

BUSHFIRE MANAGEMENT AREA PLAN



Government
of South Australia

Outback



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Document Control

Version	Date	Summary of Changes	Author
1			

Endorsements

This document requires the following endorsements by the Outback Bushfire Management Committee

Version	Date	Name	Title	Signature
1	21/08/19	Sindy McCourt	Chair, Outback Bushfire Management Committee	

Approvals

This document requires the following approvals:

Version	Date	Name	Title	Signature
1	30/08/2019	Peter White	Chair, State Bushfire Coordination Committee	

Distributions

This is a web based publically accessible Plan. Updated versions are loaded onto the web site (www.cfs.sa.gov.au). Hard copy versions are not produced or distributed.

Recognition of Aboriginal Culture

Aboriginal Australians have rights to maintain, control, protect and develop their intellectual property over cultural heritage, traditional knowledge and traditional cultural expressions.

Front cover image: Watarru Community (Photo credit: P McDonough, March 2019). Approval to use this photo was sought through the Chair & Traditional Custodian of Watarru Community.

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1. Introduction

Bushfire cannot be eliminated from the landscape, and there are circumstances when fire cannot be controlled, however planning and preparedness activities can reduce the frequency, spread and impact of bushfire events. The Outback is a bushfire prone environment with people, assets and areas of environmental sensitivity at risk during bushfire events. The *Fire and Emergency Services Act 2005 (FES Act 2005)*, outlines the responsibilities of key Government organisations, the community and the public to prepare for, prevent or inhibit the spread of any bushfire.

The Outback Bushfire Management Area Plan (BMAP) comprises the following elements:

- This written component outlining the planning process, context and other relevant information
- An online map that identifies assets and their risk levels, and includes pop up tables of information for each asset
- Spreadsheets containing lists of all Outback BMAP assets, their risk rating and risk treatment strategies

Prevention and preparedness are vital components in reducing injuries and deaths, loss of assets, financial costs and aiding community recovery. The Outback BMAP is aimed at prevention and preparedness planning, processes and actions. The Plan outlines information, strategies and actions to prevent or mitigate (reduce) bushfire impact on assets and in the landscape, rather than focussing on the business continuity, emergency response or replacement costs.

The Outback BMAP is able to be updated on a regular and ongoing basis following its initial approval and publication. The Outback Bushfire Management Committee (BMC) ensures the Plan is regularly reviewed and updated and that public consultation processes are undertaken where required. ([Refer to Section 3: Roles and Responsibilities](#)).

This plan aims to recognise the role that fire plays in the Region's biodiversity and that fire is a natural element in this environment and much of the plant and animal life are dependent on it for their continued existence. There are however some environments where fire, particularly unplanned fire, can be detrimental.

The Outback BMC recognises and respects the Aboriginal people's enduring physical and cultural relationship to country and expertise with the use of fire in the landscape.

This BMAP has been prepared under specifications as determined by the State Bushfire Coordination Committee (SBCC), Bushfire Management Committees, and the CFS Bushfire Management Planning Unit and has linkages to the State Rural Fire Hazard Management Plan. The State Rural Fire Hazard Management Plan

is specified by the EM Act in a format determined by the SEMC and is a strategic level document designed to provide policy and direction for the management of rural fire hazard across the state. The State Bushfire Management Plan is a requirement under *Section 73 of the FES Act 2005*, and sets the standards for preparation and implementation of the BMAPs.

1.1 Purpose and Scope

The *Fire and Emergency Services Act 2005 (FES Act 2005)* requires each of the nine South Australian Bushfire Management Committees (BMC's) to prepare and maintain a BMAP. Each BMC will adopt a BMAP that will:

- Identify existing or potential risk to assets from bushfire within the BMA
- Outline coordinated and collaborative bushfire prevention and mitigation strategies to achieve appropriate hazard reduction associated with bushfire management within its area
- Identify asset or land custodians responsible for the implementation of bushfire risk mitigation treatments
- Use or establish principles and standards to guide or measure the success of the bushfire management strategies and initiatives.

The purpose of the Outback BMAP is to provide strategic direction for bushfire management planning in the Outback Bushfire Management Area (BMA) ([refer to location map on page 5](#)), across the landscape regardless of tenure. The Plan will guide the bushfire mitigation works for Aboriginal Land Councils, the Outback Communities Authority, government land management organisations and local communities. The Plan also provides essential inputs into state and local government planning, the application of building codes, fire fuel management, planning for emergency management response and prioritising for sound mitigation decisions.

The scope of the Outback BMAP encompasses a range of asset categories and landscape wide areas of potential bushfire risk. Asset categories include areas of human settlement; industrial and business areas; and assets of social significance to local communities or the State as well as environmental assets. ([Refer to Section 4: Risk Assessment](#)). Environmental assets have been assessed using a methodology that has been developed by the Ecological Technical Reference Group (ETRG), a working group of the SBCC. ([Refer to Section 4.2: Risk Assessment Methodology for Environmental Assets](#)).

Bushfire safety requires a partnership approach and is a shared responsibility between government agencies, private sector, non-government organisations, Traditional Custodians and the wider community. The planning process ensures consultation strategies

provide all stakeholders with the opportunity to contribute to fire management planning and thus undertake appropriate action to address the risk of bushfire.

1.2 Objective

The protection of people, property and the environment is the fundamental objective of this plan, as a shared responsibility between government and the community. Community members and organisations are required to contribute to mitigating bushfire risk. The risk assessment process focusses on what can be measured (vegetation, fire intensity, separation distances, weather, topography, building resilience, access routes etc.) and what can be managed by applying risk treatment strategies.

The objective of this plan is to:

- Document the identification and assessment of the bushfire risk to assets within the Outback BMA
- Capture the current and future risk treatment strategies
- Identify those asset or land custodians responsible for implementing risk treatment strategies
- Support and inform planning at a local level
- Support Aboriginal Fire Management Aspirations
- Protect Life and Property
- Support the Protection of Areas of Cultural Significance under the guidance of Traditional Custodians
- Manage Fuels on a Landscape Scale
- Identify Training, Resource and Infrastructure Requirements

A future outcome of the BMAP will be the creation of community bushfire protection plans developed in consultation with local communities. These will be tailored to suit local communities and in language where appropriate to improve the common understanding of bushfire risk, risk treatment options and items to protect.

1.2.1 Constraints, Assumptions and Exclusions

The BMAPs are developed specifically for bushfire planning and preparedness. Issues relating to operational bushfire response or recovery are not addressed in this plan but are covered in plans, policies and procedures of government and non-government emergency and community service agencies.

It is not feasible to risk assess every individual building or parcel of land for the inclusion into the Outback online BMAP. Although some individual privately owned residences, farms, small

businesses etc., are not specifically identified in the Plan's online map by a point, polygon or line, they will still have a level of risk from bushfire. Every landholder has a responsibility to undertake bushfire prevention and preparedness activities relevant to their location and situation.

This Outback BMAP does not include details for implementation, monitoring, review or reporting. The requirements for these actions is in development and will be in a format as determined by the SBCC.

Weather conditions play a significant role in the likelihood of a bushfire occurring along with the potential fire behaviour and intensity. Bureau of Meteorology (BOM) historical weather data for the fire ban districts in each bushfire management area throughout the state has been used in conjunction with other inputs in determining risk assessment outcomes.

Formulas and data used during risk assessment workshops and in the development of this plan have been based on the best available information at the time of development, and may be subject to change over time as more accurate data and information becomes available. Average fuel loads have been assumed to complete the risk assessment process. However it is noted that seasonal variation is particularly relevant to the Outback BMA where rainfall events can dramatically change the amount of vegetation.

The FES Act 2005 Section 127 protects stakeholders from liability in relation to the development and implementation of a BMAP.

[Refer to Section 1.3.1: Fire and Emergency Services Act](#) for more information.

1.3 Legislation

1.3.1 Fire and Emergency Services Act

A BMAP is a requirement under the *FES Act 2004 Section 73A*. In particular *Section 73A (1)* requires the BMC to prepare and maintain a BMAP for its areas. *Section 73A (3)* outlines that the BMAP must:

- a) Identify existing or potential risks to people and communities within its area from bushfire; and
- b) Outline strategies to achieve appropriate hazard reduction associated with bushfire management within its area, especially through a coordinated and cooperative approach to bushfire prevention and mitigation; and
- c) Identify action that should be taken by people, agencies and authorities to achieve appropriate standards of bushfire management within its area; and
- d) Without limiting points (b) and (c), establish or adopt principles and standards to guide or measure the

successful implementation of bushfire management strategies and initiatives; and

- e) Include or address other matters prescribed by the regulations or specified by the SBCC.

Sections 73A(4) and 73A(5) direct that the BMAP must be consistent with the State Bushfire Management Plan, and such other plans, policies and strategies as may be prescribed by the regulations.

FES Act 2005 Section 127-Protection from liability provides protection to key stakeholders for information or actions undertaken in relation to BMAPs. In particular, *Section 127(4)* states:

(4) Without limiting subsection (1), no liability attaches to SACFS, the State Bushfire Coordination Committee, a bushfire management committee or a council (or the members of any of them) by virtue of the fact that a bushfire prevention plan—

(a) has not been prepared under this Act in relation to a particular part of this State; or

(b) has been so prepared but has not been implemented, or fully implemented.

Some examples may include the non-inclusion of an asset into a BMAP that is subsequently lost or damaged in a bushfire, or the inability of asset owners to undertake treatments assigned to assets.

1.3.2 Local Government Act

Chapter 2 Section 7 of the Local Government Act 1999 specifies the principle functions of a council. The functions that are specific to this plan include:

- *Section 7(d)*: to take measures to protect its area from natural and other hazards and to mitigate the effect of such hazards; and
- *Section 7(f)*: to provide infrastructure for its community and for development within its area (including infrastructure that helps to protect any part of the local or broader community from any hazard or other event, or that assists in the management of any area).

Additionally *Section 8(d) of the Local Government Act 1999* outlines the way in which councils are required to undertake their roles and functions. It specifies the need for consistency of all plans, policies and strategies with Regional, State and National objectives and strategies concerning the economic, social, physical and environmental development and management of the community.

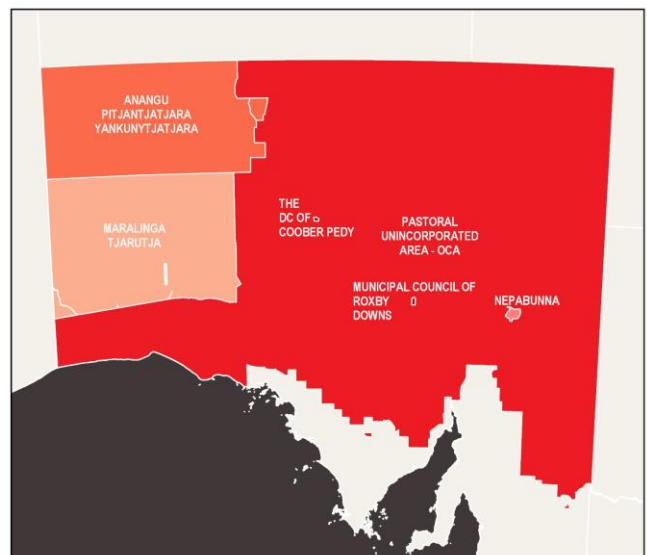
Local government governance arrangements

In the sparsely populated northern parts of South Australia a number of different arrangements have been established for local government-type services/governance arrangements. The towns of Coober Pedy and Roxby Downs are incorporated under the Local Government Act 1999 and with the variation that Roxby Downs does not yet have an elected Council, function under the framework as other Local Governments in SA.

The Anangu Pitjantjatjara Yunkunytjatjara and Maralinga Tjarutja are established respectively under the Pitjantjatjara Land Rights Act and the Maralinga Land Rights Act and provide some of the services and functions expected of a local government authority.

Nepabunna, Yalata and Gerard are Aboriginal Community Councils operating on Aboriginal Lands Trust land.

The Outback Communities Authority (OCA) has jurisdiction for the remainder of the state and provides limited local government-type support. The OCA is a statutory authority created under the Outback Communities (Administration and Management) Act 2009. It has been established to manage the provision of public services and facilities to outback communities which are widely dispersed across the Pastoral Unincorporated Area which covers over 60% of South Australia's land area (625,000km²). OCA helps with the provision of water supplies, or invests in 'municipal' services like waste collection and town maintenance. OCA maintain a network of outback UHF radio repeater towers and a constructed network of outback airstrips to provide near all-weather 24 hour emergency access and a lot of public toilets.



Map 1: Local Government and Aboriginal Lands

1.3.3 State Emergency Management Act

Section 3 of the *Emergency Management Act 2004* (South Australia) specifies that an “emergency means an event (whether occurring in the State, outside the State or in and outside the State) that causes, or threatens to cause:

- a) The death of, or injury of, or other damage to the health of any person; or
- b) The destruction of, or damage to, any property; or
- c) A disruption to essential services or to services usually enjoyed by the community; or
- d) Harm to the environment, or to flora or fauna.

At a regional level, this BMAP will provide valuable input into the Zone Emergency Management Plans (ZEMP) in relation to rural fire.

1.3.4 Acts, Codes and Regulations influencing Bushfire Management Planning

The following are some of the Acts, Codes and Regulations to be considered in developing and undertaking bushfire management planning and practices:

- [Native Vegetation Act 1991 \(SA\) Section 29](#)
- [Native Vegetation Regulations 2017 \(SA\)](#)
- [Environment Protection and Biodiversity Conservation Act 1999 \(Commonwealth\) Section 18 and 269AA](#)
- [Code of Practice for fire management on Public Land in South Australia 2012-2016](#)
- [National Parks and Wildlife Act 1972 \(SA\)](#)
- [Natural Resources Management Act 2004](#)
- [Wilderness Protection Act 1992 \(SA\)](#)
- [Arkaroola Protection Act 2012](#)
- [Aboriginal Heritage Act 1988](#)
- [Native Title Act 1993](#)
- [Native Title \(South Australia\) Act 1994](#)
- [Crown Land Management Act 2009 \(SA\)](#)
- [Outback Communities \(Administration and Management\) Act 2009](#)
- [Anangu Pitjantjatjara Yankunytjatjara Land Rights Act 1981](#)
- [Maralinga Tjarutja Land Rights Act 1984](#)
- [Roxby Downs \(Indenture Ratification\) Act 1982](#)
- [Opal Mining Act 1995](#)
- [Mines and Works Inspection Act 1920](#)
- [Aboriginal Lands Trust Act 2013](#)
- [Pastoral Land Management and Conservation Act 1989](#)
- [Dog Fence Act 1946](#)
- [Defence Act 1903](#)

- [Defence Legislation Amendment \(Woomera Prohibited Area\) Act 2014](#)
- [Defence Force Regulations 1952](#)
- [Mining Act 1971](#)
- [Petroleum and Geothermal Energy Act 2000](#)
- [Planning, Development and Infrastructure Act 2016](#)
- [PDI \(General\) Regulations 2017](#)
- [PDI \(Transitional Provisions\) Regulations 2017](#)
- [Development Act 1993 \(pending repeal to be replaced by the PDI Act 2016\)](#)
- [Development Regulations 2008 \(pending repeal to be replaced by associated regulations to the PDI Act 2016\)](#)
- [Northern Territory Bushfires Management Act 2016](#)
- [Western Australian Bushfires Act 1954](#)
- [Queensland Fire and Emergency Services Act 1990](#)
- [New South Wales Rural Fires Act 1997](#)

The implementation of identified risk treatment strategies within this BMAP must comply with the requirements as directed by the above legislation. For example, the assessment and management of risk in regard to indigenous cultural heritage are performed in accordance with the requirements of the Aboriginal Heritage Act 1988. Notification of Traditional Custodians and native title claimants is required if ground disturbance works are to take place in areas of known cultural heritage. Under this Act it is illegal to harm, excavate, relocate, take away or be in possession of indigenous cultural heritage.

2. Outback Bushfire Management Area

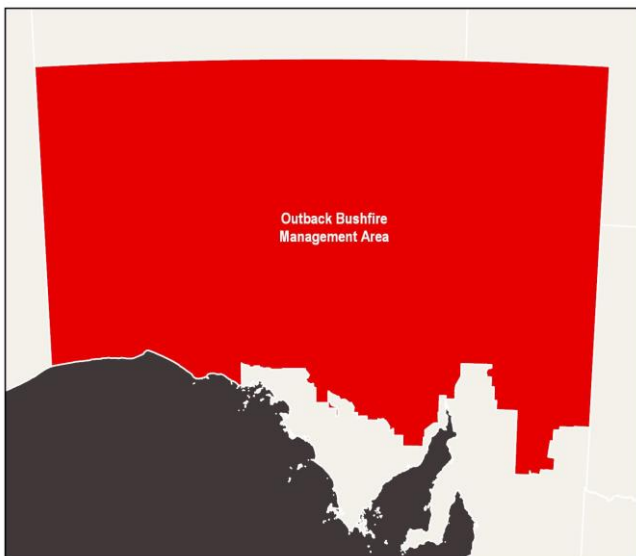
2.1 Location

The Outback BMAP has been developed for the Outback BMA region of South Australia. The boundary incorporates the whole of the following council and community areas: (see map below)

The Outback BMA comprises of the area of northern South Australia bounded by the Western Australian, Northern Territory/Queensland and New South Wales borders. The southern reaches are defined by the northern extent of the Upper Eyre Peninsula, Flinders Mid-North Yorke and Murray Mallee BMA's. The area covers approximately 812,335km² (approximately 82.7% of the State).

The Outback BMA has two Local Government Areas:

- District Council of Coober Pedy
- Roxby Council



Map 2: Outback Bushfire Management Area

The Outback Communities Authority (OCA) is a Local Government Association who has primary functions and objectives to manage and promote improvements in the provision of public services and facilities to outback communities and to articulate the views, interests and aspirations of outback communities.

Within the OCA area, many of the townships have Progress Associations (or similar) who determine community needs and priorities and, where human resources allow, maintain facilities and services and undertake important town management roles.

See **Appendix A** for a list of towns and populations

Maralinga Tjarutja Council is an incorporated body constituted by the traditional Yalata and Maralinga Custodians to administer the lands granted to them under the Maralinga Tjarutja Land Rights Act 1984 and covers an area of 102,863km². The Maralinga Tjarutja and the Pila Nguru (or Spinifex people) also jointly own and administer the Mamungari Conservation Park in conjunction with Department for Environment and Water (DEW).

Oak Valley is the only aboriginal community based on the Maralinga Tjarutja lands which is located on the southern fringe of the Great Victoria Desert. It is approximately 320km north of Yalata by 4WD track, crossing the Trans Australian railway line at Ooldea. It was established in 1985 as a community outstation for people displaced from the Maralinga lands for the British atomic tests. Oak Valley (Maralinga) Inc. manages the establishment and development of the community including the provision of housing, roads and other infrastructure. The local population ranges from 80-100, however can swell to 1,500 people for special cultural activities with visitors from neighbouring communities.

The **Aboriginal Lands Trust** oversees a range of communities that are mainly former missions and reserves that were vested to the Trust when it began. The Trust must use its funds for economic development and improvement of Trust land and the purchase of further land. Below is a list of the communities that are within the Outback BMA that ALT oversees:

- Koonibba Community
- Nipapanha (Nepabunna) Community
- Umoona Community
- Yalata Community
- Dunjiba Community

The Nepabunna Community Council is a local government area situated on Adnyamathanha land east of Copley in the Northern Flinders Ranges. Originally established as a mission in the 1930s, the community became a council in 1998 and is now part of the Local Government Association of SA. At the 2016 Census Nepabunna had a population of 66. The Nepabunna Community Council has an area of approximately 76km² and also is responsible for the Nantawarrina **Indigenous Protected Area** (IPA) that covers around 580km².

Iga Warta is a separate entity to Nepabunna, as it's an aboriginal family run business that has a range of accommodation and provides cultural awareness tours for tourists.

The Outback Communities Authority also recognises co-existing Aboriginal community groups in the following three towns:

- Marree Arabunna People's Committee – Marree
- Dunjiba Community Council – Oodnadatta

- Aroona Aboriginal Council – Copley

2.2 Population and Language

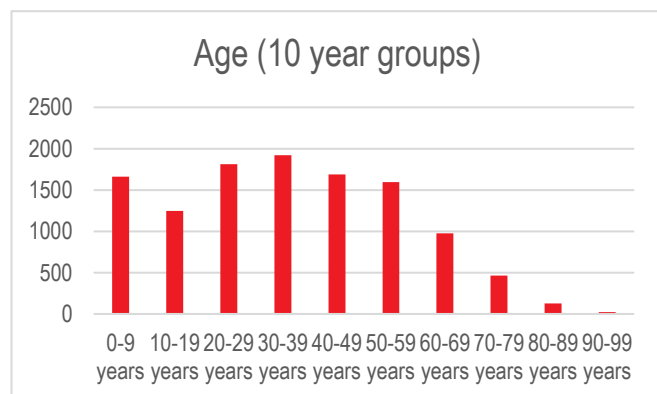
The population within the Outback BMA was counted at just over 11,500 at the last Census (2016). This is approximately 0.7% of South Australia's population.

Table 1: Outback Population

LGA	Population
APY	2270
Coober Pedy	1766
Maralinga Tjarutja	62
Roxby Downs	3881
Pastoral Unincorporated	3524
Total	11,503

27% of the Outback BMA population identify as Aboriginal or Torres Strait Islander and approximately 25% of the population speak a language other than English (ABS). **Figure 1** below shows the age demographics of the population.

Figure 1: Age Demographics



The facts below outline the highly transient nature of population dynamics in the Outback BMA:

- Aboriginal community populations change seasonally – migration to major centres occurs in the heat of summer
- Aboriginal cultural and sporting activities – attract members from other surrounding communities increasing the resident community population during the time
- Some pastoral leases are inhabited and some are not – workers come in at particular times of the year in response to cattle/sheep processing requirements
- There is a transient tourist population travelling through and within the Outback area at most times of the year. Numbers fluctuate depending on factors such as the filling of Lake Eyre
- The mining industry has numerous transient workers – fly in and fly out basis - that may not be reflected in demographic statistics
- The expansion of Olympic Dam means the town of Roxby Downs will be continuously expanding.
- Mineral, gas, petroleum and geothermal exploration companies have satellite camps throughout the Outback BMA, these are of a transient nature
- There are several major transport corridors that dissect the BMA. At any time there can be significant numbers of people on these roads or utilising roadsides rest areas.

Population estimates for the APY Lands as per CENSUS 2016 indicates that people are mostly concentrated in a number of larger settlements, together with smaller homeland areas, generally in the northern and eastern parts of the lands.

2.3 Economy

The key employment industries across the Outback are listed below.

Table 2: Key Industries

Key Industry	No of Employees
Mining	1565
Education and Training	479
Agriculture, Forestry and Fishing	443
Accommodation and Food Services Tourism	373
Health Care and Associated Services	326

Despite the small and isolated populations of the Outback the region contributes significantly to the State's GDP. The Flinders Ranges and Outback 2016-17 Tourism Gross Regional Product (GRP) was calculated at \$283 million¹. And as at 2017 there were 229 tourism related businesses listed within the BMA. The major industries are Mining, Agriculture and Tourism. The below list

¹ <http://tourism.sa.gov.au/documents/CORP/documentMedia.ashx?A={5248E716-08BE-4FD9-8E56-8385C7023132}&B=False>

shows the number of government health facilities across the Outback BMA.

Table 3: Outback Health Facilities

Facility Type	No of Facilities
Hospitals	2
Remote Health Clinics	5
Residential Care Facilities	6
Total	13

2.4 Land Tenure and Use

Land use within the Outback BMA comprises the following:

- Pastoral Leases – cattle and sheep grazing
- Mining and Petroleum, Geothermal Exploration Industries
- Tourism
- Department for Environment and Water (DEW)
- Private Conservation Areas
- Private Land Use Areas
- Heritage Agreements
- Shooting Reserves
- Aboriginal lands and Indigenous Protected Areas (IPA)
- Department of Defence lands

The type of land use may influence a range of bushfire issues such as chances of ignitions, ability of bushfire to establish and spread, opportunities for suppression and the risk treatments applied to reduce bushfire risk and impact. Although there are multiple land uses and land owners across Outback BMA, broader bushfire issues and risk treatments are assessed and applied using a tenure blind approach to bushfire management planning.

The upper North of the BMA is dominated by cattle grazing on pastoral lands and in the south there are predominantly smaller sheep grazing stations. The majority of these stations are leased from the SA Government. Some stations have diversified into tourism with campgrounds and farm stay accommodation. Some stations within the BMA have also been converted into private conservation areas, including Bon Bon Station, Kalamurina, Arkaroola and others, where the land is no longer grazed by stock but conserved to allow the flora and fauna to regenerate naturally.

DEW manage the national parks, conservation parks and regional reserves throughout the Outback BMA along with other Crown and Public Lands. The Maralinga Tjarutja and Anangu Pitjantjatjara Yankunytjatjara (APY) Aboriginal people are freehold collective owners of a large portion of the Victoria Desert/Nullarbor MDA. There are other indigenous communities within the BMA, who live on and manage land including Dunjiba, Umoona, Nepabunna and Yalata.

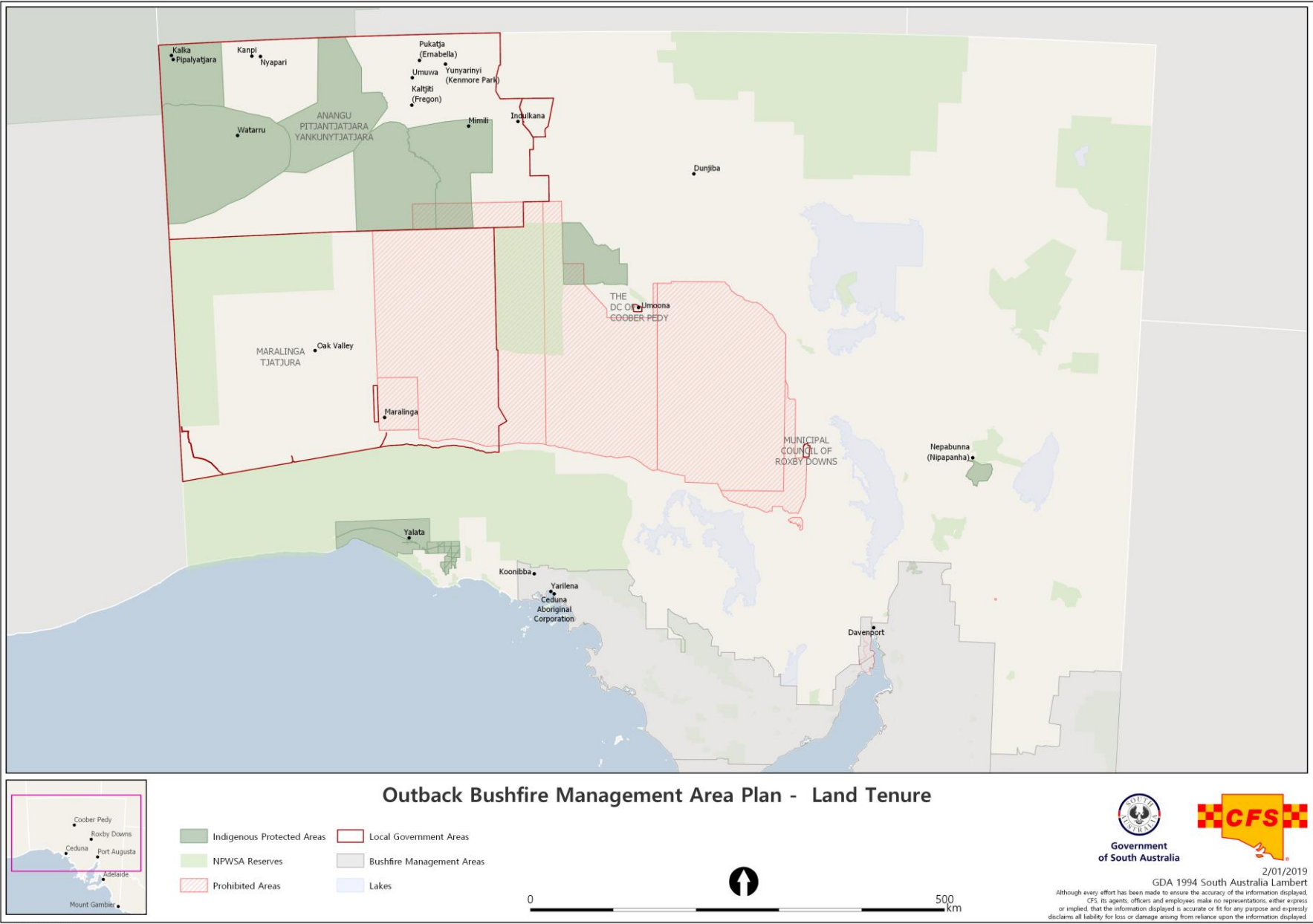
The Anangu Pitjantjatjara Yankunytjatjara Land Rights Act 1982 confers freehold land rights to the Pitjantjatjara, Yankunytjatjara and Ngaanyatjarra people who are the custodians of this country. The APY Lands are managed by an Executive Board representing the communities on the lands.

The APY Management include five **Indigenous Protected Areas** – Watarru, Walalkara, Kalka-Pipalyatjara, Aparra-Makirir-Punti and Antara-Sandy Bore. These areas have IPA Country Management Plans. Indigenous Protected Areas are areas of land or sea country owned or managed by Aboriginal groups, which are voluntarily managed as a protected area for biodiversity conservation through an agreement with the Australian government. IPAs are an essential component of Australia's National Reserve System, which is the network of formally recognised parks, reserves and protected areas across Australia. As well as protecting biodiversity, IPA's aim to deliver cost-effective environmental, cultural, social, health and wellbeing and economic benefits to Indigenous communities. The IPA programme was established to support Traditional Custodians to manage their country, combining traditional knowledge with western science. APY supports land management activities in a wide range of fields including fire management on the IPA areas.

Areas to the east of the APY Lands are largely pastoral in nature, featuring extensive livestock grazing and some cropping. Mining ventures operate throughout much of the Outback BMA with exploration and extraction activities occurring throughout the year.

The Department of Defence also manage a large proportion of the central area of the Outback BMA. See below for a map displaying land tenure & land managers.

The Woomera Prohibited Area (WPA) is a globally unique military testing range. It covers 122,188km² in the North West of SA. It is the largest land testing range in the world. The WPA is mainly Crown land covered by pastoral leases, exploration and mining tenements and native title. The WPA is regulated by legislation and plays a significant role in Australia's national security. Consideration needs to be given to the management of vegetation on this land given that access for suppression activities can be restricted due to security considerations. **Map 3** shows the variety of land tenure across the BMA.



Map 3 Outback BMA Land Tenure

2.5 Topography

The Outback BMA is characterised by large expanses of desert, open grassland, salt lakes and is bounded in the north-west corner by the rugged Musgrave and Mann Ranges that run east to west.

Below the ranges extends the Great Victoria Desert, within which lies the Tallaringa Conservation Park and Mamungari Conservation Park. At the southern end of the Great Victoria Desert are the Ooldea and Barton Ranges beyond which, are the Nullarbor and Yellabinna Regional Reserves among other small Conservation Parks.

Lake Gairdner and Lake Torrens form a large part of the landscape in the southern central part of the BMA. North of these lakes is Lake Eyre National Park and further north are the Witjira National Park and Simpson Desert. The Simpson Desert is characterised by extensive parallel dunes separated by flat inter-dune corridors.

To the north west of the Simpson Desert is the channel country of the Cooper Basin where much of the nation's gas is produced. The Cooper Creek drainage system is fed from catchment areas that originate in Queensland. To the south, the main topographical features are the Vulkathunha Gammon Ranges and the northern Flinders Ranges. The unique landscape comprises a combination of chasms, gorges, bluffs and plateaus.

2.5.1 Water Catchments

Ground water, particularly from the Great Artesian Basin (GAB), is critical to the health of ecological communities and the viability of the pastoral, mining and tourism industries in the South Australian Arid Lands region. There are almost 5000 individual spring vents in 169 spring groups within the South Australian part of the GAB. The largest group is the Dalhousie complex, where more than 60 springs are located. The Mound Springs associated with GAB is a critically endangered ecological community under the [Environment Protection and Conservation Act 1999](#).

The northern part of the region is dominated by four major catchments – Neales-Peake, Cooper Creek, Georgina-Diamantina, and Macumba – large surface draining networks which terminate at Lake Eyre. 'Boom' periods are triggered when floodwaters from interstate and major rainfall events enter the catchments and recharge the region's lakes, dams and wetlands including the Ramsar-listed, Coongie Lakes the largest Ramsar site in Australia.

During frequent and prolonged droughts or 'bust' periods, water bodies with permanent fresh water such as Algebuckina Waterhole in the Neales River catchment and Cullyamurra Waterhole in the Cooper Creek catchment provide critical refuge for plants and animals².

2.6 Fire Weather and History

The Outback BMA encompasses the following Fire Ban Districts (FBD) – Northeast Pastoral, Northwest Pastoral, Flinders, Eastern Eyre and West Coast. Fire Danger Season (FDS) dates are set annually by the CFS Chief Officer based on recommendations from the Outback BMC.

The Outback BMA is predominantly arid to semi-arid country. The expansive area experiences times of extreme heat and annual variability in the timing and intensity of rainfall. Generally, the outback country receives low annual rainfall compared with the rest of the State.

Weather patterns that produce above average rainfall create concerns for bushfire due to exponential grass growth. Buffel grass is particularly problematic in that it increases fuel loads in areas that were historically low, in some cases more than doubling the recorded fuel load.

There are large areas within the BMA where fire suppression activities are not generally undertaken, due to the remoteness and inaccessibility of much of the country. Fires within the Outback BMA travel enormous distances unchecked through much of the landscape and are often characterised by their significant size. For example the total area burnt during the 2011/2012 Fire Danger Season exceeded 5.58 million hectares. Some of the more recent recorded fires across the APY Lands include:

- September 2017 – Pukatja (Ernabella) incident, burnt over 100,000ha
- September 2017 – Amata incident, burnt over 110,000ha
- February 2018 – Yunyarinyi (Kenmore Park) incident, burnt over 169,000ha
- September 2018 – Umuwa incident, burnt over 170,000ha
- December 2018 – Murputja incident, burnt over 101,000ha

Table 4: Fire Frequency and Hectares burnt 2017-19

Financial Year	No of fires	No of hectares burnt
2017/2018	118	299,549ha
2018/2019	294	651,122ha

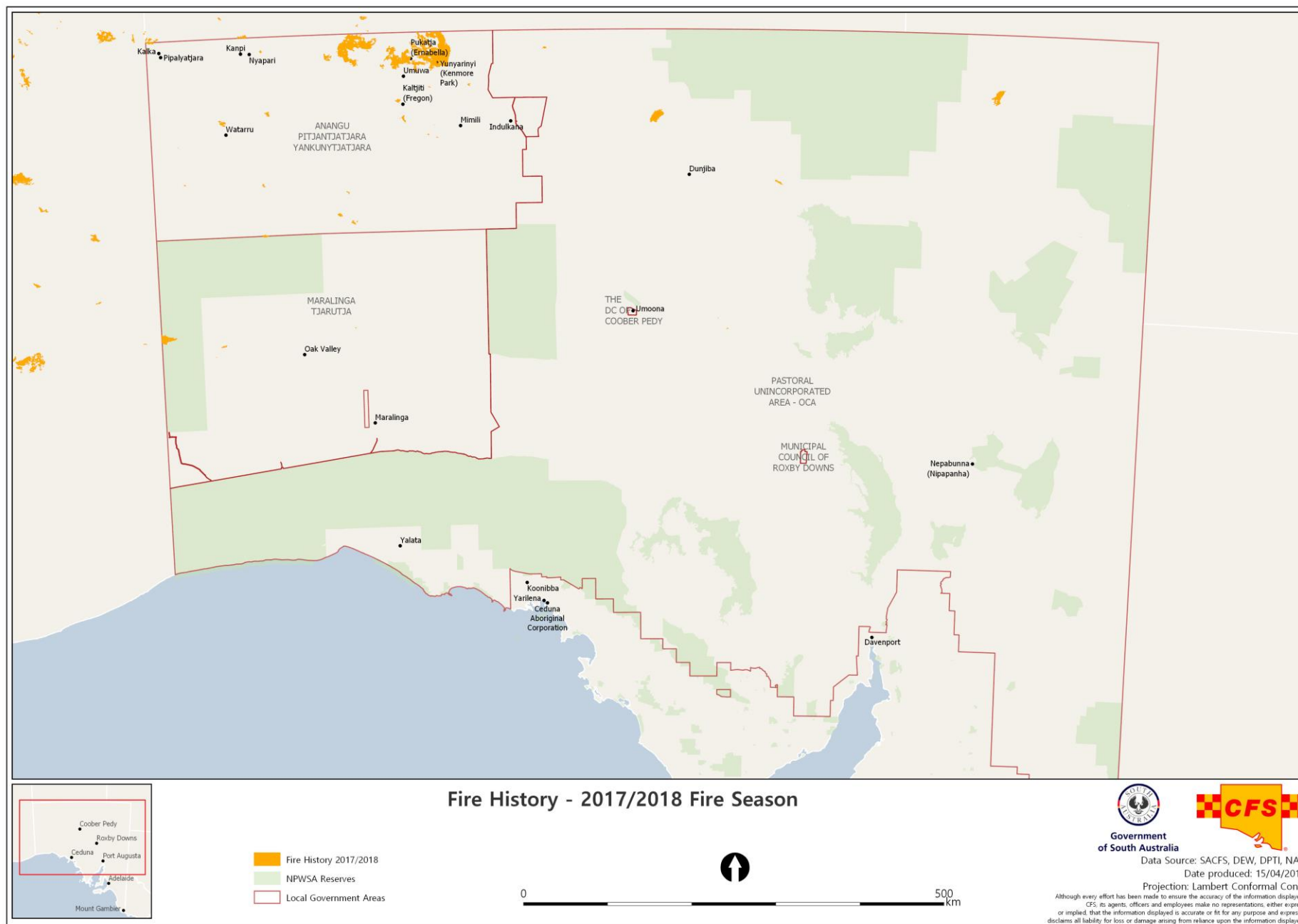
Fire frequency across the rest of the Outback BMA varies. Northern APY lands (Mann & Musgrave Ranges) burn more frequently (seven or eight times in the last forty years) than parts of the southern APY (two to four times in the last forty years). Fire frequency in the northern Maralinga Tjarutja lands appears to be less frequent again with fire occurring once every twenty to forty years. Fire frequency in the Yellabinna CP area is similar to that of

² http://www.naturalresources.sa.gov.au/aridland/water/managing_water_resources

the Maralinga Tjarutja lands and there is very little or no fire activity recorded in Tallaringa CP and the Nullarbor complex. See pages 11 and 12 for fire history maps.

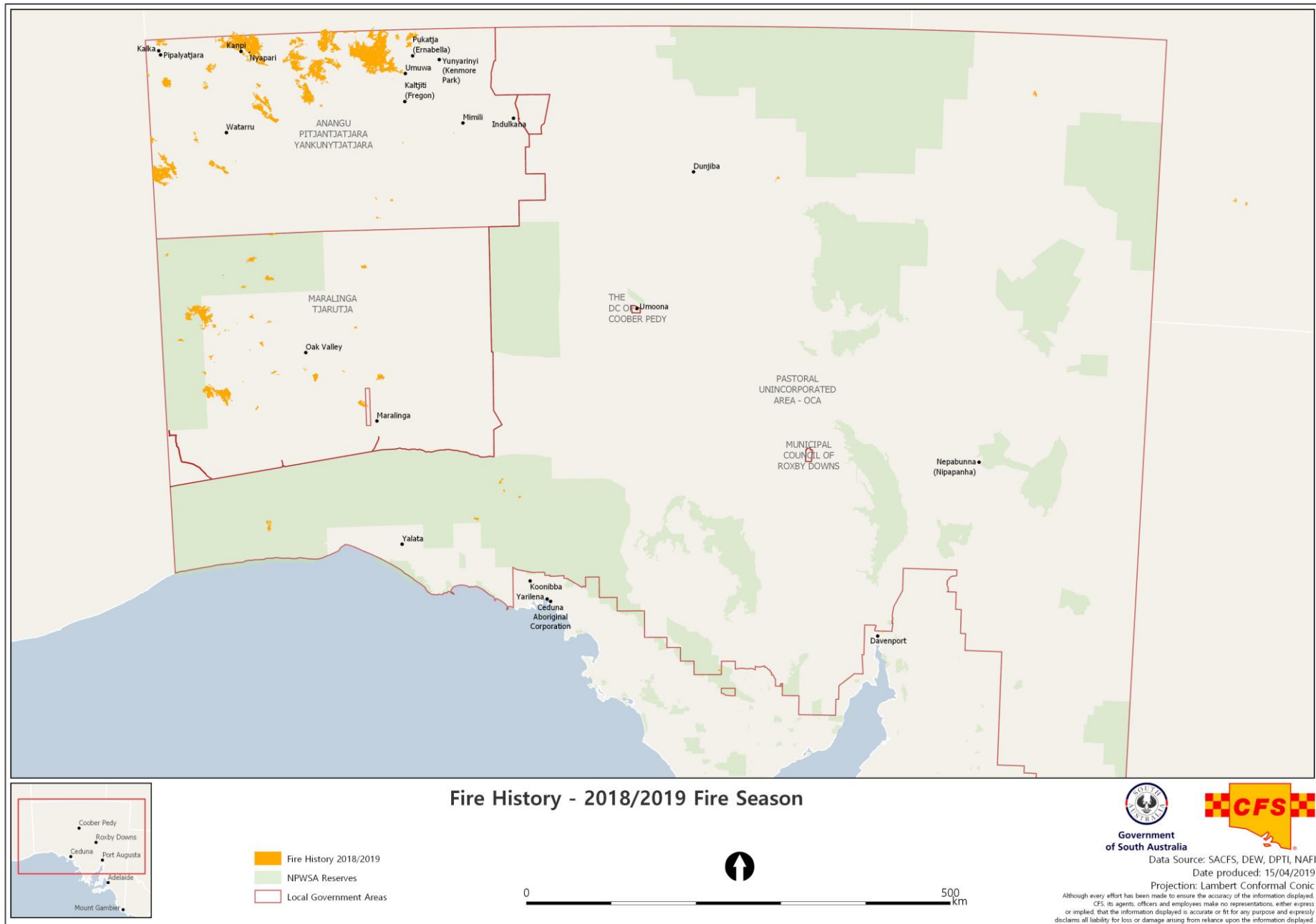
Whilst there are sources of ignition such as roadside fires and rubbish clearing, the main cause of unintentional fires across the Outback is lightning. The biggest threat to the pastoral areas is displaced feral animals, such as camels, looking for feed after wildfire events. Predation by feral cats and foxes is also a significant threat following bushfires when habitat and food sources can be limited.

During the fire danger season the CFS utilise the [NAFI website](#) to check for current and known hotspots to identify any fires of concern as well as the BOM for overnight lightning activity in the Pastoral Districts and APY Lands. The locations of hotspots are accurate to within approximately a kilometre of their actual location. Occasionally hotspots may be triggered by very hot rock surfaces, smoke plumes or errors in the automated process that detects the hotspots from a satellite image. CFS may decide upon a fire detection flight depending on availability of resource



MR204_A3_Outback/NAFI

Map 4: Fire History (2017/2018 Fire Season)



HR204_A3_Outback/NAFI

Map 5: Fire History (2018/2019 Fire Season)

2.7 Cultural Fire Management

The traditional cultural practices of Aboriginal people would have maintained mosaics of vegetation at different stages of succession after fire disturbance as part of their nomadic and semi-nomadic management of landscape. It is important to note that this mosaic may not have been an explicit goal of the traditional use of fire, but rather a default outcome of cultural and hunting practices associated with people migrating and hunting regularly across large expanses of country. The establishment of settlements and homelands across the APY Lands as well as changing migratory and hunting patterns has disrupted the cultural processes that led to the complex fire regimes across the landscape. Most vegetation now experiences fire more rarely, and when fires do pass through they are often larger and more intense wildfires. Moreover, as people are no longer walking country in the same way, most of the burning that now occurs is close to access tracks rather than distributed broadly across the landscape. When fire does occur in areas that are not regularly burnt, either from lightning strikes or inadvertent human activity, the result is often larger bushfires. There is an increased risk to the communities because these fires are less controllable and if large areas of natural habitat are lost in one fire event, ecosystems and natural processes will be permanently altered and wind and water erosion can increase. Most native bushfood plants are sensitive to large, infrequent fire regimes having adapted to the cultural burning practices of Aboriginal people.

Current fire management approaches are aimed at preventing or mitigating large-scale bushfires however the BMC note that on Aboriginal land, Aboriginal people can and will burn areas without necessarily engaging in any form of 'western' planning process, and this plan does not seek to change that in any way.

It is not the intention of the Plan to replace direct cultural fire management activities undertaken by Aboriginal People on their lands, whether executed by traditional or contemporary means. Rather, the Plan seeks to support Aboriginal People to undertake cultural fire management where appropriate.

To support cultural fire management by Aboriginal People an 'action based' approach is generally encouraged underpinned by sound working relationships between project partners with discussion and engagement occurring on country. Projects such as Ten Deserts Project or the DEW Burning on Private land project are supported by the Outback BMC. These groups are working on engagement towards activity on the ground and the Outback BMC acknowledge that this will take time.

APY Land Management have identified broad strategies for habitat protection burning within the APY Lands. The process for identification of areas to be burnt needs to occur on an annual basis. The AW Fire Management Strategy 2014 outlines some key principles for prescribed burning such as when and how to burn and for specific vegetation types. Planning also occurs at events such as the Tri-State Waru Meeting held between communities across

the desert regions of SA, WA and NT and facilitated by the Central Land Council.

Fire management across the APY Lands can be complicated due to the number of different agencies involved and differing objectives. Resources to assist with coordinating fire management across the APY Lands would increase the effectiveness of activities.

On Aboriginal owned land, it is the Traditional Custodians who must have final say about the management of their country. It is important to recognise that management and use of land by Aboriginal People is governed by Traditional Custodians responsibility and the oral tradition of Tjukurpa. Rather than focusing on documenting sites, or attempting to describe and codify traditional knowledge, the emphasis in management should be on encouraging the retention of traditional knowledge by Aboriginal People and by developing and maintaining sincere relationships with people and their land.

2.8 Climate

2.8.1 Temperature

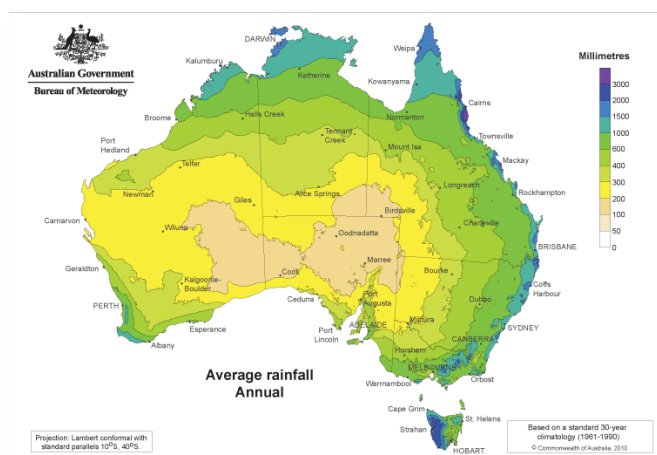
The hottest months are December, January and February with temperatures averaging around 30°C, however, temperatures over 35°C and exceeding 40°C are common. Generally, the further north and inland areas experience the hottest temperatures compared to more southerly coastal areas. Along the coastal area of the BMA sea breezes can start reducing temperatures considerably by early afternoon.

2.8.2 Wind and Weather Patterns

The Outback BMA is influenced by predominantly North Westerly - Westerly winds. Depending on the type of pressure system winds can also be generated from the North, which is a hot dry wind from the arid interior and this occurs mostly in the summer months.

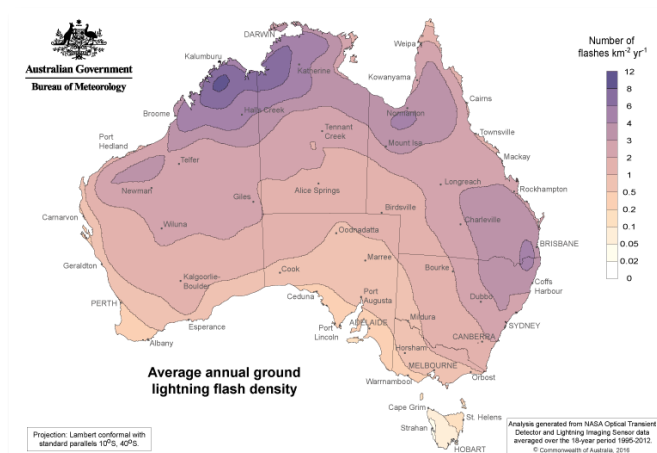
2.8.3 Rainfall

Much of the region covered by the Outback BMA is some of the driest and most remote in South Australia with no permanent rivers or creeks. Water is a limiting factor throughout the BMC; rock-holes, springs and soaks are the only source of water available in dry times and even these may become dry. Map 6 below shows the average annual rainfall totals across the BMA.



However, in exceptional climatic events like La Nina years, the Outback BMA can receive excessive rainfall which can lead to an increase fuel loads. Arid and semi-arid desert regions of Australia are characterised by ephemeral grasses that sprout following successive seasons of higher than average rainfall, resulting in increased likelihood of major fire events in the season following these events.

Lightning is a key cause of many fire starts. As the map below highlights, a higher level of lightning activity is observed in the northern parts of BMA.



2.8.4 The impacts of climate change

Climate change is having direct environmental impacts on water resources, primary production, infrastructure, flora, fauna and the health of our landscapes. Climate change factors are also contributing to increases in bushfire frequency and intensity resulting from:

- Longer fire seasons

- Less opportunities for hazard reduction burns
- Record hot and dry conditions
- More extreme and catastrophic fire danger days
- Severe weather events (dry lightning thunderstorms, sudden wind shifts)
- Reduced soil moisture
- Increase evaporation
- More demand for decreasing stocks of water

Rainfall - By 2070, annual rainfall is projected to decline by 8.1%.

Maximum Temperature - By 2070, annual mean maximum temperature is projected to increase by 1.8°C.

Fire Weather - Fire weather projections suggest increased fire weather in the future for Woomera. In 2030 severe fire danger days are projected to increase 31 % from the baseline of 17.7 days per year to 23.2 days per year. By 2070 severe fire danger days are projected to increase to 24.7 days per year (40 % increase from baseline) (CCIA, 2015).

The specific ways that climate change will impact all aspects of fire management are not fully understood.

Fuel accumulation rates, plant decomposition rates, fuel moisture, humidity and particularly rainfall patterns are becoming less predictable.

Heatwaves have been a particular concern for aboriginal communities and land managers in recent years. Heatwaves make it difficult to go outside, for people to continue their activities and can lead to blackouts due to high electricity load demand. This can result in people seeking alternatives for cooking and heating such as camp fires. These camp fires can be left unattended, resulting in small grass fires burning for days and later becoming large uncontrollable bushfires.

Additional information on climate change impacts can be found in the following websites:

- [Bureau of Meteorology: Climate Change and Variability](#)
- [Climate Change in Australia](#)

2.9 Buffel grass

Buffel grass (*Cenchrus ciliaris*) is a perennial tussock grass native to Africa, India and Asia that has been introduced as a pasture and dust suppression species in central Australia. It is a highly invasive environmental weed and extremely difficult to control. Research has confirmed a significant correlation between buffel grass and increased fuel loads and that there is positive fire invasion feedback for buffel grass. Buffel grass is now widely distributed across the northern areas of South Australia, in particularly the APY Lands where dense infestations are causing considerable social, environmental and safety concerns. Infestations have also been identified in several localities in the Maralinga Tjarutja lands and southern parts of the BMA.

Figure 2: Buffel Grass



Buffel Grass presents a particularly significant threat to biodiversity. Buffel Grass responds well to fire, regenerating rapidly and is also drought tolerant and very difficult to eradicate. Buffel Grass readily establishes in road and track verges, parking bays, towns and other disturbed areas. Buffel Grass forms dense monocultures and increases the frequency and intensity of fires, and displaces native plants and the animals that depend on them. Buffel grass seeds are triggered to germinate by even minor forms of soil disturbance. Buffel Grass produces approximately 2-3 times the combustible material of displaced native grasses, resulting in hotter, more intense fires and is able to rapidly regenerate after fire and suppress regeneration of native species.

Buffel Grass must be actively growing for effective uptake of herbicides therefore timing of application is vital. Fire or slashing and herbicides may be integrated to improve foliar uptake and manage larger infestations. All control programs require several years of follow-up treatment and monitoring. Fire is not an effective management tool on its own. Well-developed rootstock may require multiple applications of herbicide to destroy large plants and seeds can remain viable for up to 4 years. Chemical control programmes thus require flexibility and responsiveness around rainfall events.

As identified in the draft Integrated buffel grass management plan for the Great Victoria Desert 2018-2023 (BFGVD) the principal constraints in undertaking effective buffel grass management are financial resources, labour capacity, access to equipment and herbicides and accessibility to remotely located infestations. The bushfire risk to the majority of communities across the APY Lands is driven by the presence of buffel grass. The Outback BMC is supportive of all efforts that aim to reduce the spread of buffel grass and over the life of this plan will seek to promote the management strategies outlined in the BFGVD. Mapping the extent of buffel grass infestations has also been identified as an important element in the management of this weed and the Outback BMC will be looking to identify potential funding sources.

The AW NRM Board has been undertaking monitoring and eradication actions within the region, including mapping and trial burning/spraying combinations at various locations within the MT and Yalata lands.

A standard operating procedure (AW Buffel Grass Operational Strategy) has been developed by DEW and the AW NRM Board to provide advice regarding minimisation of buffel Grass spread by people, vehicles and machinery. An APY Buffel Grass Working Group has also been established and meets numerous during the year to discuss current and future strategies for tackling buffel grass. Reports from this group are provided to the Outback BMC to keep the BMC informed regarding on-ground actions and to ensure information about best practice management is distributed. The Working Group would like to see a dedicated buffel grass project area appointed to coordinate efforts across the APY Lands.

Controlling buffel grass around communities has been recognised by the CFS and local brigades as a high priority to reduce the risk of fire to key assets such as health clinics, water infrastructure and community housing. The maintenance of existing fire breaks around communities combined with grader breaks may provide opportunities to back burn buffel grass around communities and reduce the risk to residents.

Control of buffel grass is a long term management issue. Sporadic efforts will not succeed in addressing the risks posed by buffel grass. The increasing fuel loads due to the spread of buffel grass will be continually assessed by the BMC during the life of the Outback BMAP to ensure risk is adequately addressed.

While buffel grass is a declared plant in South Australia it is not recognised as a declared weed in the neighbouring state of Western Australia or in the Northern Territory. This increases the complexity of coordinating cross border efforts to contain the spread and minimise the adverse impacts of buffel grass. The Outback BMC is supportive of the Principles contained in the draft SA Buffel Grass Strategic Plan 2019-2024 as well as the strategies in the draft BGGVD, the area where buffel grass is of most concern in terms of bushfire risk.

The Outback BMC is committed to providing assistance where possible in the management of buffel grass and member agencies are encouraged to seek funding to assist.

impacts stemming from the loss of habitat including food, shelter, nesting sites and movement corridors can have severe long term implications for populations.

It is acknowledged that fire suppression activities can also have a negative impact on environmental assets. Bushfire suppression strategies and efforts should consider impact minimisation and protection of environmental assets.

2.10 Environment

Humans depend directly and indirectly upon living systems for their health and well-being. Bushfire, in addition to other threats such as pest plants and animals, has both a negative and positive influence on these living systems. Outback Bushfire Management Area is home to:

- At total of 462 threatened native flora species
 - 24 national native flora species listed as threatened under the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999
- 204 threatened native fauna species
 - 36 national native fauna species listed as threatened under the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999
 - 168 state native fauna species listed as threatened under the South Australian National Parks and Wildlife Act 1972
- 9 threatened ecological communities
 - 1 national threatened ecological community listed as threatened under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999
 - 8 state threatened ecological community listed under the South Australian Provisional List of Threatened Ecosystems of South Australia

Understanding how species, populations and ecological communities respond to fire regimes determines if preventative treatment actions are required to reduce the risk from bushfire. While many species have adapted tolerances to fire regimes so they can survive fire, large-scale intense bushfires or prolonged, frequent fire can put some vulnerable species and ecological communities at risk and individuals may perish in a bushfire. Furthermore, indirect

3. Roles & Responsibilities

3.1 State Bushfire Coordination Committee

The FES Act 2005 Section 71A outlines the functions of the State Bushfire Coordination Committee. Some of these functions include:

- a) promoting the State-wide coordination and integration of policies, practices and strategies relating to bushfire management activities;
- b) providing guidance, direction and advice to bushfire management committees;
- c) preparing and reviewing the State Bushfire Management Plan and to keep under review the extent to which Bushfire Management Area Plans and strategies adopted or applied by bushfire management committees are consistent with the State Bushfire Management Plan;
- d) approving and auditing Bushfire Management Area Plans prepared and endorsed by Bushfire Management Committees.

3.2 Outback Bushfire Management Committee

The Outback BMC has been established by the SBCC under the FES Act 2005, and under Section 73A(1) of this Act must prepare and maintain a BMAP for its BMA. This plan takes an unbiased landscape view of the strategic bushfire management needs of the BMA and is, therefore, boundary and tenure blind.

The key function of the Outback BMC is to coordinate all relevant stakeholders with a responsibility for bushfire management within the BMA, to undertake a risk assessment process, and oversee the implementation of risk mitigation strategies. The purpose of this process is to reduce the risk of fire negatively impacting on life, property, and the environment in accordance with the FES Act 2005. The role and responsibility of Outback BMC will include:

- a) Promoting the coordination of policies, practices and strategies relating to bushfire management activities within its area;
- b) Preparing and keeping under review a BMAP for its area and ensuring that the BMAP is consistent with the State Bushfire Management Plan;
- c) Overseeing implementation of its BMAP and reporting to the SBCC;

- d) Initiating or preparing the development of plans, policies, practices or strategies to promote effective bushfire management within its area;
- e) Convening with local or regional forums to discuss issues associated with bushfire management within its area, including working with local communities to promote and improve effective bushfire management;
- f) In the exercising and performance of their powers and functions:
 - i. Having due regard to the impact of their actions on the environment; and
 - ii. Seeking to achieve a proper balance between bushfire prevention and proper land management in the country; and
 - iii. Performing any other functions assigned by the Minister or the SBCC.

3.3 Bushfire Management Committee Member Organisations

BMC member organisations are responsible for:

- a) Contributing to the decision-making of the Committee
- b) Preparing and implementing action or work plans to address relevant risk treatments or issues identified in the plan.
- c) Ensuring input into the planning process by their BMC representatives
- d) Providing information and make decisions on bushfire management planning issues within the area
- e) Reviewing the Bushfire Management Area Plan information and drafts and make amendments if required
- f) Determining methodologies for community and public consultation on key components of the BMAP
- g) Assessing and endorsing BMAP updates or changes.

Please refer to **Appendix B** for a list of the Outback BMC member organisations.

3.4 Other Land Management Agencies & Traditional Custodians

Due to the uniqueness of the Outback BMA there are a number of agencies that operate only in this area and have responsibilities or involvement with land and fire management.

A number of these are legislative bodies such as Outback Communities Authority (OCA), APY, Maralinga Tjarutja, or Department of Defence or mining towns like Woomera, Leigh Creek & Cultana. These localities may be serviced by private fire services and have bushfire prevention plans.

A significant portion of the Outback BMA is classed as unincorporated land and is not governed by a local municipal corporation. The Outback Communities Authority advocates for these communities who are largely self-managed.

Pastoral Board was established under the Pastoral Land Management and Conservation Act 1989. The Board administers pastoral leasehold tenure over approximately 505,000km², mainly cattle and sheep properties separated by the Dog Fence (with cattle to the north of the fence and sheep to the south). While the Pastoral Board has no direct involvement with fire management its management of leases and stocking rates makes it an important partner as well as a conduit to those on the land.

DEW is responsible for establishing and managing parks and reserves in South Australia. There are several types of public lands across the Outback BMA that DEW have direct management responsibility – national parks, conservation parks and regional reserves. In addition to this is the co-management model for parks management which enables DEW to share responsibility for management of these area with relevant Aboriginal groups through the creation of either a co-management board or a co-management advisory committee. The co-management of parks plays an important role in advancing the reconciliation process and resolving issues relating to traditional land ownership. [List of national park co-management boards and committees.](#)

DEW's risk-based Fire Management Plans (<http://www.environment.sa.gov.au/managing-natural-resources>) include strategies for bushfire risk mitigation and suppression on DEW reserves and selected surrounding lands. The Outback BMA incorporates lands included within the below Fire Management Plans:

- *Witjira Waru Pulka (Fire) Management Strategy 2018-2028*
- *Alinytjara Wilurara Fire Management Strategy 2014*
- *Northern Flinders Ranges Fire Management Plan 2016*

The recommendations made within these plans are supported by the Outback BMC.

Alinytjara Wilurara and SA Arid Lands Natural Resource Management Boards have responsibilities under the NRM Act for ensuring natural resources are appropriately managed. The NRM Boards work with other agencies to achieve NRM outcomes.

There are also a number of privately managed nature reserves across the BMA that have largely been reclaimed from Pastoral leases, and are now managed as nature reserves. These reserves come under separate Federal legislation as part of the National Reserve System. Listed below are some of the private nature reserves that fall within the Pastoral area of SA

- Bon Bon Station Reserve
- Kalamurina Sanctuary Reserve
- Witchelina Reserve
- Arkaroola Protection Area
- Boolcoomatta Reserve
- Bunkers Conservation Reserve
- Warraweena
- Pinda Spring
- Arkaba Conservancy
- Hiltaba Nature Reserve

Other plans that may include elements of fire management include Country Management Plans and Indigenous Protected Areas Management Plans.

Tri-State Waru (fire) Committee meets annually, attended by senior Aboriginal people from across the Ngaanyatjarra Pitjantjatjara Yankunytjatjara Lands which spans the central desert region of SA, WA & NT. The meeting is facilitated by Central Land Council to review fire management and risks and devise an action plan for the year. Land managers from environment and fire agencies as well as bodies such as [Ten Deserts Project](#) attend to offer assistance in terms of funding, training and collaboration. The Outback BMC is supportive of this Committee and is committed to providing assistance or advocacy where appropriate.

3.5 Community

Bushfire prevention and preparedness is a shared responsibility of the State government, local councils and fire agencies, individuals, landholders and building managers (public and private), and the broader community. This BMAP assumes that all persons in the Outback BMA are responsible for the mitigation of the bushfire risk for themselves, their neighbours and their community, and therefore need to understand and partake in bushfire prevention and preparedness. This is especially relevant to the protection of life and the property and environmental assets not specifically identified, mapped or risk rated within this BMAP.

In particular, legislation (*FES Act 2005*) states that owners of land must take reasonable steps:

- a) to prevent or inhibit the outbreak of fire on the land; and
- b) to prevent or inhibit the spread of fire through the land; and
- c) to protect property on the land from fire; and
- d) to minimise the threat to human life from a fire on the land

To ensure that the community is observing these bushfire prevention and management activities, Fire Prevention Officers within the Outback BMA are required by the *FES Act 2005* to assess the extent of bushfire hazards within the council area, and provide advice to land holders and work with communities on bushfire prevention and preparedness. Where necessary, authorised Fire Prevention Officers can enforce the provisions of the *FES Act 2005* on private land.

While measures in this plan will assist to protect life and property, the work of agencies and authorities relating to fire prevention is only one aspect of limiting the impact of bushfire on the community. Property preparation and the public knowing how to stay safe during a bushfire are a vital aspect in preventing loss of life and property. Information relevant to all members of the community on bushfire prevention and preparedness can be found on the following link: [SA CFS Fact Sheets](#)

It is noted that methods of communication and engagement that are used in the southern parts of the state may not be appropriate or viable across the Outback BMA, in particular in very remote areas. Programmes and avenues of communication need to be carefully considered and specifically tailored to deliver the best results.

Visitor safety in National Park Reserves is a major consideration during the fire danger season and during bushfire suppression. Parks and Reserves may be closed temporarily due to forecast significant fire danger weather or during bushfires or other fire management related activities. Due to geographical expanse and remoteness, physical closures to all access points may not be possible. The public need to be educated to the fact parks and

reserves may not be safe places during significant fire danger weather or during bushfires and the onus is on individuals to stay informed by monitoring forecasts, local radios stations or the CFS website or Bushfire Information Hotline.

4. Risk Assessment

The risk assessment methodology for life (Human Settlement) and property (Economic and Social Value) assets is outlined in section 4.1. (For the detailed methodology see [BMAP Handbook](#)). The process for determining risk outcomes for environmental assets uses a different methodology and is covered under Section 4.2.

The assets considered within this plan are divided into four classes: Human Settlement Assets, Economic Assets, Social Value Assets and Environmental Assets. Each of these asset classes are further broken down into asset categories as shown in Table 5.

Table 5: Asset Classes & Categories

Asset Class	Asset Category
Human Settlement Assets(Life)	• Special Fire Protection • Residential
Economic Assets (Property)	• Infrastructure • Commercial or Industrial
Social Value Assets (Property)	• Facilities or sites of Community Value • Historic buildings or sites
Environmental Assets (Environment)	• Community nominated • Threatened ecological community • Flora • Fauna • Significant habitat • Reserve system <i>(Refer to Section 4.2: Environment)</i>

Assets and Areas not risk rated

Land, assets, communities or people who are not specifically identified or mapped within this BMAP may still have a level of bushfire risk. This is particularly relevant to the more sparsely populated areas outside of rural townships and communities. Landholders in the Outback BMA, including people and asset owners not risk rated, have a responsibility to undertake bushfire prevention and preparedness activities relevant to their location and situation.

Bushfire Safer Places

Life and property assets within a Bushfire Safer Place have not been specifically risk assessed however the BMAP process may identify where changes have occurred that would initiate a reassessment of areas classified as Bushfire Safer Places such as an expansion of a township. The BMC can request a reassessment

based on these changes. As part of the development of this plan new areas were identified and assessed to see if they met the requirements for a Bushfire Safer Place.

Human Settlement (Life)

Human Settlement assets are those assets which are likely to be occupied by people and may be at risk from bushfire. Therefore, there is the potential for the loss of human life. This category also includes facilities such hospitals and nursing homes, schools and child care centres. These are classed as Special Fire Protection assets.

Economic (Property)

Economic assets considered within this plan are those identified by the BMC as of significance to the economy, and are at risk from the impact of bushfire. They include commercial and industrial sites, and infrastructure providing utilities such as energy, water, transport and telecommunications.

Social Value (Property)

Assets of social value identified in this plan include those of historic or community value. This category includes facilities such as halls, churches, institutes and recreational facilities.

Department of Premier and Cabinet Aboriginal Heritage Division maintains the Register of Aboriginal Sites and Objects. Information about Aboriginal heritage can be extremely sensitive and there are legislative and cultural restrictions related to whether and how this information is shared. These sites therefore have not been risk assessed and the BMC (or the assigned treatment agency) will, where required, contact the relevant [Recognised Aboriginal Representative Body](#) (RARB) and/or appropriate Traditional Custodians about considerations regarding Aboriginal sites in an area and any potential impact or considerations prior to the implementation of bushfire prevention activities. Aboriginal cultural heritage is also considered when Traditional Custodians apply their knowledge in identifying areas for fire management works. A formal example of where this occurs is at the annual Tri-State Waru (Fire) Committee meeting.

Environmental

The environmental assets listed below are assessed for negative impacts from bushfire.

- Community nominated environmental assets sourced from the Atlas of Australia Living Australia BioCollect system
- Threatened ecological community listed as threatened under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* or under the *South Australian Provisional List of Threatened Ecosystems of South Australia*
- Flora native species listed as threatened under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* or the *South Australian National Parks and Wildlife Act 1972*
- Fauna native species listed as threatened under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* or the *South Australian National Parks and Wildlife Act 1972*
- Regionally important significant habitat
- Native vegetation contained in South Australian terrestrial reserve systems:
 - Natural world heritage properties listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
 - Natural national heritage places listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
 - Wilderness protection areas declared under the *South Australian Wilderness Protection Act 1992*
 - Heritage agreements declared under the *South Australian Native Vegetation Act 1991*
 - Reserves declared under the *South Australian National Parks and Wildlife Act 1972*
 - Native forest reserves declared under the *South Australian Forestry Act 1950*
 - Forest conservation areas declared under the *South Australian Forestry Act 1950*
 - Reservoir reserves under the care and control of SA Water

- Groundwater basins under the care and control of SA Water
- Indigenous Protected Areas
- Nature Reserves owned and managed by the National Trust South Australia
- Rail and Roadside reserves

4.1 Risk Assessment Methodology for Life and Property Assets

The life and property assets identified and assessed for their risk from bushfire in this BMAP has been sourced from the community, local councils, infrastructure agencies, business groups, SA Government agencies, Outback BMC working groups, CFS and web based geospatial resources.

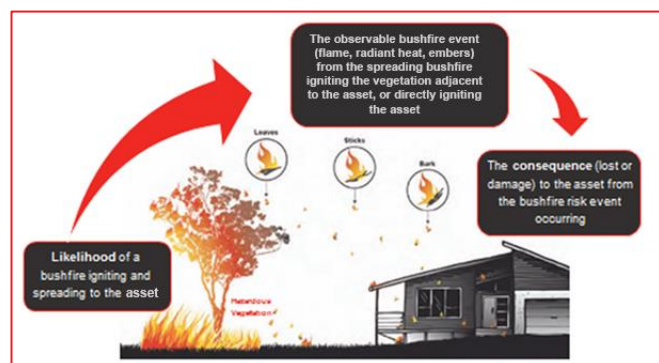
The risk rating outcomes for life and property assets currently identified in this Plan are determined using a number of inputs (risk drivers). Some of these include:

- Susceptibility of assets and people
- Vegetation type and its distance from the asset
- Predominant slope of the vegetation in relation to the asset
- Access and/or egress to and from the asset
- Frequency of ignitions in the general area of the asset

Risk drivers for each asset are contained in the extended version of the asset spreadsheet which is available from the CFS Bushfire Management Planning Unit.

The life and property assets are geographically identified and presented with a coloured risk rating as either, a point, line or polygon in the [online bushfire risk map](#) that forms part of this plan. This plan also includes a table listing all relevant information relating to the risks, as well as existing and proposed risk treatment strategies associated with each asset. The planning process allows for a single repository for all current and future assessments to be managed and maintained within the Outback BMA.

The risk assessment framework analyses a range of inputs to determine the potential likelihood of a bushfire igniting, establishing and spreading to assets, and the potential consequence (impact) to those assets. Combining the likelihood with the consequence provides the overall risk rating for an asset or area. ([Refer to Section 4.1.4: Risk Ratings](#)).

Figure 3 Bushfire Risk Diagram

4.1.1 Weather Context

When the bushfire risk assessment was undertaken for this plan, the weather conditions taken into consideration were taken from over the fire danger season period for the last 5-7 years for each Fire Ban District (data was provided by Bureau of Meteorology).

The weather context assumes a Fire Danger Rating (FDR) of Extreme, typically characterised by fully cured fuels, high temperatures, low relative humidity and high winds.

Through their local knowledge of fire weather and fire behaviour, workshop attendees and other stakeholders are able to determine which assets would be at risk and aid in the determination of likelihood and impact of bushfire.

4.1.2 Likelihood

In determining the likelihood of a bushfire igniting and spreading and impacting an asset the following inputs are considered:

- Historical evidence of past bushfires and scarring across the landscape.
- The type and amount of vegetation within the landscape.
- The influence of land use factors and lightning on frequency of ignitions.

Inputs include Bureau of Meteorology data relating to local weather conditions within the Outback BMA, vegetation classification and fuel structures to undertake basic fire behaviour modelling. Local knowledge is also used to validate the system-derived likelihood calculations.

4.1.3 Consequence

The term “consequence” for the purpose of this plan applies only to the asset itself. It means “what will happen to the asset if it is impacted by a bushfire?” For example will it burn down, will it cease to function, will people be injured etc.? It does not refer to the wider level social, financial or business continuity consequences of losing

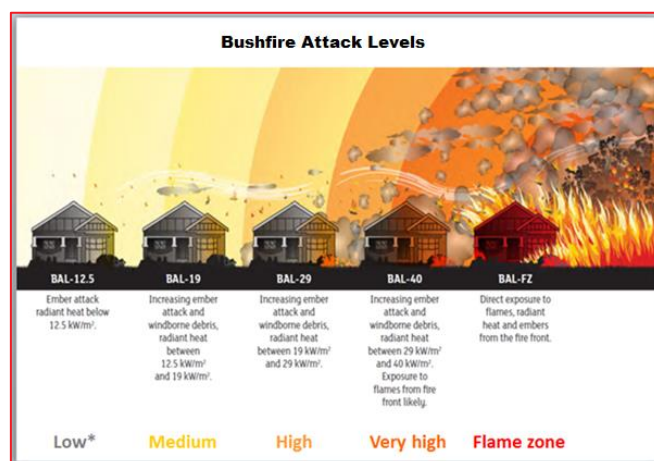
the asset. These wider level consequences are to be considered following direction from the State Rural Fire Hazard Plan that has identified major risks to the state using the National Emergency Risk Assessment Guidelines (NERAG). Related actions and treatments will be considered in the implementation phase of the Bushfire Management Area Plans.

The elements that contribute to the consequence of a bushfire on an asset are the Bushfire Attack Level (BAL) measuring the radiant heat and either the susceptibility of occupants in human settlement assets or the susceptibility of built structures.

Bushfire Attack Level (Radiant Heat)

Bushfire Attack Level (BAL) is a measure of the radiant heat a building or structure is expected to be subjected to in the event of a bushfire on a day of Extreme FDR. This measure is used by the AS3959 Australian Standard for the construction of buildings in bushfire-prone areas in that buildings are rated to certain BALs.

The BAL is determined by classifying the type of vegetation around the building, the distance of the vegetation from the building, the slope of the land around the vicinity of the building. The higher the BAL, the higher the radiant heat will be at that site during a bushfire. The aim should be to maintain assets below a BAL of 12.5 Kw/m² thereby eliminating the ignition of the structure from radiant heat. It should be noted that this Standard does not take into account the potential impact of spark and ember on structures.

Figure 4: Bushfire Attack Levels

Susceptibility of Human Settlement Assets (Life)

This assessment refers to the susceptibility of the building occupants to bushfire and therefore, the potential for the loss of human life. It is not the assessment of the structures or the built environment.

This assessment is based on the combination of three elements: the people who live in the area, the preparedness level of the assets and environmental factors. For example, a rural community with a very active Community Fire Safe Group, well prepared properties

and a well maintained bushfire buffer zone will have a reduced susceptibility.

Susceptibility of Built Structures (Economic and Social Value Assets)

The susceptibility of a built structure being adversely impacted by bushfire is dependent on the type of construction and material used as well as its general condition. For example, concrete water tanks or steel towers have a very low susceptibility, whereas a heritage timber barn would have a very high susceptibility. It is noted that structures in the Outback BMA do not have the same requirements regarding compliance with building regulations. This is because state planning controls do not extend across much of the BMA due to low population densities and as such buildings in the Outback BMA may be more susceptible to bushfire.

Risk Rating Explanations

When interpreting the overall risk rating for each asset it is important to understand that these results provide a scale only by which one risk can be compared to another. They are derived through assessing specific risk criteria to determine the likelihood of a bushfire threatening an asset and the level of impact or consequence to an asset from the adjacent vegetation should it be ignited by bushfire. The definition for each overall risk rating is as follows

 N/A

Properties and assets are constructed of materials that are unlikely to be impacted by bushfire and/or vegetation is at a significant distance away or virtually absent from the surrounding landscape.

 Low

Properties and assets are well prepared or defensible from the potential impacts from a bushfire should a bushfire approach. Surrounding vegetation is either likely to be a significant distance away or of low levels.

 Medium

Properties and assets are likely to be defensible with little preparation, although surrounding vegetation or topography still poses some risk.

 High

Properties and assets that are not prepared for a bushfire or don't have adequate firefighting amenities or separation distance and are therefore susceptible to the impacts of bushfire. Fire is likely to reach assets with surrounding vegetation and topography fuelling fire intensity and behaviour.

 Very High

Properties and assets require special consideration to the impacts of bushfire. Bushfires are likely to be able to reach assets with high intensity with only low expectations of being able to defend assets.

 Extreme

Assets and properties are highly susceptible with heavy ember attack and likely flame contact from nearby flammable materials. There are limited options for safe egress or defensible space around a property from the effects of a bushfire due to continuous or dense vegetation or challenging topography.

		Consequence			
		Minor	Moderate	Major	Catastrophic
Likelihood	Almost certain	High	Very High	Extreme	Extreme
	Likely	Medium	High	Very High	Extreme
	Possible	Low	Medium	High	Very High
	Unlikely	Low	Low	Medium	High

Figure 5: Risk Matrix for Life and Property Assets

4.2 Risk Assessment Methodology for Environmental Assets

The *Standard for the identification and risk assessment of South Australian environmental assets from bushfire* (SBCC 2017) is used for the risk assessment of environmental assets and subsequent identification of priorities and risk treatments for the environmental component of BMAPs. The standard defines the methodology and process for the identification and risk assessment of environmental assets from the negative impact by bushfire. Preventative risk treatment/s are determined for each environmental asset and are prioritised to reduce risk. Effective risk treatments can eliminate or minimise the negative impacts of bushfire, in order to prevent the degradation or loss of environmental assets.

The environmental risk assessment does not address:

- maintenance or enhancement of natural ecosystems
- maintenance of temporal and spatial diversity of fire regimes through the application of ecological fire management guidelines
- assessment of potential environmental impacts of risk treatments identified for life and property assets, in particular overlay of Asset Protection and Bushfire Buffer Zones
- assessment of potential environmental impacts of vegetation clearance, including prescribed burning. This environmental risk assessment will provide information to inform operational planning, however, it is not intended to be the sole source of policy directing these matters
- assessment of environmental impacts of bushfire suppression activities. This environmental risk assessment will provide bushfire hazard information to inform bushfire response planning, however, it is not intended to be the sole source of policy directing these matters.

4.2.1 Methodology

The *Standard for the identification and risk assessment of South Australian environmental assets from bushfire* (SBCC 2017) has been developed to assess risk associated with bushfires, and is consistent with the Australian Standard AS/NZS ISO 31000:2009 Risk Management – principles and guidelines. The National Emergency Risk Assessment Guidelines (2nd edition, CoA, 2015) has been used to guide standardised environmental consequence levels, likelihood ratings, and a risk matrix to derive an overall risk rating for environmental assets.

Consequence assessments consider the likely impacts to the species regional population, entire regional distribution of the ecological community or habitats within the Outback BMA, rather than the local patch or individuals within a population.

The consequence level for an environmental asset is determined by its degree of permanent or long term damage from bushfire. Degree of damage is the amount to which the environmental asset is likely to experience degradation or damage due to exposure to a bushfire.

The assessment of likelihood, the chance of the bushfire impacting the environmental asset, is statistically measured by calculating the average period of time between bushfire occurrences of a given extent within the Outback Bushfire Management Area.

The risk rating matrix (**Figure 6**) for the environmental assets is determined by combining the consequence and likelihood levels.

		Consequence				
		Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood	Almost certain	Medium	Medium	High	Extreme	Extreme
	Likely	Low	Medium	High	Extreme	Extreme
	Unlikely	Low	Low	Medium	High	Extreme
	Rare	Very low	Low	Medium	High	High
	Very rare	Very low	Very low	Low	Medium	High
	Extremely rare	Very low	Very low	Low	Medium	High

Figure 6 Risk Matrix for Environmental Assets

5. Risk Treatment Strategies

Bushfires cannot be eliminated from the landscape; however a combination of risk treatment strategies can be applied to reduce either the likelihood and/or impact of bushfire and to increase community resilience, enhance the ability of firefighting agencies to access and suppress bushfires, limit the spread of bushfire, and protect people, assets and the environment. The SBCC has endorsed risk treatment strategies that include both asset specific and BMA wide risk treatments.

5.1 Bushfire Management Area Wide Risk Treatment Strategies

BMA wide risk treatments are the overarching bushfire prevention and preparedness activities that are applied to mitigate the occurrence, spread and consequence of bushfire to a number of assets, across selected areas, or throughout the whole BMA.

They broadly address the bushfire risk to assets and, thereby, reduce the overall level of bushfire risk in the BMA. Each of the risk treatment strategies will reduce either the likelihood and/or the consequence of bushfire depending on the targeted outcome of the programme.

BMA wide risk treatments may include legislative requirements, policies and programs of firefighting agencies, fuel hazard reduction, development and building regulations in fire prone areas and arson prevention programmes.

Some examples include:

- National and State Legislation, Policies, Guidelines and Codes such as the *South Australian Fire and Emergency Services Act and Regulations 2005*, that includes applicable fuel management requirements, firebreak standards and annual enforcement programmes.
- State and local planning frameworks such as the State Rural Fire Hazard Plan, Outback Bushfire Management Area Plan and roadside vegetation management strategies.
- Land management agencies may have specific fire management policies and plans which set out a range of mitigation strategies to minimise the impact of bushfire on built and environmental assets.
- CFS state-wide preparedness campaigns and management of Fire Danger Seasons, Fire Danger Ratings, Permits and Total Fire Bans.
- Department for Education policies and procedures for schools at risk from bushfires.

- Building Code of Australia and State based Ministerial Building Standards.
- SA Police Operation Nomad.
- Capacity building with local communities around fire management and suppression activities through initiatives of the Ten Deserts Fire Management Officer and the CFS Outback Areas Officer.
- Relevant signage that promote safety and awareness for travellers and the broader community (i.e. signage at parking bays).

A significant and effective component of BMA wide risk treatments is the management of vegetation (often referred to as “landscape risk treatments”). In response to the National Policy Statement for Bushfire Management, and recent bushfire inquiries and recommendations, the South Australian Government has mandated an increased programme of vegetation management and prescribed burning to reduce bushfire consequences to life, property and the environment. Landscape risk treatments that manage vegetation involve the use of prescribed burning, however where this may be undesirable or operationally not practical, strategies such as the mechanical removal of vegetation may be undertaken.

Landscape risk treatments that form broader strategic breaks of low fuel across areas of the Outback aim to enhance suppression capability and therefore reduce the risk of fire moving between large or distinct areas of high fuel. Landscape risk treatments also aim to reduce the risk of a bushfire impacting asset clusters such as townships or human settlement areas rather than individual residences.

All landscape risk treatment works are undertaken with consideration to all environmental and ecological issues and in accordance with required approvals such as the [*Environment Protection and Biodiversity Conservation Act 1999*](#), and the [*Native Vegetation Act 1991*](#).

The BMC is supportive of land management agencies and communities in collaborating with organisations, such as the Ten Deserts Project and CFS, who can assist communities with on-ground works and the use of fire for both cultural and community protection purposes.

5.2 Asset Specific Risk Treatment Strategies

Asset specific risk treatments are activities used to modify the characteristics of a hazard to reduce either the likelihood and/or consequence of bushfire on an asset. The Outback BMC allocate risk treatment strategies to reduce the risk to assets within the Outback BMA.

Asset specific risk treatment strategies are allocated to mitigate individual risks within the BMAP Risk Treatment Register and are designed to mitigate specific elements of the risk i.e. the radiant heat, susceptibility of the asset to sparks and embers, the intensity of the bushfire and/or the potential of a bushfire starting and establishing. Asset specific risk treatment strategies are allocated to asset owners and/or land managers and will assist in developing work plans, details of risk treatment actions and timeframes.

Some examples of asset specific risk treatments include:

- Property preparedness by ember proofing and clearing debris around a building
- Asset Protection Zone (APZ) of modified vegetation in and around an electrical substation
- Bushfire Buffer Zone (BBZ) of modified vegetation to prevent the spread of fire and reduce the likelihood of large patch of habitat being damaged.
- The maintenance and creation of fire access tracks and fire breaks around assets.

5.3 Risk Treatment Strategies and Actions

Risk Treatment Strategy	Risk Treatment Action
Land and Property Management	• Asset Protection Zone • Bushfire Buffer Zone • Firebreaks & Fire Access Tracks • Prescribed Burning • Fuel Reduction • Property Preparedness • Exclude known critical habitat from all fire • Create moveable low fuel area within and surrounding habitat • Prevent fire from burning entire habitat patch in single event
Legislative & Administrative	• Policy, Standards & Codes of Practice • South Australian Planning and Design Code (and Design Standards, Practice Directions and Practice Guidelines) • Bushfire Prevention Activities (FPO Activities)
Community Engagement, Education & Information Provision	• Community Development Programmes • Education • Information Provision
Appropriate Risk - No Treatment	• No Treatment required • Monitor and review to ensure risk level remains acceptable
No Current Treatment – More Information/Decision required	• More Information required to determine appropriate treatment • More information and analysis required • Monitor and Review
Not assessed	• More work is needed to assess risk

Land and Property Management Actions:

5.3.1 Property Preparedness

Property preparedness relates to action taken by landholders to reduce the risk of bushfire impacting on a house or other buildings. The primary focus of property preparedness should be the reduction of fuel hazards around the property and the elimination of ignition sources in areas surrounding or on structures, by:

- reducing or removing fine vegetation fuels (long grass, dried leaves, shrubs etc.)
- removing other flammable materials and liquids
- reducing the risk of impact from windblown burning embers, flame contact and intense heat radiated from bushfires.

If the occupants plan to stay and defend their home during a bushfire, having a well prepared property is essential.

The CFS webpage includes information and [fact sheets](#) on property preparedness and [asset protection zones](#).

5.3.2 Asset Protection Zones

An Asset Protection Zone (APZ) surrounds or is adjacent to an asset listed in the BMAP Risk Register.

APZs should be managed so that the Overall Fuel Hazard (as an average throughout the zone) does not exceed Moderate. Dry grass in an APZ should be maintained at 10cm or less.

APZs are designed to reduce fire spread, intensity, radiant heat and direct flame contact to an asset. The location of an APZ should include areas such as existing cleared areas, roads and driveways which have low fuel levels.

The [Native Vegetation Regulations 2017](#) allows for the clearance of understorey of up to 20m around a residence for fire protection³. An APZ may be extended beyond 20m where slopes occur downhill from the asset where vegetation types have high fuel levels ([refer to AS3959 2011](#)⁴). An APZ may similarly be less than 20m where the ground slopes uphill from assets or where vegetation fuel levels are low.

An APZ may be used to reduce the risk of impacts to assets identified in the BMAP Risk Register, for example residential buildings, industrial, commercial or heritage buildings, essential infrastructure, and cultural or environmental assets or items.

A Standard was approved by the SBCC in 2017 for creating and maintaining APZs, BBZs and Conservation Zones. For current information on APZs, BBZs and Conservation Zones please refer to the [Bushfire Management Zone Standard and Guidance for Use](#).

5.3.3 Bushfire Buffer Zones

A Bushfire Buffer Zone (BBZ) is an area, beyond an APZ, where additional fuel management can reduce the risk of bushfire impact on assets. These zones often complement an APZ around a significant asset.

BBZs may also be used to provide strategic fuel reduced areas, which may include fuel breaks through or around a large block of vegetation, with the aim of reducing:

- the impact of bushfire burning a whole large block of native vegetation or several adjacent smaller areas of native vegetation;
- the potential for a bushfire to burn out of vegetated land into surrounding land; or
- the potential for a bushfire to burn into vegetated land from surrounding land.

Please refer to the [Bushfire Management Zone Standard and Guidance for Use](#).

On DEW managed land APZs & BBZs are displayed spatially on the online map however where these treatments have been identified elsewhere, as either an existing or proposed treatment, they are indicated on the online map as text in the pop-up box linked to the asset. The Outback BMC will be working with the treatment agencies to capture the location of these zones spatially.

³ See the brochure [Reduce the Impact of Bushfire](#) for more detail.

⁴ AS3959-2009, amended 3-2011, Construction of buildings in bushfire-prone areas, Standards Australia.

5.3.4 Firebreaks and Fire Access Tracks

Firebreaks and fire access tracks are strategic fire management works which may be implemented as measures to assist with bushfire mitigation or suppression. The standard for firebreaks and tracks has been defined in the [South Australian Firebreaks, Fire Access Tracks and Sign Standards Guidelines \(2015 Government Agencies Fire Management Working Group GAFMWG\)](#) and was endorsed by the SBCC.

A firebreak is an area or strip of land where vegetation has been removed or modified to reduce the intensity and rate of spread of fire that may occur. A fire access track is designed, constructed and maintained for the safe passage of firefighting vehicles undertaking fire suppression activities. Whilst firebreaks and fire tracks may be constructed or designed for a specific purpose, it does not necessarily exclude a fire track to also act as a fire break, or vice versa, in some instances. See the [GAFMWG Standard](#) document for further information on firebreaks, fire access tracks and sign standards.

Regional Anangu Services Aboriginal Corporation (RASAC) maintain fire breaks around communities across the APY Lands. These tracks have been reviewed to determine if any changes are required to provide additional protection with particular consideration to the risk posed by the proliferation of buffel grass. Existing and proposed tracks are identified on the online map.

Firebreaks and refuges have been identified on DEW lands. These mainly include existing areas of low fuel such as major roads, salt pans and areas of grazed land adjacent conservation areas.

5.3.5 Prescribed Burning

Prescribed burning is the controlled application of fire under specified environmental conditions to a predetermined area and at the time, intensity, and rate of spread required to attain planned resource management objectives. Prescribed burning is a tool used to achieve fuel hazard reduction management for bushfire risk mitigation and to achieve environmental, land management and research objectives.

The State Government public land agencies of DEW, SA Water and ForestrySA share agency resources to undertake fuel hazard reduction prescribed burning at a landscape scale across public lands to reduce the risk of bushfire impacts entering or emanating from a government managed reserve. DEW is currently reviewing the [Ecological Fire Management Guidelines](#) with input from key stakeholders and interest groups.

Information on DEW prescribed burns can be found on the following link: [DEW Prescribed Burns](#)

For private land holders looking to undertake prescribed burning in native vegetation the requirements are outlined by the [Native Vegetation Council](#). DEW's [Burning on Private Land Project](#) aims to assist land owners in determining the feasibility and suitability of burning of a tool as well as identifying pre- and post-burn work.

Where burning occurs on Aboriginal land it may be for cultural reasons or to reduce fuel loads. The Outback BMC recognises that some areas may be off limits for burning for various reasons and that this information may be sensitive and is only provided to the public where approval from Traditional Custodians is given.

Legislative and Administrative Actions:

5.3.6 Bushfire Prevention Activities Conducted by a Fire Prevention Officer

Fire Prevention Officers undertake fire prevention activities as outlined in the [South Australian Fire and Emergency Services Act 2005 \(Part 4A Division 2\)](#) and [Regulations 2005](#). Bushfire prevention activities undertaken by Fire Prevention Officer include:

- assessing the extent of bushfire hazards within the relevant council area;
- assisting the council in providing advice and information to any bushfire management committee whose area incorporates any part of the relevant council area in connection with the preparation or review of the committee's Bushfire Management Area Plan;

- providing advice to owners of property in respect of bushfire prevention and management;
- carrying out any other functions assigned to the Fire Prevention Officer by the regulations.

As there are only two relatively small local government agencies across the Outback BMC the CFS Regional Officer assumes the duties normally undertaken in a council Fire Prevention Officer. Site inspections and direction to undertake bushfire prevention activities will be prioritised based on the risk ratings identified for communities with consideration of rainfall dependent seasonal variability.

5.3.7 Policy, Standards and Codes of Practice

The policies, standards and codes of practice refer to current overarching bushfire management practices, performance measures and desired outcomes of the fire management activities on private and public lands. They provide a framework for the safe and effective management of potential ignition sources and fire on private and public land in South Australia. Examples include codes on Pile Burning, Harvesting and Use of Wood Ovens, and policies requiring permits for fire activities.

This strategy may also include emergency management policies that individual organisations such as schools, health and community services and utilities have or require to mitigate bushfire risk to their assets. Examples may include closing assets or not driving through high risk areas on catastrophic fire danger forecasts.

Where seasonal conditions increase the risk to an area the BMC will consider amendments to existing policies and standards, or the creation of new ones. The BMC may also consider the need to publicise seasonally relevant policies, standards or codes of practice in order to prevent ignitions, protect travellers etc.

5.3.8 Council Planning and Development Policy and Standards

Key objectives outlined within planning strategy documents and Development Plans across Government and in local area Development Plans (as required under [Section 22 of the Development Act 1993](#)), should give consideration to the protection of life, property and assets including infrastructure, the region's cultural heritage (indigenous and non-indigenous) and environmental assets from hazards such as bushfire.

Ministers and or Local Government may amend such policies and strategies in order to accurately address key objectives relative to the risk identified in their local area.

Current planning policies relating to bushfire risk, contained in relevant Development Plans, may be reviewed in this context as part of future Development Plan amendments. Notably, the State Government has embarked on the implementation of key planning reforms over the next 1-5 years, as part of a new planning system and the Planning, Development and Infrastructure Act, 2016. Pending the timing and sequencing of the introduction of new planning rules and governance systems, there is potential to also review future policy approaches relating to bushfire risk and asset protection through this process.

Community Engagement, Education and Information Provision Actions:

5.3.9 Community Engagement

Community education and engagement activities can extend from simple information provision to extended training and empowerment programmes. These activities can be, and are, undertaken by many different groups (CFS, MFS, local councils, SAPOL, Ten Deserts, Red Cross, etc.). The type of programme or information that needs to be provided is dependent on the audience and their level of risk.

Research has shown that information provision on its own, whilst important, does not lead to a sufficient level of planning and preparation for bushfires. Community engagement programmes have the potential to achieve positive outcomes at both the individual (resident, household, etc.) and community level, provided they are planned, well implemented and resourced appropriately. Materials should be designed by, or in consultation with, community and/or relevant subject matter experts or agencies.

Information provision for travellers has been identified as particularly important due to the large numbers of people that travel through the Outback. Work is being undertaken by relevant agencies to develop consistent signage to be placed at strategic locations (roadside rest stops etc.) to inform travellers about fire restrictions and bushfire safety.

The BMC considers the engagement of remote communities in bushfire prevention activities as a high priority as suppression activities are difficult across such vast areas. The BMC would like to see a long term strategy developed between CFS, APY Management and other key stakeholders to engage with at risk communities in a culturally appropriate and sustained manner.

risk treatment strategies and their associated activities will be implemented. These plans should include:

- Risk and risk treatment identifiers
- Existing and proposed risk treatments
- Responsibility for risk treatment implementation
- Prioritisations of risk treatments
- Actions required to undertake risk treatments
- Timeframes for the completion of risk treatments
- Performance and success measures
- Reporting and monitoring procedures

The risk treatment implementation plan will enable Councils and land managers to develop or inform local works plans and will provide a mechanism for the Outback BMC to monitor timeframes and progress of risk treatments.

5.4 Risk Treatment Implementation Plan

Once the Outback BMAP has been approved by the SBCC, risk treatment/action implementation plans will be developed in conjunction with the BMC, Councils, asset and land manager/owners in order to document and report how the chosen

6. Reviewing, Monitoring and Reporting

6.1 Monitoring

The SBCC approves new or reviewed BMAPs and provides guidance, direction and advice to bushfire management committees.

The Outback BMC is required to monitor all aspects of the BMAP contents, risk assessments and risk treatments on an ongoing basis including:

- Changes to accepted risk levels
- Changes in circumstances or assessment criteria
- Additional information (should it become/when it becomes available)
- Changes in social, political or legislative/regulative environments
- Changes to the BMC area or organisational responsibilities
- Progress toward the completion of the risk treatment actions listed in the BMAP
- The timeliness of the risk treatment works in the BMAP
- Compliance of risk treatment works with relevant Acts, Codes and Regulations. ([Refer to Section 1.3: Legislation](#)).

6.2 Reviewing

As stipulated in the *FES Act 2005* this BMAP must be formally reviewed at least once in every four year period from the approval date of the original plan.

However, as a live Plan, the Outback BMC will ensure that the BMAP is reviewed, in part or wholly, whenever an amendment, context or risk issue is identified or brought to the attention of the BMC, or to assess the progress of risk treatment works against stated timeframes. A summary of actions and amendments will be reported by BMCs to the SBCC on at least an annual basis.

6.3 Reporting

Outback BMC is required under *FES Act 2005* to report to the SBCC on its progress implementing the bushfire risk management strategies identified in the plan.

BMC member organisations will need to report to the Outback BMC on the progress of risk treatment actions outlined in the BMAP. A pilot online tool is currently in development to enable a simple and efficient way for treatment agencies to report their progress in implementing risk treatments.

Where amendments, additions or deletions within the BMAP are required the BMPU will provide support and assistance to the BMC so that member agencies can confidently assess any changes.

7. Risk Registers

7.1 Overview of Risk and Risk Treatment Registers

The Risk Register and Risk Treatment Register are integral components of this BMAP, along with the online map and this context document. The Registers are current as of the date this document was approved. Due to the dynamic nature of risk, the BMC will monitor and update the status of risks and risk treatments once the risk treatment works have been completed, or where there is a change in the factors that determine the level of risk.

The information pertaining to each risk is to be monitored by the BMC and updated and maintained by the CFS Bushfire Management Planning Unit on the secure Bushfire Risk Information Management System (BRIMS).

7.2 Risk Registers

The Risk Registers list information relating to each asset identified within the Outback BMC and the overall risk rating that has been determined for each asset. The level of risk for life and property assets in the risk register does not necessarily indicate its level of priority for mitigation works. For example, a substation with a risk rating of extreme may have a much higher priority for risk treatments than a communication tower with the same risk rating due to being a critical link in the electricity grid. The BMC and member organisations will identify, monitor and report on priorities for mitigation works. The environmental assets that have been identified as requiring a risk treatment have been assigned a level of priority and this is included in the risk register. A copy of the *Risk and Treatment Register* is available through the Bushfire Management Area Plans site:

<https://www.cfs.sa.gov.au/prepare-for-a-fire/bushfire-management-planning/bushfire-management-area-plans/>

7.2.1 Risk Treatment Registers for Life and Property Assets

The Risk Treatment Register for human settlement (life), economic and social value (property) assets details the risk treatment strategies and actions that have been allocated to each asset. The register also includes the agency or agencies who are involved in implementing, or supporting the implementation of, a risk treatment strategy or action.

7.2.2 Risk Treatment Register for Environmental Assets

The Risk Treatment Register for environmental assets is a record of the assessment of bushfire risk to environmental assets and the recommended preventative risk treatment strategies and actions to mitigate this risk. The register includes the asset name, consequence and likelihood of the bushfire risk occurring, recommended treatment strategies and actions, and who is responsible for managing the risk.

Appendix A Outback Communities

Listed below are the towns, approximate populations and governance arrangements for communities across the Outback BMA.

Town	Progress Association, LGA or Community Council	Population	Type of Township	CFS brigade
Andamooka	Andamooka Progress and Opal Miners Association Inc.	316	Opal Mining	Andamooka CFS
APY Lands	Anangu Pitjantjatjara Yankunytjatjara (APY Lands) Council	2276	Aboriginal Communities	Pip Kalka CFS, Amata CFS, Pukatja CFS, Kaltjiti CFS, Mimili CFS,
Blinman	Blinman Progress Association	35	Tourism and Service Town	(Wilpena CFS)
Cockburn	Cockburn Progress Association	56	Service Town	(Yunta CFS)
Coober Pedy	District Council of Coober Pedy	1762	Council	Coober Pedy CFS
Coorabie	Coorabie & Districts Progress Association	51 (shared with Coorabie)		Far West CFS
Copley	Aroona Aboriginal Council, Copley Progress Association	72	Service Town	Leigh Creek/Copley CFS
Fowlers Bay	Fowlers Bay Progress Association	51 (shared with Coorabie)	Service Town	Far West CFS
Glendambo	Glendambo & Districts Progress Association Inc.	77	Service Town	Glendambo CFS
Innamincka	Innamincka Progress Association Inc.	12	Service Town	-
Iron Knob	Iron Knob Progress Association Inc.	144	Iron Ore Mining	Iron Knob CFS
Leigh Creek	Leigh Creek Community progress Association	245	Coal Mining	Leigh Creek/Copley CFS
Lyndhurst	Lyndhurst and Districts Progress Association	24	Service Town	-
Marla	Marla & Districts Progress Association Inc.	100	Service Town	Marla CFS
Marree	Marree Arabanna People's Committee, Marree Progress Association	150	Service Town	Marree CFS
Mintabie	Town due to be closed		Opal Mining	Mintabie CFS
Moomba	-	1201	Gas Exploration	SANTOS Emergency Services (Industry Brigade)
MT Lands	Maralinga Tjarutja Community Inc	62	Aboriginal Communities	
Nipapanha	Nepabunna Aboriginal Community Council	66	Aboriginal Community	Nepabunna CFS
Oodnadatta	Dunjiba Community Council, Oodnadatta Progress Association	204	Service Town	Oodnadatta CFS
Penong (& Bookabie)	Penong Progress Association	289	Service Town	Penong CFS

Roxby Downs	Roxby Council	4000	Uranium and Mineral Mining	Roxby Downs CFS
Tarcoola	Outback Communities Authority	38	Railway township	Challenger Gold Mine CFS
William Creek	William Creek Progress Association, OCA	10		(Coober Pedy CFS)
Woomera	-	146	Australian Defence Force	Woomera Emergency Services (Industry Brigade)
Yalata Community	Yalata Aboriginal Community Council	248	Aboriginal Community	(Far West CFS)
Yunta	Yunta Progress Association	50	Service Town	Yunta CFS

Appendix B Outback BMC Member Organisations

Listed below are the Member Organisations of the Outback Bushfire Management Committee. It should be noted that although not members of the Outback BMC, many other Government and non-Government organisations are consulted on, and contribute to the Outback BMAP.

For further information on the roles and responsibilities of the Bushfire Management Committee and Member Organisations, please refer to:

- [*Section 3.2: Outback Bushfire Management Committee, and*](#)
- [*Section 3.3: Bushfire Management Committee Member Organisations*](#)

Outback BMC Member Organisations

Member Organisation	Member Organisation
• Roxby Downs Council	• Alinytjara Wilurara Natural Resource Management Board
• District Council of Coober Pedy	• Maralinga Tjarutja
• SA Country Fire Service	• Primary Producers SA
• SA Police	• Department for Environment and Water
• Department for Planning, Transport and Infrastructure (DPTI)	• SA Country Fire Service Volunteer Association
• Conservation Council of SA	• Outback Communities Authority
• Traditional Custodians from APY Lands	• Aboriginal Lands Trust
• SA Arid Lands Natural Resource Management Board	• Department of Defence
• Pastoral Board	

Related Documents

Name of Document

Alinytjara Wilurara Fire Management Strategy 2014
A Template for a Local Council Roadside Vegetation Management Plan, Native Vegetation Council (2012)
AS 3959-2009/Amendment 3-2011; Construction of buildings in bushfire-prone areas (2009)
AS/NZS ISO 31000:2009 Risk Management - Principles and Guidelines (2009)
Bushfire Management Zone Standard and Guidance for Use (2017)
CFS – Code of practice – Vegetation and rubbish pile burning – (April 2015)
Crown Land Management Act 2009 (SA)
Department of the Premier and Cabinet South Australia's Strategic Plan - Creating Opportunity. Department of the Premier and Cabinet, Government of South Australia (2004)
Development Act 1993 Development Regulations (2008)
Emergency Management Act (South Australia) (2004)
Emergency Management in Australia Concepts and Principles Manual 1 (2004)
Environment Protection and Biodiversity Conservation Act (Commonwealth) Section 18 and 269AA (1999)
Fire and Emergency Services Act and Regulations (2005)
Integrated buffel grass management plan for the Great Victoria Desert 2018-2023 <i>Draft</i>
Outback – Bushfire Management Committee, Interim Bushfire Management Area Plan, (September 2012)
Guidelines for Plantation Forestry in South Australia 2009
Guidelines for the Management of Roadside Vegetation, Native Vegetation Council (2012)
Minister's Specification SA 76, Maintenance and testing of essential safety provisions, (2015 edition)
Minister's Specification SA 76A, Fire Safety Requirements in Caravan Parks and Residential Parks, (December 2007)
Minister's Specification SA 76C, Protection of buildings exposed to brush fences, November (2007)
Minister's Specification SA H3.2, Concessions for farm buildings, (2015 edition)
National Bushfire Management, Policy Statement for Forests and Rangelands (2014)
National Construction Code (Formerly the Building Code of Australia, BCA) (2016)
National Parks and Wildlife Act 1972 (SA)
Native Vegetation Act 1991 (SA) Section 29 (1991)
Native Vegetation Act 1991 and Regulations (2003)
Native Vegetation Regulations 2003 (SA) Section 5A-1 and 5(1)(zi) (2003)
Northern Flinders Ranges Fire Management Plan 2016
SA CFS - Rural Fire Hazard Plan (2014/15)
South Australian Firebreaks, Fire Access Tracks and Sign Standards Guidelines (2015)
State Bushfire Management Plan (2010)
Wilderness Protection Act 1992 (SA)
Witjira Waru Pulka (Fire) Management Strategy 2018-2028

Definitions and Acronyms

Name	Description
Agencies	Refers to any State or Federal Government Department that is the manager or owner of the land or asset.
AIRS	Australian Incident Reporting System
Anangu	A western desert language word for Aboriginal person. Commonly used to refer to any individual or group of western desert language people of Pitjantjatjara, Yankunytjatjara or Ngaanyatjarra descent.
APY	Anangu Pitjantjatjara Yankunytjatjara
APZ	Asset Protection Zone is a fuel reduced area surrounding a built asset or structure.
AS/NZS ISO 31000:2009	AS/NZS ISO 31000:2009 Risk Management - Principles and Guidelines. The agreed international standard that dictates the fundamental principles behind risk management.
Asset	A term used to describe anything of value within communities that may be impacted by bushfire. This may include residential areas, infrastructure, commercial, environmental, heritage and community valued sites.
Asset Owner	The owner occupier or custodian responsible for the care or management of an asset. The responsibility may be defined by ownership, lease or contract. Also refer to the <i>Fire and Emergency Service Act 2005</i> for more information.
Asset Risk Treatment Strategies	Strategies allocated to modify the bushfire risk to specific assets that have been assessed.
AW	Alinytjara Wilurara
BAL	Bushfire Attack Level is the level of radiant heat that is likely to impact on an asset
BBZ	Bushfire Buffer Zone consists of strategic firebreaks of sufficient width and continuity to provide a substantial barrier to the spread of bushfire.
BMA	Bushfire Management Area
BMAP	Bushfire Management Area Plan as defined under the <i>Fire and Emergency Services Act 2005</i> S73A.
BMC	Bushfire Management Committee as defined under the <i>Fire and Emergency Services Act 2005</i> S72A.
BOM	Bureau of Meteorology
BRIMS	Bushfire Risk Information Management System - A systematic process that identifies assets at risk from bushfire, assesses the level of risk, captures current and proposed risk treatments, risk treatment owners and time frames for implementation and provides a framework for continuous review and monitoring of the risks and their risk treatments.
Bushfire Hazard	The vegetation that poses a level of threat to human life, economic and cultural assets or environmental assets. The potential severity of a bushfire threat is determined by fuel load, fuel arrangement and topography under a given climatic condition.
Bushfire Risk	The concept of bushfire risk has three elements: a) the likelihood of a bushfire igniting and spreading to the hazard adjacent to and threatening an asset; b) the observable event of the hazardous vegetation igniting and c) the impact to the asset from a bushfire event.
CFS	Country Fire Service (South Australia)
Consequence	The term "Consequence" for the purpose of this plan, means "what will happen to the asset if it is impacted by a bushfire?" For example will it burn down, will it cease to function, will people be injured etc.? The elements that contribute to the consequence of a bushfire are the Bushfire Attack Level (BAL) (measuring the radiant heat) and either the susceptibility of occupants in human settlement assets or susceptibility of built structures.
DEW	Department for Environment and Water
FBD	Fire Ban District
FDI	Fire Danger Index
FDR	Fire Danger Rating
FDS	Fire Danger Season
FES Act	Fire and Emergency Services Act 2005
FPO	Fire Prevention Officer

Fuel Hazard Guide	The Fuel Hazard Guide aims to assist with defining and identifying the different components of Fuel Hazard through the assessment of Fuel Hazard levels for Surface, Near-Surface, Elevated and Bark Fuel
GAFMWG	Government Agencies Fire Management Working Group
Impact	The loss, or damage, to an asset from a bushfire.
IPA	Indigenous Protection Area
Land Manager	The person, organisation or agency responsible for the care or management of an asset or land. The responsibility may be defined by ownership, lease or contract. Also refer to the <i>Fire and Emergency Services Act 2005 Section 3</i> for additional clarification.
Likelihood	The chance of a bushfire igniting and spreading to the hazard adjacent to and threatening an asset.
MT	Maralinga Tjarutja
Prescribed Burning	Prescribed burning is the planned application of fire under prescribed environmental conditions and within defined boundaries to achieve fuel hazard reduction management for bushfire risk mitigation and to achieve ecological, land management and research objectives.
RARB	Register of Recognised Aboriginal Representative Bodies
SAPOL	South Australia Police
SBCC	State Bushfire Coordination Committee
ZEMP	Zone Emergency Management Plan

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