

**Smith Bushfire Consultants** Pty Ltd

# **BUSHFIRE ATTACK LEVEL REPORT**

Lot 224 Pastel Road, Anketell  
(City of Kwinana)



Report completed by Ralph Smith  
Smith Bushfire Consultants Pty Ltd  
BPAD Accredited Practitioner 27541  
10 July 2023  
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# Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.


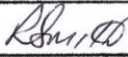
## Property Details and Description of Works

<b>Address Details</b>	<b>Unit no</b>	<b>Street no</b>	<b>Lot no</b>	<b>Street name / Plan Reference</b>		
			224	Pastel Road		
<b>Local government area</b>	<b>Suburb</b>			<b>State</b>	<b>Postcode</b>	
	Anketell			WA	6167	
<b>Main BCA class of the building</b>	<b>Class 1a</b>		<b>Use(s) of the building</b>	Dwelling		
<b>Description of the building or works</b>	Construction of a dwelling					

## Determination of Highest Bushfire Attack Level

AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class G Grassland	>0-5	22	BAL – 12.5

## BPAD Accredited Practitioner Details

<b>Name</b> Ralph Smith	<div style="border: 1px solid black; padding: 5px;"> <p>I hereby declare that I am a BPAD accredited bushfire practitioner. </p> <p>Accreditation No. 27541</p> <p>Signature </p> <p>Date 10 July 2023</p> </div>
<b>Company Details</b> Smith Bushfire Consultants Pty Ltd	
I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018.	

Authorised Practitioner Stamp

Reliance on the assessment and determination of the Bushfire Attack Level contained in this certificate should not extend beyond a period of 12 months from the date of issue of the certificate. If this certificate was issued more than 12 months ago, it is recommended that the validity of the determination be confirmed with the Accredited Practitioner and where required an updated certificate issued.

## Introduction

This is a Bushfire Attack Level (BAL) assessment and report. It has been developed by Smith Bushfire Consultants Pty Ltd for the exclusive use of the client, Terranovis Pty Ltd and their agents.

This BAL assessment and report has been compiled using the standard methodologies required by Western Australian government departments and agencies. The report is based on the following:

- *State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP 3.7)*, December 2015
- *Guidelines for Planning in Bushfire Prone Areas*, December 2021
- *Australian Standard 3959 – Construction of buildings in bushfire-prone areas (Incorporating Amendments Nos 1 and 2)*, November 2018
- City of Kwinana requirements

The techniques described in the above publications have been applied in the appropriate areas and circumstances for the development of this document.

Where there was no public access, the interpretation is based on photographic and satellite imagery, and a laser distance meter was used to measure distances and effective slope.

## DISCLAIMER

This Bushfire Attack Level (BAL) assessment and report has been prepared in good faith. It is derived from sources believed to be reliable and accurate at the time of publication. Nevertheless, this report is distributed on the terms and understanding that the author is not responsible for results of any actions taken based on information in this publication or for any error or omission from this publication.

Smith Bushfire Consultants Pty Ltd has exercised due and customary care in the preparation of this BAL report and has not, unless specifically stated, independently verified information provided by others.

Any recommendations, opinions or findings stated in this report are based on circumstances and facts as they existed at the time Smith Bushfire Consultants Pty Ltd performed the work. Any changes in such circumstances and facts upon which this document is based may adversely affect any recommendations, opinions or findings contained in this report.

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## Property Details

**Location of property:** Lot 224 Pastel Road, Anketell, WA

**Property owner or representative:** Warren Spencer

**Property owner or representative contact details:** warren@terranovis.com.au

**Date of field assessment:** 5 July 2023

## Purpose of Assessment

This assessment has been undertaken to determine the potential Bushfire Attack Level (BAL) on Lot 224 Pastel Road, Anketell. The BAL assessment and subsequent report are based on the physical evidence that was present at the time of assessment. The BAL assessment is based on the requirements contained within the Western Australian government policies and guidelines.

BALs are used to determine which, if any, construction requirements contained within Sections 3–9 of the *Australian Standard 3959 – Construction standard of buildings in bushfire-prone areas* (AS 3959) are appropriate for a particular site.

## Procedure

The BAL assessment involved the following process in accordance with AS 3959 (Method 1):

- Determine the area to be assessed
- Determine the relevant Fire Danger Index (FDI)
- Determine the vegetation type/s and class
- Determine the distance of the site from the classified vegetation type/s
- Determine the effective slope/s under the classified vegetation type/s
- Determine the BAL
- Determine the appropriate construction requirements.

## Fire Danger Index

The methodology rates bushfire attack using a combination of vegetation type, slope and distance from the building or building envelope to the predominant vegetation. In Western Australia it assumes a Fire Danger Index (FDI) of 80.



## Site Assessment

The assessment of Lot 224 Pastel Road, Anketell, was undertaken on 5 July 2023 for the purpose of determining the Bushfire Attack Level in accordance with AS 3959 (Method 1).

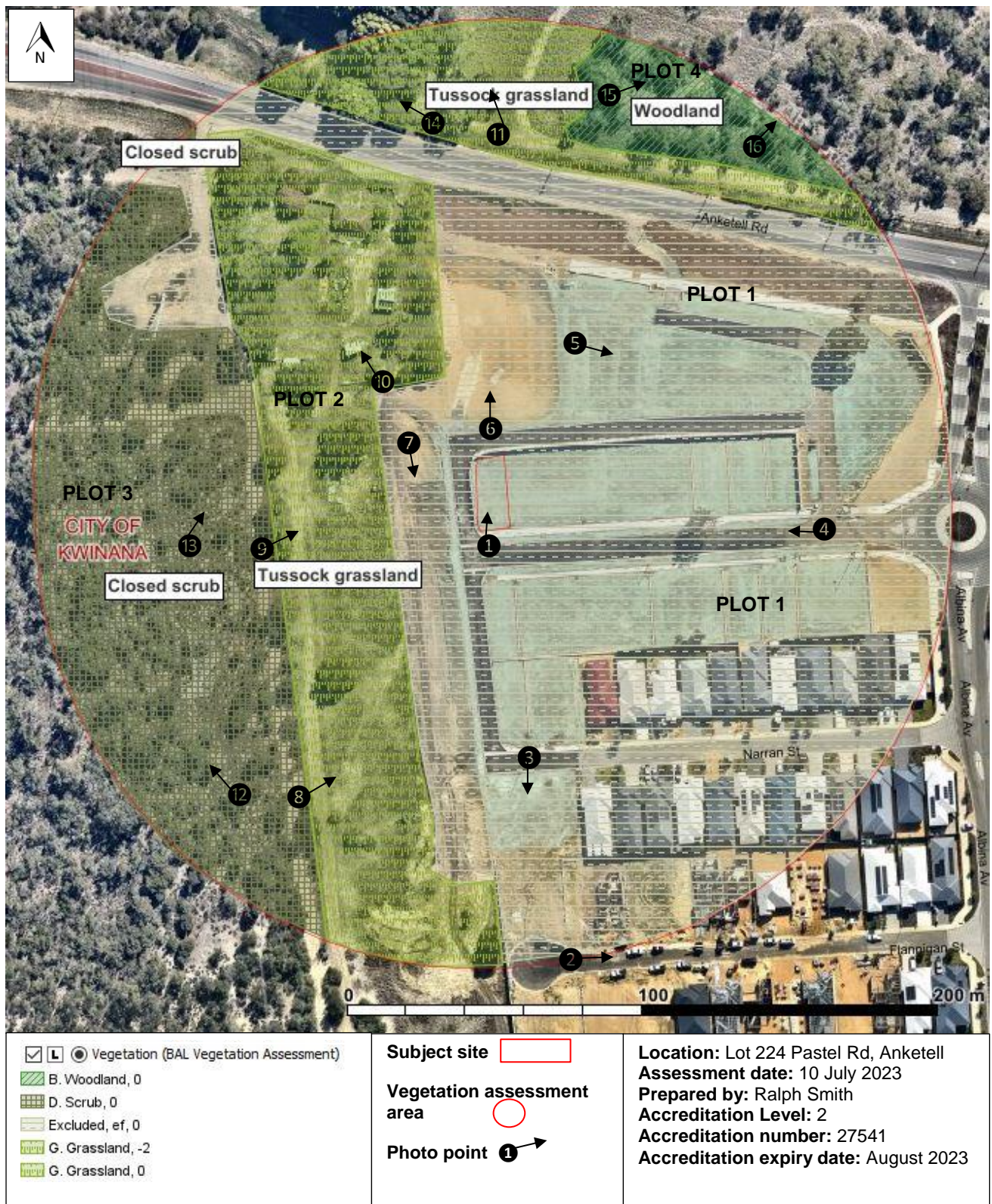


Figure 1: Vegetation Classification Map.



## Slope



**Figure 2:** Two-metre Contour Map.

Source: Department of Primary Industries and Regional Development

The pale orange lines on the contour map are two-metre contour lines. The slope is assessed as being south-west to the north-east, as confirmed by the contour map. The slope is associated with the vegetation and therefore there would be minimal impact on the bushfire rate of spread because of the slight slope.

## Vegetation Classification

All vegetation within 150 metres of the lot boundary as indicated on the vegetation classification map was classified in accordance with the Western Australian Government criteria and Clause 2.2.3 of AS 3959 was applied. Each distinguishable vegetation plot with the potential to determine the Bushfire Attack Level is identified below. AS 3959 only requires consideration of 50 metres between vegetation and the building for grassland.

### Plot 1

Exclusion – Low threat vegetation and non-vegetated areas  
Clause 2.2.3.2 (e) and (f).



**Photo ID: Photo 1** Looking at the lot ready for a dwelling to be constructed.



**Photo ID: Photo 2** Looking across the subdivision site with lots where construction on new builds has commenced.



**Photo ID: Photo 3** Looking at the cleared lots ready for construction to commence and the road.



**Photo ID: Photo 4** Looking across the land north-east of the lot which is cleared and ready for new dwellings.





5/07/2023 2:06:17 PM (+8.0 hrs) Dir=SSE Lat=-32.21088 Lon=115.85385 Alt=3ft MSL WGS84  
**Photo ID: Photo 5** Looking across the land north-east of the lot which is cleared and ready for new dwellings.



5/07/2023 2:07:23 PM (+8.0 hrs) Dir=NNW Lat=-32.21128 Lon=115.85354 Alt=3ft MSL WGS84  
**Photo ID: Photo 6** Looking at the drainage sump.



5/07/2023 2:08:54 PM (+8.0 hrs) Dir=S Lat=-32.21114 Lon=115.85326 Alt=3ft MSL WGS84  
**Photo ID: Photo 7** Looking at the cleared and managed land west of the lot.

**Plot 2**

Class G – Grassland under an open woodland (G – 06)



5/07/2023 1:46:40 PM (+8.0 hrs) Dir=NNW Lat=-32.21329 Lon=115.853 Alt=3ft MSL WGS84  
**Photo ID: Photo 8** Looking at the grassland on the land to the west of the lot.



5/07/2023 1:49:34 PM (+8.0 hrs) Dir=NW Lat=-32.21187 Lon=115.85288 Alt=3ft MSL WGS84  
**Photo ID: Photo 9** The grassland west of the lot.





5/07/2023 2:08:49 PM (+8.0 hrs) Dir=NW Lat=-32.21114 Lon=115.85326 Alt=3ft MSL WGS84

**Photo ID: Photo 10** The grassland vegetation within the derelict neighbouring house yard.



5/07/2023 1:54:00 PM (+8.0 hrs) Dir=N Lat=-32.20994 Lon=115.85252 Alt=3ft MSL WGS84

**Photo ID: Photo 11** The grassland vegetation north of Anketell Road.

### Plot 3

Class D – Scrub (D – 13)



5/07/2023 1:47:26 PM (+8.0 hrs) Dir=WNW Lat=-32.21252 Lon=115.85281 Alt=3ft MSL WGS84

**Photo ID: Photo 12** The scrub vegetation west of the grassland neighbouring the subdivision site.



5/07/2023 1:49:54 PM (+8.0 hrs) Dir=NNE Lat=-32.21176 Lon=115.85274 Alt=3ft MSL WGS84

**Photo ID: Photo 13** The scrub vegetation west of the grassland neighbouring the subdivision site.



5/07/2023 1:53:53 PM (+8.0 hrs) Dir=NW Lat=-32.20995 Lon=115.8526 Alt=3ft MSL WGS84

**Photo ID: Photo 14** The scrub vegetation north of Anketell Road.

**Plot 4**

Class B – Woodland (B – 05)

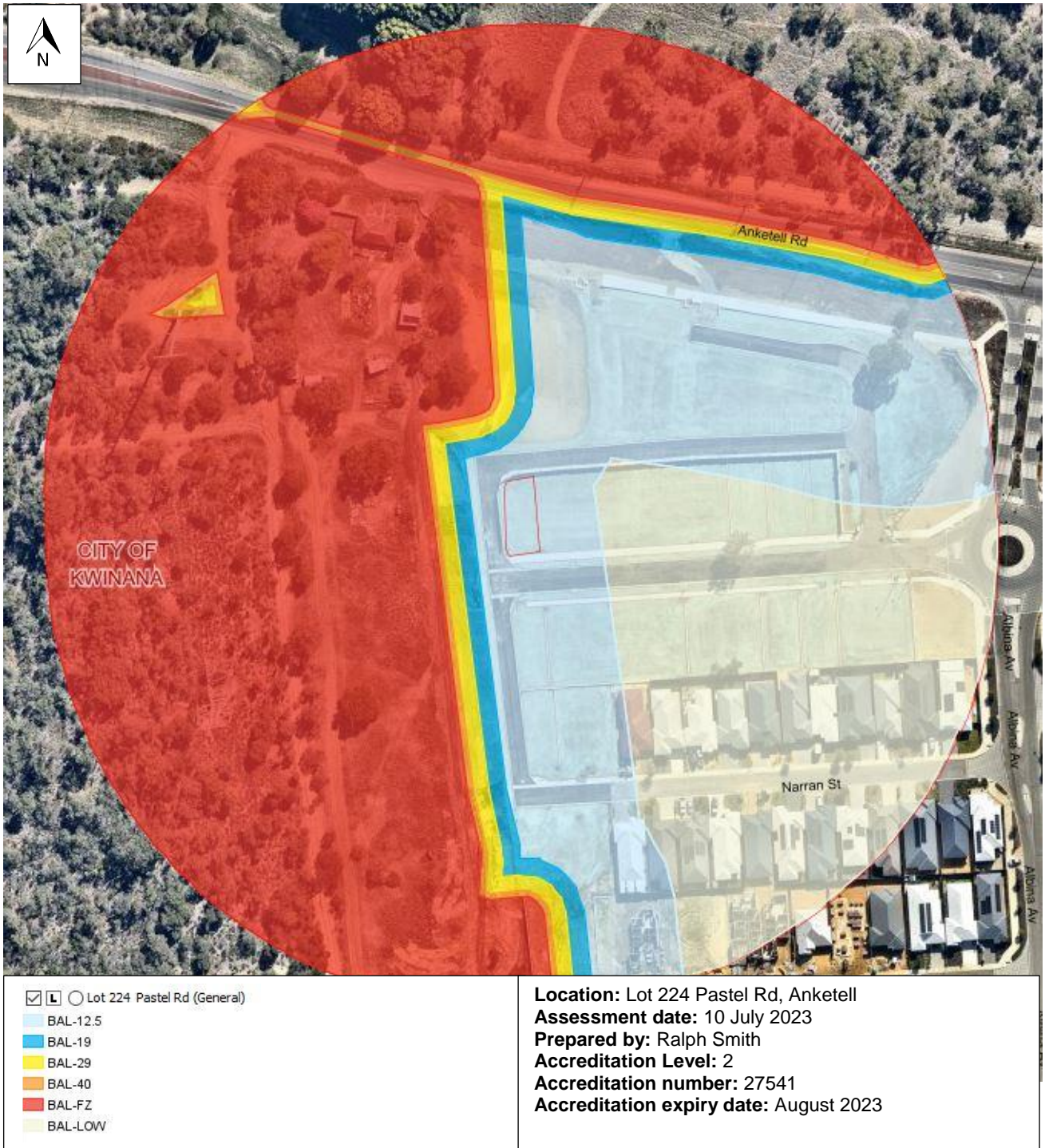


5/07/2023 1:59:33 PM (+8.0 hrs) Dir=E Lat=-32.21033 Lon=115.8544 Alt=3ft MSL WGS84  
**Photo ID: Photo 15** The woodland vegetation north of Anketell Road.



5/07/2023 2:00:56 PM (+8.0 hrs) Dir=ENE Lat=-32.21032 Lon=115.85509 Alt=3ft MSL WGS84  
**Photo ID: Photo 16** The woodland vegetation north of Anketell Road and the subdivision site.





**Figure 3:** BAL Contour Map.

## Notes to Accompany Vegetation Classification

### 1. Plot 1

Exclusion – Low threat vegetation and non-vegetated areas  
Clause 2.2.3.2 (e) and (f).

Lot 224 Pastel Road, Anketell is a residential lot located within a newly established residential estate. The lot is cleared and ready for construction to commence. The lots immediate surrounding the lot and within the new estate are all cleared and developed, ready for sale and construction of dwellings to commence. The land to the west has been cleared and is managed to low threat vegetation standard.

Plot 1 includes the road network and suburban infrastructure that services the area.

### 2. Plot 2

Class G – Grassland under an open woodland (G – 06)

This plot comprises the land to the west, but separated by a 22 metre wide cleared and managed area, of the lot. There is an absence of a multi-tiered scrub layer beneath the sparse tree overstorey cover. The overstorey cover is less than 10% and contains a grassland surface vegetation.

### 3. Plot 3

Class D – Scrub (D – 13)

This plot comprises the scrub that is west of the development site and is classified as Regional Park. The principle overstorey vegetation is *Banksia spp.* This portion of the plot is separated from the development site by grassland under an open woodland.

### 4. Plot 4

Class B – Woodland (B – 05)

This plot comprises the land to the north of the development site across Anketell Road. Currently it is intact woodland tree overstorey with a multi-tiered scrub understorey. This plot has a mixture of overstorey tree species, such as jarrah and banksia. Banksia is the primary overstorey vegetation species, with some sparse and scattered jarrah and marri trees. A basal area assessment of this vegetation estimated on a line around 100 metres with nine sample points, north and parallel to the Anketell Road provided a 1.88 m<sup>2</sup> basal area of jarrah and marri trees. When compared to the basal area to crown cover percentage<sup>1</sup> a basal area of 1.88 m<sup>2</sup> is less than 10% crown cover. This plot is very close to being able to classified as scrub as a consequences of the level of *Banksia spp.*, *Melaleuca spp* and *Leptospermum spp* foliage coverage.

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<sup>1</sup> Sneeuwjagt and Peet, 2011, "Forest Fire Behaviour Tables for Western Australia", Department of Conservation and Land Management, Perth



## Potential Bushfire Impacts

The potential bushfire impacts to the lot from each of the identified vegetation plots are identified below.

Plot	Vegetation Classification	Effective Slope	Separation distance (m)	BAL rating
1	Exclusion – Low threat vegetation and non-vegetated areas Clause 2.2.3.2 (e) & (f)	N/A	N/A	BAL-LOW
2	Class G – Grassland under an open woodland (G – 06)	>0-5	22	BAL-12.5
3	Class D – Scrub (D – 13)	Level / Upslope	62	BAL-12.5
4	Class B – Woodland (B – 05)	Level / Upslope	109	BAL-LOW

## Determination of Bushfire Attack Level (BAL)

The determined Bushfire Attack Level (highest BAL) for Lot 224 Pastel Road, Anketell, has been determined in accordance with Clause 2.2.6 of AS 3959 using the above analysis.

The determined Bushfire Attack Level (BAL) for the lot is assessed as a BAL-12.5.

## Appendix 1

Aerial photo showing the indicative subject site, Lot 224 Pastel Road, Anketell, as being designated a bushfire prone area. Source: Landgate.





## References

Landgate. (2023). *Map of Bushfire Prone Areas*. Retrieved 7 July 2023 from <https://maps.slip.wa.gov.au/landgate/bushfireprone/>

Department of Planning, Lands and Heritage maps from <https://espatial.dplh.wa.gov.au/PlanWA/Index.html?viewer=PlanWA>

Department of Primary Industries and Regional Development (DPIRD). *Natural Resource Information (WA) – Contour Map*. Retrieved 7 July 2023 from <https://dpiird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f>

Near Maps online mapping from <http://www.nearmaps.com>.

Sneeuwjagt and Peet, 2011, "Forest Fire Behaviour Tables for Western Australia", Department of Conservation and Land Management, Perth

Standards Australia. (2018). *Australian Standard 3959 – Construction of buildings in bushfire-prone areas (Incorporating amendments No 1 and 2)*. Standards Australia, Sydney, NSW.

Western Australian Planning Commission, (2015). *State Planning Policy 3.7 – Planning in Bushfire Prone Areas*. Western Australian Planning Commission, Perth, WA.

Western Australian Planning Commission, (2021). *Guidelines for Planning in Bushfire Prone Areas*. Western Australian Planning Commission, Perth, WA.