Fire Management Plan

Buderim Forest Bushland Conservation Reserve Core, Buderim.

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Sunshine Coast™ COUNCIL

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Introduction

This fire management plan has been prepared to address community safety and the maintenance of ecological values in Buderim Forest Bushland Conservation Reserve Core (the reserve). The reserve is located on the northern slopes of Buderim.

Legislative requirements

Qld Fire and Emergency Services Act (1990)

Sunshine Coast Council (SCC) and its corporatised entities as well as all other entities which are owned and/or managed on behalf of SCC and who are responsible for the management of land, are considered to be a land occupier under the *Qld Fire and Emergency Services Act* 1990 (s67). The *Qld Fire and Emergency Services Act* (1990) is the head of power for the Qld Fire and Emergency Services (QFES) who administers the provisions of the Act and Regulations.

The definition of a land occupier under the act is:

"occupier of land" *includes, where there is no person in actual occupation of the land, the person charged by the owner or by law with the management of the land.*

The act also defines the term occupier.

"occupier"*, used with reference to any premises, means the person in actual occupation or, if there is no such person, the owner.*

Section 67 of the Act requires SCC on becoming aware of a fire burning on land it occupies to take all reasonable steps to extinguish or control the fire and report the fire and its location to a fire officer as soon as possible.

The act also requires SCC to obtain a permit to burn from the closest QFES station or fire warden prior to conducting any burns within their property.

Local Laws – SCC

Sunshine Coast Council Local Law No. 3 (Community Health and Environmental Management) 2011 and Sunshine Coast Council Subordinate Local Law No. 3 (Community Health and Environmental Management) 2011 are the local laws that regulate fires in urban areas. It applies specifically to fires that do not require a permit under the Fire and Emergency Services Act. All burns undertaken by Council will be within the QFES permit system so the local laws do not apply.

Site description

Location

The property is described as Lot 100 on SP168139; Lot 2 on RP169053; Lot 3 on RP211081; Lot 20 on RP215784; Lot 4 on RP217121; Lot 9 on RP212167; Lot 17 on RP211616; Lot 7 on RP211615; Lot 1 on RP215100; Lot 1 on RP109581; Lot 22 on RP810561; Lot 101 on RP842835 and Lot 100 on RP842835. The size of the combined properties is approximately 46 hectares (see Map 1). The main access points to the reserve are via Lindsay Road and Quorn Close.

Landscape

The dominant landscape features are the steep slopes and gullies that drain into Martin's Creek. The sandstone waterfalls in the upper section of the reserve are a major feature of the walking track network.

Vegetation

Version 8 Regional Ecosystem mapping identifies seven RE's within the reserve. The following information on these RE's has been obtained from the Department of Environment and Heritage Protection. Vegetation mapping for the reserve is presented in Map 2.

12.9 – 10.14 - *Eucalyptus pilularis* tall open-forest with shrubby understorey. Other species include *Syncarpia*

glomulifera, *S. verecunda*, *Corymbia intermedia*, *Angophora woodsiana* and *Eucalyptus microcorys* in coastal areas and species of RE 12.9-10.5 in drier sub coastal areas. *Eucalyptus pilularis* sometimes extends onto colluvial lower slopes. Occurs on Cainozoic and Mesozoic sediments especially sandstone. This RE is listed as "Least Concern".

Fire management guidelines for this RE are;

SEASON: Summer to winter.

INTENSITY: Plan for low to moderate. Unplanned occasional high intensity wildfire will occur.

INTERVAL: 4-8 years maintains a healthy grassy system. 8-20 years for shrubby elements of understorey.

STRATEGY: Aim for 40-60% mosaic burn. Needs disturbance to maintain RE structure (eucalypt overstorey with open understorey of predominantly non-rainforest species).

ISSUES: 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. 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 may contain a high number of rare and threatened plant species which require appropriate fire management.

12.9 - 10.16 – Microphyll to notophyll vine forest ± *Araucaria cunninghamii*. Characteristic species include *Argyrodendron* sp. (Kin Kin W.D. Francis AQ 81198), *Araucaria cunninghamii*, *Agathis robusta*, *Backhousia myrtifolia*, *Cupaniopsis parvifolia*, *Dendrocnide photinophylla*, *Rhodosphaera rhodanthema*, *Flindersia australis*, *F. xanthoxyla*, *Drypetes deplanchei*, *Olea paniculata*, *Diospyros geminata*, *Gossia bidwillii*, *Excoecaria dallachyana* and *Vitex lignum-vitae*. Occurs on Cainozoic and Mesozoic sediments. This RE is listed as "Of Concern".

Fire management guidelines for this RE are;

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.

12.8.3 – Complex notophyll vine forest. Characteristic species include *Argyrodendron trifoliolatum*, *Argyrodendron* sp. (Kin Kin W.D. Francis AQ 81198), *Olea paniculata*, *Castanospermum australe*, *Cryptocarya obovata*, *Ficus macrophylla* forma *macrophylla*, *Syzygium francisii*, *Diploglottis australis*, *Pseudoweinmannia lachnocarpa*, *Podocarpus elatus*, *Beilschmiedia obtusifolia*, *Neolitsea dealbata* and *Archontophoenix cunninghamiana*. Occurs on Cainozoic igneous rocks, especially basalt and laterised basalt <600m altitude. This RE is listed as "Least Concern".

Fire management guidelines for this RE are;

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.

12.3.1 - 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* emergents (e.g. *E. grandis*) and *Araucaria cunninghamii*; less commonly *Agathis robusta* may also be present. Occurs on Quaternary alluvial plains and channels. This RE is listed as "Endangered".

Fire management guidelines for this RE are;

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.

12.3.2 – *Eucalyptus grandis* ± *E. microcorys*, *Lophostemon confertus* tall open-forest with vine forest understorey ('wet sclerophyll'). Patches of *Eucalyptus pilularis* sometimes present especially in vicinity of sedimentary rocks (e.g. around Palmwoods). Fringing streams and in narrow gullies in high rainfall areas. This RE is listed as "Of Concern".

Fire management guidelines for this RE are;

SEASON: Late summer to autumn.

INTENSITY: Moderate to high.

INTERVAL: Minimum 20 years, maximum unknown, requiring further research.

STRATEGY: Needs disturbance to maintain RE structure (eucalypt overstorey, rainforest dominated but mixed species understorey). It is unlikely that mosaic burns will be achievable because fire would most likely be of higher intensity (i.e., likely to be a wildfire) and is only likely to occur at long intervals (at least 20+ years) during prolonged dry periods. In exceptional circumstances, different localities containing this ecosystem could be burnt to ensure a continuum of habitat availability across the broader landscape. Using this strategy maximises the probability of spatial mosaics in the landscape.

ISSUES: Operationally there will be many areas of wet sclerophyll that cannot be safely burnt, and will only burn in wildfire. There is evidence that suggests that infrequent high intensity fires sustain the eucalypt overstorey. Wet sclerophyll has been shown to be a moving ecotone

between vine forest and moist/dry sclerophyll.

12.5.2 – *Corymbia intermedia, Eucalyptus tereticornis* grassy open forest to woodland. Other species can include *Lophostemon suaveolens, Angophora leiocarpa, Eucalyptus acmenoides* or *E. portuensis, E. siderophloia* or *E. crebra, Corymbia tessellaris* and *Melaleuca quinquenervia* (lower slopes). *Eucalyptus exserta* is usually present in northern parts of bioregion. Occurs on complex of remnant Tertiary surfaces +/- Cainozoic and Mesozoic sediments. Usually deep red soils. This RE is listed as "Endangered".

Fire management guidelines for this RE are;

SEASON: Summer to late-autumn.

INTENSITY: Low.

INTERVAL: 3-6 years.

STRATEGY: Aim to burn 40-60% of any given area. Spot ignition in cooler or moister periods encourages mosaics.

ISSUES: Control of weeds is a major focus of planned burning in most areas. Maintain ground litter and fallen timber habitats by burning only with sufficient soil moisture. Burning should aim to produce fine scale mosaics of unburnt areas.

12.9-10.17d - Open forest generally containing *Eucalyptus siderophloia*, *E. propinqua*, *Corymbia intermedia*. Other characteristic species include *Lophostemon confertus*, *Eucalyptus microcorys* and *E. acmenoides* or *E. portuensis*. Other species that may be present locally include *Corymbia trachyphloia* subsp. *trachyphloia*, *C. citriodora* subsp. *variegata*, *E. longirostrata*, *E. carnea*, *E. moluccana* and occasional vine forest species. Hills and ranges on Cainozoic and Mesozoic sediments. This RE is listed as "Least Concern".

Fire management guidelines for this RE are;

SEASON: Summer to winter.

INTENSITY: Plan for low to moderate. Unplanned occasional high intensity wildfire will occur.

INTERVAL: 4-8 years maintains a healthy grassy system. 8-20 years for shrubby elements of understorey.

STRATEGY: Aim for 40-60% mosaic burn. Needs disturbance to maintain RE structure (eucalypt overstorey with open understorey of predominantly non-rainforest species). Any moist sclerophyll that is relatively open with a mixture of grasses and shrubs should be a priority for fire management to retain RE structure.

ISSUES: 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. 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 may contain a high number of rare and threatened plant species which require appropriate fire management.

A detailed flora survey was undertaken in 2013 by Brush Turkey Enterprises. 335 plant species were identified including 75 introduced plant species. These introduced species are primarily along the reserve boundaries where the park directly adjoins residential development.

Three planted flora species listed in the Nature Conservation (Wildlife) Regulations 1994 were identified in the 2013 survey. Earlier surveys also identified one scheduled flora species;

- *Pararistolochia praevenosa* (near threatened).

It is unlikely that this species would be impacted by both prescribed and unplanned fires as it occurs primarily in the rainforest vegetation areas.

Fauna

No detailed fauna surveys have been undertaken in Buderim Forest Park BCR Core. Site inspection shows evidence of fauna such as scats, tree scratching and soil disturbance. Given the size and significance of the reserve formal surveying of fauna populations is recommended.

Summary of Ecological Issues

Effective fire management is required to maintain the mix of rainforest and open forest vegetation communities in the reserve. The open forest communities require periodic fire to facilitate recruitment of the Eucalypt canopy while the rainforest vegetation requires fire exclusion. Given the urban development surrounding the reserve undertaking planned burns will present significant challenges. Liaison with adjacent landowners will be required to seek opportunities to undertake planned burns that cross the boundaries of the reserve.

This variation in ecological requirements means that any planned burns will need to be undertaken when soil moisture is relatively high. Ignition patterns for these burns will need to commence on ridgelines and burn slowly into gullies where they can self-extinguish on the open forest – rainforest boundary.

Fire hazard

State Planning Policy – Fire Hazard Assessment Methodology

The State Government replaced State Planning Policy (SPP01/03) with a new single SPP in 2013. This SPP also includes state-wide mapping of bushfire hazards.

The SPP is predominantly to be referred to with respect to new development within Queensland. The SPP mapping data provides a trigger for local governments to investigate and consider the relevant interest and does not automatically preclude development. The mapping is amended from time to time to ensure the most recent state information is available.

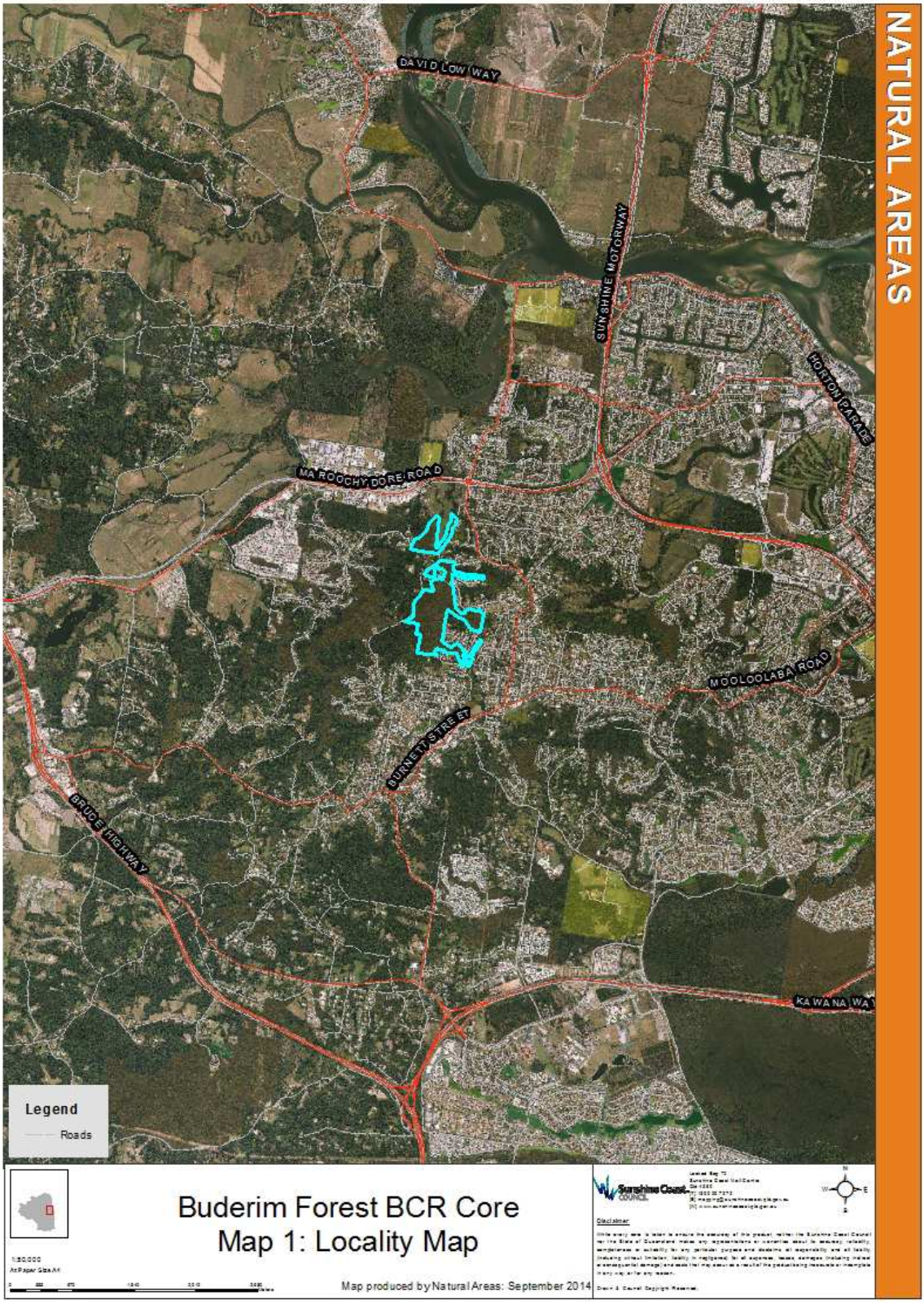
The Sunshine Coast Council Planning Scheme 2014 includes bushfire hazard mapping that was prepared using the old methodology from SPP 1/03. Both mapping products show the reserve has a mixture of medium and high to very high bushfire hazard areas as well as low hazard areas where the vegetation is dominated by rainforest species. Both mapping products are provided below in Maps 3 & 4.

<u>Other considerations</u>

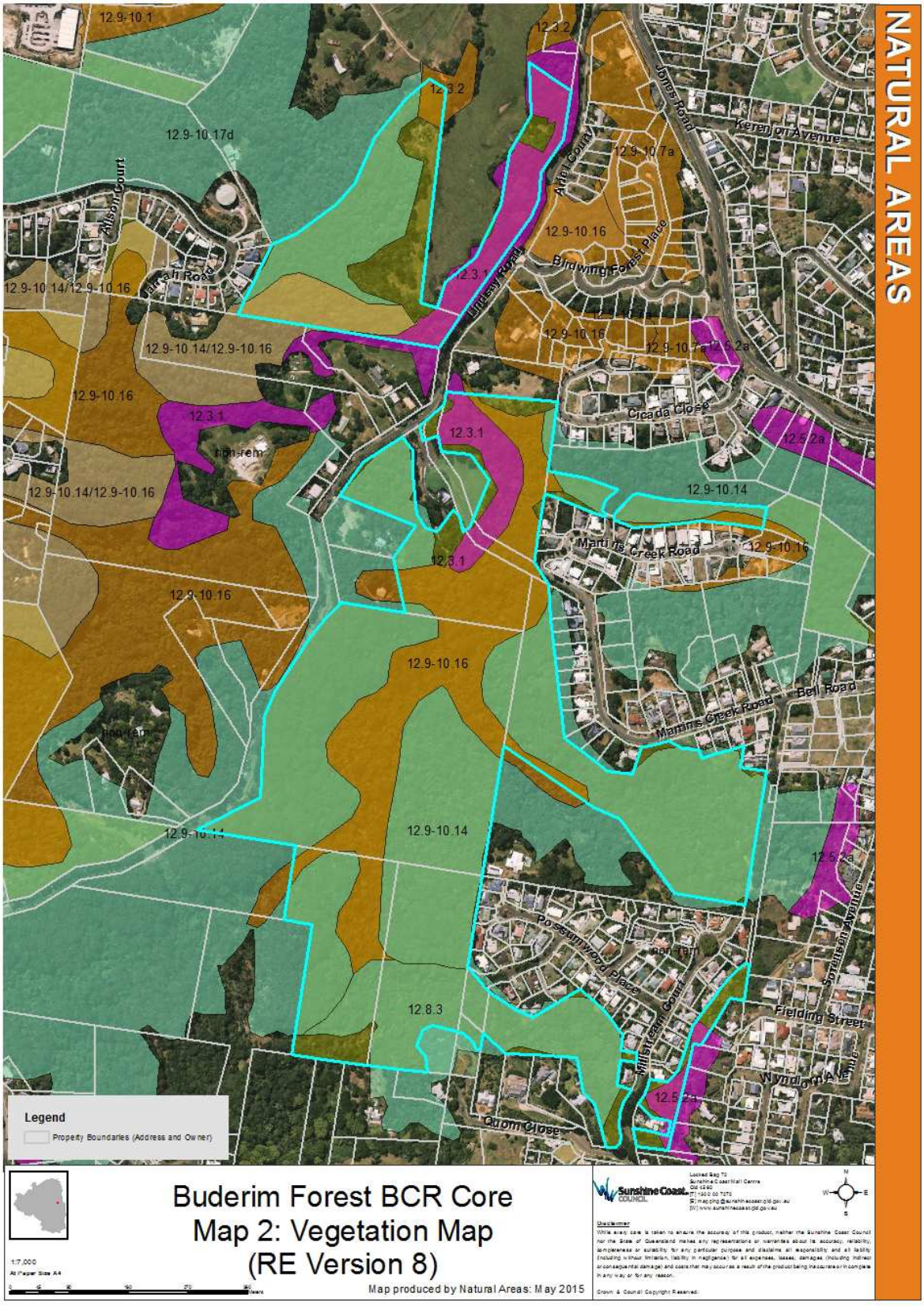
Overall the fire hazard has been assessed as being medium, given the combination of rainforest and open forest vegetation communities. Whilst fires can occur within the reserve it is unlikely that they will reach very high intensities given the large tracts of rainforest that separate the ridges that are dominated by open forest.

The implementation of planned burns to reduce fuel loads can be utilised to manage this risk. Given the difficulties of terrain noted above any planned burns would also need to include adjacent private properties. This would require the consent of these landowners and ideally joint burning operations with QFES.

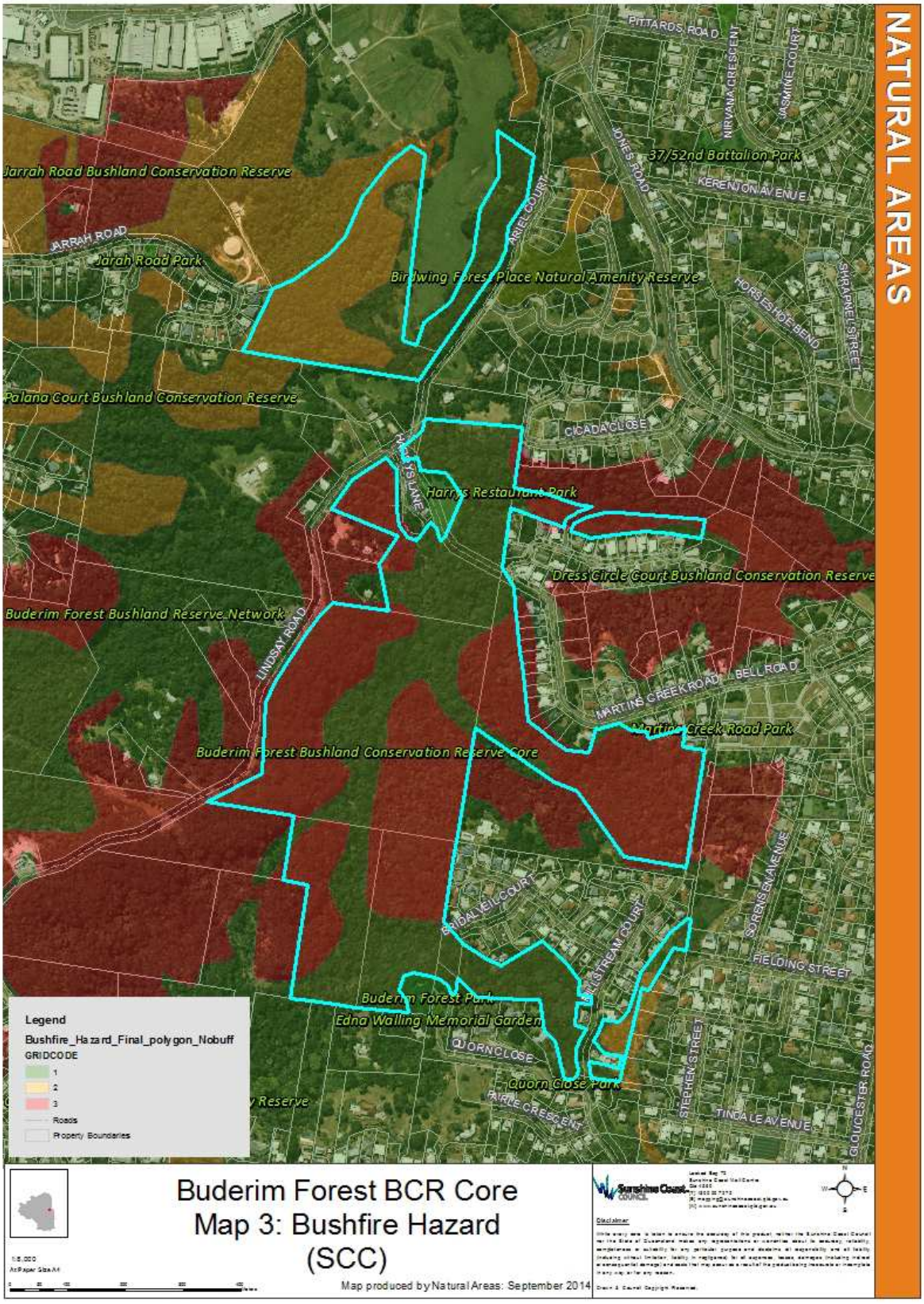
Map 1 – Locality Map



Map 2 – Vegetation Map

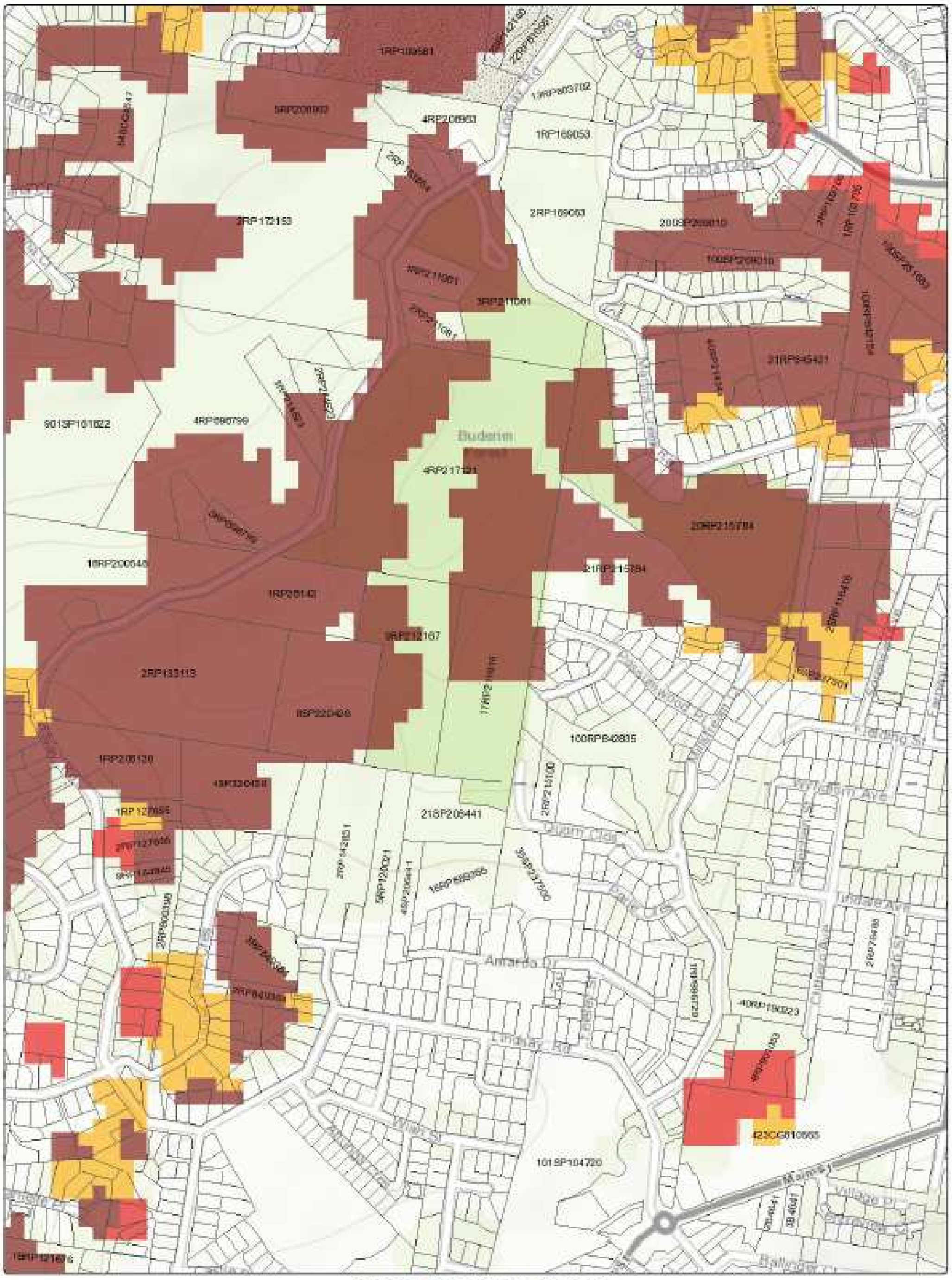


Map 3a – Bushfire Hazard Map (SCC)



Map 3b – Bushfire Hazard Map (SPP)

Map 3b – Bushfire Hazard Map (SPP)



State Planning Policy

Local government development assessment

Department of State Development Infrastructure and Planning

Queensland Government

Date: 18/09/2014

0 45 90 180 270 360

Metres

Disclaimer:
This map has been prepared with due care based on the best available information at the time of publication. The department holds no responsibility for any errors, inconsistencies or omissions within this document. Any decisions made by other parties based on this document are solely the responsibility of those parties.
Please note whilst Bushfire Hazard Areas have not been triggered they may still apply.

Legend

Cadastre (10k)

- Cadastre (10k)

Bushfire hazard area (Bushfire prone area)

- Very high (potential intensity)
- High (potential intensity)
- Medium (potential intensity)

Management area

- Management area

Planning methodology

Field assessment

The site assessment was undertaken in conjunction with the vegetation survey and other information such as slope, fuel loads and aspect and dominant species associations.

Fire Management Units

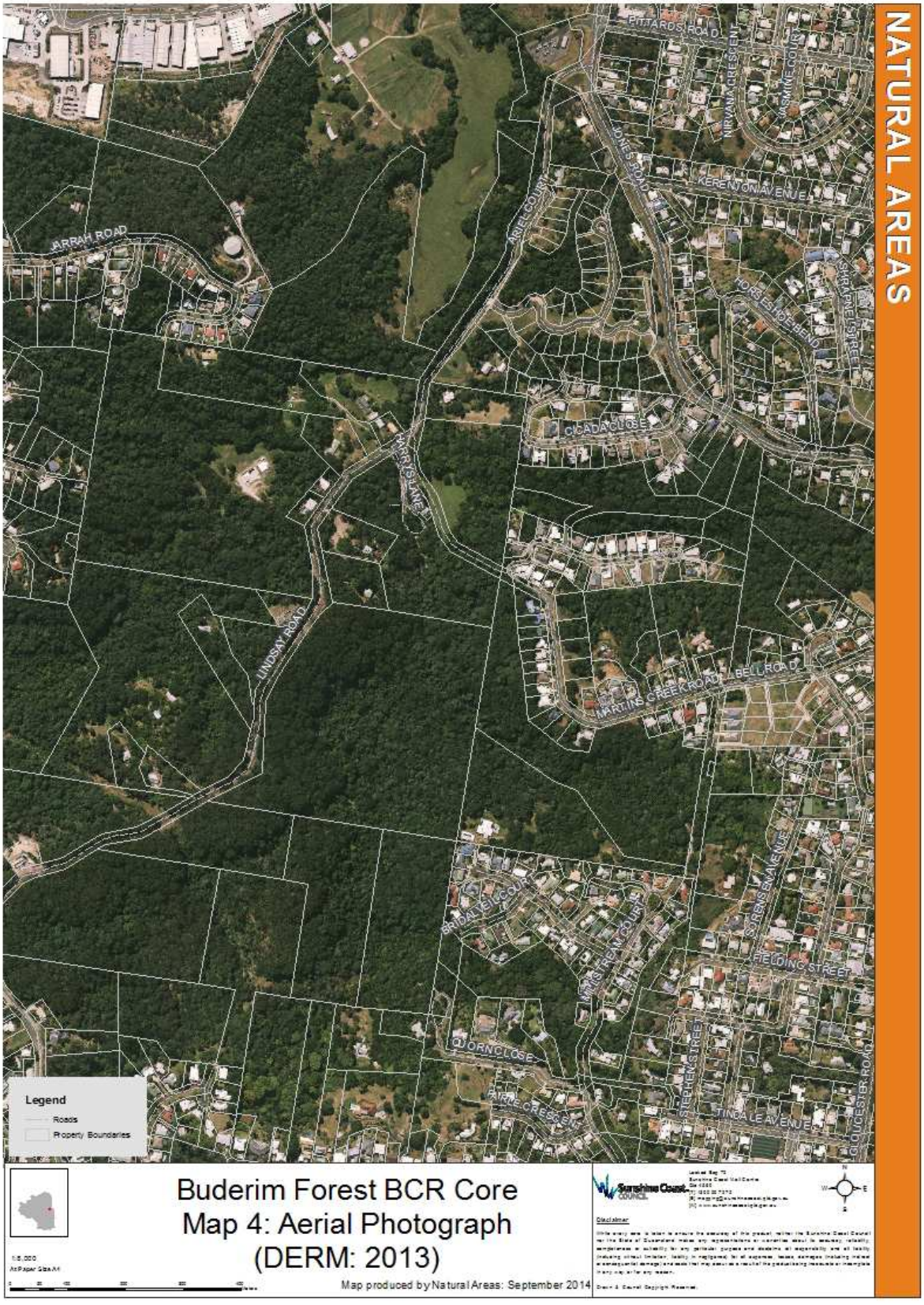
Fire Management Units (FMU) are those areas within which fire can be managed to achieve management objectives.

The FMUs are defined by existing firebreaks, fire trails, internal tracks and property boundaries. The FMUs have been identified in Map 5.

The fire management units allow for the development of management which have relevance to either:

- Property protection,
- Protection of sensitive and significant vegetation or habitats; and
- Management of appropriate fuel loads.

Map 4 – Aerial Photograph



Map 5 – Fire Management Units

Map 6 – Fire Management Trails

Fire Management Units – Management Prescriptions

Block Number	Management Unit 1
Description	This management area covers the majority of the reserve located in the central portion of the park. The area has a good cover of vegetation although some areas are degraded by environmental weeds, particularly those closest to urban development. The management area is bounded mainly by private property with shared boundaries with FMU4 (see Map 5).
Access to FMU	Vehicle access is possible via Harry's Lane and Quorn Close. The walking trail network provides foot access through the central parts of the management unit.
Water sources	Fire hydrants are located on the network of streets surrounding the reserve.
Vegetation communities	This area is dominated by RE 12.9 – 10.16 – Araucarian microphyll to notophyll vine forest on sedimentary rocks, RE 12.3.1 - Gallery rainforest (notophyll vine forest) on alluvial plains and RE 12.8.3 - Complex notophyll vine forest on Cainozoic igneous rocks. Altitude <600m. There are small areas of RE 12.9-10.14 - *Eucalyptus pilularis* tall open forest on sedimentary rocks and RE 12.3.5 - *Eucalyptus tindaliae* and/or *E. racemosa* open forest on remnant Tertiary surfaces, on some edges of this management unit.
Management objectives	➢ Manage all biodiversity values within the unit; ➢ Manage as a non-burning unit to maintain the rainforest vegetation and to protect the ecological values of the reserve.
Management prescriptions	1. Extinguish all unplanned fires should they commence within the open forest/woodland components of the Management Unit.
Burning regime	Non-burning unit

Block Number	Management Unit 2
Description	This management area is located in the northern portion of the park. The area has a good cover of vegetation although there are some environmental weeds along the boundaries with private properties to the east. The management area is bounded on the western, southern and northern sides by private properties and by Lindsay Road on the eastern boundary (see Map 5).
Access to FMU	The main access to this FMU is via Lindsay Road.
Water sources	Fire hydrants are located on the network of streets surrounding the reserve.
Vegetation communities	This area is dominated by RE 12.3.1 - Gallery rainforest (notophyll vine forest) on alluvial plains.
Management objectives	➢ Manage all biodiversity values within the unit; ➢ Manage as a non-burning unit to maintain the rainforest vegetation and to protect the ecological values of the reserve.
Management prescriptions	1. Extinguish all unplanned fires should they commence within the open forest/woodland components of the Management Unit.
Burning regime	Non-burning unit

Block Number	Management Unit 3
Description	This management area is located in the north-western portion of the park. The area has a good cover of vegetation although some areas are degraded by environmental weeds, particularly those closest to cleared pasture. The management area is bounded on all sides by private properties and by a small section of FMU2 (see Map 5).
Access to FMU	Access is via Lindsay Road. Vehicle access may be possible via the private properties on Lindsay Road and Jarrah Road.
Water sources	Fire hydrants are located on the network of streets surrounding the reserve.
Vegetation communities	This area is dominated by RE 12.9 – 10.17d – Open forest generally containing *Eucalyptus siderophloia*, *E. propinqua*, *Corymbia intermedia* on sedimentary rocks.
Management objectives	➢ Manage all biodiversity values within the unit; ➢ Manage as a burning unit with fire frequencies between 10-25 years to maintain the vegetation community. ➢ Any planned burns will require cooperation with neighbouring residents given the lack of vehicle access.
Management prescriptions	1. Undertake planned burns every 10-25 years to maintain ecological values. 2. Extinguish all unplanned fires should they commence within the open forest/woodland components of the Management Unit.
Burning regime	Burning unit (10-25 years)

Block Number	Management Unit 4
Description	This management area is located in the south-western portion of the park (see Map 5). The area has a good cover of vegetation although some areas are degraded by environmental weeds, particularly those closest to urban development.
Access to FMU	The primary vehicle access is via Lindsay Road.
Water sources	Fire hydrants are located on the network of streets surrounding the reserve.
Vegetation communities	This area is dominated by RE 12.9 – 10.14 – *Eucalyptus pilularis* tall open forest on sedimentary rocks.
Management objectives	➢ Manage all biodiversity values within the unit; ➢ Manage as a burning unit with fire frequencies between 10-15 years to maintain the open forest. ➢ Planned burns will require cooperation with neighbouring residents given the lack of vehicle access.
Management prescriptions	1. Undertake planned burns every 10-15 years to maintain ecological values. 2. Extinguish all unplanned fires should they commence within the open forest/woodland components of the Management Unit.
Burning regime	Burning unit (10-15 years)

General recommendations

- Fire management activities are to be focused in the open forest vegetation communities with a focus on those areas where private properties directly adjoin the reserve.
- Planned burns should be undertaken as per this plan to preserve the ecological values within the reserve.

Action Required	By whom	Priority	Timeframe
Undertake planned burns	SCC and QFRS	Medium	Ongoing
Liaise with adjacent residents regarding potential cross boundary burns.	SCC	As required	Ongoing