BUSHFIRE ATTACK LEVEL ASSESSMENT



Lot 3/RP158360, Lots 5 & 6/RP154403 and Lot 9/RP170908 King Road and Viewland Drive, Mooloolah Client Reference: 002.03.19



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Contents

1.0	Introduction	5
2.0	Site and Development Description	5
	2.1 Property Description	5
	2.2 Proposed Development	6
	2.3 Site Location and Layout	6
3.0	Bushfire Hazard Assessment	8
	3.1 Bushfire Hazard Classification	8
	3.2 Vegetation Assessment, Slope and Separation Distances from Proposed	10
	Development	12
	3.3 Fuel Accumulation Assessment	
4.0	Site Constraints and Environmental Values which may limit mitigation options	19
	4.1 Fire History	21
5.0	Specific Risk Factors Associated with the Development Proposal	21
	5.1 Nature of activities anticipated on site	21
	5.2 Numbers of people likely to be present	21
6.0	Nature and Severity of Potential Attack	22
	6.1 Bushfire Season and Weather	22
	6.2 Anticipated Direction of Bushfire Attack	22
	6.3 Anticipated Severity of Attack	24
7.0	Bushfire Protection Measures in Combination	26
	7.1 Building Construction and Design	27
	7.2 Asset Protection Zones and Landscaping	29
8.0	Recommendations	30
9.0	Summary	30
10.0) References	30
Appendix 1 Less combustible native plants list		
Арр	endix 2 Template for Residents Bushfire Emergency Management Plans	42

1.0 Introduction

This report has been commissioned by Urbex Pty Ltd, to comply with the Building Code of Australia (BCA), in respect of functional performance objectives for bushfire attack relating to the residential Lots created by the subdivision of Lot 3/RP158360, Lots 5 & 6/RP154403 and Lot 9/RP170908.

Sunshine Coast Council (SCC) bushfire hazard overlay mapping, classifies Lots in Stages 2, 3 and 4 as "bushfire prone area" (BPA) in terms of Section 12 of Building Regulation 2006.

SPP 01/03 (*Mitigating the adverse Impacts of flood, bushfire and landslide*) specifies the methodology used for such mapping. SPP 01/03 was replaced by State Planning Policy (December 2013, latest version July 2017) accompanied by *A new methodology for State-wide mapping of bushfire prone areas in Queensland* (CSIRO 2014) with bushfire hazard mapping which Council gives consideration to, and which designates a substantially greater portion of the site as BPA.

The designation by Council of land being "bushfire prone" invokes the Building Code of Australia (BCA), requiring compliance with its bushfire related functional performance objectives and with AS3959-2018 *Construction of buildings in bushfire prone areas* providing "Deemed to Satisfy" construction solutions.

The original bushfire management plans (BMPs) that supported the DA, prescribed the Bushfire Attack Level (BAL) ratings for new Lots based on Method 1 of the above Standard, and misrepresentation of slope with the potential to create issues for Lot buyers, designers, builders and certifiers. In addition the BMPs did not recognize the exclusion of vegetation Group F (Rainforest) for Queensland under the National Construction Code (Volume 2, Part 3.7.4.0), which relieves many Lots of the need to comply with AS3959-2018. This latest study applies Method 2 under the same Standard to clarify BAL ratings for the affected Lots. This report supersedes the original BMPs in so far as required construction under AS3959-2018 is concerned.

The scope of this requested assessment relates solely to BAL determination for construction, and not to all the other considerations which would make up a comprehensive Bushfire Management Plan.

This assessment serves to determine the Bushfire Attack Level (BAL) requirement for the proposed buildings under AS3959.

2.0 Site and Development Description

2.1 **Property Description**

Site ID:Lot 3/RP158360, Lots 5 & 6/RP154403 and Lot 9/RP170908.
Parish of MOOLOOLAH. County of CANNING.Current address of property:King Road and Viewland Drive, Mooloolah, QLD 4533.Local Government Area:Sunshine Coast Council (SCC).Total Area:N/AZoning:Low Density Residential, Emerging Community, Rural Residential.

2.2 Proposed Development

The proposed development involves 137 new lots created in five Stages.

2.3 Site Location and Layout



Figure 1. Broader Area showing the location of the subject lots.

The site in question is located on the lower foothills either side of the South Mooloolah River. This watercourse is heavily invaded by Camphor Laurel (*Camphorum cinnamomum*) and Slash Pine (*Pinus elliottii*) in areas which the Department of Natural Resources Mines and Energy (DNRME) maps as "Notophyll vine forest" (Regional Ecosystem 12.3.1), and which State Government does not map as a hazardous vegetation community from a bushfire perspective. Whilst the species composition present is not entirely consistent with RE12.3.1, fuel loads are similar and moisture condition is permanently high, and similar to "Rainforest" under AS3959-2018. Under the National Construction Code (Volume 2, Part 3.7.4.0) vegetation Group F (Rainforest) is excluded for Queensland, which relieves many Lots of the need to comply with AS3959.

In contrast, areas of tall moist and wet sclerophyll forest (mainly RE12.9 - 10.17 / 12.9 - 10.17c) present at some development interfaces, have high fuel accumulation potential and represent potential hazard against which future dwellings require the protection offered by construction in accordance with AS3959-2018.

The assessment uses both Method 1 and 2 under AS3959 to determine the Bushfire Attack Level (BAL) for construction.



Figure 2. Lot layout showing location of the relevant Stages of development.

Figure 2 shows the five proposed Stages of development. Areas that are currently open grassland are potentially subject to future recruitment and regrowth of low threat vegetation in low lying areas and high threat vegetation in better drained elevated areas.

The site is within approximately 2km by road of the nearest Queensland Fire and Emergency Services (Mooloolah Fire Station) with local Rural Fire Brigade also potential responders, with a response time dependant on the availability of volunteers to turn out.

3.0 Bushfire Hazard Assessment

3.1 Bushfire hazard classification



Figure 3. Council bushfire hazard mapping

"Bushfire Prone Land" is defined under Building Regulation 2006 and the BCA as an area <u>identified as such</u> <u>by Local Government</u> (in this case using a methodology outlined in SPP 01/03 (*Mitigating the adverse Impacts of flood, bushfire and landslide*). SPP01/03 has subsequently been replaced by State Planning Policy – natural hazards, risk and resilience accompanied by State bushfire hazard mapping based on *A new methodology for State-wide mapping of bushfire prone areas in Queensland* (CSIRO 2014). This overlay designates a larger proportion of the site as BPA, as seen in Figure 4.

Councils give consideration to latest State mapping, as do Certifiers.



Figure 4. Latest State bushfire hazard mapping.

The yellow numbered circles in Figures 3 and 4 represent potentially hazardous vegetation communities, and the green numbered circles represent low hazard vegetation. The BMPs submitted with the DA recommend the fire trails marked FT1 to 3, although these should be surveyed and assessed for feasibility given potentially excessive slope in these areas.

The effect of this mapping is to trigger the BCA and its functional performance objectives for bushfire, with AS3959-2018 providing "Deemed to Satisfy" building solutions.

The BCA bushfire requirements relate to Class 1, 2 and 3 buildings constructed in a *"designated bushfire prone area"*.

This assessment compares Bushfire Attack Levels (BALs) using Methods 1 and 2 under AS3959-2018.

3.2 Vegetation Assessment, Slope and Separation Distances from Proposed Development



Figure 5. Fuel accumulation, slopes and setback. Solid arrows show most likely direction of bushfire attack. Contours shown are 10m.

The yellow numbered circles in Figures 3 and 4 represent potentially hazardous vegetation communities, and the green numbered circles represent low hazard vegetation. Th future edge of hazardous vegetation is taken to be the solid red line in Figure 5, preserving a low hazard state for 10m from the road centreline.

The vegetation type in terms of AS3959-2018 is "Forest" for vegetation communities 1,3,5 and 6; and "Scrub" for Area 7. Average slope beneath vegetation being classified varies, summarised in Table 1.

Section 6 objectively calculates and determines the potential nature and severity of bushfire attack more thoroughly. This serves as a basis for determining the construction and other bushfire protection measures outlined in this BAL Assessment.

Vegetation community / area	Regional Ecosystem	Vegetation Classification AS3959-2018	Interfacing Lots	Effective slope beneath vegetation	Flame width
1	12.9 - 10.17	Forest	502 - 506	0°	20m
2	12.3.1 equivalent	Rainforest			
3 (Downslope)	12.9 – 10.17c	Forest	508 – 511 (north)	13° Down	100m
3 (Upslope)	12.9 – 10.17c	Forest	508 – 511 (south)	0° / Upslope	100m
4	12.3.1.equivalent	Rainforest			
5	12.9 – 10.17c	Forest	401 – 408 (east and west)	0°	20m
6 (Downslope)	12.9 – 10.17c	Forest	409 – 413 (east and west)	10° Down	100m
6 (Upslope)	12.9 – 10.17c	Forest	319 across to 346	16° Upslope	100m
7	N/A	Scrub	347 across to 301	0° / Upslope	100m

Fuel assessments were determined using the Overall Fuel Hazard Assessment - DSE Victoria (Oct 2010).

Table 1. Vegetation, Slope and Flame width assumptions for different hazard interfaces

3.3 Fuel Accumulation Assessment - Vegetation Community / Area 1



Figure 6. Fuel Accumulation Assessment Area 1

Fuel hazard estimate	Assessment according to Hines et al 2010			
Date: 20 th March 2019		Area 1		
Layer	Rating	Description / Comments	Equivalent fuel load t/ha	
Surface and near surface	Very High	High litter bed average 20 - 30mm with Moderate near surface fuels largely <i>Imperatur sp, Themeda sp</i> with bracken fern.	12 - 14	
Elevated	Moderate	Canopy recruiters spindly with most fuel at top of layer.	2	
Bark	High	Some fibrous barks (<i>E.microcorys</i>), some ribbon barks (<i>E.tereticornis</i>) with lower bark hazard species – <i>L.confertus, Camphorum sp, Pinus sp.</i>	2	
Overall rating	High		18t/ha	

Table 2. Fuel Assessment Area 1

The vegetation community present is consistent with mapped RE12.9 – 10.17 (given the presence of the tall eucalypts), for which the State Government (Queensland Fire and Emergency Services – QFES dataset) attributes a default value of 17.2t/ha to total available fuel.

For the purpose of site specific fire modelling in Section 6, 17.2t/ha to total available fuel, of which 14t/ha is surface and near surface fuel, is considered reasonable and consistent with the requirements of AS3959-2018.

3.4 Fuel Accumulation Assessment – Vegetation Community / Area 2



Figure 7. Fuel Accumulation Assessment Area 2

Fuel hazard estimate	Assessment according to Hines et al 2010		
Date: 20 th March 2019	Area 2		
Layer	Rating	Description / Comments	Equivalent fuel load t/ha
Surface and near surface	Low	Low litter bed average 10mm with high rate of decomposition. Mainly pine needles, some <i>Paspalum sp.</i>	4
Elevated	Moderate	Canopy recruiters spindly with most fuel at top of layer.	1
Bark	Low	Predominantly Camphorum sp, Pinus sp	0
Overall rating	Low		5t/ha

Table 3. Fuel Assessment Area 2

The vegetation community present has fuel levels consistent with mapped RE12.3.1, for which the State Government (Queensland Fire and Emergency Services – QFES dataset) attributes a default value of 4.5t/ha to total available fuel. With such a fuel load, potential fireline intensity would not exceed 4000kW/m, thereby rating as Low Hazard. Akin to rainforest (from an available fuel perspective) this vegetation community can be excluded as potential hazard under the National Construction Code (Volume 2, Part 3.7.4.0).

3.5 Fuel Accumulation Assessment – Vegetation Community / Area 3



Figure 8. Fuel Accumulation Assessment Area 3

Fuel hazard estimate	Assessment according to Hines et al 2010			
Date: 20 th March 2019		Area 3		
Layer	Rating	Description / Comments	Equivalent fuel load t/ha	
Surface and near surface	Very High	Very high litter bed average 40 - 50mm with Very High near surface fuels largely <i>Imperatur sp, Melinis sp,</i> <i>Paspalum sp</i> with bracken fern.	12 - 14	
Elevated	Very high	Canopy recruiters, tall shrubs with fuel throughout layer.	4 - 5	
Bark	Very High	Fibrous barks (E. microcorys), some ribbon barks (E.tereticornis) with lower bark hazard species – L.confertus, C.intermedia.	3	
Overall rating	Very High		22t/ha	

Table 4. Fuel Assessment Area 3

The vegetation community present is consistent with mapped RE12.9 – 10.17c (given the presence of the tall eucalypts), for which the State Government (Queensland Fire and Emergency Services – QFES dataset) attributes a default value of 24.1t/ha to total available fuel.

For the purpose of site specific fire modelling in Section 6, 24.1t/ha to total available fuel, of which 18t/ha is surface and near surface fuel, is considered reasonable and consistent with the requirements of AS3959-2018.

3.6 Fuel Accumulation Assessment – Vegetation Community / Area 4



Figure 9. Fuel Accumulation Assessment Area 4

Fuel hazard estimate	Assessment according to Hines et al 2010		
Date: 20 th March 2019	Area 4		
Layer	Rating	Description / Comments	Equivalent fuel load t/ha
Surface and near surface	Low	Low litter bed average 10mm with high rate of decomposition. Mainly pine needles, some <i>Paspalum sp.</i>	4
Elevated	Moderate	Canopy recruiters spindly with most fuel at top of layer.	1
Bark	Low	Predominantly Camphorum sp, Pinus sp.	0
Overall rating	Low		5t/ha

Table 5. Fuel Assessment Area 4

The vegetation community present has fuel levels consistent with mapped RE12.3.1, for which the State Government (Queensland Fire and Emergency Services – QFES dataset) attributes a default value of 4.5t/ha to total available fuel. With such a fuel load, potential fireline intensity would not exceed 4000kW/m, thereby rating as Low Hazard. Akin to rainforest (from an available fuel perspective) this vegetation community can be excluded as potential hazard under the National Construction Code (Volume 2, Part 3.7.4.0).

3.7 Fuel Accumulation Assessment – Vegetation Community / Area 5



Figure 10. Fuel Accumulation Assessment Area 5

Fuel hazard estimate	Assessment according to Hines et al 2010			
Date: 20 th March 2019		Area 5		
Layer	Rating	Description / Comments	Equivalent fuel load t/ha	
Surface and near surface	Very High	Very high litter bed average 40 - 50mm with Very High near surface fuels largely <i>Imperatur sp</i> with bracken fern.	12 - 13	
Elevated	High	Canopy recruiters, tall shrubs with fuel throughout layer.	3 - 4	
Bark	Very High	Ribbon barks (<i>E.tereticornis</i>) with lower bark hazard species – <i>L.confertus, C.intermedia.</i>	3	
Overall rating	Very High		20t/ha	

Table 6. Fuel Assessment Area 5

The vegetation community present is consistent with mapped RE12.9 – 10.17c (given the presence of the tall eucalypts), for which the State Government (Queensland Fire and Emergency Services – QFES dataset) attributes a default value of 24.1t/ha to total available fuel.

For the purpose of site specific fire modelling in Section 6, 24.1t/ha to total available fuel, of which 18t/ha is surface and near surface fuel, is considered reasonable and consistent with the requirements of AS3959-2018.

3.8 Fuel Accumulation Assessment – Vegetation Community / Area 6



Figure 11. Fuel Accumulation Assessment Area 6

Fuel hazard estimate	Assessment according to Hines et al 2010			
Date: 20 th March 2019		Area 3		
Layer	Rating	Description / Comments	Equivalent fuel load t/ha	
Surface and near surface	Very High	Very high litter bed average 40 - 50mm with Very High near surface fuels largely <i>Imperatur sp, Melinis</i> <i>sp, Paspalum sp</i> with bracken fern.	12 - 14	
Elevated	Very high	Canopy recruiters, tall shrubs with fuel throughout layer.	4 - 5	
Bark	Very High	Fibrous barks (<i>E. tindaliae</i>), some ribbon barks (<i>E.tereticornis</i>) with lower bark hazard species – <i>L.confertus, C.intermedia.</i>	3	
Overall rating	Very High		22t/ha	

Table 7. Fuel Assessment Area 6

The vegetation community present is consistent with mapped RE12.9 – 10.17c (given the presence of the tall eucalypts), for which the State Government (Queensland Fire and Emergency Services – QFES dataset) attributes a default value of 24.1t/ha to total available fuel.

For the purpose of site specific fire modelling in Section 6, 24.1t/ha to total available fuel, of which 18t/ha is surface and near surface fuel, is considered reasonable and consistent with the requirements of AS3959-2018.

3.9 Fuel Accumulation Assessment – Vegetation Community / Area 7



Figure 12. Fuel Accumulation Assessment Area 7

The vegetation community present is invaded by Slash Pines, with a thick scrubby component of *Acacia spp, Lantana sp* on the edge of a lesser drainage line. Applying the precautionary principle this area has been treated as "Scrub" under AS3959-2018, with Method 1 applied to Bushfire Attack Level (BAL) influences.

4.0 Site constraints and environmental values which may limit mitigation options

The Queensland Department of Natural Resources, Mines and Energy (DNRME) shows mapped remnant vegetation of "Endangered" RE12.3.1 and "Of Concern" RE12.9 – 10.17 across the site as shown in Figure 13 below.



Figure 13. Regional Ecosystem Mapping

DNRME provides the following Description and recommended fire guidelines for the vegetation communities mapped.

Regional	Description	Fire Guidelines
Ecosystem		
RE 12.3.1 Endangered	Complex to simple notophyll vine forest. Waterhousea floribunda is predominant fringing stream channels. Other species can include Cryptocarya hypospodia, C. obovata, C. triplinervis, Argyrodendron trifoliolatum, Ficus coronata, F. fraseri, F. macrophylla forma macrophylla, Aphananthe philippinensis, Elaeocarpus grandis, Grevillea robusta, Castanospermum australe and Syzygium francisii. Ficus racemosa and Nauclea orientalis in north of bioregion. Eucalyptus spp. emergents (e.g. E. grandis) and Araucaria cunninghamii; less commonly Agathis robusta may also be present. Occurs on Quaternary alluvial plains and channels. (BVG1M: 4b) Vegetation Hazard Class (VHC) 4.1 4.5t/ha Total Available Fuel Load (State Default Value)	STRATEGY: Do not burn deliberately. Protection relies on broad-scale management of surrounding country. May need active protection from wildfire in extreme conditions or after prolonged drought. Planned burns should not create a running fire into vine forest. Ensuring conditions of good soil moisture and moisture of litter in surrounding communities will limit fire behaviour/intensity. ISSUES: Fire sensitive and not normally flammable. Some preliminary work suggests rainforest seedling germination from planned burning activities will assist the establishment of seedlings in newly burnt areas, especially due to smoke. There may be issues with lantana and other weeds from fire and other disturbance. Remnants may be limited by frequent fire at the margins; this requires further research.
RE 12.9 - 10.17 Of Least Concern	Open-forest complex generally with a variety of stringybarks, grey gums, ironbarks and in some areas spotted gum. Canopy trees include <i>Eucalyptus siderophloia</i> , <i>E.</i> <i>propinqua or E. major, E. acmenoides or E.</i> <i>portuensis, E. carnea and/or E. microcorys</i> <i>and/or Corymbia citriodora</i> subsp. <i>variegata</i> . Other species that may be present locally include <i>Corymbia</i> <i>intermedia</i> , <i>C. trachyphloia</i> , <i>Eucalyptus</i> <i>tereticornis</i> , <i>E. biturbinata</i> , <i>E. moluccana</i> , <i>E.</i> <i>longirostrata</i> , <i>E. fibrosa subsp. fibrosa and</i> <i>Angophora leiocarpa</i> . <i>Lophostemon</i> <i>confertus</i> often present in gullies and as a sub canopy or understorey tree. Mixed understorey of grasses, shrubs and ferns. Hills and ranges of Cainozoic and Mesozoic sediments. (BVG1M: 9a) Vegetation Hazard Class (VHC) 9.2 17.2t/ha Total Available Fuel Load (State Default Value) 12.9-10.17c: Open forest of <i>Eucalyptus</i> <i>carnea and/or Eucalyptus tindaliae</i> +/- <i>Corymbia citriodora subsp. variegata</i> , <i>Eucalyptus crebra</i> , <i>Eucalyptus major</i> , <i>Corymbia henryi</i> , <i>Angophora woodsiana</i> , <i>C.</i> <i>trachyphloia</i> , <i>E. siderophloia</i> , <i>E. microcorys</i> , <i>E. resinifera and E. propinqua</i> . <i>Lophostemon</i> <i>confertus</i> often present in gullies and as a sub canopy or understorey tree. Occurs on	OPTIMAL FIRE SEASON: Summer to winter. a. Summer to winter. INTENSITY: Plan for low to moderate. Unplanned occasional high intensity wildfire will occur. a. Low to moderate. INTERVAL: 4-8 years maintains a healthy grassy system. 8-20 years for shrubby elements of understorey. a. 4-25 years. STRATEGY: Aim for 40-60% mosaic burn. Needs disturbance to maintain RE structure (eucalypt overstorey with open understorey of predominantly non-rainforest species). a. Aim for 40-60% mosaic burn. Burn with soil moisture and with a spot ignition strategy so that a patchwork of burnt/unburnt country is achieved. ISSUES: Typically lower rainfall than other moist RE types, but prefers sheltered slopes and gullies where it maintains moist environment. Frequent fire is needed to maintain understorey integrity, keeping more mesic species low in the profile of the understorey so that other species can compete. A grassy system is especially important for species such as the eastern bristlebird and its habitat. It is essential that wildfires are not the sole source of fire in this ecosystem. High intensity fires occur periodically through time, however frequent low to moderate intensity fires will create the disturbance required to keep the understorey diverse. A follow- up burn soon after a high intensity wildfire can be considered to reduce germinating mesic species. This RE contains a number of rare and threatened plant species (e.g., Plectranthus suaveolens and Sophora fraseri) which require appropriate fire management.

	Cainozoic and Mesozoic sediments. (BVG1M: 9a) Vegetation Hazard Class (VHC) 9.1 24.1t/ha Total Available Fuel Load (State Default Value)	a. The fire regime should maintain a mosaic of grassy and shrubby understoreys. Control of weeds is a major focus of planned burning in most areas. Careful thought should be given to maintaining ground litter and fallen timber habitats by burning only with sufficient soil moisture. Burning should aim to produce fine scale mosaics of unburnt areas. Variability in season and fire intensity is important, as well as spot ignition in cooler or moister periods to encourage mosaics.
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Table 8. Regional Ecosystems Descriptions and Fire Guidelines

The retained areas of forest vegetation are unlikely to be provided with managed fire, along with the temporary hazard reduction benefits this brings.

Planning is not based on any assumptions regarding hazard reduction; and has to be based on fuel levels reaching a long term maximum stable state, coinciding with ignition under worst case foreseeable fire weather conditions.

4.1 **Fire History and Frequency**

This study found several indicators of prior fire, dating back more than 10 years. Most recent fires have been hazard reduction burns under relatively benevolent conditions, nevertheless charring heights exceed 4m in areas supporting RE12.9 – 10.17. Recurrence of fire at some time has to be regarded as possible, potentially coinciding with maximum fuel accumulation and worst case fire weather conditions.

5.0 Specific risk factors associated with the development proposal

5.1 Nature of activities anticipated on site

Normal residential activities are anticipated to occur in the area, which includes the potential inclination of juveniles and others to make temporary "camps" in bushland, and others to undertake acts of deliberate arson. The number of fire incidents expected by QFES varies in direct proportion to the numbers of people present. The proposed development makes a considerable addition to the number of people living in the area and potentially exposed to unplanned fire and its effects.

No storage or handling of hazardous materials in bulk is envisaged.

5.2 Numbers of people likely to be present

Many more people can be expected to be present on the subject lots depending on the time of day and day of the week.

6.0 Nature and Severity of Potential Bushfire Attack

6.1 Bushfire season and Fire Weather

The "typical fire season" in this area peaks between September and November. The predominant winds in the area are south easterly, however during the fire season, hot gusty westerlies of over 30 kph can be expected, with Relative Humidity falling to 10% and less. Temperatures on these days can climb over 35° C, and for two or three days a year, fire weather conditions equivalent to FDI levels of around 60 can be anticipated. (Note that this is in contrast to the value of 40 which is being used in the recently revised AS3959 - 2018).

A new methodology for State-wide mapping of bushfire prone areas in Queensland (CSIRO, 2014) defines new regional FDI values for planning purposes, as shown in Figure 12 below, attributing an FDI value of 60 to the area in question.



Figure 14. State based indications of a revision of "worst case" FDI values to FDI 60 for the area involved.

6.2 Anticipated direction of bushfire attack

Worst fire weather conditions are anticipated from the west through northwest to north, associated with the direction of traditionally worst case fire weather conditions. Attack from other directions is also possible.

Anticipated directions of attack are reflected in Figure 4.

Bushfire attack comes in a number of forms: direct flame, radiant heat, embers, smoke and wind. Research shows that over 80% of houses lost to bushfire in Australia can be attributed to ember attack, within 100m of bushland. The proposed buildings would be expected to face some radiant heat along with minor ember attack.



Figure 15. Main Bushfire Attack mechanisms (Image courtesy of Ramsay & Rudolf 2003)

6.3 Anticipated severity of bushfire attack

The anticipated/potential fire line intensity and other calculated fire parameters are shown in Table 9. The resulting BAL data is shown as BAL contours in Figures 17 and 18.

Vegetation community / area	Regional Ecosystem	Vegetation Classification AS3959	Interfacing Lots	Effective slope beneath vegetation	Flame width (m)	Fire Intensity (Byram, 1959) (kW/m)	Rate of Spread (Noble et al, 1980) (kph)	Flame Height (modified Mc Arthur V equation, NSW RFS 2001)	BAL Ratings (Method 2)	BAL Ratings (Method 1)
1	12.9 - 10.17	Forest	502 - 506	0°	20m	8 958	1.01	(m) 8.62	BAL FZ within <18m of intact unmanaged vegetation BAL 40 from 8 - <10m BAL 29 from 10 - <13m BAL 19 from 13 - <16m BAL 12.5 from 16 - <100m	BAL FZ within <10m of intact unmanaged vegetation BAL 40 from 10 - <13m BAL 29 from 13 - <20m BAL 19 from 20 - <28m BAL 12.5 from 28 - <100m
3 (Downslope)	12.9 – 10.17c	Forest	508 – 511 (north)	13° Down	100m	39 408	3.18	23.54	BAL FZ within <18m of intact unmanaged vegetation BAL 40 from 18 - <24m BAL 29 from 24 - <34m BAL 19 from 34 - <46m BAL 12.5 from 46 - <100m	BAL FZ within <19m of intact unmanaged vegetation BAL 40 from 19 - <25m BAL 29 from 25 - <36m BAL 19 from 36 - <49m BAL 12.5 from 49 - <100m
3 (Upslope)	12.9 – 10.17c	Forest	508 – 511 (south)	0° / Upslope	100m	16 137	1.3	11.32	BAL FZ within <10m of intact unmanaged vegetation BAL 40 from 10 - <13m BAL 29 from 13 - <19m BAL 19 from 19 - <27m BAL 12.5 from 27 - <100m	BAL FZ within <10m of intact unmanaged vegetation BAL 40 from 10 - <13m BAL 29 from 13 - <20m BAL 19 from 20 - <28m BAL 12.5 from 28 - <100m
4 5	12.3.1.equivalent 12.9 – 10.17c	Rainforest Forest	401 – 408 (east and west)	0°	20m	18 827	1.51	12.72	BAL FZ within <9m of intact unmanaged vegetation BAL 40 from 9 - <12m BAL 29 from 12 - <15m BAL 19 from 15 - <19m BAL 12.5 from 19 - <100m	BAL FZ within <10m of intact unmanaged vegetation BAL 40 from 10 - <13m BAL 29 from 13 - <20m BAL 19 from 20 - <28m BAL 12.5 from 28 - <100m
6 (Downslope)	12.9 – 10.17c	Forest	409 – 413 (east and west)	10° Down	30m	32 173	2.58	19.69	BAL FZ within <16m of intact unmanaged vegetation BAL 40 from 16 - <19m BAL 29 from 19 - <24m BAL 19 from 24 - <30m BAL 12.5 from 30 - <100m	BAL FZ within <15m of intact unmanaged vegetation BAL 40 from 15 - <20m BAL 29 from 20 - <29m BAL 19 from 29 - <41m BAL 12.5 from 41 - <100m

6 (Upslope)	12.9 – 10.17c	Forest	320 across to 347	16°Upslope	100m	5 372	0.43	5.7	BAL FZ within <5m of intact	BAL FZ within <10m of intact
									unmanaged vegetation	unmanaged vegetation
									BAL 40 from 5 - <7m	BAL 40 from 10 - <13m
									BAL 29 from 7 - <10m	BAL 29 from 13 - <20m
									BAL 19 from 10 - <15m	BAL 19 from 20 - <28m
									BAL 12.5 from 15 – <100m	BAL 12.5 from 28 – <100m
7	N/A	Scrub	347 across to 301	0° / Upslope	100m					BAL FZ within <10m of intact
										unmanaged vegetation
										BAL 40 from 10 - <13m
										BAL 29 from 13 - <19m
										BAL 19 from 19 - <27m
										BAL 12.5 from 27 – <100m

Table 9. Calculated fire values and BAL ratings based on setback from unmanaged vegetation

Table 10 below shows the significance of various levels of radiant heat flux.

Radiant Heat Flux (kW/m²)	Likely Effects
> 40 - 110	Flame Zone. Even the strongest toughened glass fails.
	Latest technology in toughened glass may survive. Most will not. Timber ignites without pilot flame. Limit
29 - 40	of BAL-40 Construction AS3959 - 2009.
	Ignition of timbers without piloted ignition (3 minutes exposure) during the passage of a bushfire. Most
29	types of toughened glass could fail. Limit of BAL-29 Construction AS3959 - 2009.
	Screened float glass could fail during the passage of a bushfire.Limit of BAL-19 Construction AS3959 -
19	2009.
	Standard float glass could fail during the passage of a bushfire. Limit of BAL-12.5 Construction AS3959 -
12.5	2009. Some timbers can ignite with prolonged exposure and with pilot ignition sources (eg embers)
	Critical conditions. Firefighters not expected to operate in these conditions. Considered life threatening in
	under a minute in protective equipment. Fabrics inside a building could ignite spontaneously with long
10	exposures.
7	Likely fatal to unprotected persons after exposure of several minutes.
4.7	Extreme conditions. Firefighter in protective clothing will feel pain after 60 seconds exposure.
3	Hazardous conditions. Firefighters expected to operate for a short period (10 minutes).
2.1	Unprotected person will feel pain after 1 minute exposure - non fatal.

 Table 10. Significance of various RHF levels (Source: NSW RFS, 2006)



7.0 Bushfire Protection Measures in Combination

Figure 16. Bushfire Planning Measures in Combination (Source: NSW RFS, 2006)

Figure 16, taken from *Planning for Bushfire Protection* (NSW Rural Fire Service, 2006) illustrates that there are other factors and measures which need to be integrated to mutually support one another to provide protection against bushfire.

Simply removing the hazard is one possible way of removing risk to life and property, but this approach is not desirable. The safety of life and property can be achieved whilst retaining the natural amenity and value of bushland areas, provided these integrated bushfire protection measures are applied.

7.1 Building Construction and Design

Figures 17 and 18 show the BAL contours for the site, and based on the final location of dwelling footprints, determines the minimum BAL rating for construction under AS3959-2018.



Figure 17. BAL contours for northern portion of the development.



Figure 18. BAL contours for southern portion of the development.

Note that the BAL contours are based off the edge of unmanaged vegetation, which in some cases is the edge of a fire trail, where such is constructed. If fire trails are not constructed (eg behind Stage 4) the edge of unmanaged vegetation is the rear lot boundary.

Note also that unmanaged vegetation / hazard exists downslope of dwelling sites on Lots 508 – 511, and Figure 18 shows the setback required to achieve the BAL ratings taken from Table 9.



7.2 Asset Protection Zones and Landscaping

Figure 19. Components of an Asset Protection Zone (APZ)

Asset protection zones provide the most strategically valuable defense against radiant heat and flame, and to a lesser extent embers. The function of the Inner Protection Area (IPA) is to distance the Asset from Flame and Radiant Heat. The Outer Protection Area (OPA) separates ground fuels from canopy fuels, causing canopy fires to collapse and become ground fires.

The IPA should be maintained as free as possible of available fuel, through short mowing of grass and removal of fine flammable debris. Plants retained in or introduced into the IPA should be selected based on low combustibility, by virtue of high moisture content, low volatile oil content, high leaf mineral levels, large fleshy leaves, absence of shedding bark. Plant arrangement is just as important as low combustibility. Plants should be placed so as to not provide either vertical or horizontal connectedness of plant material. Appendix 1 provides examples of less hazardous plant species. Combustible vegetation shall not be allowed to come into contact with combustible parts of buildings. Trees shall not be allowed to directly overhang roof lines.

In this case the APZ on each Lot is to be entirely constructed and maintained as IPA, with the exception of Lots 508 – 511, where the first 15m should be as IPA and the remainder of the setback as OPA.

8.0 Recommendations

- The minimum construction level under AS3959-2018 should be determined by Table 9 and Figures 17 and 18 of this report. Any structure built within 6m of residential buildings will also need to be constructed in accordance with this Standard. Builders shall warrant that they have a copy of this Standard, and that it shall be used consistently throughout the design and construction of any residential building.
- 2. The unbuilt portion of all Lots shall be managed as Inner Protection Area. with the exception of Lots 508 511, where the first 15m should be as IPA and the remainder of the setback as OPA.
- 3. Residents should give consideration to their preparedness for fire (beyond the scope of this BAL Assessment) in terms of their emergency response plan, guidance for which is available upon request, or from material published and made available by Queensland Fire and Rescue Service.

9.0 Summary

The identification of the area as "bushfire prone" by Council, invokes the application of the BCA, which calls up AS3959 as the relevant building standard for new dwellings and associated Class10a structures.

This report supersedes any existing BMP in as far as prescribed BAL ratings is concerned.

10.0 References

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Appendix 1

Less combustible native plants list

Source: Bowden, J (1999)

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Fire Retardant Native Plants

<u>Form</u>: S = Shrub; T = Tree; V = Vine; H = Herb; Gc = Ground cover; eO = epyphytic Orchid; eF = epyphytic Fern; tF = terrestrial Fern. Fire-retardance: Lm = due to leaf water contents; St = due to salt content; Sl = succulent leaves

<u>Comments</u>: Wb = suitable for windbreak/fire barrier; Ad = suitable as addition to windbreak/fire barrier but nut as main species; Us = suitable for understory of windbreak/fire barrier; Oa = suitable for open areas near house; Bf = suitable if protected from direct flames; De = Deciduout in winter, in flower or in dry periods

(-) = may not occur naturally in Pine Rivers Valley but has not proved invasive.

Fire-Retardant Plants for Small Gardens

GYMNOSPERMS					
Zamaceae Lepidozamia peroffskyana	Shining Burrawang	s	Ē	Us Sa	
Macrozamia lucida	Pineapple Zamia	S	Lm	Us Sa	
Macrozamia miquelii	Wild Pineapple	S	Ш	Us Oa Sa	
Agavaceae					
Cordyline petiolaris	Broad-leaf Palm Lily	S	Im	Us Sa	
Cordyline rubra	Red-fruit Palm Lily	s	Im	Us Sa	
Cordyline strica	Slender Palm Lily	S	Im	Us Sa	
MONOCOTYLEDONS					
Amaryllidaceae					
Crinum pedunculatum	River Lily	Н	Lm SI	Us Oa Sa	
Doryanthes palmeri (-)	Spear Lily	Η	Im SI	Us Oa Sa	
Proiphys cunninghamii	Brisbane Lily	Η	Lm Sl	Us Sa	
Araceae					
Alocasia brisbanensis	Cunjevoi	Н	Im	Us Sa	
Gymnostachys anceps	Settlers Flax	Н	Im	Us Sa	
Pothos longipes	Pothos	^	Im	Us Sa	
Typhonium brownii	Stinking Lily	Н	Im	Us Sa	
Arecaceae					
Linospadix monostachya	Walking Stick Palm	Ь	Im	Us Sa	

Scientific Name	Common Name	Form	Fire Retardance	Comments
Commelinaceae				
Aneilema acuminatum	Aneilema	H Gc	Im	11. 0
Aneilema biflorum (-)	Aneilema	HGc	1 <u>1</u>	US 3a
Commelina cvanea	Scurwy Plant	D H Co	= _	US 2a
Pollia crisnata	Snabe Wood		<u> </u>	Us Op Sa
Pollia manufulla	T G A CON	H GC	Em	Us Sa
nun macropulna	Large Snake Weed	H Gc	Lm	Us Sa
Dioscoraceae				
Dioscorea transversa	Native Yam	>	Im	IIs Sa
L illareae				3
Pulling Luft				
Daubure Durbosa (-)	Bulbine Lily	Н	Lm SI	Oa
Dianella brevipedunculata	Blue Flax Lily	Н	Lm	Us Oa Sa
Dianella caerulea	Blue Flax Lily	Η	Im	The Oa Sa
Dianella revoluta	FlaxLily	Н	l m	Us Oa Sa
Drymophila moorei (-)	Orange Berry	Н	I I	Us Ua Da
Tripladenia cunninghamii	BushLily	Н	Ц	Us Sa
Orchidaaaa				
Dendrohium amatteria				
Dendrohium gracincaule	Spotted Orchid	e0	Im	Sa
Denarobium A gracultimum	Natural Hybrid	e0	Im	Sa
munophylum monophylum	Luly of the Valley			
Pendrohium schooninim	Orchid	e0	Im	Sa
D hocklari)		(
Dendrohium enerioeum	Vincol Orchid	ဝွ ပ	E	Sa
Pandrohim speciosum	D 11 111 10 110	e0	Ш	Sa
Jondant vereigouum	Bridal Veil Orchid	eO	Im	Sa
venui obium tetragonum	Spider Orchid	60	Im	Sa
hilesiaceae				
<i>Sustrephus latifolius</i>	Wombat Berry	Λ	Ĩ	
feitonoplesium cymosum	Scrambling Lily	~	In	Us Va Sa Us Sa
hilvdraceae				
hilydrum lanuginosum	Frogsmouth	aH	Lm SI	Oa Wet areas
milacaceae				
nilax glycophylla	Sweet Sarsnarilla	Λ	-	:
anthombooccus		•		US Sa
annuly novecede		9		
onmina conjerujona	Mat Kush	Н	Lm	Oa
omanara hystrix	Creek Mat Rush	Н	Im	Us Sa
omanara tongifolia	Long-leaf Mat Rush	Н	Lm	Us Oa Sa
omandra filiformis	Fine-leaf Mat Rush	Н	Im	Oa
omandra multiflora	Many-flower Mat			
	Rush	Н	Lm	Oa
omandra spicata	Mountain Mat Rush	Н	Im	Us Oa Sa
inoiheraceae				
Ininia artiadeliana	Wild Cincor		à	
	VVIII VIIIVCI	I		0 1.

Comments

Fire Retardance

Form

Common Name

Scientific Name

252 LIVING WITH THE ENVIRONMENT IN PINE RIVERS SHIRE -

- FIRE RETARDANT NATIVE PLANTS 253

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Wild Ginger Native Ginger

Alpinia coerulea

Scientific Name	Common Name	Form	Fire Retardance	Comments	Cciantific Namo	Common Manual			
DICOTVLEDONS							FORM	FIRE Retardance	Comments
					Celastraceae				
Aizoaceae					Cassine australis	Red Olive Berry	S/T	Lm	Us Sa
Carpobrotus glaucescens	Pig Face	H Gc	Lm SI	Oa	Denhamia celastroides	Orange Boxwood	S/T	Lm	Us Sa
0)				Denhamia pittosporoides	Orange Boxwood	S/T	Im	IIe Sa
Acanthaceae					Maytenus bilocularis	Orangebark	S/T	L II	Us Sa
Graptophyllum excelsum (-)	Scarlet Fuchsia	S	Lm	Us Sa)			
Graptophyllum spinigerum	Samford Holly	S	Im	Us Sa	Chenopodiaceae				
Pseuderanthemum tenellum	Pseuderanthemum	Н	Im	Us Sa	Einadia hastata	Rerry Salt Bush	C Co	43	0
Pseuderanthemum variahile	I nve Flower	Ξ	m I	IIe Sa	Enchylaena tomentosa	Duby Salt Duch		01	Ca Ca
			I	1000	Haloomia intra	Nucy San Dush	200	10.10	Oa
•					nauosarcia maica	Samphure	s Gc	St SI	Oa Salty soil
Aplaceae					Sarcocornia quinqueflora	Samphire	S Gc	St SI	Oa Salty soil
Centella australis	Pennywort	H Gc	Im	Oa	Suaeda australis	Seablite	S Gc	St SI	Oa Salty soil
Hydrocotyle acutiloba	Pennywort	H Gc	Im	Us Sa	Suaeda arbusculoides	Jellvhean Plant	SGC	St SI	Oa Salturail
Hydrocotyle pedicellosa	Pennywort	H Gc	Im	Us Sa		umi t imag fires	200	10.10	Ud Sally soll
•					Convolulaceae				
Anocynaceae					Convolulue arubaccane	Australian Dinductor	11		(
Alinia monifolia	Choin fauit	0	[II. Co	Diskondar en uoestens	Ausualian Bindweed	> ;	Tm	Oa
Alysia Inscipatia		0 0		US 34	Dicnonara repens	Kidney Weed	H Gc	Lm	Us Sa
Carissa ovata	Current Bush	2	Im	Us Oa Sa	Polymeria calycina	Swamp Bindweed	٨	Im	Oa
Neisosperma poweri (-)	Milkbush	S	Lm	Us Sa					
Ochrosia moorei (-)	Southern Ochrosia	S	Im	Us Sa	Cunoniaceae				
Parsonsia lenticellata	Narrow-leaf Silkpod	>	Im	Us Sa	Aphanopetalum resinosum	Gum Vine	V Go	Im	11. 0.
Parsonsia lilacina	Delicate Silknod	Λ	Im	IIs Sa	Vesselowskya ruhifalia (_)	Southern Maran	D Lo	1	US 24
Tabernaemontana			I	1	() michon i nomen inches	DOUNDELLI INTALALA	1/0		US Sa
pandacaqui	Banana Bush	S	Im	Us Sa	Davidsoniaceae				
					Davidsonia princions (_)	Davidson's Dlum	E		
Aristolochiaceae					() manual management	lint te mentand	-	III	US 3a
Aristolochia sp. aff. pubera	Pine Vine	^	Im	IIs Sa	Dilleniaceae				
Aristolochia pramora	Pichmond Birdwing		1	2	Hibborita across		C		
minimum practician				8 11	ning aspend	Kougn Guinea Flower	'n	ш	Oa
	VIDE	>	T	Us Sa	Hibbertia dentata	Toothed Guinea Flowe	T V	Im	Us Oa Sa
					Hibbertia linearis	Showy Guinea Flower	S	Im	Oa
Asclepiadaceae					Hibbertia obtusifolia	Hoary Guinea Flower	S	Im	Oa
Hoya australis	Wax Flower	>	Im	Us Sa	Hibertia stricta	Erect Guinea Flower	v	E I	
Marsdenia longiloha	Slender Milk Vine	N	Im	IIs Sa	Hibbertia scandens	Twining Guines Flourer	2 2		11 0 0
Secomone elliptica	Corky Milk Vine	N	E E	IIe Sa		I WILLING CULLEGA FIOWER	~	TI	US Ua Sa
Tolonhora paniculata	Thin last Tulonhora				Planamanan				
i ytophora panicatata	I IIIII-ICAI I JIODIIOIA	*	IIII	US 2d	raeocar paceae				
Dismoniococco					Elaeocarpus renculatus	Blueberry Ash	S/T	Lm	Us Oa Sa
		11		0 0 1	-				
Fandorea Juoribunda	New sp. Pine K	>	T	Us Va Sa	Epacridaceae				
Pandorea jasminoides	Bower of Beauty	>	Im	Us Oa Sa	Trochocarpa laurina	Tree Heath	S/T	Im	Us Sa
Caesalnineaceae					Rscalloniaceae				
Cassia artemisioides (-)	Silver Cassia	5		Ca	Abronhyllum ornans	Native Hydroneeo	0	1	0 11
Capping at the transmission 1	DILY COOLE	2		Ca	Dologues contracto	INAUVE ITYUTATIZEA	2	E I	Us Sa
Common Common					rotyosma cunningnamu	reatherwood	S/T	Lm	Us Sa
Lobalia trianaceae	Horact Lobalia	пСо]	The Oo	Fundationa				
Wellenburg another	Pluck Loucha	30 1	IIII	US Ca	A h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h h				
wamendergia gracius	DINEDEILS	5		Oa	Acarypha captulpes	Small-leaf Acalypha	S	Lm	Us Sa
					Acalypha eremorum	Native Acalypha	S	Lm	Us Sa
Capparaceae					Acalypha nemorum	Southern Acalypha '	S	Im	Us Sa
Capparus arborea	Native Caper	S/T	Im	Us Sa	Actephila lindleyi	Actephila	S/T	Im	Us Sa
Capparis sarmentosa	Scrambling Caper	Λ	Lm	Us Sa	Alchornea ilicifolia	Native Holly	S	Im	Us Sa
					Breynia oblongifolia	Native Coffee Bush	S	Im	Us On Sa
					Cleistanthes cunninghamii	Cleistanthes	SIT	<u></u>	The Ca
					0		+ 10		100 90

APPENDICES

254 LIVING WITH THE ENVIRONMENT IN PINE RIVERS SHIRE

s/T s s s/T s/T s/T	5 5 5 5 5 5 5	Us Oa Sa De Oa Sa Us Sa Oa Us Sa Oa Us Sa Oa Us Sa
s v s ₇ T s s s ₇ T s s	<u>a a a a</u>	Oa Sa Us Sa Oa Us Sa Oa Us Sa Oa Us Sa
s v s _{/T} s s _{/T}	555 <u>5</u> 55	Oa Sa Us Sa Oa Us Sa Oa Us Sa Oa Us Sa
s x s/T s x s/T	5 <u>5</u> 5	Us Sa Oa Us Sa Oa Us Sa Us Sa
s s sy s	5 <u>5</u> 5	Oa Us Sa Oa Us Sa Tis Sa
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S/T v S/T	ē 5	Us Sa Tie Sa
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S Gc	lm	Os
S	Lm	O_{S}
S/T	Lm St	Oa Coastal
S/T	Lm	Us Sa
S/T	Lm	Us Sa
S	Im	Us Sa
Т	Lm	Us Sa
S/T	Im	Us Sa
S/T	Lm	Us Sa
T	Im	Us Sa
S	Im	Us Sa
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Croton phlebaliodes	Narrow-leaf Croton	S	Im	Us Sa
Croton verreauxii	Native Cascarilla	S/T	Lm	Us Sa
Macaranga tanarius	Macaranga	S/T	Lm	Us
Mallotus claoxyloides	Scrub Odour Bush	S/T	Lm	Us Sa
Omalanthus nutans (O. populifolius)	Qld Bleeding Heart	S/T	Im	Us Sa
Eupomatiaceae				
Eupomatia bennettii	Small Bolwarra	S	Im	Us Sa
Eupomatia laurina	Bolwarra	S	Im	Us Sa
Escaloneaceae Cuttsia viburnea (-)	Native Elderberry	Т	Lm	Us Sa
Tabaceae				
Abrus precatorius	Crabs Eve Vine	2	Im	Us Oa Su
Aotus lanigera	Pointed Aotis	S	Im	Oa Sa
<i>Glycine clandestina</i>	Twining Glycine	Λ	Im	Oa
Slycine tomentella	Wooly Glycine	>	Im	Oa
Hardenbergia violacea	False Sarsparilla	٧	Lm	Oa
Hovea linearis	Common Hovea	S	Im	Oa
Hovea longipes (-)	Brush Hovea	S	Lm	Sa
ndigophora australis	Australian Indigo	S	Im	Oa
Kennedia rubicunda	Dusky Coral Pea	Λ	Im	Oa
Dxylobium ilicifolium (-)	Holly Pea	s	Lm	Oa
Dxylobium scandens (-)	Netted Shaggy Pea	S	Lm	Oa
ultenaea retusa	Blunt-leaf Bush Pea	s	Lm ,	Oa O
ultenaea spinulosa (-)	Prickly Pea	2	<u>щ</u> .	Ca O
ultenaea villosa (-)	Hairy Bush Fea Darling Dea	nu	m "	e d
owannsona galegijona	Dannig rea	0	ПП	Ca
Goodeniaceae				
Joodenia rotundifolia	Star Goodenia	H Gc	Im	Oa
scaevola aemula (-)	Fairy Fan Flower	H Gc	Lm	Oa
scaevola albida (-)	Fan Flower	Η	Lm	Oa
scaevola calendulacea (-) scaevola ramosissima (-)	Scented Fan Flower A Fan Flower	H Gc H Gc	Lm Lm	Oa Oa
amiaceae				
Ajuga australis	Southern Bugle	Η	Im	Oa
ectranthus argentatus (-)	Silver Native Coleus	Н	Im	Us Sa
lectranthus graveolens	Native Coleus	Н	Im	Us Sa
ectranthus parviflorus	Cockspur Flower	Н	Im	Us Sa
rostanthera ovalifolia	Oval-leaf Mint Bush	S	Im	Os Sa
auraceae				
Jryptocarya laevigata	Glossy Laurel	S/T	Im	Us Sa
Cryptocarya meisneriana	Thick-leaf Laurel	S/T	Im	Us Sa
eeaceae				
· · · · · · · · · · · · · · · · · · ·	Bandicoot Barry	0	Im	II. Co

APPENDICES

Scientific Name	Common Name	Form	Fire Retardance	Comments	Scientific Name	Common Name	Form	Fire Retardance	Comments
Rhodamnia dumicola	Rib-fruit Malletwood	S/T	Im	Us Sa	Canthium microphyllum	Small-leaf Canthium	S	Im	Us Sa
Rhodamnia maidenii (-)	Smooth Scrub Turpent	ine S	Im	Us Sa	Ixora bleckleri	Brown Coffeewood	S/T	Im	Us Sa
Rhodomyrtus psidioides	Native Guava	S	Im	Us Sa	Morinda acutifolia	Veiny Morinda	٨	Im	Us Sa
Syzygium wilsoni (-)	Powder-puff Lilly Pilly	S	Im	Us Sa	Morinda jasminoides	Sweet Morinda	٧	Im	Us Sa
					Pavetta australiensis	Pavetta	S	Lm	Us Sa
Nyctaginaceae	· · · · · ·			-	Psychotria daphnoides	Smooth Psychotria	S	Ш	Us Sa
Pisonia aculeata	Native Bougainvillia	>	Im	Us Sa	Psychotria loniceroides	Hairy Psychotria	s	Lm	Us Sa
					Psychotria simmondsiana	Small Psychotria	S	Im	Us Sa
Oleaceae					Randia benthamiana	Native Gardenia	S	Lm	Us Sa
Jasminum simplicifolium	Slender Jasmine	٧	Lm	Us Sa	Randia chartacea	Narrow-leaf Gardenia	S	Lm	Us Sa
Notelaea ovata	Netted Mock Olive	S	Im	Us Sa					
Notelaea venosa	Veined Mock Olive	S	Im	Us Sa	Rutaceae				
					Clausena brevistyla (-)	Clausena	S	Im	IIs Sa
Passifloraceae					Microcitrus australasica (-	-) Finger Lime	S	Im	Us Sa
Passiflora aurantia	Red Passion Flower	٧	Гш	Us Oa Sa	Murraya ovatifoliolata (-)	Native Murraya	S/T	Im	IIs Sa
Passiflora herbertiana	Yellow Passion Flower	Λ	Lm	Us Oa Sa	Phebalium woombye (-)	Phebalium	s	Lm	Oa
					-				
Peperomiaceae					Sambucaceae				
Peperomia blanda			6		Sambucus australasica	Yellow Elderberry	s	Im	Us Sa
(leptostachya)	Native Peperomia	H ;	m,	Us Sa					
Peperomia tetraphylla	Native Peperomia	Η	Ш	Us Sa	Sapindaceae				
					Alectryon cortaceus (-)	Beach Bird's Eye	S/T	Im	Wb Oa
Pittosporaceae		2			Arytera microphylla (-)	Dwarf Coogara	S	Lm	Us Sa
Citriobatus linearis	Black-fruit Thornbush	S	Lm	Us Sa	Cupaniopsis newmanii (-)	Long-leaf Tuckeroo	F	Im	Us Sa Oa
Citriobatus paucifloris	Orange Thornbush	S	Im	Us Sa	Cupaniopsis serrata	Rusty Tuckeroo	S/T	Lm	Us Sa Oa
Pittosporum revolutum	Brisbane Laurel	S	Lm	Us/Wb Sa/On	Cupaniopsis wadsworthii (-) Dwarf Tuckeroo	S	Im	Us Sa
					Harpullia alata (-)	Wing-leaf Tulip	S	Im	Us Sa
Proteaceae					Mischocarpus sundaicus	Red Pear-fruit	L	Im	Us Sa
Banksia oblongifolia	Dwarf Banksia	S		Oa Pf					
Banksia robur	Swamp Banksia	S		Oa Pf	Sapotaceae				
Grevillea leiophylla	Wallum Grevillea	S		Oa Pf	Planchonella myrsinoides	Yellow Plumwood	S/T	Lm	Us Sa
Grevillea 'Robyn Gordon'	G. 'Robyn Gordon'	S		Oa Pf					
Grevillea sericea	Pink Spider Flower	S		Oa Pf	Scrophulariaceae				
Grevillea 'Shirley Howie'	G. 'Shirley Howie'	S		Oa Pf	Artenema fimbriatum	Koala bells	Η	Im	Oa
Grevillea 'Superb'	G. 'Superb'	S		Oa Pf					
Hakea florulenta	Hakea	S		Oa Pf	Tetragoniaceae				
Hakea purpurea	Purple Hakea	S		Oa Pf	Tetragonia tetragonioides	Native Spinach	H Gc	St Sc	Oa
Lambertia formosa (-)	Mountain Devil	S		Oa Pf					
Lomatia silaifolia	Crinkle Bush	S		Oa Pf	Solanaceae				
Stenocarpus angusifolia (-,		S		Oa Pf	Duboisia myoporoides	Corkwood	S/T	Im	Us Sa
					Solanum aviculare	Kangaroo Apple	S	Im	Us Sa Oa
Rhizophoraceae					Solanum densevestitum (-)	Furry Nightshade	S	Im	Us Sa
Bruguiera gymnorrhiza	Orange Mangrove	S/T	Lm St	Oa Coastal	Solanum stelligerum (-)	Star Nightshade	S	Im	Us Sa
Ceriops tagal	Yellow Mangrove	S/T	Lm St	Oa Coastal)			
Rhizophora stylosa	Stilted Mangrove	S/T	Lm St	Oa Coastal	Sterculiaceae				
					Brachychiton bidwillii	Little Kurrajong	S	Im	Us Sa Oa
Rosaceae					Commersonia fraserii	Scrub Kurrajong	S	μ	Us Sa Oa
Rubus parvifolia	Pink Raspberry	S	Im	Oa					
Rubus rosifolius	Native Raspherry	S	Im	Us Sa	Symplocaceae				
Rubiaceae	:	ł			Symplocus baeuerlenii (-)	Shrubby Hazelwood	S	Im	Us Sa
Canthium coprosmoides	Coast Canthium	L/S	Lm	Us Oa Sa					
Canthium lamprophyllum	Large-leaf Canthium	S/T	Lm	Us Sa					

APPENDICES

258 LIVING WITH THE ENVIRONMENT IN PINE RIVERS SHIRE -

APPENDICES

Scientific Name	Common Name	Form	Fire Retardance	Comments	1
Thymeliaceae					1
Phaleria clerodendron (-)		S	Lm	Us Sa	
Phaleria chermsideana	Scrub Daphne	S/T	Lm	Us Sa	
Pimelea linifolia	Slender Rice Flower	s a		Oa	
Wikstroemia indica	Tie Bush	s	Lm	Us Oa Sa	
Tiliaceae Corchorus cunninghamii	Corchorus	s	Ш	Us Sa	
Flatostema reticulatum	Rainforest Sninach	н	Im	IIe Sa	
Elatostema stinitatum (-)	Small Soft Nettle	: д	ln ul	Us Sa	
Pipturus argenteus	Native Mulberry	S/T	Ц Ц	Us Sa	
Verhengrege					
Callicarpa pedunculata	Velvet-leaf	S	Lm	Us Sa	
Clerodendrum floribundum	Lolly Bush	S/T	Lm	Us Oa Sa	
Clerodendrum tomentosum	Hairy Lolly Bush	S/T	Lm	Us Oa Sa	
Phyla nodiflora (-)	Condamine Couch	H Gc	Im	Oa	
Vitex ovata (-)	Vitex	S Gc	Im	Oa	
Violaceae					
Viola betonicifolia	Purple Violet	Н	Im	Us Sa	
Viola hederacea	Native Violet	Η	Im	Us Sa	
Vitanaaa					
Covratia acris	Hairv Water Vine	Λ	Im	IIe Sa	
Cavratia clematidea	Slender Grape	^	Im	Us Oa Sa	
Cavratia eurvnema	Soft Water Vine	٨	Im	Us Sa	
Cissus opaca	Small-leaf Water Vine	٧	Im	Us Oa Sa	
Winteraceae					
Tasmannia insipida	Pepper Bush	S	Lm	Us Sa	
PTERIDOPHYTES					
Aspleniaceae					
Asplenium attenuatum	A Spleenwort	Ц	Lm	Sa	
Asplenium australasicum	Crow's Nest Fern	eF	Lm	Sa	
Osmondaceae					
Todea barbara	King Fern	tF	Im	Us Sa	
Polypodiaceae					
Drynaria rigidula	Basket Fern	eF	Lm	Sa	
Phymatodes scandens	Scented Climbing Fern	tF	Lm	Sa	
Platycerium bifurcatum	Elkhorn	eF	Im	Sa	
Platycerium superbum	Staghorn	ц, Г	, Im	Sa	
Pyrrosia confluens	Felt Fern	er L	гц.	Sa	
Pyrrosia rupestris	Rock Felt Fern	er	Im	Sa	

Fire-Retardant Plants for Medium Gardens

1

small gardens can be used in addition to the list of plants for The following plants

Scientific Name	Common Name	Form	Fire Retardance	Comments
MONOCOTYLEDONS				
Arecaceae Archontophoenix				
cunninghamii	Picabeen Palm	Р	Im	Ad
Calamus muelleri	Lawyer Cane Vine	Р	Im	Ad
Livistona australis	Cabbage Palm	Ь	Im	PA
Smilacaceae				
Ripogonum fawcettianum	Small Supplejack	Λ	Im	Sa
Smilax australis	Barb-wire Vine	Λ	Im	Sa Oa
DICOTYLEDONS				
Akaniaceae				
Akania lucens	Turnipwood	Τ	Lm	Us
Alangiaceae Alangium villosum				
polyosmoides	Muskwood	Т	Im	Us
Alangium villosum tomentosum	Muskwood	F	Im	TIc
				3
Annonaceae Polyalthia nitidissima	Canary Beech	H	Im	Us
Apocynaceae				
Alstonia constricta	Quinine Tree	Τ	Im	Us
Melodinus acutiflorus	Merangarra	Λ	Im	Sa
Melodinus australis	Southern Melodinus	>	Lm	Sa
Araliaceae Cephalaralia cephalobotrys	Climbing Panax	>	Lm	Sa
Bignoniaceae ⁰ andorea pandorana	Wonga Vine	>	Ē	Oa Sa
Caesalpiniaceae 3arklya syringifolia Cassia tomentella (-)	Crown of Gold Tree Velvet Bean	T S/T	E E	Us Sa Oa Us Oa
Cunoniaceae Callicoma serratifolia (-)	White Alder	S/T	Ţ	Us
Dilleniaceae Gecomanthe hillii (-)	Fraser Island Climber	>	Ē	Sa

260 LIVING WITH THE ENVIRONMENT IN PINE RIVERS SHIRE

Myoporeacea Myoporeacea Srr Im Wo Myopranum acuminatum Coast Boobialla Srr Im Us Myrshatecas Muttonwood T Im Us Myrshatecas Muttonwood T Im Us Myrshatecas Muttonwood T Im Us Myrshatecas Silky Myrte Srr Im Us Myrshatecas Silky Myrte Srr Im Us Moreasaritii: Silky Myrte Srr Im Us Moteasaritii: Silky Myrte Srr Im Us Moteasarind Muteasaritii: Silki Myrte </th <th></th> <th></th> <th></th> <th>School of the second school of the</th> <th></th>				School of the second school of the	
Myrstinaceae Mutanwood T Im Us Repares viriabilis Mutanwood T Im Us Myrtaceae Siley Myrtle Siley Myrtle T Im Us Acreae sainhi Carek Lilly Pilly Siley Myrtle T Im Us Decadprantia Siley Myrtle Siley Myrtle T Im Us Retrositeros queenslandera (.) Rooth-back Rose Apple T Im Us Us Syzguim hodghinsonia Veineles Mock Olive SiT Im Us Us Notelace microcarpa Veinet Mock Olive SiT Im Us Us Notelace microcarpa Veinet Mock Olive SiT Im Us Us Notelace microcarpa Veintess Mock Olive SiT Im Us Us Notelace microcarpa Veinet Mock Olive SiT Im Us Us Notelace microcarpa Veinet Mock Olive SiT Im Us Us Notelace minorocarpa <	Myoporaceae Myoporum acuminatum	Coast Boobialla	S/T	Ē	Wb 6
Myrtacase Myrtacase <i>anneua suihii Caek</i> LillyPlUy T Im Us/W <i>anneua suihii</i> Silky Myrtle T Im Us <i>beasopermunitania</i> Silky Myrtle T Im Us <i>Metrosideros queenstandica</i> (-) Smooth-back Rose Apple T Im Us <i>Syzgium hadgkinonia</i> Veineless Mock Olive SrT Im Us Us <i>Nordaera queenstandica</i> (-) Smooth-back Rose Apple T Im Us <i>Nordaera i longifolia</i> Large Mock Olive SrT Im Us Us <i>Nordaera i longifolia</i> Large Mock Olive SrT Im Us Us <i>Nordaera i longifolia</i> Large Mock Olive SrT Im Us Us <i>Nordaera i longifolia</i> Large Mock Olive SrT Im Us Us <i>Nordaera i longifolia</i> Large Mock Olive SrT Im Us Us <i>Nordaera i longifolia</i> Large Mock Olive SrT Im U	Myrsinaceae Rapanea variabilis	Muttonwood	Г	Ц	Us
Decomponent Stychytic T Inn Usym Rhodamnia Table Myrite T Inn Usym Syzgium hadghirsonia () Smooth-bark Rose Apple T Inn Usym Noreideros queenslandica ()Firk Myrite T Inn Usym Syzgium hadghirsonia () Smooth-bark Rose Apple T Inn Usym Noreideros queenslandica ()Firk Myrite T Inn Usym Usym Noreideros queenslandica ()Smooth-bark Rose Apple T Inn Usym Usym Noreidero microcarpa Velvet Mock Olive S/T Inn Usym Noreidero microcarpa Velvet Mock Olive S/T Inn Usym Noreidero microcarpa Velvet Mock Olive T Inn Usym Noreidero microcarpa Velvet Mock Olive T Inn Usym Noreidero microcarpa Velvet Mock Orange T Inn Usym Pitrosportum<	Myrtaceae Acmena smithii (small variatios)	Coords I ally Bally.	F		
Merosideros queenstandica (-)Pink Myrtle T In Us Syzgium hodginsonia (-) Smooth-bark Rose Apple T In Us Syzgium hodginsonia (-) Smooth-bark Rose Apple T In Us Oleacese Brown Malletwood T In Us Noteleae ingibionia Veines Mock Olive S/T In Us Noteleae ingibionia Veines Mock Olive S/T In Us Us Noteleae ingibionia Veines Mock Olive S/T In Us Us Pitrosportum indutatum Mock Orange T In Us Us Pitrosportum undutatum Mock Orange T In Us Us Pitrosportum undutatum Mock Orange T In Us Us Ruckinghamia celsissima () Iony Outlebowed T In Us Us Ruchamia integrifica Nork Orange T In Us Us Ruchamia celsissima () Iony Outlebowed T In Us	Decaspermum humile	Silky Myrtle	S/T	u u	Us/W
Rhodamnia rubescens Brown Malletwood T Im Us Syzysjum hodgkrisonia () Smooth-back Rose Apple T Im Us Olcaccae Smooth-back Rose Apple T Im Us Us Notelace longifolia Large Mock Olive S/T Im Us Us Notelace longifolia Large Mock Olive S/T Im Us Main Pittosporane Velvet Mock Olive S/T Im Us Main Pittosporane interrocapa Velvet Mock Olive S/T Im Us Main Pittosporane Maccolami Native Francipani T Im Us Main Pittosporane Maccolami Native Francipani T Im Us Main Pittosporane Native Francipani T Im Us Main Pittosporane S T Im Us Main Pittosporane S T Im Us Mai	Metrosideros queenslandica	(-)Pink Myrtle	L	Im	11s
Dysygtum nogenreonta (+) System nogenreonta (+) Jos Olcateae Jonetaea joinsonii Veinless Mock Olive S/T Lm Us Notelaea joinsonii Veinless Mock Olive S/T Lm Us Notelaea incrocarpa Veitvet Mock Olive S/T Lm Us Notelaea incrocarpa Veitvet Mock Olive S/T Lm Us Pitrosporum indulatum Native Francipani T Lm Us Pitrosporum indulatum Nock Orange T Lm Us Pitrosporum indulatum Nock Orange T Lm Us Buckinghumia cefsissima (-) Nory Curl Flower T Lm Us Ruckinghumia cefsissima (-) Nory Curl Flower T Lm Us Ruckinghumia cefsissima (-) Nory Curl Flower T Lm Us Macadamia integrifolia (-) Red Boppel Nut T Lm Us Macadamia integrifolia Nut T Lm Us Mo Macadamia integrifolia Rough Shell Bush Nut T Lm Us Macadamia integrifolia Rough Shell Bush Nut T Lm Us Macadamia terraphylla Ro	Rhodamnia rubescens	Brown Malletwood	L	Lm	Us/W
Oleaceae Norelacea johnsoni Veinless Mock Olive SrT Im Us Norelacea johnsoni Veinless Mock Olive SrT Im Us Norelacea microcarpa Velvet Mock Olive SrT Im Us Pittosporareae Velvet Mock Olive SrT Im Us Pittosporare distribution Mock Orange T Im Us Pittosporarea Noty Curl Flower T Im Us Pittosporarea Nock Orange T Im Us Pittosporarea Nock Orange T Im Us Pittosporarea T Im Us Us Pittosporarea T Im Us Us<	Jyzygum hodgkinsonia (-)	Smooth-bark Rose App	le T	Lm	Us
Notelace Notelac Notelace Notelace	Oleaceae Notelaea iohnsonii	Veinless Mock Olive	ST S	<u>-</u>	T.
Notelacea Notelacea Velvet Mock Olive S/T Im US Molector Pittosporarea Hymenosporum flarum Native Francipani T Im US Molector Pittosporum indiatum Mock Orange T Im US Molector Protenceae Buckinghamic celsissima () Nory Curl Flower T Im US Molector Buckinghamic celsissima () Nory Curl Flower T Im US Molector Buckinghamic celsissima () Nory Curl Flower T Im US Molector Buckinghamic celsissima () Nory Curl Flower T Im US Molector Bucking amborescens () T T Im US Molector Macadamia ternifolia Macocdamia integrifolia Queenshand Nut T Im US Molector Macadamia ternifolia Macodamia ternifolia Macocdamia ternifolia Macocdamia ternifolia Macocdamia ternifolia Macocdamia ternifolia <td< td=""><td>Notelaea longifolia</td><td>Large Mock Olive</td><td>L/S</td><td>Im I</td><td>US TT₆/W/I</td></td<>	Notelaea longifolia	Large Mock Olive	L/S	Im I	US TT ₆ /W/I
Pittosporareat Hinsporaceat Hymenosporum flarum Natve Frangipani T Lm Us Ad Proteacea Buckinghamic celsissima (>) Ivory Curl Flower T Lm Us Ad Proteacea Buckinghamic celsissima (>) Ivory Curl Flower T Lm Us Ad Grevillea hemizice (>) Tree Lomatia S/T Lm Us Ad Grevillea hemizice (>) Tree Lomatia S/T Lm Us Ad Macadamia interpifolia (>) Tree Lomatia S/T Lm Us Ad Macadamia terraphylia Rough Shell Bush Nut T Lm Us Ad Macadamia terraphylia Rough Shell Bush Nut T Lm Us Ad Macadamia terraphylia Rough Shell Bush Nut T Lm Us Ad Macadamia terraphylia Rough Shell Bush Nut T Lm Us Ad Macadamia terraphylia Rough Shell Bush Nut T Lm Us Ad Macadamia terraphylia Rough Shell Bush Nut T Lm Us Macada	Notelaea microcarpa	Velvet Mock Olive	S/T	In In	Us/WI
Hymenosporum flavum Native Frangipani T Im Us Ad Pittosporum undulatum Mock Orange T Im Us Ad Proteaceae Buckinghamia celsissima (-) Ivory Curl Hower T Im Us Ad Buckinghamia celsissima (-) Nory Curl Hower T Im Us Wb Buckinghamia celsissima (-) Twee Lomatia S/T Im Us Wb Hicksbeachia pinnatifolia Oueensland Nut T Im Us Wb Macadamia integrifolia Queensland Nut T Im Wb Macadamia integrifolia Rough Schl Bush Nut T Im Wb Macadamia interrifolia Rough Schl Bush Nut T Im Wb Macadamia interrifolia Rough Schl Bush Nut T Im Us Macadamia interrifolia Rough Schl Bush Nut T Im Us Macadamia interrifolia Rough Schl Bush Nut T Im Us	Pittosporaceae				
Pittosporum undulatum Mock Orange T Im Us/Wi Proteacea Buckinghamia celsissima (-) Ivory Curl Flower T Im Us Pf Buckinghamia celsissima (-) Nory Curl Flower T Im Us Pf Grewillea helmsiae (-) Tree Lomatia ST Im Us Mo Hicksbeachia pinnarifolia Oueensland Nut T Im Us Mo Macadamia terrifolia Queensland Nut T Im Us Wb Macadamia terrifolia Queensland Nut T Im Us Wb Macadamia terrifolia Queensland Nut T Im Wb Wb Macadamia terrifolia Queensland Nut T Im Wb Wb Macadamia terrifolia Queensland Nut T Im Wb Wb Triunia youngiana Spice Bush T Im Us Wb Triunia youngiana Spice Bush T Im Us Wb Macadamia terrifolia Macadamia terrifolia Mc Im Us Macadamia terrifolia Macadamia T Im Us Macadamia terrifolia Macadamia T Im	Hymenosporum flavum	Native Frangipani	T	Im	Us Ac
ProteaceaeNory Curl FlowerTImWbBuckinghamia celsissina (-)Kory Curl FlowerTImUsPfGrevillea helmsiae (-)Tee LomatiaS/TImUsPfHicksbeachia pinnatifoliaTee LomatiaS/TImUsPfLomatia arborescens (-)Tree LomatiaS/TImUsPfMacadamia integrifoliaMarocoly NutTImUsWbMacadamia integrifoliaMarocoly NutTImWbMacadamia integrifoliaRough Shell Bush NutTImWbMacadamia terrafiyliaRough Shell Bush NutTImUsMacadamia terrafiyliaRough Shell Bush NutTImUsMacadamia terrafiyliaRough Shell Bush NutTImUsMacadonia terrafiyGolden AshTImUsMabitacaeHodgkinsonia ovarifioraSoft AcronychiaVImMacadosis austrafisRound LimeSoft AcronychiaSrImMicropicia paucifiora	Pittosporum undulatum	Mock Orange	Т	Lm	Us/Wł
Grevillea helmsiae (-) T Im Us Pf Hicksbeachia pinnatifolia (-) Tree Lomatia S/T Im Us Pf Macadamia integrifolia Tree Lomatia S/T Im Us Pf Macadamia integrifolia Queensland Nut T Im Us Pf Macadamia integrifolia Queensland Nut T Im Us Wb Macadamia terraphylia Rough Shell Bush Nut T Im Us Wb Macadamia terraphylia Rough Shell Bush Nut T Im Us Wb Macadamia terraphylia Rough Shell Bush Nut T Im Us Wb Macadamia terraphylia Rough Shell Bush Nut T Im Us Wb Macadamia terraphylia Rough Shell Bush Nut T Im Us Wb Macadamia terraphylia Rough Shell Bush Nut T Im Us Wb Macadamia terraphylia Rough Shell Bush Nut T Im Us Wb Macadamia terraphylia Golden Ash T Im Us	Proteaceae Buckinghamia celsissima (-	Ivory Curl Flower	E	E.	M/h
Hicksbeachia pinnatifolia(-) Red Boppel NutTLinUsMaLomatia arborescens(-)Tree LomatiaS/TLinUsWbMacadamia integrifoliaQueensland NutTLinWbMacadamia terrafioliaMaroochy NutTLinWbMacadamia terrafioliaMaroochy NutTLinWbMacadamia terrafioliaMaroochy NutTLinWbMacadamia terrafioliaMaroochy NutTLinWbMacadamia terrafioliaRough Shell Bush NutTLinWbMacadamia terrafioliaRough Shell Bush NutTLinWbMacadamia terrafioliaRough Shell Bush NutTLinWbMacadamia terrafioliaRough Shell Bush NutTLinWbMacadamia terraficaSpice BushTLinWbMacadamia terrafiloraGolden AshTLinUs/WbHodykinsonia ovatifloraGolden AshTLinUs/WbRunneulaceaeHeadche VineVLinUs/WbAronychia imperforataCoast AspenS/TLinUs/WbAcronychia imperforataSoft AcronychiaS/TLinUs/WbAcronychia imperforataSoft AcronychiaS/TLinUs/WbMicroitrus austrafisRoundLineSLinUs/WbMicroitrus austrafisRoundLineSLinWbMicroitrus austrafisRoundLineSLinWb <td>Grevillea helmsiae (-)</td> <td></td> <td>E</td> <td>Ē</td> <td>Us Pf</td>	Grevillea helmsiae (-)		E	Ē	Us Pf
Lomatia arborescens (-)Tree LomatiaS/TImUsPfMacadamia integrifoliaMaroochy NutTImWbMacadamia ietraphyllaRough Shell Bush NutTImWbMaroochy NutTImWbWbTriunia youngianaSpice BushTImWbMaroochy NutTImWbWbMaroochy NutTImWbMaroochy NutTImWbMaroothy NutTImWbMaroothy ReliaRough Shell Bush NutTImWhite ProvinciaSpice BushTImWbMathematic ReliantiaCoelospermumGolden AshTImUs/WbHodgkinsonia ovatifloraGolden AshTImUs/WbRubiaceaeHeadache VineVImUsUsRunnulaceaeSoft AspenS/TImUsUsAcronychia imperforataSoft AspenS/TImUsUsMicrocitrus australisRoundLimeS/TImUsUsMicrocitrus australisRoundLimeS/TImUsUsMicroritrus australisHolly-leaf Bird's EyeTImWbMbMectryon subcinereusWild QuinceTImWbMbMectryon subcinereusWild QuinceTImWbWbMectryon subcinereusHairy Bird's EyeTMbWbMectryon subdentalusHairy B	Hicksbeachia pinnatifolia (-	Red Boppel Nut	L	Im	Us Ad
Macadamia integrifoliaQueensland NutTLinWbMacadamia terraphyllaRough Shell Bush NutTLinWbTriunia youngianaSpice BushTLinWbWininia youngianaSpice BushTLinWbRubiaceaeSpice BushTLinWbCoelospermum paniculatumCoelospermum paniculatumCoelospermum paniculatumCoelospermum paniculatumSpice BushTHodgkinsonia ovatifloraGolden AshTLinUs/WbRunnulaceaeVLinVLinUs/WbRunnulaceaeKunnunlaceaeS/TLinUs/WbRunnulaceaeSoft AspenS/TLinUs/WbAcronychiaimperforataSoft AspenS/TLinUs/WbAcronychiaimperforataSoft AspenS/TLinUs/WbAcronychiaimperforataSoft AspenS/TLinUs/WbAcronychiapauerfloraSoft AspenS/TLinUs/WbAcronychiapauerfloraSoft AspenS/TLinUs/WbAcronychiapauerfloraSoft AspenS/TLinUs/WbAcronychiapauerfloraSoft AspenS/TLinWbAcronychiapauerfloraSoft AspenS/TLinWbAcronychiapauerfloraSoft AspenS/TLinWbAcronychiapauerfloraSoft AspenTLinWbAcronychiapauer	Lomatia arborescens (-)	Tree Lomatia	S/T	Lm	Us Pf
Macadamia ternifoliaMarcochy NutTLinWbTriunia youngianaSpice BushTInWbTriunia youngianaSpice BushTInWbRubiaceaeSpice BushTInUsCoelospermum paniculatumCoelospermumVInUs/WbHodgkinsonia ovatifloraGolden AshTInUs/WbRunnuclaceaeVInVSaRunnulaceaeHeadache VineVInUs/WbRunnuclaceaeSoft AspenS/TInUs/WbRunnuclaceaeSoft AspenS/TInUs/WbRunnuclaceaeSoft AspenS/TInUs/WbAcronychia imperforataSoft AspenS/TInUs/WbAcronychia pauefloraSoft AspenS/TInUs/WbAcronychia pauefloraSoft AspenS/TInUs/WbAcronychia pauefloraSoft AspenS/TInWbAcronychia pauefloraSoft AspenS/TInWbAcronychia pauefloraRoundLineS/TInWbAcronychia pauefloraRoundLineTInWbAcronychia pauefloraHeityBird'sEyeTInWbAcronychia pauefloraBoundLineTInWbAcronychia pauefloraAlectryon connatusHeityBird'sEyeTMbAlectryon subdentalusHolly-leaf Bird'sEyeTMbWbAlectryon tomentosusHairy Bird'sEye<	Macadamia integrifolia	Queensland Nut	Г	Lm	Wb
Macadama tetraphylla Rough Shell Bush Nut T Im Wub Triunia youngiana Spice Bush T Im Wo Rubiaceae Spice Bush T Im Wo Coelospermum paniculatum Coelospermum V Im Us/Wh Hodgkinsonia ovatiflora Golden Ash T Im Us/Wh Runnculaceae V Im V Im Us/Wh Runnculaceae Headache Vine V Im Sa Runnculaceae Headache Vine V Im Us/Wh Runnculaceae Kutaceae S/T Im Us Runneulaceae Soft Acronychia S/T Im Us Acronychia mperforata Coast Aspen S/T Im Us Acronychia mperforata Soft Acronychia S/T Im Us Acronychia pauciflora Soft Acronychia S/T Im Us Acronychia pauciflora Soft Acronychia S/T Im Us Microcitrus australis <td< td=""><td>Macadamia ternifolia</td><td>Maroochy Nut</td><td>L</td><td>Lm</td><td>Wb</td></td<>	Macadamia ternifolia	Maroochy Nut	L	Lm	Wb
Irunua youngiana Spice Bush T Im Us Rubiaceae V Im Us Us Coelospermum paniculatum Coelospermum V Im Us Hodgkinsonia ovatiflora Golden Ash T Im Us Runneulaceae Headache Vine V Im Us Runneulaceae Kunneulaceae V Im Us Runneulaceae Headache Vine V Im Us Runneulaceae Kunneulaceae V Im Us Runneulaceae S/T Im Us Rutaceae S/T Im Us Acronychia matrafis RoundLime S/T Im Us Microcitrus austrafis RoundLime T Im Wb Acronychia paustrafis RoundLime T Im Micrositrus <td>Macadamia tetraphylla</td> <td>Rough Shell Bush Nut</td> <td>H</td> <td>Im</td> <td>Wb</td>	Macadamia tetraphylla	Rough Shell Bush Nut	H	Im	Wb
RubiaceaeVImSaCoelospermum paniculatumCoelospermumVImSaHodgkinsonia ovatifloraGolden AshTImUs/WbRununculaceaeHeadache VineVImUs/WbRununculaceaeHeadache VineVImUs/WbRununculaceaeSigrinoidesHeadache VineVImUs/WbRunuculaceaeSoft AcronychiaS/TImUs/WbRutaceaeSoft AcronychiaS/TImUsAcronychia paucifloraSoft AcronychiaTImWbAcronychia paucifloraRoundLimeTImWbAcronychia paucifloraRoundLimeTImWbAcronychia paucifloraAcronychiaTImWbAcronychia paucifloraRoundLimeTImWbAcronychia paucifloraAcronychiaTImWbAcronychia paucifloraAcronychiaTImWbAcronychia	Triunia youngiana	Spice Bush	L	Im	Us
Coelospermum paniculatumCoelospermumVImSaHodgkinsonia ovatifloraGolden AshTImUs/WbRunuculaceaeKunuculaceaeVImUs/WbClematis glycinoidesHeadache VineVImUs/WbClematis glycinoidesHeadache VineVImUs/WbAcronychia imperforataCoast AspenS/TImUs/WbAcronychia imperforataSoft AcronychiaS/TImUs/WbAcronychia paucifloraSoft AcronychiaS/TImUsMicrocitrus australisRound LimeSImUsMicrocitrus australisRound LimeTImWbAlectryon connatusAlectryonTImWbAlectryon subdentalusHolly-leaf Bird'sEyeTImWbAlectryon tomentosusHairy Bird'sEyeTImWb	Rubiaceae				
Hoagkunsona ovarytora Golden Ash T Im Us/Wb Runneulaceae Golden Ash T Im Us/Wb Runneulaceae Headache Vine V Im Us/Wb Clematis glycinoides Headache Vine V Im Us/Wb Rutaceae Syrt Im Us/Wb Acronychia imperforata Coast Aspen S/T Im Us/Wb Acronychia paucifiora Soft Acronychia S/T Im Us/Wb Alectryon connatus Alectryon MildQuince T Im Wb Alectryo	Coelospermum paniculatum	Coelospermum	Λ	Im	Sa
Runneulaceae V Lm Sa Clematis glycinoides Headache Vine V Lm Sa Rutaceae Coast Aspen S/T Im Us/Wb Acronychia imperforata Coast Aspen S/T Im Us/Wb Acronychia imperforata Soast Aspen S/T Im Us/Wb Acronychia pauciflora Soft Acronychia S/T Im Us Microcitrus australis RoundLime S Im Us Microcitrus australis RoundLime T Im Us Alectryon connatus Alectryon T Im Wb Alectryon subcinereus Wild Quince T Im Wb Alectryon subcinereus Holly-leaf Bird's Eye T Im Wb	Hodgkinsonia ovatiflora	Golden Ash	H	Im	Us/Wb
Clematis glycinoides Headache Vine V Im Sa Rutaceae SYT Im Us/Wb Acronychia imperforata Coast Aspen S/T Im Us/Wb Acronychia imperforata Soft Acronychia S/T Im Us/Wb Acronychia pauciflora Soft Acronychia S/T Im Us Microcitrus australis Round Lime S Im Us Sapindaceae Alectryon T Im Wb Alectryon subcinereus Wild Quince T Im Wb Alectryon subcinereus Hoily-leaf Bird's Eye T Im Wb	Rununculaceae				
RutaceaeS/TLmUs/WbAcronychia imperforataCoast AspenS/TLmUs/WbAcronychia paucifloraSoft AcronychiaS/TLmUsMicrocitrus australisRoundLimeSImUsMicrocitrus australisRoundLimeSImUsMicrocitrus australisRoundLimeSImUsMicrocitrus australisRoundLimeTImUsSapindaceaeAlectryonTImWbAlectryon subcinereusWild QuinceTImWbAlectryon subcinereusHairy Bird'sEyeTImWbAlectryon tomentosusHairy Bird'sEyeTImWb	Clematis glycinoides	Headache Vine	>	Lm	Sa
Acronychia imperforataCoast AspenS/TImUs/WbAcronychia paucifloraSoft AcronychiaS/TImUsAcronychia paucifloraSoft AcronychiaS/TImUsMicrocitrus australisRoundLimeSImUsSapindaceaeActryonTImWbAlectryon connatusAlectryonTImWbAlectryon subcinereusWildQuinceTImWbAlectryon subcinereusHolly-leaf Bird's EyeTImWbAlectryon tomentosusHairy Bird's EyeTImWb	Rutaceae				
Acronychia pauciflora Soft Acronychia S/T Lm Us Microcitrus australis Round Lime S Lm Us Sapindaceae S Im Us Alectryon connatus Alectryon T Lm Wb Alectryon subcinereus Wild Quince T Lm Wb Alectryon subcinereus Holly-leaf Bird's Eye T Lm Wb	Acronychia imperforata	Coast Aspen	S/T	Im	Us/Wb
Mucrocurus austrauts Kound Lune S Lm Us Sapindaceae Alectryon T Lm Wb Sl Alectryon subcinereus Wild Quince T Lm Wb Alectryon subdentalus Holly-leaf Bird's Eye T Lm Wb Alectryon tomentosus Hairy Bird's Eye T Lm Wb	Acronychia pauciflora	Soft Acronychia	S/T	Lm	Us
SapindaceaeSapindaceaeAlectryon connatusAlectryonTImMectryon subcineeusWild QuinceTImAlectryon subdentalusHolly-leaf Bird's EyeTImAlectryon tomentosusHairy Bird's EyeTImMetryon tomentosusHairy Bird's EyeTImMetryon tomentosusHairy Bird's EyeTImMetryon tomentosusHairy Bird's EyeTImMetryon tomentosusHairy Bird's Eye	MICFOCIFTUS AUSTRALIS	Kound Lime	s	Im	Us
Alectryon subcinereus Wild Quince T Lm Wb Sic Alectryon subdentalus Holly-leaf Bird's Eye T Lm Wb Alectryon tomentosus Hairy Bird's Eye T Lm Wb	Sapindaceae		E		
Alectryon subdentalus Wild Quince T Lm W0 Alectryon subdentalus Holly-leaf Bird's Eye T Lm W0 Alectryon tomentosus Hairy Bird's Eye T Lm W0	meen you commun	Alecuyon	-	m T	Wb Slo
Alectryon subdentalus Holly-leaf Bird's Eye T Lm Wb Alectryon tomentosus Hairy Bird's Eye T Lm Wb	Alectryon subcinereus	Wild Quince	F	Lm	Wb
Alectryon tomentosus Hairy Bird's Eye T Lm Wb	Alectryon subdentalus	Holly-leaf Bird's Eye	L	Im	Wb
	Alectryon tomentosus	Hairy Bird's Eye	F	Lm	Wb

Scientific Name	Common Name	Form	Fire Retardance	Comments
Ebenaceae				
Diospyros australis	Black Plum	L	Im	Us/Wb
Diospyros geminata	Scaly Ebony	F	Lm	Us/Wb
Diospyros mabacea (-)	Red-fruited Ebony	L	Lm	Us
Escalloniaceae				
Anopterus macleayanus (-)	Queensland Laurel	Τ	Im	Us
Polyalthia nitidissima	Canary Beech	Т	Im	Us
Euphorbiaceae				
Claoxylon australe	Brittlewood	S/T	Lm	Us
Croton achronychioides	Thick-leaved Croton	S/T	Im	Us
Croton insularis	Queensland Cascarilla	S/T	Lm	Us
Croton stigmatosus	White Croton	T	Lm	Us
Fabaceae Frythring vesnertilio	Rat's Wing Coral Tree	E	Ē	Ad De
	0		l	
Hernandia bivalvis	Cudgerie	Т	Lm	Wb
Lauraceae				
Cryptocarya bidwilli	Yellow Laurel	Т	Im	Wb
Cryptocarya meisneriana	Thick-leaf Laurel	Τ	Im	Wb
Cryptocarya sclerophylla	Boonah Laurel	Τ	Lm	Wb
Cryptocarya triplinervis	Brown Laurel	L	Lm	Wb
Cryptocarya triplinervis var.	United Parson	E	1	WIL
74/06/13	TIALLY DIOWILLAUIOL	-		
Meliaceae				
Owenia venosa	Crow's Apple	H	Lm	Us/Wb
Synoum glandulosum	Scentless Rosewood	S/T	Im	Us
l'urraea pubescens (T. brownii)	Native Witch-Hazel	T	Im	Us
Menispermaceae				
Stephania janonica var				
discolor	Tape Vine	>	Гш	Sa Oa
Mimosaceae				
Acacia aulacocarpa	Hickory Wattle	Τ	Lm	Wb/Pf
Acacia implexa	Light Wood	L	Im	Wb/Pf
Acacia melanoxylon	Blackwood	L	Im	Wb/Pf
Acacia cincinnata	Wattle	S/T	Im	Wb/Pf
^p ararchidendron pruinosum	Snowwood	T	Lm	Us/Wb
Moraceae				
Ficus coronata	Creek Sandpaper Fig	Τ	Im	Us/Wb
Ficus fraseri	A Sandpaper Fig	Τ	Im	Us/Wb
ricus opposita	A Sandpaper Fig	Τ	Lm	Us/Wb
Streblus brunonianus				
S. pendulinus)	Whalebone Tree	H	Lm	Us/Wb

APPENDICES

262 LIVING WITH THE ENVIRONMENT IN PINE RIVERS SHIRE -

	Common Name	Form	Fire Retardance	Comments
Flagellariaceae Flagellaria indica	Supplejack	Λ	<u>.</u>	ő
3	wonforddae	*	III	23
Pandanaceae				
Freycinettia excelsa	Climbing Pandanus	Λ	Im	Sa
Freycinettia scandens	Climbing Pandanus	>	Im	Sa
Smilacaceae				
Ringonum album	White Cumpical	11		-
Pincernine branfalt	WILL Supplead	> ;	H	Sa
Discontan Dievyouum	SuppleJack	>	Lm	Sa
Kipogonum discolor	Prickly Supplejack	2	Lm	Sa
Kipogonum elseyanum	Hairy Supplejack	Λ	Im	Sa
DICOTYLEDONS				
Anacardiaceae				
Euroschinus falcata	Ribbonwood	T	ш	WF
Rhodosphaera rhodanthemo	1 Deep Yellowwood	Т	Im	Wb
Annonaceae				
Melodorum leichhardtii				
(Rauwenhoffia I.)	Zig-Zag Vine	٨	Im	Sa
Apocynaceae				
Alstonia constricta	Ouinine Tree	F		1171
Melodinus acutiflorus	Meranoarra	N		O A C
Melodinus australis	Southern Malodinus	~ ~	Ξ.	Sa
Darsonsia eucalvatanholla	Gargaloo	11	Ξ.	Sa
arsonsia fulva	Uaugauou Furry Silbood	~	H ,	Sa Oa
Darsonsia lanceolata	Northan Sillera	1	5 .	Sa
arsonsia latifolia	Monkey Vine	> 1	щ.	Sa
arsonsia straminea	Monbay Dono	1	<u>ال</u>	Sa
arsonsia velutina	Velvet Silbood	1	S.	Sa Oa
arsonsia ventricosa	Pointed Silkpod	• >	lln m	sa Ua Sa
Arecaceae				
Calamus muelleri	Lawyer Cane	٧	Im	Sa
rraliaceae				
ephalaralia cephalobotrys	Climbing Panax	Λ	Lm	Sa
olyscias elegans	Celerywood	Т	Im	Wb/Ad Oa
				Sa
olyscias murrayi	Pencil Cedar	F	Lm	Ad Oa Sa
sclepiadaceae				
arsdenia rostrata	Common Milk Vine	٧	Im	Sa
therospermataceae aphnandra micrantha	Socketwood	E	Ē	A.F.
		•		0 AA

Scientific Name	Common Name	Form	Fire Retardance	Comments
Arytera divaricata	Rose Tamarind	L	Lm	Wb
Arytera foveolata	Pitted Coogera	L	Lm	Wb
Cupaniopsis parvifolia	Small-leaf Tuckeroo	L	Lm	Wb
Cupaniopsis shirleyana (-)	Wedge-leaf Tuckeroo	L	Lm	Us/Wb
Cupaniopsis tomentella (-)	Boonah Tuckeroo	L	Im	Wb
Elattostachys nervosa	Beetroot	Τ	Lm	Us/Wb
Elattostachys xylocarpa	White Tamarind	L	Lm	Wb
Guioa semiglauca	Wild Ouince	T	Lm	Wb
Lepiderema pulchella (-)	Fine-leaf Tuckeroo	L	Lm	Wb
Mischocarpus australis	Red Pear-fruit	F	Im	Wb
Toechima tenax	Scrub Teak	F	Im	Wb
Constructos				
Sapotaceae Planchonella chartacea	Thin-leaf Plum	SIT	Im	IIs Sa
Planchonella cotinifolia	Small-leaf Plum	S/T	In	Us Sa
Cimentoneo				
Guilfovlia monostylis	Native Plum	F	Im	IIs
anticonom muchimo			I	ŝ
Symplocaceae				
Symplocus thwaitesii	Buff Hazelwood	S/T	Lm	Us
PTERIDOPHYTES				
Cyatheaceae		3		
Cyathea australis	Rough Tree Fern	ŧ	Im	Us
Cyathea cooperi	CommonTree Fern	tF	Lm	Us
Cyathea leichhardtiana	Prickly Tree Fern	tF	Im	Us
Fire-Retardant Plants	for Large Gard	ens, A	creage Bloc	ks, Parks ar
Farms				
The following plants can be u	ised in addition to the list	s of plan	is for small and me	dium gardens.
Crientific Name	Common Name	Entm	Eiro Rotardanco	Commonte
GYMNOSPERMS				
Araucariaceae				
Agathis robusta (-)	Qld Kauri	Т	Ilm	Pf - resin
Araucaria bidwillii (-)	Bunya Pine	Τ	Im	Pf - resin
Araucaria cunninghamii	Hoop Pine	Т	Lm	Pf - resin
Dodorennenado				
Podocarnus alatus	Droute or Dlum Dino	E	m]	Df vacin

264 LIVING WITH THE ENVIRONMENT IN PINE RIVERS SHIRE

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Lawyer Cane Vine

Arecaceae (Palmae) Calamus muelleri

MONOCOTYLEDONS

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Scientific Name	Common Name	Form	Fire Retardance	Comments
Avicenniaceae				-
Avicennia marina	Grey Mangrove	L	Lm St	Oa Coasta
Burseraceae Canarium australasicum	Carrotwood	F	Lm	Wb
Caesalpiniaceae				
Cassia marksiana (-)	Native Laburnum	T	Lm	Mb
Caesalpinia bonduc	Caesalpinia	>	Im	Sa
Caesalpinia scortechinii	Large Prickle Vine	>	Im	Sa
Caesalpinia subtropica	Corky Prickle Vine	>	Im	Sa
Celastraceae				
Celastrus australis	Staff Climber	2	Lm	Sa
Celastrus subspicatus	Large Staff Vine	2	Lm	Sa
Loeseneriella barbata				
(Hippocratea b.)	Knot Vine	>	Lm	Sa
Cunoniaceae				
Caldeluvia naniculosa	Rose-leaf Marara	Τ	Im	Wb
Coratonetalum anetalum (-	Coachwood	Т	Lm	Wb
Geissois henthamii	Red Carabeen	Τ	Lm	Wb
Pseudoweinmannia				
lachnocarna	Marara	Τ	Im	Wb
Schizomeria ovata	White Birch	Τ	Im	Us/Wb
Ebenaceae				
Diosnyros fasciculosa	Grey Ebony	F	Lm	Wb
Diospyros pentamera	Myrtle Ebony	Τ	Lm	Wb
Ehretiaceae				
Cordia dichotoma (-)	Cordia	L	Im	Wb
Ehretia acuminata	Koda	T	Im	Ad De
Elaeocarpaceae				
Elaeocarpus eumundi	Eumundi Quandong	F	Lm	Wb
Elaeocarpus grandis	Blue Quandong	L	Lm	Wb
Flaeocarpus kirtonii	White Quandong	L	Lm	Wb
Flaeocarnus obovatus	Hard Ouandong	L	Lm	Wb
Sloaned dustralis	Maiden's Blush	L	Lm	Wb
Sloanea woollsii	Yellow Carabeen	H	Lm	Wb
Escalloniaceae				
Quintinia verdonii	Grey Possumwood	L	Lm	Wb
Euphorbiaceae				
Austrobuxus swainii (-)	Pink Cherry	F	Lm	Wb
Raloghia inophylla (B. luci	ta) Scrub Bloodwood	Т	Lm	Wb
Bridelia exaltata	Scrub Ironbark	Т	Lm	Wb
Rridelia leichhardtii	Leichhardt's Ironbark	L	Lm	Wb
Clarvelon australe	Brittlewood	Τ	Lm	Wb
Cluby jurn www.				

Scientific Name	Common Name	Form	Fire Retardance	Comments
Dissiliania baloabiaidas	I amounted	E		Wh
Dissultanta patogatotaes	Vellow Tulin	- E	<u> </u>	Wh
Everypetes austratuated	Milky Mangrove	- [-	I m St	Ad Coastal
Evocoecaria dallachyana	Scrith Poison Tree	+ E	In or	Wh
Glochidion ferdinandi	Cheese Tree	- E	ų į	Wb
Glochidion sumatranum	Buttonwood	F	Ē	Wb
Mallotus discolor	Yellow Kamala	L	Ln	Wb
Mallotus philippensis	Red Kamala	F	Im	Wb
Fabaceae				
Austrosteenisia blackii	Blood Vine	>	Lm	Sa Oa
Castanospermum australe	Black Bean	L	Im	Wb
Derris involuta	Native Derris	>	Im	Sa
Erythrina sp. Lacey's Creek	Corkwood	T	Im	Ad De
Erythrina vespertilio	Batswing Coral Tree	Т	Lm	Ad De
Mucuna gigantea	Burny Bean	>	Im	Sa
Flacourtiaceae				
Scolopia braunii	Flintwood	Т	Im	Wb
Flindersiaceae				
Flindersia australis	Crowe Ach	F	Ĩ	Wh
Elindencia homotione	Donnott's Ach	- E		WIP
Fundersia collina Flindersia collina	Leonard Ash	- E	m m	Wb
Flindersia schottiana	Cudgerie or Bumny Ash	F	Ē	Wh
Flindersia xanthoxyla	Yellowwood	- H	li ul	Wb
A		•		
Icacinaceae				
Citronella moorei	Churnwood	F	Lm	Wb
Pennantia cunninghamii	Brown Beech	F	Lm	Wb
Lauraceae				
Cryptocarya erythroxylon	Pigeonberry Ash	F	Im	Wb
Cryptocarya hypospodia	Rib-fruit Pepperberry	T	Im	Wb
Cryptocarya macdonaldii	Cooloola Laurel	F	Im	Wb
Cryptocarya microneura	Murrogun	T	Im	Wb
Cryptocarya obovata	Pepperberry Tree	Г	Im	Wb
Endiandra muelleri	Mueller's Walnut	T	Im	Wb
Endiandra pubens	Hairy Walnut	Т	Im	Wb
Endiandra sieberi (-)	Hard Corkwood	H	Lm	Wb
Neolitsea australiensis	Grey Bolly Gum	T	Im	Wb
Neolitsea dealbata	White Bolly Gum	Τ	Im	Us/Wb
Malvaceae				
Hibiscus tiliaceus	Cotton Tree	T	Im	Wb
Lagunaria patersonii (-)	Norfolk Is Hibiscus	H	Lm	Wb
Meliaceae Anthocarana nitidula				
(Pseudocarapa nitidula)	Incense Cedar	H	Im	Wb
Dysoxylum fraseranum	Rosewood	L	Im	Wb

266 LIVING WITH THE ENVIRONMENT IN PINE RIVERS SHIRE -

e Comments	Scientific Name	Common Name	Form	Fire Retardance	Comments	1
	Oleaceae					1
Wb Wb	Olea paniculata	Native Olive	Т	Im	Wb	
Wb/Ad De	Pineraceae					
Wb	Piper novae-hollandiae	Native Pepper Vine	Λ	Im	C.o	
Wb/Ad De	4		eî.	1	94	
	Pittosporaceae					
č	Pittosporum rhombifolium	Hollywood	T	Im	Wb	
Sa	Protescese					
S. S.	Elvidia magalta	Dell Mat	E			
So of	Provillog billiong ()		- E	<u> </u>	Mb.	
Ca	Cremina minuna (-)		- 1	m .	F	
24	Urevulea robusta	Sulky Oak	e i	Lm	Ρf	
	Manda guarijora	Smooin Helicia	H	m .	Pf	
	Macaaamia miegrijona	Queensiand Nut	- 1	Im	Wb	
WIP DI	Macaaamia ternijolia	Maroochy Nut	H	Im	Wb	
WD FI	Macadamia tetraphylla (-)	Kough-shell Bush Nut	L	Lm	Wb	
W/H	Urlocallis pinnata (-)	Pink Silky Oak	-	Lm	Pf	
Wh Pf	Unlocatilis wickhamii (-)	Satin Oak	H	Lm	Pf	
Wh	(Attoxyton Jummeum)		E	,		
	Stenocarpus saugnus (-)	SCTUD BEETWOOD	- 1	Lm	H	
	stenocarpus sundaus	wheel of Fire Lree	H	Lm	Wb	
Sa	Ranunculaceae					
	Clematis aristata	Old Man's Beard	>	Im	Sa	
Wb	Rhamnaceae					
W0	Alphitonia excelsa	Red Ash	T	Im	Wb	
WD A T D	Alphitonia petrei	Pink Ash	T	Im	Wb	
Ad De	Emmenosperma					
Wb Wr	alphitonioides	Yellow Ash	H	Im	Wb	
M D	-					
0. 0.	Kosaceae					
Ca Ja Sa	Kubus moluccanus	MoluccaBramble	>	Im	Sa	
1	Rutaceae					
	Acronychia oblonoifolia	White I illy Dilly.	Цo			
Wh	A crowsching without	Code: A and Filly	1/0	щ,	4M	
2	Sanomelione dimiliater	COIKY ACTORIZED	→ 8	Lm	Wb	
Wh	our comencope sumpricipant	bauerenta	-	Ш	Wb	
Wh	Caninclarease					
Wb	Alectron reticulatus	Alectron	E		11.11	
Wb	Arvtera lautererana	Cordinov Tamarind	+ E		O AA	
Wb	Atalava multiflora	Rroad-leaf Whitewood	+ F	1111 ***1	WD	
Wb	Atalaya salicifalia (A virens)	Seruh Whitewood	- E		WD.	
Wb	Castanosnota anhanandi (_)	Brown Tamarind	- E	1. 1	0 M	
Wb	Cunanioneis anacardioides	Tuckaroo	- E	1111 1-1	W D	
21.	Currentoreis Accolliterenie ()	Drown Tuolono	- E	ш.	Wb.	
	Dinloolottis comphellii (_)	Small leaf Temorind	1/2	Щ -	M.D.	
Sa	Diploglottis cuminohamii	Native Tamarind	- E	<u>ار</u> ا	WD	
	Harpullia hillii	Blunt-leaf Tulin	+ F	la la	W D/ VIII	
	Harpullia pendula	Tulipwood	۰E	II II	Wh.	
		The second s	•		11.11	

Dysorytum mollissimum sw. nodle (D. mudler) Red Bean T Inn Wb swondle (D. mudler) Red Cedar T Inn Wb Swonylam mollissimum Minic Cedar T Inn Wb Swonylam mollissimum Minic Cedar T Inn Wb Swonylam moletis Ninki Cedar T Inn Wb Dennia cerpladera Ninki Cedar V Inn Wb Swonylam morei Red Cedar V Inn Wb Swonylam morei Ninki Cedar V Inn Wb Swonylam morei Minicover V Inn Wb Swonylam mollicitat Minicover V Inn Wb Swonylam T Inn Wb Wh Swonylam Hickory	Scientific Name	Common Name	Form	Fire Retardance	Comments
synonjulin reginality Reservoid T In m Wold Dynonjulin reginality Reservoid T In m Wold Melia archarota Raty Reservoid T In m Wold Melia archarota Raty Reservoid T In m Wold Donnia carefurdia Real Cedar T In m Wold Donnia archarota Real Cedar T In Molecular Surceptatium Intervention While Cedar T In Molecular Surceptatium Intervention While Cedar T In Molecular Surceptatium Intervention Presidentie V In Sa Surceptatium Intervention Presidentie V In Sa Surceptatium Intervention Presidentie V In Sa Surceptatium Intervention Presidentie V In Molecular Surceptatium Intervention Presidentie T In Molecular Acada audiococarpa var. Anton-Intervention Rather T In Molecular Acada audiococarpa var. Anton-Intervention Rather T In Wold Presidentie Acada audiococarpa var. Acada audiococarpa var. Anton-Intervention Rather T In Wold Presidentie T In Molecular Acada audiococarpa var. Anton Vinte Fig T In Molecular Presidentie T In Molecular Acada audiococarpa var. Antonor Vinte Presidentie T In Molecular Fictor supervar var. Autonor Vinte Presidentie T In Molecular Fictor supervar var. Antonor Vinte Presidentie T In Molecular Collicular Collection Presidenties Route Fictor Presidenties Route Presidenties R	Dysoxylum mollissimum				
Dysorytium referent Hairy Reservoid T Inn WM MM Metita crandracia Hairy Reservoid T Inn WM MM Overnit creption Wintik Cedar T Inn WM MM Toorna custralis Red Cedar T Inn WM MM Mentspermatese Wintik Cedar T Inn WM MM Stephonic ancorei Wintik Cedar Y Inn WM MM Stephonic ancorei Wintik Cedar Y Inn Sa Stephonic ancorei Matk Shake Vine Y Inn WM MM Stephonic ancorei Matk Shake Vine Y Inn WM MM Stephonic ancoreides Arrow-head Vine Y Inn WM MM Mantherwoold T Inn WM MM Matk Shake Vine Y Inn WM MM Acceic hardronylon Baskwood T Inn WM MM M M M M M M M M M M M M<	ssp. molle (D. muelleri)	Red Bean	T	Lm	Wb
Milation White Cedar T Inn WMM Downia arendon Number Cedar T Inn WMM Towai arendon Read Cedar T Inn WMM Towai arendon Read Cedar T Inn WMM Towai arendo Read Cedar T Inn WMM State Vine V Inn Sa Sa State Vine V Inn Sa Sa State Vine V Inn V Inn Sa State Vine Arrew-lead Vine V Inn Sa Sa State Vine Arrew-lead Vine V Inn Sa Sa Minoscene Marblewood T Inn WD MD Acacia bakeri Marblewood T Inn WD MD Acacia bakeri Marblewood T Inn WD MD Acacia bakeri Marblewood T Inn WD MD	Dysoxylum rufum	Hairy Rosewood	T	Im	Wb
Onenia cepiadora Onion Cedar T Inn Wb/MI Fona australis Red Cedar T Inn Wb/MI Fona australis Red Cedar T Inn Wb/MI Menispermatena Wild Gape Y Inn Sa Steropetician invoyenties Prixkly Snike Vine Y Inn Sa Stephonia caraleara Prixkly Snike Vine Y Inn Sa Stephonia caraleara Saike Vine Y Inn Sa Minoscena Antow-lead Vine Y Inn Wb/B Minoscena Mathbewood T Inn Wb/B Acacia autocorapa var Mathbewood T Inn Wb/B Acacia interpolytita Batekwood T Inn Wb/B Acacia interpolytita Lase Flower Y Inn Wb/B Acacia interpolytita Batekwood T Inn Wb/B Acacia interpolytita Batekwood T Inn Wb/B Ac	Melia azedarach	White Cedar	T	Lm	Wb/Ad
Toora australis Red Cedar T In WMM Menispermacese Yild Grape Y In Sa <i>Legrephora moresi</i> Wild Grape Y In Sa <i>Legrephora moresi</i> Sinke Vine Y In Sa <i>Septoprian moresi</i> Sinke Vine Y In Sa <i>Septoprian serializina</i> Sinke Vine Y In Sa <i>Trospora tinosporalis</i> Antow-head Vine Y In Sa <i>Minositema</i> Marblewood T In Wb P <i>Accid ableri</i> Marblewood T <t< td=""><td>Owenia cepiodora</td><td>Onion Cedar</td><td>L</td><td>Lm</td><td>Wb</td></t<>	Owenia cepiodora	Onion Cedar	L	Lm	Wb
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Acacia bakeriMarblewoodTInnWbPfAcacia harpophylla (.)Brigalow WattleTInnWbPfAcacia melanoxylomBackwoodTInnWbPfAcacia melanoxylomLace FlowerTInnWbPfAcacia melanoxylomLace FlowerYInnWbPfAcacia melanoxylomLace FlowerYInnWbPfMonimiacaeMonimiacaeAnchor VineYInnWbMonimiacaeSmall-leafed FigTInnWbFicus varianophyllaMoreton Bay FigTInnWbFicus obliquaSmall-leafed FigTInnWbFicus varianoNiple FigTInnWbFicus varianoNiple FigTInnWbFicus varianoNiple FigTInnWbFicus varianaNiple FigTInnWbFicus varianaColdraniaVInnWb	aulacocarpa	Hickory Wattle	L	Lm	Wb Pf
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Acacia melanoxylonBlackwoodTInWbArchidendron grandiflorumLacc FlowerTInWbArchidendron grandiflorumLacc FlowerVInWbMonimisceacAnchor VineVInWbPalmeria scandensAnchor VineVInWbFicus vireusSmall-leafed FigTInWbFicus obliquaSmall-leafed FigTInWbFicus vireus var. sublanceolara/Wite FigTInWbFicus vireus var. sublanceolara/Wite FigTInWbFicus vireus var. sublanceolara/Wite FigTInWbFicus vireus var. sublanceolara/Wite FigTInWbMaclura cochinchinensisCockspur ThomVInWbMaclura cochinchinensisVInWbMbMatisia scandensBunsy VineVInWbMatalisia scandensBush SatinashVInWbMatalisia scandensBush SatinashVIn<	Acacia harpophylla (-)	Brigalow Wattle	T	Im	Wb
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Maclura cochinchinensisCudrania c.)Oa Sa(Cudrania c.)Cockspur ThornVImMalaisia scandensBurny VineVImMyrtaceaeBurny VineVImArmena hemilampraBlush SatinashVImArmena ingensKed AppleVImArmena ingensCreek Lilly PillyTImArmena sindraiCreek Lilly PillyTImArmena sindraiCreek Lilly PillyTImArmena sindraiBrush BoxTImArmena sindraiCreek Lilly PillyTImArmena sindraiCreek Lilly PillyTImArmena sindraiBrush BoxTImSyncarpia glomuliferaTurpentineTImSyzgium corynanthumSour cherryTImSyzgium correi (-)DurobbyTImNyctaginaceaeNative BougainvilleaVImSonia aculeataNative BougainvilleaVImSanda aculeataNative BougainvilleaVIm	Ficus watkinsiana	Nipple Fig	Т	Im	Wb
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Acmena hemilampraBlush SatinashVImWbAcmena ingensAcmena ingensAcmena ingensWWh(A. brachyandra)Red AppleVImWb(A. brachyandra)Red AppleYImWbAcmena smithiiCreek Lilly PhllyTImWbAcmena smithiiCreek Lilly PhllyTImWbAcmena smithiiCreek Lilly PhllyTImWbSyncarpia glomuliferaTurpentineTImWbSyzgium australeScrub CherryTImWbSyzgium corpinanthumSour cherryTImWbSyzgium corpinervePuple CherryTImWbSyzgium corei (-)DurobbyTImWbNyctaginaceaeNative BougainvilleaVImSa	Myrtaceae				
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APPENDICES

268 LIVING WITH THE ENVIRONMENT IN PINE RIVERS SHIRE -

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Scientific Name	Common Name	Form	Fire Retardance	Comments
		8		
Jagera pseudorhus	Foam Bark Tree	T	Im	Wb
Mischocarpus anodontus	Veiny Pear-fruit	Т	Lm	Mb
Mischocarpus pyriformis	Yellow Pear-fruit	Τ	Lm	Wb
Rhysotoechia bifoliolata (-)	Twin-leaf Tuckeroo	Τ	Im	Wb
Sarcopteryx stipata	Corduroy	Τ	Im	Wb
Toechima dasyrrhache	Blunt-leaf Steelwood	Т	Im	Wb
Sapotaceae				
Amorphospermum antilogum	Brown Pearwood	T	Im	Wb
Amorphospermum whitei (-)	Rusty Plum	T	Im	Wb
Planchonella australis	Black Apple	Τ	Im	Wb
Planchonella laurifolia (-)	Blush Coondoo	T	Lm	Wb
Planchonella pohlmaniana	Yellow Boxwood	Τ	Im	Wb
Simaroubaceae				
Ailanthus triphysa	White Siris	T	Im	Wb
Guilfoylia monostylis	Native Plum	H	Im	Wb
Siphonodontaceae				
Siphonodon australis	Ivorywood	L	Lm	Wb
Sterculiaceae				
Argyrodendron actinophyllum	Black Booyong	Τ	Lm	Wb
Argyrodendron trifoliolatum	Brown Tulip Oak	Т	Lm	Wb
Brachychiton acerifolius	Flame Tree	Τ	Lm	Ad De
Brachychiton discolor	Lace Bark	T	Lm	Ad De
Brachychiton populneus	Kurrajong	T	Lm	Wb
Brachychiton rupestris (-)	Qld Bottletree	E 1	, Im	Ad De
Brachychiton sp. (-)	Ormeau Bottletree	i e	Щ.	Ad De
Commersonia partramia Storvilia auadrifida	Brown Nurrajong Peanut Tree	- E	ш, ш,	Ad De
milimmh municipa		-		
Symplocaceae Symplocos stawelli	White Hazelwood	Т	Lm	Wb
Ulmaceae				
Aphananthe philippinensis	Native Elm	Γ	Im	Wb
Celtis paniculata	Investigator Tree	Г	Lm	Мb
Urticaceae				
Dendrocnide excelsa	Giant Stinging Tree	L	Im	Wb
Dendrocnide photinophylla	Mulberry Stinger	Г	Lm	Мb
Verbenaceae Gmelina leichhardtii	White Beech	E	щ	Wb
Premna lignum-vitae	Lignum-vitae	E	Im	Wb
Vitaceae				
Cissus antarctica	Kangaroo Vine	2	Lm	Wb
Cissus hypoglauca	Five-leaf Watervine	Λ	Lm	Wb
Cissus sterculiifolia	Long-leaf Watervine	Λ	Lm	Wb
Tetrastigma nitens	Shining Grape	Λ	Lm	Wb



270 LIVING WITH THE ENVIRONMENT IN PINE RIVERS SHIRE

Appendix 2

Bushfire Survival Plan Guideline / Template

Bushfire Survival Plan PREPARE.ACT.SURVIVE.

Tomorrow's Queensland: strong, green, smart, healthy and fair

Queensland Government

Department of Community Safety

RURAL FIRE SERVIC



Bushfires in Queensland

The fire season in Queensland normally commences in the far north of the state in July and progresses through to southern areas as spring approaches. The fire season can extend through to February in southern and far south-western Queensland. These time frames can vary significantly from year to year, depending on the fuel loads, long-term climate and short-term weather conditions in each area.

There are four key considerations for dealing with bushfire:

- The safety of you and your family.
- The resilience of your property.
- The protection of irreplaceable valuables and important documents.
- The maintenance of adequate levels of insurance.

This document will provide you with information about the things you need to consider to prepare yourself and your home for the bushfire season, and how to make your own personal Bushfire Survival Plan.

> It is your responsibility to prepare yourself, your family and your home for the threat of bushfire.

You must prepare_ACT_SURVIVE_

Your main priority is to ensure that you and your family are safe. During a bushfire you and your family's survival and safety depend on your preparations, and the decisions you make.

The lives of you and your family are more important than any building.

Whether your plan is to leave early or stay, you must prepare your home and property to increase their level of resilience and your chances of survival.

Understand your risk

The first step in planning to survive a bushfire is to understand your own level of risk. By understanding your own level of risk you will be able to make informed decisions that are right for you and your family. Included with this Bushfire Survival Plan is a selfassessment tool that will enable you to assess the risk level associated with your property. If you are still unsure of your level of risk or require assistance contact your local fire station for more information. To book a Bushfire Safety presentation call 1300 369 003.

Fire danger ratings

The increased frequency of extreme bushfires in Australia in the last 10 years and the recent experience of the Black Saturday fires in Victoria have encouraged fire services throughout Australia to introduce new levels of Fire Danger Rating (FDR). A lift-out chart of the FDR system is contained within this document. Display it in a prominent place in your home or keep it with your Bushfire Survival Plan.



Catastrophic fire danger rating

The highest level is catastrophic. On a day of catastrophic FDR leaving early is the only option to ensure your survival. You must relocate early to a safer location, hours or the day before a fire occurs. Under no circumstances will it be safe to stay with your property.

Extreme fire danger rating

The second highest level is extreme. Should a fire occur in your area on a day of extreme FDR leaving early will always be the only option. Staying can only be considered for homes that:

- Have been designed and constructed specifically to address the threat of bushfire.
- Have been maintained to those levels and are currently well prepared.
- Can be actively defended by people with the skills, knowledge and confidence to implement a well-rehearsed Bushfire Survival Plan.

On days of catastrophic or extreme FDR:

- Fires are likely to be uncontrollable, unpredictable and very fast moving with highly aggressive flames extending high above tree tops and buildings.
- Thousands of embers may be violently blown into and around homes causing other fires to start rapidly and spread quickly up to 20 kilometres ahead of the main fire.
- Fire can threaten suddenly, without warning, and the heat and wind will make it difficult to see, hear and breathe as the fire approaches.
- People in the path of such fires will almost certainly be injured or die and a significant number of homes and businesses will be destroyed or damaged.
- Even well-prepared and constructed homes will not be safe.
- Expect power, water and phone networks to fail as severe winds bring down trees, power lines and blow roofs off buildings well ahead of the fire.

It is vital that you understand on these days that your survival will depend solely on how well you have prepared and how decisively you act. Leaving late can be a deadly option. If you are in any doubt, make the decision to LEAVE EARLY.

What will you do?

At all times you need to PREPARE.ACT.SURVIVE.

When the fire danger rating is **'catastrophic'** leaving early is the safest option.

When the fire danger rating is lower than **'catastrophic'**, one of the most important decisions you need to make is whether you will leave early or stay with a well prepared property. This decision is the basis of your Bushfire Survival Plan.

The following questions may help you make the right decision for whether you will leave early or stay:

- Do you need to consider family members who are young, elderly or infirm?
- Are you physically and emotionally prepared to stay with your property?
- Do you have the knowledge, skills, and confidence to stay with your property?
- Is your home adequately constructed, maintained and prepared to withstand the impact of a fire?
 In other words, is your home prepared to withstand the impact of a bushfire?
- Do you have well-maintained resources and equipment to fight fire, and do you know how to use them?
- Do you have appropriate protective clothing to fight a fire?
- What will you do if a rapid onset fire leaves you with no time to leave? Where will you shelter?



Leave early

If you plan to leave early then you must leave your home well before a bushfire threatens and travelling by road becomes hazardous. Your leave early preparations include:

Step 1: Preparation – your property should be well prepared for bushfire even if you intend to leave early.

Step 2: What you will do – make your Bushfire Survival Plan in accordance with your decision to leave early.

Step 3: Make a contingency plan – the FDR, the preparedness of your home, a change in household circumstances, a change in your physical preparedness or unexpected visitors are some things that may require you to reconsider your Bushfire Survival Plan.

Planning to stay

Planning is critical to successfully staying with your home may involve the risk of psychological trauma, injury or death.

Step 1: Preparation – your property must be able to withstand the impact of bushfire and well prepared to shelter you and your family.

Step 2: What you will do – make your Bushfire Survival Plan in accordance with your decision to stay.

Step 3: Make a contingency plan – the FDR, the preparedness of your home, a change in household circumstances, a change in your physical preparedness or unexpected visitors are some things that may require you to reconsider your Bushfire Survival Plan.

In making your decision to stay, here are a few things you need to consider.

- Is your property able to withstand the impact of a bushfire?
- Are you physically and emotionally prepared to stay with your property?
- Do you have well-maintained resources and equipment and do you know how to use them?
- Do you have appropriate protective clothing?
- Will your bushfire survival plan need to be different for weekdays, weekends or if someone is sick at home?
- Do you have a contingency plan?

Preparing your Bushfire Survival Plan

Preparation is the key to survival. Being involved in a fire will be one of the most traumatic experiences of your life.

- Prepare yourself you need to be both mentally and physically prepared to carry out your Bushfire Survival Plan.
- Prepare your Bushfire Survival Plan.
- Prepare your Bushfire Survival Kit.
- Prepare your Bushfire Relocation Kit.
- Prepare your property.

When writing your plan you need to consider:

- Have you made the right choice: to leave early or stay?
- Have you discussed your choice with your family, friends and neighbours?
- Who will take charge and lead other family members by carefully communicating the various tasks set out in the plan?
- If you have chosen to stay what will you do to protect your property when the fire arrives?
- What will you put in your Bushfire Survival Kit and where will you store it?
- Do your friends, family and neighbours know the details of your plan?

- What will you do if your Bushfire Survival Plan fails?
- Do you have an alternative option or contingency plan if your plan fails?
- Do you have a Neighbourhood Safer Place (NSP) you can go to as a last resort? For more information on NSPs see www.ruralfire.qld.gov.au.
- Is it safe to travel there?

If your decision is to leave early, you must include the following information or action items in your Bushfire Survival Plan:

- Monitor media outlets radio, TV, mobile phone and internet for bushfire alerts.
- When will you leave?
- What will be your trigger for action?
- Will your plan be different for weekdays, weekends, or if someone is at home sick or injured?
- What will you take with you (Relocation Kit)?
- Where will you and your family go when you leave early?
- What route will you take to get there?
- What will you do with your pets?
- What will you do if there are consecutive or multiple
 'catastrophic' or extreme fire danger days?
- Will you go into work on days when the FDR is in the upper levels?
- Will you send your children to school when the FDR is in the upper levels?
- Will all members of your household leave early?
- What will you do to prepare your property?
- What is your contingency plan in the event that it is unsafe to leave?

If your decision is to stay you must include the following information or actions items in your Bushfire Survival Plan:

- Monitor media outlets Radio, TV, mobile phone and internet.
- Locate your Bushfire Survival Kit.
- Put on protective clothing.
- Remain hydrated by drinking lots of water.

- Move any stock to fully grazed paddocks.
- Move cars to a safe location.
- Remove garden furniture, doormats and other items.
- Close windows and doors and shut blinds.
- Take down curtains and move furniture away from windows.
- Seal gaps under doors and window screens with wet towels.
- Place pets inside, restrain them, and provide water.
- Block downpipes and fill gutters with water.
- Wet down the sides of buildings facing the approaching fire front.
- Wet down decks and verandas.
- Wet down fine fuels close to buildings.
- Turn on sprinklers in garden before bushfire arrives.
- Fill containers with water; bath, sinks, buckets, wheelie bins, etc.
- Have ladders ready for roof space access (inside) and against roof (outside).
- Have generator or petrol pump ready.
- Start checking and patrolling for embers outside.

When the fire front arrives:

- Take all fire fighting equipment inside such as hoses and pumps as they may melt during the fire.
- Go inside and shelter away from the fire front.
- Patrol the inside of your home, including the ceiling space, for embers or small fires that may start.
- Drinks lots of water.
- Check family and pets.

After the fire front has passed:

- Wear protective equipment.
- Go outside once it is safe.
- Check for small spot fires and burning embers:
 - inside roof space
 - under floor boards
 - under house space
 - on veranda and decks

- on window ledges and door sills
- in roof lines and gutters
- garden beds and mulch
- wood heaps
- outdoor furniture
- sheds and carports
- Continue to drink lots of water.
- Stay at your property until the surrounding area is clear of fire.
- Monitor media outlets radio, TV, mobile phone and internet.

You need to be both mentally and physically prepared to carry out your Bushfire Survival Plan

There may be other actions to include, depending on your individual property and the level of bushfire risk you are exposed to.

Include the whole family in creating your Bushfire Survival Plan. You and your family should be aware of the actions you will take at the various FDR levels and it is important to ensure this is incorporated into your Bushfire Survival Plan. The FDR for your area can be found on roadside signs and by visiting www.ruralfire. qld.gov.au and following the FDR link.

It is important that your Bushfire Survival Plan does not rely solely on receiving an alert.

Once you have completed your Bushfire Survival Plan, practise it regularly to ensure everyone involved knows exactly what to do in the event of a fire.

Preparing your Bushfire Survival Kit

It is essential that you have a Bushfire Survival Kit if your choice is to stay with your property. This kit will ensure you and your family have the important equipment you need to stay. For a comprehensive list of equipment needed in a Bushfire Survival Kit see page 14.

Preparing your Bushfire Relocation Kit

It is equally important to have a relocation kit if your choice is to leave early. This kit will ensure you and your family have important items and equipment required to relocate for the time needed. For a comprehensive list of items and equipment needed in a Bushfire Relocation Kit see page 15.

Making a contingency plan

No matter whether your decision is to leave early, well before a bush fire threatens or to stay you should still have a contingency plan as part of your Bushfire Survival Plan. There are many scenarios to consider, such as what you will do if a rapid onset fire starts in your local area making roads impassable or travel particularly dangerous. You should have other options if road travel is not safe.

- Is your house well prepared?
- Can it provide you with protection from radiant heat?
- Have you identified a safer location such as an NSP?

Sheltering in a well-prepared property is far safer than being out in the open or in a vehicle

Preparing your property

An unprepared property is not only at risk itself, but may also present an increased danger for your neighbours and their homes.

Planning is absolutely critical to safely staying with your home. Staying home involves the risk of psychological trauma, injury and death. There are a number of measures you can take to prepare your home and property for bushfire. These include several preparations you must take annually prior to the bushfire season.

Your pre-season property preparations should include:

- Displaying a prominent house number.
- Ensuring there is adequate access for fire trucks to your property – 4 metres wide by 4 metres high with a turn-around area. Reduce vegetation loads along the access path.
- Mowing your grass regularly.
- Removing excess ground fuels and combustible material (long dry grass, dead leaves and branches).
- Clearing of leaves, twigs, bark and other debris from the roof and gutters.
- Purchasing and testing the effectiveness of gutter plugs.
- Trimming low-lying branches 2 metres from the ground surrounding your home.
- Enclosing open areas under your decks and floors.
- Installing fine steel wire mesh screens on all windows, doors, vents and weep holes.
- Pointing LPG cylinder relief valves away from the house.
- Conducting maintenance checks on pumps, generators and water systems.
- Checking that you have sufficient personal protective clothing and equipment.
- Relocating flammable items away from your home including woodpiles, paper, boxes, crates, hanging baskets and garden furniture.
- Sealing all gaps in external roof and wall cladding.
- Checking that the first aid kit is fully stocked.

Bushfire Alerts

If you receive an emergency warning about a bushfire or other emergency, take notice as it could save your life.

There are three types of alert messages to help you make the right safety choices:

Bushfire Advice Message – a fire has started – general information to keep you up to date.

Bushfire Watch and Act Message – represents a heightened level of threat. Conditions are changing, a fire is approaching; lives may come under threat. Take appropriate action.

Bushfire Emergency Warning – is the highest level message advising of impending danger. It may be preceded with the Standard Emergency Warning Signal (SEWS).

> An Emergency Warning means there is a threat to lives and protective action is required immediately.

When a bushfire strikes

You have made your decision to **PREPARE.ACT.SURVIVE.** You have prepared your property before the fire season. You have made your Bushfire Survival Plan. You have practised your Bushfire Survival Plan.

A bushfire is threatening? What do you do?

- Know the FDR for any given day.
- Regularly check the FDR on the Rural Fire Services website at www.ruralfire.qld.gov.au.
- Monitor your media outlets for warnings on bushfire activity.
- Seek out information if you have to, and do not assume that you will receive a warning.
- Leave early or stay according to your Bushfire Survival Plan.
- Act decisively in accordance with your Bushfire Survival Plan.
- Do not adopt the 'wait and see' option.

Travelling in your vehicle near a bushfire

Sheltering inside a vehicle is a high-risk strategy that can result in death. Whilst sheltering inside a vehicle offers you a slightly higher chance of survival than being caught in the open, having a leave early or stay strategy is a much safer option.

You should never take a journey into areas where the fire danger is catastrophic or extreme. You should consider postponing or finding alternative routes if necessary. If you can smell or see smoke in the distance it is best to u-turn and drive away from the danger.

If you are caught in smoke or flames while on the road:

- Turn on the vehicle's headlights and hazard warning lights.
- If you need to shelter in your vehicle drive your car into a bare, clear area well away from surrounding trees, leaving lights on. Position vehicle to prevent side impact from advancing fire front.
- Close all windows and vents.
- Leave the engine running and turn off the air conditioning system.
- Cover your entire body with woollen or cotton blankets to protect from radiant heat.
- Take shelter below the window level.
- Drink water frequently and stay in the vehicle until the fire front has passed.
- Once the fire front has passed exit the vehicle to inspect the damage and ensure other passengers are safe.

Neighbourhood Safer Places

A Neighbourhood Safer Place (NSP) is a place of last resort for people during a bushfire. An NSP may form part of a back-up plan when:

- Your Bushfire Survival Plan has failed.
- Your plan was to stay but the extent of the fire means that your home cannot withstand the impact of the fire and therefore your home is not a safe place to shelter.
- The fire has escalated to an extreme or catastrophic level and relocation is the safest option.

An NSP is an identified building or open space within the community that can provide a level of protection from the immediate life-threatening effects of a bushfire. NSPs still entail some risk, both in moving to them and while sheltering in them and cannot be considered completely safe.

They are a place of *last resort* in bushfire emergencies only. The following limitations of NSPs need to be considered within your Bushfire Survival Plan:

- NSPs do not cater for pets.
- Firefighters may not be present as they will be fighting the main fire front elsewhere.
- NSPs do not provide meals or amenities.
- They may not provide shelter from the elements, particularly flying embers.

If you are a person with special needs you should give consideration to what assistance you may require at an NSP.

Although QFRS cannot guarantee an immediate presence during a bushfire, every effort will be made to provide support as soon as resources are available.

If an NSP is part of your contingency plan it should not require extended travel through fire-affected areas to get there.

FIRE DANGER RATING



The Fire Danger Rating (FDR) is an early indicator of potential danger and should act as your first trigger for action. The higher the rating the greater the need for you to act.

The FDR is an assessment of the potential fire behaviour, the difficulty of suppressing a fire, and the potential impact on the community should a bushfire occur on a given day.

A Fire Danger Index (FDI) of 'low-moderate' means that fire will burn slowly and that it will be easily controlled, whereas a FDI in excess of 'catastrophic 100+' means that fire will burn so fast and so hot that it will be uncontrollable.

CATASTROPHIC 100+

A fire with a rating of **'catastrophic'** may be uncontrollable, unpredictable and fast moving. The flames will be higher than roof tops. Many people will be injured and many homes and businesses will be destroyed.

During a **'catastrophic'** fire, well-prepared and constructed homes will not be safe. Leaving is the only option for your survival.

EXTREME 75-99

A fire with an **'extreme'** rating may be uncontrollable, unpredictable and fast moving. The flames will be higher than roof tops. During an **'extreme'** fire, people will be injured and homes and businesses will be destroyed.

During an **'extreme'** fire, well-prepared and wellconstructed homes may not be safe. Leaving is the only option for your survival.

SEVERE 50-74

A fire with a **'severe'** rating may be uncontrollable and move quickly, with flames that may be higher than roof tops. A **'severe'** fire may cause injuries and some homes or businesses will be destroyed.

During a fire with a **'severe'** rating, leaving is the safest option for your survival. Use your home as a place of safety only if it is well-prepared and well-constructed.

VERY HIGH 25-49

A fire with a **'very high'** danger rating is a fire that can be difficult to control with flames that may burn into the tree tops. During a fire of this type some homes and businesses may be damaged or destroyed.

During a fire with a **'very high'** danger rating, you should use your home as a place of safety only if it is well prepared and well-constructed.

HIGH 12-24

A fire with a **'high'** danger rating is a fire that can be controlled where loss of life is unlikely and damage to property will be limited.

During a fire with a **'high'** danger rating, you should know where to get more information and monitor the situation for any changes.

LOW-MODERATE 0-11

A fire with a **'low to moderate'** rating can be easily controlled and pose little/or no risk to life or property.

During a fire with a **'low to moderate'** rating, you should know where to get more information and monitor the situation for any changes.

BUSHFIRE SURVIVAL PLAN

Complete your personalised Bushfire Survival Plan lift-out.

Personal details:

Important phone numbers: 000 (Fire, Police and Ambulance)

Family:	Family:	Family:
Work:	Friends:	Friends:
School:		

Important contact details – name and phone number:

Insurer:	Policy Number:	Phone:
Electricity:		Phone:
Water:		Phone:
Gas:		Phone:
Phone Company:		Phone:
Council:	Phone:	

Leave early:

List all names and contact phone numbers of household members who have decided to leave early then complete Section 1.

Names:

Phone:

Stay:

List all names and contact phone numbers of household members who have decided to stay, then complete Section 2.

Names:

Phone:

Leave early – Section 1

Pull this Bushfire Survival Plan lift-out from this document and keep in a safe place.

Leaving early will always be the safest option for you and your family. It is extremely important for you to prepare a detailed leave early plan to ensure everyone understands what to do and when. Use the boxes below to list tasks to do.

When to go – Think of different triggers that will cause you and your family to leave early. Think about what you will do if you have sent the children to school that day. Think about whether or not you will have to travel from work into the fire zone.

Where to go – Identify one or more safer locations. Consider putting on personal protective clothing before you leave home.

How to get there – What roads will you take to your destination? Have an alternative route if your first choice is impassable.

What to take – Make a list of your most valuable items (e.g. insurance papers, electronic records, photo albums, passports, birth certificates and other important documents).

Stay – Section 2

Anyone who is not going to leave early must be involved in completing this stay and defend plan to ensure they know what to do. Every stay plan will be different depending on your circumstances. Use the boxes below to list tasks to do.

- Before the fire approaches – Start getting yourself and your property ready for a bushfire.

As the fire approaches – Prepare for ember attack on or near your home. Remember to put on personal protective clothing.

- **As the fire front arrives** - Stay safe by monitoring the fire from inside your home.

- **After the fire has passed** – Patrol your property and extinguish any spot fires or burning embers. You may need to keep this up for several hours.

Everyone must have a contingency plan

Have a contingency plan – what will you do if you can't activate your Bushfire Survival Plan? Remember that leaving late can lead to loss of lives.

Know where your nearest NSP is and how to get there.

ACTIVATING YOUR BUSHFIRE SURVIVAL PLAN

Once you have prepared your Bushfire Survival Plan and completed your preparations, it is absolutely essential that you regularly practise and review your plan. This will make sure you and your family are well organised in the event of a bushfire. If a bushfire threatens the health and safety of you, your family, home or property, you should follow these steps:



BUSHFIRE SURVIVAL KIT

You need to have a Bushfire Survival Kit stored in an area of the house that is safe and easy to access. It should contain:

- protective clothing
- mop
- gloves
- torch
- hoses

shovel

- towels
- buckets
- safety goggles
- ladder
- medications
- bottled drinking water
- fire extinguishers
- battery operated radio
- spare batteries
- smoke mask
- woollen blankets
- first aid kit
- knapsack sprayer
- protective clothing for the whole family.







RELOCATION KIT

Write a list of all items your family will need before, during and after your relocation. The list below shows items that you might like to put in your relocation kit.

- protective clothing for the whole family
- battery operated radio and spare batteries
- safety goggles
- mobile phone and battery charger
- medications
- wallet or purse and money
- clothing (two sets of clothes for each family member)
- identity information (passports, birth certificates)
- bottled water (enough for each relocated family member)
- family and friends' phone numbers
- items of high importance (e.g. family photos, valuables, important documents)
- blankets (natural fibres)
- children's toys





BUSHFIRE RISK SELF-ASSESSMENT CHECKLIST



This basic self-assessment checklist is designed to give you a greater understanding of the bushfire risk level relevant to your property. Information provided in this assessment will assist you when completing your Bushfire Survival Plan.

Address:			
		Postcode:	
Property O	wner/Property Name:		

ACCESS/EGRESS	Road/Street/Driveway	PLEA	SE √ A	PPROPRIATE	BOX
Clear of overhanging vegetation		Yes		No	
Unrestricted gate access		Yes		No	
Clear of overhead power lines		Yes		No	
Able to reverse in		Yes		No	
Turning/passing areas		Yes		No	
Heavy vehicle access on cattle grid/brid	lge	Yes		No	
Alternative way out		Yes		No	
Two wheel drive access		Yes		No	
STRUCTURE/S					
Exterior walls – non-combustible		Yes		No	
Roof ridge capping sealed		Yes		No	
Eaves enclosed		Yes		No	
Roofing gutters and valleys clear of leaf	litter and fine fuels	Yes		No	
Underfloor enclosed		Yes		No	
Vents screened		Yes		No	
Windows – non-combustible finishing		Yes		No	
Deck/veranda non-combustible		Yes		No	
WATER SUDDLY					
Reticulated water supply		Ves		No	
Tank supply with OEPS access	malo camlock fitting	Voc		No	
so fire figthers can use water if needed		162		NO	
QFRS accessible external open water su	ıpply (dam/pool)	Yes		No	
Firefighting pump and hose connected	to water supply	Yes		No	

Other considerations

There are a range of other things to be considered regardless of your decision to leave early or stay:

- Firefighting equipment such as pumps, hoses and sprinkler systems should be tested regularly and maintained in maximum operational working condition.
- Firefighters may need access to your property during a bushfire so it is in your best interests to allow enough space for fire trucks (4 metres wide by 4 metres high).
- Your pets, livestock and other animals require proper care and attention during fires. Consider food, medication, transportation and sleeping arrangements for your animals.

Myths versus Reality

Myths	Reality
There will always be a fire truck available to fight a bushfire threatening my home.	Firefighters may be required to fight many fronts of a large fire. Fire trucks and firefighters are finite resources so it is important they are deployed in an appropriate manner to best manage the fire.
I know the back streets in town like the back of my hand so it is OK for me to leave at the last minute.	If your decision in your Bushfire Survival Plan is to leave early, then you should leave well before the fire front reaches your property. Irrespective of your local area knowledge you must stick to your plan and leave early. Leaving late can be fatal.
Someone from an emergency service will knock on my door when it is time to leave.	Emergency services personnel may not be available to alert the community by door-knocking and encouraging you to leave. You need to monitor the bushfire alerts by listening to the radio, watching TV or checking the rural fire website. You need to be ready to leave early if your life or the people in your care are at risk.
My house will not burn down because there is more than 50 metres between my home and nearby bushland.	Most houses which burn down during bushfires have been attacked by flying embers. Under certain conditions embers can cause ignitions up to 20kms in front of the main fire. A combination of your level of preparation and your home's construction will determine the survivability of your home.
I only have to clean my gutters and mow my lawns to prepare my property for bushfire.	Fire requires fuel, heat and oxygen to occur. This means that flames or embers do not necessarily rely solely on your gutters and lawns for fuel. They might utilise overhanging trees, woodpiles, old building materials under the deck or chemicals in the garden shed to sustain them. Take the time to properly prepare your whole property, which includes yourself, your house and your land.

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