



NSW RURAL FIRE SERVICE



GUIDE FOR BUSH FIRE PRONE LAND MAPPING

VERSION 5b

November 2015

© State of New South Wales through the NSW Rural Fire Service 2015

The NSW Rural Fire Service (NSW RFS) encourages the availability, dissemination and exchange of public information. You may copy, distribute, display, download and otherwise freely deal with this material for personal, in-house or non-commercial use, on the condition that you include the copyright notice "© State of New South Wales through the NSW Rural Fire Service" [plus year of creation or first publication] on all such uses. In the event that you wish to copy, distribute, display, download, store, or use this material for a purpose other than personal, in-house or non-commercial use, you must obtain permission from the NSW RFS by writing to the following address:

The Commissioner
NSW Rural Fire Service
Locked Mail Bag 17
Granville NSW 2142

You must also obtain permission from the NSW RFS if you wish to:

- charge others for access to the work (other than at cost);
- include all or part of the work in advertising or a product for sale,
- modify the material; or
- use any trade mark from this publication, including the NSW Rural Fire Service crest or MyRFS logo.

Disclaimer Statement

While the material within this publication is current at the time of writing changes in circumstances after the time of publication may impact on the accuracy of the material. Individuals are responsible for ensuring they have the most current version of this publication.

The information and material contained herein is general in nature and is intended for your use and information. The NSW Rural Fire Service (NSW RFS) disclaims, to the extent permitted by law, all warranties, representations or endorsements, express or implied, with regard to the material contained herein. The NSW RFS does not warrant or represent that the material contained herein is free from errors or omissions, or that it is exhaustive. Users should exercise their own skill and care with respect to its uses. You must not assume that this material will be suitable for the particular purpose that you had in mind when using it.

The NSW RFS disclaims any liability (including but not limited to liability by reason of negligence) to the users of the material for any loss, damage, cost or expense whether direct, indirect, consequential or special, incurred by, or arising by reason of, any person using or relying on the material and whether caused by reason of, any error, omission or misrepresentation in the material or otherwise. Users of the Website will be responsible for making their own assessment of the material and should verify all relevant representations, statements and information with their own professional advisers.

The NSW Rural Fire Service reserves the right to review this guideline. The information contained in this document is subject to change from time to time.

Contents

1	Definitions	4
2	Introduction	6
3	Legislation.....	6
4	Limitations.....	7
5	Monitoring and Review	7
6	Bush Fire Prone Mapping Process	7
6.1	Process for Amendments and Certification of a Bush Fire Prone Land Map	7
6.2	Process for Amendments and Certification of a Bush Fire Prone Land Map for Urban Release Areas (URA).....	8
6.3	Mapping Category 3 Vegetation.....	9
6.4	Interim Measures for Mapping Urban Release Areas	9
6.5	Map for Commissioner’s Approval	9
7	Steps to Prepare a Bush Fire Prone Land Map	10
7.1	Step 1 - Identification of BFPV	10
7.1.1	Methodology.....	10
7.1.2	Exclusions	11
7.2	Step 2 - Preparation of Bush Fire Prone Land Map	12
7.3	BFPV Buffer	12
8	Map Publishing, Data Management and Quality.....	12
8.1	Copyright and Licensing.....	13
8.2	Custodianship and Data Brokerage	13
8.3	Metadata Requirements.....	15
8.4	Data Format and Structure.....	15
8.5	File Naming Conventions	16
8.6	Data Quality	16
8.7	Depiction	16
8.8	Provision of Source Data	16
8.9	Delivery of BFPV Data to the NSW RFS.....	17
8.9.1	Files Sent Electronically	17
8.9.2	Files Sent by Post	17
9	References	17
	Appendix 1 – URA Application Form	18

1 Definitions

Agricultural land - A piece of land used for agricultural purposes including, but not limited to, dairying, pig-farming, poultry farming, viticulture, orchards, bee-keeping, horticulture, vegetable growing, the growing of crops of any kind, or any combination of these, but excluding forestry and plantations (e.g. tea tree).

Bush fire hazard - The potential for land to carry a bush fire, utilising materials or fuels that can be ignited.

Bush fire prone area - An area of land that can support a bush fire or is likely to be subject to bush fire attack, as designated on a bush fire prone land map.

Bush fire prone vegetation map (BFPV) - A map prepared in accordance with this guide and defining areas of vegetation by BFPV categories. This map may be prepared by Council or Urban Release Area developers.

Bush fire prone land map (BFPL) - A map prepared in accordance with this guide and certified by the Commissioner of the NSW RFS under section 146(2) of the *Environmental Planning and Assessment Act 1979*.

Bush fire risk evacuation map - A map developed by council in consultation with the NSW RFS which identifies land that is susceptible to evacuation difficulties in the event of a bush fire. Certain Special Fire Protection Purpose developments may be deemed inappropriate for these areas and may be prohibited. The map will identify these areas via cross-hatching.

The bush fire risk evacuation map is held by the Department of Planning and Environment. A copy of this map also needs to be provided to the NSW RFS.

Council/s - The council of a local government area (LGA).

Designated bush fire prone land - In relation to an area, means land recorded for the time being as bush fire prone land on a bush fire prone land map for the area.

Digital data - The electronic datasets comprising the certified bush fire prone land polygons and the related metadata (in MapInfo TAB or ESRI Shapefile format).

Grasslands - Grassed areas capable of sustaining a fire. Under *Australian Standard 3959 Construction of buildings in bushfire-prone areas*, identified as low open shrubland, hummock grassland, closed tussock grassland, tussock grassland, open tussock, sparse open tussock, dense sown pasture, sown pasture, open herbfield, and sparse open herb field. Grass, whether exotic or native, which is regularly maintained at or below 10cm in height (includes maintained lawns, golf courses, maintained public reserves, parklands, nature strips and commercial nurseries) are regarded as managed land.

LPI – NSW Land and Property Information

Managed Land - Managed land is land that has vegetation removed or maintained to limit the spread and impact of bush fire. It may include existing developed land (i.e. residential, commercial or industrial), roads, golf course fairways, playgrounds or sports fields, vineyards, orchards, cultivated ornamental gardens and commercial nurseries. Most common will be gardens and lawns within curtilage of buildings. These areas will be managed to meet the requirements of an Asset Protection Zone.

Remnant Vegetation – For purposes of this guide, remnant vegetation is vegetation that is considered to be of a lower bush fire risk (than Category 1 and Category 3) due to the size and/or shape of the parcel. This includes areas of vegetation greater than one hectare, but less than 2.5 hectares in size.

Urban Release Area (URA) – Land that is defined as being located within an urban release area by NSW Department of Planning & Environment.

2 Introduction

On 1 August 2002, the *Rural Fires and Environmental Assessment Legislation Amendment Act 2002* amended the *Rural Fires Act 1997* and the *Environmental Planning and Assessment Act 1979* (*EP&A Act*) to provide significant improvements in bush fire safety. This included a requirement for the preparation of a bush fire prone land map identifying vegetation within LGAs that has the potential to support a bush fire. The bush fire prone land map is the trigger for the consideration of bush fire protection measures for new development (*Planning for Bush Fire Protection* and Australian Standard 3959-2009 – *Construction of buildings in bush fire prone areas*).

On 1 March 2013, the *EP&A Act* was amended allowing the NSW Rural Fire Service (NSW RFS) to update bush fire prone land maps for urban release areas in a streamlined fashion.

This guide provides the details for the mapping of bush fire prone land as required under section 146 of the *EP&A Act*. It is to be used by the NSW RFS, councils, and those involved in the mapping of urban release areas.

The methodology is one that is to be applied State wide for comparative purposes. The data set created for the purposes of mapping bush fire prone land can also be used by Councils to create other maps like a Bush Fire Property Map and Bush Fire Risk Evacuation Map.

3 Legislation

This section outlines the legislative context for the mapping of bush fire prone land and the assessment of Development Applications on such land.

Section 146 of the *EP&A Act* requires councils, where a Bush Fire Risk Management Plan applies, to record a bush fire prone land map after consulting with the Commissioner of the NSW RFS. The Commissioner will designate lands to be bush fire prone within an area and, when satisfied that the lands have been recorded on a map, certify the map as the Bush Fire Prone Land map. Councils are required to make these maps available for public inspection.

Section 149 of the *EP&A Act* requires that a council will, in the planning certificate, include advice on relevant matters affecting a parcel of land of which it may be aware. This includes Bush Fire Prone Land, as specified in Schedule 4 of *Environmental Planning and Assessment Regulation 2000*. The section 149 certificate is an important mechanism for councils to inform people living in or looking to purchase into a bush fire prone area, that bush fire is a consideration.

Section 79BA of the *EP&A Act* requires that where development of bush fire prone land occurs, the consent authority must be satisfied that the development complies with *Planning for Bush Fire Protection 2006* or has consulted with the Commissioner of the NSW RFS.

Complying development is permitted on bush fire prone land for the lower risk bush fire attack levels (Australian Standard 3959 BAL levels 12.5, 19, and 29). Such development is required to meet development standards complying with *Planning for Bush Fire Protection 2006*.

Section 100B of the *Rural Fires Act 1997* requires that a Bush Fire Safety Authority is issued by the Commissioner of the NSW RFS for all residential subdivision or special fire protection purpose developments on Bush Fire Prone Land. A Bush Fire Safety Authority is issued where the Commissioner believes that the development complies with standards that provide the development with appropriate protection measures against bush fire.

4 Limitations

Bush Fire Prone Land mapping is intended to designate areas of the State that are considered to be higher bush fire risk for development control purposes. Not being designated bush fire prone is not a guarantee that losses from bush fires will not occur.

Changes to the landscape may occur from time to time and therefore the certified bush fire prone land maps may not be a true indication of bush fire risk.

5 Monitoring and Review

Council, having had its Bush Fire Prone Land certified by the Commissioner of the NSW RFS, should regularly monitor and review the information to ensure currency and reliability of data depicted.

Monitoring and review of the bush fire prone land should reflect required certification and approval standards within legislative timeframes (i.e. before the end of the period of every five years after the certification date of the map as outlined in section 146 of the EP&A Act).

Notwithstanding, bush fire prone land maps may need to be reviewed and prepared on a more frequent basis depending on the extent of vegetation changes within the LGA (e.g. annually). In its review, council should consider any areas of expanding residential development leading to vegetation loss or areas of vegetation regrowth. Factors to consider in mapping vegetation change include data currency, resolution and availability of air photography/satellite imagery and vegetation maps plus mapping accuracy.

6 Bush Fire Prone Mapping Process

6.1 Process for Amendments and Certification of a Bush Fire Prone Land Map

For Urban Release Areas section 6.2 and 6.3 of this document will apply.

The following describes the process for re-certification of Bush Fire Prone Land maps for Council. An amendment is treated as a re-certification.

- Council should initially contact NSW RFS Headquarters (HQ) regarding the review of the map to obtain requirements for re-certifying.
- NSW RFS HQ will notify and liaise with the relevant NSW RFS District Office (or NSW Fire & Rescue section for non NSW RFS districts) to assist in coordinating the recertification process.
- NSW RFS HQ will provide Council a digital copy of the Bush Fire Prone Land map plus 1 kilometre buffer into adjoining Council areas (allowing for consistency along boundaries).
- Council to review bush fire prone vegetation and update then refer back to NSW RFS HQ.
- Once satisfied NSW RFS will forward map to Council
- Once satisfied with the content of the map, Council to provide Bush Fire Prone Land map to NSW RFS HQ for approval and certification as follows:
 - Council to forward the data file to NSW RFS Headquarters for processing. This shall be provided as digital data (e.g. MapInfo Tab File or ESRI Shape File, with the map projection defined).
 - Council shall include with the digital dataset a letter requesting the Commissioner certify Council's map and detail the proposed changes.
 - Council is also to include an accompanying letter from the manager of the local NSW RFS District responsible for that council (or relevant NSW RFS Customer Service Centre in non rural fire districts), confirming the proposed amendments and its concurrence to them.
 - Any contentious issues are to be resolved prior to the recertification and printing of final bush fire prone land maps. Where anomalies or issues are identified during the recertification

process, the NSW RFS will contact the local council. Any amendments to the map are the responsibility of the council.

- The NSW RFS will commence the recertification process once amendments have been agreed to by NSW RFS district staff (or relevant NSW RFS Customer Service Centre in non rural fire districts) and council, and all information is complete and accepted as being accurate.
- The NSW RFS will endeavour to provide a hard copy of the Bush Fire Prone Land map certified by the Commissioner and accompanying digital data to the council within 28 days of processing the final amendments.

All communication regarding bush fire prone land is to be provided to the NSW RFS by mail or email. Refer to NSW RFS contacts in Section 8.9 of this document.

6.2 Process for Amendments and Certification of a Bush Fire Prone Land Map for Urban Release Areas (URA)

Any proposed amendment to a bush fire prone land map is to be regarded as requiring re-certification. A draft map does not constitute a certified map.

This document is to be used in conjunction with the URA User Guide. The User Guide and other supplementary documentation to assist in the application process will be available on the NSW RFS website.

Before an applicant decides to go through this process, the applicant must confirm the site is located within a defined Urban Release Area. Please check the NSW Department of Planning & Environment website for details.

The following is the process for re-certification of Bush Fire Prone Land maps for those developing urban release.

- a. The applicant is to request a bush fire prone land map dataset for the subject area from NSW RFS Headquarters.
- b. The NSW RFS will electronically provide this in the form of a shape file of the existing BFPV plus buffer and surrounding 200 metres of site.
- c. NSW RFS HQ will notify and liaise with the relevant NSW RFS District Office (or Fire & Rescue NSW section for non NSW RFS districts) to assist in coordinating the recertification process.
- d. Applicant to review dataset and update in accordance with this guide.
- e. The applicant is to submit an application form (Appendix 1) with an amended data set to the NSW RFS Planning and Development at Headquarters for processing. This shall be provided as digital data (e.g. MapInfo Tab File or ESRI Shape File, with the map projection defined).
- f. NSW RFS Headquarters advises relevant council that an application has been received for an amendment to the Bush Fire Prone Land Map.
- g. Liaison will occur if required with the relevant NSW RFS office, which will provide written confirmation of the proposed amendments and its concurrence to NSW RFS Headquarters.
- h. Where anomalies or issues are identified during the recertification process, the NSW RFS will liaise with the applicant. If issues cannot be resolved and the NSW RFS does not support the amendments, the applicant will be contacted to discuss the disparity with NSW RFS. NSW RFS reserves the right to be the absolute arbiter and will advise applicants in writing of determinations.

- i. The NSW RFS will commence the recertification process once amendments have been agreed to and all information is complete and accepted as being in accordance with the guidelines.
- j. Once certified the NSW RFS will provide a hard copy of the BFPLM and accompanying digital data to the council and a soft copy (pdf) to the proponent as soon as possible after processing the amendments.
- k. All communication regarding bush fire prone land is to be delivered to the NSW RFS by mail or email. Refer to NSW RFS contacts in Section 8.9 of this document.

6.3 Mapping Category 3 Vegetation

As part of the introduction of Category 3 into the Bush Fire Prone Land system, a 3 year transition period will occur. During this period councils will need to recertify their bush fire prone land maps and incorporate the new Category 3 layer.

To assist councils with mapping Category 3 vegetation, the NSW RFS has created a Category 3 vegetation layer. This layer could assist councils in mapping Grasslands along with the other Category 3 vegetation types. If Councils are interested in obtaining a copy of this data, please contact the Co-ordinator or NSW RFS HQ GIS section for the dataset. This dataset is intended to be used as a draft for mapping bush fire prone vegetation.

6.4 Interim Measures for Mapping Urban Release Areas

Due to the introduction of Category 3, it is necessary to clarify these requirements when mapping urban release areas. Given the URA process is intended to be streamlined; the NSW RFS will liaise with Council in relation to the inclusion of Category 3 and, depending on circumstances, may recertify the application under the 2014 version of the guide (Category 1 and Category 2 vegetation only). Any rectifications outside the URA process will require incorporation of Category 3 as per Section 7.

6.5 Map for Commissioner's Approval

The NSW RFS will print the final Bush Fire Prone Land map using the standard NSW RFS template for approval by the Commissioner.

Any contentious issues are to be resolved prior to the recertification and printing of final Bush Fire Prone Land maps.

The NSW RFS will produce three hard copies of the certified Bush Fire Prone Land map (at A0 size for the LGA) to be filed and distributed as follows:

- Copy 1 – for NSW RFS, Planning and Development section;
- Copy 2 – for NSW RFS, District Manager (or Fire and Rescue NSW);
- Copy 3 – for Council records.

The NSW RFS will also distribute a digital version of the map back to Council along with the associated metadata.

The NSW RFS may also display the Bush Fire Prone Land data and maps on the NSW RFS website. Data will also be made available for download from data.nsw (<http://data.nsw.gov.au/>) in alignment with NSW Government Open Government Policy.

The Commissioner shall certify the Bush Fire Prone Land map under section 146 of the *EP&A Act*. upon advice of the Manager, Development Planning and Policy.

7 Steps to Prepare a Bush Fire Prone Land Map

Bush Fire Prone Land maps are required to be reviewed at least every five years. When preparing a map it should be based on the most up to date aerial photography, or satellite imagery and where necessary field inspection/ground truthing to ensure accuracy.

The methodology for preparing a bush fire prone mapping products is outlined in sections 6.1 - 6.4.

7.1 Step 1 - Identification of BFPV

RESPONSIBILITY: Council / Applicant in URA process

CUSTODIAN: NSW RFS DATA BROKER: Council

This section defines the methodology and criteria for determining what is categorised as BFPV. Council may undertake their own vegetation mapping studies, source vegetation information from Local Vegetation Studies, or utilise satellite or air photography. State government agencies such as National Park and Wildlife Services and the Office of Environment and Heritage have also conducted vegetation mapping. Care must be taken when sourcing vegetation information to ensure it is fit for purpose. When undertaking mapping the following considerations are to be taken into account:

- vegetation regrowth and clearing
- likely urban development upon approved development land
- boundary alignment with adjoining councils
- land management practices
- mapping accuracy and quality, refer to section 8; and
- for URAs, land/vegetation should be mapped as bush fire prone where it
 - has been rezoned as environmental protection or
 - areas where a riparian corridor, nature reserve or similar is proposed and management is not guaranteed.
 - this is applied even if the area has not been fully established or the vegetation in its current form is in its infancy.

*Note: As part of the transition period for Category 3, council should contact the NSW RFS to obtain a copy of the draft Category 3 dataset.

Council may use various sources to build the most current vegetation map including air photography, satellite imagery and vegetation maps. The data sources and methods used to map the BFPV need to be set out in ANZLIC/ISO compliant metadata statement and provided to the NSW RFS.

7.1.1 Methodology

The methodology for categorising bush fire prone land is as follows:

Identify and determine vegetation types (Keith, 2005) for all land within the local government area (both private and public tenure), using *Planning for Bush Fire Protection*. Vegetation is to be classified into the following categories based on vegetation types and potential risk:

Vegetation Category 1

Vegetation Category 1 is considered to be the highest risk for bush fire. It is represented as red on the bush fire prone land map and will be given a 100m buffer. This vegetation category has the highest combustibility and likelihood of forming fully developed fires including heavy ember production. Vegetation Category 1 consists of:

- Areas of forest, woodlands, heaths (tall and short), forested wetlands and timber plantations.

Vegetation Category 2

Vegetation Category 2 is considered to be a lower bush fire risk than Category 1 and Category 3 but higher than the excluded areas. It is represented as light orange on a bush fire prone land map and will be given a 30 metre buffer. This vegetation category has lower combustibility and/or limited potential fire size due to the vegetation area shape and size, land geography and management practices. Vegetation Category 2 consists of:

- Rainforests.
- Lower risk vegetation parcels. These vegetation parcels represent a lower bush fire risk to surrounding development and consist of:
 - Remnant vegetation;
 - Land with ongoing land management practices that actively reduces bush fire risk. These areas must be subject to a plan of management or similar that demonstrates that the risk of bush fire is offset by strategies that reduce bush fire risk; AND include:
 - Discrete urban reserve/s;
 - Parcels that are isolated from larger uninterrupted tracts of vegetation and known fire paths;
 - Shapes and topographies which do not permit significant upslope fire runs towards development;
 - Suitable access and adequate infrastructure to support suppression by firefighters;
 - Vegetation that represents a lower likelihood of ignitions because the vegetation is surrounded by development in such a way that an ignition in any part of the vegetation has a higher likelihood of detection.

Vegetation Category 3

Vegetation Category 3 is considered to be medium bush fire risk vegetation. It is higher in bush fire risk than category 2 (and the excluded areas) but lower than Category 1. It is represented as dark orange on a Bush Fire Prone Land map and will be given a 30 metre buffer. This category consists of:

- Grasslands, freshwater wetlands, semi-arid woodlands, alpine complex and arid shrublands.

7.1.2 Exclusions

Vegetation excluded from being mapped as bush fire prone includes:

- Single areas of vegetation less than 1 hectare in area and greater than 100 metres separation from other areas of Category 1, 2 or 3 vegetation;
- Multiple areas of vegetation less than 0.25 hectares in area and not within 30 metres of each other;
- Strips of vegetation less than 20 metres in width, regardless of length and not within 20 metres of other areas of Category 1, 2 or 3 vegetation;
- Areas of “managed grassland” including grassland on, but not limited to, recreational areas, commercial/industrial land, residential land, airports/airstrips, maintained public reserves and parklands, commercial nurseries and the like;

- Areas of managed gardens and lawns within curtilage of buildings;
- Non-vegetated areas, including waterways, roads, footpaths, buildings and rocky outcrops.
- Managed botanical gardens;
- Agricultural lands used for annual and/or perennial cropping, orchard, market gardens, nurseries and the likes are excluded;
- Saline wetlands including mangroves.
- Other areas that, due to their size, shape and overall risk are not considered Category 1, 2 or 3 vegetation.

NOTE:

- The BFPV dataset must exclude any vegetation identified as an ‘Exclusion’ (see above).
- NSW RFS has an automated Geographic Information Support process to determine the size and lateral separation of areas of remnant vegetation according to the ‘exclusions’. Vegetation may be downgraded by this process.
- Councils will need to concentrate on both the classification of vegetation of and determined land management practices for the vegetated areas being assessed.
- Councils do not need to buffer the vegetation. Buffering is undertaken in step 2, using the NSW RFS automated processes.
- Further advice is available from the NSW RFS GIS Unit.

At the conclusion of this part of the process there will be a spatial dataset named ‘BFPV’.

7.2 Step 2 - Preparation of Bush Fire Prone Land Map

RESPONSIBILITY: NSW RFS/Council

CUSTODIAN: NSW RFS/Council DATA BROKER: Council/NSW RFS

The BFPLM consists of buffered vegetation (produced in Step 1). Before the BFPV is buffered, NSW RFS will undertake quality checking as outlined in section 8.6, including checking remnant vegetation and compliance to exclusions. Any identified changes to the supplied BFPV map will be confirmed with Council.

7.3 BFPV Buffer

This section defines the criteria for determining the BFPV buffer. Once areas of vegetation have been defined and the appropriate bush fire vegetation categories have been applied, it will be necessary to apply the buffering criteria.

The method for the determination of bush fire vegetation buffering is as follows: -

- BFPV Category 1 – apply a 100 metre external buffer to each vegetation polygon.
- BFPV Category 2 – apply a 30 metre external buffer to each vegetation polygon.
- BFPV Category 3 – apply a 30 metre external buffer to each vegetation polygon.

At the conclusion of this process there will be one dataset; comprising of four parts; Vegetation Category 1, Vegetation Category 2, Vegetation Category 3 and Buffer. This will be used to define ‘Bush Fire Prone Land’ and will be displayed on a map.

8 Map Publishing, Data Management and Quality

These map and data requirements are necessary to ensure a coordinated and standardised approach to generating and maintaining Bush Fire Prone Land maps. These requirements apply only to map outputs, not to data structures or formats within local council database environments.

8.1 Copyright and Licensing

Given that bush fire prone land maps are published under control of the State of NSW (through the NSW RFS, section 146 *EPA Act* and associated guidelines), copyright is owned by the NSW RFS pursuant to sections 176 and 177 of the *Copyright Act 1979*.

AusGOAL and creative commons licensing “provides a framework for government and other organisations affected by Right To Information to give full effect to its underlying policy. It supports open licensing decisions that enable the community to re-use the information as intended by the legislative reforms.” (AusGoal, 2011). In NSW this right to information is enacted through the *Government Information (Public Access) Act 2009*, and open data policy.

The NSW RFS applies Creative Commons by Attribution (CC BY) open access licensing to the NSW Bush Fire Prone Land map. To the extent that Creative Commons licensing applies, all data and other material produced by NSW RFS constitutes Crown copyright, save for the logos of Council, NSW RFS, NSW Government and any material protected by a trade mark. NSW RFS has applied the Creative Commons Attribution 3.0 Australia Licence.

NSW RFS asserts the right to be attributed as author of the original material in the following manner:



© NSW Rural Fire Service [Year]

As far as practicable, material for which the copyright is owned by a third party will be clearly labelled and attributed in the metadata statement and on printed / pdf versions of the NSW Bush Fire Prone Land maps. NSW RFS has made all reasonable efforts to ensure that this material reproduced by the NSW RFS with the full consent of the copyright owners.

It is requested that all Council supplied BFPV maps be correctly attributed to source datasets or work from which they may be derived. This may be done within the supplied metadata or printed maps and written documentation.



8.2 Custodianship and Data Brokerage

The data custodianship of the various data sets that are produced by the Bush Fire Prone Land mapping process follows the principles outlined in the [NSW Custodianship Guidelines for Spatial Data \(2013\)](#).

The Guidelines for Custodianship also set out the principles of: trusteeship, standard setting, maintenance of information, authoritative source, accountability, information collection and maintenance of access.

Brokerage of data refers to the exchange of data and information. A data broker in each organisation would arrange the provision and receipt of data and information in an organisation. When data is owned by one organisation (or custodian) permission must be given to a second organisation to broker the data or information, on the custodian's behalf. This arrangement is set out in a data license agreement.

Under these principles, responsibilities are split between Council and NSW RFS for the Bush Fire Prone Land mapping digital datasets and components of the Bush Fire Prone Land maps. These responsibilities are summarised below:

Dataset	Custodian	Data Broker	Data Licence / Copyright
Bush Fire Prone Vegetation	NSW RFS	Council	 © NSW Rural Fire Service [Year]
Bush Fire Prone Land Map (Dataset)	NSW RFS	NSW RFS and Council	 © NSW Rural Fire Service [Year]
Cadastre	LPI, Council or Developer (three possible sources)	LPI or Council	© NSW Government
Bush Fire Prone Property Map This is a selection of the cadastre lots that intersect Bush Fire Prone Land Map. This map could be remade at various points in time as the cadastre changes.	Council or Developer	Council Provided as separate digital data sets (BFPLM and Cadastre) The certified printed maps or PDF versions can be supplied by both organisations. Maps may be made available on both organisations' websites as PDF documents or via web maps.	Council Determined, with attribution in regard to the BFPL dataset to © NSW Rural Fire Service [Year]

The NSW RFS responsibilities with regard to copyright and ownership are as follows:

Provide, manage and maintain a central repository for all bush fire prone land mapping data across NSW.

The NSW RFS will manage data held within the central repository in accordance with the NSW Metadata Element Set User Guidelines for Vector Datasets (NSW Govt 2012) and NSW Custodianship Guidelines for Spatial Data (2013)

Individual Council Bush Fire Prone Land map metadata statements will be compiled in consultation with the council, for information on broker details, lineage, maintenance, and citation information.

Copyright and ownership of the end output digital Bush Fire Prone Land data and certified hardcopy Bush Fire Prone Land map, will reside with the NSW RFS. However, the NSW RFS will allow each council the authority to broker (release) their BFPLM data for whichever purpose that they deem to be appropriate.

Where the NSW RFS produces Bush Fire Prone Land maps (printed or PDF) on behalf of councils, the NSW RFS will provide the Bush Fire Prone Land map dataset to councils.

Council responsibilities with regard to data brokerage are as follows:

Council will ensure Bush Fire Prone Land map (printed or PDF) outputs are in accordance with this Guide.

Council is to have the Bush Fire Prone Land map available for public inspection during normal business hours pursuant to section 146 of *EP&A Act*.

Council is a broker of the Bush Fire Vegetation Map.

Councils are given permission under CC BY open data licensing to broker the data, printed map and PDF version.

8.3 Metadata Requirements

Metadata provides the means for discovering spatial information by identifying the 'what', 'where', 'who', 'when' and 'how' the data behind the information is constructed. Metadata is the means to disclose what the spatial data describes, as well as how it should and can be used (NSW Govt 2012).

Metadata must be provided by all organisations in the MS Word and/or XML format abiding by ISO19139 standard and ANZLIC/NSW profiles. This can be done by adhering to the NSW Metadata Element Set for Vector Datasets User Guidelines (NSW Govt 2012).

Organisations may use any of the metadata creation software available that conforms to the ISO19139 standard and ANZLIC/NSW Guidelines.

Once the NSW Bush Fire Prone Land map is updated the metadata will be made available on the [NSW Spatial Data Catalogue](#) and linked to data.nsw.gov.au.

8.4 Data Format and Structure

When councils send BFPV and property map layers to the NSW RFS the data must be in accordance with the following:

BFPV map

- a. One data set is required, consisting of the Vegetation Categories;
- b. The Council cadastre layer may be provided otherwise the NSW RFS will use the latest LPI cadastre as an overlay layer to the BFPLM;
- c. Data can be supplied in the following proprietary formats: ESRI Arc Geodatabase (Personal or File), ESRI shape or MapInfo tab/mid/mif;
- d. Supplied data must include all files that are required for display and storage of the data. Eg. MapInfo tab file includes files with the suffix: .tab/.dat/.id/.map/.ind. Arcview Shape includes files with the suffix: shp, dbf, shx, prj, xml, See: http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?TopicName=Shapefile_file_extensions;
- e. All data provided must be in the datum GDA 94 and in either of the following map projections: Geographics, Lamberts or Transverse Mecator Projection (MGA54, 55 or 56). This must clearly be identified in the meta-data statement or file name;
- f. The data must not be password protected or locked in any way that denies the NSW RFS full and complete access to the data; and
- g. The required attribute fields for the bush fire vegetation dataset are: -

Field Name	Type	Size	Example
Vegetation Category	Character	1	1, 2 , 3
BFP_DESC	Character	32	Vegetation Category 1
LGA_NAME	Character	50	Central Darling
<i>Date Certified</i>	<i>Character</i>	<i>8</i>	<i>ddmmyyyy</i>

Note: *Date Certified* Field will be filled in by the NSW RFS once the map has been certified by the Commissioner of the NSW RFS.

8.5 File Naming Conventions

When sharing datasets between the organisations it is recommended that the following conventions are used.

BFPV dataset files are to use the following naming convention:

- BFV_CouncilName_DateSaved
- BFV – This designates Bush Fire Vegetation.
- CouncilName – sentence case: if more than one word do not leave spaces (e.g. CentralDarling).
- Date Saved – formatted as YYYYMMDD.

Where produced, the bush fire prone land dataset is to use the following naming convention:

- BFPL_CouncilName_DateSaved
- BFPL – This designates bush fire prone land.
- CouncilName – sentence case: if more than one word do not leave spaces.
- Date Saved – formatted as YYYYMMDD.

8.6 Data Quality

All data will be checked by the NSW RFS Headquarters for quality, including a visual check against the most recent air photos or satellite imagery available and against data quality checks.

Visual checks will check for presence and absence of the correct vegetation types, holes and gaps in the data along Council boundaries.

Quality checking will check both the completeness of the attributing, topological errors such as overlapping polygons, gaps between polygons and overlapping council boundaries. National Park and State Forest boundaries will also be used where necessary. Further information is available from the NSW RFS GIS unit.

8.7 Depiction

It is important to maintain a consistent presentation to the maps. The depiction as stated here is not software specific; however it is generic and can be applied to all GIS software. The colour definitions for each Category of vegetation are as follows:-

- Vegetation Category 1 polygons shall be coloured solid red without a borderline.
- Vegetation Category 2 polygons shall be coloured solid light orange without a borderline.
- Vegetation Category 3 polygons shall be coloured solid dark orange without a borderline.
- BFPV Buffer polygons shall be coloured solid yellow without a borderline.

8.8 Provision of Source Data

If Council utilised different procedures or source data to develop the vegetation map please provide documentation or data with submitted Bush Fire Vegetation dataset. Council will need to provide details such as: the data source, date, currency, projection. This should be recorded in the metadata statement with the BFV dataset.

For example: Vegetation interpretation was derived from Spot 5 Satellite data captured on August 2005.

8.9 Delivery of BFPV Data to the NSW RFS

The mechanisms for delivering datasets to the NSW RFS are as follows:

8.9.1 Files Sent Electronically

Files sent electronically (i.e. email) shall have all files saved into WinZip files and attached to the email. Each WinZip file will include all applicable files. The attached WinZip files shall be named in accordance with 8.5 – File Naming Conventions.

Files sent electronically with a subject title of XX Council Bush Fire Prone Land map dataset to:

bushfireprone.mapping@rfs.nsw.gov.au

Files may also be transferred via file transfer protocol (ftp) sites (either Council's site or NSW RFS ftp site), contact gjs@rfs.nsw.gov.au for further information.

8.9.2 Files Sent by Post

Files may be sent to the NSW RFS via normal postal service. Files sent in this way shall be copied to a standard compact disc (CD). The CD shall be posted in a package that has been specifically designed for CD postage. CDs should be a closed session and written for standard CD reader access. The NSW RFS will not accept any other delivery mechanism without prior approval.

Files sent by post to:

The Commissioner
NSW Rural Fire Service
Attn Manager Development Planning & Policy
Locked Bag 17
GRANVILLE NSW 2142

9 References

ANZLIC (1998) Guidelines for Custodianship, ANZLIC, ACT, Australia.

ANZLIC (2007) ANZLIC Metadata Profile Guidelines, ANZLIC – the Spatial Information Council, ACT, Australia.

NSW Government (2010) NSW Spatial Metadata Policy, CS2i, NSW.

NSW Government (2012) ver. 2.8 NSW Metadata Element Set for Vector Datasets User Guidelines, NSW LPI, NSW.

NSW Government (2013) ver. 1.5 NSW Custodianship Guidelines for Spatial Data, online

<http://www.finance.nsw.gov.au/ict/sites/default/files/NSW%20Government%20Custodianship%20Guidelines%20for%20Spatial%20Data.pdf>.

Additional reference material for vegetation classification can be found in *Planning for Bush fire Protection 2006* (or subsequent versions).

NSW Government (2012) M2012-10 Open Government, online <http://arp.nsw.gov.au/m2012-10-open-government>.

NSW Government (2013) NSW Government Open Data Policy, online

<http://www.finance.nsw.gov.au/ict/sites/default/files/NSW%20Government%20Open%20Data%20Policy%201.0.pdf>.

Appendix 1 – URA Application Form



Urban Release Area (URA) – Bush Fire Prone Land Map (BFPLM) Amendment Application Form

APPLICATION

Name	
Company	
Telephone	
Mobile	
Email	

PROPERTY DETAILS

Lot/s		DP/SP	
URA NAME		STAGE No/s	
SUBURB/s:			
LOCAL GOVERNMENT AREA/s:			

DETAILS OF PROPOSED AMENDMENTS

CHECKLIST

- Amended shapefile
- Lot Layout / Matserplan
- Extract of existing BFPLM
- Aerial photography of site (if available)