



FSG LUP 0003

Land Use Planning

ASSESSING VEGETATION IN A BUSHFIRE MANAGEMENT OVERLAY (BMO)

BACKGROUND

Through reference to AS 3959-2009 *Construction of buildings in bushfire prone areas* (AS 3959) the Victoria Planning Provisions at Clause 52.47 classifies vegetation into seven categories. This is for the purposes of determining defensible space and construction requirements in a Bushfire Management Overlay (BMO). This approach uses a generalized description of vegetation based on the AUSLIG (Australian Natural Resources Atlas: No. 7 - Native Vegetation) classification system.

Permit applications within the BMO are required to undertake a Bushfire Site Assessment. Part of this assessment requires vegetation to be classified into one of seven categories defined by AS 3959. This Fire Service Guideline provides a vegetative key to assist with classifying Victorian vegetation into the categories of AS 3959.

This Fire Service Guideline is not intended to be a stand alone document. It should be used in conjunction with the other guidance material on undertaking a Bushfire Site Assessment.

SCOPE & OBJECTIVE

For the purposes of the BMO and a Bushfire Site Assessment, provide a vegetation key for the consistent identification of vegetation appropriate to Victoria and AS 3959.

INTRODUCTION

AS 3959 defines 'classifiable vegetation'. Classifiable vegetation constitutes vegetation that presents a bushfire hazard within 150 metres of the development and in the case of subdivision, from the boundary of the property to be subdivided. Non-hazardous vegetation (defined below) does not constitute classified vegetation as it can form vegetation between the (proposed) building and the classified vegetation.

Vegetation from all facades of a proposed building or from an exposed property boundary for subdivisions or vulnerable development should be considered when classifying the vegetation.

The Bushfire Management Overlay (BMO) relies on a generalized description of vegetation as provided by AUSLIG classification system. This is similar to that used in AS 3959-2009. Table B1 provides a description of the vegetation classes and AUSLIG vegetation types within AS3959-2009.

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Vegetation Classification	AUSLIG Description	Grouping in AS3959	Descriptions from AS3959-2009.
Forest	Tall Open Forest Tall Woodland	A	Trees over 30 metres high; 30-70% foliage cover; (may include understorey ranging from rainforest and tree ferns to low trees and tall shrubs). Found in areas of high reliable rainfall. Typically dominated by eucalypts.
	Open Forest Low Open Forest		Trees 10-30 metres high; 30-70% foliage cover; (may include understorey of sclerophyllous low trees and tall scrubs or grass). Typically dominated by eucalypts.
	Pine Plantations		Trees 10-30 metres in height at maturity generally comprising Pinus species or other softwood species, planted as a single species for the production of timber.
Woodland	Woodlands Open woodlands	B	Trees 10-30 metres high; 10-30% foliage cover dominated by eucalypts; understorey grassy. In semi-arid areas with scattered low trees to tall shrubs typically Acacia, Callitris or Casuarina.
	Low woodland Low open woodland Open shrubland		Low trees and shrubs 2-10 metres high; foliage cover less than 10%. Dominated by eucalypts and acacias. Often have a grassy understorey or low shrubs. Acacias and Casuarina woodlands grade to Atriplex shrublands in the arid and semi-arid zones.
Shrubland	Closed heaths Open heaths	C	Found in wet areas but which are affected by poor soil fertility or shallow soils. Shrubs 1-2 metres high often comprising Banksia, Acacia, Hakea and Grevillea. Wet heaths occur in sands adjoining dunes of the littoral (shore) zone. Montane heaths occur on shallow or water-logged soils.
	Low shrubland		Shrubs <2 metres high; greater than 30% foliage cover. Understoreys can contain grasses, Acacia and Casuarina often dominant in the arid and semi arid zones.
Scrub	Closed scrub	D	Found in areas wet enough to support eucalypts trees, which are affected by poor soil fertility or shallow soils. >30% foliage cover. Dry heaths occur in rocky areas. Shrubs >2 metres high. Often coastal wetlands.
	Open scrub		Trees greater than 2 metres high, 10-30% foliage cover. Dominated by eucalypts or co-dominant melaleuca and myoporum with a mixed understorey
Mallee/Mulga	Tall shrubland	E	Vegetation dominated by shrubs (especially eucalypts and acacias) with a multi-stemmed habit; usually greater than 2 metres in height, <30% foliage cover. Note: Mulga is not found in Victoria.
Rainforest	Tall closed forest Closed forest Low closed forest	F	Trees 10-40 metres in height; >90% foliage cover; understorey may contain a large number of species with a variety of heights.
Grassland	Grassland	G	All forms including situations with shrubs and trees if the overstorey foliage cover is less than 10%.

Table B1: Classification of Vegetation from AS3959-2009. (adapted from AS3959-2009).

The Key below should always be used to classify vegetation in accordance with this system as the above descriptions are often too generalised for Victorian conditions.

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HOW TO USE THE KEY

This *Key* comprises a series of questions each with two alternate answers (e.g. A or A*). To use the *Key*, read both alternate answers, choose the most correct one and go to the next question below the correct answer. Repeat until you reach a description name in ***bold italics***. This 'Key' has been adapted from the book *Ocean Shores to Desert Dunes* by David Keith, 2002 (with permission of the author). For interpretation of technical terms in this Key refer to the Terminology section at the back of this document.

THE KEY

**BMO and
AS 3959
Vegetation
Class**

- A Vegetation dominated by trees (single stem plants that are generally more than 5 m tall when mature) and mallee forms.
- B Forests or woodlands dominated by eucalypts other than multi-stemmed mallee eucalypts.
- C Tall forests (typically >30 m) dominated by tall straight-trunked eucalypts, often with understorey trees (typically *Acacia*), ferns or herbs in the understorey. Largely confined to moderately fertile soils in sheltered locations where average annual rainfall exceeds 900mm. Includes "Blue Gum" plantations. Excludes riverine forests of the inland or coastal plains that lack the understorey characteristics described. ***Forests (Wet)***
- C* Forests or woodlands dominated by short to moderately tall trees (rarely >30m), usually branching at less than half of their height. The understorey generally lacks ferns and shrubs with broad soft leaves, but may include abundant grasses, hard leaved shrubs or ephemeral herbs. Widespread across Victoria.
- D Forests and woodlands with an abundance of plant groups in the understorey that are able to tolerate periodic inundation or waterlogging, particularly sedges, rushes and reeds. Confined to damp low lying parts of the coast or adjacent to rivers, lakes or swamps in the inland. ***Forests (Riparian)***
- D* Forests or woodlands generally lacking plants that tolerate inundation or waterlogging. Rarely in damp, low lying sites adjacent to rivers, lakes or swamps.
- E Forests or rarely woodlands with an abundance of hard leaved (sclerophyllous) shrubs in the understorey. Only rarely dominated by "Box" eucalypts. Ground cover often sparse and typically dominated by sclerophyllous sedges, but may sometimes include reasonably continuous swades of grasses. Occurs on coastal plains and the inland slopes where average ***Forest***

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rainfall exceeds 500mm, largely on infertile soils.

- E* Woodlands or rarely forests, that lack an abundance of hard-leaved (sclerophyllous) shrubs in the understory. “Box” eucalypts usually present and often dominate, generally 15-30 metres tall inland. In sub-alpine areas trees may be lower at 5-15 metres high, dominated by “Snow Gum”. Perennial grasses interspersed with perennial herbs are prominent in the understory and may be continuous with shrubs being sparse, except in some semi-arid areas where drought tolerant shrub species (chenopods) may dominate in more open woodlands, typically 5-20 metres high. Widespread across Victoria including sub-alpine areas and north of the Divide. **Woodland**
- B* Forests or woodlands not dominated by eucalypts although they may be present as scattered individuals or may dominate as a multi-stem habit of mallee eucalypts. Includes plantations of pine.
- G Forests dominated by trees with dense canopies touching those of adjacent trees (i.e. a closed canopy), and with horizontally held leaves. Trees and shrubs typically with soft leaves. Primarily occurring in sheltered gullies where average annual rainfall exceeds 1000mm. Does not include canopies dominated by wattles or casuarina.
- H Trees tolerant of (and subject to) tidal inundation, understory sparse to non-existent. Restricted to tidal estuaries along the coast. May be found in conjunction with saltmarsh. **#Mangrove**
- H* Trees not tolerant of (or subject to) tidal inundation, understory usually open to dense, rarely sparse, never non-existent. Found on the coast and escarpments but never in tidal estuaries. Trees belonging to various plant families, their leaves broad and usually soft. Vines often occurring the tree canopies or understorey. Understorey typically includes ferns and herbs. Found in deep sheltered gullies. **Rainforest**
- G* Woodlands and open forests dominated by trees with open canopies that barely touch (casuarina). Pine plantations and semi arid inland where multi-stemmed mallee eucalypts are also found. Some areas may form thick dense vegetation for periods after fire.
- J Plantations of pine. **Forest**
- J* Dominant trees are mutli-stemmed (mallee) eucalypts although taller single stemmed trees

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may occur 5-10 m tall with canopies of adjacent trees barely touching. Understorey includes an open ground cover of perennial and ephemeral grasses and herbs, and a variable cover of drought-tolerant shrubs. Extensive areas of the semi-arid and arid inland.

Mallee

A* Trees absent, or present only as scattered emergent individuals.

K Vegetation dominated by stunted and slow growing shrubs or herbfields that tolerate prolonged seasonal burial in snow. Restricted to the alpine zone above 1600-1800 m elevation.

Tussock Moorland

K* Vegetation dominated by plants that cannot tolerate prolonged seasonal burial in snow. Distributed in non alpine landscapes (below 1600 m elevation).

L Vegetation with an abundance of plants that are tolerate periodic inundation or waterlogging dominated by emergent sedges or shrubs, and waterbodies dominated by submerged or floating aquatic herbs, rushes, reeds, grasses or succulent herbs. Soils are deep and often black or dark grey with partly decomposed organic matter.

M Dominated by shrubs (generally less than 2 metres in height), sedges together with grasses or non-succulent herbs that tolerate permanent or periodic inundation or waterlogging with freshwater. Restricted to freshwater swamps with humic or gleyed soils on the coast, slopes and plains.

Shrubland

M* Dominated by herbs (including succulents), grasses, floating aquatic herbs or rarely shrubs that tolerate periodic inundation or waterlogging in lakes, lagoons or saline water. Restricted to freshwater lakes, lagoons and tidal estuaries on the coast, and salt lakes on the western plains.

#Lakes, Lagoons and Saltmarsh

L* Vegetation with few, if any, plants that tolerate periodic inundation or waterlogging usually dominated by shrubs

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or grasses, sometimes including an abundance of sedges, but never submerged or floating aquatic herbs. Soils may be grey-brown, yellow or red, usually dry or damp though may be flooded on rare occasions.

- N Vegetation dominated by perennial tussock grasses with herbs. Shrubs very rarely present. Generally found on clay soils on flat to undulating terrain on the coast, slopes and plains. In the inland, dominated by drought tolerant shrubs, including saltbush, with some perennial grasses and herbs as well as abundant ephemeral grasses and herbs after rain. Generally found on sandy or loamy soils. **Grasslands**
- N* Vegetation dominated by shrubs. Perennial tussock grasses are absent or occasional, though never dominant. May be dominated by hard-leaved but not drought tolerant shrubs usually also with perennial sedges, herbs and grasses, though generally lacking ephemeral plants closer to the coast.
- O Vegetation generally greater than 2 metres in height, although may be lower shortly after fire. **Scrub**
- O* Vegetation less than 2 metres in height at maturity. **Shrubland**

vegetation denoted with an hash are deemed to be non-hazardous vegetation for the purposes of the BMO and AS 3959-2009.

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Terminology.

Term	Description
	(Source: adapted from DSE, 2007, citing Meagher, David (1991) <i>The Macmillan Dictionary of the Australian environment</i> . Macmillan Company, South Melbourne, Victoria.)
Altitude	General altitudinal range in which the vegetation occurs. These are guides only: <ul style="list-style-type: none">• Alpine - above 1600m elevation• Sub-alpine - between 1200-1600m elevation• Montane - between 900-1200m elevation• Foothill - between 300-900m elevation• Lowland - between 0-300m elevation
Chenopod	A member of the (former) plant family Chenopodiaceae. Characteristically, these are adapted to tolerate saline environments and are able to survive with very little moisture by having special adaptations for preserving water such as succulent leaves, thick bark or waxy stems.
Ephemeral	This term is used where some significant environmental or vegetation feature is transient in time, i.e. of short and unpredictable duration, such as water in some wetlands.
Estuarine	A partially enclosed body of water at the mouth of a river, that is influenced by tides, and where freshwater mixes with salt water.
Forest	Vegetation with trees that usually have a long single bole and are closely spaced. This structural type is generally taller than woodland types (>30m). The lower strata may be ferny, shrubby or grassy.
Mallee	Shrubland (< 8m tall) dominated by multi-stemmed, ligno-tuberous eucalypts.
Plain	A large flat or gently undulating area of land, usually with a relief of less than 9m. In the typological context, the elevation range could approach 100m over wide areas. Plains are usually found at low elevations, and are often formed by the deposition of alluvium. These may be formed by a variety of geomorphological processes: <ul style="list-style-type: none">(i) Deposition of alluvium e.g. Gippsland Plains,(ii) Coastline retreat e.g. Sunset Country, or(iii) a combination of both, or(iv) by the out flow of highly fluid lavas such as some basalts, e.g. Victoria's Western Volcanic Plains.
Rainforest	In Victoria 'rainforest' is the common term for what Specht calls 'closed-forest'. Rainforest is dominated by trees with a closed canopy (ie. only very small gaps between the canopies of dense foliage – unlike the open foliage and distinct canopy gaps of eucalypt forests). These forests are fire-sensitive – even a

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	single fire may lead to their local extinction or grossly change their composition and structure. Non-vascular epiphytes e.g. (mosses, liverworts) are usually common, ferns are usually common (except in dry types) and vines are usually present and common, except in high altitude rainforests.
Riparian	Areas intimately associated with a river, creek or lake that require the presence of free water at some time during the year either through floods or average river flows.
Sclerophyllous	Plants having relatively tough leaves that contain large amounts of woody tissue.
Scrub	Scrubs have closed canopies (ie. densely foliated and closely-spaced). They can be distinguished from rainforests by their lower canopy heights (< 6m tall) and presence of sclerophyllous plants.
Shrubland	Shrublands are generally treeless or nearly so, usually less than 2m in height and have open canopies (wide gaps between the dominant shrubs). These often develop in rocky situations or on very dry environments.
Stream	A natural watercourse of any size.
Swamp	A low wet area that is permanently covered by water or is waterlogged and is usually covered by shrubs or trees or sedges.
Wetland	A low-lying area sometimes inundated or permanently covered by water.
Woodland	A vegetation community dominated by widely-spaced, spreading trees, often with short boles and a spreading habit. This structural type is often shorter than forest types (<30m). The lower vegetation strata is usually grassy and may be shrubby, but are rarely dominated by ferns.

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FURTHER QUERIES

If you have any detailed queries, please contact your CFA Department of Community Safety at the following CFA Regional offices:

45 Chapel Street
BENDIGO VIC 3550
Phone: (03) 5430 2200
Fax: (03) 5442 2246

120-122 Princes Highway
DANDENONG VIC 3715
Phone: (03) 9767 1800
Fax: (03) 9767 1880

18-22 Lakeview Drive
LILYDALE VIC 3140
Phone: (03) 8739 1300
Fax: (03) 8739 1382

92-94 Coleraine Road
HAMILTON VIC 3300
Phone: (03) 5551 1500
Fax: (03) 5551 1582

Level 3
Port of Sale Business Centre
64 Foster Street
SALE VIC 3850
Phone: (03) 5149 1000
Fax: (03) 5149 1082

251 High Street
MELTON VIC 3337
Phone: (03) 8746 1400
Fax: (03) 8746 1480

120 Curlewis Street
SWAN HILL VIC 3585
Phone: (03) 5036 2800
Fax: (03) 5036 2882

1 Ely Street
WANGARATTA VIC 3677
Phone: (03) 5721 4122
Fax: (03) 5721 3497

19 Learmonth Road
WENDOUREE 3350
Phone: (03) 5329 5510
Fax: (03) 5329 5582
(PO Box 222W
Ballarat West 3353)

61 Separation Street
NTH GEELONG VIC 3215
Phone: (03) 5240 2700
Fax: (03) 5277 1515

195-205 Numurkah Road
SHEPPARTON VIC 3630
Phone: (03) 5833 2400
Fax: (03) 5833 2482

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