

Annex A

Singleton Bush Fire Management Committee

Bush Fire Risk Management Plan



Prepared by the Singleton Bush Fire
Management Committee
Pursuant to section 52 of the *Rural Fires Act 1997*



Prepared by the Singleton Bush Fire Management Committee; pursuant to
section 52 of the Rural Fires Act, 1997

Authorisation

In accordance with Part 3 Division 4 of the Rural Fires Act 1997, this Draft Plan has been prepared by the Singleton Bush Fire Management Committee and has been endorsed at the BFMC meeting on 18 November 2009 for submission to the Bush Fire Coordinating Committee.

Recommended



Chairperson
Singleton Bush Fire Management Committee

Approved



On behalf of the
NSW Bush Fire Co-ordinating Committee

- 7 MAR 2011

Amendment List

Amendment		Entered	
Number	Date	Signature	Date

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Glossary

Assets: anything valued by the community which includes houses, crops, livestock, heritage buildings and places, infrastructure, the environment, businesses, and forests, that may be at risk from bush fire.

Bush Fire: a general term used to describe fire in vegetation, includes grass fire.

Bush Fire Hazard: the potential severity of a bush fire, which is determined by fuel load, fuel arrangement and topography under a given climatic condition.

Bush Fire Risk: the chance of a bush fire igniting, spreading and causing damage to the community or the assets they value.

Bush Fire Risk Management: a systematic process that provides a range of treatments which contribute to the well being of communities and the environment, which suffer the adverse effects of wildfire/bush fire.

Bush Fire Threat: potential bush fire exposure of an asset due to the proximity and type of a hazard and the slope on which the hazard is situated.

Consequence: outcome or impact of a bush fire event.

Fire Fighting Authorities: the NSW Rural Fire Service, NSW Fire Brigades, the National Parks and Wildlife Service and Forests NSW.

Likelihood: the chance of a bush fire igniting and spreading.

Major Bush Fire: A bush fire which requires the attendance of multiple brigades, or causes damage to property or injury to one or more persons.

Display area: geographic area determined by the Bush Fire Management Committee which is used to provide a suitable area and scale for community participation and mapping display purposes.

Recovery costs: the capacity of an asset to recover from the impacts of a bush fire.

Risk Acceptance: an informed decision to accept the consequences and the likelihood of a particular risk.

Risk Analysis: a systematic process to understand the nature of and to deduce the level of risk.

Risk Assessment: the overall process of risk identification, risk analysis and risk evaluation.

Risk Identification: the process of determining what, where, when, why, and how something could happen.

Risk Treatment: the process of selection and implementation of measures to modify risk.

Vulnerability: the susceptibility of an asset to the impacts of bush fire.

Abbreviations

APZ: Asset Protection Zone

BFCC: Bush Fire Coordinating Committee

BFMC: Bush Fire Management Committee

BFRMP: Bush Fire Risk Management Plan

BRIMS: Bushfire Risk Information Management System

ESD: Ecologically Sustainable Development

LEP: Local Environment Plan

LGA: Local Government Area

LMZ: Land Management Zone

NPWS: National Parks and Wildlife Service

RFS: Rural Fire Service

SFAZ: Strategic Fire Advantage Zone

SFP: Special Fire Protection

Chapter 1. Introduction

1.1 Background

Under the *Rural Fires Act 1997* the Bush Fire Coordinating Committee (BFCC) must constitute a Bush Fire Management Committee (BFMC) for each area in the State, which is subject to the risk of bush fires. Each BFMC is required to prepare and submit to the BFCC a draft Bush Fire Risk Management Plan (BFRMP).

A BFRMP is a strategic document that identifies community assets at risk and sets out a five-year program of coordinated multi-agency treatments to reduce the risk of bush fire to the assets. Treatments may include such things as hazard reduction burning, grazing, community education, fire trail maintenance and establishing community fireguard groups.

Annual programs to implement the treatments identified in this plan will be undertaken by the relevant land managers and fire fighting authorities.

In exercising its functions under the *Rural Fires Act 1997*, including the preparation of a draft BFRMP, the BFMC is required to have regard to the principles of ecologically sustainable development (ESD).

This document and the accompanying maps together, form the BFRMP for the Singleton BFMC area.

This BFRMP has been prepared by the Singleton BFMC and covers both public and private lands. This BFRMP must be reviewed and updated within each successive five-year period from the constitution of the BFMC.

The BFCC recognises that climate change has the potential to increase bush fire risk. The risk assessment process applied in this BFRMP is based on current climatic conditions. The BFCC will monitor information on climate change and will modify the process when necessary.

1.2 Aim and Objectives

The **aim** of this BFRMP is to minimise the risk of adverse impact of bush fires on life, property and the environment.

The **objectives** of this BFRMP are to:

- reduce the number of human-induced bush fire ignitions that cause damage to life, property and the environment;
- manage fuel to reduce the rate of spread and intensity of bush fires, while minimising environmental/ecological impacts;
- reduce the community's vulnerability to bush fires by improving its preparedness; and
- effectively contain fires with a potential to cause damage to life, property and the environment.

1.3 Description of the Singleton BFMC area

1.3.1 Location and land tenure

The Singleton BFMC area is located in the centre of the Hunter Valley in New South Wales and includes the Local Government Area of Singleton.

The area covered by the Singleton BFMC is 489,347 hectares and includes the land tenures outlined in Table 1.1.

Land Manager*	% of BFMC area
National Parks & Wildlife Service	37.4
Forests NSW	1.3
Department of Lands	4.2
Local Government	0.7
Private	38.7
Commonwealth	2.8
Coal Mining (Private Tenure)	14.9

Table 1.1 Land tenure

1.3.2 Climate and bush fire season

The typical / average climate in the Singleton BFMC area is best described as warm temperate. Seasonal variation in conditions produces hot summers and cool to mild winters with occasional severe frosts, and the bush fire season generally runs from September to March. The average annual rainfall is 698 mm. The average maximum temperature for January is 30.6 degrees and for July 17.2 degrees. The average minimum temperature for January is 17.9 degrees and for July 5.1 degrees.

Prevailing weather conditions associated with the bush fire season in the Singleton BFMC area is north-west to westerly winds accompanied by high day-time temperatures and low relative humidity. There are also many dry lightning storms that occur during the bush fire season.

1.3.3 Population and demographic information

The population of the Singleton Local Government Area (LGA) is 23,000 people. The major population centres are Singleton and Singleton Heights/ Hunterview. These areas are inhabited by approximately 15,000 people. Other centres of population include the rural residential areas around Branxton/ Dalwood and the Retreat. Other centres of population are the rural villages of Broke, Bulga, Jerrys Plains and Putty and the Singleton Military Area.

The following issues have been identified within the Singleton BFMC area as potentially impacting on the ability of certain sections of the community to prepare themselves for bush fire:

- There are an increased number of people wanting a rural lifestyle and not being aware of the impact bush fires have on a community.
- There are an increasing number of visitors to the Hunter Valley wine tasting areas.
- Large number of absentee landholders in the southern end of Singleton LGA.
- Increased amount of lands under the control of coal mines and other related support industries.

1.3.4 History of bush fire frequency and ignition cause

The Singleton BFMC area has on average 203 bush fire calls per year, of which about 30 on average can be considered to be major fires.

The main sources of ignition in the Singleton BFMC area are: lightning strikes from summer storms, fire escape from private properties and accidental ignitions in the rural areas and along the transport corridors.

The Singleton area has experienced bush fires on a variety of occasions which have been documented since 1939. Major fire activity occurred in September 1939, October 1968 and 1974, November 1980 and 1983, January 1994, December 1997 and 2001, January 2002 and October 2002, November 2006 and February 2009. These wildfires burnt large areas of public and private lands.

Fires generally travel in an easterly direction under the influence of west to north-westerly winds. Southerly and/or easterly winds also have the potential to intensify wildfire burning during the passage of cooler changes during the spring and summer.

To view recorded history of fire activity, refer to Maps 3 and 4 (Appendix 4).

Preventing the ignition of bush fires by human activities, particularly on days when severe bush fire weather conditions prevail, is an important strategy for managing bush fires. To put effective ignition management programs in place, it is important to understand the patterns and major sources of ignition in the area.

The major ignition causes in the Singleton area are:

- Lightning - lightning activity in the district is spread right across the area, which is normally (but not always) accompanied by rainfall. Most thunderstorm activity generally occurs in late spring and summer.
- Electrical power lines- arcing of electrical power lines in high winds, particularly those in the valley floor, can result in the ignition of fire. However the placement of spacers on low voltage power lines and the introduction of low voltage insulated aerial bundled conductors has minimised these in recent years.
- Escapes from legal burning- mainly in rural areas of the BFMC, occurring in similar areas to illegal burning activity. This activity is also largely in mid to late spring, but can happen throughout the year.
- Illegal burning activities- mainly concentrated, but not limited to, rural areas and occur generally from mid to late spring.
- Car dumping- dumping of cars and setting them alight is one of the minor ignition sources in Singleton LGA particularly in urban bushland areas close to the major population areas.
- Arson- A small amount of arson has been recorded over the years.

Chapter 2. Identifying and assessing the bush fire risk

2.1 Process

The Australia/New Zealand Standard *AS/NZS 4360: 2004 Risk Management* was used as the basis for the risk assessment process. See Figure 2.1 for the steps involved. For a detailed description of the process undertaken see the Bush Fire Risk Management Planning Guidelines for Bush Fire Management Committees on the RFS website: www.rfs.nsw.gov.au.

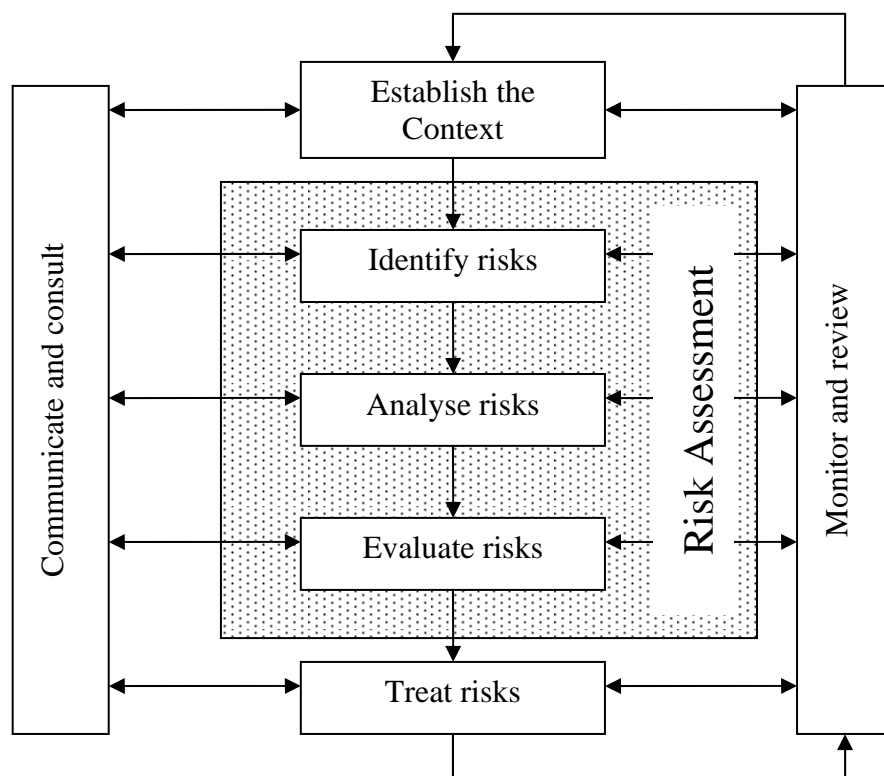


Figure 2.1 Overview of the risk assessment process

2.2 Communication and consultation

Community participation is an integral part of risk management. The Community Participation Strategy involved developing and implementing a process to address the needs, issues and concerns of stakeholders within the BFMC area in regards to the BFRMP. See Appendix 1 for the Community Participation Strategy used by the Singleton BFMC in preparing this BFRMP.

2.3 Identifying the bush fire risk

Identifying the level of bush fire risk involves firstly identifying the assets considered important by the community in the Singleton BFMC area, and then identifying the threat to the assets. This involves consideration of fuel (vegetation type and arrangement), slope, separation (the distance between the asset and the fuel), the vulnerability or resilience of the asset, and the likelihood and consequences of a bush fire impacting on these assets.

2.3.1 Assets

BFMC members and the community, including RFS volunteers, identified assets within the Singleton BFMC that they believed were at risk of bush fire.

See Appendix 2 for the full list of assets identified in the Singleton BFMC area. See Maps 1 & 2 (Appendix 4) for the location of assets to be treated under this BFRMP.

The assets were divided into four asset types:

Human settlement

- Residential areas including urban bushland interface areas and rural properties;
- Special Fire Protection areas including schools, hospitals, nursing homes, and tourist facilities; and
- Other human settlement areas including commercial and industrial areas where distinct from major towns.

The Singleton local government area (LGA) is located in the centre of the Hunter Valley region of New South Wales. The terrain ranges from dense rainforest with steep mountains and deep valley floors in the north through an extended valley floor where the majority of the settlement is located, to elevated sandstone ridges where the vegetation is mainly dry sclerophyll forest in the south.

High risk settlement is situated mainly in the southern areas of the LGA and includes the settlements of Jerrys Plains, Bulga, Howes Valley, Broke and the Putty areas. These areas are expected to grow through the life of the Plan with an increased move to rural residential and weekender type of landholders.

The proposed development of Huntlee near the vineyard areas to the south of Branxton will see an increased number of Human Settlement assets at risk from bush fires.

Economic

- Agricultural; dairy and mushroom farms, regional saleyards, extensive cropping/grazing land;
- Commercial/industrial; major industrial areas to the west and south of Singleton, waste treatment plants, sawmills in the south;
- Infrastructure; large power stations and extensive power transmission lines, gas pipelines, railway lines, electricity substations, communication facilities;
- Tourist and recreational e.g. tourist sites and facilities, resorts, retreats;
- A large number of Coal Mines.
- Commercial forests e.g. eucalypt plantations and commercial native forests; and
- Drinking water catchment in the north of Singleton local government area.

Environmental

- Threatened species, populations and endangered ecological communities
- Locally important species and ecological communities, such as species and communities especially sensitive to fire.

The heavily timbered rainforest in the north and the weathered sandstone ridge country throughout the south supports a diverse range of flora and fauna. A large part of the BFMC area is reserved for national parks and water catchments with significant natural areas remaining on private land. Listed threatened species and communities are located in various areas throughout the Singleton LGA. There are locally and regionally endangered individuals and populations found in the Singleton area.

Conservation agreements currently exist in the Mount Royal and Howes Valley areas.

Cultural

- Aboriginal significance – Aboriginal places and items of significance;
- Non-indigenous heritage – places and items arising from the early occupation of NSW by European or other non-indigenous settlers; and
- Other cultural assets – community halls, heritage list houses, clubs and recreational facilities.

See Appendix 2 for the full list of assets identified in the Singleton BFMC area. See maps 1 & 2 for the location of assets to be treated under this BFRMP.

2.3.2 Assessing the bush fire risk - consequence

Once the assets were identified, the consequence of a bush fire impacting on these assets was assessed.

See Appendix 2 for the consequence ratings assigned to each asset identified in the Singleton BFMC area.

The different asset types had different assessment processes used to determine the consequence. These processes are identified below.

Human settlement

A potential fire behaviour model using vegetation type, slope and separation distance was used to produce a threat rating for human settlement assets. The vulnerability of the asset to a bush fire was also assessed and a rating assigned. These ratings were then used to assess the consequence of a bush fire impacting upon these assets.

Special Fire Protection (SFP) assets were considered inherently more vulnerable to bush fire due to mobility capacity, knowledge or other issues relating to their inhabitants, (e.g. the elderly, infirm, children or tourists) and therefore stricter requirements for vulnerability assessment and rating were applied.

Economic

The level of economic impact e.g. local, regional or state, as well as the economic recovery costs (how long and complicated a financial recovery will be) of the asset were identified. These ratings were used to assess the consequence of a bush fire impacting upon these assets.

Environmental

Environmental assets with known minimum fire threshold were assessed to determine if they were at risk of a bush fire within the 5 year life of the BFRMP using fire history data. Those environmental assets which were within or above the fire threshold were not assessed in the BFRMP, as the negative impact of a fire within the 5 year period was determined as being low and may even be of benefit to the asset and surrounding habitat.

The vulnerability of an environmental asset was determined by its conservation status and its geographic extent (distribution across the landscape). Vulnerability and potential impact of bush fire were used to assess the consequence of a bush fire impacting upon an environmental asset.

Cultural

For non-indigenous historical, Aboriginal and other cultural assets a potential fire behaviour model using fuel load, slope and proximity was used to produce a threat rating. The physical vulnerability of the asset to a bush fire was also

assessed. These ratings were then used to assess the consequence of a bush fire impacting upon a cultural asset.

2.3.3 Assessing the bush fire risk - likelihood

For all asset types the likelihood of a bush fire occurring was assessed. This involves considering fire history, including ignition cause and patterns, known fire paths, access, containment potential and potential fire run i.e. size of the vegetated area. See Appendix 2 for the likelihood ratings assigned to each asset identified in the Singleton BFMC area.

2.3.4 Identifying the level of risk

The consequence and likelihood ratings were then used to identify the level of risk. See Appendix 2 for the risk ratings assigned to each asset identified in the Singleton BFMC area.

2.3.5 Evaluating the bush fire risk

Once the risk ratings for each asset were identified, they were evaluated to:

- a) confirm that risk levels identified in the risk analysis process are appropriate and reflect the relative seriousness of the bush fire risk;
- b) identify which assets require treatments; and
- c) Identify treatment priorities.

2.3.6 Prioritising treatments

No organisation has limitless resources to deal with adverse risk. It is therefore necessary to define priorities. The bush fire risk ratings determined were used to prioritise the risk treatments, i.e. areas of extreme risk were considered first for treatment, then very high, then high then medium then low.

2.3.7 Risk acceptability

Risks below a certain level are assessed as not requiring treatment within the life of this Plan. This is due to a combination of resource availability, capacity to undertake works and risk priority. Within the Singleton BFMC area, the level of risk acceptability is medium. Areas of medium and low risk are likely to be managed by routine procedures and so do not require a specific application of resources within the BRFMP. However, some low or medium risk rating assets have been assigned treatments in the BFRMP. These assets have been assessed as low or moderate due to the occurrence of routine treatments such as mechanical hazard reduction. The continuation of the routine treatments will ensure that the risk remains at an acceptable level.

Chapter 3. Treating the risk

3.1 *Bush Fire Management Zones*

Bush Fire Management Zones were identified within the Singleton BFMC area and mapped (see maps 1-2). These zones identify the fire management intent for a specific area. See Table 3.1 for descriptions of the zones and their purposes. The four categories of Bush Fire Management Zones are:

- Asset Protection Zone (APZ);
- Strategic Fire Advantage Zone (SFAZ);
- Land Management Zone (LMZ); and
- Fire Exclusion Zone (FEZ).

Some of these zones (usually Land Management Zones) may be further classified within this category by the land manager, e.g. LMZ - Heritage Management Zone (NPWS).

Zone	Purpose	Suppression Objective(s)	Zone characteristics
Asset Protection Zone	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 bush fire impacts on undefended assets.	As per RFS document <i>Standards for Asset Protection Zones</i> .
Strategic Fire Advantage Zone	To provide strategic areas of fire protection advantage which will reduce the speed and intensity of bush fires, and reduce the potential for spot fire development; To aid containment of wildfires to existing management boundaries.	To improve the likelihood and safe use of: Parallel Attack suppression strategies within the zone. and/or Indirect Attack (back burning) in high to very high fire weather conditions within the zone. To reduce the likelihood of: Crown fire development within the zone. and/or Spot fire ignition potential from the zone .	Zone width related to suppression objectives and dependant upon: <ul style="list-style-type: none"> • Topography • Aspect • Spotting propensity • Location of adjacent firebreaks • Mosaic pattern of treatment Assess Overall Fuel Hazard (OFH) once vegetation communities reach minimum fire thresholds within this plan. Management practices should aim to achieve mosaic fuel reduction patterns so that the majority of the SFAZ has an OFH of less than high.
Land Management Zone	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 reduce the likelihood of spread of fires. To undertake mosaic burning	As appropriate to achieve land management e.g. heritage and/or fire protection e.g. broad scale mosaic burning objectives.
Fire Exclusion Zone	To exclude bush fires.	N/A	Variable dependant on size of fire sensitive area requiring protection.

Table 3.1 Bush Fire Management Zones: Purpose, objectives and characteristics

NB: OFH refers the Overall Fuel Hazard Guide as described in the document published by (Dept. of Sustainability and Environment 3rd ed. 1999 & NPWS version); State-wide procedures for assessment of fuel hazard will be developed in conjunction with the BFCC.

Note: All areas that are not mapped or described as APZs or SFAZs are considered as LMZs.

*For the purpose of the Bush Fire Environmental Assessment Code:

1. Plantations that are approved under the *Plantations & Reafforestation Act 1999* after closure of the public exhibition period for this BFRMP are considered to be identified in this BFRMP; and
2. Retained vegetation within the aforementioned plantations is considered to be a Strategic Fire Advantage Zone identified in the text of this BFRMP as long as it meets the suppression objectives for SFAZs included in the BFRMP, and is not mapped or otherwise described as a Fire Exclusion Zone in the BFRMP.

3.2 BFMC wide treatments

BFMC wide treatments are activities which reduce the overall bush fire risk within the BFMC area and are undertaken on an ongoing basis as part of normal business. These treatments are not linked to specific assets in the BFRMP, rather they are applied across all or part of the BFMC area as designated by legislation or agency policy. BFMC wide treatments include the following:

- **Reviewing the bush fire prone land map**

These maps identify bush fire prone land and are used to trigger whether a development application is assessed using *Planning for Bush Fire Protection*¹.

- **Ensuring developments in bush fire prone land comply with *Planning for Bush Fire Protection***

This assessment process requires new applications for development to include bush fire protection measures.

- **Using the Local Environment Plan/s (LEPs) to control developments in areas with a bush fire risk**

LEPs can be used to exclude development in extreme bush fire risk areas or where bush fire protection measures cannot be incorporated.

- **Varying the standard bush fire danger period as required**

In years where the weather is particularly adverse the bush fire danger period may be brought in early or extended. This is assessed every year by the BFMC.

- **Requiring permits during the bush fire danger period**

In the bush fire danger period a fire safety permit is required to light a fire in the open. Permits specify conditions such as fire fighting equipment that must be on site, or restrict burns based on weather conditions.

¹ NSW Rural Fire Service 2006 *Planning for Bush Fire Protection: A guide for councils, planners, fire authorities and developers*.

- **Prosecution of offenders in relation to deliberate ignitions**

Under the *Rural Fires Act 1997* persons may be prosecuted for breaching the conditions on a fire permit, lighting a fire during a Total Fire Ban, allowing fire to escape their property, or other breaches of the Act. In addition, the member agencies of the BFMC will co-operate with the NSW Police in relation to the prosecution of arsonists under the *Crimes Act 1900*.

- **Investigation of bush fire cause**

All bush fires which do not have a known cause are investigated to identify how they started.

- **Normal fire suppression activities**

Responding to bush fire is a normal business activity for the fire fighting authorities.

- **Assessing and managing compliance with strategic fire fighting resource allocation provisions**

Strategic fire fighting resource allocation provisions is the process used to identify the number of stations, brigades and appliances required in an area, and consider members, training, assets and hazards.

- **Preparation of a S52 Operations Coordination Plan**

The Operations Coordination Plan is prepared biannually and sets out how coordinated fire fighting will occur. It includes specific operational restrictions on fire fighting techniques in certain areas, where fires will be managed from, and how agencies involved can communicate during operations.

- **Fire Management Plans or Plans of Management**

Some land management agencies have developed fire management plans or plans of management with specific fire or fuel management strategies, for example a Forests NSW Regional Fuel Management Risk Plan, a NPWS Fire Management Strategy. These publicly exhibited plans form the basis for operational fire planning on public parks, reserves and forests.

- **Bush Fire Hazard Complaints**

If someone is concerned about possible bush fire hazards on a neighbouring property or any other land, then this can be reported to the RFS Commissioner or their local RFS Fire Control Centre. The complaint will be investigated and may result in a notice being issued to the landowner or manager to reduce the hazard.

3.3 Asset specific treatments

There are five broad strategy groups available to treat the bush fire risk to assets identified in the BFRMP.

The types of asset specific treatments in each strategy group used in the Singleton BFMC area are listed below. A full list of the treatment strategies in the Singleton BFMC area are in Appendix 3.

Strategy	Targeted treatments used in the <i>Singleton</i> BFMC area
Ignition Management	<ul style="list-style-type: none">• Limit, restrict or manage access to potential ignition areas.• Enact fire restriction protocol when Fire Danger Rating is greater than high
Hazard Reduction	<ul style="list-style-type: none">• Maintain APZ• Inspect and maintain APZ as required• Implement SFAZ burning strategies• Management burns after harvesting operations• Implement firebreak / easement maintenance program
Community Education	<ul style="list-style-type: none">• Conduct community education programs e.g. targeted community meetings, schools visits etc.• Review and provide advice for fuel management plans
Property Planning	<ul style="list-style-type: none">• Assist with the preparation of emergency / relocation plan• Review and update exiting fire relocation plan
Preparedness	<ul style="list-style-type: none">• Inspect and Maintain fire trail network• Develop management guidelines for IMT's• Prepare Pre Incident plan• Property Identification Project (PIP)• Provide training and resources for CFU• Undertake building maintenance works

Table 3.2 Asset specific treatments used in the Singleton BFMC area

3.4 Fire thresholds

The vegetation in the Singleton BFMC area has been classified into fire threshold categories (Table 3.3*).

Vegetation formation	Minimum SFAZ Threshold	Minimum LMZ Threshold	Maximum Threshold	Notes
Rainforest	NA	NA	NA	Fire should be avoided.
Alpine complex	NA	NA	NA	Fire should be avoided.
Wet Sclerophyll forest (shrubby sub formation)	25	30	60	Crown fires should be avoided in the lower end of the interval range.
Wet Sclerophyll forest (grassy sub formation)	10	15	50	Crown fires should be avoided in the lower end of the interval range.
Grassy woodland	5	8	40	Minimum interval of 10 years should apply in the southern Tablelands area. Occasional intervals greater than 15 years may be desirable.
Grassland	2	3	10	Occasional intervals greater than 7 years should be included in coastal areas. There was insufficient data to give a maximum interval; available evidence indicates maximum intervals should be approximately 10 years.
Dry sclerophyll forest (shrub/grass sub formation)	5	8	50	Occasional intervals greater than 25 years may be desirable.
Dry sclerophyll forest (shrub sub formation)	7	10	30	Occasional intervals greater than 25 years may be desirable.
Heathlands	7	10	30	Occasional intervals greater than 20 years may be desirable.
Freshwater wetlands	6	10	35	Occasional intervals greater than 30 years may be desirable.
Forested wetlands	7	10	35	Some intervals greater than 20 years may be desirable.
Saline wetlands	NA	NA	NA	Fire should be avoided.
Semi-arid woodlands (grassy sub formation)	6	9	No max	Not enough data for a maximum fire interval.
Semi-arid woodlands (shrubby sub formation)	10	15	No Max	Not enough data for a maximum fire interval.
Arid scrublands (chenopod sub formation)	NA	NA	NA	Fire should be avoided.
Arid scrublands (acacia sub formation)	10	15	No Max	Not enough data for a maximum fire interval.

Table 3.3 Fire Thresholds for Vegetation Categories

3.5 Annual works programs

The land management agencies and fire fighting authorities responsible for implementing the treatments identified in this plan will include those treatments in their annual works programs detailing how, when, and where the required activities will be undertaken.

3.6 Implementation

When the treatments identified in this BFRMP are implemented there are a number of issues that need to be considered by the responsible agency/land manager including environmental assessments and approvals, and smoke management and prescribed burn plans.

- **Environmental assessment**

Hazard reduction works usually require an environmental assessment to be undertaken prior to the commencement of the works. The Bush Fire Environmental Assessment Code, where applicable, is the simplest form of environmental assessment for hazard reduction works. This sets out available works and minimum fire thresholds for each zone type, as well as considering threatened species, cultural heritage, and soil and erosion issues.

- **Smoke**

The BFCC has issued a policy on smoke management, BFCC Policy 3-01 Bush Fire Smoke Management. This policy requires identified smoke issues to be managed through a prescribed burn plan, and where required traffic management plans, prior to work being undertaken.

Chapter 4. Performance monitoring and reviewing

4.1 Review

This BFRMP must be reviewed and updated within each successive five-year period from the constitution of the BFMC. The Singleton BFMC will also review this plan as necessary to account for any changes in context or risk. This may be triggered by a range of circumstances, including but not limited to:

- changes to the BFMC area, organisational responsibilities or legislation;
- changes to the bush fire risk in the area; or
- Following a major fire event.

4.2 Monitoring

The BFMC is required to monitor progress towards the completion of treatment works listed in the BFRMP, and the timeliness of the works.

4.3 Reporting

The BFMC is required to report annually to the BFCC on its progress in implementing the bush fire risk management activities identified in this plan.

4.4 Performance Measurements

State wide performance measurements which are linked to the BFRMP objectives have been identified within Appendix G of BFCC Policy 03/2007. All BFMCs must use these to monitor and report on their success in reducing the bush fire risk in their BFMC area.

Appendix 1 Community Participation Strategy

SINGLETON BUSH FIRE RISK MANAGEMENT PLAN COMMUNITY ENGAGEMENT BRIEF

**Prepared by
Keith Lobb BFRMP Support Officer
Modified by Singleton BFRMP Sub Committee
May 2009**

Proposed methodology

The following Community Engagement Process is proposed as the most efficient, effective and appropriate means to ensure the delivery of the Bush Fire Risk Management Plan (BFRMP).

The Process is comprised of a number of stages, each uniquely focussed on delivering the necessary **purpose**. The stages of the Community Engagement Process will either be directed at informing stakeholders, inviting stakeholder participation, or seeking feedback.

Engagement in the process

The Bush Fire Management Committee (BFMC) understands that in the preparation of any plan, initial community engagement is essential. Community engagement at the initial stages of any project has enormous benefits to the community and the outcome of the project.

The aim of this community engagement is to obtain information that will primarily form the BFRMP. The challenge for the BFRMP is to unify the diverse views of stakeholders and develop a range of measures and strategies that address the relevant requirements.

Study area

The Study Area includes the Local Government Area of:

- Singleton

Stage 1 Scope of Works

Purpose - In broader terms the consultation will aim to:

- Ensure that specific and targeted communication occurs between the BFMC and the community throughout the development of BFRMP.
- Ensure prominent stakeholders do not make judgements of the acceptability of a risk based on their own perception of risk.
- Provide greater opportunity for local brigades, land holders and other stakeholders to have input into the bush fire risk management process.
- Determine the concerns of the community regarding bush fire risks within the community.
- Ensure that the community's perceptions of risk, as well as their perceptions of benefits, be identified, understood, documented and addressed in the BFRMPs.
- Improve community confidence in bush fire risk management across the landscape and provide the community with a sense of ownership of the BFRMP.
- Educate the community regarding bush fire risk management in the area so that they can contribute towards risk reduction.

Stage 2- Informing the community

A comprehensive communications strategy is proposed as the means of informing the community of the BFRMP. The specific message to be delivered will include:

- Informing the community of the BFRMP;
- What it specifically is and isn't;
- Outline the process involved in developing the Singleton BFRMP. Provide details of the consultation process i.e. how the community can participate;
- Reiterate what the next step in the process is, so to advise and minimise anticipated community contact; and
- Where to go for information, only if required.

A variety of mediums will ensure viral marketing of information regarding the project. This will include:

Web

A link on Singleton Council's web page will be utilised to promote the BFRMP process. This web site will be used as the central point for posting and receiving information about the project. The site will be regularly updated and reviewed daily for messages and comments. The site can be accessed at www.singleton.nsw.gov.au and can be found under Bush Fire Risk Management.

Responsibility: Singleton Council

Newspaper

Hunter Valley News
Singleton Argus
The Cochfighter
Branxton & Vineyards News

Responsibility: Paul Jones BFMC Executive Officer

Radio

ABC
2NM/Power FM
KO FM
105.3 New FM
REEMA FM

Responsibility: RFS Media and BFMC Executive Officer

Television

NBN (News and Community Announcement)
Prime (News and Community Announcement)
Southern Cross Ten

Community and Neighbourhood Centres

Responsibility: RFS Media and BFMC Executive Officer

Stage 3- Engagement Sessions (data collection)

The BFMC does not recommend conducting public meetings as an engagement strategy. Public meetings are difficult to manage, often encourage attendance by individuals 'with an axe to grind', are opportunities for individuals or collectives to monopolise the address system, encourage poor seating arrangements (someone normally has their back to someone), and are difficult to gain valuable and constructive information from participants.

A number of engagement sessions are proposed to compliment the survey in the data collection process. The engagement session is a technique used to gain information from a variety of community members that prefer to speak with someone directly one on one. It is necessary to engage this section of the community, yet they are difficult to consult by the more traditional methods of consultation such as phone surveys or door to door surveys. The session is designed to engage the mobile user.

The session provides an informal and comfortable opportunity for the community to provide comment. The quality of data that is collected by this method can be very sound because we are gathering information on location where specific examples can be pointed out.

The following locations for engagement sessions are proposed:

- Singleton livestock markets: Wednesday 25th February 2009 830am – 12 noon
- Mount Olive Hall: Thursday 26th February 2009 6pm - 9pm
- Putty RFB Station: Saturday 28th February 2009 1pm - 4pm
- Singleton Gowrie Street Mall: Thursday 5th March 2009 9am – 5pm

The session will operate with a number of BFMC Sub Committee members who will use a series of standard questions and spontaneous discussion prompts to seek comment. The session will be equipped with visual aids including maps and photographs to encourage discussion.

The value of this type of technique is the opportunity to engage a variety of users. However, the BFMC is mindful that this type of engagement can also attract residents that may have issues that are not relevant to the preparation of the BFRMP.

Stage 4- One-on-one consultations (data collection)

The quality of information collected within specific timeframes provides an effective and efficient means of engagement. The quality of information obtained has been far better than that obtained during more traditional methods of consultation such as public meetings.

The one on one interview is an opportunity for project staff to:

- outline the project and detail the expected outcomes
- specify their involvement in the process
- present a snap shot of the study area including any initial findings
- gather standardised information from each stakeholder
- provide personal attention to each stakeholder, thereby building a relationship between the project and the stakeholder
- gather information from the stakeholder
- create a partnership approach where trust and transparency is established

Selected government agencies and community organisations will be interviewed using the one-on-one technique.

The following government agencies and NGO's are proposed to be consulted and are all current members of the BFMC:

- ARTC
- Department of Lands
- Transgrid
- Macquarie Generation
- Energy Australia
- National Parks and Wildlife Service
- Nature Conservation Council
- Singleton Council

- NSW Fire Brigade
- NSW Police
- NSW Rural Fire Service
- Dept of Defence
- NSW Farmers Association
- Local Coal Mines

Stage 5- Submissions (data collection)

Submissions in writing will be invited from the community. This is an opportunity for stakeholders who prefer not to attend engagement sessions or complete surveys.

It should be noted that this Strategy is subject to additional information supplied by the desktop analysis.

Stage 6- Prepare and deliver data report

All of the data collected from the various engagement options and desktop analysis will be collated and provided in a report to the BFMC. This information will compliment the existing information supplied by each of the project partners. A draft BFRMP will be prepared and comments invited.

Stage 7- Exhibition of the Draft BFRMP

BFMC propose that Stages 2- 5 be repeated in order to receive relevant feedback on the draft BFRMP. It is envisaged that this process will avert any possible grandstanding by individuals and groups, whilst providing the opportunity for the community to constructively comment on the proposed Plan. The engagement process will be promoted via the same channels, and additionally, those who attended the engagement sessions previously will be advised in writing on when and where the second round of engagement options will be conducted.

8- Final report (feedback)

This report is a collation of all relevant information collected in Stage 7. The final report (feedback) provides the last opportunity for stakeholders to have input into the BFMC endorsed BFRMP.

Timeframe

The broad timeframes for the Community Engagement Process for the Bush Fire Risk Management Plan are proposed as follows:

Stage 1 - Identify Scope of Works	April 08
Stage 2 - Informing the Community	February - March 2009
Stage 5 - Data Collection	April 08 - Jan 09
Stage 5a - Engagement Sessions (Data Collection)	February/ March 09
Stage 5b - One-on-One (Data Collection)	As required till draft prepared
Stage 5c - Submissions	April 09
Stage 6 - Prepare Data Report and Promote Draft Plan (Inform)	April/May 09
Stage 7 - Present Draft Plan (Seek Feedback)	20th May 09
Stage 7a - Web View	From January 09
Stage 7c - Submissions	March - July 09
Stage 7d - Singleton Library/ Singleton Council Website/ NPWS office	October/November 09
Stage 7e - Exhibition (Draft) BFRMP	October/November 09
Stage 8 - Final Report (Feedback)	December 09
Stage 9 - Endorsement of BFRMP	February 2010

Appendix 2 - Asset Register

Map Ref No.	Asset type	Asset sub type	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment No.
1	Economic	Drinking Water Catchment	Glennies Creek Catchment	Carrowbrook	North	Unlikely	Major	Medium	4	
2	Cultural	Non Indigenous	Sheepskin Hut		South	Likely	Catastrophic	Extreme	1B	8;11
3	Cultural	Non Indigenous	California Hut	Wollemi NP	South	Likely	Catastrophic	Extreme	1B	8;11
4	Cultural	Non Indigenous	Long Weeney Hut	Long Weeney Creek Putty	South	Likely	Catastrophic	Extreme	1B	8;11
5	Human Settlement	Residential	Isolated Rural Properties Mount Royal	Mt Royal Rd, Cassell's, Cedar & Timberlea Rd's	North	Likely	Catastrophic	Extreme	1B	13;16;23
6	Economic	Infrastructure	Transgrid Electricity Transmission Line		South	Likely	Catastrophic	Extreme	1B	7
7	Human Settlement	Residential	Glenroy Estate		South	Likely	Catastrophic	Extreme	1B	15;22
8	Human Settlement	Residential	Isolated Rural Properties Bimbadeen Estate	Stanhope	North	Likely	Catastrophic	Extreme	1B	13;17
9	Human Settlement	Residential	Kindarun rural properties	Baxters Junction	South	Likely	Catastrophic	Extreme	1B	6;20;13;18
10	Human Settlement	Special Fire Protection	Mount Royal eco cabins	Mt Royal Rd	North	Likely	Catastrophic	Extreme	1B	12
11	Human Settlement	Special Fire Protection	High Wollemi Resort	Putty Rd	South	Likely	Catastrophic	Extreme	1B	19
12	Economic	Infrastructure	Northern Rail & Coal Transport Corridor		North	Likely	Major	Very High	2A	24
13	Human Settlement	Residential	Isolated Rural Prop Carrowbrook	Carrowbrook Rd	North	Likely	Major	Very High	2A	13;52
14	Economic	Infrastructure	Redbank Power Station		South	Likely	Major	Very High	2A	54
16	Human Settlement	Residential	Lambs Valley Isolated Rural Properties (Ridgetop)	Lambs Valley	North	Likely	Major	Very High	2A	13;51;55
17	Economic	Mines	Liddell Coal	Hebden Road, Liddell	North	Likely	Major	Very High	2A	29
18	Economic	Mines	Mount Owen	Hebden Road Ravensworth	North	Likely	Major	Very High	2A	30
19	Economic	Mines	Ashton Coal Open Cut	Camberwell	North	Likely	Major	Very High	2A	31
20	Economic	Mines	Rix's Creek Open Cut	Rix's Creek	North	Likely	Major	Very High	2A	32
21	Economic	Mines	Hunter Valley Operations	Lemington	North; South	Likely	Major	Very High	2A	33
22	Economic	Mines	Warkworth	Mount Thorley	South	Likely	Major	Very High	2A	34
23	Economic	Mines	Mount Thorley	Mount Thorley	South	Likely	Major	Very High	2A	35
24	Economic	Mines	Bulga Coal	Broke Road	South	Likely	Major	Very High	2A	36
25	Economic	Mines	Howick/ Newdell Coal Preparation Plant	Ravensworth	North	Likely	Major	Very High	2A	37
26	Economic	Mines	Xstrata Coal	Lemington	North	Likely	Major	Very High	2A	38
27	Economic	Infrastructure	Electricity Sub Station Mount Thorley	off Putty Rd opposite Warkworth coal mine	South	Likely	Major	Very High	2A	25
28	Human Settlement	Residential	Putty (Valley)		South	Likely	Major	Very High	2A	6;21;13
29	Human Settlement	Special Fire Protection	Mount Pleasant Public School	Goorangoola Road Mount Olive	North	Likely	Major	Very High	2A	50
30	Economic	Mines	Wambo Coal Mine		South	Likely	Major	Very High	2A	28
31	Human Settlement	Special Fire Protection	Parkland Motel	New England Highway	North	Likely	Major	Very High	2A	56
32	Human Settlement	Special Fire Protection	Glendon Hall (Toy Box)	Glendon Road	North	Likely	Major	Very High	2A	49

Map Ref No.	Asset type	Asset sub type	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment No.
33	Economic	Infrastructure	Workshops and Pumping Station @ Glennies Creek Dam	Glennies Creek Dam	North	Likely	Major	Very High	2A	27
34	Economic	Infrastructure	Gas fired power station Glennies Creek	Procters Lane	North	Likely	Major	Very High	2A	53
35	Human Settlement	Residential	Isolated rural properties Bulga		South	Almost certain	Moderate	Very High	2C	57;13;58
36	Economic	Infrastructure	Crest & Water Resources Radio Towers	Mount Dyrring	North	Likely	Moderate	High	3A	62
37	Economic	Infrastructure	Energy Aust substation Gresford/Elderslie Road	Elderslie Road	North	Likely	Moderate	High	3A	25
38	Economic	Infrastructure	Elderslie Radio Tower	Tangory Mountain	North	Likely	Moderate	High	3A	63
39	Economic	Infrastructure	Electricity Sub station Ravensworth	Old New England Highway	North	Likely	Moderate	High	3A	25
40	Human Settlement	Residential	Isolated rural properties Howes Valley		South	Likely	Moderate	High	3A	13;71;76
42	Economic	Commercial Forest	Putty State Forest		South	Likely	Moderate	High	3A	66
43	Human Settlement	Residential	Lambs Valley Rural Properties (Valley)	Lambs Valley	North	Likely	Moderate	High	3A	13;72
44	Economic	Commercial Forest	Pokolbin State Forest	Broke	South	Likely	Moderate	High	3A	66
45	Economic	Commercial	Mount Thorley Industrial Area		South	Unlikely	Moderate	Low	NA	
46	Human Settlement	Residential	Isolated rural properties Doyles Creek		South	Likely	Moderate	High	3A	57;13;69
47	Economic	Commercial	McDougalls Hill Industrial Estate		North	Unlikely	Moderate	Low	NA	
48	Human Settlement	Residential	Hanwood Estate		South	Likely	Moderate	High	3A	13;70
49	Cultural	Non Indigenous	Stockyards	Howes Mountain	South	Likely	Moderate	High	3A	11
50	Economic	Infrastructure	Obanvale Water Treatment Plant	Bridgman Road	North	Likely	Moderate	High	3A	65
51	Economic	Infrastructure	RTA Radio Mast	Howes Mountain	South	Likely	Moderate	High	3A	64;11
52	Economic	Infrastructure	Water Pumping Station	Bridgman Road near Camberwell Coal	North	Likely	Moderate	High	3A	27
53	Economic	Infrastructure	Sewerage Treatment Plant	Army Camp Rd	South	Likely	Moderate	High	3A	27
54	Economic	Infrastructure	Radio Mast & Weather Station	Mount Poppong	South	Likely	Moderate	High	3A	11
55	Economic	Infrastructure	Mobile Telephone transmission tower	New England Highway Belford	South	Likely	Moderate	High	3A	73
56	Human Settlement	Residential	Milbrodale isolated rural properties		South	Likely	Moderate	High	3A	57;13;98
57	Human Settlement	Residential	Lower Belford rural properties	Bell,Hermitage, Kirkton Rds. Standen & Corinda Dr	South	Likely	Moderate	High	3A	68;13
58	Cultural	Non Indigenous	Other non indigenous sites	Mt Royal	North	Likely	Moderate	High	3A	99
59	Economic	Commercial	Putty Sawmill	Yengo Drive	South	Likely	Moderate	High	3A	100
60	Economic	Infrastructure	Coal Loading Facilities	Mount Thorley, Wambo, Bulga, Integra, Hunter Valley Ops, Ashton, Ravensworth, Liddell.	North	Unlikely	Catastrophic	High	3C	101
61	Economic	Infrastructure	Putty Trig		South	Unlikely	Major	Medium	4	94
62	Economic	Mines	Integra (Camberwell) Coal Underground		North	Unlikely	Major	Medium	4	84
63	Economic	Infrastructure	Obanvale Radio Repeater	Obanvale trig	North	Unlikely	Major	Medium	4	79
64	Economic	Infrastructure	Air Navigation Facility (SGT NDB)	Roughit Lane Sedgefield	North	Unlikely	Major	Medium	4	95
65	Economic	Commercial	Singleton Council Depot and RTA Depot	Maidon Dieu Rd	North	Likely	Minor	Medium	4	
66	Economic	Infrastructure	Whitingham Solar Power Station	Whitingham	South	Unlikely	Major	Medium	4	
67	Human Settlement	Residential	Bulga Village		South	Likely	Minor	Medium	4	
68	Economic	Infrastructure	Energy Aust sub station Maison Dieu	Maison Dieu Road	North	Unlikely	Major	Medium	4	25
69	Human Settlement	Residential	Rural Properties Warkworth		South	Likely	Minor	Medium	4	
70	Human Settlement	Special Fire Protection	St Shenouda Monastery	Putty Road 2km south of Yengo Drive	South	Possible	Moderate	Medium	4	81
71	Human Settlement	Residential	Isolated Rural Properties Mirannie	Mirannie	North	Likely	Minor	Medium	4	
72	Human Settlement	Residential	Rural properties Glendon		North	Likely	Minor	Medium	4	
73	Human Settlement	Residential	Rural properties Scotts Flat		North	Likely	Minor	Medium	4	
74	Human Settlement	Residential	Rural Residential Properties Retreat	Wattle Ponds	North	Likely	Minor	Medium	4	

Map Ref No.	Asset type	Asset sub type	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment No.
75	Human Settlement	Residential	Jerrys Plains		South	Likely	Minor	Medium	4	
76	Economic	Agricultural	Thoroughbred horse studs Jerrys Plains, Milbrodale.		South	Unlikely	Major	Medium	4	92
77	Human Settlement	Special Fire Protection	Milbrodale Public School		South	Likely	Minor	Medium	4	82
78	Human Settlement	Residential	East Branxton Rural Residential		South	Likely	Minor	Medium	4	
79	Human Settlement	Residential	Dalwood Isolated Rural		South	Likely	Minor	Medium	4	
80	Human Settlement	Residential	Whittingham Rural residential		South	Likely	Minor	Medium	4	
81	Human Settlement	Residential	Glenridding Rural Residential		South	Likely	Minor	Medium	4	
82	Human Settlement	Residential	Gowrie		North	Likely	Minor	Medium	4	83
83	Human Settlement	Residential	Isolated Rural Properties Glendon Brook	Glendon Brook	North	Likely	Minor	Medium	4	93
84	Human Settlement	Residential	Rural Properties Westbrook	Westbrook	North	Likely	Minor	Medium	4	
85	Human Settlement	Residential	Elderslie locality		North	Likely	Minor	Medium	4	
86	Human Settlement	Residential	Stanhope Locality		North	Likely	Minor	Medium	4	
87	Human Settlement	Residential	Rural Residential Properties	Thomas & Sunnyside Lane	North	Likely	Minor	Medium	4	
88	Human Settlement	Residential	Rural Residents Mt Olive	Mount Olive	North	Likely	Minor	Medium	4	
89	Human Settlement	Residential	Rural Properties Goorangoola	Goorangoola Road	North	Likely	Minor	Medium	4	
90	Economic	Mines	Beltana Underground	Broke Road	South	Unlikely	Major	Medium	4	85
91	Human Settlement	Residential	Rural Res Mitchells Flat	Mitchells Flat	North	Likely	Minor	Medium	4	
92	Human Settlement	Residential	Rural Res Sedgfield	Gresford Rd, Big Ridge, Mirannie Rd.	North	Likely	Minor	Medium	4	
93	Human Settlement	Residential	Rural Properties Long Gully/Dyrring	Long Gully/ Mt View/ Dyrring Roads	North	Likely	Minor	Medium	4	
94	Human Settlement	Special Fire Protection	Mount Olive Hall (Toy Box)	Opposite Judan Rd	North	Likely	Minor	Medium	4	
95	Human Settlement	Special Fire Protection	Broke Hall (Toy Box)	Cochrane Street	South	Likely	Minor	Medium	4	
96	Human Settlement	Special Fire Protection	Bulga Hall (Toy Box)	Inlet Rd	South	Likely	Minor	Medium	4	
97	Cultural	Non Indigenous	Glendon House	Glendon Road	North	Likely	Minor	Medium	4	
98	Human Settlement	Special Fire Protection	Glennies Creek Hall	Middle Falbrook Road	North	Likely	Minor	Medium	4	
99	Human Settlement	Special Fire Protection	Jerrys Plains Public School	Jerrys Plains	South	Unlikely	Major	Medium	4	90
100	Human Settlement	Special Fire Protection	Kirkton Public School	Standen Drive Lower Belford	South	Unlikely	Major	Medium	4	91
101	Human Settlement	Residential	Broke Village		South	Likely	Minor	Medium	4	
102	Economic	Tourist and Recreational	Sweetwater B&B Facilities	Sweetwater Road	South	Likely	Minor	Medium	4	
103	Economic	Tourist and Recreational	Youngville Picnic Area	Loop Road	North	Likely	Minor	Medium	4	11
104	Economic	Tourist and Recreational	Tea house - Putty	Off Putty Valley Road	South	Likely	Minor	Medium	4	
105	Economic	Infrastructure	RTA Depot Howes Valley	Putty Road Howes Valley	South	Likely	Minor	Medium	4	
106	Cultural	Other	Camberwell Church	New England Highway Camberwell	North	Likely	Minor	Medium	4	
107	Economic	Commercial	Explosive Storage facilities	Broke Road, Mt Thorley, Gouldsville	South	Unlikely	Moderate	Low	NA	96
108	Human Settlement	Special Fire Protection	Broke Public School	Cochrane Street Broke	South	Unlikely	Moderate	Low	NA	97
109	Economic	Infrastructure	Water Pumping Stations South	Putty Rd, Broke Rd, Fordwich Crossing	South	Unlikely	Moderate	Low	NA	
110	Human Settlement	Special Fire Protection	Jerrys Plains Hall	Redmondvale Road	South	Unlikely	Minor	Low	NA	
112	Environment	Endangered	Endangered Ecological Communities - Very High			Likely	Major	Very High	2A	9
113	Environment	Endangered	Endangered Ecological Communities - High			Likely	Moderate	High	3A	9
114	Environment	Endangered	Endangered Ecological Community - Medium			Unlikely	Major	Medium	4	9
115	Environment	Locally Important	Fire Intolerant Vegetation		North; South	Unlikely	Moderate	Low	NA	9
116	Economic	Commercial	United Service Station Whittingham	New England Highway & Golden Highway Whittingham	South	Likely	Moderate	High	3A	56

Map Ref No.	Asset type	Asset sub type	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment No.
117	Human Settlement	Special Fire Protection	Howes Valley Community Hall & Fire Station	Putty Road Howes Valley	South	Likely	Major	Very High	2A	26
118	Human Settlement	Special Fire Protection	Putty Community Hall	Putty Valley Road Putty	South	Almost certain	Moderate	Very High	2C	59
119	Human Settlement	Residential	Putty rural ridgetop properties	Ridgetop properties	South	Likely	Catastrophic	Extreme	1B	6;21;13;14
120	Human Settlement	Special Fire Protection	Glendon Brook Hall	Glendon Brook Road Glendon Brook	North	Likely	Minor	Medium	4	
121	Human Settlement	Special Fire Protection	Elderslie Hall	Elderslie Village	North	Likely	Minor	Medium	4	
122	Human Settlement	Special Fire Protection	Lower Belford CWA Hall	Corinda Drive Lower Belford	South	Likely	Minor	Medium	4	
123	Economic	Tourist and Recreational	Accommodation & B&B Facilities (Hermitage Road)	Hermitage Road Pokolbin	South	Likely	Moderate	High	3A	60
124	Economic	Tourist and Recreational	Broke B&B Facilities	Variuos roads near Broke Village	South	Likely	Moderate	High	3A	77
0	Human Settlement	Other	Singleton Military Area	Range Road Whittingham	South	Likely	Minor	Medium	4	78;80
0	Economic	Agricultural	Grazing lands North MDA	All grazing lands north of the Hunter River	North	Likely	Minor	Medium	4	
0	Economic	Agricultural	Grazing lands South MDA	All grazing lands south of the Hunter River	South	Likely	Minor	Medium	4	
0	Economic	Agricultural	Vineyard Areas South	Dalwood, Broke, Hermitage, Milbrodale, Howes Valley, Putty.		Likely	Minor	Medium	4	
0	Economic	Commercial	Hill Top Service Station and Truck stop	New England Highway McDougals Hill	North	Unlikely	Moderate	Low	NA	
0	Economic	Infrastructure	Rural Telephone exchanges	Various locations near numerous villages and rural areas.	North; South	Likely	Moderate	High	3A	67
0	Economic	Mines	United Underground	Golden Highway Warkworth		Unlikely	Major	Medium	4	89
0	Economic	Mines	Cumnock Coal	Ravensworth	North	Likely	Major	Very High	2A	39
0	Economic	Mines	Mount Owen Coal mine	Hebden	North	Likely	Major	Very High	2A	40
0	Economic	Mines	United Mine Open Cut	Warkworth	South	Likely	Major	Very High	2A	41
0	Economic	Mines	Ashton Coal Underground	New England Highway Camberwell	North	Unlikely	Major	Medium	4	86
0	Economic	Mines	Bulga Coal Preparation Plant	Broke Road	South	Likely	Major	Very High	2A	42
0	Economic	Mines	Hunter Valley Coal Preparation Plant	Lemington Road	North	Likely	Major	Very High	2A	43
0	Economic	Mines	Integra Coal Open Cut	Bridgman Road	North	Likely	Major	Very High	2A	44
0	Economic	Mines	Mount Thorley Coal Preparation Plant	Mount Thorley	South	Likely	Major	Very High	2A	46
0	Economic	Mines	North Wambo Underground	Wambo Road Warkworth	South	Unlikely	Major	Medium	4	87
0	Economic	Mines	Ravensworth/ Narama Open Cut	Hebden Road	North	Likely	Major	Very High	2A	47
0	Economic	Mines	United Coal Preparation Plant	Golden Highway Warkworth		Likely	Major	Very High	2A	48
0	Economic	Mines	Ravensworth Underground	Lemington Road	North	Unlikely	Major	Medium	4	88
0	Environment	Endangered	Major consequence Flora and Fauna	Milbrodale	North; South	Likely	Major	Very High	2A	9
0	Cultural	Aboriginal Significance	Other Aboriginal Heritage Sites	Across LGA	North; South	Likely	Moderate	High	3A	9
0	Cultural	Aboriginal Significance	High consequence Aboriginal Heritage	Across LGA	North; South	Likely	Catastrophic	Extreme	1B	9
0	Cultural	Non Indigenous	Bulga Road	Bulga Road	South	Likely	Moderate	High	3A	57
0	Cultural	Other	Cedar Hut	Cassells Road near main creek.		Likely	Moderate	High	3A	61
0	Cultural	Other	Former Howes Valley School	Next to Community Hall/ RFB station	South	Likely	Minor	Medium	4	

Map Ref No.	Asset type	Asset sub type	Asset name	Asset Location	Display area	Likelihood	Consequence	Risk	Priority	Treatment No.
0	Cultural	Other	Saint Columbus Church - Goorangoola	Goorangoola	North	Likely	Minor	Medium	4	
0	Cultural	Other	Blaxlands House	Broke		Likely	Minor	Medium	4	
0	Cultural	Other	Corinda House Farm	52 Corinda Drive Lower Belford		Likely	Minor	Medium	4	
0	Cultural	Other	Leconfield	Dalwood Road		Likely	Minor	Medium	4	
0	Cultural	Other	Manresa	Gresford Road - Glendon Brook		Likely	Minor	Medium	4	
0	Cultural	Other	Milbrodale Estate	Putty Road - Milbrodale		Likely	Minor	Medium	4	
0	Cultural	Other	Minimbah and Outbuildings	Whittingham		Likely	Minor	Medium	4	
0	Cultural	Other	Kirkton Winery and Vineyard site	Bell Road Belford		Likely	Minor	Medium	4	
0	Cultural	Other	Johnsons Cottage	Stanhope Road		Likely	Minor	Medium	4	
0	Cultural	Other	Greylands and Outbuildings	Goorangoola		Likely	Minor	Medium	4	
0	Cultural	Other	Glen Nevis	Westbrook Road Westbrook		Likely	Minor	Medium	4	
0	Cultural	Other	Former Chain of Ponds Hotel	Old New England Highway Ravensworth		Likely	Minor	Medium	4	
0	Cultural	Other	Former Belford Public School	Belford		Likely	Minor	Medium	4	
0	Cultural	Other	Baroona and outbuildings	Whittingham		Likely	Minor	Medium	4	
0	Cultural	Other	Cyril Moxham's House	Hambledon Hill Road - Wylies Flat		Likely	Minor	Medium	4	
0	Cultural	Other	Strowan	Jerrys Plains		Likely	Minor	Medium	4	
0	Cultural	Other	Camberwell Community Hall	Camberwell		Likely	Minor	Medium	4	
0	Cultural	Other	Church of Good Sheppard	Belford		Likely	Minor	Medium	4	
0	Cultural	Other	Charlton	Cobcroft Road - Fordwich		Likely	Minor	Medium	4	
0	Cultural	Other	Bendeich Cottage	Stanhope Road		Likely	Minor	Medium	4	
0	Cultural	Other	Mount Leonard	Putty Road - Bulga		Likely	Minor	Medium	4	
0	Cultural	Other	Mr Leonard's Public School	Bulga		Likely	Minor	Medium	4	
0	Cultural	Other	New Freugh Ruin	Belford		Likely	Minor	Medium	4	
0	Cultural	Other	Public School	New England Highway cnr Hebden Rd - Ravensworth		Likely	Minor	Medium	4	
0	Cultural	Other	Ravensworth Homestead	Ravensworth		Likely	Minor	Medium	4	
0	Cultural	Other	Wambo and Outbuildings	Warkworth		Unlikely	Minor	Low	NA	
0	Cultural	Other	Warromean	Glendon Road - Scotts Flat		Likely	Minor	Medium	4	
0	Cultural	Other	Dulwich	Middle Falbrook Road - Nundah		Likely	Minor	Medium	4	

Appendix 3 – Treatment Register

Priority (Risk Rating)	Asset ID	Asset Name	Strategy	Treatment ID	Action Description	Responsible Agencies	Other RA	Support Agencies	Other SA	1011	1112	1213	1314	1415
1B (Extreme)	0	High consequence Aboriginal Heritage	Preparedness	9	Develop management guidelines for IMT's	DECC		DL;NSWFB; RFS;DPI			[1112]	[1213]	[1314]	[1415]
	2	Sheepskin Hut	Hazard Reduction	11	Implement DECC Fire break maintenance program	DECC				[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	8	Undertake building maintenance works.	DECC				[1011]	[1112]	[1213]	[1314]	[1415]
	3	California Hut	Hazard Reduction	11	Implement DECC Fire break maintenance program	DECC				[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	8	Undertake building maintenance works.	DECC				[1011]	[1112]	[1213]	[1314]	[1415]
	4	Long Weeney Hut	Hazard Reduction	11	Implement DECC Fire break maintenance program	DECC				[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	8	Undertake building maintenance works.	DECC				[1011]	[1112]	[1213]	[1314]	[1415]
	5	Isolated Rural Properties Mount Royal	Community Education	16	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
			Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	23	Prepare Pre Incident Plan	RFS				[1011]	[1112]	[1213]	[1314]	[1415]
	6	Transgrid Electricity Transmission Line	Hazard Reduction	7	Implement power easement maintenance program.	Other	Transgrid	RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	7	Glenroy Estate	Community Education	15	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	22	Prepare Pre Incident Plan	RFS				[1011]	[1112]	[1213]	[1314]	[1415]
	8	Isolated Rural Properties Bimbadeen Estate	Community Education	17	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
			Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
	9	Kindarun rural properties	Community Education	18	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
			Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	6	Complete Property Identification Project	RFS		LGA		[1011]	[1112]			
				20	Prepare Pre Incident Plan	RFS				[1011]	[1112]	[1213]	[1314]	[1415]
	10	Mount Royal eco cabins	Property Planning	12	Assist preparation of emergency/relocation plan	RFS					[1112]			
	11	High Wollemi Resort	Hazard Reduction	19	Maintain APZ	Private		RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	119	Putty rural ridgetop properties	Community Education	14	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
			Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	6	Complete Property Identification Project	RFS		LGA		[1011]	[1112]			
				21	Prepare Pre Incident Plan	RFS				[1011]	[1112]	[1213]	[1314]	[1415]
2A (Very High)	0	Bulga Coal Preparation Plant	Community Education	42	Review and provide advice for fuel management plan	RFS						[1213]		
		Cumnock Coal	Community Education	39	Review and provide advice for fuel management plan	RFS						[1213]		
		Hunter Valley Coal Preparation Plant	Community Education	43	Review and provide advice for fuel management plan	RFS							[1314]	
		Integra Coal Open Cut	Community Education	44	Review and provide advice for fuel management plan	RFS							[1314]	

Priority (Risk Rating)	Asset ID	Asset Name	Strategy	Treatment ID	Action Description	Responsible Agencies	Other RA	Support Agencies	Other SA	1011	1112	1213	1314	1415
		Major consequence Flora and Fauna	Preparedness	9	Develop management guidelines for IMT's	DECC		DL;NSWFB; RFS;DPI			[1112]	[1213]	[1314]	[1415]
		Mount Owen Coal mine	Community Education	40	Review and provide advice for fuel management plan	RFS						[1213]		
		Mount Thorley Coal Preparation Plant	Community Education	46	Review and provide advice for fuel management plan	RFS							[1314]	
		Ravensworth/ Narama Open Cut	Community Education	47	Review and provide advice for fuel management plan	RFS							[1314]	
		United Coal Preparation Plant	Community Education	48	Review and provide advice for fuel management plan	RFS								[1415]
		United Mine Open Cut	Community Education	41	Review and provide advice for fuel management plan	RFS						[1213]		
	12	Northern Rail & Coal Transport Corridor	Preparedness	24	ARTC to maintain rail corridor and access tracks.	ARTC				[1011]	[1112]	[1213]	[1314]	[1415]
	13	Isolated Rural Prop Carrowbrook	Community Education	52	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
			Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
	14	Redbank Power Station	Preparedness	54	Prepare Pre Incident Plan	RFS				[1011]	[1112]	[1213]	[1314]	[1415]
	16	Lambs Valley Isolated Rural Properties (Ridgetop)	Community Education	51	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
			Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	55	Complete Property Identification Project	RFS		LGA					[1314]	[1415]
	17	Liddell Coal	Community Education	29	Review and provide advice for fuel management plan	RFS					[1112]			
	18	Mount Owen	Community Education	30	Review and provide advice for fuel management plan	RFS				[1011]				
	19	Ashton Coal Open Cut	Community Education	31	Review and provide advice for fuel management plan	RFS				[1011]				
	20	Rix's Creek Open Cut	Community Education	32	Review and provide advice for fuel management plan	RFS					[1112]			
	21	Hunter Valley Operations	Community Education	33	Review and provide advice for fuel management plan	RFS					[1112]			
	22	Warkworth	Community Education	34	Review and provide advice for fuel management plan	RFS					[1112]			
	23	Mount Thorley	Community Education	35	Review and provide advice for fuel management plan	RFS					[1112]			
	24	Bulga Coal	Community Education	36	Review and provide advice for fuel management plan	RFS					[1112]			
	25	Howick/ Newdell Coal Preparation Plant	Community Education	37	Review and provide advice for fuel management plan	RFS					[1112]			
	26	Xstrata Coal	Community Education	38	Review and provide advice for fuel management plan	RFS						[1213]		
	27	Electricity Sub Station Mount Thorley	Hazard Reduction	25	Maintain APZ	Other	Energy Australia	RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	28	Putty (Valley)	Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	6	Complete Property Identification Project	RFS		LGA		[1011]	[1112]			
				21	Prepare Pre Incident Plan	RFS				[1011]	[1112]	[1213]	[1314]	[1415]
	29	Mount Pleasant Public School	Community Education	50	Conduct Kids FireWise activity	RFS					[1112]		[1314]	[1415]
	30	Wambo Coal Mine	Community Education	28	Review and provide advice for fuel management plan	RFS					[1112]			
	31	Parkland Motel	Hazard Reduction	56	Inspect APZ and Maintain as required	Private		RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	32	Glendon Hall (Toy Box)	Hazard Reduction	49	Inspect APZ and Maintain as required	LGA				[1011]	[1112]	[1213]	[1314]	[1415]

Priority (Risk Rating)	Asset ID	Asset Name	Strategy	Treatment ID	Action Description	Responsible Agencies	Other RA	Support Agencies	Other SA	1011	1112	1213	1314	1415
	33	Workshops and Pumping Station @ Glennies Creek Dam	Hazard Reduction	27	Maintain APZ	LGA				[1011]	[1112]	[1213]	[1314]	[1415]
	34	Gas fired power station Glennies Creek	Preparedness	53	Prepare Pre Incident Plans	RFS				[1011]	[1112]	[1213]	[1314]	[1415]
	112	Endangered Ecological Communities - Very High	Preparedness	9	Develop management guidelines for IMT's	DECC		DL;NSWFB; RFS;DPI			[1112]	[1213]	[1314]	[1415]
	117	Howes Valley Community Hall & Fire Station	Hazard Reduction	26	Maintain APZ	RFS		LGA		[1011]	[1112]	[1213]	[1314]	[1415]
2C (Very High)	35	Isolated rural properties Bulga	Community Education	58	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
			Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	57	Maintain existing fire trails	DECC		DL;LGA		[1011]	[1112]	[1213]	[1314]	[1415]
3A (High)	118	Putty Community Hall	Hazard Reduction	59	Maintain APZ	Private		LGA		[1011]	[1112]	[1213]	[1314]	[1415]
	0	Bulga Road	Preparedness	57	Maintain existing fire trails	DECC		DL;LGA		[1011]	[1112]	[1213]	[1314]	[1415]
		Cedar Hut	Preparedness	61	Prepare Pre Incident Plan	DECC				[1011]	[1112]	[1213]	[1314]	[1415]
		Other Aboriginal Heritage Sites	Preparedness	9	Develop management guidelines for IMT's	DECC		DL;NSWFB; RFS;DPI			[1112]	[1213]	[1314]	[1415]
		Rural Telephone exchanges	Hazard Reduction	67	Maintain APZ	Other	Telstra	RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	36	Crest & Water Resources Radio Towers	Hazard Reduction	62	Inspect and Maintain APZ as required	RFS		Other	CREST	[1011]	[1112]	[1213]	[1314]	[1415]
	37	Energy Aust substation Gresford/Elderslie Road	Hazard Reduction	25	Maintain APZ	Other	Energy Australia	RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	38	Elderslie Radio Tower	Hazard Reduction	63	Maintain APZ	Other	Telstra	RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	39	Electricity Sub station Ravensworth	Hazard Reduction	25	Maintain APZ	Other	Energy Australia	RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	40	Isolated rural properties Howes Valley	Community Education	71	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
			Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	76	Maintain existing fire trails	RFS		DL;LGA;RFS				[1213]		
	42	Putty State Forest	Hazard Reduction	66	Management burn after harvesting operations.	DPI				[1011]	[1112]	[1213]	[1314]	[1415]
	43	Lambs Valley Rural Properties (Valley)	Community Education	72	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
			Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
	44	Pokolbin State Forest	Hazard Reduction	66	Management burn after harvesting operations.	DPI				[1011]	[1112]	[1213]	[1314]	[1415]
	46	Isolated rural properties Doyles Creek	Community Education	69	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
			Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	57	Maintain existing fire trails	DECC		DL;LGA		[1011]	[1112]	[1213]	[1314]	[1415]
	48	Hanwood Estate	Community Education	70	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
			Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
	49	Stockyards	Hazard Reduction	11	Implement DECC Fire break maintenance program	DECC				[1011]	[1112]	[1213]	[1314]	[1415]
	50	Obanvale Water Treatment Plant	Hazard Reduction	65	Maintain APZ	LGA		RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	51	RTA Radio Mast	Hazard Reduction	11	Implement DECC Fire break maintenance program	DECC				[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	64	Inspection and maintenance of access	RTA		DECC			[1112]		[1314]	
	52	Water Pumping Station	Hazard Reduction	27	Maintain APZ	LGA				[1011]	[1112]	[1213]	[1314]	[1415]
	53	Sewerage Treatment Plant	Hazard Reduction	27	Maintain APZ	LGA				[1011]	[1112]	[1213]	[1314]	[1415]

Priority (Risk Rating)	Asset ID	Asset Name	Strategy	Treatment ID	Action Description	Responsible Agencies	Other RA	Support Agencies	Other SA	1011	1112	1213	1314	1415
	54	Radio Mast & Weather Station	Hazard Reduction	11	Implement DECC Fire break maintenance program	DECC				[1011]	[1112]	[1213]	[1314]	[1415]
	55	Mobile Telephone transmission tower	Hazard Reduction	73	Maintain APZ	Other	Optus/Telstra	RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	56	Milbrodale isolated rural properties	Community Education	98	Implement community engagement activity	RFS		DECC		[1011]	[1112]	[1213]	[1314]	[1415]
			Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	57	Maintain existing fire trails	DECC		DL;LGA		[1011]	[1112]	[1213]	[1314]	[1415]
	57	Lower Belford rural properties	Community Education	68	Implement community engagement activity	RFS		DECC			[1112]			
			Hazard Reduction	13	Implement SFAZ burning strategies	DL;LGA;DECC; RFS;DPI				[1011]	[1112]	[1213]	[1314]	[1415]
	58	Other non indigenous sites	Hazard Reduction	99	Inspect APZ and Maintain as required	DECC				[1011]	[1112]	[1213]	[1314]	[1415]
	59	Putty Sawmill	Community Education	100	Implement community engagement activity	RFS		LGA		[1011]	[1112]	[1213]	[1314]	[1415]
	113	Endangered Ecological Communities - High	Preparedness	9	Develop management guidelines for IMT's	DECC		DL;NSWFB; RFS;DPI			[1112]	[1213]	[1314]	[1415]
	116	United Service Station Whittingham	Hazard Reduction	56	Inspect APZ and Maintain as required	Private		RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	123	Accommodation & B&B Facilities (Hermitage Road)	Community Education	60	Implement community engagement activity.	NSWFB;RFS		LGA;DECC			[1112]			
	124	Broke B&B Facilities	Hazard Reduction	77	Maintain APZ	Private		RFS		[1011]	[1112]	[1213]	[1314]	[1415]
3C (High)	60	Coal Loading Facilities	Hazard Reduction	101	Inspect APZ and Maintain as required	Private		RFS		[1011]	[1112]	[1213]	[1314]	[1415]
4 (Medium)	0	Ashton Coal Underground	Community Education	86	Review and provide advice for fuel management plan	RFS								[1415]
		Baroona and outbuildings												
		Bendeich Cottage												
		Blaxlands House												
		Camberwell Community Hall												
		Charlton												
		Church of Good Sheppard												
		Corinda House Farm												
		Cyril Moxham's House												
		Dulwich												
		Former Belford Public School												
		Former Chain of Ponds Hotel												
		Former Howes Valley School												
		Glen Nevis												
		Grazing lands North MDA												
		Grazing lands South MDA												
		Greylands and Outbuildings												
		Johnsons Cottage												
		Kirkton Winery and Vineyard site												
		Leconfield												
		Manresa												
		Milbrodale Estate												
		Minimbah and Outbuildings												
		Mount Leonard												
		Mr Leonard's Public School												
		New Freugh Ruin												

Priority (Risk Rating)	Asset ID	Asset Name	Strategy	Treatment ID	Action Description	Responsible Agencies	Other RA	Support Agencies	Other SA	1011	1112	1213	1314	1415
		North Wambo Underground	Community Education	87	Review and provide advice for fuel management plan	RFS								[1415]
		Public School												
		Ravensworth Homestead												
		Ravensworth Underground	Community Education	88	Review and provide advice for fuel management plan	RFS								[1415]
		Saint Columbus Church - Goorangoola												
		Singleton Military Area	Ignition Management	80	Enact fire restriction protocol at FDR > high	Defence		NSWFB;RFS		[1011]	[1112]	[1213]	[1314]	[1415]
			Preparedness	78	Inspect and maintain access rds and perimeter tracks	Private; Defence		RFS		[1011]	[1112]	[1213]	[1314]	[1415]
		Strowan												
		United Underground	Community Education	89	Review and provide advice for fuel management plan	RFS								[1415]
		Vineyard Areas South												
		Warromean												
	1	Glennies Creek Catchment												
	61	Putty Trig	Hazard Reduction	94	Maintain APZ	Other	Optus/Telstra	RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	62	Integra (Camberwell) Coal Underground	Community Education	84	Review and provide advice for fuel management plan	RFS								[1415]
	63	Obanvale Radio Repeater	Hazard Reduction	79	Maintain APZ	Other	Optus/Telstra	RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	64	Air Navigation Facility (SGT NDB)	Hazard Reduction	95	Maintain APZ	Other	Civil Aviation Safety Authority	RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	65	Singleton Council Depot and RTA Depot												
	66	Whittingham Solar Power Station												
	67	Bulga Village												
	68	Energy Aust sub station Maison Dieu	Hazard Reduction	25	Maintain APZ	Other	Energy Australia	RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	69	Rural Properties Warkworth												
	70	St Shenouda Monastery	Hazard Reduction	81	Maintain APZ	Private		RFS				[1213]		
	71	Isolated Rural Properties Mirannie												
	72	Rural properties Glendon												
	73	Rural properties Scotts Flat												
	74	Rural Residential Properties Retreat												
	75	Jerrys Plains												
	76	Thoroughbred horse studs Jerrys Plains, Milbrodale.	Community Education	92	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
	77	Milbrodale Public School	Community Education	82	Conduct Kids FireWise activity	RFS				[1011]		[1213]		[1415]
	78	East Branxton Rural Residential												
	79	Dalwood Isolated Rural												
	80	Whittingham Rural residential												
	81	Glenridding Rural Residential												
	82	Gowrie	Preparedness	83	Provide training and resources for CFU	NSWFB		RFS		[1011]	[1112]	[1213]	[1314]	[1415]
	83	Isolated Rural Properties Glendon Brook	Community Education	93	Implement community engagement activity	RFS		LGA;DECC		[1011]	[1112]	[1213]	[1314]	[1415]
	84	Rural Properties Westbrook												
	85	Elderslie locality												
	86	Stanhope Locality												
	87	Rural Residential Properties												

Priority (Risk Rating)	Asset ID	Asset Name	Strategy	Treatment ID	Action Description	Responsible Agencies	Other RA	Support Agencies	Other SA	1011	1112	1213	1314	1415
	88	Rural Residents Mt Olive												
	89	Rural Properties Goorangoola												
	90	Beltana Underground	Community Education	85	Review and provide advice for fuel management plan	RFS								[1415]
	91	Rural Res Mitchells Flat												
	92	Rural Res Sedgefield												
	93	Rural Properties Long Gully/Dyrring												
	94	Mount Olive Hall (Toy Box)												
	95	Broke Hall (Toy Box)												
	96	Bulga Hall (Toy Box)												
	97	Glendon House												
	98	Glennies Creek Hall												
	99	Jerrys Plains Public School	Community Education	90	Conduct Kids FireWise activity	RFS				[1011]		[1213]		[1415]
	100	Kirkton Public School	Community Education	91	Conduct Kids FireWise activity	RFS				[1011]		[1213]		[1415]
	101	Broke Village												
	102	Sweetwater B&B Facilities												
	103	Youngville Picnic Area	Hazard Reduction	11	Implement DECC Fire break maintenance program	DECC				[1011]	[1112]	[1213]	[1314]	[1415]
	104	Tea house - Putty												
	105	RTA Depot Howes Valley												
	106	Camberwell Church												
	114	Endangered Ecological Community - Medium	Preparedness	9	Develop management guidelines for IMT's	DECC		DL;NSWFB; RFS;DPI			[1112]	[1213]	[1314]	[1415]
	120	Glendon Brook Hall												
	121	Elderslie Hall												
	122	Lower Belford CWA Hall												
NA (Low)	0	Hill Top Service Station and Truck stop												
		Wambo and Outbuildings												
	45	Mount Thorley Industrial Area												
	47	McDougalls Hill Industrial Estate												
	107	Explosive Storage facilities	Property Planning	96	Review existing fire relocation plan	NSWFB		LGA;RTA; Other	Dyno-Nobel	[1011]	[1112]	[1213]	[1314]	[1415]
	108	Broke Public School	Community Education	97	Conduct Kids FireWise activity	RFS				[1011]		[1213]		[1415]
	109	Water Pumping Stations South												
	110	Jerrys Plains Hall												
	115	Fire Intolerant Vegetation	Preparedness	9	Develop management guidelines for IMT's	DECC		DL;NSWFB; RFS;DPI			[1112]	[1213]	[1314]	[1415]

Appendix 4 – Maps

Map Number	Map Title
1	Singleton North Assets
2	Singleton South Assets
3	Time Since Fire
4	Bush Fire Frequency

Singleton BFM Bush Fire Risk Management Plan 2011

North - Map Display Area
Map 1 of 2

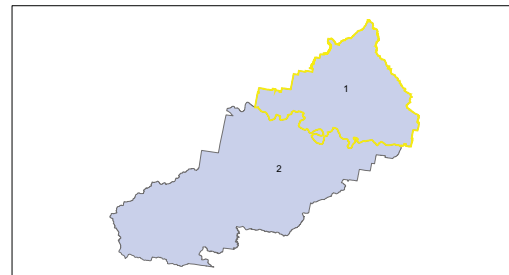
This Bush Fire Risk Management Plan (BFRMP) has been prepared by the Singleton Bush Fire Management Committee (BFMC) pursuant to section 52 of the *Rural Fires Act 1997*.

The aim of this BFRMP is to reduce the adverse impact of bush fires on life, property and the environment.

The objectives of this BFRMP are to:

- reduce the number of human-induced bush fire ignitions that cause damage to life, property or the environment;
- manage fuel to reduce the spread and intensity of bush fires while minimising environmental/ecological impacts;
- reduce the community's vulnerability to bush fires by improving its preparedness; and
- effectively contain fires with a potential to cause damage to life, property and the environment.

This map forms part of the BFRMP for the Singleton BFM, covering the local government area(s) of Singleton. It should be viewed in conjunction with the accompanying BFRMP document which provides further details on the BFM area, the assets assessed and the risk assessment process used.



Review
Under the *Rural Fires Act 1997* this plan must be reviewed and updated within each successive five year period following the constitution of the BFM. The Singleton BFM will also review this plan as necessary. This may be triggered by a range of circumstances, including but not limited to:

- changes to the BFM area, organisational responsibilities or legislation;
- changes to the bush fire risk in the area; or
- following a major fire event.

Assets

This BFRMP identifies the assets that are considered by the Singleton BFM and community to be at risk from bush fires, assesses the bush fire risk to each asset and assigns treatments designed to mitigate the risk. Assets in the BFM area identified as requiring treatments are listed in the assets table. Other assets within the BFM area that were assessed as not requiring treatments within the life of this plan are listed in the appendix to the BFRMP document. The Map Ref number "NA" denotes non-spatial assets.

Treatments

Specific treatments assigned to assets in the Singleton area are listed in the treatments table and linked to the assets which they are designed to protect. Standard BFM wide treatments (i.e. not linked to a specific asset) which occur on an ongoing basis within the BFM area are:

- reviewing the bush fire prone land map;
- ensuring developments in the bush fire prone land comply with Planning for Bush Fire Protection;
- using the Local Environment Plan's (LEPs) to control development in areas with a bush fire risk;
- varying the standard bush fire danger period as required;
- requiring permits during bush fire danger periods
- prosecution of arsonists/offenders
- investigation of bush fire cause;
- normal fire suppression activities;
- assessing and managing compliance with strategic fire-fighting resource allocation management systems;
- preparation of a S2 Operations Coordination Plan;
- fire management plans or plans of management; and
- bush fire hazard complaints.

Note on LMZ: All areas not specifically mapped as an APZ, SFAZ or FEZ are considered as LMZ for this risk management plan. For areas identified by an LMZ polygon on the map, please refer to the BFRMP document for the specific land management objectives.

Zone	Purpose	Suppression Objective(s)	Zone characteristics
Asset Protection Zone	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 bush fire impacts on unattended assets.	As per RFS document <i>Standards for Asset Protection Zones</i> .
Strategic Fire Advantage Zone	To provide strategic areas of fire protection advantage which will reduce the spread and intensity of bush fires, and reduce the potential for spot fire development. To aid containment of wildfires to existing management boundaries.	To improve the likelihood and safe use of: Parallel Attack suppression strategies within the zone. Indirect Attack (back burning) in high to very high fire weather conditions within the zone. To reduce the likelihood of: Spot fire development within the zone, and/or Spot fire ignition potential from the zone.	Zone width related to suppression objectives and dependent upon: - Topography - Aspect - Spotting propensity - Location of adjacent firebreaks - Mosaic pattern of treatment Assess Overall Fuel Hazard (OFH) once vegetation communities reach minimum fire thresholds within this plan. Management practices should aim to achieve mosaic fuel reduction patterns so that the majority of the SFAZ has an OFH of less than high.
Land Management Zone	To meet relevant land management objectives in areas where APZs or SFAZs are not appropriate.	To reduce the likelihood of spread of fires. To undertake mosaic burning	As appropriate to achieve land management e.g. heritage and/or fire protection e.g. broad scale mosaic burning objectives.
Fire Exclusion Zone	To exclude bush fires.	N/A	Variable dependent on size of fire sensitive area requiring protection.

Assets

	Human - Residential		Commercial Forests
	Human - Other		Drinking Water Catchments
	Special Fire Protection		Environmental - Locally Important
	Economic - Agricultural		Environmental - Substrate Sensitive
	Economic - Commercial		Environmental - Ecosystems
	Economic - Infrastructure		Cultural - Cultural Heritage
	Economic - Tourism and Recreational		Cultural - Cultural Other
	Economic - Mines		Cultural - Non Indigenous

Bush Fire Management Zones

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

Base Data Layers

	Major Roads Sealed		Drainage Potential
	Major Roads Unsealed		Drainage Non Potential
	Secondary Road Sealed		Hydro Line Potential
	Secondary Road Unsealed		Hydro Line Non Potential
	Local Road Sealed		Contour (100m)
	Local Road Unsealed		Contour (10m)
	Local Road Unimproved		Map Display Area
	4WD Track Unimproved		Local Government Area
	Path		Green Land
	Heavy Rail		State Forests
	Light Rail		National Park
	Heavy Rail Siding		

*Note - Some base data layers may not be displayed on map

0 2.5 5 7.5 10
km

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Date created: Wednesday, 19 January 2011

BFRR version 2.0.1.5 + S

Singleton BFMC Bush Fire Risk Management Plan 2011

South - Map Display Area
Map 2 of 2

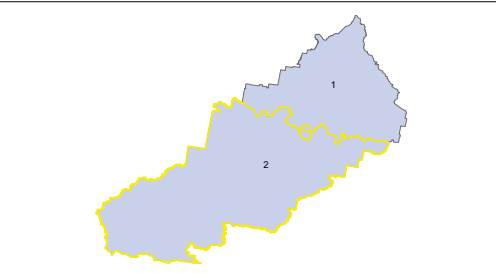
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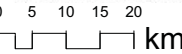
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Assets	
	Human - Residential
	Human - Other
	Special Fire Protection
	Economic - Agricultural
	Economic - Commercial
	Economic - Infrastructure
	Economic - Tourism and Recreational
	Economic - Mines
	Commercial Forests
	Drinking Water Catchments
	Environmental - Locally Important
	Environmental - Substrate Species
	Environmental - Ecosystems
	Cultural - Aboriginal Heritage
	Cultural - Other
	Cultural - Non Indigenous

Bush Fire Management Zones	
	Fire Exclusion Zone (FEZ)
	Asset Protection Zone (APZ)
	Land Management Zone (LMAZ)
	Strategic Fire Advantage Zone (SFAZ)

Base Data Layers	
	Major Roads Sealed
	Major Roads Unsealed
	Secondary Road Sealed
	Secondary Road Unsealed
	Local Road Sealed
	Local Road Unsealed
	Local Road Unspecified
	4WD Track Unspecified
	Path
	Heavy Rail
	Light Rail
	Heavy Rail Siding
	Drainage Potential
	Drainage Non Potential
	Hydro Line Potential
	Hydro Line Non Potential
	Contour (100m)
	Contour (50m)
	Map Display Area
	Local Government Area
	Crown Land
	State Forests
	National Park

*Note - Some base data layers may not be displayed on map



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Date created: Wednesday, 19 January 2011

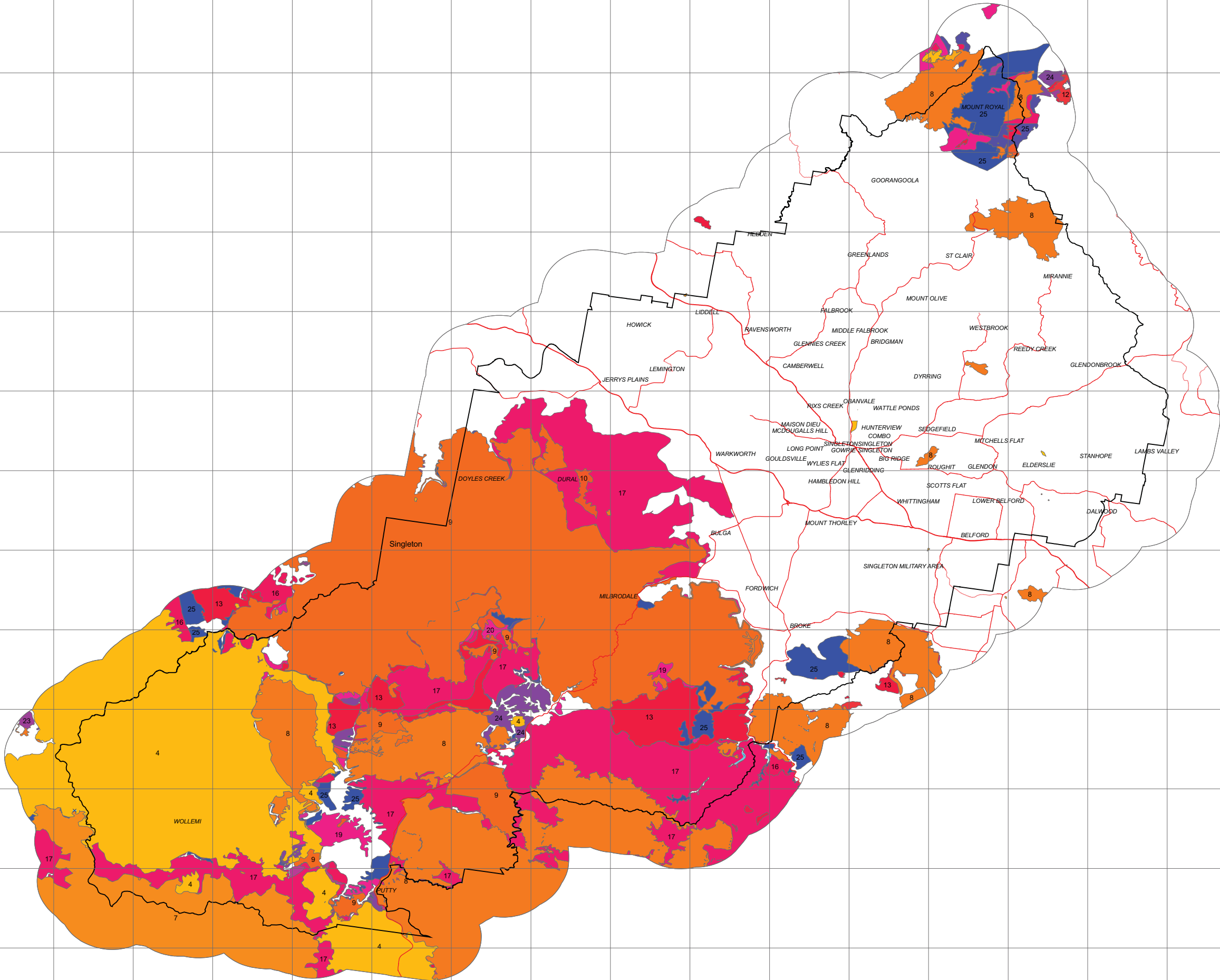
BFRR version 2.0.1.5 + S

Singleton BFM

Time Since Fire

Map created 24/2/2010

Number of years since last burnt (2007 Data used)



Legend

Time Since Fire



Major Roads

- Major Road Sealed
- Major Road Unsealed
- Secondary Road Sealed
- Secondary Road Unsealed

Hydrology

- Hydro-Line Perennial
- Hydro-Line Non Perennial
- Drainage Perennial
- Drainage Non Perennial

Jurisdiction

- Jurisdiction
- BFMC 5km Buffer
- Other States
- NSW

Data Dictionary:

Data Type	Source	Date
BFMC Boundaries (incl 5km Buffer)	NSW RFS	August 2007
Towns or Locations	NSW LPI	August 2007
Road Network	NSW LPI	August 2007
Drainage	NSW LPI	August 2007
Fire History	NSW RFS	2007
State Backdrop	NSW LPI	August 2007

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Date Created: 24/2/2010 Created By: Judith Henderson

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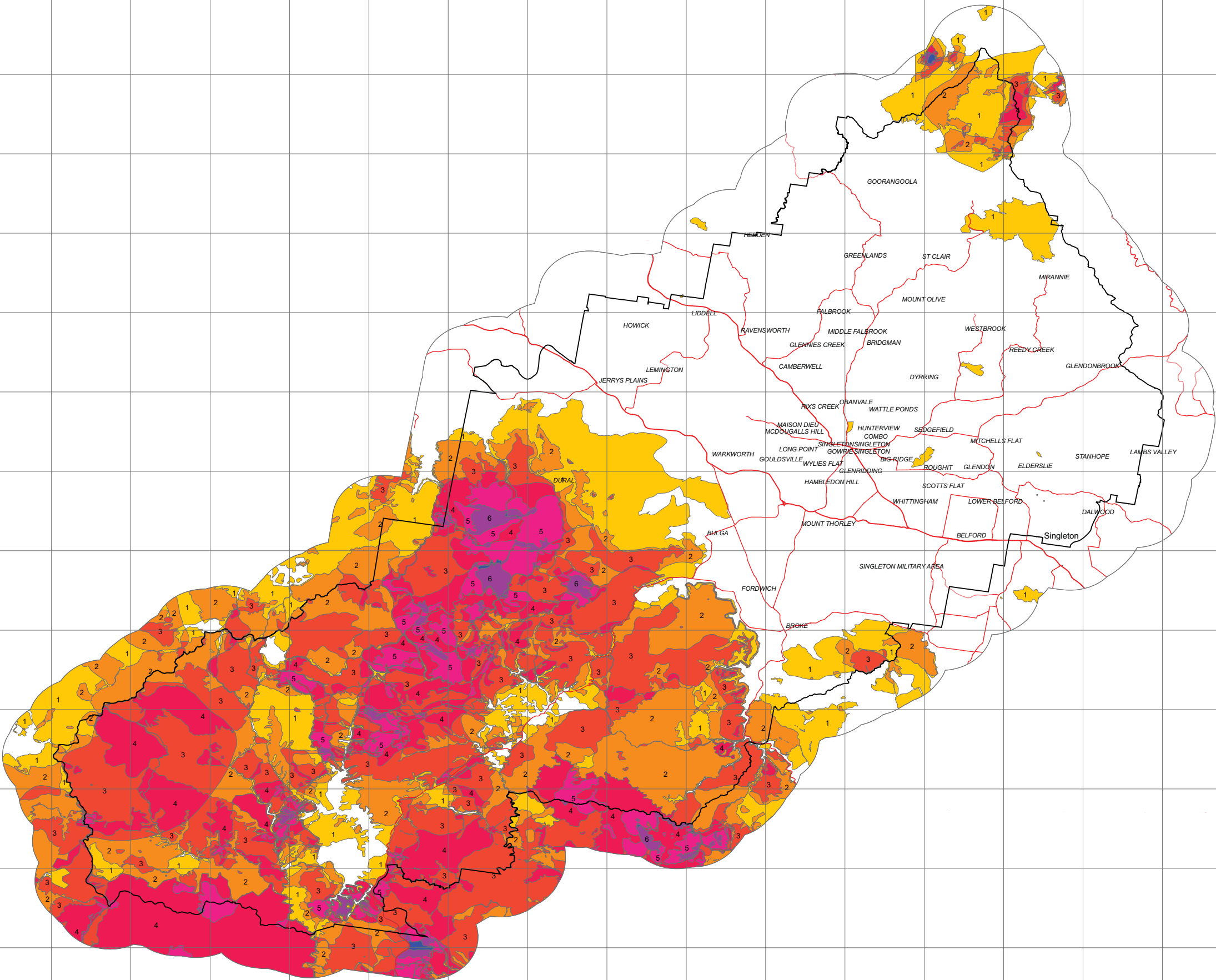
1:163,953 @ A0



Singleton BFM

Bush Fire Frequency

Number of Wildfires Recorded (2007 DataCurrency Data)



Legend

Fire Frequency (2007DataCurrency)

1

2

3

4

5

6

7 +

Major Roads

Major Road Sealed

Major Road Unsealed

Secondary Road Sealed

Secondary Road Unsealed

Hydrology

Hydro-Line Perennial

Hydro-Line Non Perennial

Drainage Perennial

Drainage Non Perennial

Jurisdiction

Jurisdiction

BFMC 5km Buffer

Other States

NSW

Data Dictionary:

Data Type	Source	Date
BFMC Boundaries (incl 5km Buffer)	NSW RFS	August 2007
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Date Created: 24/02/2010 Created By: J Henderson

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1:173,081 @ A0

