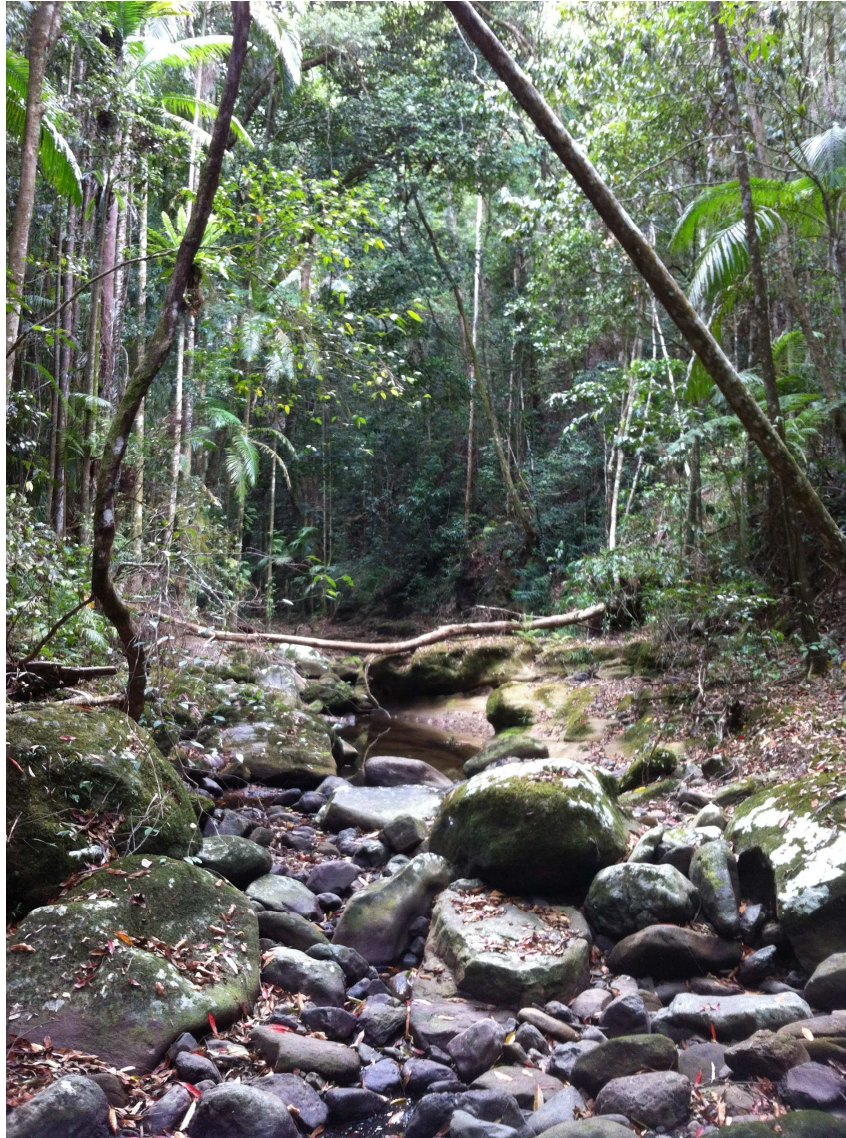


Fire Management Plan

London Creek Environmental Reserve, Peachester.



Sunshine Coast Council

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May 2015

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Introduction

This fire management plan has been prepared to address community safety and the maintenance of ecological values in the London Creek Environmental Reserve (the reserve). The reserve is located to the west of Peachester.

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. The reserve is not within the urban area and 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 15 on SP168935 and Lot 17 on SP251354. The size of the combined properties is approximately 142 hectares (see Map 1).

A number of trails provide access to the reserve with the primary access points from MacDonalds Road. Access may also be gained through adjacent private properties after gaining permission from the relevant landowners.

Landscape

The dominant landscape features are moderate to very steep slopes, ridges, and gullies. The main watercourse is London Creek which flows through the reserve in a northeast to southwest direction. There are also steep sandstone ridges along the edges of the reserve.

Vegetation

Version 8 Regional Ecosystem mapping identifies four RE's within the reserve. The following information on these RE's has been obtained from the Environmental Protection agency. 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".

12.9 - 10.14a - Open forest of *Eucalyptus grandis*, *Lophostemon confertus*, *E. microcorys*, *Syncarpia glomulifera* subsp. *glomulifera* +/- *E. pilularis*. Occurs on Cainozoic and Mesozoic sediments especially sandstone in wet gullies and southern slopes. This RE is listed as "Least Concern".

Fire management guidelines for these RE's 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 (Campbell and Clarke 2005). 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. Wildfire should be used as a catalyst to recreate the required frequency of disturbance. It is likely that mesic species will germinate after a high intensity fire

and another fire soon after will be required (as recommended by Watson 2007). 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 AQ81198), *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.

12.3.2 - *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". Much of this RE is prone to infestation by weeds, especially *Lantana camara*. This RE requires fire for regeneration.

Fire management guidelines for this RE are;

SEASON: Late summer to autumn.

INTENSITY: Moderate to high.

INTERVAL: Minimum 20 years, maximum unknown (Campbell 2005), 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.

A detailed flora survey was undertaken in 2012 by Garry Thomas with 334 plant species identified. This includes 60 introduced plant species.

There are five flora species listed in the Nature Conservation (Wildlife) Regulations 1994 present within the reserve. These species are;

- *Macadamia ternifolia* (vulnerable)
- *Romnaldia strobilacea* (vulnerable)
- *Syzygium hodgkinsoniae* (vulnerable)
- *Pararistolochia praevenosa* (near threatened)
- *Bosistoa transversa* (vulnerable - EPBC Act - Federal)

All of these species occur primarily in the rainforest vegetation communities within the reserve and as such it is unlikely that they would be impacted by prescribed burns. There is potential for these species to be impacted during severe wildfires.

Fauna

Detailed fauna surveys were undertaken by Ed Meyer and Future Plus Environmental in the reserve during 2012 and 2013. The surveys targeted frogs and other vertebrates including reptiles and mammals. 12 species of frogs were identified along the creeks within the reserve and 61 mammal and reptile species were observed throughout the reserve.

Of the 12 frog species observed, two species were of conservation significance: the Giant Barred frog, which is listed as 'Endangered' under the *Nature Conservation Act (1992)* and *Environment Protection and Biodiversity Conservation Act (1999)*, and the Tusked frog, which is listed as 'Near Threatened' under the *Nature Conservation Act (1992)*.

One bird species observed, the Marbled Frogmouth (*Podargus ocellatus plumiferus*), is listed as 'Vulnerable' under the *Nature Conservation Act (1992)*.

Summary of Ecological Issues

Geographically the reserve has two distinctive landforms, the areas fringing London Creek and associated gullies are dominated by rainforest with RE 12.9-10.16 dominant and the open forest sandstone ridgelines with RE 12.9-10.14 dominant (Map 3). Anecdotal evidence from the local Fire Warden is that fire

has been excluded for approximately 20-25 years for much of the reserve. Periodic fire is required to maintain the open forest vegetation communities within the reserve.

Due to the diversity of fauna in the reserve it is essential to establish and maintain a range of habitat types. Where it is possible to burn, fire should be used to maintain the open forest structure to ensure there is minimal mid storey vegetation. For areas where it is not possible to contain a burn within the reserve, burning will be less frequent. This will result in a thicker vegetation and an established mid storey.

In addition, there are areas dominated by rainforest in the reserve which require fire exclusion.

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.

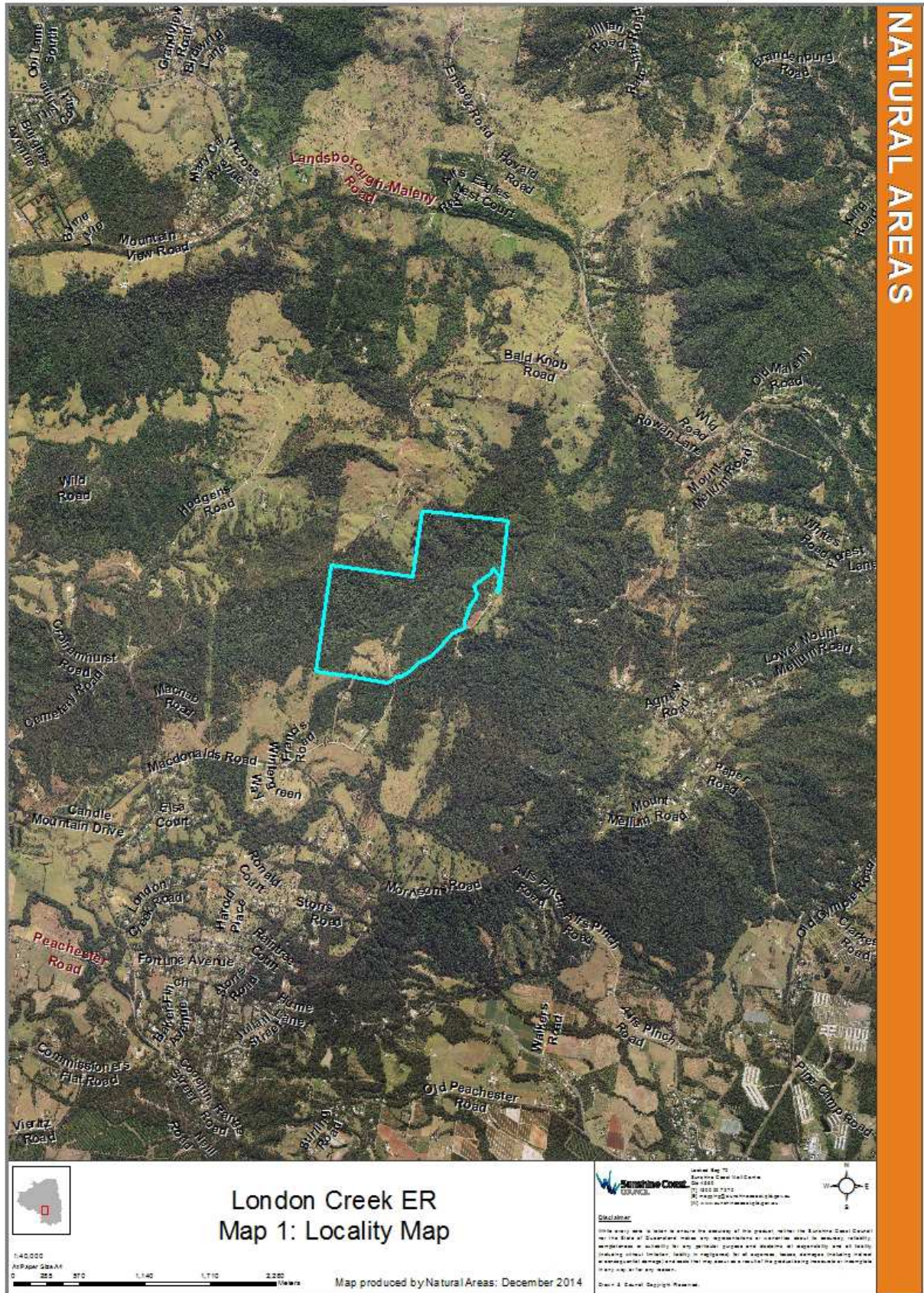
The Sunshine Coast Council Planning Scheme 2014 includes bushfire hazard mapping that was prepared using the old methodology from SPP 1/03. Both mapping products show the reserve has a mixture of medium and high to very high bushfire hazard areas as well as low hazard areas where the vegetation is dominated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

Other considerations

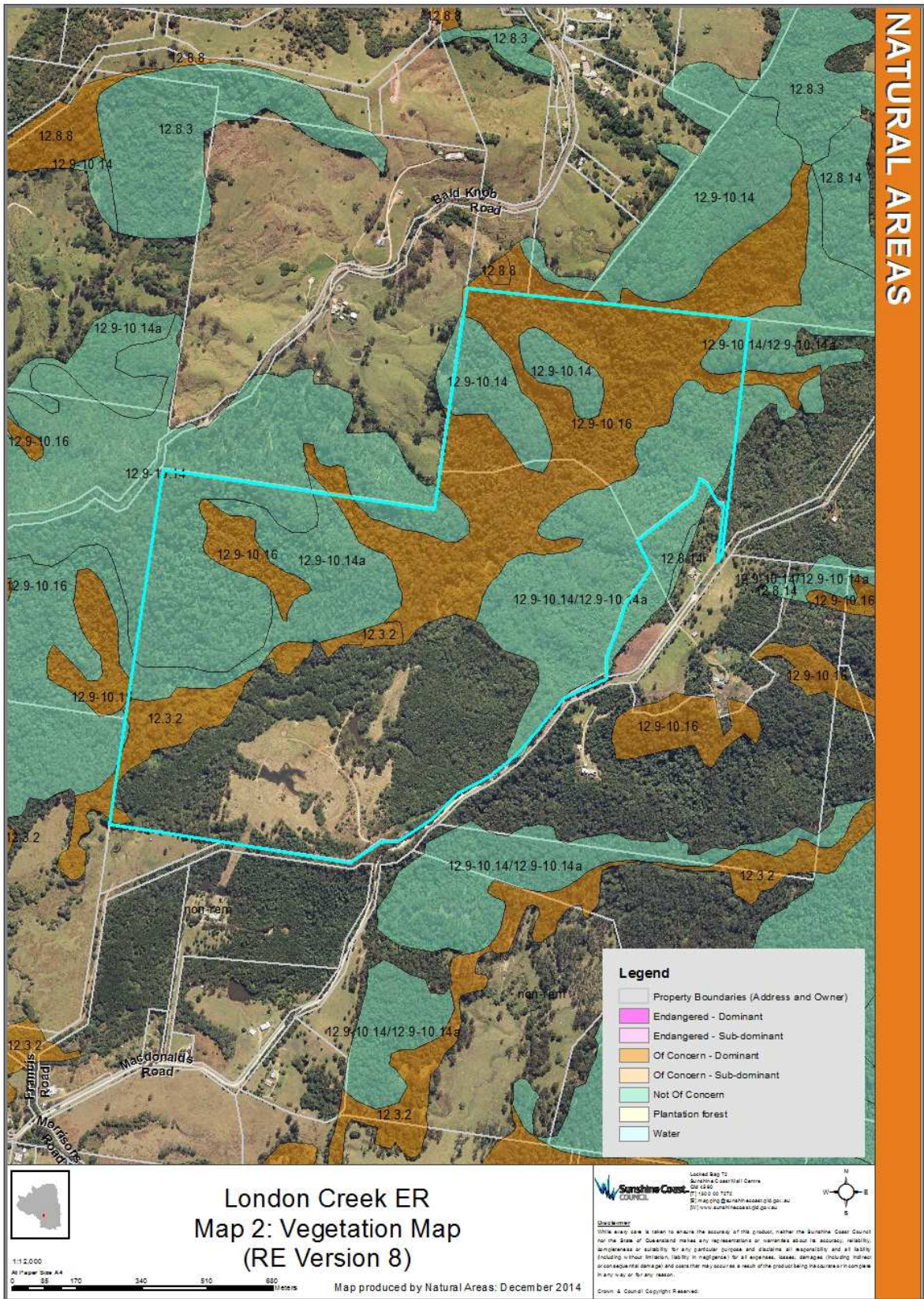
The reserve is surrounded by large vegetated land parcels to the east and west, which increases the overall area of vegetation available during a bushfire and the potential for landscape scale bushfires to enter the reserve.

Overall the fire hazard has been assessed as being high, given the large size and steep slopes of the reserve. Whilst fires can and will occur within the reserve, the rainforest areas would act as a buffer to low intensity fires and reduce the likelihood of them spreading.

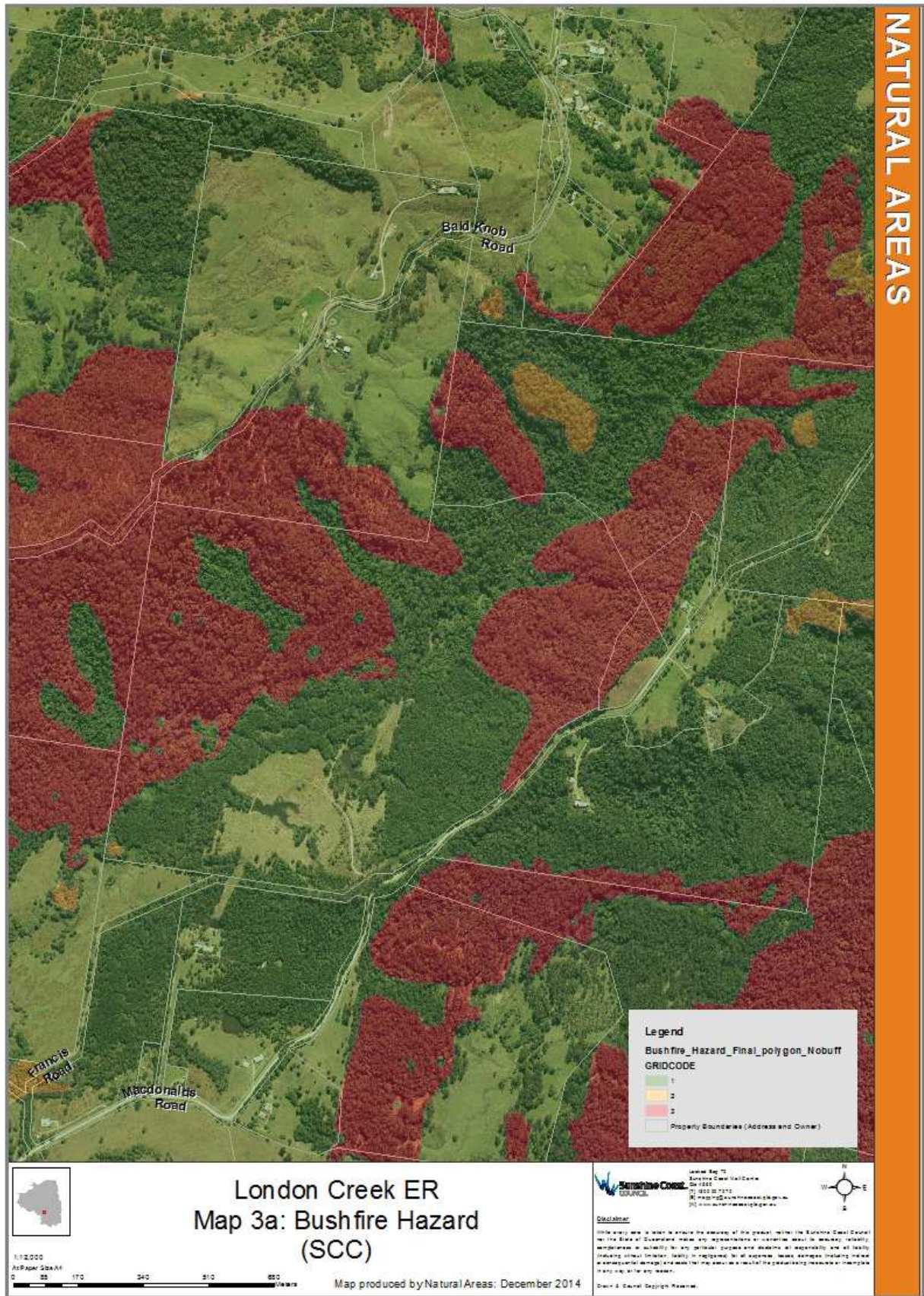
Map 1 - Locality Map



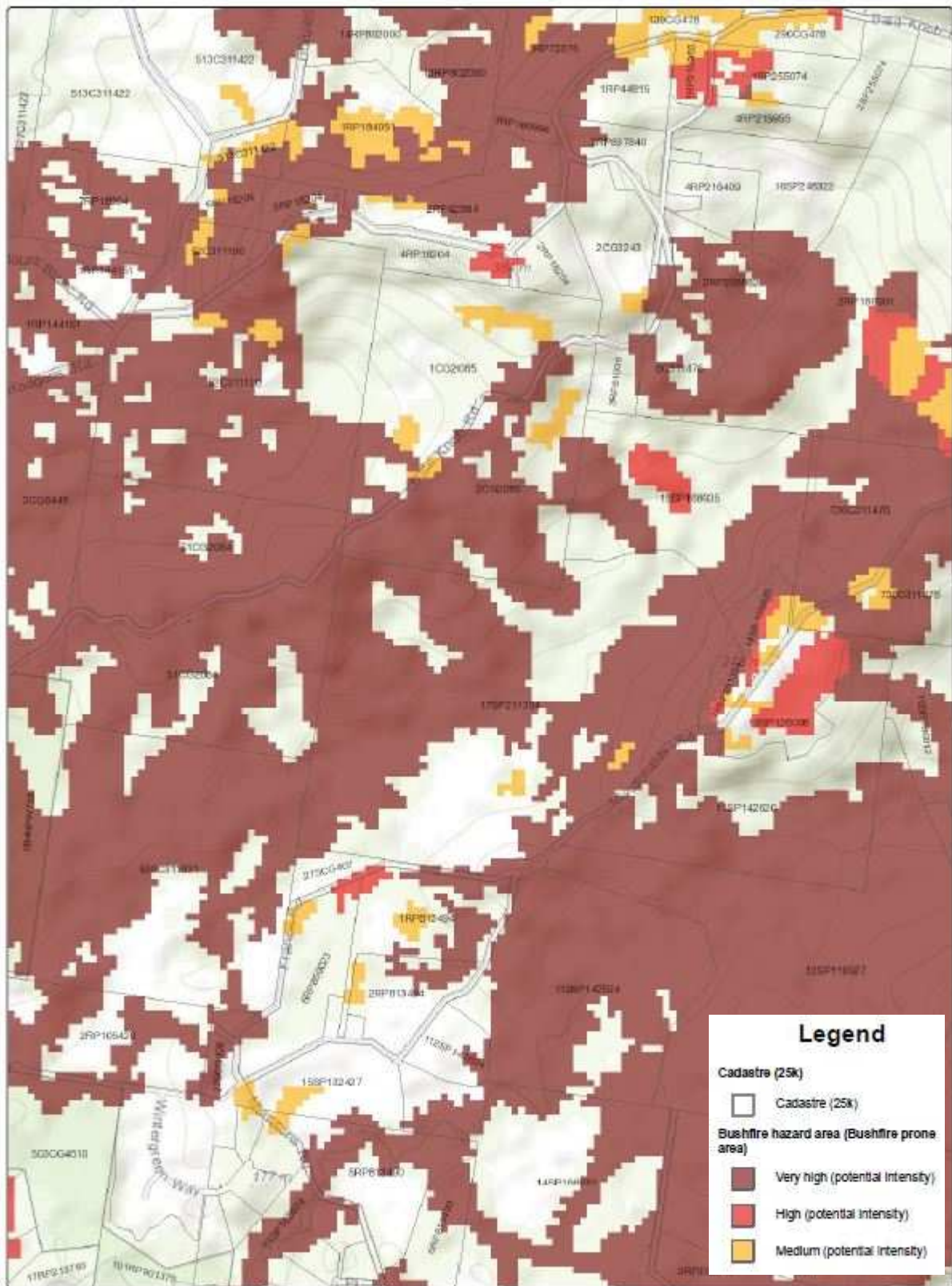
Map 2 - Vegetation Map



Map 3a - Bushfire Hazard Map (SCC)



Map 3b - Bushfire Hazard Map (SPP)



State Planning Policy

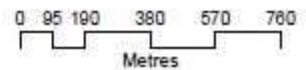
Local government development assessment



Department of
State Development
Infrastructure and Planning
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Date: 22/12/2014

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, inaccuracies or omissions within this document. Any decisions made by other parties based on this document are solely the responsibility of those parties. Please note while Bushfire Hazard Areas have not been triggered they may still apply.



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.

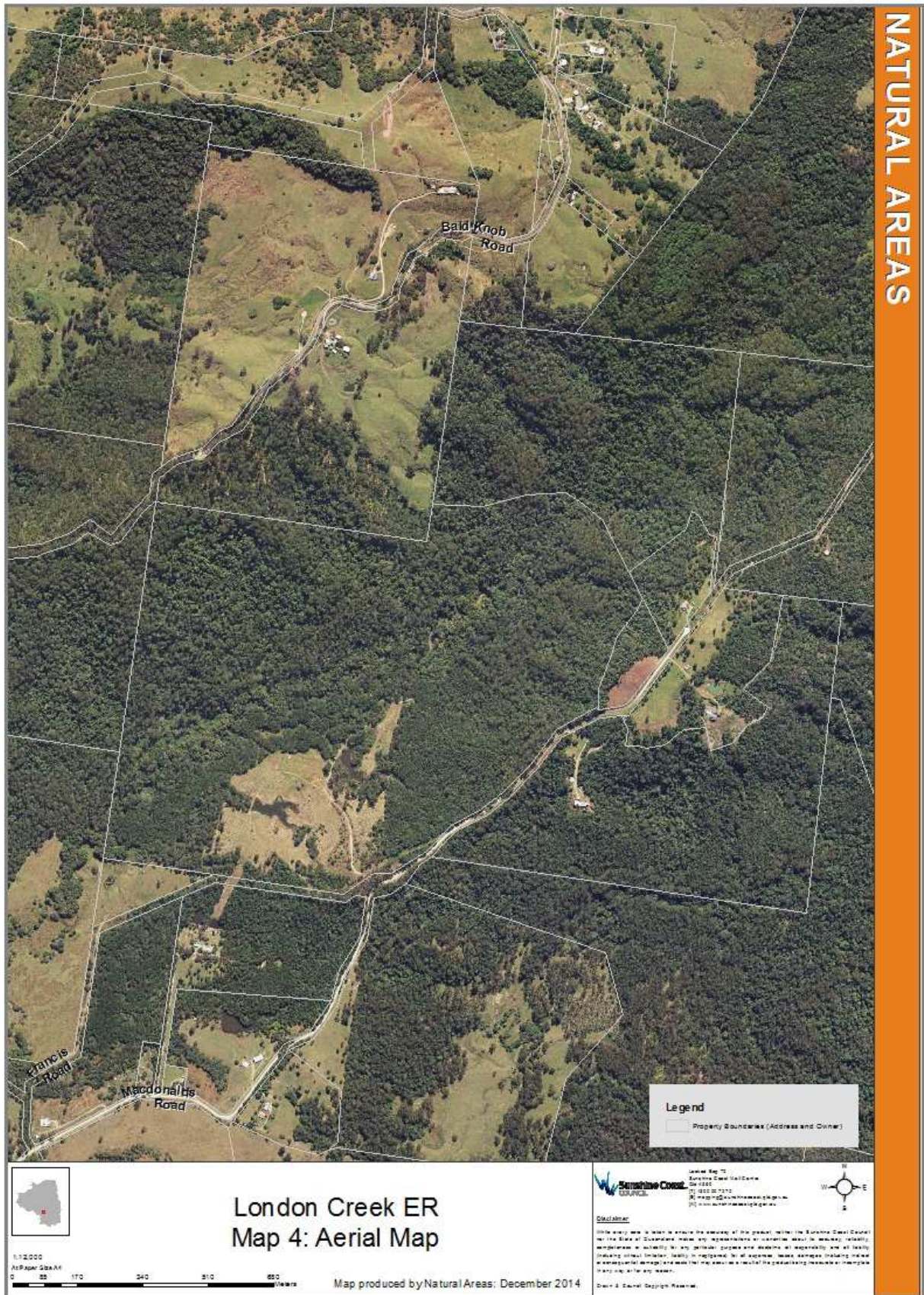
The FMUs are defined by existing firebreaks, fire trails, internal tracks and property boundaries.

The FMUs have been identified in Map 5.

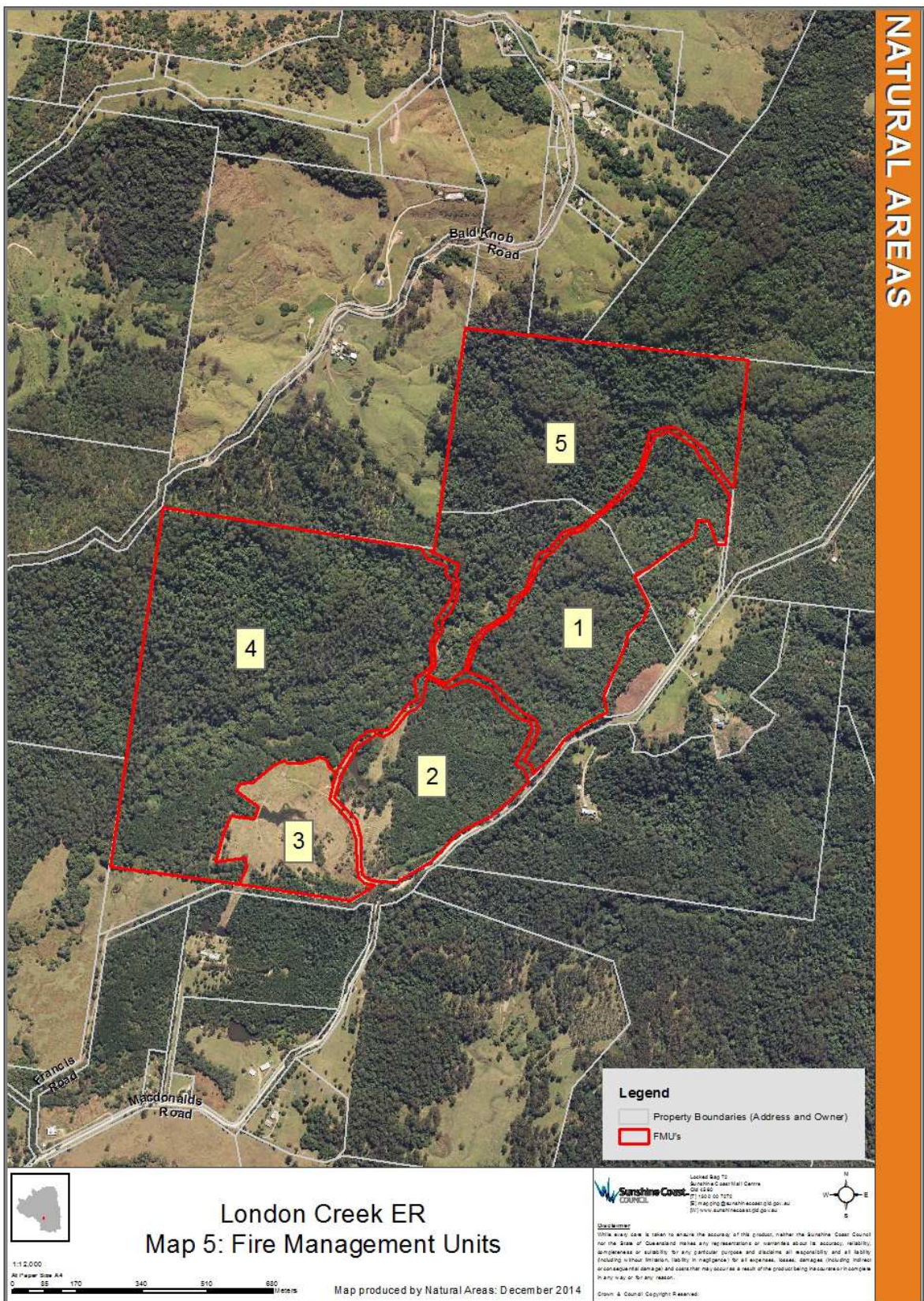
The fire management units allow for the development of management objectives which have relevance to either:

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

Map 4 - Aerial Photograph



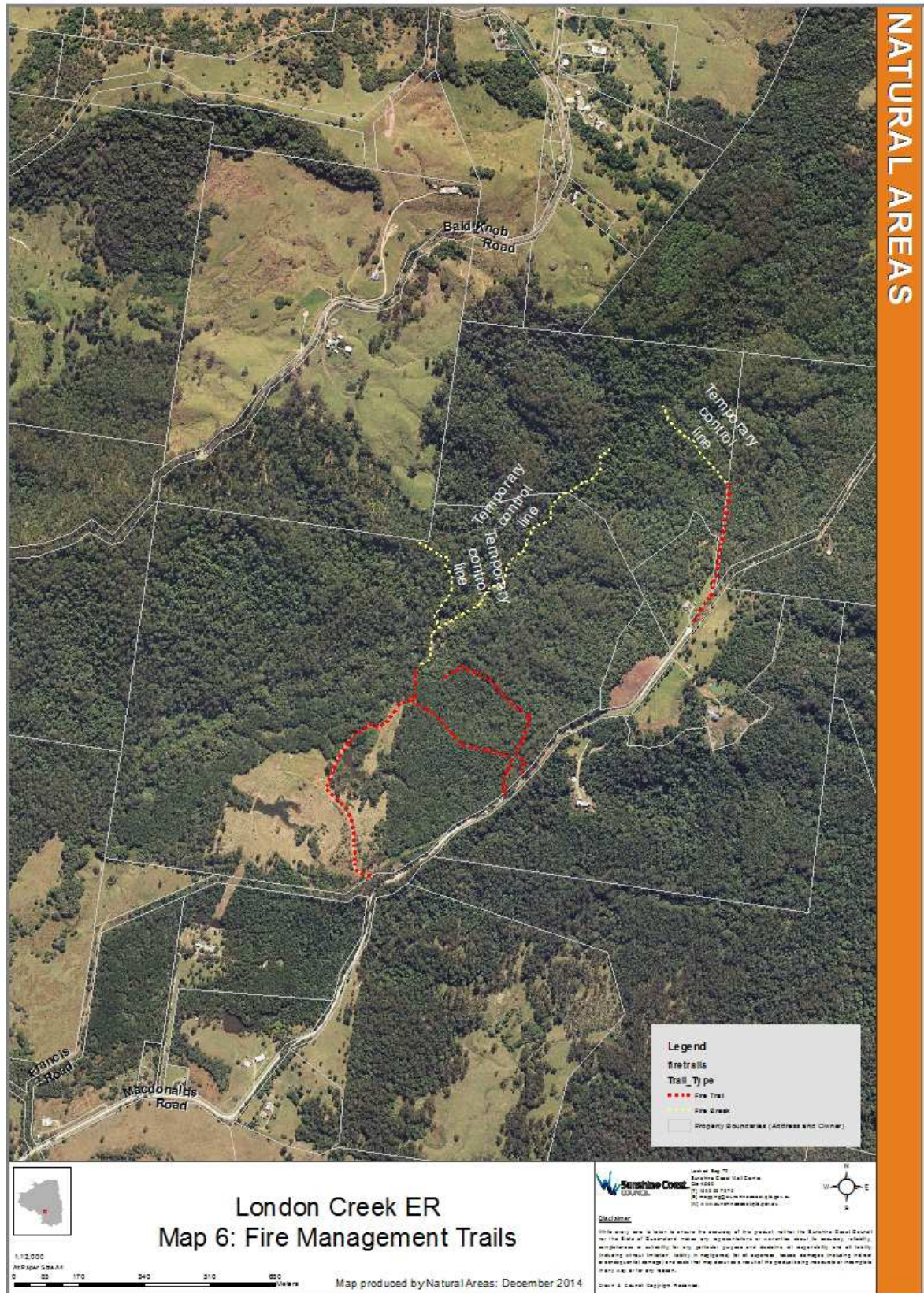
Map 5 - Fire Management Units



London Creek ER
Map 5: Fire Management Units

Map produced by Natural Areas: December 2014

Map 6 - Fire Management Trails



Fire Management Units - Management Prescriptions

Block Number	Management Unit 1
Description	This management area is located in the north-east section of the reserve. The area has a good cover of vegetation dominated by tall open forest. The management area is bounded to the north and south by fire trails and to the east by Macdonalds Road. (see Map 5).
Access to FMU	Access is obtained via the fire trails and Macdonalds Road.
Water sources	There are no fire hydrants in the area. Water may be available from dams on the reserve as well as adjacent properties on Macdonalds Road.
Vegetation communities	This area is dominated by RE 12.9-10.14 / 12.9-10.14a - <i>Eucalyptus pilularis</i> tall open forest on sedimentary rocks.
Management objectives	<ul style="list-style-type: none"> ➤ Manage all biodiversity values within the unit; ➤ Manage as a burning unit with fire frequencies between 5-15 years to protect the ecological values of the reserve and maintain the mixed grassy and shrubby understorey.
Management prescriptions	<ol style="list-style-type: none"> 1. Undertake planned burns every 5-15 years to maintain ecological values. 2. Allow fires to burn downhill and self extinguish as they reach the open forest/rainforest ecotone.
Burning regime	Burning unit (5-15 years)

Block Number	Management Unit 2
Description	This management area is located in the south-east section of the reserve. The area has a good cover of vegetation dominated by regrowth open forest. This unit contains revegetation offset areas which need to be protected from fire until they reach maturity. The management area is bounded by Macdonalds Road and the fire trail network (see Map 5).
Access to FMU	Access is obtained via the fire trail off Macdonalds Road.
Water sources	There are no fire hydrants in the area. Water may be available from dams on the reserve as well as adjacent properties on Macdonalds Road.
Vegetation communities	This area is mapped as non-remnant vegetation.
Management objectives	<ul style="list-style-type: none"> ➤ Manage all biodiversity values within the unit; ➤ Manage as a non-burning unit due to revegetation offset projects. Once these have reached maturity, apply a fire frequency as appropriate.
Management prescriptions	<ol style="list-style-type: none"> 1. Manage for fire exclusion until revegetation offsets reach maturity. 2. Extinguish all unplanned fires should they commence within the Management Unit.
Burning regime	Non-burning unit (until revegetation offsets reach maturity)

Block Number	Management Unit 3
Description	<p>This management area is located in the south-east section of the reserve.</p> <p>This unit contains revegetation offset areas which need to be protected from fire until they reach maturity.</p> <p>The management area is bounded to the north and west by FMU 4, south by private property and to the east by Macdonalds Road (see Map 5).</p>
Access to FMU	Access is obtained via the fire trail off Macdonalds Road.
Water sources	There are no fire hydrants in the area. Water may be available from dams on the reserve as well as adjacent properties off Macdonalds Road.
Vegetation communities	This area is mapped as non-remnant vegetation.
Management objectives	<ul style="list-style-type: none"> ➤ Manage all biodiversity values within the unit; ➤ Manage as a non-burning unit due to revegetation offset projects. Once these have reached maturity, apply a fire frequency as appropriate.
Management prescriptions	<ol style="list-style-type: none"> 1. Manage for fire exclusion until revegetation offsets reach maturity. 2. Extinguish all unplanned fires should they commence within the Management Unit.
Burning regime	Non-burning unit (until revegetation offsets reach maturity)

Block Number	Management Unit 4
Description	<p>This management area is located in the south-west section of the reserve.</p> <p>The area has a good cover of vegetation dominated by tall open forest.</p> <p>The management area is bounded to the east by FMU 2, 3 & 5 and on all other boundaries by private property (see Map 5).</p>
Access to FMU	Access is obtained via the fire trail off Macdonalds Road. Access may also be possible through adjacent properties off Bald Knob Road.
Water sources	There are no fire hydrants in the area. Water may be available from dams on the reserve as well as adjacent properties on Macdonalds Road.
Vegetation communities	This area is dominated by RE 12.9-10.14 / 12.9-10.14a - <i>Eucalyptus pilularis</i> tall open forest on sedimentary rocks.
Management objectives	<ul style="list-style-type: none"> ➤ Manage all biodiversity values within the unit; ➤ Manage as a burning unit with fire frequencies between 10-25 years to protect the ecological values of the reserve.
Management prescriptions	<ol style="list-style-type: none"> 1. Undertake planned burns every 10-25 years to maintain ecological values. 2. Allow fires to burn downhill and self extinguish as they reach the open forest/rainforest ecotone.
Burning regime	Burning unit (10-25 years)

Block Number	Management Unit 5
Description	This management area is located in the northern section of the reserve. The area has a good cover of vegetation dominated by rainforest. The management area is bounded to the north, west and northeast by private property and by FMU 1 to the south (see Map 5).
Access to FMU	Access is obtained via the fire trail off Macdonalds Road.
Water sources	There are no fire hydrants in the area. Water may be available from dams on the reserve as well as adjacent properties on Macdonalds Road.
Vegetation communities	This area is dominated by 12.9-10.16 Araucarian microphyll to notophyll vine forest on Cainozoic and Mesozoic sediments
Management objectives	<ul style="list-style-type: none"> ➤ Manage all biodiversity values within the unit; ➤ Manage as a non-burning unit to protect the ecological values of the reserve
Management prescriptions	1. Manage as a non-burning unit to maintain the ecological values of the reserve.
Burning regime	Non-burning unit

General recommendations

- Cooperation is required from owners of neighbouring properties to facilitate prescribed burns, as it is not practical to contain burns within the reserve.
- Prescribed burns will generally be undertaken to maintain ecological values within the reserve.
- Ongoing maintenance slashing of fire trails throughout the reserve.

Action Required	By whom	Priority	Timeframe
Undertake prescribed burn in FMU1 and adjacent private property	SCC and RFB	High	2015 - 2017
Liaise with adjacent residents.	SCC and RFB	Ongoing	To be coordinated prior to conducting prescribed burns in FMU1 or FMU4