Shire of Wongan-Ballidu

BUSHFIRE RISK MANAGEMENT PLAN

2022-2027

Contents

- 1. Introduction 1**
 - 1.1. Background.....1
 - 1.2. Aim and Objectives.....1
 - 1.3. Legislation, Policy and Standards1
 - 1.3.1 Legislation and Policy..... 1
 - 1.3.2 Other Related Documents 2
 - 1.3.3 Shire of Wongan-Ballidu Documents and References 3
- 2. The Risk Management Process 4**
 - 2.1. Roles and Responsibilities5
 - 2.2. Communication and Consultation7
- 3. Establishing the Context 7**
 - 3.1. Description of the Local Government and Community Context8
 - 3.1.1 Strategic and Corporate Framework 8
 - 3.1.2 Location, Boundaries and Tenure 11
 - 3.1.3 Population and Demographics 12**
 - 3.1.4 Economic Activities and Industry..... 14
 - 3.2. Description of the Environment and Bushfire Context16
 - 3.2.1 Topography and Landscape Features 16
 - 3.2.2 Climate and Bushfire Season 17
 - 3.2.3 Vegetation..... 23
 - 3.2.4 Threatened Species and Communities 24**
 - 3.2.5 Bushfire Frequency and Causes of Ignition..... 28
 - 3.2.6 Current Bushfire Risk Management Activities 31
- 4. Asset Identification and Risk Assessment 33**
 - 4.1. Planning Areas33
 - 4.2. Asset Identification.....33
 - 4.3. Assessment of Bushfire Risk.....35
 - 4.3.1 Consequence Assessment..... 36
 - 4.3.2 Likelihood Assessment..... 36
 - 4.3.3 Assessment of Environmental Assets 36
 - 4.3.4 Local Government Asset Risk Summary 36
- 5. Risk Evaluation 37**
 - 5.1. Evaluating Bushfire Risk.....37
 - 5.2. Risk Acceptability.....37
 - 5.3. Treatment Priorities39
- 6. Risk Treatment 40**
 - 6.1. Local Government Wide Controls40

6.2.	Development of the Treatment Schedule	41
7.	Monitoring and Review.....	41
7.1.	Review	42
7.2.	Monitoring.....	42
7.3.	Reporting.....	42
7.3.1	Privacy Issues and Release of Information	42
8.	Glossary.....	43
9.	Common Abbreviations	45
10.	Appendices.....	46
	Appendix A - Communication Strategy.....	46
	Appendix B - Local Government Wide Controls Table.....	46

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Document Endorsements

The Shire of Wongan-Ballidu Council endorses that the Bushfire Risk Management (BRM) Plan has been reviewed and assessed by the Office of Bushfire Risk Management as consistent with the standard for bushfire risk management planning in Western Australia, the Guidelines for Preparing a Bushfire Risk Management Plan. The Shire of Wongan-Ballidu is the owner of this document and has responsibility, as far as is reasonable, to manage the implementation of the BRM Plan and facilitate the implementation of bushfire risk management treatments by risk owners. The approval of the BRM Plan by Shire of Wongan-Ballidu Council satisfies their endorsement obligations under State Hazard Plan Fire.

Local Government	Representative	Signature	Date
Shire of Wongan-Ballidu	CEO		

Version	Date	Author	Section
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Disclaimer

In approving this BRM Plan, The Shire of Wongan-Ballidu Council is acknowledging the assets that have been identified and the risk ratings and treatment priorities assigned. Approval of the plan is a commitment by the Shire of Wongan-Ballidu to work with landowners and managers to address unacceptable risk within the community. Endorsement of this plan is not committing the Shire of Wongan-Ballidu to a program of treatment works to be implemented by others, or an acceptance of responsibility for risk occurring on land that is not owned or managed by the Shire.

1. Introduction

1.1. Background

Under the State Hazard Plan Fire an integrated Bushfire Risk Management (BRM) Plan is to be developed for local government areas with significant bushfire risk. This BRM Plan has been prepared for the Shire of Wongan-Ballidu in accordance with the requirements of the Guidelines for Preparing a Bushfire Risk Management Plan (the Guidelines) from the Office of Bushfire Risk Management (OBRM) within the Department of Fire and Emergency Services (DFES). The risk management processes used to develop this BRM Plan are aligned to the key principles of AS/NZ ISO 31000:2009 Risk management –Principles and Guidelines and those described in the National Emergency Risk Assessment Guidelines. This approach is consistent with State Emergency Management (SEM) Policy and SEM Prevention and Mitigation Procedure 1.

This BRM Plan is a strategic document that facilitates a coordinated approach towards the identification, assessment and treatment of assets exposed to bushfire risk. The Treatment Schedule sets out a broad program of coordinated multi-agency treatments to address risks identified in the BRM Plan. Government agencies and other land managers responsible for implementing treatments participate in developing the BRM Plan and Treatment Schedule to ensure treatment strategies are collaborative and efficient, regardless of land tenure.

1.2. Aim and Objectives

The aim of a BRM Plan is to effectively manage bushfire risk to protect people, assets and other things of local value in the Shire of Wongan-Ballidu. The objectives of this BRM Plan are to:

- guide and coordinate a tenure blind, multi-agency BRM program over a five-year period.
- document the process used to identify, analyse and evaluate risk, determine priorities and develop a plan to systematically treat risk.
- facilitate the effective use of the financial and physical resources available for BRM activities.
- integrate BRM into the business processes of local government, landowners and other agencies.
- ensure there is integration between landowners, BRM programs and activities; and
- document processes used to monitor and review the implementation of treatment plans to ensure they are adaptable and that risk is managed at an acceptable level.

1.3. Legislation, Policy and Standards

The following legislation, policy and standards were considered to be applicable in the development and implementation of the BRM Plan.

1.3.1 Legislation and Policy

- 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 (Cth)
- Fire Brigades Act 1942
- Fire and Emergency Service Act 1998
- Metropolitan Water Supply, Sewerage and Drainage Act 1909
- Bush Fires Regulations 1954
- Emergency Management Regulations 2006
- Planning and Development (Local Planning Scheme) Regulations 2015
- SEM Plan (State Emergency Management Committee (SEMC 2019)
- SEM Policy (SEMC 2019)
- SEM Prevention and Mitigation Procedure 1 (SEMC 2019)
- State Hazard Plan Fire (SEMC 2019)
- State Planning Policy 3.4: Natural Hazards and Disasters (Western Australian Planning Commission (WAPC 2006)
- State Planning Policy 3.7: Planning in Bushfire Prone Areas (WAPC 2015, as amended)

1.3.2 Other Related Documents

- A Capability Roadmap: Enhancing Emergency Management in Australia 2016 (Australasian Fire and Emergency Services Authorities Council 2016)
- A Guide to Constructing and Maintaining Fire-Breaks (DFES 2018)
- A Guide to the Use of Pesticides in Western Australia (Dept. of Health 2010)
- AS 3959:2009 Construction of Buildings in Bushfire-Prone Areas (Standards Australia 2009)
- AS/NZ ISO 31000:2009 Risk Management – Principles and Guidelines (Standards Australia 2009)
- Australian Disaster Resilience Handbook 10: National Emergency Risk Assessment
- Building Protection Zone Standards (DFES)
- Bushfire Risk Management System (BRMS) User Guide (DFES)
- Bushfire Risk Management Planning Handbook (DFES 2018)
- Code of Practice for Timber Plantations in Western Australia (Forest Products Commission (FPC 2006)
- Guidelines (Australian Institute for Disaster Resilience 2015)
- Guidelines for Preparing a Bushfire Risk Management Plan 2020 (DFES 2020)
- Guidelines for Planning in Bushfire Prone Areas (WAPC 2017)
- Guidelines for Plantation Fire Protection (DFES 2011)
- National Disaster Risk Reduction Framework (Department of Home Affairs 2018)
- National Strategy for Disaster Resilience (Attorney-General's Department 2011)

- Public Service Circular No. 88 Use of Herbicides in Water Catchment Areas (Department of Health 2007)
- Western Australian Emergency Risk Management Guide (SEMC 2015)

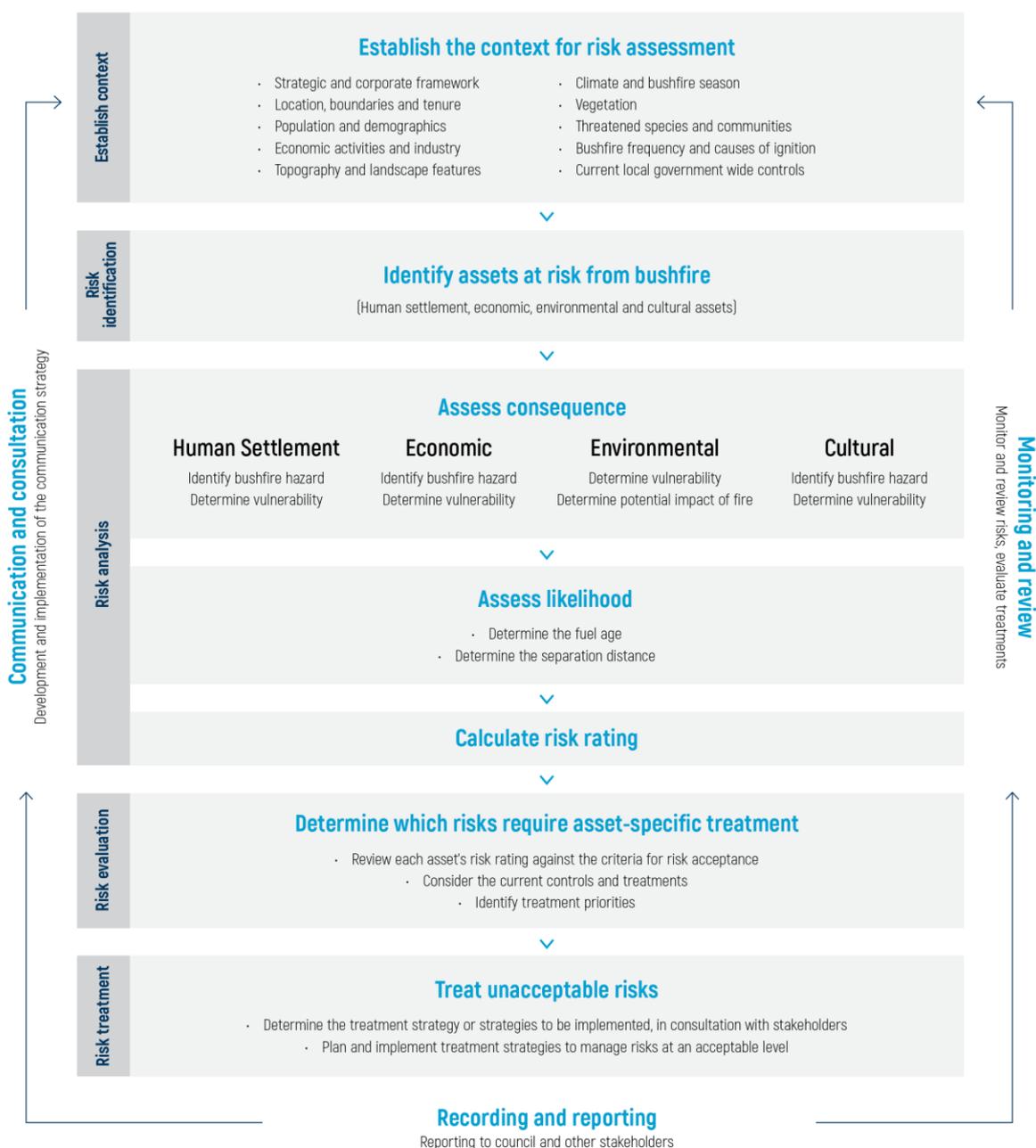
1.3.3 Shire of Wongan-Ballidu Documents and References

- Shire of Wongan-Ballidu Strategic Community Plan
- Shire of Wongan-Ballidu Corporate Business Plan
- Municipal Heritage inventory 1997
- <https://www.wongan.wa.gov.au/council/mocardy-dam-pipeline-project.aspx>
- <https://www.wongan.wa.gov.au/council/colocation.aspx>
- <https://www.wongan.wa.gov.au/about-us/statistics.aspx>
- <https://www.wongan.wa.gov.au/tourism/tourism.aspx>
- https://www.wongan.wa.gov.au/profiles/wongan/assets/clientdata/burning_period_20-21.jpg
- Council Policy Manual V5
- Local Emergency Management Arrangements
- Shire of Wongan-Ballidu Bush Fire Brigades Amendment Local Law 2010
- Delegated Authority Register 2021
- Local Planning Strategy Scheme 5
- Strategic Community Plan Review 2021, V2 Draft
- Roadside Vegetation and Conservation Values April 2005, Roadside Conservation Committee
- Vegetation survey of the Wongan Hills – CALM/Anne Coates 1988
- Declared Rare and Poorly Known Flora CALM/program No 39

2. The Risk Management Process

The risk management processes used to identify and address risk in this BRM Plan are aligned with the international standard for risk management, *AS/NZ ISO 31000:2009 Risk Management – Principles and Guidelines*. This process is outlined in Figure 1.

Figure 1 – An overview of the risk management process¹



¹ Adapted from: AS/NZS ISO 31000:2009, with permission from SAI Global under licence number 1510-c081.

2.1. Roles and Responsibilities

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

Table 1 – Roles and Responsibilities

Stakeholder Name	Roles and Responsibilities
Local Government	<ul style="list-style-type: none"> • Custodian of the Bushfire Risk Management Plan (BRM Plan) • Coordinate the development and ongoing review of the integrated BRM Plan. • Negotiate a commitment from landowners to treat risks identified in the BRM Plan. • Undertake treatments on lands owned or managed by them. • Submit the draft BRM Plan to DFES' Office of Bushfire Risk Management (OBRM) for review and endorsement. • Submit the OBRM endorsed BRM Plan to council for their approval and adoption.
Department of Fire and Emergency Services	<ul style="list-style-type: none"> • Participate in and contribute to the development and implementation of BRM Plans. • Support to local government through expert knowledge and advice in relation to the identification, prevention and treatment of bushfire risk. • Facilitate local government engagement with state and federal government agencies in the local planning process. • Undertake treatments on Unmanaged Reserves and Unallocated Crown Land within gazetted town site boundaries. • In accordance with Memorandums of Understanding and other agreements, implement treatment strategies for other landowners. • Review BRM Plans for consistency with the Guidelines prior to final approval by council. • Administer and coordinate the Mitigation Activity Fund Grants Program.
Department of Biodiversity, Conservation and Attractions	<ul style="list-style-type: none"> • Participate in and contribute to the development and implementation of BRM Plans. • Provide advice for the identification of environmental assets that are vulnerable to fire and planning appropriate treatment strategies for their protection. • Undertake treatments on department managed land, and Unmanaged Reserves and Unallocated Crown Land outside gazetted town site boundaries and land in which they have an agreement for.
Forest Products Commission	<ul style="list-style-type: none"> • Participate in and contribute to the development and implementation of BRM Plans. • Provide information about their assets and current risk treatment programs. • Undertake treatments on lands owned or managed by them.

Stakeholder Name	Roles and Responsibilities
Department of Planning, Lands and Heritage	<ul style="list-style-type: none"> • Provide advice for the identification of their assets and infrastructure, specifically Aboriginal and European heritage.
Other State and Federal Government Agencies and Public Utilities	<ul style="list-style-type: none"> • Provide information about their assets and current risk treatment programs. • Participate in and contribute to the development and implementation of BRM Plans. • Undertake treatments on lands they manage.
Corporations and Private Landowners	<ul style="list-style-type: none"> • Provide information about their assets and current risk treatment programs.
Indigenous representation, South West Aboriginal Land and Sea Council. Ballardong Noongar and Yued Noongar people.	<ul style="list-style-type: none"> • Role in plan treatment development implementation and review
<p>Other</p> <ul style="list-style-type: none"> • Chief Bushfire Control Officer (CBFCO) • Bushfire Advisory Committee (BFAC) • District Operations Advisory Committee (DOAC) • Local Emergency Management Committee (LEMC) • Bushfire Brigades (BFB's) and other Emergency Services Volunteers 	<ul style="list-style-type: none"> • Participation in and contribution to the development and implementation of BRM Plans and treatment schedules. • Providing advice for the identification of assets that are vulnerable to fire. • Providing advice on appropriate treatment strategies for asset protection.

2.2. Communication and Consultation

Communication and consultation throughout the risk management process is fundamental to the development, implementation and review of the BRM Plan. To ensure appropriate and effective communication occurred with relevant stakeholders at each stage of the BRM planning process, a Communication Strategy was prepared (**Appendix A**)

3. Establishing the Context

History

Covering an area of 3,368 square kilometres, the Shire of Wongan-Ballidu falls within the traditional lands of the Ballardong Noongar and Yued Noongar people. The area's granite outcrops, fauna, flora and water systems are deeply woven within Indigenous culture and continue to be a source of deep spiritual connection for the Traditional Custodians.

The district was discovered by Surveyor General John Septimus Roe seven years after the Swan River colony was founded in 1829. On an exploration voyage returning from Mt Marshall, Roe's party sighted the Wongan Hills. Running low on supplies, the hills offered good water and grass for the horses and Roe set up camp. It was during this visit that Roe named the area's highest point Mount Matilda in honour of his wife.

The localities within the Shire are Ballidu, East Ballidu, West Ballidu, Burakin, Cadoux, Kondut, Lake Hinds, Lake Ninan, Mocardy and Wongan Hills. The Shire consists of undulating land with various soil types and granite outcrops. The Wongan Hills name originates from the Aboriginal name 'Wongan Katta', which translates to 'Talking Hills', referring to the wind whispering through the hills.

Wongan Hills, the most densely populated town within the Shire serves as a social and commercial hub. According to historical records, the first Wongan Hills settlers arrived in 1905 and the first commercial wheat crop was grown the following year. The first store was opened in the town in 1909 and the railway arrived in 1911, the same year the town site was officially proclaimed.

Ballidu, directly North of Wongan Hills and 219km northeast of Perth is the second largest town within the Shire. Ballidu's name is derived from the Indigenous name given to a nearby spring. Local residents preferred the Indigenous name "Balli" however the Lands Department wanted to call the town "Duli". A compromise was reached and Ballidu was named in 1914.

The third town site of Cadoux is located 200 kilometres northeast of Perth (via Dowerin). It was suggested by the local Road Board Secretary to name the locale "Cado" after a local farmer. The correct spelling of "Cadoux" was later confirmed and honours Donald Cadoux, a French-Canadian settler who arrived in WA in 1909 and later died in Gallipoli during WW1. Cadoux was founded in 1929 and is the site of the second most damaging earthquake in the history of Western Australia. The damage was estimated at \$3.8 million at the time of the 1979 disaster.

Smaller Gazetted Townsites are Burakin, Kondut and Kokardine.

3.1. Description of the Local Government and Community Context

3.1.1 Strategic and Corporate Framework

The Shire of Wongan-Ballidu's Strategic Community Plan (SCP) and corporate framework is outlined in the The Shire of Wongan-Ballidu Corporate Business Plan 2016/17-2019/20.

The BRM Plan aims to support the shire achieve its strategic vision of *"a caring and supportive community driving sustainability of agriculture, services and the environment"* and the mission statement *"Leaders in the provision of local government services and infrastructure."*

Both the vision and mission statement are supported through the following values:

- **1.4 Community safety and emergency preparedness**
- **1.4.1 Support the community in emergency and fire management planning, preparedness, response and recovery**
- **1.6.4 Promote and support volunteering in clubs and community groups**
- **2.1 Protection of natural resources**
- **2.2.3 Minimise impact of climate variability by mitigation planning**
- **3.2 A strong tourism industry – supported by managing fire and mitigation works**
- **4.4.1 Undertake ongoing maintenance and further develop the road network – Roadside fuel management**
- **4.7 Attractive streetscapes, open spaces, parks and gardens – management of fuel loads in these locations**

The corporate Business Plan activates the priorities in the Strategic Community Plan and aligns purpose specific strategy and actions to each year of delivery. Resources, finances and assets are considered over a four-year period and aligned to ensure each team within the organisation is working, in an integrated way, towards the aspirations and priorities contained within the Strategic Community Plan.

The BRM Plan is a purpose specific strategy to address community concerns around safety, fire and emergency management. The planning process contributes to the achievement of the goals associated with the corporate business plan.

The Shire of Wongan-Ballidu recognises the importance of leadership and coordination in emergency management and has an established Local Emergency Management Committee (LEMC) with multi-agency membership. The committee provides an important multiagency forum for the BRM Plan to consult.

The Shire's Local Emergency Management Committee (LEMC) and Bushfire Advisory Committee (BFAC) are identified as key stakeholders in the development, implementation and review of the BRM Plan. Their input and advice are critical to the bushfire risk management process and will provide an important forum for consultation, joint-agency partnerships and the resolution of local issues affecting bushfire risk management. The Local Emergency Management Arrangements reflect bushfire as a high risk within the Shire of Wongan-Ballidu.

The BRM Plan will assist by improving the community's awareness of bushfire risk and treatment activities planned in their area. Identification of treatment priorities will assist the shire's forward planning and budgeting for treatment activities within the BRM Plan area.

The shire has a scheduled annual works program and proactively addresses risks identified on shire managed land, within their budgetary constraints.

3.1.1.1 Challenges

The following challenges have been identified for the shire, all of which have the potential to impact the objectives of this BRM Plan. Consequently, special consideration should be given to these matters during the life of this plan, detailed information on these challenges and their influence on bushfire risk management can be found later in the plan:

- Reduced resources and increased safety risks during the bushfire season.
- Aging population. This increases the demand on emergency services to ensure these residents are kept safe during an incident and lower capacity to prepare properties, it also means fewer volunteers capable of assisting the brigades.
- Attraction and retention of residents impacting succession planning within the emergency services volunteer brigades.
- Changes to agricultural practices. For example, the introduction of harvesters which crush the chaff before depositing it back in the field, should debris (rock metal) go through this system there is a greater risk of starting a fire.
- Vulnerable groups, such as the elderly, itinerant workers and recreational visitors. This group all require additional consideration in emergency events and the Shire needs to consider this in its planning.
- The volume of traffic moving through the shire along known ignition routes.

In addition to the above challenges, the Shire has identified a number of priority areas that need to be considered in the bushfire risk planning processes both in the context of this BRM plan and beyond. These include:

- Limitations of water access and supply.
- Management of unallocated crown land (UCL) and unmanaged reserves (UMR) both within and outside town boundaries.
- The risk of fire travelling along rail corridors in and around the more populated areas of the shire.
- Road reserves, particularly as statistics reflect these are known fire ignition points.
- Management of reserves within the shire; and
- Vegetation in and around telecommunications and public utility infrastructure such as the communications towers, water pipeline, pumping station and the railway.

The Shire of Wongan-Ballidu Bushfire Advisory Committee (BFAC) has been informed of the BRM planning process and has avenues to contribute to the planning process, this group will also be a key stakeholder in the appropriate treatment strategy for the Shire of Wongan-Ballidu.

The LEMC and the BFAC will continue to be involved in the implementation and review of the BRM Plan as outlined in **Appendix A** – Communication Strategy.

To advise the Strategic Community Plan, the Wongan-Ballidu Shire is currently at the midway point of a survey, initial statistics were released in March 2021 (Strategic Community Plan Review 2021, V2 Draft) A total of 61 responses received so far. From these and future results the communities desire to see more resources made available for bushfire protection are anticipated.

The Strategic Community Plan drives the development of the Corporate Business Plan, both of which are integrated with and informed by the Council’s Asset Management, Workforce and Long-Term Financial Plans. Together they form the Local Government Integrated Planning and Reporting Framework.

This Strategic Community Plan demonstrates the Councils commitment in Wongan-Ballidu, for multiple outcomes driven through the community. This will be a major factor influencing the BRM plan. Prioritising treatments for bushfire risk, identified within the shire and the methodology in executing these treatments. There are several issues which are priorities for the Wongan-Ballidu community to be addressed through the BRM planning process. They include:

In order to reduce the impact of these challenges the Shire is committed to the following

- Education and engagement around private property preparation techniques.
- Evacuation planning and communication.
- Reserves Management Plan.
- Support for the enforcement of the Firebreak notice by the Wongan-Ballidu Council, BFAC LEMC and the Executive Group; and
- Access to vegetated areas for fire control and mitigation activities.

Ultimately, the Shire of Wongan-Ballidu’s Chief Executive Officer (CEO) is responsible for the BRM Plan processes, sustainability and continuity, noting that the CEO is able to delegate all or some of these responsibilities. There are multiple internal stakeholders involved in the effective implementation of the BRM Plan, the shires responsibility is to address the risks within its scope and facilitate the management of bushfire risk in the wider community. The Shire of Wongan-Ballidu’s CEO may delegate responsibility for the implementation and maintenance of this plan, while in place, to the Bushfire Risk Planning Coordinator role, if appointed, the Community Emergency Services Manager or a suitably qualified member of staff, yet to be determined (figure 2).

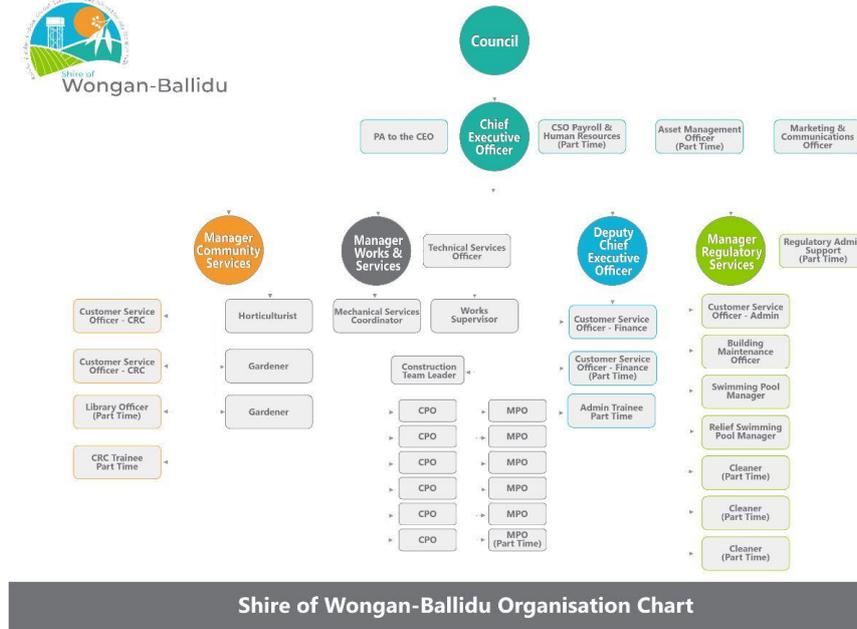


Figure 2 – Organisational structure Shire of Wongan-Ballidu

3.1.2 Location, Boundaries and Tenure

The Shire of Wongan-Ballidu is located in the centre of the Western Australian Wheatbelt. The Shire covers an area of 3,368 km² and is bordered by the Shires of Dalwallinu to the north, Moora to the north-west, Victoria Plains to the south-west, Goomalling to the south, Dowerin to the south-east and Koorda to the east (figure 3).

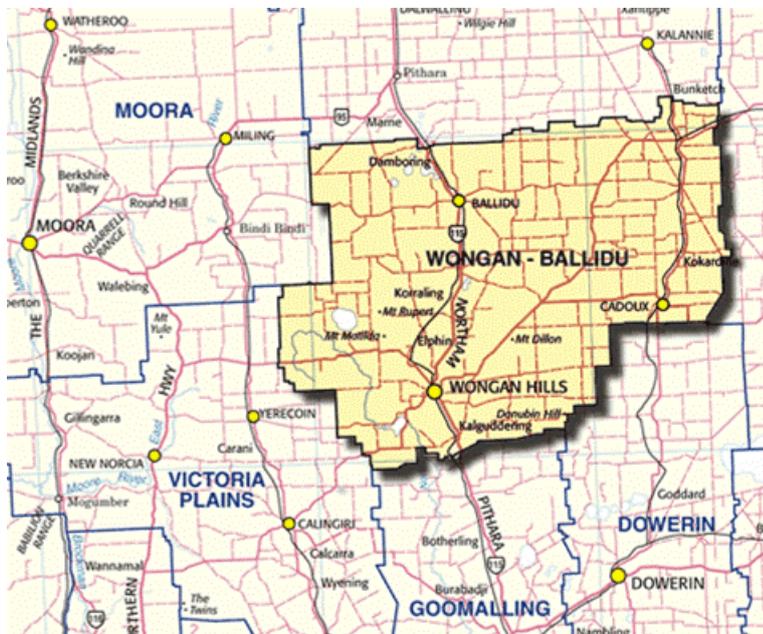


Figure 3 - Location of the Wongan-Ballidu Shire

The shire encompasses the townsites of Wongan Hills, Ballidu, Cadoux, Kokardine, Burakin and Kondut. Wongan Hills serves a wide and diverse agricultural area and is the administrative centre for the Shire of Wongan-Ballidu. Although the shire has six gazetted townships, only

Wongan Hills, Ballidu and Cadoux have any residential properties which are exposed to bushfire risk.

Wongan Hills township is bounded by several large reserves under various tenure, these reserves total 3850ha vested with a combination of the Shire of Wongan-Ballidu and DBCA. This places substantial pressure on local government and its rate payers to adequately maintain Strategic Bushfire Mitigation Strategies without additional resources, both financially and capability based. These reserves are composed of dense Woodland with shrubland understory which varies in density due to canopy cover. It is estimated to carry around 25t/ha and provides the most significant risk from bush fire to the townsite. It is and will continue to be a key area of focus for mitigation works and ongoing maintenance over time. The primary focus will be on creating safe access for emergency responders followed by considerations on how and when best to reduce the fuel load.

Much of the Shire is given over to agricultural purposes and as such risks to individual farmsteads is, in the main, from crop fire. This is addressed in the BRM Plan by individually rating each property and examining ways to effectively reduce the risk in neighbouring bush areas which may cause the crop to ignite. However, many crop fires are started either by lightning strike or mechanically, usually at harvest time. Each property is assessed and rated with the appropriate recommendation for treatments. The trend in agriculture is for the consolidation of smaller family farms into large corporation-controlled enterprises, this comes with its own issues. Firstly, fewer staff on the large farms results in less people power to assist fighting any fire. However, with mechanisation and increased cost efficiencies it is assumed these larger farms will be more likely to equip themselves with adequate fire fighting equipment and have suitable arrangements to implement all necessary fire break orders issued by the Shire.

3.1.3 Population and Demographics

The Shire of Wongan-Ballidu has a residential population of 1,331. Of this total, 53.3% are male and 46.7% female with a median age of 41 years². The 2016 census has these people residing in 540 dwellings. Table 2 shows a breakdown of the Shire's age demographics against the Western Australian and Australian averages.

Population growth for Wongan-Ballidu between 2011 census and 2016 census is 7.18% lower than the forecast average for WA.³

The median age within Wongan-Ballidu is 41 years, which is older than the median age for Western Australia (36 Years) and Australia (38 years). A large proportion of these people are farm based which in general terms lends itself to a greater capacity to respond quickly to bushfire events with farm-based equipment or local brigade. During the peak Bush fire period these workers are also heavily committed to harvesting, however the Shire uses the imposition of Harvest bans on days of very high danger and above which then reduces the risk of a fire starting and frees up resources to assist with any fire outbreaks.

There is a noticeable under representation of persons aged 20-29 years in the Shire (at 10.2 percent) compared to Western Australia (14 Percent). This is becoming a common trend in

² ABS Statistics 2016

³ WAPC (March 2019), Western Australia Tomorrow: Population report No.11

many regional areas as young adults leave the area to move to larger population centres for tertiary education or employment.

Within the Shire there is an ageing demographic, with an average of 16.1 % of the population being 65 or older as compared with the Western Australian average of 14.1%. These figures see an increase in percentage of aging population from 12% in 2011. This increase contributes to the increase in residents who need assistance for core activities and a decreasing pool of volunteers to draw from or bush fire brigades.

Elderly people are considered a vulnerable demographic in bushfire management, as they may have less capacity to prepare and defend property or protect themselves during a fire event and may have additional or special needs during evacuation and relocation. Because of this, there is need for increased planning for this group to ensure that they are adequately considered in bushfire management planning, communications during fire events, community education delivery and consultation when planning mitigation works. There is a need to ensure that there is tailored advice provided to this group during pre-fire season preparation, as well as during bushfire events.

This trend is reflected in the increase in the average age of bushfire volunteers in the shire. It is a challenge for the shire to develop effective strategies to engage with the limited younger age groups within the community to maintain the volunteer numbers required to manage both bushfire and the large program of prescribed burning within the shire, whilst maintaining and transferring the vast knowledge base currently residing within the older volunteers.

New residents into the Shire, seasonal workers, tourist and absentee landowners are also vulnerable groups who are likely to have less appreciation of the hazard of bushfire due to their lack of knowledge of the local areas, understanding of local conditions and limited experience with bushfires. These groups pose a challenge for the Shire in how to address community education on all bushfire related matters. Similarly, many property owners in semi-urban and urban areas have not witnessed a bushfire, and the level of knowledge, experience, preparedness, ability and resilience is less known. This needs to be a focus of community education activities by the Shire.

Age Demographic - Table

Age	Wongan-Ballidu (S)	%	Western Australia	%	Australia	%
Median age	41	--	36	--	38	--
0-4 years	91	6.8	161,727	6.5	1,464,779	6.3
5-9 years	116	8.7	164,153	6.6	1,502,646	6.4
10-14 years	73	5.5	150,806	6.1	1,397,183	6.0

15-19 years	40	3.0	149,997	6.1	1,421,595	6.1
20-24 years	59	4.4	160,332	6.5	1,566,793	6.7
25-29 years	78	5.8	184,908	7.5	1,664,602	7.1
30-34 years	98	7.3	194,267	7.9	1,703,847	7.3
35-39 years	80	6.0	173,041	7.0	1,561,679	6.7
40-44 years	91	6.8	171,996	7.0	1,583,257	6.8
45-49 years	86	6.4	172,520	7.0	1,581,455	6.8
50-54 years	103	7.7	162,438	6.6	1,523,551	6.5
55-59 years	91	6.8	149,899	6.1	1,454,332	6.2
60-64 years	113	8.5	132,145	5.3	1,299,397	5.6
65-69 years	82	6.1	116,755	4.7	1,188,999	5.1
70-74 years	58	4.3	82,911	3.4	887,716	3.8
75-79 years	27	2.0	61,509	2.5	652,657	2.8
80-84 years	23	1.7	42,590	1.7	460,549	2.0
85 years and over	27	2.0	42,420	1.7	486,842	2.1

Table 2 - Age Demographic – ABS 2016

3.1.4 Economic Activities and Industry

The Shire of Wongan-Ballidu is renowned for its grain production and is highly dependent upon the agriculture industry. The industrialisation of agriculture, uncertain weather conditions, opening of global markets and declining terms of trade have been major factors impacting on farm production. This has potential implications for businesses dependent on farms for their main source of income and has had a negative economic impact on the Shire.

Fire therefore is a major risk to this economic asset. The Shire plans to use the BRM Plan not only to highlight areas like this that require attention but as a basis to qualify for Mitigation Activity Fund Grants which will enable mitigation treatments to be conducted which were previously out of reach of the Shires budget.

The total Western Australian agricultural economy was worth approximately \$8.2 billion in 2015-16 (\$55.9 Billion Australia wide). Whilst the Wongan-Ballidu Shire is estimated to have contributed \$100,502,781 (Gross Value) to the statewide agricultural revenue in 2015 - 2016⁴.

Number of Businesses by Industry - As at 30 June

Description	2015	2016	2017	2018	2019
Agriculture, forestry and fishing (no.)	119	109	112	103	104
Manufacturing (no.)	4	4	4	4	4
Electricity, gas water and waste services (no.)	3	----	----	----	----
Construction (no.)	13	18	20	13	13
Wholesale trade (no.)	4	4	4	3	3
Retail trade (no.)	13	20	13	10	8
Accommodation and food services (no.)	10	8	4	4	4
Transport, postal and warehousing (no.)	11	13	13	8	12
Financial and insurance services (no.)	15	10	13	15	9
Rental, hiring and real estate services (no.)	27	35	30	27	24
Professional, scientific and technical services (no.)	8	11	6	6	6
Administrative and support services (no.)	6	4	4	3	3
Other services (no.)	8	9	8	3	4
Currently unknown (no.)	3	3	----	----	----
Number of Businesses by Industry - Total (no.)	236	238	225	208	202

Table 3 - Number of Business by industry

The major industry in the Shire of Wongan-Ballidu by employment and number of associated businesses is Agriculture, Forestry and Fishing which makes up 29.8% of the total employment and 51% of all businesses. Hence the need for concentrated effort to mitigate wherever possible the disruption to this industry by bushfire.

Industry of Employment – Proportion of Employed Persons

Description	2011	2016
Agriculture, forestry and fishing (%)	32.2	29.8
Mining (%)	1.4	1.2
Manufacturing (%)	4.8	3.3
Electricity, gas water and waste services (%)	0.4	0.4
Construction (%)	5.2	3.1
Wholesale trade (%)	7.8	10.3
Retail trade (%)	8.8	6.8

⁴ Australian Bureau of Statistics – 2016 Census

Description	2011	2016
Accommodation and food services (%)	3.1	3.3
Transport, postal and warehousing (%)	5.5	6.5
Information media and telecommunications (%)	0.4	0.4
Financial and insurance services (%)	1.4	1.9
Professional, scientific and technical services (%)	2.4	1.9
Administrative and support services (%)	1.4	1.3
Public administration and safety (%)	4.8	6.1
Education and training (%)	8.6	8.9
Health care and social assistance (%)	5.9	6.4
Arts and recreation services (%)	0.4	0.6
Other services (%)	4.5	3
Industry of Employment - Inadequately described or not stated (%)	1.6	4.8
Total persons employed (no.)	706	672

Table 4 - Employment by industry in the Shire of Wongan-Ballidu

3.2. Description of the Environment and Bushfire Context

3.2.1 Topography and Landscape Features

Clearing for agriculture has taken place mainly on the alluvial soils of the slopes and valleys. The area is dominated by agricultural land use and the natural vegetation has been extensively cleared. This area represents a significant potential for intense, fast-moving bushfires, especially during harvest season (November to March) when harvesting activities have the greatest potential to ignite a fire and crops are cured. Fortunately, the landscape in these areas is gently undulating with broad fields and scattered remnants on the periphery, making access for firefighting appliances easier. However, there are several hilly outcrops which pose more difficult access for firefighting activities which are spread across the Shire. In these areas access or fire break roads provide the best means of combating fires within this terrain.

The western portion of the shire underlying geology occurs in the southwestern terrain of the Yilgarn craton. The underlying geology comprises of igneous and metamorphic rocks, layered with quartz feldspar and biotite gneiss. The geology underlying the western boundary of the shire includes granitic rock.

The shire is characterised by undulating rises to low hills, migmatitic rocky outcrops and granitic rocks. The soils are described as deep yellow sandy with yellow to brown sandy earth soils overlying gravelly subsoil. Small areas of non-alkaline soils of sandy and loamy duplexes exist in this area.

Topography can significantly impact the bushfire behaviour, impeding access for suppression resources and limiting options for mitigation works which makes it a significant factor in bushfire risk and management.

The impact of topography is more significant where the rock outcrops may restrict and, in some cases, prevent access by fire appliances and machinery. In wooded areas where the rocky formations prevent ground-based firefighting, direct attack of a fire is limited to aerial response or alternatively, ground crews must wait for the fire to reach an area of suitable topography. This method however greatly increases the time for fire to be suppressed, which means fires have time to grow resulting in larger fires often with higher intensities and rates of spread.

When fighting larger more intense fires in rocky outcrops, alternate control strategies may be required. For example, constructing fire lines (tracking), around the perimeter of the fire, using heavy machinery or by reducing fuels ahead of the main fire front, or in unburnt pockets through backburning. 'Tracking' is a parallel attack that can minimise the final area impacted by fire. An indirect attack, such as backburning, may increase the overall fire size, but may be necessary in areas where there are limited options for containment, tracking is unachievable or to strengthen established containment lines. While land formations can make installing firebreaks and fire lines challenging, this issue highlights the need to ensure good strategic fire breaks are created and maintained ahead of time, which can be used to contain fires in this more difficult terrain. Environmental impacts, such as impacts to remnant vegetation, can be best managed by maintaining a network of strategic fire access tracks. Fire access tracks are relatively less effective when suppressing larger more intense fires however are preferable to provide safe, effective, and quicker access and therefore improve the ability to control a fire whilst small.

The waterways in the Shire are often riparian vegetation corridors which creates areas where the vegetation is separated by rivers or saline depressions making movement across the landscape challenging. This is particularly the case for firefighters as fires often spot across the watercourses and salt areas where firefighters cannot easily cross and they may have to travel some distance to be able to get to the other side. This can often result in a significant delay in firefighting response allowing the fires to be able to grow quickly.

3.2.2 Climate and Bushfire Season

In Wongan Hills, the summers are hot and dry, the winters are long and cold, and it is windy and mostly clear year-round. Over the course of the year, the temperature typically varies from 0°C to 43°C. (Dept Primary Industries and Regional Development website).



Department of Primary Industries and Regional Development Wongan Hills : Temperature (Monthly)

01-01-2016 - 01-06-2021

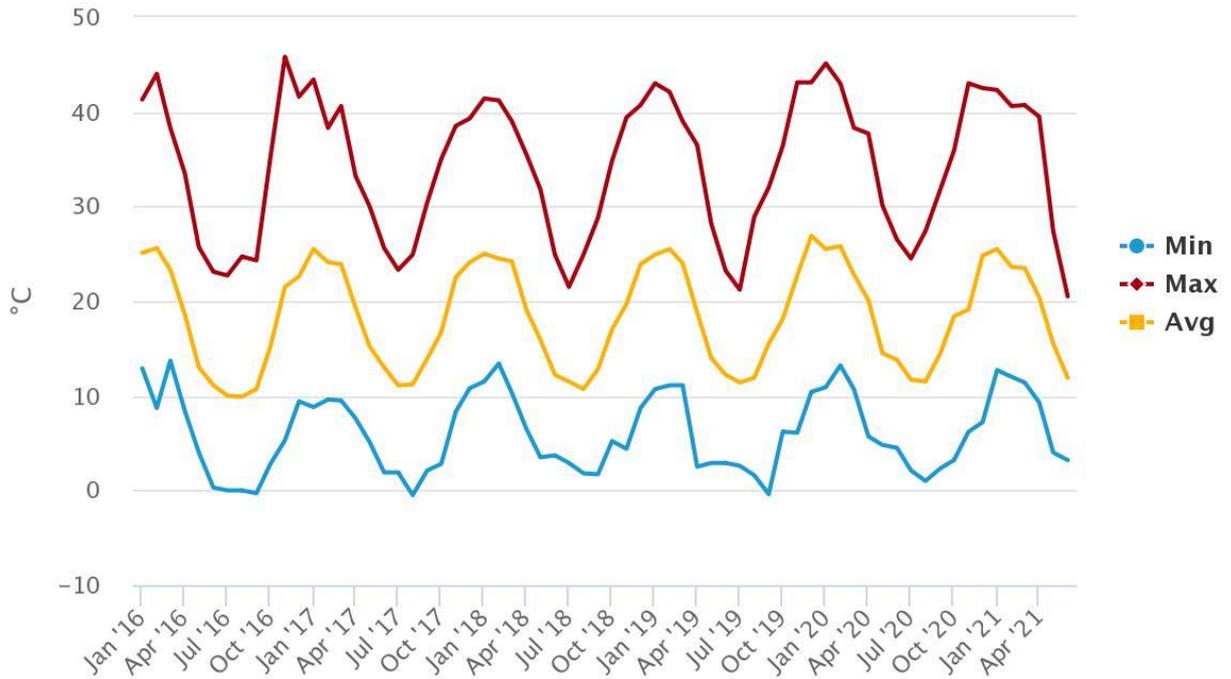


Figure 4 - Wongan-Ballidu Yearly Temperature ⁵



Department of Primary Industries and Regional Development Wongan Hills : Humidity (Monthly)

01-01-2016 - 01-06-2021

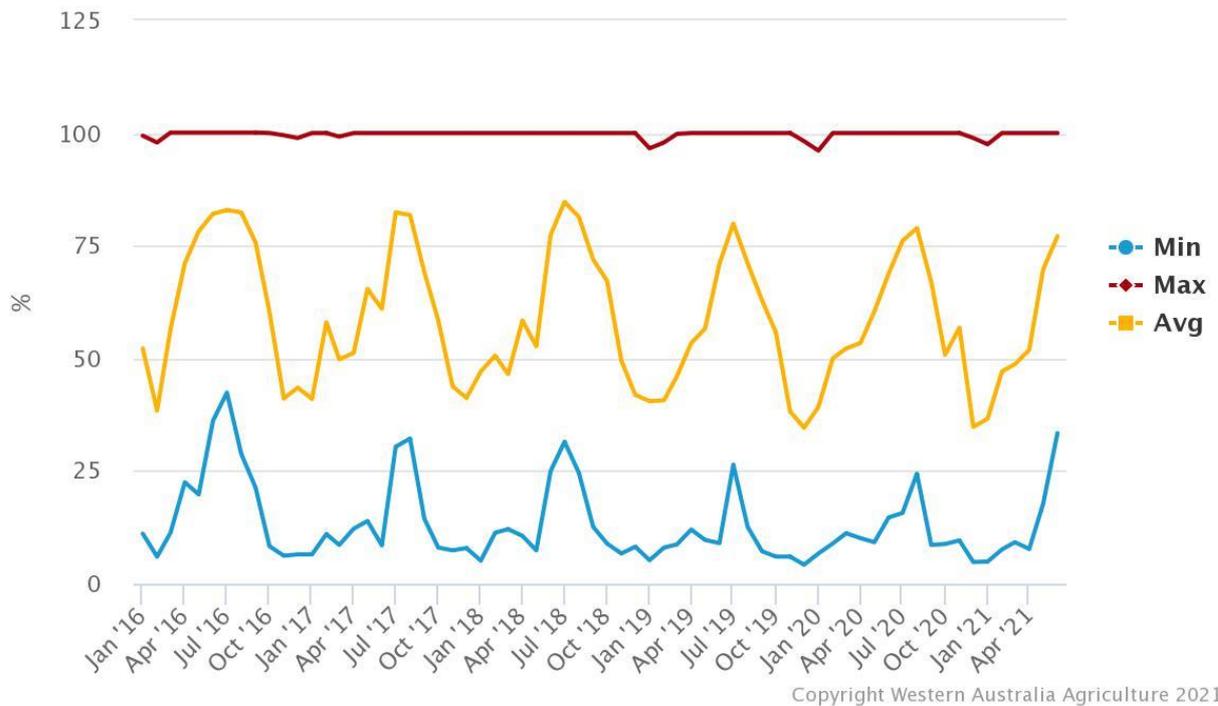


Figure 5 - Wongan-Ballidu Yearly Humidity ⁵

As is the case throughout the Wheatbelt, humidity is at its lowest during the summer months contributing greatly to the ideal conditions for fire, with the average of 35% RH.

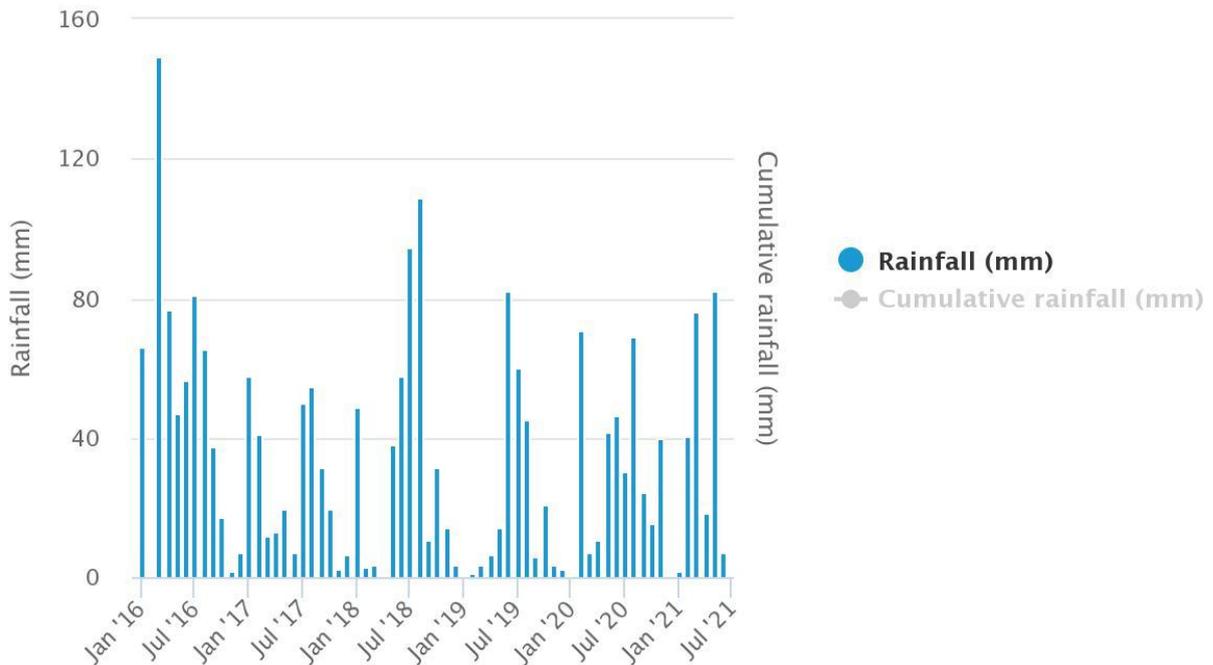
The early to mid- summer period is generally dominated by weekly weather cycles and movements of the west coast trough through the area, producing thunderstorms and lightning. This is one of the primary causes of bushfires in the shire. Destructive gale force winds and widespread bushfires have resulted from periodic incursion of decaying tropical cyclones below the 30°S latitude. Summers are dry, with December and January receiving average monthly falls of less than 2.5mm of rain. The hot dry summers and seasonal strong winds create an environment where there is a significant risk of bushfire.



Department of
Primary Industries and
Regional Development

Wongan Hills : Rainfall (Monthly)

01-01-2016 - 01-06-2021



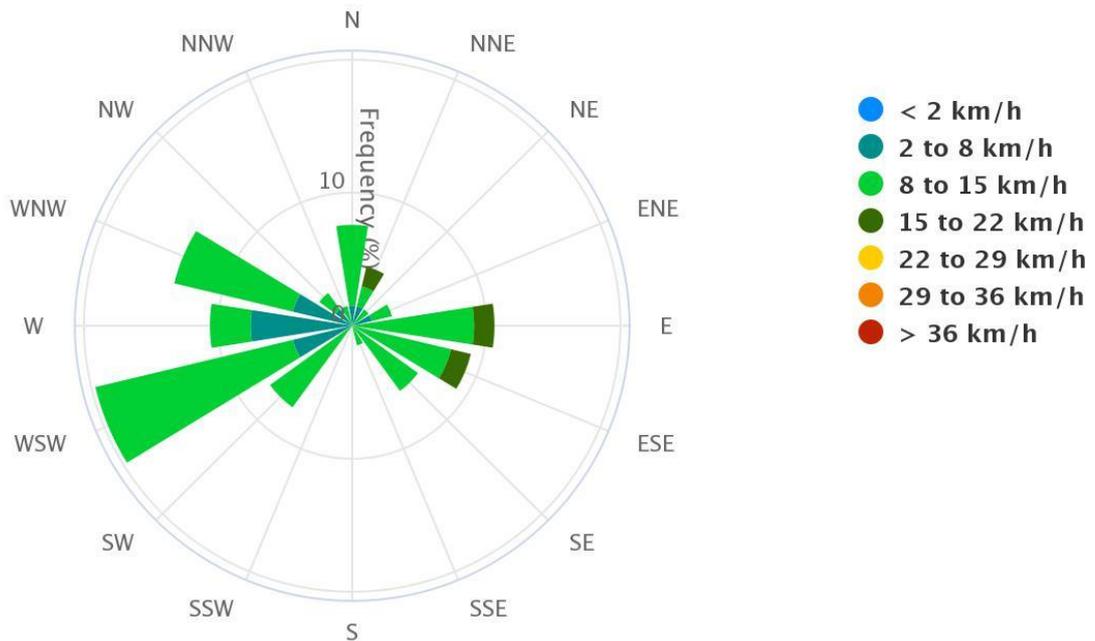
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Figure 6 - Wongan-Ballidu Average yearly Rainfall ⁵



Wongan Hills : Wind Rose (Monthly)

01-01-2016 - 01-06-2021



Copyright Western Australia Agriculture 2021

Figure 7 - Average yearly wind strength and direction ⁵

Prevailing winds are from the West Northwest and West Southwest, which can prove challenging during suppression because they are generally strong and dry. North-westerly/North Easterly winds prevail between January and March. These winds are generally hot and dry and occur during the peak bushfire period. Winds have been recorded from these directions at up to 100Km/hr During the summer months.⁵

Climate Change

Over the past few years, a significant amount of data has been produced worldwide to demonstrate the effects that climate change will have on the regions.

Changes to temperature and rainfall regimes over the past 20 years, suggests increases in minimum temperatures and declining mean annual rainfall in the region⁶. These trends will be exacerbated by further increases in minimum temperature, decreases in rainfall, increased storm activity and frequency of extreme fire weather days as predicted under climate change scenarios. These may impact on remnant vegetation within the region and present some management challenges, particularly in relation to hydrology and fire management.

⁵ <https://weather.agric.wa.gov.au/station/WH>

⁶ BoM 2003 The Greenhouse Effect and Climate Change

This may result in the window for prescribed burning in the Wongan-Ballidu Shire opening in spring from its current, relatively small window. But also has implication for a longer more severe bushfire season.

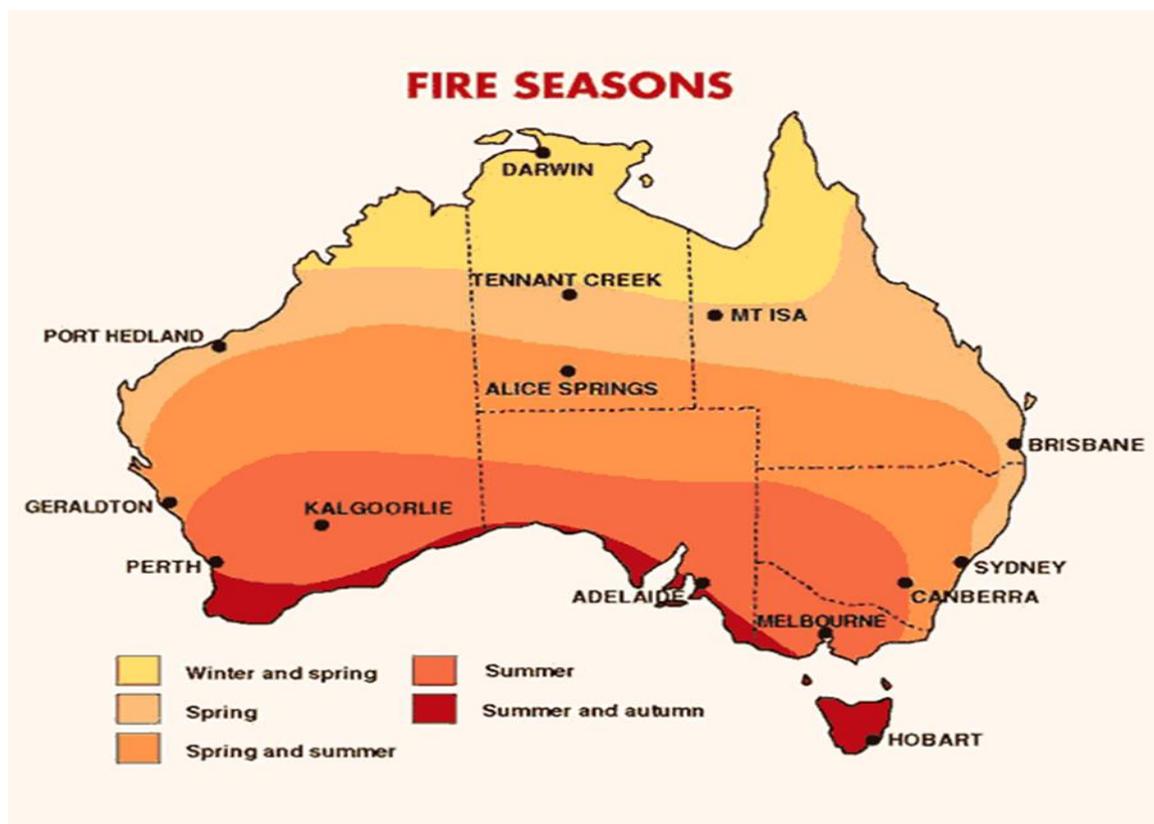


Figure 8 - Fire Seasons of Australia ⁶

In the Wheatbelt the climate has become warmer and drier and is likely to continue to dry, with lower winter rainfall and increased average temperatures resulting in a longer ‘fire season’ and a greater proportion of the landscape that is sufficiently dry to burn.⁷

Fire danger index

The Forest Fire Danger Index (FFDI) is based on a combination of different weather conditions acknowledged to influence the risk of dangerous bushfire conditions in Australia, including temperature, rainfall, humidity and wind speed. In addition to the weather, bushfire events in Australia are also influenced by factors such as vegetation conditions, terrain and ignition sources. When a Fire Danger Index (FDI) reaches 50 the conditions are considered as severe; when conditions reach 75 the conditions are considered as extreme. The Forest Fire Danger Index and the Grass Fire Danger Index are intended for use in examining broad-scale features in fire weather conditions for regions throughout Australia⁸.

The Grassland Fire Danger Index (GFDI) is an index that describes the rate of spread of a grass fire and therefore the difficulty of putting it out. The index was developed in Australia and has been adapted for the Great Plains. (Crops can be interpreted as grasslands) It is based on a combination of the “greenness” of the grass, and various meteorological parameters. The higher the index, the faster a grass fire will spread. The weather parameters (listed in

⁷ www.dpaw.wa.gov.au

⁸ <https://www.dfes.wa.gov.au/bushfire/prepare/>

decreasing order of importance) are wind, wind gusts, relative humidity and temperature, however, the biggest single factor is “curing.” Curing is a measure of the moisture content in drying grass. To spread rapidly, there must be fuel, and completely cured grass is an excellent fuel. Conversely, green grass does not burn easily, regardless of wind or relative humidity.⁹ Harvest/vehicle movement bans are set using the GFDI.

Application of Fire Danger Index (FDI) 80. - The fire danger index reflects the chance of a fire starting, its rate of spread, its intensity and the difficulty of its suppression, according to various combinations of air temperature, relative humidity, wind speed and both the long- and short-term drought effects. Inputs to hazard assessment calculation are reflective of FDI 80 (Grass Fire Danger Index 110) conditions, as per AS3959-2009. The higher the rating, the less chance of controlling a fire until weather conditions improve.

The Shire of Wongan-Ballidu is located within the Mortlock Fire Weather District. Given the mix of agricultural holdings and remanent native vegetation within the Shire of Wongan-Ballidu, the Grass Fire Danger Index is the model applied to determine the FDI within the shire given the prevalence of agricultural activities.

From the FDI, predictions can be made regarding a fire’s rate of spread, intensity and the potential for various suppression tactics to succeed. The FDI is the basis for determining the Fire Danger Rating, shown below, which is a scale developed to assist communities to better understand information about fire danger.¹⁰

⁹ www.weather.gov

¹⁰ Source: Department of Fire and Emergency Services



 Catastrophic	Catastrophic What does it mean? FDI 100 + These are the worst conditions for a bush or grass fire. Homes are not designed or constructed to withstand fires in these conditions. The safest place to be is away from high risk bushfire areas.
 Extreme	Extreme What does it mean? FDI 75 - 99 Expect extremely hot, dry and windy conditions. If a fire starts and takes hold, it will be uncontrollable, unpredictable and fast moving. Spot fires will start, move quickly and come from many directions. Homes that are situated and constructed or modified to withstand a bushfire, that are well prepared and actively defended, may provide safety. You must be physically and mentally prepared to defend in these conditions.
 Severe	Severe What does it mean? FDI 50 - 74 Expect hot, dry and possibly windy conditions. If a fire starts and takes hold, it may be uncontrollable. Well prepared homes that are actively defended can provide safety. You must be physically and mentally prepared to defend in these conditions.
 Very High	Very High What does it mean? FDI 32 - 49 If a fire starts, it can most likely be controlled in these conditions and homes can provide safety. Be aware of how fires can start and minimise the risk. Controlled burning off may occur in these conditions if it is safe - check to see if permits apply.

Figure 9 - Fire danger Ratings ¹¹

3.2.3 Vegetation

The Wongan Hills and surrounding countryside are situated in the Avon Botanical District. Beard (1979) has mapped the Moora grid square which includes the Wongan Hills district. From this work it is noted that the remaining natural vegetation is covered by *Allocasuarina campestris* (Rock Sheoak) and *Dryandra* thicket. This vegetation forms shrubby heathland with dense shrub layer that has large amounts of suspended dead materials which results in fast moving fire activity.

The Mt Rupert and Mt Matilda area surrounded by *Eucalypts Loxophleba* (York Gum) woodlands. With *Eucalypts Loxophleba* and *Eucalypts salmonophloia* (Salmon Gum) woodland covering the southwest corner. These woodlands are taller than the shrubby heaths and tend to have a more open mid-storey. The fuels are well distributed from ground to canopy which means fires quickly move into the canopy.

¹¹ Source: Department of Fire and Emergency Services www.dfes.wa.gov.au

The country consists mainly of residual sandplain with occasional granite outcroppings. The valleys are saline with salt lakes and halophytes with small areas of peripheral woodland and aeolian sandplain. This topography lends itself to extensive broadacre farming with occasional rocky outcrops, unfortunately these higher outcrops often attract lightning strikes initiating a bush fire which have the potential to travel into the plains and the crops. Only 5.2% of the original natural vegetation remains in the Shire.

The remainder of the Shire is made up of broadacre farming. In these areas the harvest period means that there are high fuel loads with dried vegetation in paddocks if fires start in unharvested crops, they can be high intensity and move very fast.

3.2.4 Threatened Species and Communities

Flora and Fauna represent particular significance for the shire as they are not only recognised environmental assets in their own right, but also impact the treatment options available for identified risks in relation to other assets.

All treatments need to be assessed in line with the requirements of the identified flora and fauna detailed below, with care given to ensure appropriate authorities are consulted prior to any mitigation work commencing. Where possible, consultation should also occur prior to implementing any response strategies. The shire will, where possible, remind landowners/managers of their obligation to obtain appropriate clearances and approvals prior to commencing vegetation-based treatments. This includes:

- Environmentally Sensitive Areas (ESA's)
- Declared Rare Flora and Fauna (DRF's)
- Threatened Ecological Communities (TEC's).

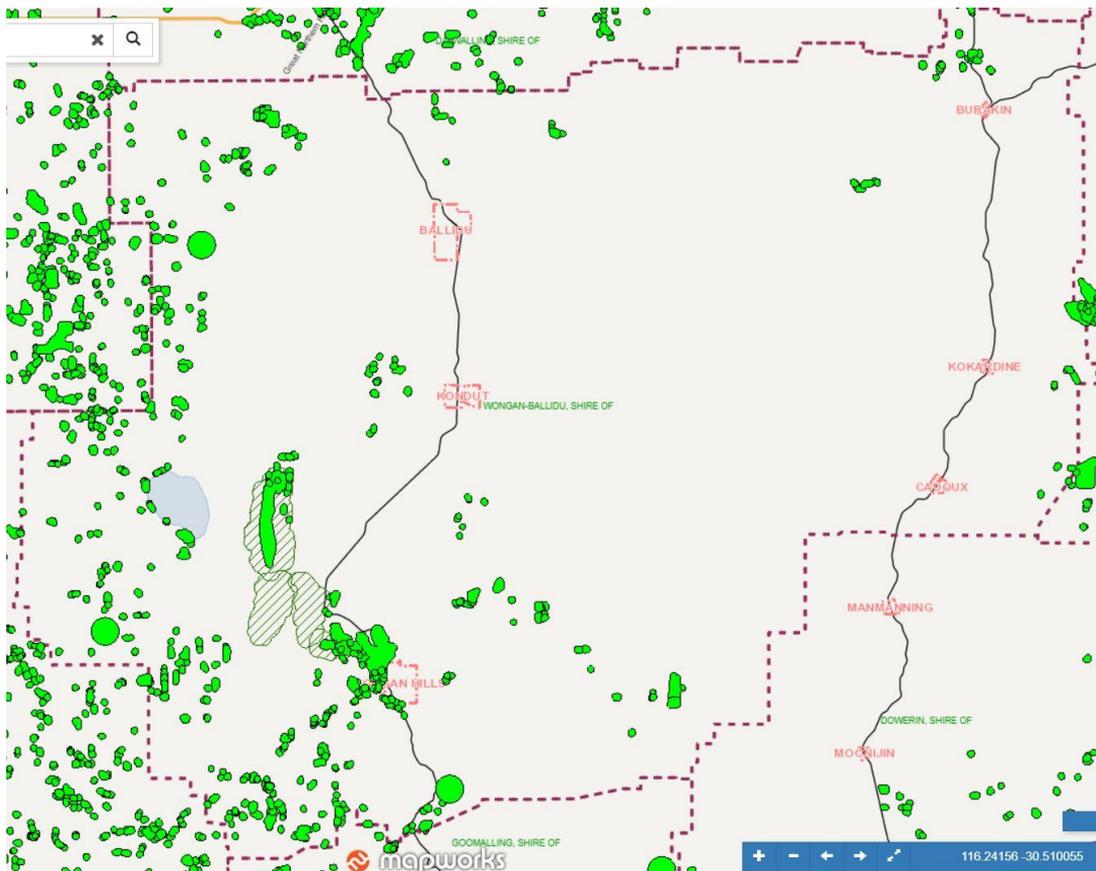


Figure 10 - Threatened Ecological Communities - BRMS

As illustrated in Figure 10, TEC's (in solid green) and Priority areas (in shaded green) are predominantly clustered to the North and West of the townsite of Wongan Hills in an area of reserves which creates a very difficult set of circumstances when it comes to conducting mitigation treatments to protect human settlement assets within the town. All treatments will require detailed study and appropriate permits prior to any works being conducted.

A further consideration in relation to both bushfire prevention and response strategies is the potential spread of weeds or diseases such as *Phytophthora Cinnamomi* (Dieback). Dieback has infected large areas of Western Australia. It is easily spread through soil movement from vehicles, animals, water and feet. Other fungal-borne diseases can also be spread through these pathways. This risk must be considered in the context of planned prevention and response strategies and the risk minimised wherever possible.

Flora

Large areas within the Shire of Wongan-Ballidu have been cleared for Agricultural activities, there remains outcrops of remnant vegetation throughout the shire which are usually disconnected by large agricultural development.

Although some plants are rare because of their requirement for a specific restricted habitat, the majority have become rare or threatened because of the activities of humans. Extensive land clearing and modification of the environment has resulted in the extinction of some plant taxa and threatens the survival of many others. Continued land clearing, road works, grazing by domestic stock and rabbits, plant pathogens (particularly *Phytophthora* species), exotic weeds and insects, inappropriate fire regimes and rising saline water tables continue to threaten many plant taxa.

Status according to IUCN criteria	Taxon
Critically Endangered	<i>Acacia pharangites</i> <i>Calothamnus accedens</i> <i>Gastrolobium glaucum</i> <i>Grevillea dryandroides</i> subsp. <i>dryandroides</i> <i>Lysiosepalum abollatum</i> <i>Verticordia staminosa</i> subsp. <i>staminosa</i>
Endangered	<i>Acacia pygmaea</i> <i>Conostylis wonganensis</i> <i>Melaleuca sciotostyla</i> <i>Philothea wonganensis</i>
Vulnerable	<i>Eremophila ternifolia</i> <i>Eucalyptus recta</i> <i>Microcorys eremophiloides</i> <i>Rhagodia acicularis</i>

Table 5 - Plant Taxa addressed in CALM program No 39

Status	Taxon
Presumed Extinct	<i>Calothamnus accedens</i>
Endangered	<i>Acacia pharangites</i> <i>Acacia pygmaea</i> <i>Eremophila ternifolia</i> <i>Gastrolobium glaucum</i> <i>Grevillea dryandroides</i> subsp. <i>dryandroides</i> <i>Melaleuca sciotostyla</i> <i>Philothea wonganensis</i> <i>Stylidium coroniforme</i> <i>Verticordia staminosa</i> subsp. <i>staminosa</i>
Vulnerable	<i>Acacia semicircularis</i> <i>Daviesia spiralis</i> <i>Rhagodia acicularis</i>

Table 6 - Plant Taxa listed under EPBC Act as of 2005

Vegetation response to fire is a consideration when planning mitigation activities. Human settlements are a priority for bushfire mitigation, but consideration is also given within the treatment planning phase to species that will not recover from inappropriate fire regimes.

A prescribed burning rotation appropriate for the vegetation system and proximity to vulnerable assets will ensure species health and diversity, appropriate monitoring and fuel sampling of the individual vegetation systems will ensure biodiversity is maintained at current levels and a balance between community safety and the environment is maintained.

Fauna

Data Sourced from the “EPBC Act Protected Matters Report” covering the Shire of Wongan-Ballidu has been extracted for this section.

An example of a fire threatened species endemic to the Wongan-Ballidu Shire, is the Chuditch and the Red-Tailed Phascogale, these small marsupials are known to inhabit more mesic parts of the landscape such as swamps and creeks that can support dense vegetation where fire plays an important role in maintaining the habitat of this threatened species. Inappropriate fire regimes including intense bushfires can threaten their populations.

Fire management for the Chuditch and the Red-Tailed Phascogale conservation is based on using prescribed burning to either protect healthy habitat and populations from bushfire or to regenerate senescent habitat that is no longer occupied by them.

Preventing large scale landscape fire also prevents tree hollows and larger trees from being heavily affected. Which are also critical components of some threatened avian species habitats.

The following table is extracted from the ¹²“EPBC Act Protected Matters Report” and clearly illustrates the Fauna in the area, of special note.

¹²Source: <http://www.environment.gov.au/webgis-framework/apps/pmst/pmst-region.jsf>

Threatened Species		[Resource Information]
Name	Status	Type of Presence
BIRDS		
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Breeding known to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
FISH		
Nannatherina balstoni Balston's Pygmy Perch [66698]	Vulnerable	Species or species habitat may occur within area
MAMMALS		
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area
Phascogale calura Red-tailed Phascogale, Red-tailed Wambenger, Kenngoor [316]	Vulnerable	Species or species habitat likely to occur within area
OTHER		
Idiosoma nigrum Shield-backed Trapdoor Spider, Black Rugose Trapdoor Spider [66798]	Vulnerable	Species or species habitat known to occur within area

REPTILES

[Egernia stokesii badia](#)

Western Spiny-tailed Skink, Baudin Island Spiny-tailed Skink [64483] Endangered

Species or species habitat likely to occur within area

Table 7 – EPBC matters report for the Shire of Wongan-Ballidu

3.2.5 Bushfire Frequency and Causes of Ignition

Table 8 presents bushfire ignition causes. Although the major cause of bushfire within the Shire of Wongan-Ballidu is from weather events, by far most fires, cumulatively, are from human interactions, as is the case all-over Western Australia. Based on the fires recorded, 18% were because of Vehicles (incl Farming Equipment) 11% burn offs/reignitions, and 9% suspicious. To limit these occurrences the Shire has and enforces Harvest and vehicle movement bans when conditions reach pre-determined levels. It also has a permit system to limit and provide a level of control around fires at certain times of the year. Lightning storms provide a potential source of ignition for bushfires throughout the wheatbelt. The Bureau of Meteorology recorded 2018 as one of the warmest on record and 2019 as the warmest and second driest since 1924. Monthly rainfall was below average (49%) this would account for the increased fire activity shown in table 8

There are several major roadways that transect the Wongan-Ballidu shire. These roads are used by heavy transport for both the public and freight which contribute to a higher number of fires occurring along these routes. The Shire has a programme to maintain a cleared area on the roadside however funding and resources frequently see this project incomplete.



All Bushfires
LGA of WONGAN-BALLIDU (S)
from 01/07/2015 to 30/06/2020

A Bushfire is considered to be any vegetation fire (bush, grass, scrub, forest): of any size

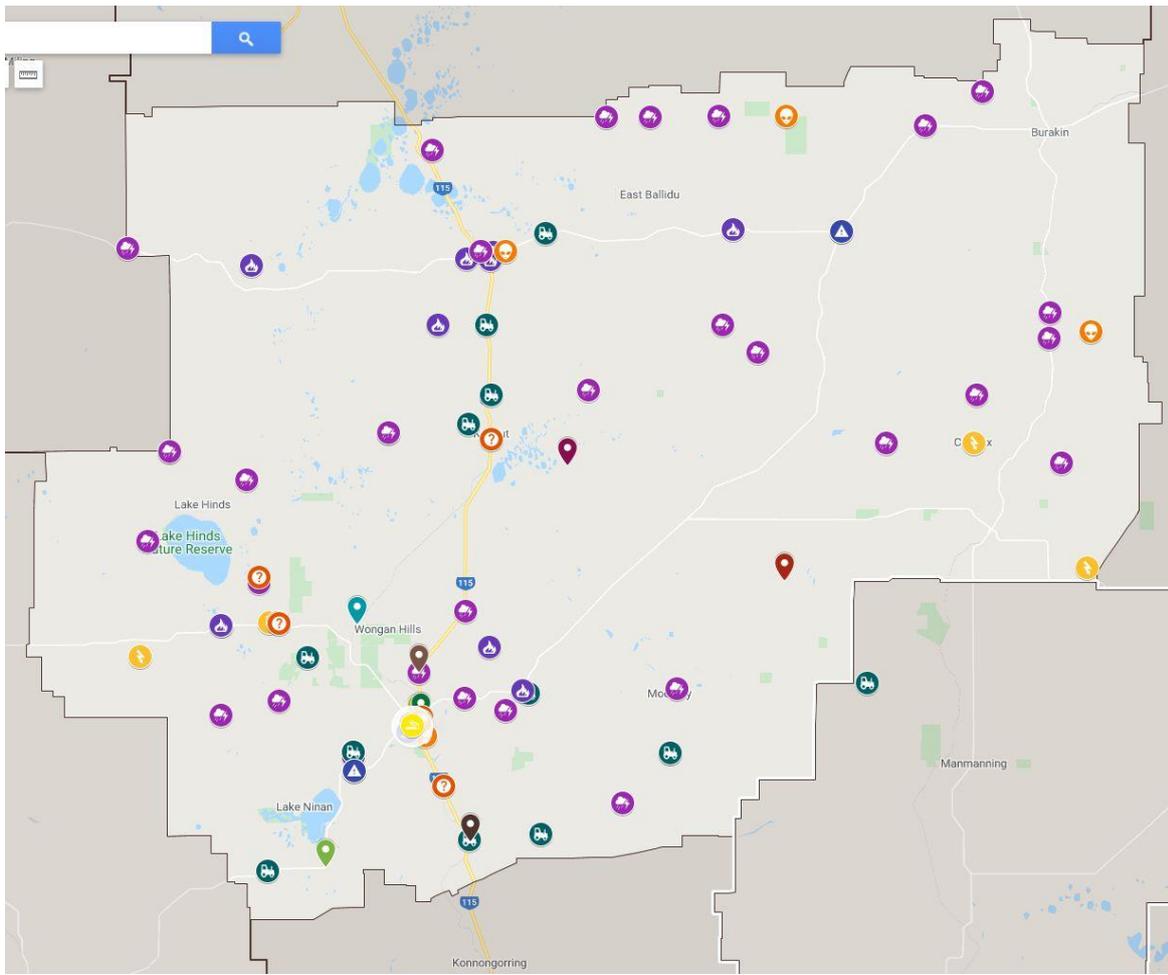
Bushfires Summary of Ignition

Total for the Shire of Wongan-Ballidu

	2015/ 2016	2016/ 2017	2017/ 2018	2018/ 2019	2019/ 2020	Total
Total Number of Bushfires:	7	23	5	36	18	89
Burn off fires	0	6	0	4	0	10
Campfires/bonfires/outdoor cooking	1	0	0	0	0	1
Children misadventure	0	0	1	0	0	1
Cigarette	0	0	1	0	0	1
Electrical distribution (excl. power lines)	0	1	0	0	0	1
Equipment - Mechanical or electrical fault	0	0	0	1	0	1
Equipment - Operational deficiency	0	0	0	0	1	1
Fireworks/flares	0	0	0	1	0	1
Heat from other hot objects or friction	0	0	0	0	1	1
Improper Fuelling/Cleaning/Storage/Use of material ignited	0	1	0	0	0	1
Power lines	1	0	0	2	1	4
Reignition of previous fire	0	1	0	0	2	3
Suspicious/Deliberate	1	2	0	3	2	8
Undetermined	0	0	0	0	1	1
Unreported	0	3	0	1	3	7
Vehicles (incl. Farming Equipment/Activities)	0	3	1	7	5	16
Weather Conditions - Lightning	4	6	2	17	2	31

Table 8 - Bushfire ignition Report Shire of Wongan-Ballidu ¹²

¹² DFES Risk, Capability and Analysis



bushfires w ignition Wongan Balli...

Styled by Cause of Ignition

- Weather Conditions - Lightning (31)
- Vehicles (incl. Farming Equip... (16)
- Burn off fires (10)
- Suspicious/Deliberate (8)
- Unreported (7)
- Power lines (4)
- Reignition of previous fire (3)
- Campfires/bonfires/outdoor ... (1)
- Children misadventure (1)
- Cigarette (1)
- Electrical distribution (excl. p... (1)
- Equipment - Mechanical or el... (1)
- Equipment - Operational defi... (1)
- Fireworks/flares (1)
- Heat from other hot objects ... (1)
- Improper Fuelling/Cleaning/... (1)
- Undetermined (1)

Figure 11 – Ignition Type and Location

3.2.6 Current Bushfire Risk Management Activities

Roadside Fire Management

The WA Roadside Conservation Committee's (RCC's) guidelines on fire management states:

- roadside burning should not take place without the consent of the managing authority;
- local government authorities should adopt by-laws to control roadside burning;
- roadside burning should be planned as part of a total shire / area Fire Management Plan;
- only one side of a road should be burnt in any one year; *this will ensure habitat retention for associated fauna and also retention of some of the scenic values associated with the road;*
- when designing a Fire Management Plan, the two principles which must be kept in mind are the ecological management of vegetation and the abatement of fire hazard;
- no firebreaks should be permitted within the road reserve unless the width of the roadside vegetation strip is greater than 20m;
- a firebreak on any road reserve should be permitted only when, in the opinion of the road manager, one is necessary for the protection of the roadside vegetation. The road manager shall specify the maximum width to which the break may be constructed; and
- in the case of any dispute concerning roadside fire management, the Department of Fire and Emergency Services (DFES) should be called in to arbitrate.

Before any decision is made to burn a road verge, particularly if threatened flora is present, the proponent should be aware of all values present and the impact the fire will have. It is illegal to burn roadsides where threatened flora is present without written permission from the Minister for the Environment. Fire can also be particularly destructive to heritage sites of either Aboriginal or European origin. The shire will consider the values in its road corridors before undertaking mitigation activities.

More information about fire management in roadsides can be found in the RCC's publication, Biodiversity Conservation and Fire in Road and Rail Reserves: Management Guidelines (2011).

Map of Bushfire Prone Areas

The intent of the WA Government's Bushfire Prone Planning Policy is 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. This policy does not apply retrospectively, however the BRM Plan can help address this risk for existing development by establishing an effective treatment plan to manage unacceptable community risks within the broader landscape. The Shire of Wongan-Ballidu Bushfire Prone Areas are shown in Figure 12.

Fire remains the highest risk factor to the community from an emergency management perspective. The Shire is faced with increased fire risk to people and property due to a drying climate, development in high fuel load areas (Urban Rural Interface), increased tourist numbers for a portion of the year, and increasing pressure on fire brigade volunteers to support fire response requirements and the ageing volunteer demographic.

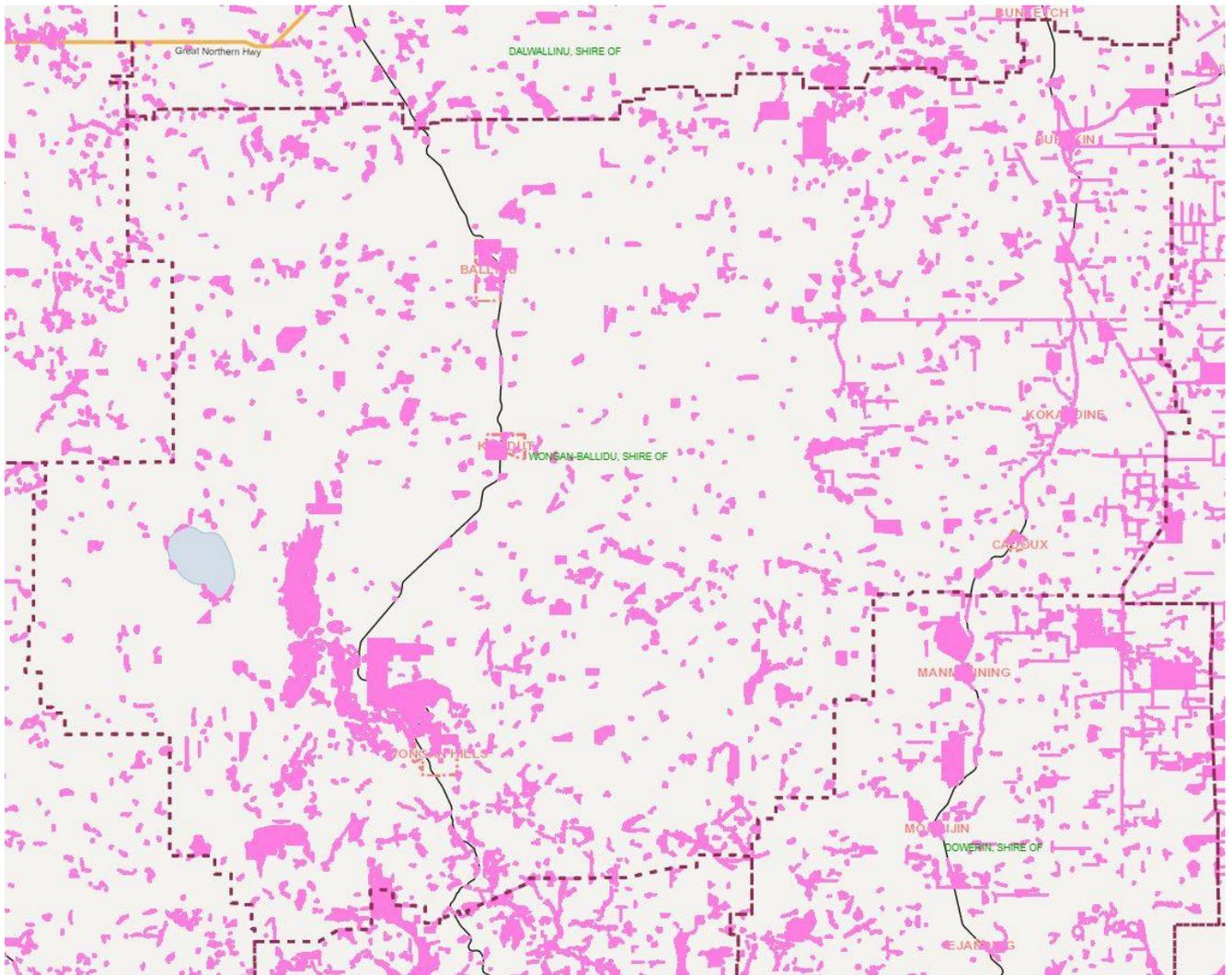


Figure 12 - Bushfire Prone areas Wongan-Ballidu

Volunteer Fire Brigades/additional resources

Response capability

Bushfire response in the Shire of Wongan-Ballidu is wholly undertaken by Volunteers.

The Shire of Wongan-Ballidu has six local volunteer brigades. This is made up of four volunteer Bush Fire Brigades (BFB) being Burakin, Cadoux-Manmanning, Lake Ninan-Hinds and Mocardy. All rely solely on farmer response units except for the single 4.4 appliance (housed at Cadoux) which is shared with the Shire Dowerin. The town site of Wongan is serviced by the Wongan Hills Volunteer Fire and Rescue Service (VFRS) which has a light tanker with rescue trailer and a 3.4 pump. Ballidu townsite is serviced by Ballidu Volunteer Fire and Emergency Services (VFES) and has a 4.4 and 2.4 appliance. The community has funded and maintain their own mobile water response with a 30,000L purpose designed tanker trailer which can be transported to local incidents.

Burning Restrictions

The *Bush Fires Act 1954*, sections 17 and 18, provides for the 'declaration and gazettal' of Prohibited and Restricted Burning Times as well as the ability to adjust burning times to suit changing weather conditions. The Shire of Wongan-Ballidu Restricted and Prohibited Burning times are as follows:

- 13th October To 14th November: Restricted (permits required)
- 15th November To 13th of February: Prohibited
- 14th February to 31st March: Restricted (permits required)
- 1st April to 12th October: No permit required – exercise caution and manage smoke nuisance.
- All of the above are subject to local conditions, dates may change.

Bush Fires Act 1954 Section 33 Fire Management Notices

The Shire issues an annual firebreak Notice in accordance with Section 33 of the Bush Fires Act 1954. Also included is information including, the definition of Restricted & Prohibited Burning Times with the dates and the guidelines for the requirements. This notice is sent to residents with the rate notice each year. The notice can also be found on the shire web site. The intent of the Firebreak Notice is to ensure private properties are maintained in a low fuel state over the high threat period so they do not contribute to the overall risk in the community and are accessible to responding personnel in the event of a fire. The Shire also produces and distributes a "Fire Safety Information Pack" this contains contact details for Fire Control Officers and brigades, detail of Harvest and Vehicle Movement Bans and sundry pertinent information surrounding the mitigation of a fire occurring.

4. Asset Identification and Risk Assessment

4.1. Planning Areas

The Shire of Wongan-Ballidu has a single planning area.

4.2. Asset Identification

Asset identification and risk assessment has been conducted at the local level using the methodology described in the Guidelines and recorded in BRMS. Identified assets are categorised into the following categories and subcategories.

Asset Category	Asset Subcategories
Human Settlement	Residential areas Residential areas, including dwellings in rural areas and the rural-urban interface. Places of temporary occupation Commercial and industrial areas, mining sites or camps and other locations where people may work or gather. Special risk and critical facilities Locations and facilities where occupants may be especially vulnerable to

bushfire for one or more of the following reasons:

- Occupants may have limited knowledge about the impact of bushfires;
- Occupants may have a reduced capacity to evaluate risk and respond adequately to bushfire event;
- Occupants may be more vulnerable to stress and anxiety arising from a bushfire event or the effects of smoke;
- There may be significant communication barriers with occupants;
- Relocation and/or management of occupants may present unique challenges or difficulties, such as transportation, or providing alternative accommodation, healthcare or food supplies; or
- Facilities that are critical to the community during a bushfire emergency.

Economic

Agricultural

Areas under production, such as pasture, livestock, crops, viticulture, horticulture and associated infrastructure.

Commercial and industrial

Major industry, waste treatment plants, mines (economic interest), mills, processing and manufacturing facilities and cottage industry.

Critical infrastructure

Power lines and substations, water pumping stations, tanks/bores and pipelines, gas pipelines, telecommunications infrastructure, railways, bridges, port facilities and waste water treatments plants.

Tourist and recreational

Tourist attractions, day-use areas and recreational sites that generate significant tourism and/or employment within the local area. These assets are different to tourist accommodation described as a Human Settlement Asset (see above).

Commercial forests and plantations

Plantations and production native forests.

Drinking water catchments

Land and infrastructure associated with drinking water catchments.

Environmental

Protected

Flora, fauna and ecological communities that are listed as a:

- Critically Endangered, Endangered or Vulnerable species under the Environmental Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act 1999) (including associated critical habitat);
- Critically Endangered, Endangered or Vulnerable species under the Biodiversity Conservation Act 2016;
- Critically Endangered, Endangered or Vulnerable ecological community under the EPBC Act 1999 (Cth);
- Critically Endangered, Endangered or Vulnerable Threatened Ecological Community (TEC) endorsed by the Minister for Environment (WA);
- Fauna protected under international conventions; and
- Ramsar wetlands of international importance.

Priority

Flora, fauna and ecological communities that are a:

- Priority species listed on the Priority Flora or Priority Fauna Lists held by

Asset Category	Asset Subcategories
	<p>DBCA (Priority 1-5).</p> <ul style="list-style-type: none"> • Priority Ecological Community (PEC) (Priority 1-5); and • Wetlands of national or state importance. <p>Locally important Species, populations, ecological communities or habitats that the local community or independent scientific experts consider important for the area and for which there is some scientific evidence that protection would be beneficial. Wetlands of local importance. Sites being used for scientific research.</p>
Cultural	<p>Aboriginal heritage Places of indigenous significance identified by the DPLH or the local community.</p> <p>European heritage Non-Indigenous heritage assets afforded legislative protection through identification by the National Trust, State Heritage List or Local Planning Scheme Heritage List.</p> <p>Local heritage Assets identified in a Municipal Heritage Inventory or by the local community as being significant to local heritage.</p> <p>Other Other assets of cultural value to the local community, for example community halls, churches, clubs and recreation facilities.</p>

Table 9 – Asset Categories and Subcategories

4.3. Assessment of Bushfire Risk

Risk assessments have been undertaken for each asset or group of assets identified using the methodology described in the Guidelines.

The Asset Risk Register will be maintained in BRMS, this information is not included in the plan because information captured through the Bushfire Risk Management System (BRMS) includes data considered ‘personal’ in nature including the names and addresses of landholders. There is therefore the potential for the data collected through the BRMS to be used for purposes other than bushfire risk mitigation (i.e. Insurance companies using this information to set insurance premiums).

The Chief Executive Officer is to be consulted prior to any Bushfire Risk Management Planning data being released to the public domain.

To actively encourage and support the implementation, monitoring and review of agreed actions the Shire of Wongan-Ballidu as a matter of course or upon request, will provide reports to key stakeholders that detail the assets and treatments that the stakeholders (landowners) have responsibility for.

The percentage of assets within the local government in each asset category at the time of BRM Plan endorsement is shown in the table below.

Asset category	Proportion of identified assets
Human Settlement	87.7%
Economic	7.8%
Environmental	4%
Cultural	0.5%

Table 10 – Asset Category Proportions

4.3.1 Consequence Assessment

Consequence is described as the outcome or impact of a bushfire event. The approach used to determine the consequence rating is different for each asset category: Human Settlement; Economic; Environmental; and Cultural.

The methodology used to determine the consequence rating for each asset category is based on the following:

- **Consequence Rating – Human Settlement, Economic and Cultural Assets**

The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the hazard posed by the classified vegetation and the vulnerability of the asset.

- **Consequence Rating – Environmental Assets**

The outcome or impact of a bushfire event on the asset, or a group of assets, measured by the vulnerability of the asset and the potential impact of a bushfire or fire regime.

4.3.2 Likelihood Assessment

Likelihood is described as the potential of a bushfire igniting, spreading and impacting an asset. The approach used to determine the likelihood rating is the same for each asset category: Human Settlement; Economic; Environmental; and Cultural.

4.3.3 Assessment of Environmental Assets

Using available biological information and fire history data, environmental assets with a known minimum fire threshold were assessed to determine if they were at risk from bushfire, within the five-year life of the BRM Plan. Environmental assets that would not be adversely impacted by bushfire within the five-year period have not been included and assessed in the BRM Plan. The negative impact of a fire on these assets (within the period of this BRM Plan) was determined to be minimal and may even be of benefit to the asset and surrounding habitat.

4.3.4 Local Government Asset Risk Summary

A risk profile for the local government is provided in Table 10. This table shows the proportion of assets at risk from bushfire in each risk category at the time the BRM Plan was endorsed.

Asset Category	Risk Rating				
	Low	Medium	High	Very High	Extreme
Human Settlement	1.4%	3%	8.5%	12.3%	62.5%
Economic	0.2%	0.5%	0.5%	1.8%	4.8%
Environmental		0.2%	1.3%	0.7%	1.8%
Cultural					0.5%

Table 11 – Local Government Asset Risk Summary

5. Risk Evaluation

5.1. Evaluating Bushfire Risk

The risk rating for each asset has been assessed against the consequence and likelihood descriptions to ensure:

- The rating for each asset reflects the relative seriousness of the bushfire risk to the asset;
- Consequence and likelihood ratings assigned to each asset are appropriate; and
- Local issues have been considered.

5.2. Risk Acceptability

Risks below a certain level were not considered to require specific treatment during the life of this BRM Plan. They will be managed by routine local government wide controls and monitored for any significant change in risk.

In most circumstances risk acceptability and treatment will be determined by the landowner, in collaboration with local government and fire agencies. However, as a general rule the following courses of action have been adopted for each risk rating.

Risk Rating	Criteria for Acceptance of Risk	Course of Action
Extreme	<p>Requires asset specific treatment strategies to be applied.</p> <p>Treatment action is required within 2 years of the plan being endorsed.</p> <p>It is unlikely that Local Government Wide Controls would be</p>	<p>Routine controls are not enough to adequately manage the risk. Specific action(s) required in the first 2 years of the BRM Plan. Priorities will include:</p> <ul style="list-style-type: none"> • Treatments that will have maximum benefit to multiple assets and critical infrastructure. • Treatments that benefit vulnerable communities will be given priority. • Identification of partnerships with other agencies for strategic mitigation. • Assets within the townsite to be included on Fire Break inspection list.

	adequate to manage the risk.	<ul style="list-style-type: none"> • Communication with asset owners as per Communication Plan and focus on increasing understanding of the risk facing these assets.
Very High	<p>Requires asset specific treatment strategies to be applied.</p> <p>Treatment action is required within 3 years of the plan being endorsed.</p> <p>It is unlikely that Local Government Wide Controls would be adequate to manage the risk.</p>	<p>Routine controls are not enough to adequately manage the risk. Specific action(s) required in the first 3 years of the BRM Plan.</p> <p>Priorities will include:</p> <ul style="list-style-type: none"> • Treatments that will have maximum benefit to multiple assets and critical infrastructure. • Identification of partnerships with other agencies for strategic mitigation. • Assets within the townsite to be included on Fire Break inspection list. • Communication with asset owners as per Communication Plan and focus on increasing understanding of the risk facing these assets.
High	Asset specific treatment strategies will be required to adequately manage the risk.	<p>Routine controls are not enough to adequately manage the risk. Specific action is required in the life of the BRM Plan (Five years).</p> <p>Priorities will include:</p> <ul style="list-style-type: none"> • Priorities will be made for treatments that will have maximum benefit to multiple assets and critical infrastructure. • Assets that fall adjacent to Extreme or Very High-risk assets. • Treatments that benefit vulnerable communities will be given priority. • Identification of partnerships with other agencies for strategic mitigation. • Communication with asset owners as per Communication Plan and focus on increasing understanding of the risk facing these assets.
Medium	<p>Asset specific treatments are not required, but risk should be monitored.</p> <p>Local government wide controls should be sufficient to manage the risk.</p> <p>If there is a change in the landscape / environment these assets may need to be</p>	<p>Specific actions are not required. Risk may be managed with routine controls and monitored periodically throughout the life of the BRM Plan.</p>

	reassessed frequently.	more	
Low	Asset specific treatments are not required, but risk should be monitored. Local government wide controls should be sufficient to manage the risk. If there is a change in the landscape / environment these assets may need to be reassessed more frequently.		Specific actions are not required. Risk will be managed with routine controls and monitored as required.

Table 12 – Criteria for Acceptance of Risk and Course of Action

5.3. Treatment Priorities

The treatment priority for each asset has been automatically assigned by BRMS and recorded in the Treatment Schedule, based on the asset’s risk rating. Table 12 shows how consequence and likelihood combine to give the risk rating and subsequent treatment priority for an asset.

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

Table 13 – Treatment Priorities

6. Risk Treatment

The purpose of risk treatment is to reduce the likelihood of a bushfire occurring and/or the potential impact of a 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. There are many strategies available to treat bushfire risk. The treatment strategy (or combination of treatment strategies) selected will depend on the level of risk and the type of asset being treated. Not all treatment strategies will be suitable in every circumstance.

6.1. Local Government Wide Controls

Local Government Wide Controls are activities that reduce the overall bushfire risk within the Shire of Wongan-Ballidu. These types of activities are not linked to specific assets and are applied across all or part of the local government as part of normal business or due to legislative requirements. Some notable controls currently in place in Shire of Wongan-Ballidu are:

- Bush Fires Act 1954 Section 33 notices, including applicable fuel management requirements, firebreak standards and annual enforcement programs.
- Declaration and management of Prohibited Burning Times, Restricted Burning Times and Total Fire Bans for the local government.
- Public education campaigns and the use of DFES state-wide programs; including programs such as *My Bushfire Plan*.
- State-wide arson prevention programs developed in conjunction with WA Police and DFES;
- State planning framework and local planning schemes, implementation of appropriate land subdivision and building standards in line with DFES, Department of Planning and Building Commission policies and standards.
- Monitoring performance against the BRM Plan and reporting annually to the local government council and OBRM.
- Regular Bushfire Advisory committee meetings to review current practices.
- Quarterly Local Emergency Management group meetings consisting of representatives from Various emergency, essential services and infrastructure management.

Other practices and programs undertaken by local government or state agencies (Multi-Agency Work Plans) that contribute to bushfire risk management within the local government, including controls in place under state government policies, agreements or memorandums of understanding include:

- Department of Biodiversity, Conservation and Attractions Master Burn Program
- Water Corporation Bushfire Risk Management Plan
- Western Power annual asset inspection and vegetation management program
- Department of Education Memorandum of Understanding

- Main Roads WA Bridge Assessment and Maintenance Works Plan.

The Local Government Wide Controls Table has been developed and is attached at **Appendix B**.

Asset Specific Treatment Strategies

Asset specific treatments are implemented to protect an individual asset or group of assets, identified and assessed in the BRM Plan as being at risk from bushfire. There are five 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; and
- **Community Engagement**
Treatments seek to build relationships, raise awareness and change the behaviour of people exposed to bushfire risk.

6.2. Development of the Treatment Schedule

The treatment schedule is a list of bushfire risk treatments recorded within BRMS. Shire of Wongan-Ballidu will be focusing on developing a program of works that covers activities to be undertaken within the first year after the approval of the BRM Plan. The treatment schedule will evolve and develop throughout the life of the BRM Plan.

Landowners are ultimately responsible for treatments implemented 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 landowner. However, the onus is still on the landowner to ensure treatments detailed in the Treatment Schedule are completed.

7. Monitoring and Review

Monitoring and review processes are in place to ensure that the BRM Plan remains current and valid. These processes are detailed below to ensure outcomes are achieved in accordance with the Communication Strategy and Treatment Schedule.

7.1. Review

A comprehensive review of this BRM Plan will be undertaken at least once every five years, from the date of council approval. Significant circumstances that may warrant an earlier review of the BRM Plan include:

- Changes to organisational responsibilities or legislation;
- Changes to the bushfire risk profile of the local government; or
- Following a major fire event.

7.2. Monitoring

BRMS will be used to monitor the risk ratings for each asset identified in the BRM Plan and record the treatments implemented. Risk ratings are reviewed on a regular basis as described in Table 11 – Criteria for Acceptance of Risk and Course of Action. New assets will be added to the Asset Risk Register when they are identified.

7.3. Reporting

On request, the Shire of Wongan-Ballidu may contribute relevant information to be included in the *Fuel Management Activity Report* produced annually by OBRM.

This reporting will be delegated through the Executive Manager, Works and Services.

Reporting on the progress of Mitigation works and the management of bushfire risk through the BRM plan to the Bushfire Advisory Committee (BFAC) Local Emergency Management Committee (LEMC) and other relevant working groups will be made by a nominated staff member yet to be decided, annually or more often as the need dictates.

7.3.1 Privacy Issues and Release of Information

Information captured through the Bushfire Risk Management System (BRMS) includes data considered 'personal' in nature including the names and addresses of landholders. There is therefore the potential for the data collected through the BRMS to be used for purposes other than bushfire risk mitigation (i.e. Insurance companies using this information to set insurance premiums).

The Chief Executive Officer is to be consulted prior to any Bushfire Risk Management data being released to the public domain.

In order to actively encourage and support the implementation, monitoring and review of agreed actions the Shire of Wongan-Ballidu, as a matter of course or upon request, will provide reports to key stakeholders that detail the assets and treatments that the stakeholders (landowners) have responsibility for.

8. Glossary

Asset	A term used to describe anything 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 Owner	The owner, occupier or custodian of the asset itself. Note: this may differ from the owner of the land the asset is located on, for example a communication tower located on leased land or private property.
Asset Register	A component within the Bushfire Risk Management System (BRMS) used to record the details of assets identified in the Bushfire Risk Management Plan (BRM Plan).
Asset Risk Register	A report produced within the BRMS that details the consequence, likelihood, risk rating and treatment priority for each asset identified in the BRM Plan.
Bushfire	Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective.
Bushfire Hazard	The hazard posed by the classified vegetation, based on the vegetation category, slope and separation distance.
Bushfire Risk Management Plan	A development related document that sets out short-, medium- and long-term bushfire risk management strategies for the life of a development.
Bushfire Risk	The chance of a bushfire igniting, spreading and causing damage to the community or the assets they value.
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.

Draft Bushfire Risk Management Plan	The finalised draft BRM Plan is submitted to the Office of Bushfire Risk Manager (OBRM) for review. Once the OBRM review is complete, the BRM Plan is called th 'Final BRM Plan' and can be progressed to local government council for approval.
Geographic Information System (GIS)	A data base technology, linking any aspect of land-related information to its precise geographic location.
Land Owner	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.
Locality	The officially recognised boundaries of suburbs (in cities and larger towns) and localities (outside cities and larger towns).
Map	The mapping component of the BRMS. Assets, treatments and other associated information is spatially identified, displayed and recorded within the Map.
Planning Area	A geographic area determined by the local government which is used to provide a suitable scale for risk assessment and stakeholder engagement.
Priority	See Treatment Priority.
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 in order 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 Register	A component within the BRMS used to record, review and monitor risk assessme and treatments associated with assets recorded in the BRM Plan.
Risk treatment	A process to select and implement appropriate measures undertaken to modify risk.
Rural	Any area where in residences and other developments are scattered and intermingled with forest, range, or farm land and native vegetation or cultivated crops.
Rural Urban Interface	The line or area where structures and other human development adjoin or overlap with undeveloped bushland.

Slope	The angle of the ground's surface measured from the horizontal.
Tenure Blind	An approach where multiple land parcels are to be considered as a whole, regardless of individual ownership or management arrangements.
Treatment	An activity undertaken to modify risk, for example a planned burn.
Treatment Objective	The specific aim to be achieved or action to be undertaken, in order to complete the treatment. Treatment objectives should be specific and measurable.
Treatment Manager	The organisation, or individual, responsible for all aspects of a treatment listed in the <i>Treatment Schedule</i> of the BRM Plan, including coordinating or undertaking work, monitoring, reviewing and reporting.
Treatment Planning Stage	The status or stage of a treatment as it progresses from proposal to implementation.
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 BRMS that details the treatment priority of each asset identified in the BRM Plan and the treatments scheduled.
Treatment Strategy	The broad approach that will be used to modify risk, for example fuel management.
Treatment Type	The specific treatment activity that will be implemented to modify risk, for example a planned burn.
Vulnerability	The susceptibility of an asset to the impacts of bushfire.

9. Common Abbreviations

AFAC	Australasian Fire and Emergency Services Authorities Council
BFAC	Bush Fire Advisory Committee
BRM	Bushfire Risk Management
BRM Branch	Bushfire Risk Management Branch (DFES)
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
EPBC Act	Environmental Protection and Biodiversity Conservation Act
FPC	Forest Products Commission
GIS	Geographical Information System
LEMC	Local Emergency Management Committee
OBRM	Office of Bushfire Risk Management (DFES)
PEC	Priority Ecological Community
SEMC	State Emergency Management Committee
TEC	Threatened Ecological Community
UCL	Unallocated Crown Land
UMR	Unmanaged Reserve
WA	Western Australia
WAPC	Western Australian Planning Commission

10. Appendices

Appendix A - Communication Strategy

Appendix B - Local Government Wide Controls Table



Appendix A

Shire of Wongan-Ballidu

Bushfire Risk Management Planning

COMMUNICATION STRATEGY

Document Control

Document Name	Bushfire Risk Management Pla Communications Strategy
Document Owner	Shire of Wongan-Ballidu, CEO
Document Location	Shire of Wongan-Ballidu Records
Current Version	4
Issue Date	DD/MM/YYYY
Next Review Date	DD/MM/YYYY

Related Documents

Title	Version	Date
Shire of Wongan-Ballidu Bushfire Risk Management Plan	1	July 2021
Shire of Wongan-Ballidu Bushfire Risk Management Plan	2	July 2021
Shire of Wongan-Ballidu Bushfire Risk Management Plan	3	December 2021
Shire of Wongan-Ballidu Bushfire Risk Management Plan	4	December 2021

Amendment List

Version	Date	Author	Section

Introduction

A Bushfire Risk Management (BRM) Plan is a strategic document that outlines the approach to the identification, assessment and treatment of assets exposed to bushfire risk within the Shire of Wongan-Ballidu.

This Communication Strategy accompanies the BRM Plan for the Shire of Wongan-Ballidu.

It documents the:

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

Communications Overview

Communication Objectives

The communication objectives for the development, implementation and review of the BRM Plan for the Shire of Wongan-Ballidu are as follows:

1. Key stakeholders understand the purpose of the BRM Plan and their role in the BRM planning process.
2. Stakeholders who are essential to the BRM planning process, or can supply required information, are identified and engaged in a timely and effective manner.
3. Relevant stakeholders are involved in decisions regarding risk acceptability and treatment.
4. Key stakeholders engage in the review of the BRM Plan as per the schedule in place for the local government.
5. The community and other stakeholders engage with the BRM planning process and as a result are better informed about bushfire risk and understand their responsibilities to address bushfire risk on their own land.
6. Strengthen the Wongan-Ballidu Community Plan.

Communication Roles and Responsibilities

Shire of Wongan-Ballidu is responsible for the development, implementation and review of the Communication Strategy. Key stakeholders support local government by participating in the development and implementation of the Communications Strategy as appropriate. An overview of communication roles and responsibilities follows:

The CEO, Shire of Wongan-Ballidu, is responsible for:

- Endorsement of the BRM Plan Communications Strategy.
- Approve release of BRM data.

The Deputy CEO is responsible for:

- operational-level communication between the Shire and the Department of Fire and Emergency Services.
- External communications with relevant parties within the local Government.
- operational-level communication between the Shire and other State agencies as required.

Key Stakeholders for Communication

The following table identifies key stakeholders in the BRM plan’s development, 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	Level of impact of outcomes	Level of engagement
Shire of Wongan-Ballidu	Significant role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager.	High	Inform, consult, involve, collaborate and empower
Department of Fire and Emergency Services	Significant role in plan and treatment development, implementation and review. Support role in treatment Implementation.	High	Inform, consult, involve and collaborate
Office of Bushfire Risk Management	Role in endorsement of the BRM plan	Low	Consult
Department of Biodiversity, Conservation and Attractions	Significant role in plan and treatment development, implementation and review. Responsible for treatments as a land owner/manager	High	Inform, consult, involve and collaborate

Stakeholder	Role or Interest	Level of impact of outcomes	Level of engagement
Main Roads WA	Role in treatment development and implementation. Responsible for treatments as an asset and land owner/manager. Critical infrastructure interest.	Medium	Inform, consult, involve and collaborate
Telecommunications Providers	Role in treatment development and implementation. Responsible for treatments as an asset owner/manager. Critical infrastructure interest.	Medium	Inform, consult, involve and collaborate
Department of Planning land and Heritage, LandCorp & Landgate	Role in treatment development and implementation	Medium	Inform, consult, involve and collaborate
Water Corporation & Department of Water	Role in treatment development and implementation. Responsible for treatments as a land owner/manager. Critical infrastructure interest.	Medium	Inform, consult, involve and collaborate
Department of Education	Role in treatment development and implementation. Responsible for treatments as an asset and land owner/manager. Critical infrastructure interest.	Medium	Inform, consult, involve and collaborate
Private Land Owners	Role in treatment development and implementation. May have responsibilities for treatments as land owners/managers	High	Inform, consult, involve and collaborate
Western Power	Role in treatment development and implementation. Responsible for treatments as an asset owner/manager. Critical infrastructure interest.	Medium	Inform, consult, involve and collaborate
Chief Bushfire Control Officer	Significant role in plan and treatment development, implementation and review. Actively assist in risk identification and	High	Inform, consult, involve and collaborate

Stakeholder	Role or Interest	Level of impact of outcomes	Level of engagement
	treatment works. Empower to actively engage with community and identify/treat risks		
Bushfire Brigades and other Emergency Services Volunteers	Significant role in treatment implementation.	High	Inform, consult, involve and collaborate
Bushfire Advisory Committee (BFAC)	Significant role in plan and treatment development, implementation and review. Assist in risk identification and treatment works.	High	Inform, consult, involve, collaborate
District Operations Advisory Committee (DOAC)	Awareness of plan development, and status of implementation	Low	Inform, consult, involve, collaborate
Local Emergency Management Committee (LEMC)	Role in plan development, implementation and review	Medium	Inform, involve and consult
Landcare, Local Community Conservation Groups	Role in treatment development and implementation	Medium	Inform, involve and consult
Traditional Owners, Ballardong Noongar and Yued people.	Role in treatment development and implementation	Medium	Inform, involve and consult
Wongan-Ballidu Community	Awareness of plan and treatments planned for implementation	Medium	Inform, involve and consult

Communications Log – Development of the BRM Plan and Treatment Schedule

This Communications Log captures the communications with key internal and external stakeholders that occurred during the development of the BRM Plan and associated Treatment Schedule.

Timing of communication	Stakeholders	Purpose	Summary	Communication Method	Lesson Identified	Follow up
Development of the BRM Plan						
21/04/2020, 18/8/2020, 10/09/2020, 27/10/2020, 15/3/21, 1/04/21,	Shire of Wongan-Ballidu CEO, Senior Leadership Team and Council	Introduction Outline of Program	Inform and consult Confirm accountability and responsibilities	Face to face meeting Presentation & Email	Resource constraints could limit their ability to participate Lack of understanding	Milestone Updates
10/09/2020, 13/04/21,	Bushfire Advisory Committee (BFAC)	Introduction Outline of Program. Invt to provide input	Inform and consult Confirm project objectives	Face to face meetings Presentation	Stakeholders willingness to participate Lack of understanding	Attend next BFAC Meeting
As required	Local Emergency Management Committee (LEMC)		Confirm project objectives Project updates	Face to face meetings Presentation	Stakeholders willingness to participate	Project updates
10/09/2020, 13/09/2020, 23/09/2020, 31/03/2021	Chief Bushfire Control Officer (CBFCO), Bushfire Brigades, Brigade Captains	Familiarisation tour of Shire. Feedback on areas of concern.	Inform and consult Confirm project objectives	Face to face meetings & email	Time constraints Lack of understanding	On going contact

			Input into plan and treatments Project updates Identify Risk and share information			
17/11/2020	Stakeholders – Landowners / Land Managers	Site specific visit with BRPC Kellerberrin	Hospital grounds, townsite risks	Face to face meetings	Concerns over protected Flora & Fauna	On going contact
	Dept of Fire and Emergency Services (DFES) – District/Regional Office					

Development of the Treatment Schedule

	Shire of Wongan-Ballidu CEO, Senior Leadership Team and Council					
	Chief Bushfire Control Officer (CBFCO), Bushfire Brigades, Brigade Captains					
	Bushfire Advisory Committee (BFAC) and Regional Operations Advisory Committee (ROAC)					

	Stakeholders – Landowners / Land Managers					
Annually or as required	Dept of Fire and Emergency Services (DFES) – District/Regional Office	To coordinate Mitigation activities between LG & DFES	UCL/UMR Management Status and progress of plan Treatment status, gaps and issues to be addressed Continuous improvement Information sharing Identification of other planned works Identification of funding opportunities			
Once Off	Office of Bushfire Risk Management	Notify of 1 st Year planned works	Bushfire Risk Management System up to date with 1 st year's program of treatments	Email	Availability of funding	Compliance requirements

Communications Plan – Implementation and Review of the BRM Plan

This Communications Plan outlines the key communication initiatives that will be undertaken during the implementation and review of the BRM Plan.

Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method

Implementation of the BRM Plan

Life of Plan	Shire of Wongan-Ballidu CEO, Senior Leadership Team and Council	All (1 – 5)	Email Face to face meetings	Inform and consult Confirm accountabilities and responsibilities. Progress update Issues identification and action planning	CEO or Delegate	Time constraints Availability Lack of understanding Budget (for LG mitigation)	Planning and time management Clear purpose Targeted communication Regular updates	Feedback, Questions raised Level of support received
Life of Plan	Shire of Wongan-Ballidu Works and services	1 – 3 & 5	Email Face to face meetings	Reduction of fuel loads on LG managed land Upgrades to strategic firebreaks	CEO or Delegate	Poor organisation, Limited time, Not preparing Poor communication from stakeholders and LG on completion of works	Clarify misunderstandings and intentions of Plan communications Regular updates	Treatments applied Positive feedback received on treatment supplied Risk ratings reduced

Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
Biannually or as required	LEMC, BFAC, ROAC, CBFCO, CAPTS	All (1 – 5)	Email Face to face meetings	Report on progress to plan Report issues/constraints	CEO or Delegate	Availability of volunteers Time 'Buy in' Lack of understanding	Collate data and report on success to plan Compliance to plan Keep informed	Feedback received Level of engagement Issues identified and addressed
All (1 – 5)	Dept of Biodiversity, Conservation and Attractions	1 – 3 & 5	Email Face to face meetings Telephone	Confirmation of environmental assets Development of treatment options	CEO or Delegate	Resource constraints could limit their ability to participate Willingness to release 'confidential' data re environmental assets	Clarify misunderstandings and intentions of plan Provide undertakings re the release of confidential data Restrict release of information and document in plan	Level of engagement Environmental assets in BRMS
As Required	Stakeholders – Landowners / Land Managers	1 – 3 & 5	Face to face Presentations Community Engagement	Inform and consult Confirm accountability and responsibility Status and progress of plan Treatment status Gaps and issues to be addressed	CEO or Delegate	Availability Time Loss of commitment Access to treatment resources Funding	Planned sharing of information Negotiations conducted Communicate funding opportunities when available	Feedback Commitment to implement agreed controls Highly engaged Treatments being completed

Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
As required	Stakeholders Others	– 1 – 3 & 5	Face to face Presentations Community Engagement Telephone Email	Inform and consult Confirm accountability and responsibility Status and progress of plan Treatment status Gaps and issues to be addressed	CEO or Delegate	Availability Time Loss of commitment	Planned sharing of information Negotiations conducted Communicate funding opportunities when available	Feedback Commitment to implement agreed controls Highly engaged Treatments being completed
Annually or as required	DFES District Regional Office	/ 1-3	Face to face meetings Email Telephone	UCL/UMR Management Status and progress of plan Treatment status, gaps and issues to be addressed, Continuous improvement, Information sharing, Identification of other planned works, Identification of funding opportunities	CEO or Delegate	Time Conflicting priorities	Schedule communication opportunities	Planned works identified Improvements identified and implemented Issues addressed

Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
Annually – ideally prior to fire season	Community	5	Newsletter Website Facebook	Continuous improvement	CEO or Delegate	Time Conflicting priorities	Plan communication	Feedback received

Review of the BRM Plan

Annually	Shire of Wongan-Ballidu CEO, Senior Leadership Team and Council	4, 5	Face to face meetings Email Telephone	Governance and compliance Review, monitoring and reporting to Council Status update Continuous improvement	CEO or Delegate	Poor reporting and recording of information	BRPC & BRMO to record data and information appropriately	Feedback received Planned works completed Reporting & Statistics Risk ratings reduced
5 Yearly (Shire, DFES and OBRM)	OBRM & LG Council	4, 5	Face to face meetings Email Telephone Written report	Governance and compliance Review, monitoring and reporting Future planning	CEO or Delegate	Poor reporting and recording of information Review not completed by OBRM	BRPC & BRMO to record data and information appropriately Endorsed by OBRM	Feedback received Planned works completed Reporting & Statistics Risk ratings reduced
Quarterly or as required	Shire of Wongan-Ballidu Works and Services	4, 5	Face to face meetings Email Telephone	Report on actions and status of BRM Plan	CEO or Delegate	Time LG capacity Conflicting priorities	Plan communications Discuss with Shire Leadership Team	Feedback on work completed Risk ratings reduced

Timing of communication	Stakeholders	Communication Objective(s)	Communication Method	Key Message or Purpose	Responsibility	Identified Risks to Communication	Strategy to Manage Risks	Monitoring and Evaluation Method
				Continuous improvement				Improvements identified and implemented
Biannually or as required	DFES Regional / District Office	4, 5	Face to face meetings	Report on actions and status of BRM Plan Continuous improvement UCL/UMR funding	CEO or Delegate	LG capacity Time Conflicting priorities	Plan communications	Feedback on work completed Risk ratings reduced Improvements identified and implemented
Annually	BFAC, ROAC, LEMC, CBFCO, Captains	4, 5	Face to face meetings Email Telephone Presentations	Report on actions and status of BRM Plan Continuous improvement	CEO or Delegate	LG capacity Time Conflicting priorities Buy in	Keep informed Share the wins	Feedback on work completed Risk ratings reduced Improvements identified and implemented
Every 2 years or as required	Stakeholders – Land Owners / Land Managers	4, 5	Face to face meetings Telephone Presentation Community Engagement Survey	Status of treatments Success of treatments Continuous improvement	CEO or Delegate	LG capacity Time Conflicting priorities Buy in Access to resources	Plan communication Target communication Planned and prepared	Feedback on work completed Risk ratings reduced Improvements identified and implemented

Appendix B: Local Government Wide Controls Table

Control	Action/Activity Description	Lead Agency	Other Stakeholder(s)	Implementation Notes
BRM Plan Risk Analysis	Maintain and refine BRM Plan	Local Government	Landowners DFES	Treatment identification and planning for all very high and extreme risk assets within the Shire
Shire of Wongan-Ballidu, Local firebreak and hazard reduction laws (<i>Bushfires act 1954</i>)	Annual Firebreak and Fuel Reduction Notice	Local Government	FCO's, brigades and landowners	Local law established to ensure landowners 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.
Shire of Wongan-Ballidu Prohibited, Restricted and Open burn times (<i>Bush Fires act 1954</i>)	Annual Firebreak and Fuel Reduction Notice. Requirement to obtain "Burn Permit" during restricted times.	Local Government	Chief FCO, CESM, Rangers and the public.	Prohibited and restricted burn times are designed to force the community to apply for "Burn Permits" thereby reducing 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 FCO's.
Shire of Wongan-Ballidu mitigation works	The Shire's Works team has annual works programs to reduce fuel load and remove hazards on road verges	Local Government, Parks and Gardens	Public (reporting hazards and concern of risk) The Shire's Works team and Ranger	Work includes, slashing, spraying, mulching, pruning and other mechanical treatments on all Shire roads
DFES UCL/UMR land Management	Preparedness, mitigation work conducted on lands owned by DoL and managed by DFES under a MOU	DFES Goldfields-Midlands	P&W, LG, Local brigades	Annual budgeting has been completed to include mitigating risk on UCL/UMR.
Department of Biodiversity Conservation & Attractions (Parks and Wildlife) Master Burn Plans	P&W have a 6 season burn program that is published on their website. Yearly plans are available.	Parks & Wildlife	Local brigades, DFES, LG	The plans can be accessed via their website, by sharing shape files (GIS) and are communicated at Local BFAC and other various meetings.

Control	Action/Activity Description	Lead Agency	Other Stakeholder(s)	Implementation Notes
Water Corporation Bushfire Risk Management Program	Bushfire Risk Management Plan. A Bushfire Risk Management Project is under way for the Water Corp.	Water Corporation	DFES, LG	A plan is currently being developed. High risk areas are identified and treatments planned then completed. Treatments and risk assessments are available through Water Corp BRM department.
State-wide arson prevention programs	Education and awareness campaigns exist across the state for arson.	WA Police	DFES, LG	Participation as required. The Shire participates in campaigns for arson prevention.
Local Emergency Management Arrangements	Emergency Management Plan	Shire of Wongan-Ballidu	SJA WAPOL DFES DC Education CBFCO Silver Chain	Annual review of emergency plans and arrangements.
My Bushfire Plan / How Fireproof is your Plan?	Community Engagement	DFES	LG, Chief FCO, CESM, Rangers, Bushfire Ready Groups and the public	The key message of this campaign is - preparing for and responding to bushfires as a team effort and everyone needs to play their part www.mybushfireplan.wa.gov.au
Western Power annual asset inspection and vegetation management program	Western Power Bushfire Plan	Western Power	DFES, LG, DPAW	Annual vegetation management and asset inspections are completed to ensure risk is managed. Full asset inspections are completed every 4 years.
Department of Education Memorandum of Understanding	Coordination of bushfire risk management activities	DFES	DoE	Including the identification and planning of treatment options for bushfire risks on DoE school sites as listed on the DoE bushfire zone register and agreed to annually by DFES and DoE