

## Bushfire Assessment Report

Prepared for

**John Stewart and Leonie Lane**

**114 Stewarts Rd**

**Clunes**

**Lot 10 DP 586360**



Helen Robinson MDPR, BAppSc, BEnvSc(Hons), PGDBushfireProtection

BPAD accredited bushfire consultant 34868

21<sup>st</sup> November, 2020

## Executive summary

This Bushfire Assessment is produced in response to the statutory requirement under the Environmental Planning and Assessment Act 4.14 that a planning proposal for a dwelling entitlement on Bushfire Prone Land (BPL) must comply with Planning for Bushfire Protection 2019 (PBP).

The development of a dwelling entitlement potentially results in an increased residential density and while a Bushfire Safety Authority (BFSA) is not required the same principles and criteria associated with subdivisions must be applied (PBP 8.2.1). This assessment is therefore conducted in the same manner as for a 100B assessment under the Rural Fires Act.

The Bushfire Attack Level (BAL) for this proposal for a dwelling entitlement has been assessed using Method 1 in Planning for Bushfire Protection 2019 (PBP) (NSW RFS, 2019) and in Australian Standard 3959 – Construction of Buildings in Bushfire-prone Areas 2009 (AS3959) (Standards Australia, 2009a) and is determined that there are areas of suitable BAL (<29) and size to accommodate a dwelling including the area occupied by the old dairy and extensions which is currently used as a dwelling and may be the subject of future Development Applications. Additionally each point outlined in the Rural Fire Regulation 2008 (RFR), Section 44 specifies detailed conditions which are to be addressed in application for a BFSA.

The proposed dwelling entitlement, providing all recommendations within this report, including but not limited to maintenance of satisfactory Asset Protection Zone (APZ), provision of suitable water supply for fire fighting purposes are implemented once a dwelling entitlement is granted and ultimately an application for a dwelling made, will comply with the requirements and specifications of PBP, AS3959, RFA, the Building Code of Australia (BCA), RFR and planning and development controls of Byron Shire Council (BSC).

It must be remembered, by all parties, that while every effort has been made to obtain true and accurate data and analysis of this data was conducted within the framework of PBP and AS3959 as well as other standards, there is no guarantee when it comes to bushfire. While all recommendations contained in this report need to be complied with to meet the requirements of PBP and AS3959, Environmental Planning and Assessment (EP&A) and hence BSC's planning requirements, any fire event could pose a threat to both the property and the people therein.

Additionally it is incumbent upon the owners and operators and all future owners and operators to, in perpetuity, comply with all the conditions outlined here and in the Bushfire Safety Authority.

## Introduction

This report has been produced for John Stewart and Leonie Lane and is to form part of submissions to BSC for a planning proposal for a dwelling entitlement.

The proposed development site is classified as bushfire prone land on BSC's Bushfire Prone Land Maps which have been ratified by the Commissioner, NSW Rural Fire Service (RFS). An application for a Bushfire Safety Authority is not required under section 100B of the Rural Fires Act however this assessment is conducted in the same manner as for a 100B application.

To assess the development and reach the conclusions and recommendations contained in this report, Planning for Bushfire Protection 2019 (PBP) (NSW RFS, 2019), Australian Standard – Construction of buildings in bushfire prone areas incorporating Amendment Nos 1, 2 and 3 (AS3959) (Standards Australia, 2009b), Rural Fires Act (1997) and Rural Fires Regulation (2000) and other documents and standards, as noted throughout the report, were consulted.

This assessment and report has been conducted in accordance with PBP, the Rural Fires Act 100B and Rural Fires Regulation 46a.

Details required by the RFS so that they may make a determination on this development are:

### a) Site

#### Location

The development site is located at 14 Stewarts Rd, Clunes. Lot 10 DP 586360 (Fig 1).

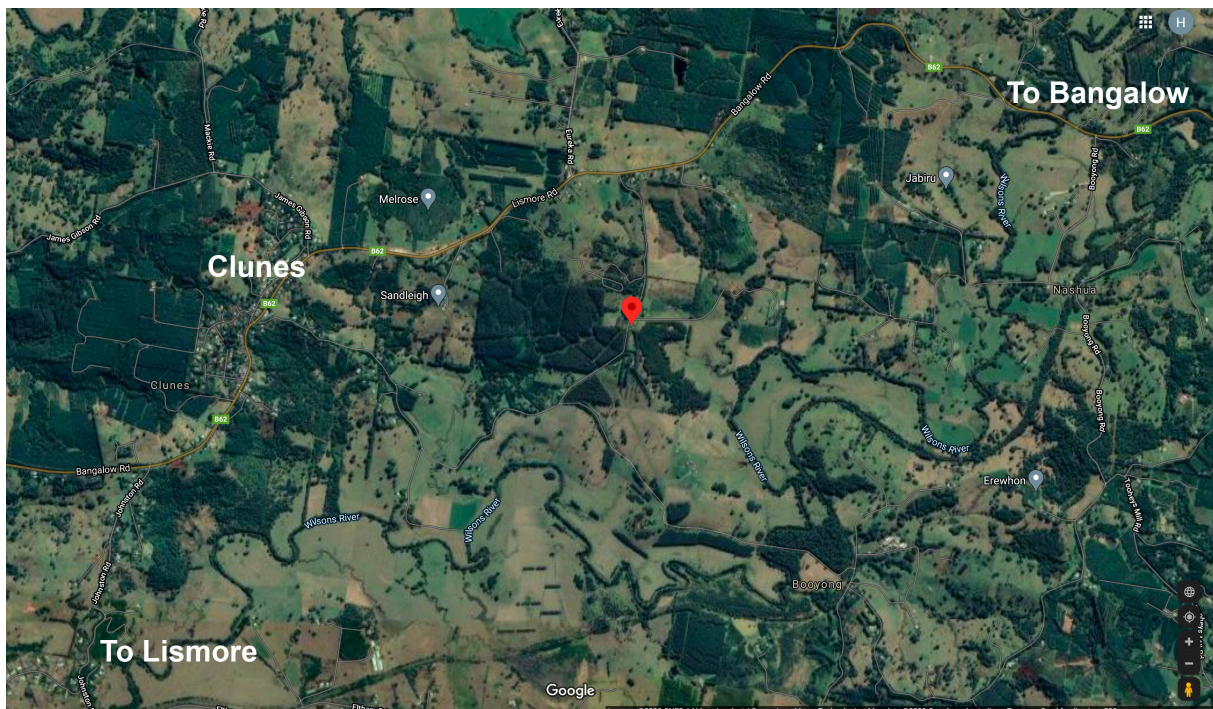


Figure 1: Locality Map for 114 Stewarts Rd, Clunes (indicated in red).



## Description

The site is an approximately 2.8ha property which was subdivided from the Stewart family property approximately 40 years ago. The property currently has no dwelling entitlement.

Diary bales, for the dairy farm from which the property was subdivided, were located on this property prior to subdivision.

The land slopes down to the west from Stewarts Rd to a second order stream which crosses the northwest corner of the property.

To the west and south of this property is a large farm forestry operation which is in the process of being harvested and converted to another use.

## b) Vegetation

The vegetation is mapped as bushfire prone by BSC as outlined in *Guide to Bush Fire Prone Land Mapping* (NSW Rural Fire Service, 2014).

Vegetation was assessed in accordance with *Ocean Shores to Desert Dunes* (Keith, 2004), PBP (Table A2.1) and AS3959 to a distance of 140m from each margin of the development (Fig 2).



Figure 2: Vegetation surrounding the proposed development. Pink = managed land, yellow = grassland, light green = forest, dark green = rainforest.

To the west and south of the property is a large farm forestry project commenced 30 – 35 years ago. This forest is in the process of being cleared. As the forest currently exists it is classified as forest for the purposes of this report. The dark green areas in Figure 2 are classified as rainforest – the southern stand appears to be much contaminated with invasive weed species. The northern area is more like woodland at the moment but given the invasive species present, observed from the road, and the lack of management these trees will soon form closed canopy.

There are macadamias and other managed lands in the area, pink in Figure 2, and large areas of grassland, yellow in Figure 2.

Of significance on the property is an area of rainforest vegetation in the northwest corner. Also, and more significantly is a large area which has recently been planted with Koala food trees. This area, while the trees are small now they will grow quickly and will have significant impact on BAL ratings in the future and therefore is classed as forest for the purposes of this report.

There are rainforest trees in the northeast corner of the property. These consist of some large specimens which, provided they are trimmed and kept away from the building which may be converted to a dwelling in the future present no threat to it or any other part of the property. The ground under these trees is well managed.

There is a large orchard, well managed, on the southern part of the property. This classifies as managed land. The remainder of the land is mowed grass. This is totally under the control of the owners and can be managed as an APZ to any distance required.

### c) Slope

Slope and aspect were assessed in accordance with PBP and AS3959 to a distance of 100m, using 10m contour map, from each margin of the development (Fig 3).

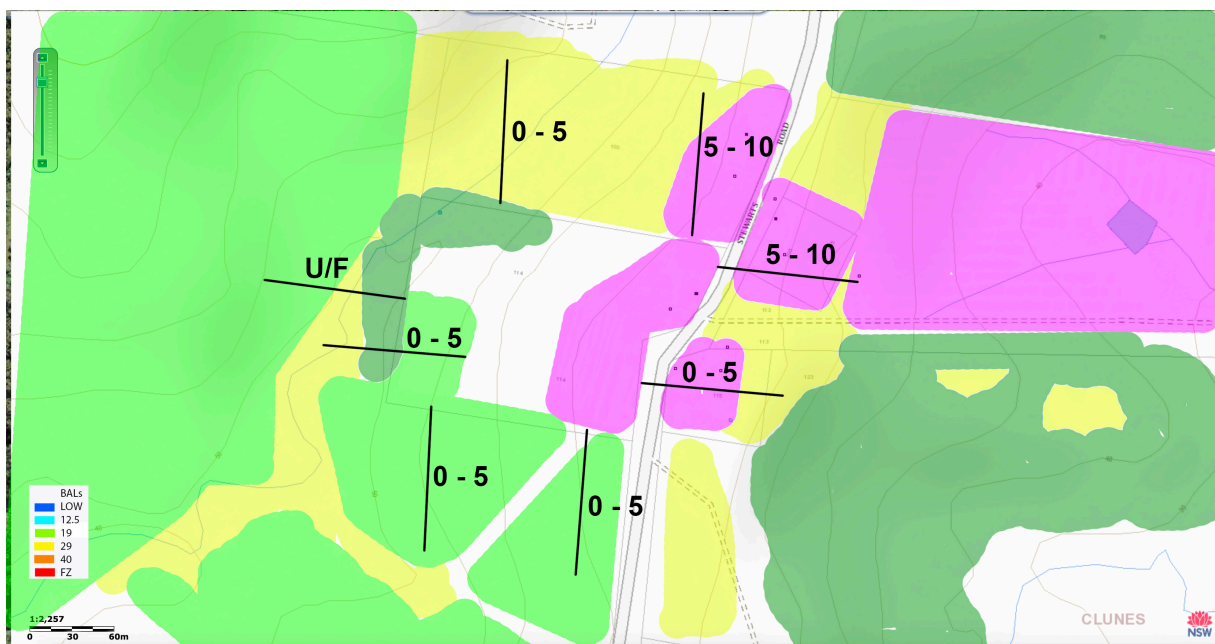


Figure 3: 10m contour topographic map with slopes under classified vegetation.

The information from Figures 2 and 3 has been used to develop a BAL contour map (Fig 4) which clearly shows there is ample land on which to build a dwelling which is on BAL 29 or less, that is any area which is coloured Yellow, Green or Light blue.



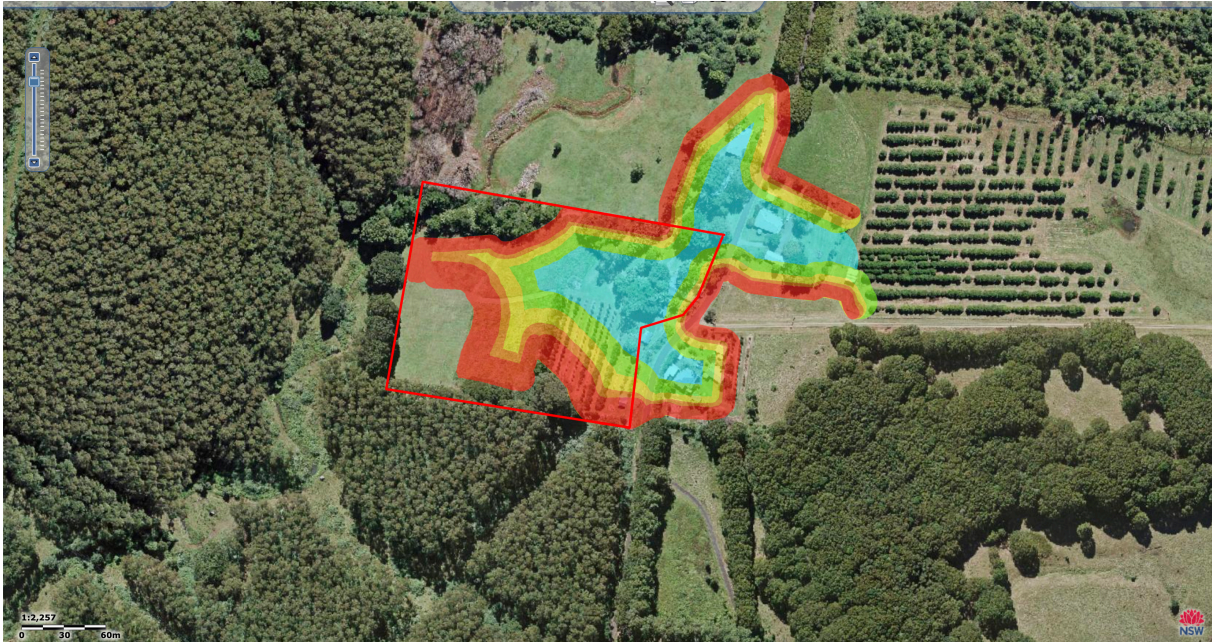


Figure 4: BAL contour map – property boundary indicated in red. BAL FZ – RED, BAL 40 – Orange, BAL 29 – Yellow, BAL 19 – Green, BAL 12.5 – Light green.

#### **d) Significant environmental features**

There are no significant environmental features within the areas on which it is suitable to build a dwelling.

#### **e) Details of threatened species, populations, endangered ecological communities and critical habitat known to the applicant**

There are no threatened species, populations, endangered ecological communities or critical habitat known to the applicant or observed at time of assessment. There are no past studies or surveys of this site or the immediate vicinity.

#### **f) Details of Aboriginal heritage known to the applicant**

The applicant is not aware of any Aboriginal heritage on the site nor in the immediate vicinity of the site. There are no past surveys or information held by DEC regarding this site.

## g) Bushfire assessment

### Fire danger index (FDI)

The FDI rating for the Far North Coast of NSW, where this development is located, is 80.

### BAL assessment

The BAL assessment, represented by a BAL contour map in Figure 3 was constructed using Method 1 in AS3959, as set out in PBP Appendix 1 and it has been determined that there is ample room of BAL 29 or less for a dwelling.

The building currently used as a dwelling is capable of achieving BAL 29.

#### a. Asset protection zone (APZ)

For the building site, the location of the current building used as a dwelling, the APZ requirements for a BAL 29 are outlined in Table 2 (PBP Table A1.12.3).

Table 2: Minimum APZ distances for BAL 29.

Direction	Vegetation	Slope °	Minimum distance for APZ (m)
North	Grassland	5 – 10	12
East	Grassland	0 – 5	11
South	Grassland	0 – 5	11
West	Forest	0 – 5	25

As the dominant vegetation type for this development is rainforest and grassland the entire APZ shall be managed as an Inner Protection Area (IPA) in perpetuity (PBP A4.1).

The IPA shall (PBP A4.1):

#### Trees

- have tree canopy cover <15% at maturity
- have tree canopy not touch or overhang the building at maturity
- have canopies separated by a minimum of 2m
- have all limbs below 2m removed
- preferably be smooth barked or evergreen

#### Shrubs

- have large discontinuities or gaps between beds
- not be located under trees
- form less than 10% of ground cover
- be separated from exposed windows and doors by at least twice the height of the vegetation

Grass/ground cover

- kept mown -  $\leq$  1cm in height
- leaves and vegetation debris removed.

#### **b. Water supply**

There is no reticulated water supply and the property is approximately 2.8ha, therefore a water supply for fire fighting of 10,000L is required.

This water supply shall (PBP 6.4c):

- Have access point located within the IPA but away from structures (>5m and <20m)
- Have a hardened ground surface for truck access within 4m of the access point
- Have all above ground fittings and pipes of metal
- Be either above or below ground
  - Above ground tanks shall:
    - Be of metal or concrete construction
    - Have 65mm metal Storz fitting with gate or ball valve
    - Have an inner diameter of minimum 50mm for all fittings
    - Have above ground pipes of metal
  - Below ground tanks shall:
    - Be clearly marked
    - Have an access hole of 200mm

Other acceptable solutions for water supply, providing they meet volume, location and access criteria above, are inground pools and dams (PBP 3.5).

#### **c. Capacity of public roads**

The property is accessed directly from Stewarts Rd. The road currently supports heavy traffic including frequent timber-jinkers. The roads are capable of supporting traffic generated from this development.

#### **d. Public road links to fire trails**

There are no fire trails of relevance to this development.

#### **e. Access and egress**

The driveway to the site is short, typical of urban driveways.



## **f. Adequacy of maintenance and emergency plans**

### **Maintenance**

Once a dwelling is approved on this site the following maintenance measures are required:

- regularly removing all litter from gutters and roof
- ensuring external painted surfaces are in good condition
- ensuring water supply is available and tanks and outlets are in good working order
- maintaining driveways in good condition
- ensuring roofing materials are firmly fixed
- screens on windows and doors are in good order with no gaps or holes
- doors are fitted with draft seals to ensure no gaps of greater than 2mm
- mats are of non-combustible materials
- woodpiles, garden sheds and other combustible materials are located away from the dwellings

Carrying out this level of maintenance in perpetuity meets the requirements of PBP in particular Appendix 4 Asset Protection Zone Standards.

### **Emergency measures**

There is no requirement for single dwelling to develop an emergency management plan. However, it is highly recommended that anyone living on or in close proximity to Bushfire Prone Land develop such a plan, review it and practise it annually (<http://www.rfs.nsw.gov.au/resources/bush-fire-survival-plan>).

### **Construction measures**

The proposed development shall be constructed to sections 3 and the appropriate construction sections of AS3959-2009 (BAL 29), and PBP. This will be addressed in future DA when there may be opportunity to achieve a lower BAL.

## **h) An assessment of how the development complies with the acceptable solutions, performance requirements and relevant specific objectives within Chapter 4 of PBP**

The measures proposed above for this development conform fully to the standards, specific objectives and performance criteria set out in PBP.

## References

KEITH, D. 2004. *Ocean shores to desert dunes: the native vegetation of New South Wales and ACT*, Hurstville, NSW, Department of Environment and Conservation (NSW).

NSW RFS 2019. *Planning for Bush Fire Protection 2019*, Sydney, NSW RFS.

NSW RURAL FIRE SERVICE. 2014. Guide for Bush Fire Prone Land Mapping. [Accessed Apr 2015].

STANDARDS AUSTRALIA 2009a. *Australian Standard Construction of building in bushfire-prone areas - AS3959*, Sydney, Australia, SAI Global Limited.

STANDARDS AUSTRALIA 2009b. Australian Standard Construction of building in bushfire-prone areas - AS3959. *In: AUSTRALIA, S. (ed.)*. Sydney, Australia.