



**NSW National Parks
& Wildlife Service**
Office of Environment & Heritage

Reserve Fire Management Strategy

**Berowra Valley National and Regional Parks and
Dural Nature Reserve**

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ISBN 978-1-76039-550-6
OEH 2016/645
Feb 2017

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List of acronyms

AHIMS	Aboriginal Heritage Information Management System
APZ	asset protection zone
BFCC	Bushfire Coordinating Committee
BFMC	Bushfire Management Committee
EEC	endangered ecological community
EPBC	Commonwealth <i>Environment Protection and Biodiversity Conservation Act</i>
FDI	fire danger index
FEZ	fire exclusion zone
FRNSW	Fire & Rescue NSW
GPS	geographic positioning system
HHIMS	Historic Heritage Information Management System
KPI	key performance indicator
LMZ	land management zone
NPWS	NSW National Parks and Wildlife Service
NR	Nature Reserve
NSW FB	New South Wales Fire Brigades
OEH	Office of Environment & Heritage
OFH	overall fuel hazard
POM	Plan of Management
RFS	Rural Fire Service
RIP	regional incident procedure
RP	Regional Park
SFAZ	strategic fire advantage zone
TSC	NSW <i>Threatened Species Conservation Act</i>

1. Introduction

1.1 Scope, terms and purpose

This document describes the strategies that the NSW National Parks and Wildlife Service (NPWS) plans to implement in Berowra Valley National Park (NP), Berowra Valley Regional Park (RP) and Dural Nature Reserve (NR) (see Figure 1). This strategy has an operational life of five years between 2017 and 2022. The operational life of the strategy may be shortened or extended if circumstances dictate.

The relationship between this document and other elements of the NPWS and Bushfire Management Committee (BFMC) framework is summarised in Figure 2. The document has been prepared to ensure consistency with the policies and procedures detailed in the NPWS Fire Management Manual, *Living with Fire in NSW National Parks: A strategy for managing bushfires in national parks and reserves 2012–2021*, the Berowra Valley National Park Plan of Management (POM), and Bushfire Management Committee Risk Management and Operations Coordination Plans.

This strategy is a relevant plan in accordance with section 38 (4) and section 44 (3) of the *Rural Fires Act 1997*. The NPWS is seeking the cooperation of all fire authorities in adopting the strategies outlined within this document when responding to bushfires within these reserves.

In addition to this document, detailed map-based strategies will be prepared and reviewed annually. The map-based strategies will be complemented by regional incident procedures (RIPs) that detail preparedness and response procedures for managing incidents such as bushfires, both as wildfires and as prescribed burns.

1.1.1 Fire management objectives

The NPWS primary objectives of fire management are to:

- protect life, property and community assets from the adverse impacts of fire
- develop and implement cooperative and coordinated fire management arrangements with other fire authorities, park and reserve neighbours and the community
- manage fire regimes within reserves to conserve and enhance biodiversity
- protect Aboriginal sites and places, historic places and culturally significant features from damage by fire
- assist other fire agencies, land management authorities and landholders in developing fire management practices that contribute to conserving biodiversity and cultural heritage across the landscape.

1.2 Strategy implementation and administration

This strategy will be implemented through the development of annual works programs that identify specific strategies to be implemented. The annual work programs are funded each financial year by recurrent or capital budget allocations. Additional funding may also be sought through various grant schemes to implement specific strategies.

The implementation of the strategies will be reviewed annually in accordance with NPWS performance indicators specified in the NPWS *Fire Management Manual*.

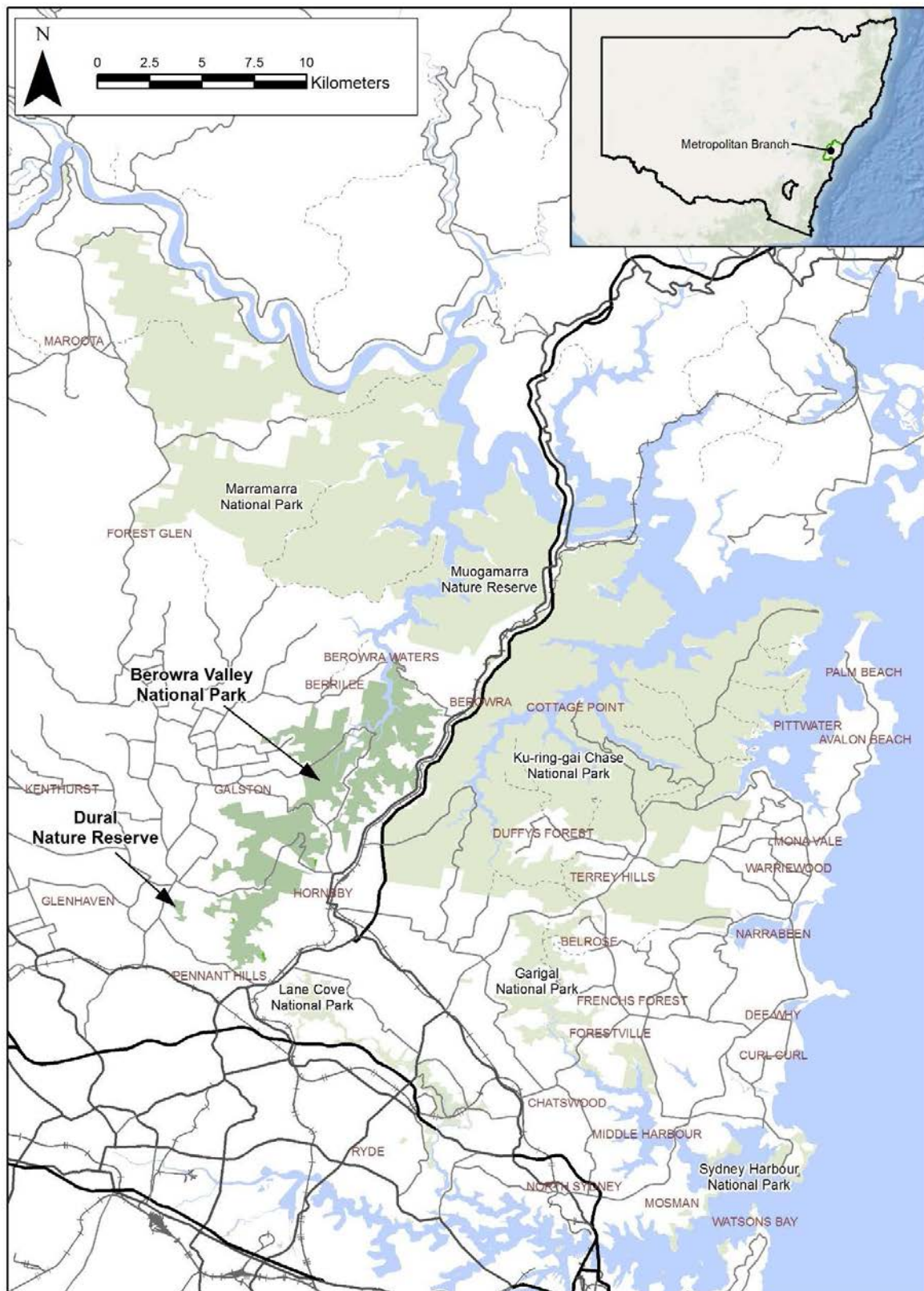


Figure 1: Location of parks and reserve

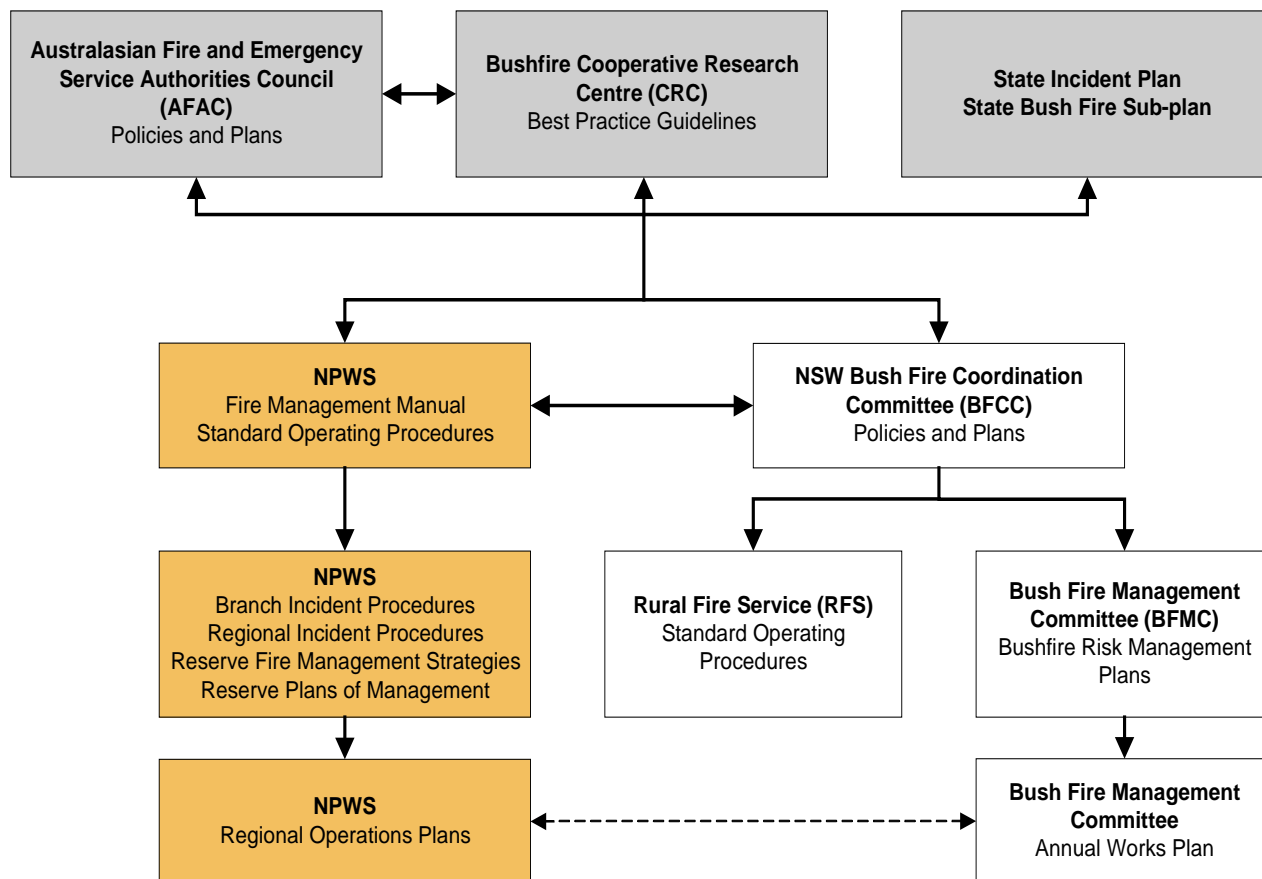


Figure 2: Integrated fire management planning framework

1.3 Description of the reserves

1.3.1 Location and terrain

This fire management strategy applies to Berowra Valley NP (3588 ha), Berowra Valley RP (9 ha) and Dural NR (35 ha). The reserves are located approximately 20 km to the north-west of Sydney CBD (Figure 1).

In addition to NPWS reserves, this strategy also considers fuel, assets and fire control advantages that are outside but continuous with or adjacent to those in the reserves. These areas include crown land, lands managed by Hornsby Council, the Metropolitan Local Aboriginal Land Council and numerous private landholders.

The reserves are located within the Hornsby–Ku-ring-gai BFMC area.

The terrain of the reserves is typical of Hawkesbury Sandstone geology, with plateau and ridgeline areas steeply sloping into drainage lines. The highest point in the reserves is 225 m above sea level. Major geographical features include the Berowra Creek catchment, which runs from the south-west to the north-east. Other major drainage lines include Calna Creek and Pyes Creek. Perhaps the most significant feature of the park is Galston Gorge. Dural Nature Reserve is centred on a drainage line that leads into Georges Creek.

1.3.2 Fire weather and history

Owing to the combination of climate, topography and vegetation, the Sydney Region is one of the most bushfire-prone areas in the world. Periodically, every 5 to 12 years, drought conditions combine with hot, dry, north-westerly to south-westerly air streams to produce the potential for high-intensity, uncontrollable bushfires. Although bushfires may occur at any time of the year, the highest probability occurs in December and January.

NPWS fire history records for the reserves date back to 1989–90. Records and mapping before this date are predominantly anecdotal, with accuracy varying accordingly. Anecdotal information is available from the Rural Fire Service (RFS) back to the 1960s. Some areas of the park have experienced a high frequency of unplanned fires, while some areas have not had a recorded fire.

Within the reserves, significant fires in 1968 and 1977 burnt tracts of bushland from Mt Ku-ring-gai to Crosslands Reserve. During the 1980s, a number of small fires occurred along the eastern edge of Berowra Valley. Since then, significant fires occurred in 1990 (Berowra), 1991 (Hornsby Heights), 1993 (Cherrybrook), January 1994 (adjacent to Westleigh), May 2000 (Old Mans Valley) and 2003 (Berowra). Most bushfires have been started by human activities, in particular arson. Lightning is not a significant cause of fire ignitions.

1.3.3 Reserve interface and development patterns

Settlement in the past has occurred along ridge tops and then gradually spread downslope, often with very little regard to the bushfire hazards intrinsic to these areas. As a result, much of the reserves are bounded by extensive areas of urban and rural interface, including the suburbs of Berowra Heights, Berowra, Mt Ku-ring-gai, Mt Colah, Asquith, Hornsby Heights, Hornsby, Normanhurst, Westleigh, Thornleigh, Pennant Hills, Cherrybrook, Dural, Galston and Berrilee.

1.3.4 Natural and cultural heritage

The vegetation survey of the reserves by Smith and Smith (1990) identified 17 vegetation communities, ranging from mangroves and saltmarsh on alluvial flats to tall open forests in the moist gullies, to open forests and heathland on ridgelines. The most common vegetation communities are highly flammable dry sclerophyll forests, woodlands and heath- and shrublands, which occupy over 80% of the reserves. A list of vegetation communities found within the reserves, along with their fire regime guidelines, is presented in Appendix 1.

The reserves provide habitat for 23 species of vulnerable or endangered flora (Appendix 2), 19 species of vulnerable or endangered fauna (Appendix 3), and three endangered ecological communities (EECs, Appendix 1). Of particular significance are the locally endemic species *Persoonia mollis* ssp. *maxima* and *Ancistrachne maidenii*.

The reserves have a long history of Aboriginal use and lie within Metropolitan Local Aboriginal Land Council territory. NPWS records show that the reserves and surrounding areas contain at least 24 known Aboriginal heritage sites. Sites within the park include cave art, engravings, grinding grooves, middens, other occupational deposits and stone arrangements. Guidelines for the protection of Aboriginal cultural heritage sites from damage by fire management activities are detailed in Appendix 4.

The reserves have a history of non-Aboriginal occupation dating back to the early years of settlement. Features of significance include the Tunks Creek bridge at Galston Gorge, the Steele Bridge across Berowra Creek, the quarry and Zig Zag Railway at Bellamy Street, Thornleigh, Berowra Waters Tea House, and a guest house at Crosslands. Guidelines for the management of historic heritage features are detailed in Appendix 5.

1.3.5 Recreational use and facilities

The reserves provide an important recreational resource for northern Sydney. During the bushfire danger period there may be as many as 5000 visitors within them. Visitors are mostly concentrated at Crosslands Reserve and Convention Centre, Stringy Bark Ridge, Tunks Rest Area at Galston Gorge, Barnetts Lookout and Glenview Road. Within the reserves there are many walking tracks and fire trails used for walking and cycling in locations surrounded by highly flammable vegetation and where escape from a bushfire would be slow or difficult. The Great North Walk in particular is very popular.

1.3.6 Summary of key fire issues

- Bushfires do and will continue to occur in the reserves owing to the combination of vegetation, climate, unplanned human-caused ignitions and occasional lightning strikes.
- Suspected arson is a major cause of bushfires within the reserves.
- There are a large number of community assets within and adjacent to the reserves that have been threatened or damaged in the past as a result of bushfires.
- A large proportion of existing assets and property do not conform to Australian Standards for both building construction and the establishment and maintenance of asset protection zones (APZs) on private property.
- The ability of residents to prepare for and take appropriate action during a bushfire is highly variable.
- During the bushfire danger period many visitors to the reserves may be located in areas surrounded by highly flammable vegetation and where escape from a bushfire would be slow or difficult.
- The reserves conserve natural and cultural heritage values that are vulnerable to inappropriate fire regimes and fire management activities.

2. Bushfire risks

2.1 Introduction

This section identifies the assets and values within and adjacent to the reserves that are at risk from bushfire and summarises the factors contributing to risk.

The risk assessment process used to develop this strategy is based on the Australian Standard on Risk Management (AS/NZS ISO 31000:2009) and *Living with Fire in NSW National Parks: A strategy for managing bushfires in national parks and reserves 2012–2021*. These documents define risk as the chance of a bushfire happening that will affect the objectives of this strategy.

Determining risk as defined above requires a yearly bushfire risk analysis to be undertaken. The risk analysis process requires the systematic use of the best available information to determine how often specified bushfires may occur and the magnitude of their consequences. The process is undertaken in conjunction with the relevant BFMCS and requires expert advice, computer modelling and statistical analysis.

The results of the risk analysis enable the risk management strategies and controls described in Section 3 to be appropriately applied.

2.2 Life and property

Within and adjacent to the reserves there are many assets that may be damaged during a bushfire. Bushfire risk is a complex interaction between a number of variables, including:

- ignition sources and patterns in the landscape
- the ability of property owners, residents and visitors to take appropriate action in the event of a fire
- the adherence of properties to the building design and construction standards as detailed in the appropriate Australian Standards documents
- the establishment and maintenance of adequate asset protection zones as described by *Planning for Bushfire Protection* (RFS 2006) within private lands
- the degree of isolation of communities and properties, potentially making them dangerous for firefighters to reach by and making effective protection difficult owing to a lack of services, particularly under severe conditions
- access for firefighters to protect property during bushfires along perimeter roads, fire trails or walking tracks at the rear of private properties that may be used to form an interface control line (ICL)
- the adequate deployment and response times of firefighting resources, both ground and air, to suppress fire and protect property
- the fire behaviour potential of the landscape based on the interaction of topography, vegetation type, fire history and fuel accumulation rates.

2.2.1 Property

Damage to property may result from direct flame contact, radiant heat or ember attack. It is an established fact that most destruction or damage to buildings in a bushfire is a direct result of poor preparedness and of the property being left unattended during a fire. Locations within and immediately adjacent to the reserves considered at risk from bushfires are listed in Table 1.

Table 1: Locations of property within and immediately adjacent to the reserves considered at risk

Location	Tenure
Berowra Heights (south side)	Private
Berowra community	Private
Mt Ku-ring-gai community (west side)	Private
Mt Colah community (Excelsior Rd)	Private
Mt Colah community (Beryl Ave)	Private
Mt Colah community (Parklands Rd)	Private
Mt Colah community (Amaroo Ave)	Private
Asquith community	Private
Hornsby community	Private
Hornsby Heights community	Private
Westleigh community	Private
Thornleigh community	Private
Pennant Hills community	Private
Cherrybrook community	Private
Dural community	Private
Beaumont Rd Industrial Estate	Private
Hornsby Heights Sewage Treatment Plant	Sydney Water
Dural community (Quarry Rd)	Private
Dural community (Carters Rd)	Private
Galston community (south side Galston Rd)	Private
Galston community (north side Galston Rd)	Private
Arcadia community	Private
Berrilee community	Private
Berowra Waters community	Private
Berowra Waters (east side)	Private
Frank Windeyer Scout Camp	Private
Crosslands Convention Centre	Private
Crosslands Reserve camp ground	Hornsby Council
Beaumont Rd Motorbike Club	Private
Isolated private property Beaumont Rd	Private
Pyes Creek private property	Private
Pyes Creek private property	Private
Pony Club, Schofield Rd	Private
Stringy Bark Ridge	NPWS
Tunks Rest Area	NPWS
The Gorge Picnic Area	NPWS
The Gorge Lookout	NPWS

Location	Tenure
Barnetts Road Picnic Area	NPWS

2.2.2 Utilities and infrastructure

Within and adjacent to the reserves there are a variety of public and private utilities that are considered at risk from bushfires, including:

- Energy Australia powerlines and substations
- TransGrid powerlines and substations
- Sydney Water infrastructure
- public transport infrastructure
- telecommunications infrastructure.

These assets in some circumstances are located in areas remote from access and where effective protection would be difficult and dangerous for crews under severe conditions.

2.2.3 Visitor and public safety

During the bushfire danger period many visitors to the reserves may be located in areas surrounded by highly flammable vegetation and where escape from a bushfire would be slow or difficult. The risk to visitors is greatest during total fire bans, park fire bans or periods of extended fire danger. High visitation areas and situations where visitors are considered at risk from bushfires include:

- Barnetts Lookout
- Galston Gorge
- the Great North Walk
- Crosslands Reserve
- popular access trails and tracks to remote areas of the reserves.

2.3 Natural heritage risks

Natural heritage features at risk are detailed in Table 2.

Table 2: Natural heritage features at risk

Natural heritage feature	Description of risk
Threatened flora (Appendix 2)	The 23 species of threatened flora may be subject to adverse fire regimes or inappropriate fire management activities. In particular, locally restricted populations of <i>Persoonia mollis ssp. maxima</i> and <i>Ancistrachne maidenii</i> are of major concern.
Threatened fauna (Appendix 3)	The 19 species of threatened fauna may be subject to adverse fire regimes or inappropriate fire management activities.
Endangered ecological communities (Appendix 1)	Shale–Sandstone Transition Forest near Lynrob Place, Thornleigh. Blue Gum High Forest on southernmost point of the reserve at Boundary Road. Sydney Coastal River Flat Forest: local examples of this community are dominated by red gums, rough barked apples and swamp oaks on quaternary alluvium.
Significant vegetation communities (Appendix 1)	Fire-sensitive rainforest gullies.
Bush regeneration sites	Over 25 bush regeneration sites within and adjacent to the reserve may be damaged by fires and fire management activities.
Soil landscapes	Areas vulnerable to rock fall where slopes exceed 18°.
Water catchments	Berowra Creek catchment. Calna Creek catchment. Tunks Creek catchment. Pyes Creek catchment.

Natural heritage features may be placed at risk as a result of adverse fire regimes, inappropriate fire management activities and pest species invasion. The potential impact of these factors on natural heritage features within the reserves is outlined below.

2.3.1 Adverse fire regimes

Fire regimes are defined by the combination of several parameters, including fire frequency, fire intensity, season, the size of fire (or the proportion of the landscape they burn) and patchiness. Certain combinations of these parameters can produce adverse fire regimes and pose a high risk to natural heritage features.

Fire frequency has been identified as a key threatening process, as it disrupts key life cycle processes in plants and animals. The primary risk from high fire frequency is a reduction in the abundance of a species to the point where it may become locally extinct. Alternatively, the exclusion of fire for an extended period of time may lead to the senescence of plants and their seed banks and the succession of other communities.

Evaluating the fire interval for vegetation communities (Appendix 1), flora (Appendix 2) and fauna (Appendix 3) assists with the identification of adverse fire regimes. Table 3 outlines the fire threshold status within a vegetation community on the basis of the fire interval history of an area. Of particular significance are areas where a vegetation community or species habitat experiences adverse regimes that are either too frequent (too frequently burnt) or too infrequent (long underburnt). In these areas, if the trend in fire regimes continues, there will be a serious decline in the abundance of sensitive species. Areas that are identified as too frequently burnt, vulnerable to frequent fire and long underburnt are considered to have adverse fire regimes.

Table 3: Fire thresholds of vegetation communities

Fire thresholds	
Too frequently burnt	Fire thresholds have been exceeded. <ul style="list-style-type: none"> • Protect from fire as far as possible.
Vulnerable to frequent fire	The area will be overburnt if it burns this year. <ul style="list-style-type: none"> • Protect from fire as far as possible.
Within threshold	Fire history is within the threshold for vegetation in this area. <ul style="list-style-type: none"> • A burn is neither required nor should one necessarily be avoided.
Long underburnt	Fire frequency is below fire thresholds in the area. <ul style="list-style-type: none"> • Consider a prescribed burn or allowing wildfire to burn.
Unknown	Insufficient data to determine fire threshold.
No regime assigned	Areas that do not have fire intervals assigned (e.g. cleared land, rock).
NB. Fire thresholds are defined for vegetation communities to conserve biodiversity.	

Other elements of fire regimes, including the season of fire occurrence, fire intensity, fire patchiness and the scale of individual fires, may also affect natural heritage features. When viewed in isolation, each element of the fire regime has a distinct effect. The greatest risk to conservation results from adverse combinations of fire regime elements that can combine to produce a synergistic or cumulative effect. For example, areas treated by regular prescribed burns are potentially exposed to a regime of repeated low intensity fires that occur outside the typical bushfire season and are usually small and patchy in nature. These areas are also predisposed to a higher fire frequency because they are often re-burnt by summer wildfires.

2.3.2 Inappropriate fire management activities

Inappropriate fire management activities associated with fire suppression operations, hazard reduction programs or fire trail maintenance may have an adverse impact on natural heritage features. The magnitude of an impact is dependent on the type of activity, the extent of the impact, the nature and sensitivity of the environment, and the rehabilitation costs.

2.3.3 Pest species invasion

The establishment of pest and weed species as a result of fire regimes and fire management activities presents a significant risk to natural heritage values. The following factors are considered to influence the risk of pest species invasion:

- nutrients and seed sources entering reserves along fire trails, drainage lines and the urban interface
- dumping of rubbish by neighbours into the reserve, resulting in the establishment of many exotic species and contributing to fuel loads

- the presence of feral animals such as foxes and rabbits within or adjacent to areas of disturbance.

Pest species within the reserves are managed in accordance with the Regional Strategies.

2.4 Cultural heritage risks

Culturally important places, sites and objects of both Aboriginal and non-Aboriginal origin occur throughout the reserves and face a significant risk of damage from adverse fire regimes and inappropriate fire management activities.

2.4.1 Aboriginal cultural heritage values

According to the Aboriginal Heritage Information Management System (AHIMS) database, over 50 Aboriginal sites have been recorded in the reserves. Owing to the sensitivity of the sites, they have not been identified in this strategy or marked on maps. The location of sites is available through AHIMS at all NPWS offices.

Various factors influence the risk of damage to Aboriginal cultural heritage values:

- High-intensity wildfires may cause the death of scar trees (trees that have been scarred by Aboriginal people through the deliberate removal of bark or wood), reduce tree stability or damage the scar. Fire may also lead to a decline in tree health and promote rot or destroy dead trees.
- Wildfire may permit soil erosion, resulting in artefact movement and damage to archaeological deposits or a build-up of soil that can lead to chemical weathering.
- Rock art sites may be damaged from smoke staining, which may lead to chemical weathering, particularly if protective vegetation is removed. Intense heat may also cause exfoliation of the rock surface.
- Vehicle traffic, including fire appliances, bulldozers, slashers or tritters may damage sites.

Guidelines for the management of Aboriginal heritage features are detailed in Appendix 4.

2.4.2 Historic heritage values

According to the Historic Heritage Information Management System (HHIMS) database, 10 sites have been recorded within the reserves. Major sites at risk from bushfires are listed in Table 4. The location of sites is available through HHIMS at all NPWS offices.

Table 4: Historic heritage features at risk

Map ID	Description
HS1	Steele Bridge
HS2	Gorge Bridge
HS3	Bellamy St Quarry and Zig Zag Railway

The following factors contribute to the risk of damage to historic heritage features:

- Bushfires may directly remove or destroy combustible material such as timber structures.
- High-intensity fires may permit soil erosion, which may lead to displacement of foundations, artefact movement and damage to archaeological deposits.
- Vehicles or bulldozers may physically damage features.
- Fire may damage or destroy vegetation with historical significance.
- High-intensity fire may also cause the spalling of rock artefacts.

Guidelines for the management of historic heritage features are detailed in Appendix 5.

3. Bushfire risk management strategies

3.1 Introduction

This section presents the strategies and controls that can be used to protect the assets and values at risk that were identified in Section 2. The development of these strategies is premised on the understanding and acceptance that unplanned bushfires do and will continue to occur.

Significantly, research and experience have shown that no one management option is effective in isolation, and optimal outcomes are achieved only through a multifaceted approach involving the community and all relevant stakeholders.

Given the large number of assets within and around the reserves it is not possible to implement strategies and controls for all assets and values every year in all locations. The results of the annual bushfire risk analysis will be used to identify and prioritise those assets most at risk and therefore in greatest need of active fire management strategies. It is important to acknowledge that after risk management strategies and controls have been implemented in preparation for the fire season, a residual level of risk to many assets and features will still remain.

The strategies are implemented in consultation with local BFMCs, land management agencies, Rural Fire Service (RFS) brigades, park neighbours and other stakeholders. The cooperation of the community is critical to the success of many strategies. In particular, the NPWS must work with BFMCs to encourage neighbours to accept responsibility for the management of fuels on their properties, to prepare and maintain their properties in accordance with appropriate Australian Building Standards, and to develop personal action plans that can be activated in the event of a bushfire.

Where possible, the fire management strategies to be implemented within the reserves are illustrated in Maps A–D. In many instances, features on the maps extend beyond the boundaries of the reserves onto other land tenures. In these circumstances, the strategies identified apply only to NPWS managed lands. The implementation of any strategies that involve multiple land tenures will require endorsement by relevant agencies or landholders and the relevant BFMCs.

3.2 Bushfire prevention

Bushfires do and will continue to occur, primarily because of unplanned human-caused ignitions. The major cause of unplanned ignitions is arson. Fires also start accidentally, from abandoned campfires, the arcing of powerlines, plant and machinery, motor vehicle accidents and escaped prescribed burns. Arson and other human-caused ignitions generally occur close to developed areas and along access tracks and trails. Lightning strikes are the only natural cause of ignitions and contribute to less than 1% of recorded ignitions. The pattern of lightning strikes is highly variable and depends on the path taken by storms and the amount of associated precipitation.

The following strategies for bushfire prevention may be implemented by the NPWS within the reserves. Fire investigators will:

- cooperate with police, RFS and Fire & Rescue NSW (FRNSW) to investigate all suspicious ignitions within the reserves and to thoroughly investigate unknown causes
- close all or part of the reserves during total fire bans, park fire bans, periods of extended fire danger or if bushfires occur adjacent to the reserves in order to control the risk of arson or accidental fires and to ensure public safety
- install and maintain locked fire trail gates where necessary and maintain key registers with other agencies and organisations in order to control access
- undertake patrols and promote cooperative surveillance programs on days of very high and extreme fire danger to manage the risk of arson and other accidental ignitions
- support the implementation of fire prevention education

- utilise lightning detection systems, rainfall radar, ground detection networks and fixed-wing aircraft or helicopters for aerial surveillance after the passage of storms to identify the location of fires started by lightning strikes
- replace wood or fuel barbecues with gas barbecues in accordance with plans of management in order to minimise the risk of fires starting from abandoned cooking fires
- liaise with permit issuing authorities (e.g. RFS and councils) to ensure neighbours obtain appropriate hazard reduction certificates and fire permits in order to minimise the potential for fires escaping private property
- liaise with infrastructure authorities to determine appropriate prevention strategies for potential ignition sources associated with their operations and assets in or adjacent to the reserves
- ensure that prescribed burns are planned to appropriate agency standards, are directed by appropriately trained and experienced staff, and are undertaken within defined weather prescriptions in order to prevent fire escapes
- ensure thorough mop-up and patrol of perimeters of wildfires and prescribed burns during or before the onset of extreme weather conditions, with the assistance of heat sensing technology to identify hot spots in order to minimise the potential for re-ignition of fires.

3.3 Bushfire suppression

Fire suppression relates to all actions or operations undertaken to contain and control a bushfire, from the time it is detected until it is extinguished. The control and suppression of bushfires is given the highest priority over all other activities. During fire suppression, the protection of life and property has the highest priority, followed by the protection of natural and cultural heritage features.

The following strategies for bushfire suppression may be implemented within the reserves.

3.3.1 Incident preparedness

- Prepare annual RIPs in order to maintain a contact database of NPWS staff, other fire agencies and support agencies or organisations, and detailed procedures relating to preparedness and management of bushfires.
- Participate with the relevant BFMC in the development and annual review of Section 52 operations coordination plans in order to document cooperative agreements for the coordination of the first response to a fire, notification of a fire, agency resources and fire suppression guidelines.
- Prepare emergency management plans for major visitor precincts within the reserves to ensure clear directions for the evacuation of visitors to safe refuges and to locate visitors in remote areas of the reserves.
- Maintain appropriate levels of protective equipment, vehicles, equipment and other materials to ensure the safety of firefighters and the ability to respond to bushfire ignitions.
- Develop resource dispatch strategies for different bushfire scenarios in order to increase the probability of first attack success and the protection of assets and features at risk.
- Undertake multi-agency incident-management team exercises in order to review response strategies, to identify high-risk fire scenarios, and to develop close working relationships and understanding between agencies and other organisations.

3.3.2 Response

- Maintain cooperation and communication with the RFS, FRNSW and other support agencies to ensure adequate and effective resource dispatch for the suppression of bushfires on or adjacent to the reserves in order to minimise the spread of fire.
- Ensure that fire suppression activities within the reserves take into consideration the standard operational guidelines detailed in Appendix 6 in order to minimise environmental impacts on the reserves.
- Remain prepared and modify work programs according to the level of fire danger in order to maintain appropriate response time to ignitions.
- Develop media and public relations strategies to engender community confidence in and support for bushfire management.
- Manage bushfires in accordance with the incident control system to ensure coherent command and control, and the safety of firefighters and the community.
- Use sufficient aircraft to attack inaccessible fires in order to minimise the spread of fires and to protect assets and features at risk.
- Deploy remote-area fire-fighting teams to suppress lightning-induced fires identified by aerial reconnaissance in order to minimise the size of fires before the passage of severe fire weather.
- Report fire suppression activities through the Bushfire Risk Information Management System and in NPWS geographic information system so as to maintain a record of all fires.

3.3.3 Recovery

- Rehabilitate damage resulting from fire suppression operations as the operation winds down.
- Where necessary, prepare rehabilitation plans to facilitate recovery from operations with significant impacts.
- Where necessary, implement pest control programs to prevent the invasion and spread of pest species.

3.4 Prescribed burning

Prescribed burning is the controlled use of fire under specified environmental and weather conditions to a predetermined area with the aim of reducing fire risk under adverse conditions.

3.4.1 Fire management zones and units

The prescribed burning program for the Reserves is based on a mapping process that divides the bushland landscape into distinct operational units bounded by fire containment lines such as fire trails, walking tracks, hand tool lines, watercourses and bushland–property boundaries. The mapping process has been undertaken in consultation with land management and fire management agencies in order to incorporate relevant local knowledge and on-ground information. In many instances, individual units may extend beyond the boundaries of the reserves onto other land tenures. In these circumstances, NPWS will facilitate, through the relevant BFMC, cooperative agreements for the management of the unit.

The location of fire management zones and units within the reserves are illustrated in Maps A–D. Each fire management unit is identified on the maps by a unique map code that can be used to obtain details of the feature in the fire management zones and units register in Appendices 7 and 8.

Once the operational units have been identified, the zoning system in Table 5 specifies the broad land management objectives for each unit within the reserves.

Table 5: Fire management zones

Zone	Purpose	Suppression objectives	Zone characteristics	KPI ¹
Asset Protection Zone (APZ) See also 2.6 Asset protection	To protect human life, property and highly valued public assets and values.	To enable the safe use of direct attack suppression strategies within the zone. To minimise bushfire impacts on undefended assets.	As per RFS document Standards for Asset Protection Zones . Management practices should aim to have fuel levels maintained within the OFH ² low to moderate range.	% of APZs treated to meet objectives [$>90\%$]
Strategic Fire Advantage Zone (SFAZ)	To provide strategic areas of fire protection advantage which will reduce the speed and intensity of bushfires, and reduce the potential for spot fire development. To aid containment of bushfires to existing management boundaries.	To improve the likelihood and safe use of: <ul style="list-style-type: none"> parallel attack suppression strategies within the zone, or indirect attack (back-burning) in high to very high fire weather conditions within the zone. To reduce the likelihood of: <ul style="list-style-type: none"> crown fire development within the zone, or spot fire ignition potential from the zone. 	Zone width relates to suppression objectives and depends upon: <ul style="list-style-type: none"> topography aspect spotting propensity location of adjacent firebreaks mosaic pattern of treatment. Management practices should aim to achieve mosaic fuel reduction patterns so that the majority of the SFAZ has an OFH of high or below.	% of SFAZs treated to meet objectives [$>70\%$]
Land Management Zone (LMZ)	To meet relevant land management objectives in areas where APZs or SFAZs are not appropriate.	As per the land management and fire protection objectives of the responsible land management agency. To undertake mosaic burning to reduce the likelihood of spread of fires.	As appropriate to achieve land management objectives (e.g. protecting heritage or broad scale mosaic burning objectives).	% vegetation formations in LMZs within fire management prescription [$<35\%$ underburnt; $>50\%$ within biodiversity threshold; $<35\%$ over-burnt].
Fire Exclusion Zone (FEZ)	Fire exclusion zones are not recommended for use by NPWS. While exclusion of fire may be preferable, it is not always possible. Areas of fire intolerant assets should be included in RFMS as LMZs with appropriate operational management guidelines.			

¹ Key performance indicators (KPIs) as per *Living with Fire in NSW National Parks, a strategy for managing bushfires in national parks and reserves 2012–2021*

² OFH refers to the *Overall Fuel Hazard Guide* (Department of Sustainability and Environment 3rd edn, 1999)

3.4.2 Assessment intervals

Each fire management unit has been assigned an interval (as per Appendices 7 and 8) at which the need for treatment will be subject to a risk assessment to determine the priority for inclusion in the annual fuel reduction program.

The determination of an appropriate interval for a unit is based on a consideration of a number of variables:

- **Zone type:** generally units that are zoned as SFAZs or APZs will be considered for treatment more frequently than LMZs.
- **Fire history:** the known history and frequency of bushfires within the unit indicate the likelihood of future events and can be used to determine the prescribed burning intervals.
- **Proximity to assets at risk:** influences the frequency of prescribed burning to maintain reduced fuel loads and to modify vegetation structure adjacent to assets.
- **The strategic value of the zone or unit:** influences the priorities for strategically locating prescribed burns in the landscape to provide an advantage during a fire suppression operation.
- **Fuel accumulation rates:** known rates of fuel accumulation are used to identify fire interval thresholds to manage fuels within certain levels.
- **Known and modelled fire behaviour:** the characteristics of fuel, aspect and terrain are assessed to determine the required fire intervals to manage likely fire behaviour.
- **Ecological requirements:** are considered to ensure that appropriate fire regime requirements are maintained for vegetation communities (Appendix 1), threatened flora (Appendix 2), threatened fauna (Appendix 3), Aboriginal heritage (Appendix 4), historic heritage (Appendix 5) and pest species management.

The database maintained by the NPWS and the RFS contains detailed information about the history of works and fires within each unit. By analysing the time since the last treatment in relation to the interval assessment guidelines, staff can identify a range of possible treatment years. The range provides the basis for triggering the consideration of specific units in the annual program. Each year, units that are under assessment will be subject to a risk analysis undertaken in consultation with the relevant BFMC. Based on the priorities established by the analysis, units to be included in the annual hazard reduction program are then identified.

The assessment of fire regimes through mapping of the locality and characteristics of all fires will be continuous so that strategies for hazard reduction can be annually reviewed, refined and adjusted. Depending on the circumstances, there may be a role for both prescribed fire and fire-exclusion in parts of the reserves at different times in the future.

3.4.3 Strategic fire management

The strategic arrangement of prescribed burns is an important consideration in the development of annual hazard reduction programs. Major considerations in the strategic arrangement of prescribed burns include;

- prioritising burns adjacent to assets in known high-risk locations, particularly on exposed ridgetops on dry aspects, in order to reduce fuel loads and likely fire intensity
- identifying terrain elements that may be considered for a prescribed burn in order to break up large continuous areas of fuels that may facilitate the spread of a fire under adverse conditions
- locating prescribed burns at strategic points within zones to create areas of reduced fuel which may assist in reducing the potential for bushfires to spread

- arranging burns in a mosaic pattern across the landscape to ensure that an appropriate age class distribution is maintained among vegetation communities within the reserves; this is particularly significant when considering the island-like nature of isolated sections of the reserves that are surrounded by developed lands
- evaluating annual prescribed burning programs to ensure that no more than 50% of vegetation communities or significant flora or fauna habitat has an age class younger than the minimum fire interval threshold; this evaluation also considers the interrelated effects of other components of fire regimes such as intensity, season of burning and the potential effects of unplanned bushfires
- determining the appropriate scale or size of prescribed burns to ensure adequate protection for assets and to reduce the intensity of bushfires; for example, several units may be combined and burnt at the same time.

3.4.4 Season

The preferred season for prescribed burns is late summer to early autumn (i.e. February to April) or spring (i.e. August to October), before the onset of the fire danger period. During these periods, specific synoptic and weather conditions enable burns to be conducted safely within identified containment lines.

A major factor in determining the preferred season of burn is the known fuel moisture dynamics of the burn area. Aspect and topographic position dominate fuel moisture retention within a burn area. Areas with moist aspects facing the east or south are generally scheduled during late summer and autumn to enable appropriate fuel moisture levels to be achieved.

The relatively dry northerly and westerly aspects may be opportunistically burnt at any time of the year. However, burns on these aspects are generally planned for early spring, before the onset of the fire season, given the tendency of these aspects to dry rapidly in the approach to summer. Winter burns are generally not successful because of high fuel moisture levels, which result in a poor burn with high levels of scorch in aerial fuels and patchy consumption of ground fuels. If there are extended dry periods during winter, then winter burning may be considered.

The optimal season of burn for the conservation of most species is late summer to early autumn. However, it is generally not safe for firefighters to conduct prescribed burning operations during this time owing to the occurrence of high to extreme forest fire danger levels. It is recognised that some spring burns may interfere with the breeding season of some plants and animals within the burn area.

3.4.5 Environmental assessment

All prescribed burns are subject to site-specific environmental assessment by the NPWS, either by a review of environmental factors or in accordance with the Bushfire Environmental Assessment Code. In addition, an assessment is undertaken by the NPWS to assess the cumulative impacts of hazard reduction regimes on populations and communities within the landscape.

The management requirements for vegetation communities (Appendix 1), threatened flora (Appendix 2), threatened fauna (Appendix 3), Aboriginal heritage (Appendix 4), and historic heritage (Appendix 5) within each fire management zone are considered during assessments.

3.4.6 Cooperative management

Annual programs for reserves are developed in conjunction with the relevant BFMCS. An adaptive management approach is used to re-prioritise proposals annually in order to ensure that the program treats areas with the greatest risk.

In many instances the proposed containment boundaries of prescribed burns extend beyond the boundaries of the reserves onto other land tenures. In the development of this Strategy, all attempts have been made to ensure the accuracy of tenures identified in the fire management zone register in Appendix 7. Where discrepancies are identified, NPWS will negotiate the appropriate management responsibilities on a case-by-case basis with the relevant parties. In circumstances where joint responsibilities are identified, NPWS will facilitate cooperative agreements for the management of the burn. Generally, prescribed burns are undertaken with the assistance of the RFS, FRNSW and other land management agencies and, in some instances, private landholders.

All prescribed burns require a plan of operations to be prepared in accordance with the NPWS *Fire Management Manual*.

3.4.7 Integrated pest species management

Prescribed burning activities may lead to pest species invasions. Where necessary, control programs may be integrated with prescribed burning programs. This may include pre- and post-burn treatment techniques.

3.5 Firebreaks

Firebreaks are manually or mechanically reduced areas of bushfire fuels, typically along the boundary between a reserve and neighbours, which aim to enable safe firefighter access under moderate conditions and compliment preparedness works undertaken by neighbours.

3.5.1 Fire management zoning

For the purposes of this Fire Management Strategy, firebreaks are considered a strategic fire advantage zone (see Table 5). It is important to note that fire breaks should not be considered an asset protection zone, as the management standards do not meet the required standards for an asset protection zone as defined by *Planning for Bushfire Protection* (2006).

The locations of firebreaks within the reserves are illustrated in Maps A–D. Each firebreak is identified on the maps by a unique map code that can be used to obtain details of the feature in the firebreak register in Appendix 8.

3.5.2 Firebreak establishment

Firebreaks may be established in areas where an asset protection zone cannot be practically established or where the requirements of *Planning for Bushfire Protection* (2006) have not been implemented on neighbouring properties. Table 6 outlines the strategies for the establishment of firebreaks that may be implemented within the reserves.

Table 6: Firebreak management strategies

Strategy	Description	Application
Under-scrubbing	<ul style="list-style-type: none"> • Scrub mulchers, slashers or brush cutters are used to remove or thin understorey vegetation. • The debris is either mulched, burnt on site or removed. • While some smaller trees may be removed, larger canopy trees are generally not disturbed. 	<ul style="list-style-type: none"> • Generally applied in SFAZs. • May be used to strengthen other fire control advantages such as access trails and roads.
Trittering, slashing/ mowing	<ul style="list-style-type: none"> • All shrub and ground fuels are removed with mechanical mowers, slashers or tritters. • Generally used in the maintenance of existing firebreaks. 	<ul style="list-style-type: none"> • Generally applied in SFAZs. • May be used to strengthen other fire control advantages such as access trails and roads.
Selective tree removal	<ul style="list-style-type: none"> • Selected trees are removed to reduce the continuity of tree canopies so as to reduce the chance of crown fire development. 	<ul style="list-style-type: none"> • In locations where there exists a high risk of crown fire development adjacent to access. • In locations where trees impede access for firefighters.
Pest control	<ul style="list-style-type: none"> • Programs to reduce the abundance and distribution of target species. 	<ul style="list-style-type: none"> • In locations where priority pest species are present.
Pile burns/ strip burns/ vegetation raft burns	<ul style="list-style-type: none"> • Vegetation debris is piled and burnt in specific locations. • Strip burns may be undertaken along the length of a firebreak. • In raft burns, under-scrubbed vegetation is formed into a raft elevated off the ground, which is then burnt. 	<ul style="list-style-type: none"> • In locations where fuel cannot be removed from the site.

In many areas, the presence of cliffs, escarpments and slopes over 18° create a situation where there may be no physical or practical means of establishing a firebreak. In these circumstances, NPWS will work with BFMCs to encourage neighbours to undertake other appropriate measures to prepare their properties.

The establishment of new firebreaks will be subject to an environmental assessment either by a review of environmental factors or in accordance with the Bushfire Environmental Assessment Code. In addition, the cumulative impacts of firebreaks on the reserves will be assessed.

3.5.3 Firebreak maintenance

Firebreaks managed by NPWS may be maintained at intervals of between 6 and 18 months, depending on the priority established by the risk assessment process. Where practical, the maintenance of firebreaks will be incorporated into prescribed burning or access maintenance programs.

3.5.4 Cooperative management

In many instances, firebreaks extend beyond the boundaries of the reserves onto other land tenures. Where joint responsibilities are identified, NPWS will encourage landowners and land management agencies to develop cooperative agreements for the management of the firebreak through the relevant BFMC.

3.5.5 Integrated pest species management

Firebreak management activities may lead to pest species invasions. Pest control requirements will be taken into consideration with scheduled works and may incorporate a combination of pre- and post-treatment control programs.

3.6 Fire management access

Access trails, roads and other routes enable access to different parts of the reserve. Access infrastructure is essential for undertaking fire management operations and activities, including direct attack of low-intensity fires, back-burning to contain high-intensity fires, and conducting hazard reduction burning.

3.6.1 Vehicular access trails

The location of trails within the reserves are illustrated in Maps A–D. Each trail is identified on the maps by a unique map code that can be used to obtain details of the feature in the trail register in Appendix 9.

3.6.2 Access trail operational accessibility

A database of the current accessibility of trails by different categories of fire appliances is detailed in the fire trail register in Appendix 9, as described in Table 7. Information on the accessibility of access infrastructure is essential during fire management operations in order to ensure the safety of firefighters.

Table 7: Operational accessibility classifications for vehicular access trails

Access classification	Description
Public road	Any major or minor public road accessible by two-wheel-drive vehicles.
Essential	This is a fire trail without which fire response and suppression in an area would be severely compromised. All reasonable efforts must be made to ensure that this trail is trafficable to the agreed vehicle carrying capacity at all times. Sudden problems such as tree falls and landslips should be rectified as soon as identified.
Important	This is a 4WD trail that is required for fire management. If this trail was unusable due to temporary circumstances, other trails could be used to contain a fire, albeit with some loss of fire management efficiency. This trail should be trafficable to the agreed vehicle carrying capacity at all times.
Dormant trail	Any trail that is closed but still has strategic value for use as a control line or strategic advantage and may be reopened for hazard reduction burns or the containment of wildfires.
Vehicle carrying capacity	<ul style="list-style-type: none"> • Cat 1: This is a fire trail that can be safely traversed by a Category 1 firefighting appliance. • Cat 7: This is a fire trail that can be safely traversed by a Category 7 firefighting appliance. • Cat 9: This is a fire trail that can be safely traversed by a Category 9 firefighting appliance.
Walking track	Walking track with no vehicle access.

3.6.3 Access trail management standards

The proposed management standard for access trails within the reserves is based on the Bushfire Coordinating Committee (BFCC) Policy 2007/02 standards for fire trails. This classification system

provides the basis for the development of maintenance regimes for existing trails and the standards for proposed upgrades to trails. The classification of trails has been undertaken in consultation with the relevant BFMCs and is consistent across member agencies. Any proposed upgrades to trails will be subject to a review of environmental factors.

It is important to note that these standards provide a target for management and do not reflect the current standard of trails within the reserves. The terrain in many areas of the reserves creates a situation where there may be no physical or practical means of attaining the proposed BFCC standards. In these instances the classification may be changed to reflect the specific circumstances.

3.6.4 Access trail maintenance

Trails in the reserves are maintained in accordance with NPWS policy in the *Fire Management Manual*, the relevant reserve plan of management and the BFCC Policy 2007/02 standards for fire trails. Table 8 summarises the indicative maintenance regimes applied to trails in order to avoid environmental damage and ensure cost-effective management. The trail maintenance program for the reserves is managed using the NPWS Asset Maintenance System, which establishes a cyclic maintenance program for trails within the reserves.

Table 8: Maintenance regimes for existing vehicular access trails by problems caused

Problem	Cause	Strategy
Erosion of track surface	<ul style="list-style-type: none"> • Crossbanks too far apart. • Earth or vegetation windrow on the side of the trail prevents outfall drainage. • Track being overused during wet periods. • Culvert blocked, or rills on the surface. 	<ul style="list-style-type: none"> • Check crossbank spacings. • Remove windrows. • Restrict vehicle usage during wet weather. • Unblock culverts. • Install and compact suitable surface capping material.
Sediment in outlets of crossbanks and mitre drains	<ul style="list-style-type: none"> • Vegetation in outlets. • Excess soil erosion on trail surface. 	<ul style="list-style-type: none"> • Remove sediment. • Check condition and spacing of erosion control structures.
Tree and shrub trimming on edge of trail	<ul style="list-style-type: none"> • Overgrown vegetation encroaching over the trail surface, reducing the width of the trail. 	<ul style="list-style-type: none"> • Remove encroaching vegetation by mechanical or other means.
Scouring of crossbank channel	<ul style="list-style-type: none"> • Excessive crossbank channel grade. 	<ul style="list-style-type: none"> • Regrade channel.
Overtopping of crossbank	<ul style="list-style-type: none"> • Insufficient height of crossbank. • Channel silted due to ponding. 	<ul style="list-style-type: none"> • Raise height of crossbank. • Remove sediment and check cause of ponding.
Erosion of outlets, crossbanks and mitre drain	<ul style="list-style-type: none"> • Excessive outlet grades. 	<ul style="list-style-type: none"> • Regrade outlet to a reduced grade. • Stabilise outlet with vegetation. • Relocate crossbank or mitre drain.
Ponding in crossbank	<ul style="list-style-type: none"> • Insufficient crossfall grade. • Blocked outlet. • Track being overused during wet periods. 	<ul style="list-style-type: none"> • Regrade channel. • Remove obstruction. • Restrict vehicle usage.
Blocked culvert	<ul style="list-style-type: none"> • Sediment build-up in culvert. • Blockage in culvert. 	<ul style="list-style-type: none"> • Remove sediment from culvert. • Remove debris from culvert.
Culvert eroding	<ul style="list-style-type: none"> • Culvert blocked. • Undersized culvert. • Inlet and outlet eroding. 	<ul style="list-style-type: none"> • Seek engineering advice and redesign culvert to accommodate expected catchment flow.

Problem	Cause	Strategy
		<ul style="list-style-type: none"> Reconstruct inlet and outlet protection or headwall.
Trees across trail	<ul style="list-style-type: none"> Tree fall due to bushfire or storm. Tree fall due to natural circumstances (e.g. age, termites, disease). 	<ul style="list-style-type: none"> Undertake a risk assessment of trees located on the edge of the trail.

3.6.5 Walking tracks

Within the reserves, the network of formal and informal walking tracks contributes significantly to the fire control advantage system. Walking tracks within the reserves are managed in accordance with policies and procedures detailed in the relevant plans of management for the reserves.

3.6.6 Hand tool lines

A hand tool line is a temporary fire control line generally less than 2m wide constructed with hand tools through terrain that is too rugged or environmentally sensitive for the use of machines. The following strategies can be used for the management of hand tool lines within reserves:

- Hand tool lines are constructed in accordance with best practice guidelines to minimise the potential for environmental degradation.
- The location and route of hand tool lines used during fire suppression operations or prescribed burns are mapped and recorded for future reference and re-use.
- Where necessary, hand tool lines are rehabilitated to prevent erosion and the establishment of informal access routes.
- In some instances, routine maintenance of vegetation regrowth along a hand tool line may be considered where the hand tool line is considered to be of strategic value.

3.6.7 Cooperative management

In many instances, access trails serve a variety of functions in addition to fire management:

- Other agencies such as TransGrid, Energy Australia, AGL and Sydney Water may use trails to reach infrastructure for maintenance and inspections.
- Private landholders may use trails to reach their properties where formal access agreements have been put in place.
- RFS volunteer brigades may use trails for training exercises and orientation with permission of the relevant NPWS manager.

Where joint responsibilities are identified, NPWS will encourage landowners and land management agencies to develop cooperative agreements for the management of the access trail.

3.7 Other fire management advantages

Other fire control advantages include water points for vehicles and helicopters, or helipads, to assist in the control and management of bushfires.

Strategies for the management of other fire control advantages include the following:

- Advantage points are mapped where possible using geographic positioning system (GPS), or from air photos or local knowledge.
- Advantage points are inspected as part of a cyclic program in order to determine works requirements.
- Advantages are incorporated into the BFMC Section 52 operations coordination plans.

- The fire advantage network within and adjacent to the reserves is evaluated to determine additional advantage requirements in conjunction with the relevant BFMCs. If required, other fire control advantages may be strategically located in the reserves to support fire management operations.

3.8 Community education, cooperation and enforcement

Community education, cooperation and enforcement programs are directed to particular communities with a recognised need because of the risk levels they face. NPWS will assist BFMCs to determine the location and priorities for programs each year. In conjunction with other member agencies of the BFMC, NPWS may implement the following strategies during the life of this strategy:

- support the RFS in FireWise activities in vulnerable communities to increase the number of community members who prepare for fire on their properties
- support the FRNSW Community Fire Unit program training days and involvement in other hazard reduction and fire preparedness activities
- support the NPWS Discovery program to incorporate fire management issues in displays, shows, guided walks and field study trips
- support the consideration of bushfire risk management in the development of bush regeneration programs
- use the media to promote and engender support for NPWS fire management activities
- review reserve signage and interpretation to include current fire management information and procedures relating to total fire bans, reserve closures and other fire management operations
- as required, develop memorandums of understanding for all jointly managed fire management zones and fire trails identified in the strategy
- develop access agreements for strategic trails that traverse private or non-reserve lands
- investigate requests for hazard reduction or hazard complaints, where necessary, jointly with the RFS or FRNSW. In all instances, NPWS will promote a holistic approach to the management of hazard complaints and promote the principle of shared responsibility for risk management with neighbours.

3.9 Database management, monitoring and research

Ongoing research and monitoring is required to improve the understanding of the consequences of fire management regimes and operations. NPWS encourages staff and research institutes such as universities and the Bushfire Cooperative Research Centre to study aspects of fire management and fire ecology. NPWS undertakes the following programs.

3.9.1 Database management

All hazard reduction activities are recorded in the applicable RFS systems and NPWS Geographic Information System.

The fire history archives are reviewed to evaluate the attribution and accuracy of mapped data and incorporate other agencies' data where available.

3.9.2 Monitoring

Overall fuel hazard assessments are implemented pre and post fire for prescribed burns.

3.9.3 Research priorities

Research priorities include:

- fuel characteristics and accumulation rates for different vegetation formations and age classes

- impacts of bushfire regimes on natural heritage values
- effects of bushfire regimes on ecosystem processes and natural resources
- effects of climate change on bushfire regimes and biodiversity
- impacts of bushfire regimes on Aboriginal and historic heritage values
- bushfire risk assessment and fire behaviour modelling
- bushfire suppression effectiveness.

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Appendices

Appendix 1: Fire regime guidelines for vegetation communities

The table below outlines the fire interval guidelines for vegetation communities in the reserves. The guidelines have been compiled from the best available information and research on the fire ecology of the communities (Bradstock et al 1995; Keith 2004). The fire interval thresholds are based on a consideration of the broad vegetation type and the species composition of communities. The minimum interval is based on the primary juvenile periods of species sensitive to extinction under frequent fire regimes and does not include the time to replenish seed bank reserves. The maximum interval indicates the time since a fire at which species may be lost from the community due to senescence. The figures for maximum intervals are largely based on assumptions and generalisations rather than on quantitative life history studies.

It is important to note that the fire intervals identified in the table below provide a guide to identifying inappropriate fire regimes within the reserves. They do not specify the preferred or desired fire intervals for vegetation communities on a long-term basis. Desired fire regimes are those that provide a diversity of fire intervals (within the intervals range identified) along with patterns of fire intensity, season of occurrence and spatial extent. Extinctions are most likely to occur when fire regimes of relatively fixed intensity, frequency and extent prevail without variation.

Regime	Vegetation communities	Min. interval	Max. interval	Ha	% of Reserve	Notes
A	Rainforest communities					
	Warm temperate rainforest	No fire	No fire	70	2.0	Fire should be avoided
B	Saline wetlands (mangroves)					
	Mangroves	No fire	No fire	10	0.3	Fire should be avoided
	Saltmarsh	No fire	No fire	3	0.1	
C	Wet sclerophyll forests					
	Blue gum high forest EEC	25	30	1	0.1	Endangered ecological community
	<i>Casuarina glauca</i> forest	25	30	7	0.2	Crown fires should be avoided in the lower end of the interval range
D	Semi-mesic grassy forests					
	Sheltered gully forest	10	50	1	0.1	Crown fires should be avoided in the lower end of the interval range
E	Swamp sclerophyll forests					
	Sydney coastal river flat forest: EEC	7	35	TBA	TBA	Endangered ecological community
	Sandstone swamp forest	7	35	2	0.1	
F	Sclerophyll grassy woodlands					
	No communities represented in the reserves	5–10	40	-	-	
G	Grassy dry sclerophyll forests					

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Regime	Vegetation communities	Min. interval	Max. interval	Ha	% of Reserve	Notes
	No communities represented in the reserves	5	50	-	-	
H	Shrubby dry sclerophyll forests					
	Shale sandstone transition EEC	12	30	1	0.1	Endangered ecological community
	Dry sandstone ridgetop woodland/low woodland	7	30	1	0.1	
	<i>E. gummifera</i> , <i>E. haemastoma</i> , <i>E. oblonga</i>	7	30	175	5.0	
	<i>E. haemastoma</i> , <i>A. bispida</i> , <i>Banksia ericifolia</i>	7	30	171	4.9	
	<i>E. pilularis</i> , <i>A. costata</i> , <i>Syncarpia glomulifera</i>	7	30	448	12.9	
	<i>E. pilularis</i> , <i>A. floribunda</i>	7	30	1	0.1	
	<i>E. pilularis</i> , <i>E. saligna</i> , <i>E. paniculata</i>	7	30	2	0.1	
	<i>E. piperita</i> , <i>Angophora bakeri</i>	7	30	4	0.1	
	<i>E. piperita</i> , <i>Angophora costata</i>	7	30	2064	59.5	
	<i>E. punctata</i> , <i>E. gummifera</i> , <i>E. haemastoma</i>	7	30	54	1.6	
	<i>E. racemosa</i> , <i>E. gummifera</i> , <i>A. costata</i>	7	30	400	11.5	
	<i>E. saligna</i>	7	30	4	0.1	
	<i>E. seiberi</i> , <i>E. gummifera</i> , <i>E. haemastoma</i>	7	30	19	0.5	
	Narrabeen slopes forest	7	30	1	0.1	
	Red bloodwood, Scribbly gum woodland	7	30	3	0.1	
	Yellow bloodwood forest	7	30	6	0.2	
I	Heathlands					
	Rock platform heath	7	30	4	0.1	
J	Grasslands					
	No communities represented in the reserves	2	10	-	-	Some intervals greater than 7 years should be included in coastal areas. Evidence indicates maximum intervals should be approximately 10 years.
K	Freshwater wetlands					
	Hanging swamp communities	6	30	1	0.1	Restricted in distribution

Appendix 2: Fire regime guidelines for flora species

Map ID ¹	Scientific name	Conservation status ²	Regeneration	Min interval ³	Max interval ⁴	Flowering season	Management guidelines
FL	<i>Acacia bynoeana</i>	TSC E, EPBC V	Likely to resprout from woody rootstock and/or seed stored in the soil.	8*	30*	Unknown	Fire tolerant due to community and topographic preference.
FL	<i>Amperea xiphoclada var. papillata</i>	Rotap 3KC-	Fire response and regeneration unknown	?	?	Unknown	Monitoring required.
FL	<i>Ancistrachne maidenii</i>	TSC V	Fire response and regeneration unknown	?	?	Unknown	Monitoring required.
FL	<i>Caladenia tessellata</i>	TSC V, EPBC V	Survives 100% scorch; resprout location unknown	>2	?	Spring	Monitoring required.
FL	<i>Darwinia biflora</i>	TSC V, EPBC V	Killed by 100% scorch; short-lived seed storage in soil	>10	30	Autumn	Fire tolerant due to community and topographic preference.
FL	<i>Darwinia peduncularis</i>	TSC V	Fire response and regeneration unknown	8*	30*	Unknown	Likely to be fire tolerant due to community and topographic preference.
FL	<i>Darwinia procera</i>	Rotap 2RCa	Killed by 100% scorch; seed storage in soil	5–10	>40	Winter–spring	Monitoring required.
FL	<i>Epacris purpurascens var. purpurascens</i>	TSC V	Killed by 100% scorch; seed storage in soil	7*	30	Winter	Seeding species sensitive to high fire frequency. Minimum interval 7 years. Requires fire intervals less than 30 years to germinate soil stored seed bank. Avoid winter burns.
FL	<i>Eucalyptus camfieldii</i>	TSC V, EPBC V	Regenerates via both epicormic buds and from a lignotuber after fire	8*	>100	Unknown	Management guidelines suggest that fire may be important to this species in enabling it to out compete other vegetation growing on these sites. General community thresholds should be suitable for this species.

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Map ID ¹	Scientific name	Conservation status ²	Regeneration	Min interval ³	Max interval ⁴	Flowering season	Management guidelines
FL	<i>Eucalyptus luehmanniana</i>	Rotap 2RCa	Survives 100% scorch; resprouts from epicormic shoots	>4	100	Unknown	Monitoring required.
FL	<i>Genoplesium baueri</i>	TSC V	Fire response and regeneration unknown	?	?	Unknown	Monitoring required.
FL	<i>Grammitis stenophylla</i>	TSC E	Fire response and regeneration unknown	?	?	Unknown	Monitoring required.
FL	<i>Grevillea longifolia</i>	Rotap 2RC-	Killed by 100% scorch; seed storage in soil	10–12	40	Spring	Monitoring required.
FL	<i>Hibbertia nitida</i>	Rotap 2RC-	Killed by 100% scorch; seed storage unknown	?	?	Spring	Recommend monitoring.
FL	<i>Lasiopetalum joyceae</i>	TSC V, EPBC V	Fire response and regeneration unknown	?	?	Unknown	Monitoring required.
FL	<i>Leptospermum deanei</i>	TSC V, EPBC V	Fire response and regeneration unknown	?	?	Unknown	Likely to be fire intolerant or adapted to long fire intervals due to topographic preference. Consider excluding fire from known locations.
FL	<i>Lomandra brevis</i>	Rotap 2RC-	Survives 100% scorch; resprout location unknown	3–6	25	Spring–autumn	Monitoring required.
FL	<i>Lomandra fluviatilis</i>	Rotap 3RCa	Fire response and regeneration unknown	?	?	Unknown	Monitoring required.
FL	<i>Melaleuca deanei</i>	TSC V, EPBC V	Resprouts; canopy stored seedbank	8	>100	Spring–summer	Likely to be adapted to heathland community threshold. Precautionary minimum interval of 10 years should be applied.

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Map ID ¹	Scientific name	Conservation status ²	Regeneration	Min interval ³	Max interval ⁴	Flowering season	Management guidelines
FL	<i>Persoonia mollis subsp. maxima</i>	TSC E, EPBC E	Killed by 100% scorch; seed storage in soil	12–15	40	Summer	Species is locally restricted to Berowra Valley and Ku-ring-gai Chase NP. Species threat from inappropriate fire frequency and trittering. Planned fires including populations of <i>P. mollis ssp maxima</i> should not be burnt at fire intervals less than 12–15 years and should be referred to NPWS Threatened Species Unit for consideration. Fire intervals of less than 8 years are likely to result in extinction.
FL	<i>Platysace clelandii</i>	Rotap 2RCa	Killed by 100% scorch; seed storage in soil	8–10	20	Spring–summer	Monitoring required.
FL	<i>Syzygium paniculatum</i>	TSC E, EPBC V	Species likely to be killed by 100% scorch; however can resprout from location unknown; persistent soil seedbank	>2	200	Summer	Mature individuals tolerate fire, but at unknown frequencies and intensities. Since this species has been recorded in fire sensitive vegetation communities, fire should be avoided in known species locations.
FL	<i>Tetradlea glandulosa</i>	TSC V	Resprouts from a woody rootstock	6–8	20	Winter–spring	Fire tolerant due to community and topographic preference.

Map ID¹ Code to be used to identify features on NPWS operational maps.

Conservation status² NSW *Threatened Species Conservation Act* (TSC) and Commonwealth *Environment Protection and Biodiversity Conservation Act* (EPBC) listings, Source: NSW Scientific Committee; E = endangered, V = vulnerable, U = Unprotected; ROTAP codes follow Briggs and Leigh 1996: codes not prefixed by 'Rotap' are suggestions from other sources and not listed in Briggs and Leigh 1996.

Min interval³ Minimum intervals based on NSW flora fire response database. Intervals marked with an * indicate a local variation of interval requirement.

Max interval⁴ Maximum Intervals based on NSW flora fire response database. Intervals marked with an * indicate a local variation of interval requirement.

Appendix 3: Fire management guidelines for fauna species

Map ID ¹	Scientific name	Common name	Conservation status ²	Management guidelines
FA1	<i>Heleioporus australiacus</i>	Giant Burrowing Frog	TSC, V EPBC, V	<ul style="list-style-type: none"> • Avoid frequent fires. • Avoid high intensity burns in known locations. • Avoid burns during summer and autumn breeding season. • Maintain appropriate fire regimes in dry/wet sclerophyll, riparian forest, sub-tropical rainforest or swamp habitat.
FA1	<i>Litoria aurea</i>	Green and Golden Bell Frog	TSC, E EPBC, V	<ul style="list-style-type: none"> • Avoid high frequency fires – may lead to a build-up of sediments in small ponds used for breeding and simplify the structure and species composition of habitat. • Maintain appropriate fire regimes to preserve sheltering sites such as vegetation and/or rocks in wet sclerophyll forests, riparian margins, marshes, dams, stream sides particularly those containing bullrushes (<i>Typha spp</i>) or spike rushes (<i>Eleocharis spp</i>).
FA1	<i>Pseudophryne australis</i>	Red-crowned Toadlet	TSC, V	<ul style="list-style-type: none"> • Avoid frequent burning that may reduce leaf litter in known habitat. • Habitat preference indicates that the populations will survive less frequent fires. • Maintain appropriate fire regimes of 8–10 years in preferred habitats, including coastal heath, low open woodland, open forest particularly damp leaf litter in ephemeral drainage lines and soaks.
FA3	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	TSC, E	<ul style="list-style-type: none"> • Nest in tree hollows, high up and usually near water. • Avoid burning of riparian corridors in known locations. • Avoid felling of potential roost trees (those with hollows) during mop-up operations. • Avoid burning during September to December breeding season. • Nests in platform of trampled waterplants over water in reeds. • Maintain appropriate fire regimes within known habitat, including mountain forests, especially densely wooded gullies and adjacent lowland woodlands.
FA3	<i>Calyptorhynchus lathami</i>	Glossy Black Cockatoo	TSC, V	<ul style="list-style-type: none"> • Avoid high intensity fires in <i>Allocasuarina</i>-dominated vegetation communities with a recurrent frequency of <15 years. • Maintain diversity in of age structures in communities, particularly open forests (with tree hollows for roosting), dominated by <i>Allocasuarina spp</i>. • Protect known nest sites with a 50–200 metre buffer strip. • Avoid burning during March to August breeding season.
FA3	<i>Falco hypoleucos</i>	Grey Falcon	TSC, E	<ul style="list-style-type: none"> • Avoid high-intensity fire within known roost locations. • Avoid burns during June to November breeding season. • Protect nest trees in tall <i>Eucalypt spp</i> adjacent to watercourses. • Maintain appropriate fire regimes within known habitat, including sparsely vegetated (trees) inland plains, sand ridges, pastoral lands, timbered watercourses.

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Map ID ¹	Scientific name	Common name	Conservation status ²	Management guidelines
FA3	<i>Neophema pulchella</i>	Turquoise Parrot	TSC, V	<ul style="list-style-type: none"> • Protect roosting/nesting sites in tree hollows/logs >2 m from ground. • Avoid felling possible habitat trees/stumps during mop-up operations. • Avoid medium–high intensity burns in known locations during August to January breeding season. • Maintain appropriate fire regimes within known habitat including Eucalypt woodlands and open forests with a ground cover of grasses and low understorey of shrubs
FA3	<i>Ninox connivens</i>	Barking Owl	TSC, V	<ul style="list-style-type: none"> • Protect nesting sites in tree hollows and sometimes in rabbit burrows in dry forests during winter–spring breeding season. • Should not be affected by low–medium intensity fires. • Avoid high intensity large area burns that reduce forage habitat. • Maintain appropriate fire regimes within known habitat, including forest and woodland, eucalypt savanna woodland, well-forested hills and flats, trees along watercourses and in gorges.
FA3	<i>Ninox strenua</i>	Powerful Owl	TSC, V	<ul style="list-style-type: none"> • Protect known nesting sites required during winter–spring breeding season. • Avoid medium–high intensity fire in known locations during nesting season. • Avoid high intensity prescribed burns or wildfires over large areas that reduce forage habitat. • Maintain appropriate fire regimes within known habitat, including forests and woodlands (requires tree hollows for roosting).
FA3	<i>Pandion cristatus</i>	Eastern Osprey	TSC, V	<ul style="list-style-type: none"> • Unlikely to be affected by fire management activities. • This species nests in trees on rocky outcrops; nest sites need to be identified and protected. • Avoid burning during April to July breeding season. • Maintain appropriate fire regimes within known habitat, including coastal waters, inlets, estuaries, offshore islands, occasionally far up rivers.
FA3	<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subsp.)	TSC, V	<ul style="list-style-type: none"> • Avoid fire management activities within known or potential habitat during breeding season. • Implement low intensity mosaic burns within known habitat. • Minimise frequency of fires within known or potential habitat.
FA3	<i>Ptilinopus superbis</i>	Superb Fruit Dove	TSC, V	<ul style="list-style-type: none"> • Unlikely to be affected by fire management activities as it is a locally vagrant species which follows local food sources. • Avoid burning during September to January breeding season. • Maintain appropriate fire regimes within known habitat, including rainforests, adjacent woodlands, mangroves and shrubland with native fruits.

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Map ID ¹	Scientific name	Common name	Conservation status ²	Management guidelines
FA3	<i>Tyto novaehollandiae</i>	Masked Owl	TSC, V	<ul style="list-style-type: none"> • Protect nesting sites required in winter–spring breeding season. • Avoid medium–high intensity fire in known locations. • Avoid high intensity burns over large areas. • Maintain appropriate fire regimes within known habitat, including open woodland/forest with tree hollows for roosting.
FA4	<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	TSC, V EPBC, E	<ul style="list-style-type: none"> • Avoid high intensity fires over large areas. • Avoid burning immediately prior to and during the April to August breeding period. • Protect potential den sites in hollow logs during mop-up operations. • Avoid fires greater than the home range of the species, which is approximately 800 ha.
FA5	<i>Phascolarctos cinereus</i>	Koala	TSC, V EPBC, V	<ul style="list-style-type: none"> • Avoid medium to high intensity fires in areas of known colonies or in low open forest with known forage tree species. • Avoid burning during summer breeding season. • Avoid frequent fires in preferred habitat of wet or dry Eucalypt forest on high-nutrient soils containing preferred feeding trees.
FA5	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	TSC, V EPBC, V	<ul style="list-style-type: none"> • Maintain appropriate fire regimes within community thresholds for forests and woodlands with well developed understorey.
FA6	<i>Cercartetus nanus</i>	Eastern Pygmy-possum	TSC, V	<ul style="list-style-type: none"> • Avoid high intensity fires over large areas. • Avoid frequent fires that may reduce cover and feed availability. • Maintain a variety of age classes in understorey vegetation by implementing a mosaic of fire intensities and frequencies. • Avoid burning during the breeding season.
FA7	<i>Varanus rosenbergi</i>	Rosenberg's Goanna	TSC, V	<ul style="list-style-type: none"> • Little-known species. • Likely to be sensitive to large area burns due to habitat loss and also to high intensity fires due to use of hollow logs as refuge. • Protect known nests/burrows in soil, hollow logs and rock crevices. • Maintain appropriate fire regimes within known habitat, including open woodland with generally rocky terrain.
FA9	<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	TSC, V	<ul style="list-style-type: none"> • Unlikely to be adversely affected by prescribed fire regimes due to winter hibernation and can utilise a wide range of forest types. • Avoid high intensity fire around known roosting sites during breeding season and to preserve den sites. • Avoid high frequency fire in habitats, as this will decrease prey (invertebrate density). • Maintain a mosaic of age classes within habitat.

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Map ID¹ Code to be used to identify features on NPWS operational maps. Based on functional fire response and life history species group FA1 = Amphibians, FA2 = Passerine birds, FA3 = Non-passerine birds, FA4 = Ground mammals, FA5 = Arboreal mammals, FA6 = Macropods, FA7 = Reptiles, FA8 = Invertebrates, FA9 = Bats

Conservation status² NSW *Threatened Species Conservation Act* (TSC) and Commonwealth *Environment Protection and Biodiversity Conservation Act* (EPBC):
E = endangered, V = vulnerable, U = Unprotected

Appendix 4: Guidelines for Aboriginal heritage management

The Office of Environment and Heritage, Aboriginal Heritage Information Management System (AHIMS) details the location and types of Aboriginal sites within the landscape and the risk of damage that may be caused by fire management activities. The database lists 20 different types of site features currently recognised. The Aboriginal site features in AHIMS have been grouped in the table below into five groups on the basis that certain features will respond similarly to fire management activities. For each site group, management strategies have been identified to prevent possible damage to features.

In addition to the strategies in the table below, consultation should be undertaken with local Aboriginal representatives and officers from the OEH Heritage Division to determine appropriate management strategies.

Map ID ¹	Site group ²	Management strategies
AH1	Artefact (AFT) Earth mound (ETM) Hearth (HTH) Non-human bone (BOM) Ochre quarry (OCQ) Potential archaeological deposit (PAD) Shell (SHL)	<ul style="list-style-type: none"> Do not break earth around known sites, especially where there is surface evidence of artefacts, shell, charcoal or ochre. Any surface alteration adjacent to site must be immediately reversed to previous state. A note must be made of site location, and details of site disturbance must be provided to OEH Heritage Division. Vehicles or heavy equipment must not be used on or within these sites unless a path exists that will not damage the site. Vegetation which is screening the site must not be damaged. There must be no slashing/trittering of vegetation, no tree removal, and no use of earthmoving equipment such as bulldozers. If using fire, place the control lines well away from the site.
AH2	Art (ART) Grinding groove (GRG)	<ul style="list-style-type: none"> If burning, loose leaf litter must be carefully removed from rock platforms and from under overhangs. Leaf litter is to be returned to the site after the fire, as site may be covered for protection from vandalism. If using fire, place control lines well away from the site. Heavy equipment (including vehicles) must not be used on rock platforms or within 10 m of sites unless an existing road is available for use. If burning, rake loose leaf litter away from vegetation near the site if smoke is likely to mark rock paintings. Do not use chemicals or other retardants within 20 m of art sites. If windy, the distance is to be extended to 50 m. Vegetation which is screening the site must not be damaged. There must be no slashing/trittering of vegetation, no tree removal, and no use of earthmoving equipment such as bulldozers.

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Map ID ¹	Site group ²	Management strategies
AH3	Aboriginal resource and gathering (ARG) Habitation structure (HAB) Modified tree (TRE) Water hole (WTR)	<ul style="list-style-type: none"> Loose leaf litter and low ground cover are to be manually cleared by raking for 10 m around carved or scarred trees and wooden structures. Wooden structures and trees of concern are to be protected at the time of burn. For example, dampen earth around structures and trees to be protected, and minimise risk of ember attack. If using fire, place control lines well away from the site. Trees of concern must be examined as soon as possible after the passage of the fire, and embers that might cause the tree to burn must be extinguished. Chemicals or other retardants that can harm plants and animals used by Aboriginal people or cause damage to water holes must not be used. There must be no slashing/trittering of vegetation, no tree removal, and no use of earthmoving equipment such as bulldozers. <p><i>If site is used by Aboriginal people, then liaise with the Aboriginal community to ensure that hazard reduction is timed to cause minimal damage to the resource and is not disruptive to gathering practices. Do not proceed if damage cannot be avoided.</i></p>
AH4	Fish trap (FSH) Stone arrangement (STA) Stone quarry (STQ) <i>Note: there is a high likelihood that other sites from Grouping 1 will be in the general vicinity.</i>	<ul style="list-style-type: none"> Do not move loose stones (i.e. to create a 'natural fire break'), especially where they have been already grouped or arranged. Heavy machinery is not to be used in or adjacent to these sites. Do not drive vehicles or use heavy equipment within these sites unless a path exists that will not damage the site. Vegetation which is screening the site must not be damaged. There must be no slashing/trittering of vegetation. Do not remove trees or use earthmoving equipment such as bulldozers. If using fire, place control lines well away from the site.
AH5	Aboriginal ceremony and dreaming (ACD) Burial (BUR) Ceremonial ring (CMR) Conflict (CFT) <i>Note: there is a high likelihood that sites from the other groupings will be in the general vicinity.</i>	<ul style="list-style-type: none"> There must be no slashing/trittering of vegetation, no tree removal, and no use of earthmoving equipment such as bulldozers. There must be no breaking of earth near known sites of this group, especially near burials and ceremonial rings. If human skeletal remains are located (and it cannot be confirmed that they are a known Aboriginal burial), then the police must be called, and the immediate location must be treated as a 'crime scene'. Vehicles or heavy equipment must not be used on or within these sites unless on established vehicular access. Vegetation which is screening the site must not be damaged. If using fire, place control lines well away from the site. <p><i>These types of sites are highly sensitive. Discussions must be held between DEC Aboriginal Heritage Conservation Officer and the local Aboriginal people before any hazard reduction works are undertaken. Do not proceed if a resolution cannot be reached.</i></p>

Map ID¹ Code used to identify features on NPWS operational maps.

Site group² Used to group sites recorded in AHIMS by like environmental variables (i.e. relative to likely fire and hazard reduction impacts). Does not indicate any grouping of site features on the ground.

Appendix 5: Guidelines for historic heritage management

The OEH's Historic Heritage Information Management System (HHIMS) details the location and types of historic sites within the landscape. Site features in HHIMS have been grouped in the table below into five groups on the basis that certain features will respond similarly to fire management activities. For each site group, management strategies have been identified to prevent possible damage to features.

In addition to the strategies in the table below, consultation will be undertaken by NPWS with archaeologists and OEH Heritage Division to determine appropriate management strategies.

Map ID ¹	Site group ²	Management strategies
HH1	Flammable, structurally unsound sites, including buildings with low structural integrity	<ul style="list-style-type: none"> • As far as possible, protect site from fire. • Avoid all ground disturbances, including the use of earthmoving machinery, handline construction and driving over sites. • Avoid water bombing. • Use of foams, wetting agents and retardant is acceptable.
HH2	Flammable but structurally sound sites, including buildings, wooden fences, signs, stock rails	<ul style="list-style-type: none"> • As far as possible, protect site from fire. • Avoid all ground disturbances, including the use of earthmoving machinery, handline construction and driving over sites. • Water bombing and use of foams, wetting agents and retardant is acceptable.
HH3	Low flammability but structurally unsound sites, including dry stone walls	<ul style="list-style-type: none"> • Avoid all ground disturbances, including the use of earthmoving machinery, handline construction and driving over sites. • Avoid water bombing. • Use of foams, wetting agents and retardant is acceptable. • Site may be burnt by bushfire, back-burn or prescribed burn without damage.
HH4	Low flammability and structurally sound sites and earthworks, including stone foundations, aqueducts	<ul style="list-style-type: none"> • Avoid all ground disturbances, including the use of earthmoving machinery, handline construction and driving over sites. • Water bombing and use of foams, wetting agents and retardant are acceptable. • Site may be burnt by bushfire, back-burn or prescribed burn without damage.
HH5	Quarries	<ul style="list-style-type: none"> • Site unlikely to be affected by fire or any fire management activities.

Map ID¹ Code used to identify features on NPWS operational maps.

Site group² Used to group sites identified in HHIMS by like environmental variables (i.e. relative to likely fire and hazard reduction impacts). Does not indicate any grouping of site features on ground.

Appendix 6: Standard operational guidelines

Issue	Guidelines
Aerial water bombing	<ul style="list-style-type: none"> • The use of bombing aircraft should support containment operations by aggressively attacking hotspots and spot-overs. • The use of bombing aircraft without the support of ground-based suppression crews should be limited to very specific circumstances. • Where practicable, foam should be used to increase the effectiveness of the water. • Ground crews must be alerted to water bombing operations. • Where practicable, fresh water should be used for water bombing in preference to salt water.
Aerial ignition	<ul style="list-style-type: none"> • Aerial ignition may be used during back-burning or fuel reduction operations where practicable, but only with the prior consent of a senior NPWS officer. • Use incendiaries to rapidly progress back-burns downslope where required.
Back-burning	<ul style="list-style-type: none"> • Temperature and humidity trends must be monitored carefully to determine the safest times to implement back-burns. Generally, when the fire danger index (FDI) is very high or greater, back-burning should begin when the humidity begins to rise in the late afternoon or early evening. With a lower FDI, back-burning may be safely undertaken during the day. • Where practicable, clear a 1 m radius around dead and fibrous-barked trees adjacent to containment lines before back-burning, or wet down these trees as part of the back-burn ignition. • Avoid ignition of back-burns at the bottom of slopes where a long and intense upslope burn is likely.
Command and control	<ul style="list-style-type: none"> • The first combatant agency on site may assume control of the fire, but then must ensure that the relevant land management agency is notified promptly. • On the arrival of other combatant agencies, the initial incident controller will consult with regard to the ongoing command, control and incident management team requirements as per the relevant BFMC plan of operations.
Containment lines	<ul style="list-style-type: none"> • Construction of new containment lines should be avoided, where practicable, except where they can be constructed with minimal environmental impact. New containment lines require the prior consent of a senior NPWS officer. • Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation. • All containment lines not required for other purposes should be closed at the cessation of the incident. • All personnel involved in containment line construction should be briefed on both natural and cultural heritage sites in the location.
Earthmoving equipment	<ul style="list-style-type: none"> • Earthmoving equipment may be used only with the prior consent of a senior NPWS officer, and then only if the probability of its success is high. • Earthmoving equipment must be always guided and supervised by an experienced officer, and accompanied by a support vehicle. When engaged in direct or parallel attack, this vehicle must be a firefighting vehicle. • Containment lines constructed by earthmoving equipment should consider the protection of drainage features, observe the <i>Threatened Species and Cultural Heritage Operational Guidelines</i>, and be surveyed, where possible, to identify unknown cultural heritage sites. • Earthmoving equipment should be washed down, where practicable, before entering NPWS estate.
Fire advantage recording	<ul style="list-style-type: none"> • All fire advantages used during wildfire suppression operations must be mapped and, where relevant, added to the database.

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Issue	Guidelines
Fire suppression chemicals	<ul style="list-style-type: none"> • Wetting and foaming agents (surfactants) are permitted for use in wildfire suppression. • The use of fire retardant is permitted only with the prior consent of the senior NPWS officer, and should be avoided where reasonable alternatives are available. • Exclude the use of surfactants and retardants within 50 m of rainforest, watercourses, dams and swamps. • Areas where fire suppression chemicals are used must be mapped, and the names of the products must be recorded. • The <i>Threatened Species Operational Guidelines</i> are to be observed.
Rehabilitation	<ul style="list-style-type: none"> • Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation. • Where necessary, undertake pest control programs to prevent the invasion and spread of pest species.
Smoke management	<ul style="list-style-type: none"> • The potential impacts of smoke and possible mitigation tactics must be considered when planning for wildfire suppression and prescribed burning operations. • If smoke becomes a hazard on local roads or highways, the police and relevant media must be notified. • Smoke must be managed in accordance with RTA traffic management guidelines.
Visitor management	<ul style="list-style-type: none"> • The reserve may be closed to the public during periods of extreme fire danger or during wildfire suppression operations.

Appendix 7: Fire management zones

Strategic fire advantage zones (SFAZ) or (SZ)

Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 01	B	Alicia	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Ku-ring-gai 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	0.2	3.2
SZ 02	B	Arthur's Circle	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	0.8	0.1
SZ 03	B	Banyula Aa	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	0.5	1.8
SZ 04	B	Banyula Ab	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS	0.3	0
SZ 05	D	Barkala	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS	2.4	0.5
SZ 06	A	Barnett's	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	12.6	0.4
SZ 07	D	Barrington Dr	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS	3.0	0
SZ 08	A & B	Beaumont Rd East Aa	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Ku-ring-gai 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Shelter Gully Forests. 	Other	0	3.9
SZ 09	A & B	Beaumont Rd East Ab	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Ku-ring-gai 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Shelter Gully Forests. 	NPWS, Other	93.5	4.1

NPWS OEH: Reserve Fire Management Strategy – Berowra Valley NP & RP and Dural NR

Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 10	A	Berowra Waters Rd east	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	0	4.8
SZ 11	B & C	Beryl	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS	1.9	0.1
SZ 12	B & C	Beryl A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	0.5	0.5
SZ 13	D	Billarga Stage 1	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS	14.8	1.0
SZ 14	D	Billarga Stage 2	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	3.0	0.5
SZ 15	D	Billarga Stage 3	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	10.5	0.3
SZ 16	B & C	Binnari Rd	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns) 	Other		7.1
SZ 17	A & B	Binya A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i> and Shelter Gully Forests. 	NPWS, Other	18.3	18.7
SZ 18	B	Binya B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS,	2.6	2.4
SZ 19	A & B	Blackash	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	41.3	4.2

NPWS OEH: Reserve Fire Management Strategy – Berowra Valley NP & RP and Dural NR

Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 20	B	Blackash/ Bowral CI A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	1.4	0.1
SZ 21	A & B	Blackash/ Bowral CI B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	0.2	1.7
SZ 22	B & C	Blue Gum	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	0.9	0.8
SZ 23	A	Brittania Rock	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	54.4	1.7
SZ 24	B	Burke A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	0.4	0.2
SZ 25	B	Burke B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS	2.9	0.1
SZ 26	B	Burke C	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	0.3	0.1
SZ 27	B & C	Burra CI	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mount Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	0	0.4
SZ 28	C & D	Caldarra	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	1.7	0.9
SZ 29	B & C	Calderwood	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Galston 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Shelter Gully Forests. 	NPWS, Other	6.5	25.4

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 30	A & B	Calna	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS, Other	25.4	0.7
SZ 31	A & B	Calna Ck	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i> and Shelter Gully Forests. 	NPWS	7.0	5.4
SZ 32	B & C	Carinya Rd a	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	0.6	2.8
SZ 33	B & C	Carinya Rd b	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	0.1	0.3
SZ 34	D	Carmen Cr	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	1.0	0.5
SZ 35	C & D	Carters Rd	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS	0.5	14.7
SZ 36	A & B	Charlton	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Galston 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for Shelter Gully Forests. 	NPWS, Other	82.7	75.6
SZ 37	B & C	Claros	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	11.0	6.3
SZ 38	B & C	Control South	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Shelter Gully Forests. 	NPWS	33.5	0

NPWS OEH: Reserve Fire Management Strategy – Berowra Valley NP & RP and Dural NR

Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 39	D	Coorang Rd A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	1.0	1.7
SZ 40	B	Crawford	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Ku-ring-gai 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS, Other	15.4	4.0
SZ 41	B & C	Crest/Heights PI	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	24.8	4.5
SZ 42	A & B	Crosslands	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	45.8	19.1
SZ 43	A	Cumbora Aa	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	1.6	1.1
SZ 44	A	Cumbora Ab	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	8.6	0.1
SZ 45	A	Cumbora Court	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	0.6	0.6
SZ 46	D	Daphne A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	5.1	1.0
SZ 47	D	Daphne B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	1.4	0.3
SZ 48	C	Dilkera CI	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	1.4	2.0
SZ 49	D	Don's Rd A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	Other	0	9.0

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 50	D	Don's Rd B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.3	28.7
SZ 51	D	Don's Rd C	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	Other	0	3.8
SZ 52	D	Duneba Dr	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Shelter Gully Forests. 	NPWS, Other	17.3	0.5
SZ 53	C & D	Dural Park	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	12.8	11.6
SZ 54	B	Excalibur CI A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	1.5	2.5
SZ 55	B	Excelsior Rd	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS, Other	39.8	1.0
SZ 56	D	Fallon Dr	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	1.0	8.8
SZ 57	B & C	Flinders	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS	1.9	0.1
SZ 58	D	Forester Cr	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	1.2	3.4
SZ 59	B & C	Foxglove	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	0.2	4.3

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 60	A	Frank's Gully	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Shelter Gully Forests. 	NPWS, Other	7.7	1.8
SZ 61	B & C	Galston Gorge Nth A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	52.9	2.9
SZ 62	D	Gavin Mc A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.2	0.4
SZ 63	D	Gavin Mc B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.1	4.6
SZ 64	A & B	Geelans A	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	4.4	88.0
SZ 65	A & B	Geelans B	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	1.7	101.0
SZ 66	C	Gilligans Rd	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	0	21.1
SZ 67	B	Gleeson Ck	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS, Other	34.3	0.4
SZ 68	B	Glenview	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Ku-ring-gai 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i> and Shelter Gully Forests. 	NPWS, Other	8.7	1.5

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 69	B & C	Gorge Sth	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for Shelter Gully Forests. 	NPWS, Other	30.3	0.1
SZ 70	A & B	Gundah Rd 1	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Ku-ring-gai 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.1	8.3
SZ 71	A & B	Gundah Rd 2	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Ku-ring-gai 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	39.2	2.8
SZ 72	A & B	Gundah Rd 3	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Ku-ring-gai 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	5.0	5.6
SZ 73	D	Gundy 1	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	7.2	0.5
SZ 74	A & B	Gwandalan	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	4.2	0.3
SZ 75	A & B	Hamley	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	5.5	24.1
SZ 76	D	Harris Rd	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns) 	NPWS, Other	3.1	18.5
SZ 77	B	Heather	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	3.8	0.1
SZ 78	B & C	Helipad	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Shelter Gully Forests. 	NPWS, Other	59.7	0.1
SZ 79	B & C	Hillview	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	17.4	1.1

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 80	B & C	Hornsby Fire Control	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	5.5	0.1
SZ 81	C & D	Hornsby Park West	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	0.5	9.4
SZ 82	C & D	Hornsby Quarry North	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	1.4	18.7
SZ 83	C & D	Hornsby Rifle Range North	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	1.2	7.2
SZ 84	C & D	Hornsby Rifle Range South	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	11.3	8.5
SZ 85	C & D	Hornsby Rifle Range West	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	8.9	16.3
SZ 86	D	Jackson Cr	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Pennant Hills 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	7.4	0.3
SZ 87	D	James Henty East	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.5	0.9
SZ 88	D	James Henty North	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.3	0.7
SZ 89	B & C	Janita	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS, Other	0.5	0.5
SZ 90	D	Jenner Rd	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	2.8	5.5

NPWS OEH: Reserve Fire Management Strategy – Berowra Valley NP & RP and Dural NR

Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 91	A	Joalah Cr a	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	1.3	0.1
SZ 92	A	Joalah Cr b	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	9.1	5.2
SZ 93	C & D	Joe's Mountain	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for Shelter Gully Forests. 	NPWS, Other	19.6	5.4
SZ 94	D	Jungo West	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Pennant Hills 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS	8.2	0
SZ 95	D	Kentia	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	7.7	0.2
SZ 96	C & D	Kentia North	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for Shelter Gully Forests. 	NPWS, Other	8.6	6.3
SZ 97	C & D	Kentia South	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 15-30 years post fire. Maintain appropriate fire regimes for Shelter Gully Forests. 	NPWS, Other	8.6	6.3
SZ 98	D	Kitchener Ln	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	2.8	0.1
SZ 99	D	Kitchener Rd	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	2.8	0.7
SZ 100	A & B	Kywong 01	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	6.6	0.6
SZ 101	A & B	Kywong 02	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	0.1	0

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 102	D	Lawson PI	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	2.7	2.1
SZ 103	B & C	Lodden Ck	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS, Other	21.3	1.9
SZ 104	D	Lynrob PI (Gundy 3)	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Thornleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	3.3	0.4
SZ 105	C & D	Mannor Rd	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	4.0	6.5
SZ 106	B & C	Margaret Av A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	6.8	1.6
SZ 107	C	Marine	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	14.4	1.0
SZ 108	B	Marshall	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	4.0	0.8
SZ 109	A & B	McAllister RD	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Galston 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	20.3	27.0
SZ 110	B & C	McKay	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	1.2	0.9
SZ 111	C	Meredith North	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	1.5	0.5
SZ 112	C	Meredith South	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	2.4	0.2

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 113	A & B	Merlin Cl	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i> and Shelterd Gully Forests. 	NPWS	17.4	0
SZ 114	C	Mills Av	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Asquith 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	0.4	3.3
SZ 115	D	Morrison	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Pennant Hills 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS	3.4	1.6
SZ 116	A & B	Mount Orient	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra Creek 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	178.3	122.0
SZ 117	B & C	Mullion	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	7.1	0.3
SZ 118	A & B	Mundowi Rd A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Ku-ring-gai 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	11.7	2.9
SZ 119	A & B	Mundowi Rd B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Ku-ring-gai 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Shelterd Gully Forests. 	NPWS, Other	82.2	26.5
SZ 120	C	Muraban	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.1	26.4
SZ 121	B & C	Murralong	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS, Other	27.3	1.7
SZ 122	D	Newline East	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	2.1	4.1

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 123	B & C	North St B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.4	1.0
SZ 124	B & C	Northumberland Av	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.4	1.3
SZ 125	B	Oakwood	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis</i> ssp. <i>maxima</i> and Sheltered Gully Forests. 	NPWS, Other	18.6	2.6
SZ 126	B & C	Old Berowra Rd	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.1	1.1
SZ 127	B & C	Outlook North	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS	23.3	0.3
SZ 128	B & C	Outlook South	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Shelter Gully Forests. 	NPWS, Other	15.7	1.1
SZ 129	B	Oxley	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	3.3	0.3
SZ 130	B	Oxley Circle	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	1.0	0.2
SZ 131	B	Oxley Drive Twin Trails	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS	3.3	0.6

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 132	B & C	Oxley West	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i> and Sheltered Gully Forests. 	NPWS	25.5	0
SZ 133	D	Parkhill A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	17.4	2.0
SZ 134	D	Parkhill B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	2.2	2.1
SZ 135	B & C	Parklands	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	0.3	9.4
SZ 136	B & C	Parklands A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	4.8	1.9
SZ 137	B & C	Parklands East	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	Other	0	0.6
SZ 138	B & C	Parklands West	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	Other	0	0.9
SZ 139	D	Patricia	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	34.0	2.5
SZ 140	B & C	Peter a	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	Other	0	0.6

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 141	B & C	Peter b	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS, Other	21.0	1.4
SZ 142	B & C	Pike	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	13.5	10.7
SZ 143	B & C	Pine Valley Rd A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Galston 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.1	5.1
SZ 144	B & C	Piperita	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	0.1	0.5
SZ 145	D	Pogson Drive	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	1.0	0.3
SZ 146	B & C & D	Pogson Trig	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	71.0	38.1
SZ 147	D	Pony Club Nth	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Pennant Hills 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	21.5	1.2
SZ 148	C & D	Private	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.7	22.6
SZ 149	C & D	QS Stage1&2	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	1.7	0.6
SZ 150	C & D	QS Stage4	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	0.8	0.5

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 151	C	Quarry Lane	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	Other	0	7.3
SZ 152	C & D	Quarry Rd South A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	10.0	15.4
SZ 153	C & D	Quarry Rd South B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	56.2	13.1
SZ 154	C & D	Quarry Rd South C	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	77.0	3.8
SZ 155	B & C & D	Quarry Trail	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i> and Sheltered Gully Forests. 	NPWS, Other	133.2	76.3
SZ 156	C & D	Quarter Sessions A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS	21.7	0.7
SZ 157	C & D	Quarter Sessions B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS,	5.7	0
SZ 158	C & D	Quarter Sessions East	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for Sheltered Gully Forests. 	Other	0	8.7

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 159	A & B	Radnor East	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Galston 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	71.0	11.0
SZ 160	A & B	Radnor West	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Galston 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	55.7	14.3
SZ 161	C & D	Refuge Rock	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Cherrybrook 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	70.9	0.2
SZ 162	B	Round Table	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5-10 years post fire. 	Other	0	1.0
SZ 163	B & C	Ryan Av	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	0.5	0.6
SZ 164	A	Sam's Ck a	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS	33.1	0.0
SZ 165	A	Sam's Ck b	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS	25.9	0
SZ 166	D	Schofield	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Pennant Hills 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	18.1	0.4
SZ 167	B & C	Sewer Works	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	14.5	4.1

NPWS OEH: Reserve Fire Management Strategy – Berowra Valley NP & RP and Dural NR

Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 168	D	Silver	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	0.6	0.3
SZ 169	C & D	Silver Cres	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS	20.5	0
SZ 170	C	Stewart Av – Clarinda St	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	32.0	3.7
SZ 171	B & C	Study Site	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS, Other	10.9	0.1
SZ 172	B	Sue PI	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS, Other	8.2	3.4
SZ 173	B & C	Sydney Rd	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	0.1	0.9
SZ 174	B & C	Sydney Rd – Raphael Dr	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	1.0	4.1
SZ 175	B & C	Tania	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i> and Sheltered Gully Forests. 	NPWS, Other	29.0	1.4
SZ 176	C	Taylors Rd A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.4	11.1

NPWS OEH: Reserve Fire Management Strategy – Berowra Valley NP & RP and Dural NR

Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 177	A & B	The Plots	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	40.0	0.2
SZ 178	D	Thorn St A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Pennant Hills 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	3.4	1.3
SZ 179	A	Ti Tree	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	1.8	1.7
SZ 180	D	Timbarra Rd (Gundy 2)	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Thornleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	2.9	0.1
SZ 181	B & C	Top of Gorge A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	4.1	0.1
SZ 182	B & C	Top of Gorge B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	11.1	2.5
SZ 183	B & C	Tunks	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Dural 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	11.3	0.1
SZ 184	A	Turner West	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	0	18.1
SZ 185	B & C	Ulolo	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	5.2	0.3
SZ 186	A	Vision Valley B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Arcadia 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	2.1	126.4
SZ 187	B & C	Waddells Gully	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Galston 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	14.0	33.4

NPWS OEH: Reserve Fire Management Strategy – Berowra Valley NP & RP and Dural NR

Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 188	B & C	Walls Gully A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	17.4	0.5
SZ 189	B & C	Walls Gully B (Rofe)	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	13.9	3.5
SZ 190	B	Waninga A1	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	1.0	0.4
SZ 191	B	Waninga A2	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	1.5	0.5
SZ 192	A & B	Waninga B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	58.2	0.2
SZ 193	A	Washtub Gully	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 8–14 years post fire. 	NPWS, Other	53.4	3.2
SZ 194	C & D	Western A	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	2.1	0.4
SZ 195	C & D	Western B	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	1.3	0.1
SZ 196	C & D	Western C	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	2.5	0.2
SZ 197	C & D	Western Cres	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS	7.8	0

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
SZ 198	D	Westleigh Dr	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	17.9	1.1
SZ 199	A & B	Wirrinda	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mt Ku-ring-gai 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	0.1	3.6
SZ 200	A	Wyanna St Berowra Heights	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	10.0	1.6
SZ 201	A & B	Yallabee	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 5–10 years post fire. 	NPWS, Other	22.4	2.9
SZ 202	A & B	Yatala Rd	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Mount Colah 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS, Other	58.0	12.1
SZ 203	D	Zig Zag Gully	<ul style="list-style-type: none"> To assist with the strategic control of bushfires and the protection of assets in Pennant Hills 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS	10.7	0

Tenure³ – All attempts have been made to ensure the accuracy of tenures identified. The tenures in the table are not guaranteed to be free from error or omission. Changes to the details may be incorporated during subsequent revisions of the strategy.

NPWS OEH: Reserve Fire Management Strategy – Berowra Valley NP & RP and Dural NR

Land management zones (LMZ) or (HZ)

Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
LZ 01	C	Belbowrie	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	24.2	1.0
LZ 02	A & B	Benowie Track Crosslands	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 15–30 years post fire or opportunistic burn by unplanned bushfire event. 	NPWS, Other	16.5	2.9
LZ 03	A & B & C	Berowra Creek	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Where practicable, minimise burn area within zone. Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS	9.8	0
LZ 04	A & B	Berowra Creek A	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Where practicable, minimise burn area within zone. Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS	10.8	0
LZ 05	A & B	Berowra Creek B	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Where practicable, minimise burn area within zone. Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	37.0	7.1
LZ 06	A & B	Berrilee South	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	85.7	113.0
LZ 07	B & C	Cabbage Tree Hollow	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis</i> ssp. <i>maxima</i> and Sheltered Gully Forests. 	NPWS, Other	70.8	5.5
LZ 08	B & C	Carters	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	77.9	33.9

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
LZ 09	A & B	Crosslands Sth	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	84.3	27.2
LZ 10	D	Dural Nature Reserve	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	25.9	9.8
LZ 11	B & C	Galston Rd to Fire Tower	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i> and Sheltered Gully Forests. 	NPWS, Other	59.6	158.4
LZ 12	C & D	Laurie	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	44.4	35.8
LZ 13	C	Laurie/Muraban	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	1.7	48.3
LZ 14	B	Lyrebird Gully	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Where practicable, minimise burn area within zone. Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i>. 	NPWS	3.9	0
LZ 15	C & D	Mitchell	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 15–30 years post fire or opportunistic burn by unplanned bushfire event. Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	63.4	20.1
LZ 16	B & C	Muraban Ridge	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	25.6	8.7
LZ 17	A & B	Radnor South	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	57.9	15.4

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Ha. on park	Ha. off park
LZ 18	B & C	Rowland Village Trail	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 10–18 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i> and Sheltered Gully Forests. 	NPWS, Other	52.1	1.7
LZ 19	C & D	Taylors	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Where practicable, minimise burn area within zone. Maintain appropriate fire regimes for Sheltered Gully Forests. 	NPWS, Other	3.8	8.7
LZ 20	A & B	Tower St	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). 	NPWS, Other	0.1	20.0
LZ 21	B & C	Waddells	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between at 12–20 years post fire (consider alternating broad area and edge burns). Maintain appropriate fire regimes for <i>Persoonia mollis ssp. maxima</i> and Sheltered Gully Forests. 	NPWS, Other	16.7	5.2
LZ 22	D	Wallumeda Wetland A	<ul style="list-style-type: none"> To maintain appropriate land management regimes to conserve natural and cultural heritage features 	<ul style="list-style-type: none"> Assess requirement for prescribed burn between 15–30 years post fire or opportunistic burn by unplanned bushfire event. 	NPWS, Other	1.3	4.7

Tenure³ – All attempts have been made to ensure the accuracy of tenures identified. The tenures in the table are not guaranteed to be free from error or omission. Changes to the details may be incorporated during subsequent revisions of the strategy.

Appendix 8: Firebreak register

Note: for the purpose of this Fire Management Strategy fire breaks (FB) are considered strategic fire advantage zones (SFAZ)

Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Area (Ha)
FB 01	B & C	145 Somerville Rd	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Maintain existing fire break by slashing, trittering or under-scrubbing as required 	NPWS	0.06
FB 02	D	Bellamy Rd	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Thornleigh 	<ul style="list-style-type: none"> Maintain existing fire break by slashing, trittering or under-scrubbing as required 	NPWS, Other	0.04
FB 03	C	Clarinda Ave	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Hornsby 	<ul style="list-style-type: none"> Maintain existing fire break by slashing, trittering or under-scrubbing as required 	NPWS	0.03
FB 04	A	CrossInds Convention	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Galston 	<ul style="list-style-type: none"> Maintain existing fire break by slashing, trittering or under-scrubbing as required 	NPWS, Other	2.88
FB 05	A	Crosslands Reserve	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Maintain existing fire break by slashing, trittering or under-scrubbing as required 	NPWS, Other	6.38
FB 06	B	Galston Rd – McKay	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Maintain existing fire break by slashing, trittering or under-scrubbing as required 	NPWS, Other	0.55
FB 07	A	Joalah Cres	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Berowra 	<ul style="list-style-type: none"> Maintain existing fire break by slashing, trittering or under-scrubbing as required 	NPWS, Other	0.28
FB 08	D	Kitchener	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Pennant Hills 	<ul style="list-style-type: none"> Maintain existing fire break by slashing, trittering or under-scrubbing as required 	NPWS, Other	0.04
FB 09	D	Lynrob	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Thornleigh 	<ul style="list-style-type: none"> Maintain existing fire break by slashing, tritter or under-scrubbing as required 	NPWS, Other	0.03
FB 10	D	Morrison Pl	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Pennant Hills 	<ul style="list-style-type: none"> Maintain existing fire break by slashing, tritter or under-scrubbing as required 	NPWS, Other	0.53

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Area (Ha)
FB 11	A	Mountain View Rd	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Berowra 	<ul style="list-style-type: none"> Maintain existing fire break by slashing, tritter or under-scrubbing as required 	NPWS, Other	0.23
FB 12	B	Oakwood	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.13
FB 13	D	Quarter Sessions Rd	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.18
FB 14	D	Redgum 01	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Pennant Hills 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.34
FB 15	D	Redgum 02	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Pennant Hills 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.13
FB 16	A	Redwood-Kywong 01	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.07
FB 17	A	Redwood-Kywong 02	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.13
FB 18	C	Rofe Cres	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.47
FB 19	C	Stewart Ave	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Hornsby 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.04
FB 20	C	Stewart to Clarinda Ave	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Hornsby 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.27
FB 21	D	Stringy Bark Ridge Picnic Area	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Pennant Hills 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	2.34
FB 22	D	Thorn St	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Pennant Hills 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.51

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Map ID	Map no.	Name	Objective	Strategy	Tenure ³	Area (Ha)
FB 23	B & C	Ulolo Ave	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Hornsby Heights 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.45
FB 24	D	Wallumeda Wetland B	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in West Pennant Hills 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.51
FB 25	D	Westleigh Drive	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Westleigh 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.43
FB 26	A	Yeramba Cres	<ul style="list-style-type: none"> To provide safe access for fire agency crews and to assist in the protection of assets in Berowra 	<ul style="list-style-type: none"> Assess requirement for slashing, trittering or under-scrubbing at 1–2 year intervals 	NPWS	0.2

Tenure³ – All attempts have been made to ensure the accuracy of tenures identified. The tenures in the table are not guaranteed to be free from error or omission. Changes to the details may be incorporated during subsequent revisions of the strategy.

Appendix 9: Access trail register

Note: The Fire Management Strategy Maps A–D illustrate the proposed BFCC class for access trails within and adjacent to the reserves. These maps do not reflect the current accessibility of access trails and should not be used as operational maps. During operations, local knowledge representatives should be contacted in order to determine the current accessibility of access trails.

Map ID	Map no.	Name	Current accessibility	Proposed BFCC class	Strategy	Tenure ³	Length (m)
T 1	B	Alicia Trail	Cat 9	Dormant	• Maintain record of trail	Other	190.6
T 2	D	Appletree Powerline Trail	Cat 9	Dormant	• Maintain record of trail	NPWS	147.6
T 3	D	Appletree Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS	907.4
T4	B	Arthurs East Trail	Cat 1	Dormant	• Maintain record of trail	NPWS	128.6
T5	B	Arthurs Excelsior Link Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS	73.1
T 6	B	Arthurs Top Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS	410.6
T 7	B	Arthurs Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS	1512.4
T 8	B	Arthurs Trail Merlin Access	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS	42.8
T 9	A	Bali Perimeter Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS, Other	155.8
T 10	A & B	Bambil Hamley Trail	Cat 1	Important	• Assess requirements to upgrade or maintain to Important standard	NPWS, Other	1264.4
T 11	A & B	Bambil Hamley Trail Branch 1	Cat 1	Important	• Assess requirements to upgrade or maintain to Important standard	NPWS	130.1
T 12	A & B	Bambil Hamley Trail Branch 2	Cat 1	Important	• Assess requirements to upgrade or maintain to Important standard	NPWS	130.1
T 13	A & B	Bambil Trail 04		Dormant	• Maintain record of trail	NPWS, Other	378.0
T 14	B	Banyula Powerline Trail	Cat 9	Dormant	• Maintain record of trail	Other	200.1
T 15	B	Banyula Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	Other	247.3
T 16	D	Barkala Trail	Cat 1	Important	• Assess requirements to upgrade or maintain to Important standard	NPWS, Other	681.0

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Map ID	Map no.	Name	Current accessibility	Proposed BFCC class	Strategy	Tenure ³	Length (m)
T 17	C & D	Barwood Trail	Cat 7	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	542.8
T 18	B	Bass Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	291.7
T 19	A & B	Beaumont East Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	737.3
T 20	A & B	Beaumont East Trail Branch 1		Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS, Other	230.1
T 21	D	Belbowrie Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	Other	1321.0
T 22	A	Berkeley Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	5222.9
T 23	A	Berkeley Trail Joalah Access	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	286.4
T 24	C	Berowra Valley Quarry Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	6618.1
T 25	B	Beryl Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	985.0
T 26	B	Beryl Trail Burke Access	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	35.0
T 27	B	Beryl Trail Beryl Access	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	59.0
T 28	B	Beryl Trail Oxley Access	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	47.0
T 29	B	Binya Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	Other	1401.4
T 30	A & B	Blackash Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	355.1
T 31	D	Blackwattle Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	414.6
T 32	D	Boundary Trail	Cat 9	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	Other	760.4
T 33	B & C	Calderwood Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS	823.4

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Map ID	Map no.	Name	Current accessibility	Proposed BFCC class	Strategy	Tenure ³	Length (m)
T 34	D	Carmen Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	592.7
T 35	D	Carters Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	Other	319.4
T 36	C	Clarinda Stewart Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS	184.7
T 37	A & B	Cootamundra Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	420.0
T 38	B	Crawford Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	344.0
T 39	B	Crawford Trail Branch 1	Cat 9	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	132.8
T 40	B	Crosslands Powerline 1 Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS, Other	457.2
T 41	B	Crosslands Powerline 2 Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS, Other	533.5
T 42	A & B	Crosslands Powerline 3 Branch 1 Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS, Other	225.6
T 43	A & B	Crosslands Powerline 3 Branch 2 Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS	183.9
T 44	A & B	Crosslands Powerline 3 Branch 3 Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS	72.8
T 45	A & B	Crosslands Powerline 3 Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS, Other	802.3
T 46	A & B	Crosslands Tank Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS, Other	601.2
T 47	B	Crosslands Tower Branch 1 Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS	576.5
T 48	B	Crosslands Tower Branch 2 Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS	981.9
T 49	B	Crosslands Tower Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	162.9
T 50	A	Cumbora Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	729.0

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Map ID	Map no.	Name	Current accessibility	Proposed BFCC class	Strategy	Tenure ³	Length (m)
T 51	A	Currawong Trail	Cat 7	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential Cat 1 standard 	NPWS	631.4
T 52	D	Daphne Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	446.8
T 53	B	Excelsior Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	458.6
T 54	B & C	Fallon Drive Trail	Cat 7	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	Other	382.7
T 55	B	Flinders Beryl Link Trail Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS	73.9
T 56	B	Flinders Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	1092.4
T 57	D	Forester Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	547.0
T 58	B	Foxglove Trail	Cat 9	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	235.6
T 59	B	Galahad Trail	Cat 1	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	243.1
T 60	B	Geelans Powerline Branch 1 Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	123.0
T 61	B	Geelans Powerline Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	817.4
T 62	D	Gilligans Private Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	420.5
T 63	D	Ginger Meggs Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	Other	1094.4
T 64	D	Ginger Megs Trail Branch 1	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	Other	112.0
T 65	D	Ginger Megs Trail Branch 2	Cat 1	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	217.7
T 66	B & C	Grey Gum Powerline Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	303.8
T 67	B & C	Grey Gum Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	189.52
T 68	B	Gum Leaf Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	166.4

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Map ID	Map no.	Name	Current accessibility	Proposed BFCC class	Strategy	Tenure ³	Length (m)
T 69	A & B	Gundah Ridge Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	Other	793.4
T 70	B	Heather Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	267.0
T 71	B & C	Heights Break	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	260.5
T 72	B & C	Hornsby Sewage Plant Road	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	590.7
T 73	D	James Henty Reserve Track	Cat 7	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	155.5
T 74	B & C	Janita Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	135.8
T 75	D	Jenner Sewer Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	Other	164.2
T 76	D	Jenner Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	Other	155.2
T 77	B & C	Kalang Trail	Cat 7	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS, Other	248.3
T 78	C	Kangaroo Sanctuary Trail	Cat 9	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	1063.4
T 79	C	Kangaroo Sanctuary Trail Branch 1	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	337.1
T 80	D	Kentia Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	1022.1
T 81	D	Kitchener Scout Hall Trail	Cat1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	138.9
T 82	B & C	Koala Place Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	Other	201.0
T 83	D	Lynrob Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	63.3
T 84	B	Lyrebird Gully Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	641.4
T 85	B & C	McKay Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	1108.4
T 86	B & C	McKay Trail Branch 1	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS	178.8

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Map ID	Map no.	Name	Current accessibility	Proposed BFCC class	Strategy	Tenure ³	Length (m)
T 87	D	Mckinley Trail	Cat 7	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	195.8
T 88	B & C	Meridith APZ access	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	143.9
T 89	C	Mitchell Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	2451.9
T 90	C	Mitchell Trail Branch 1	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS, Other	2451.9
T 91	B & C	Montview Trail	Cat1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	Other	797.3
T 92	A & B	Mundowie Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	538.5
T 93	A & B	Mundowie Trail Branch 1	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	226.0
T 94	B & C	Murralong Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS, Other	201.4
T 95	A	Nalya Complex	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Unclassified Access standard 	NPWS, Other	705.88
T 96	B & C	North Street Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail. 	NPWS, Other	128.3
T 97	B & C	Northview Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	886.4
T 98		Old Berowra Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail. 	Other	302.7
T 99	B	Oxley Access Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	41.0
T 100	B	Oxley Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	1012.6
T 101	C & D	Parklea Powerline Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS, Other	558.3
T 102	D	Patricia Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	496.4
T 103	D	Patricia Trail Branch 1	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	76.6
T 104	B	Peter Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS, Other	107.7
T 105	B & C	Pike Trail Upper	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS	326.3

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Map ID	Map no.	Name	Current accessibility	Proposed BFCC class	Strategy	Tenure ³	Length (m)
T 106	B & C	Pike Trail, follows creek	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS	212.9
T 107	D	Pogson Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	870.9
T 108	C & D	Pogson Trig Trail	Cat 7	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS	1096.7
T 109	B	Private access – Peter Cl	Cat 9	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	Other	179.1
T 110	D	Pyes Creek Private Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	1272.1
T 111	C & D	Quarry Lane (Hornsby) Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	98.1
T 112	D	Quarry Lane	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	481.4
T 113	D	Quarry Powerline 1 Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	Other	717.9
T 114	C & D	Quarry Powerline 2 Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS, Other	489.3
T 115	A & B	Radnor Powerline Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	337.1
T 116	A & B	Radnor Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	1850.5
T 117	A & B	Radnor Trail Branch 1	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	192.0
T 118	A & B	Radnor Trail Branch 2	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	210.8
T 119	A & B	Radnor Trail Branch 3	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	Other	88.1
T 120	D	Red Gum Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS, Other	375.9
T 121	D	Refuge Rock Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	622.0
T 122	D	Refuge Rock Trail Branch 1	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS	395.6
T123	D	Refuge Rock Trail Branch 2	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS	331.3
T 124	C	Rofe Park Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	Other	224.2
T 125	C & D	Rosemead Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS, Other	1493.6

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Map ID	Map no.	Name	Current accessibility	Proposed BFCC class	Strategy	Tenure ³	Length (m)
T 126	C & D	Rosemead Trail Branch 1	Cat 9	Dormant	• Maintain record of trail	Other	223.0
T 127	B & C	Rowland Trail	Cat 1	Important	• Assess requirements to upgrade or maintain to Important standard	NPWS	2191.8
T 128	C	Ryan Simon Link Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS	286.5
T 129	C	Ryan Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS	500.6
T 130	A	Sams Creek Trail	Cat 9	Dormant	• Maintain record of trail	NPWS,	170.0
T 131	D	Schofield Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS	1881.9
T 132	B & C	Simon Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS, Other	3030.5
T 133	A & B	Somerville East Powerline Trail	Cat 9	Dormant	• Maintain record of trail	Other	453.3
T 134	B & C	Sydney Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS, Other	1282.9
T 135	B & C	Tanglewood Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS, Other	904.0
T 136	B & C	Tanglewood Trail Branch 1	Cat 9	Dormant	• Maintain record of trail	NPWS, Other	614.6
T 137	D	Timbara Trail	Cat 1	Important	• Assess requirements to upgrade or maintain to Important standard	NPWS, Other	964.24
T 138	B & C	Top of Gorge Sydney Link Trail	Cat 1	Important	• Assess requirements to upgrade or maintain to Important standard	NPWS, Other	522.2
T 139	B & C	Top of Gorge Trail	Cat 1–Cat 9	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS, Other	811.18
T 140	D	Trevor Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	Other	274.7
T 141	B & C	Tunks Ridge Trail	Cat 1	Important	• Assess requirements to upgrade or maintain to Important standard	NPWS	1682.1
T 142	B & C	Ulolo Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS, Other	608.2
T 143	B	Wallaby Trail	Cat 1	Essential	• Assess requirements to upgrade or maintain to Essential standard	NPWS	976.9

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Map ID	Map no.	Name	Current accessibility	Proposed BFCC class	Strategy	Tenure ³	Length (m)
T 144	B	Waninga Branch 1 Trail	Cat 9	Dormant	<ul style="list-style-type: none"> Maintain record of trail 	NPWS	101.5
T 145	B	Waninga Branch 2 Trail	Cat 1	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	NPWS	234.1
T 146	B	Waninga Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	1533.3
T 147	C & D	Western Trail - Westleigh	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	1300.9
T 148	D	Western Trail Silver Access	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS, Other	63.5
T 149	B	Wirrinda Trail	Cat 7	Important	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Important standard 	Other	564.6
T 150	A	Wymah Trail	Cat 1	Essential	<ul style="list-style-type: none"> Assess requirements to upgrade or maintain to Essential standard 	NPWS	446.2

Tenure³ – All attempts have been made to ensure the accuracy of tenures identified. The tenures in the table are not guaranteed to be free from error or omission. Changes to the details may be incorporated during subsequent revisions of the strategy.

Maps

Guide to interpreting the fire management strategy maps

Step 1: Locate the area of interest on Sample map: Fire management strategy

Step 2: Identify the map features and map references



For example, in the following sample map features are identified as follows:

T95 – Vehicle trail

SZ 193 – Strategic fire management zone

Step 3: Refer to the appropriate appendix in the Fire Management Strategy to find the proposed management for the feature.

For SZ 193 – Strategic fire management zone 193 in the map, refer to Appendix 7: Fire management zones.

Appendix 7: Fire management zones

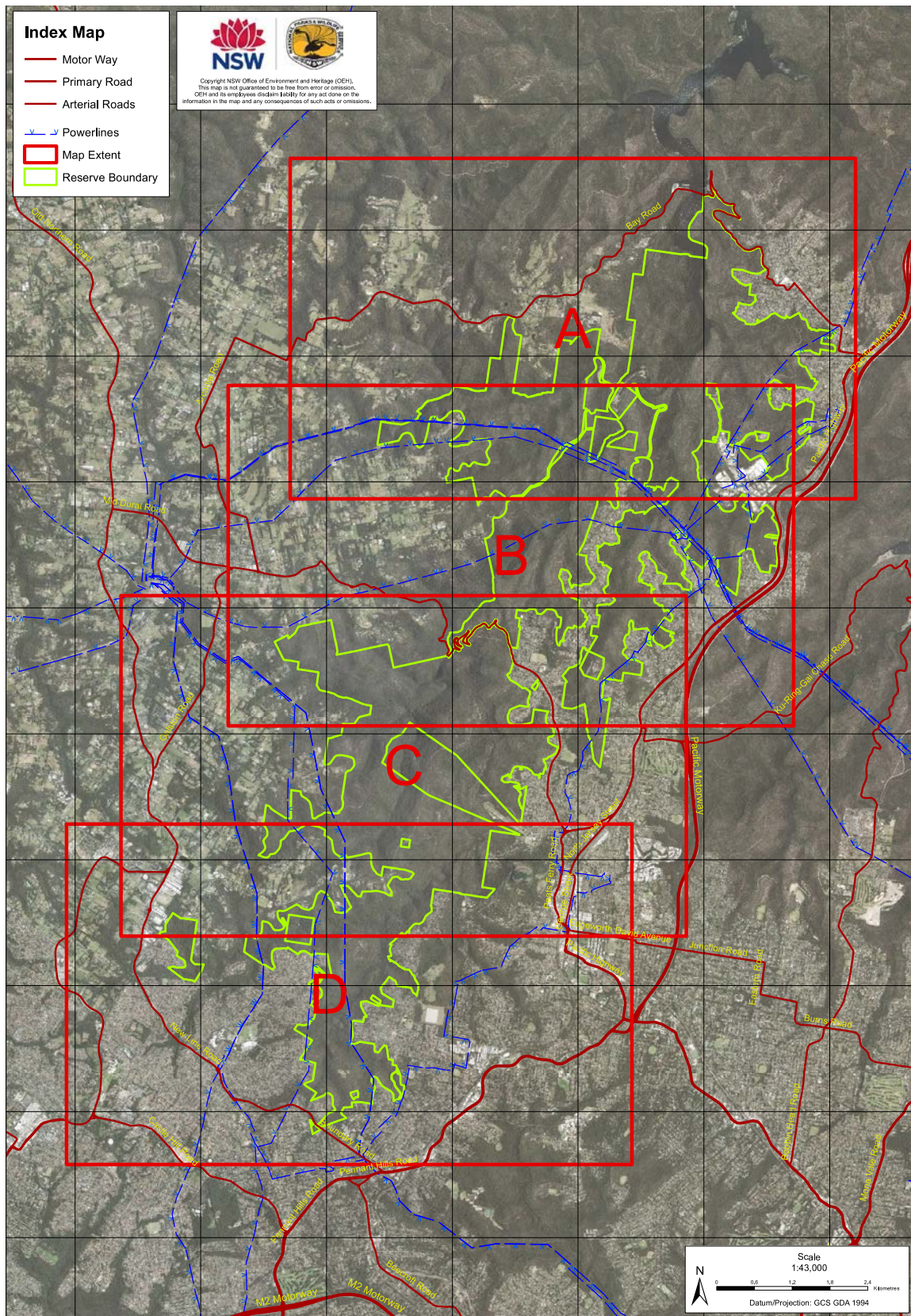
Map ID	Map no.	Name	Objective	Strategy	Tenure	Ha. on park	Ha. off park
SZ 193	A	Washtub Gully	To assist with the strategic control of bushfires and the protection of assets in Berowra Heights	Assess requirement for prescribed burn between 8–14 years post fire	NPWS	53.3	1.6

For T95 – Vehicle Trail in the map refer to Appendix 9: Access Trail Register

Appendix 9: Access trail register

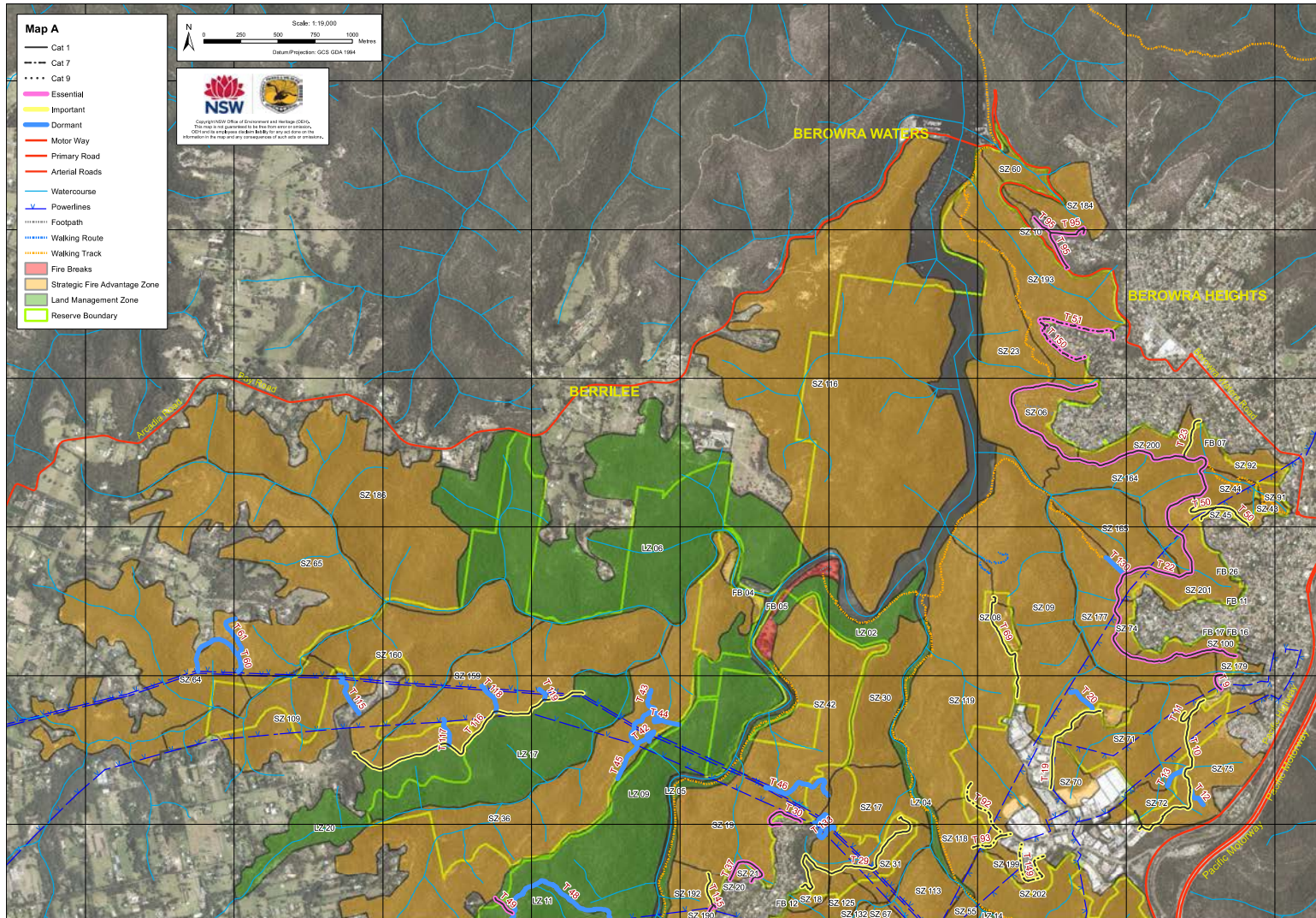
Map ID	Map no.	Name	Current accessibility	Proposed BFCC class	Strategy	Tenure	Length (m)
T 95	A	Nalya Complex	Cat 1	Essential	Assess requirements to upgrade or maintain to Essential standard	Other	705.9

Index map



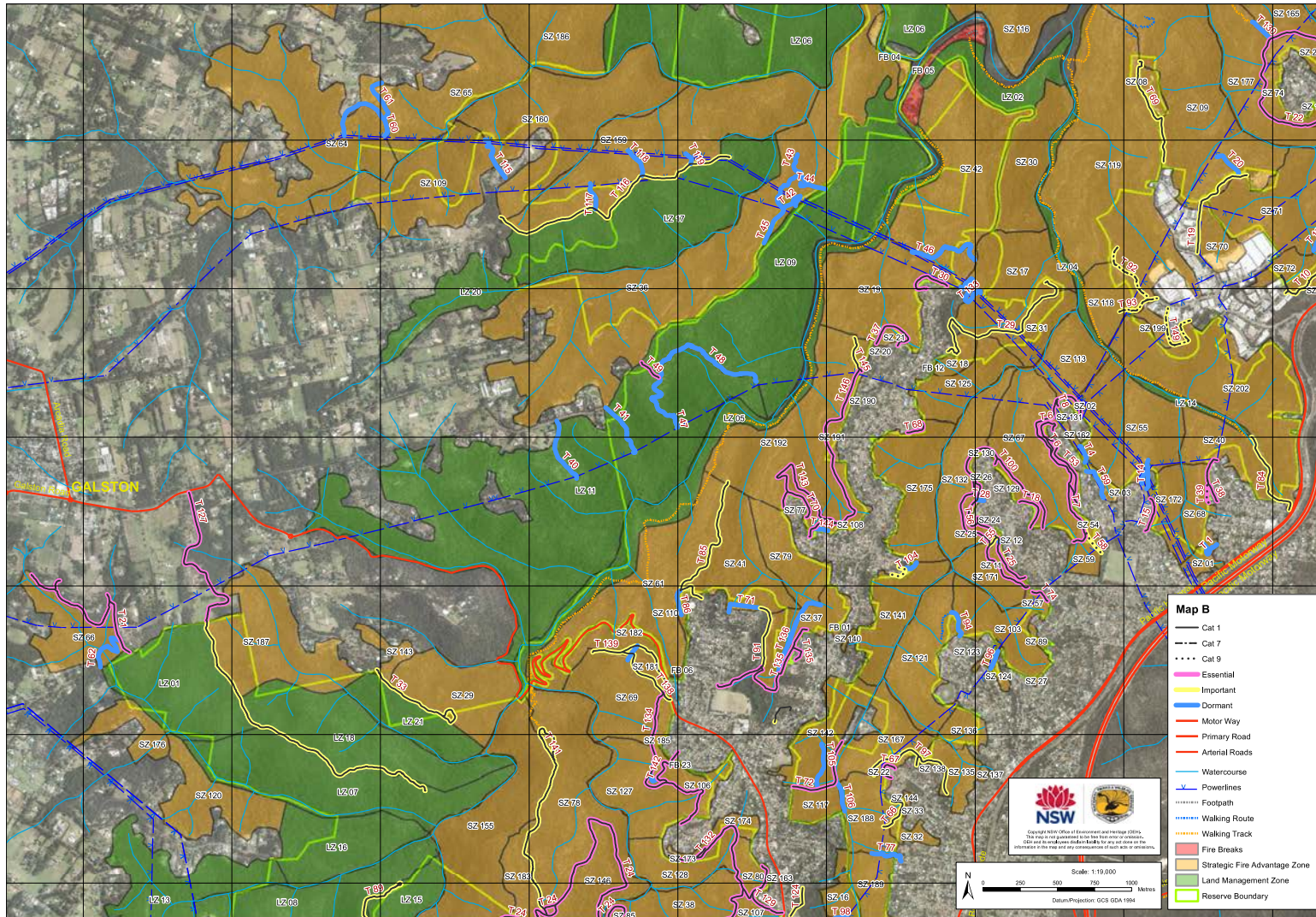
NPWS OEH: Reserve Fire Management Strategy – Berowra Valley NP & RP and Dural NR

Map A



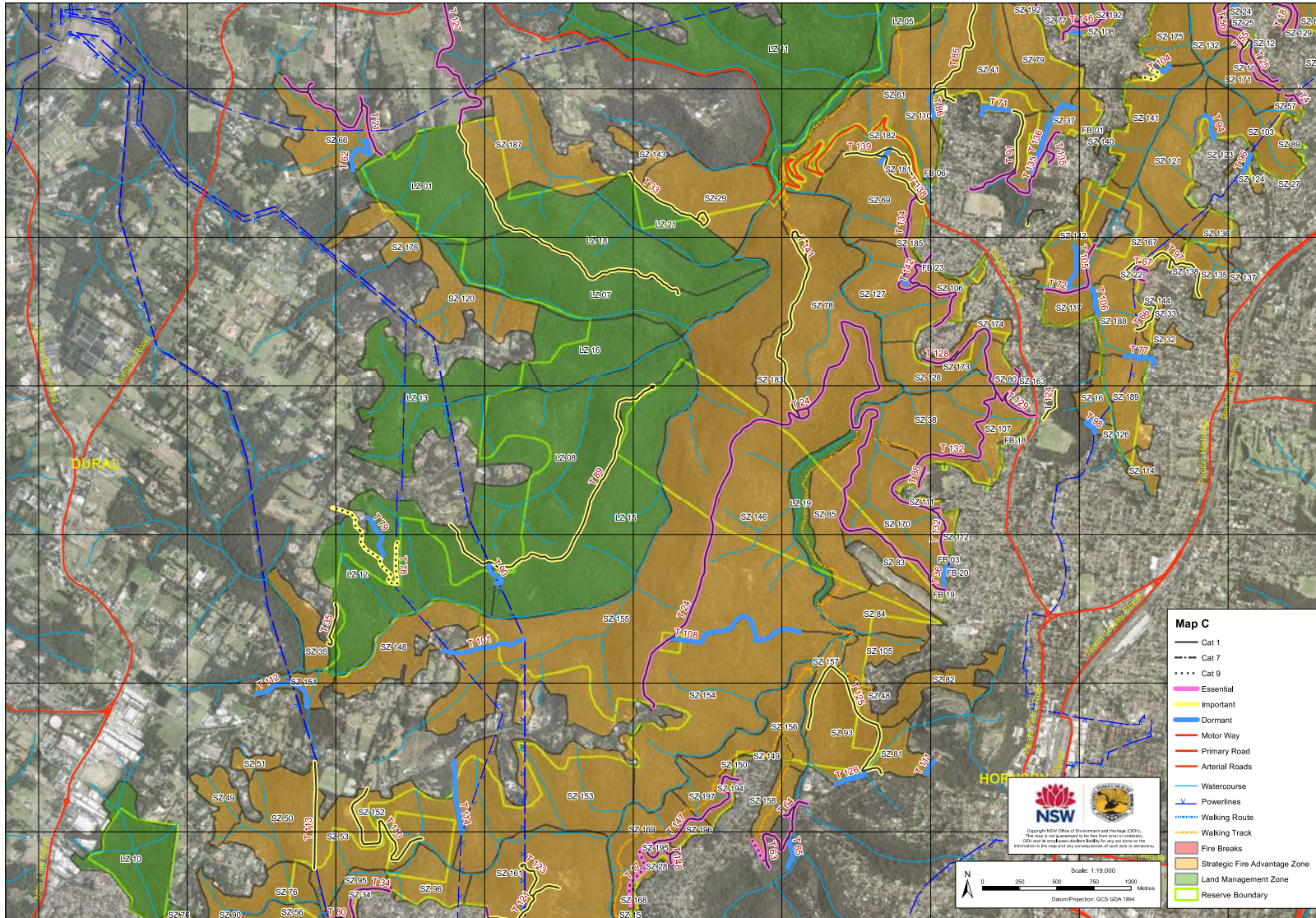
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Map B



NPWS OEH: Reserve Fire Management Strategy – Berowra Valley NP & RP and Dural NR

Map C



NPWS OEH: Reserve Fire Management Strategy – Berowra Valley NP & RP and Dural NR

Map D

