

Annexure C
Bush Fire
Management Zones
Bush Fire Risk
Management



Planning
together



Abbreviations

APZ	Asset Protection Zone
BFCC	Bush Fire Coordinating Committee
BFMC	Bush Fire Management Committee
BFMZ	Bush Fire Management Zone
BFRMP	Bush Fire Risk Management Plan
BIP	BFMC Information Portal
FEZ	Fire Exclusion Zone
IMZ	Ignition Management Zone
LMZ	Land Management Zone
OFH	Overall Fuel Hazard
SFAZ	Strategic Fire Advantage Zone

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1. Introduction

The Bush Fire Coordinating Committee (BFCC) has a standard bush fire management zoning system for use by Bush Fire Management Committees (BFMCs) across New South Wales. The 2023 Bush Fire Risk Management Policy review provides for the addition of the Ignition Management Zone to complement the existing four zones and to achieve the intent of the 2019/2020 NSW Bushfire Inquiry recommendations.

The Bush Fire Management Zones (BFMZs) are:

- Asset Protection Zone (APZ)
- Ignition Management Zone (IMZ)
- Strategic Fire Advantage Zone (SFAZ)
- Land Management Zone (LMZ)
- Fire Exclusion Zone (FEZ)

These BFMZs are designed to identify the fire management intent and fuel characteristics for a specific fuel management treatment area in a Bush Fire Risk Management Plan. Table 1 summarises the key purpose, characteristics and suppression objectives for each zone type. These descriptions should aid BFMCs in determining BFMZ treatments for their area.

ZONE	PURPOSE	ZONE CHARACTERISTICS	SUPPRESSION OBJECTIVE(S)
APZ	To protect human life, property and highly valued public assets and values.	An intensively and frequently fuel reduced areasurrounding an asset or value as described by: <ul style="list-style-type: none"> ➤ NSW RFS Standards for Asset Protection Zones; and ➤ Bush Fire Protection for Existing Development. 	To enable the safe use of Direct Attack suppression strategies within the zone. To minimise bush fire impacts on undefended assets.
IMZ	To reduce fire escalation in areas where lightning ignitions are considered a high risk (such as ridgetops). To reduce fire propagation in areas subject to higher levels of human- caused ignitions, Including arson. To reduce fire escalation via ridge to ridge ignition and other extreme fire behaviour.	An area in the landscape that is maintained at a reduced fuel level in order to minimise the propagation of ignitions and limit the rapid escalation of fires and has an Overall Fuel Hazard (OFH) of less than high. IMZs should be considered in areas with the following characteristics: <ul style="list-style-type: none"> ➤ A high frequency of human and / or natural ignitions; ➤ High risk for ignitions to impact on assets; ➤ Known fire paths; ➤ Limited access or containment options for bush fires; and/or ➤ Landscape features that have the potential to generate extreme fire behaviour. <p>An IMZ should be treated more regularly and thoroughly than an SFAZ and/or maintained at a level which depending on fuel type, aims to limit the rapid escalation of fires.</p>	To minimise fire propagation by providing increased opportunities for safe and effective suppression through ground and aerial operations and remote area firefighting. To prevent ignitions from spreading particularly in parts of the environment that are difficult to access.

ZONE	PURPOSE	ZONE CHARACTERISTICS	SUPPRESSION OBJECTIVE(S)
SFAZ	To provide strategic areas of fire protection advantage which will reduce the speed and intensity of bush fires, reduce the potential for spot fire development and aid in the containment of bush fires.	<p>An area in the landscape that is managed to achieve mosaic fuel reduction patterns so that the majority of the area has an Overall Fuel Hazard (OFH) of less than high*.</p> <p>The SFAZ spatial extent should consider bushfire risk and suppression objectives and should be dependent upon:</p> <ul style="list-style-type: none"> ➤ Topography; ➤ Aspect; ➤ Spotting propensity; ➤ Location of adjacent zones and firebreaks; ➤ Mosaic pattern of treatment; and/or ➤ Social, cultural and environmental values. 	<p>To improve the likelihood and safe use of:</p> <ul style="list-style-type: none"> ➤ Parallel attack suppression strategies within the zone; and/or ➤ Indirect attack (back burning) in high to very high fire weather conditions within the zone. <p>To reduce the likelihood of:</p> <ul style="list-style-type: none"> ➤ Crown fire development within the zone; and/or ➤ Spot fire ignition potential within the zone.
		*Assess OFH once vegetation communities reach minimum fire thresholds.	
LMZ	To meet relevant land management objectives in areas where APZs or SFAZs are not appropriate.	An area in the landscape where land management outcomes are also prioritised such as those related to social, cultural or environmental values, or those related to the management of agricultural and natural resource assets.	<p>As per the land management and fire protection objectives of the responsible land manager</p> <p>To undertake mosaic burning to reduce the likelihood of spread of fires.</p>
FEZ	To exclude bush fires.	An area in the landscape where land management outcomes require the exclusion of fire to manage fire sensitive cultural, environmental or other specific assets.	Prevention, preparation and suppression strategies should aim to exclude fire from these areas.

Table 1: Bush Fire Management Zones

2. Selecting Appropriate Zones

While some zones such as APZs and FEZs may be permanent in nature, others may have boundaries which are modified as appropriate for the term of the BFRMP (5 years), and the recent fire history of the management area. Each zone should be defined in a BFRMP by the BFMC based on:

- The fire history (extent and year) and related overall fuel hazard levels;
- The Focus Areas and modelled risk in the BFRMP (burn frequency, risk from source and risk to asset type);
- Local knowledge of the community or the vulnerability of the assets being protected that may not be captured in the modelled risk;
- Local knowledge and any available information relating to areas of known ignitions, major historical fire runs or extreme fire behaviour;

- The physical and environmental limitations of the area (See 2.4 below), including appropriate containment; and
- The zone parameters and whether implementing a new zone and/or a staged mosaic approach would allow the required hazard reduction works to proceed.

The information contained in Table 2 is provided to assist BFMCs to determine the application of the zones.

ZONE	STRATEGIC CONSIDERATIONS
APZ	<p>Applications include:</p> <ul style="list-style-type: none"> ➤ To provide fuel reduced areas around assets or groups of assets which are adjacent to bush fire hazards; ➤ To contain highly modified vegetation to reduce the radiant heat impact during a fire; ➤ To provide a defensible space to allow residents and firefighters to operate; and ➤ An area from which backburning and ember defence may be safely conducted.
IMZ	<p>Applications include:</p> <ul style="list-style-type: none"> ➤ To provide fuel reduced areas in locations that are subject to higher levels of human caused ignitions (including arson) reducing the likelihood of ignitions taking hold and improve suppression success; ➤ To reduce fuels in areas likely to be more prone to lightning ignitions (eg ridgetops) enhancing the effectiveness of rapid suppression operations and reducing the number of ignitions that develop into extreme bushfires; ➤ To reduce fuels associated with landscape features that generate extreme fire behaviour such as windward or lee slopes and series of ridgelines; ➤ Allow for the early establishment of a mosaic fuel pattern in the years following a significant bushfire event; and ➤ To enable frequent and thorough burning while seeking to avoid and mitigate environmental impact.
SFAZ	<p>Applications include:</p> <ul style="list-style-type: none"> ➤ To provide fuel reduced areas which enable the protection of assets by fire fighters when APZs are not in place; ➤ To complement APZ where these do not provide adequate protection; ➤ To provide strategically located fuel reduced areas and a mosaic of age classes within vegetation to reduce the potential for bush fires to spread; ➤ To provide areas where fire can more easily be suppressed; and ➤ To provide strategically located fuel reduced areas to reduce vulnerability of assets which are susceptible to fire.
LMZ	<p>Applications include:</p> <ul style="list-style-type: none"> ➤ To achieve fire protection objectives through prescribed burning to create a variety of fuel load structures and a mosaic of age classes within the landscape; and ➤ To provide optimum fire frequencies required for the maintenance of biodiversity or production values.

FEZ

Applications include:

- To identify areas of fire intolerant assets for which it is appropriate or necessary to exclude fire for the timeframe of the plan (it is not necessary to map FEZ for vegetation types sensitive to fire or where prescribed burning has limitations); and
 - To identify areas to be maintained as refugia adjoining areas burnt in large fires. The BFMC may agree to avoid the use of fire for a specified period of time in some unburnt areas that may otherwise be included in the fuel management register.
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Table 2: Selecting appropriate BFMZs

3. Relationships between Zones

BFMCs are to ensure that there are a range of BFMZs and strategies that appropriately address the risks to Focus Areas and the variety of asset types and social, cultural and environmental values in their area. The application of BFMZs should take into consideration the overall risk management performance outcomes for a site. Zones, including those in adjoining BFMCs, should aim to complement each other in order to:

- Be consistent across BFMC boundaries and at a regional landscape scale;
- Meet a variety of management and suppression objectives in a local area;
- Demonstrate an appropriate reduction in risk to assets and values;
- Ensure that selection of treatments are appropriate for the zone; and
- Consider any existing environmental constraints.

While the application of all zone types needs to be considered by the BFMC, in some circumstances some zone types such as IMZ's or FEZ's may not be appropriate or required.

An important point in determining the nature of an APZ for a particular location is how this relates to an adjacent SFAZ, and where applicable IMZs. For example, an SFAZ may complement an adjoining APZ where the parameters are such that the acceptable performance solution cannot be achieved and the APZ alone does not provide adequate protection.

Some events may significantly alter the fuel state in a zone such as an extensive bush fire or hazard reduction. If this occurs, then the reduction in risk to assets may be used to review an existing treatment programme within the zone or an adjoining zone. Alternatively the intensity of the treatment may be reduced if the risk has largely been addressed.

As part of the BFRMP development process, BFMCs may convert existing SFAZs to IMZs where the new zone description better meets the intent of consistently maintaining the zone in a fuel reduced state.

Following a BFMC's identification and mapping of APZs, IMZs and SFAZs, treatment options need to be discussed and agreed upon in order to meet the objectives of the zone. As part of the coordinated approach to fire management, BFMCs should discuss the commitment of resources to facilitate the implementation of treatments in APZs, IMZs and SFAZs.

LMZs may exist where APZ, IMZ or SFAZ are not appropriate. Land that is not mapped as an APZ, IMZ, SFAZ or FEZ can generally be assumed and classified as a LMZ within that BFRMP and does not need to be mapped. LMZ should be mapped in the BFRMP if they are to be a treatment in the BFRMP.

BFMCs should also ensure that zoning is consistent across tenure and BFMC boundaries, and

facilitate a resolution where there are any inconsistencies.

4. Recording zones

BFMZs identified by the BFMC are to be included in the BFRMP Fuel Management Register. There are two ways this can be achieved:

- BFMZs to be treated within the timeframe of the plan will be mapped as treatments in the Fuel Management Register and the appropriate zone type will be recorded as an attribute of the treatment.
- BFMZs identified by the BFMC that will not be treated in the timeframe of the BFRMP will appear as a spatial layer in the BIP (Fire History). This may include areas recently treated that meet the objectives of the zone.

All BFMZs are to be mapped as polygons in the BIP. The predicted fuel reduction for each zone will be modelled in the BFRMP risk evaluation process (see Annexure B- Guidelines).

It is recommended BFMZs use existing spatial information from Guardian, agency datasets, the previous BFRMP or a combination of the above. BFMZs may be mapped as logical management units using landscape features such as roads and watercourses, however the treated area must be accurately mapped in Guardian as part of the activity planning. Where mapping inconsistencies occur with adjacent zones, the APZ boundary will prevail over other zone types.

5. Incorporating member agency zones

It should be noted that BFMZs for bush fire risk management planning have been developed to work at the strategic level, and are designed to be complementary to zoning systems already used by several member agencies of the BFCC. Member agencies are therefore still able to develop, the sub-groups of zones to implement on their own tenure in agency specific plans.

Within the five zones identified in Table 1 there may be further classification to reflect agency sub-groups (usually LMZs). However, the implications of this should be considered by the BFMC and only mapped in a BFRMP if they match the intent set out by the BFMC.

6. Environmental Approvals

The Bush Fire Environmental Assessment Code (the Code) provides a streamlined environmental assessment and approval process for the purpose of bush fire hazard reduction carried out in accordance with a bush fire risk management plan, however the Code may not apply to bush fire management activities proposed by a BFMC and these should be assessed in accordance with the Environmental Planning and Assessment Act 1979.

BFMCs should consider a range of factors in evaluating the adequacy of current or addition of new APZs. Bush Fire Protection for Existing Development (BPED) provides a consistent means of carrying out an assessment of APZ works required to achieve a radiant heat load on an individual structure. It also sets the maximum distance from the structure for mechanical works achievable using the Bush Fire Environmental Assessment Code. BPED is important but it is not the only way of determining the characteristics of an APZ. BFMCs must consider a wider range of factors such as access and egress from the site and the vulnerability of the community and assets.

Activities that fall outside the provisions of the Code will require an alternate environmental approval prior to implementation. For bush fire hazard reduction works, this typically occurs under Part 5 of the Environmental Planning and Assessment Act 1979 through a Review of Environmental Factors

(REF). BFMCs are encouraged to consider the environmental approval requirements when developing treatments listed in the BFRMP. Where a REF is necessary, it is recommended that agencies consider preparing an REF that covers multiple and similar treatments that will be implemented throughout the timeline of the BFRMP.

7. Monitoring and Review

BFMZs in the Fuel Management Register should be monitored throughout the life of the BFRMP to ensure the management intent is being met. BFMCs should ensure that:

- The treatment schedule for all BFMZs should be reviewed annually as part of the Annual Works Program (see Annexure F for further information);
- APZs should be monitored throughout the year to ensure fuel loads are regularly maintained, especially during periods of high fuel growth;
- Fuel loads within IMZs should be monitored on an annual basis and the inclusion of activities in the Annual Works Program updated as appropriate;
- SFAZs should be reviewed throughout the plan to ensure the predicted fuel accumulation supports the current management proposals;
- Opportunities for implementing monitoring programs should be sought to investigate the implementation of different burning regimes on the effectiveness of fuel reduction as well as biodiversity and ecological health;
- The implementation of IMZs in particular should be continuously evaluated for effectiveness and to improve our knowledge of optimal prescribed burning regimes and techniques. The evaluation is to consider the effectiveness of complementary ignition management strategies such as community engagement, access restrictions and patrols. Effectiveness measures should include changes to fire ignitions, fire behaviour, impact on assets and ability for land managers to prevent bush fire in accordance with s63 of Rural Fire Act 1997; and
- As part of the BFRMP, a review of the location of existing zones should be considered. In particular APZs and IMZs may be persistent features in the landscape and appear in each subsequent plan, however alternate or additional locations may be proposed at each review.