

**Clarence City Council**

# **Bushfire Management Plan**

Roscommon Reserve

Lauderdale

Revised  
January 2017  
Clarence City Council

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# 1. Introduction

This Bushfire Management Plan (BMP) is the third revision and expansion of the BMP for Roscommon Reserve and the Lauderdale Dunes Coastal Reserve, prepared by AVK Environmental Management and North Barker Ecosystem Services, and will operate for a period of 5 years after which another review is recommended. Lauderdale Dunes Coastal Reserve has been removed from the BMP during the review process as the area is not mapped, or considered bushfire-prone.

It should be noted that this BMP is not an operations plan and does not deal directly with “response” to bushfires. Operational procedures are dealt with in various documents prepared by the Tasmania Fire Service (TFS) and other emergency services.

## 1.1 Aim

The aim of this BMP is to provide a framework for bushfire management that meets Clarence City Council’s land management objectives for the site, as set out in Council’s *Bushfire Management Strategy for Council Owned and Controlled Land*, *Bushfire Management Strategy - Best Management Practice Guidelines* and Strategic Plan.

It must be noted that it will not be possible to prevent bushfires occurring in the reserve unless these fires are suppressed quickly; there is a risk that large destructive fires may develop. Depending on weather conditions, such fires may burn a substantial portion of the bushland in the reserve causing damage to assets and environmental values, and even loss of life. This BMP aims to lessen these risks by minimising the risk of fires starting in the reserve, and minimising the risk of injury or damage to assets in and surrounding the reserve.

This plan also provides for the use of fire as a management tool to:

- Target area for maximum risk reduction
- reduce bushfire hazard to protect assets from bushfires
- maintain the long-term viability of the native vegetation in the reserve
- Assist in the removal of weeds and the regeneration of degraded bushland.

## 1.2 Location and Description

Roscommon Reserve is located in the town of Lauderdale (see figure 1). The reserve is approximately 117<sup>ha</sup> in size, rectangular in shape and is bounded to the east by the urban area of Lauderdale and to the north, south and west by rural residential developments. It is located on a level plain.

The reserve is owned by Clarence City Council and leased to the Equestrian Federation of Australia Inc. - Tasmanian Branch (EFA) for a period of 10 years with an option of renewal. The current lease will be renegotiated in 2021.

The Archery Society of Tasmania Inc. has a sub-license for approximately 46<sup>ha</sup> of the northern section of the reserve, which runs hand in hand with the head license for EFA.

In addition, some properties along Terrina Street that back onto the eastern side of the reserve have private lease holds of approximately 50<sup>m</sup><sup>2</sup> from Clarence City Council.

Clarence City Council manages the dry sclerophyll forest in the south-eastern corner of the reserve which is non-exclusively leased by EFA. Lease agreements within the reserve are shown on figure 2.

Roscommon Reserve has not been mapped as a bushfire-prone area under the *Clarence Interim Planning Scheme 2015*. However, the reserve does meet the current definition of a bushfire-prone area and bushfire-prone vegetation in *Interim Planning Directive No.1, Bushfire-Prone Areas Code*. Any future developments within or adjacent may require a Bushfire Risk Assessment and a Bushfire Hazard Management Plan.

Figure 1 – Location of the Reserve

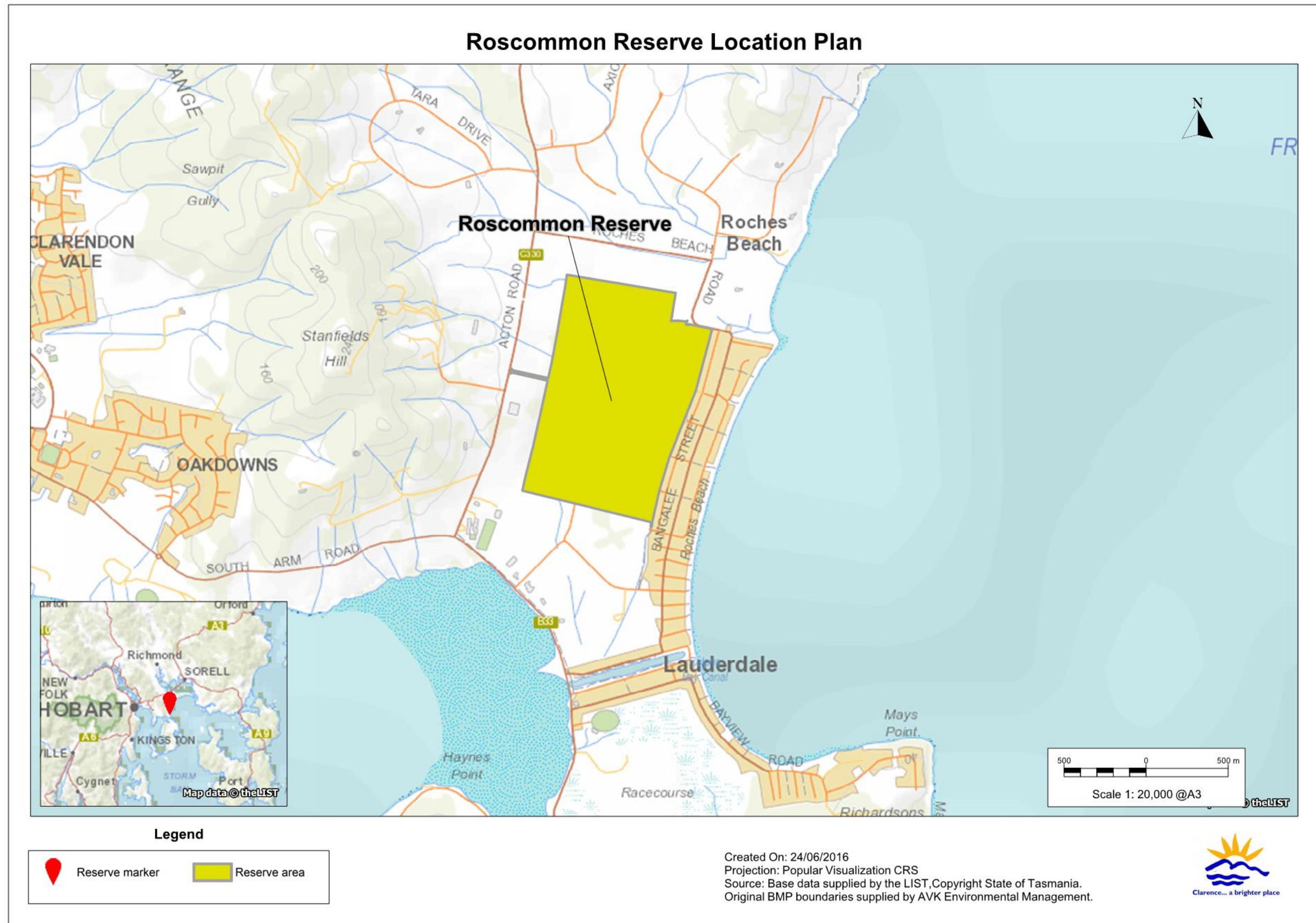
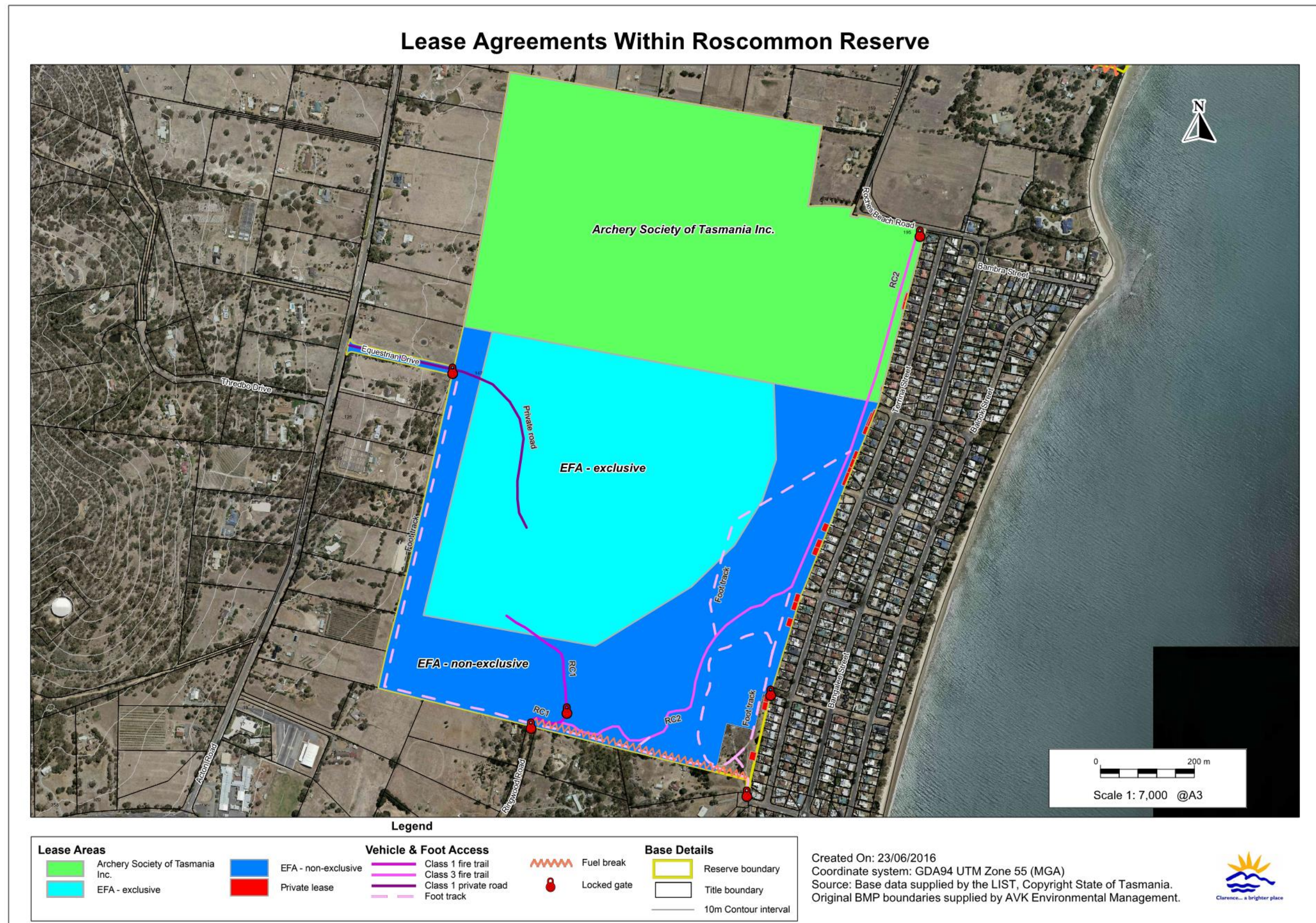




Figure 2 – Lease Agreements within Reserve





### 1.2.1 Geology and Soils

The reserve is located on undifferentiated marine and coastal barrier complex deposits consisting of Quaternary wind and wave deposited sands. Soils are sandy and prone to water logging in Roscommon which has a number of artificial channels to assist drainage.

### 1.2.2 Vegetation

The major vegetation communities in the reserve are shown in figure 3. Vegetation types and community boundaries within the park are based on TASVEG 3.0 mapping, checked and modified where required following a survey of the park. Vegetation community boundaries outside the park have not been checked for accuracy but are shown to give an indication of the surrounding vegetation.

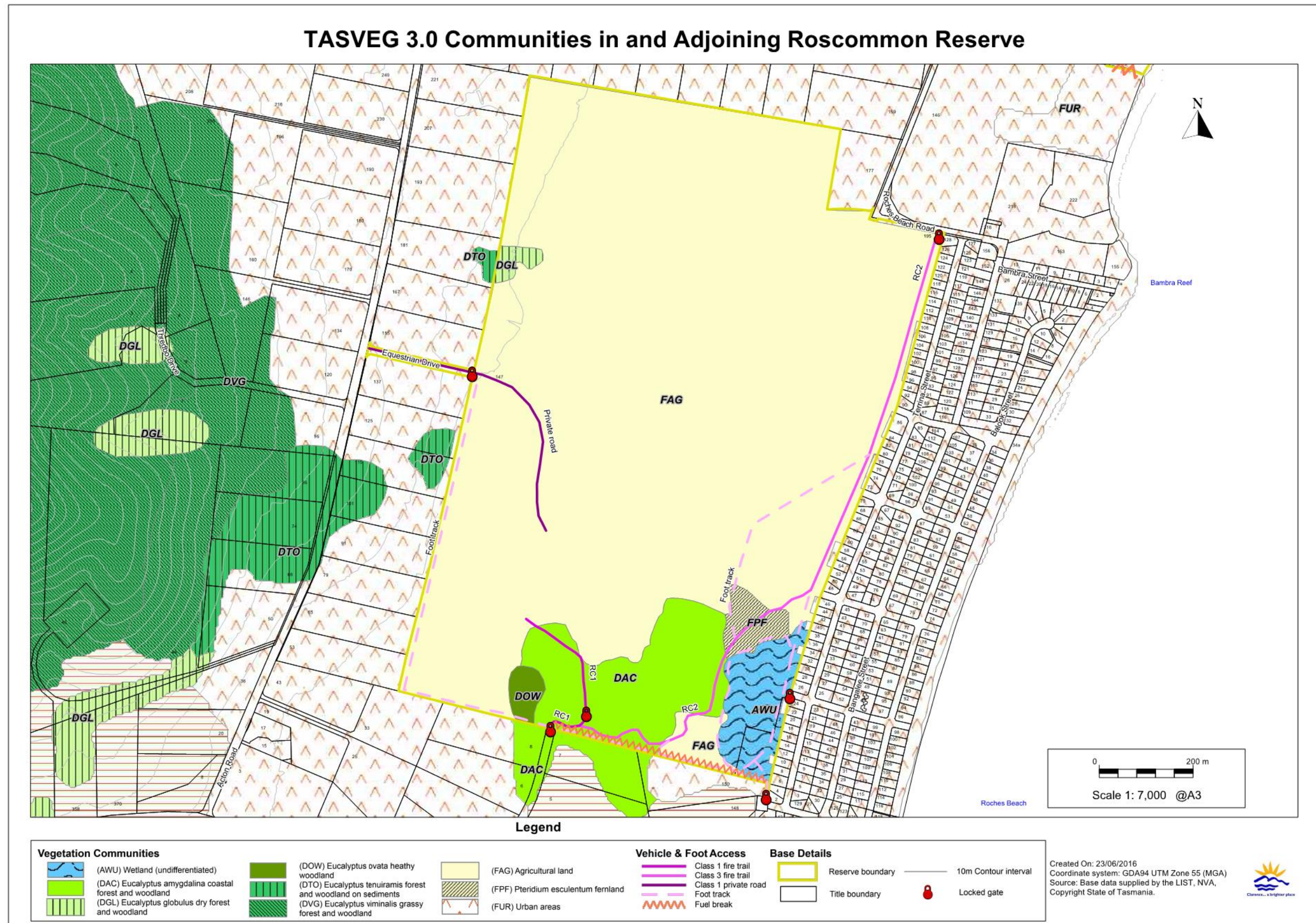
Roscommon is predominantly grassland dominated by introduced pasture species with small stands of *Eucalyptus amygdalina* coastal forest and woodland (DAC), *Eucalyptus globulus* dry forest and woodland (DGL), *Eucalyptus ovata* heathy woodland (DOW), Agricultural cleared land (FAG) and *Pteridium esculentum* fernland (FPF). Much of the forest and woodland has an understory of bracken. An artificial wetland has been created in the south east corner and has been planted with native tree and shrub species. This is located within a modified graminoid saltmarsh and classified as Wetland (undifferentiated) (AWU). Wetland (undifferentiated) (AWU) and *Eucalyptus globulus* dry forest and woodland (DGL) are listed as threatened native vegetation communities under the *Nature Conservation Act 2002*.

During October 2013 vegetation monitoring was establishing within Roscommon Reserve by Councils Fire and Bushland Management. Permanent Inventory Plot (PIP) 001 was established in VMU 1 (see figure 8). The objective of PIP001 is to collect long term qualitative data on natural *Eucalypt ovata* regeneration on a natural plain that is subject to periodic minor flooding. PIP001 has been assessed twice, once at establishment, then once in the following year. Assessment of PIP001 will continue annually in Councils Fire and Bushland Managements Vegetation Monitoring Program.

At time of reviewing the previous BMP the current two assessments on PIP001 does not provide enough data to make a working hypothesis. It is expected at the next BMP review, PIP001 will have had seven assessments, giving qualitative data to deliver a working hypothesis.



Figure 3 – Vegetation Types in the Reserve





### **1.2.3 Reserve Usage**

The reserve was formerly grazed however this has now largely ceased. It now is an important recreational area for activities such as; walking, bike riding, dog exercising and jogging.

The northern part of the reserve is used by the Archery Society of Tasmania Inc. with regular archery events. The central and southern portions are occupied by the EFA with regular equestrian events.

The Lauderdale Coastcare Group conducts activities within the reserve.

Parts of the Tangara Trail run through the reserve.

## **1.3 Bushfire Management Objectives**

Bushfire management within Roscommon Reserve will meet the following broad management objectives:

1. Protection of life, assets and adjoining property from bushfire.
2. Minimise the risk of fires starting and spreading in the reserve.
3. Protection and enhancement of the ecological and visual values provided by the reserve.
4. Protection of infrastructure and cultural heritage values within the reserve.
5. Recovery, maintenance and enhancement of vegetation communities and fauna habitat within the reserve.
6. Minimisation of soil loss resulting from bushfire, or bushfire management activities.

The actions recommended to attain each of these objectives are listed in section 5.1.

## **1.4 Reserve Management Responsibilities**

Overall management of the reserve is the responsibility of the Clarence City Council. Lease agreements (see section 1.2 and figure 2) may state individual management responsibilities.

Clarence City Council has a responsibility under the *Fire Service Act (1979)* to take all reasonable precautions to prevent any fire lit on their property from spreading onto neighbouring property. This BMP will help to fulfil that “duty of care”. The TFS is responsible for suppressing bushfires within the reserve.

## 2. Bushfire Risks

Extreme bushfire conditions can occur in southern Tasmania when dry winters and springs are followed by summers where fuels are very dry. Under these conditions, fires can be expected to move quickly under the influence of strong, dry, north-westerly winds, and then move more or less at right angles on a broad front when the subsequent south-westerly wind change arrives. Fires that start under these conditions can reach a very high intensity, even in areas with relatively low fuel loads, and are very difficult to control until the weather conditions abate.

### 2.1 Bushfire History and Causes

The bushfire history (1967-2015) of Roscommon Reserve is shown on figure 4.

#### 2.1.1 Bushfires

The only documented bushfire to impact the reserve was in September 2002 which burnt approximately 1.4<sup>ha</sup>, the cause was undetermined. Vegetation management unit (VMU) 11 was completely burnt and VMU 9, 12 & 14 were partially burnt (see figure 8 for VMUs within reserve). The 1967 Black Tuesday bushfires burnt down to Acton Road without crossing, subsequently not impacting the reserve. There are reports however of dwellings in Lauderdale being lost as a result of the 1967 fires.

Data supplied by the TFS and Clarence City Council Fire and Bushland Management showed that within the 5 year period of the previous BMP the TFS attended no incidents within the reserve.

#### 2.1.2 Planned Fuel Reduction Burning

The planned burning history (2002-2015) of Roscommon Reserve is shown on figure 5.

Recorded planned burning has been occurring within the reserve since 2002 conducted by Clarence City Councils Fire and Bushland Management. The 2016-2021 planned burn schedule for the reserve is shown in table 9. The largest planning restraint when conducting planned burns within the reserve is smoke management, and the spread of bracken fern (*Pteridium esculentum*) (see section 3.2).



Figure 4 – Bushfire History of Reserve (1967-2015)

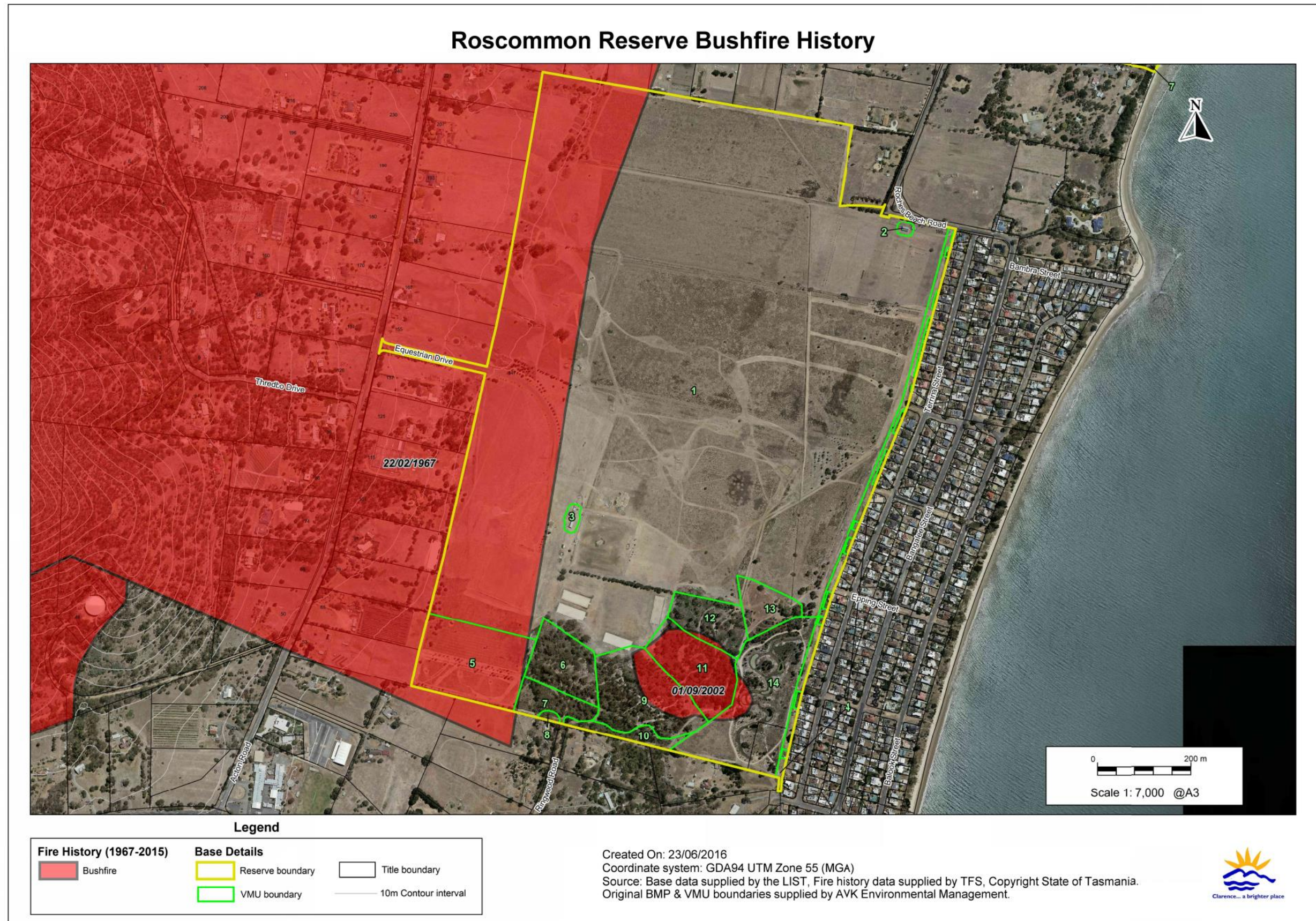
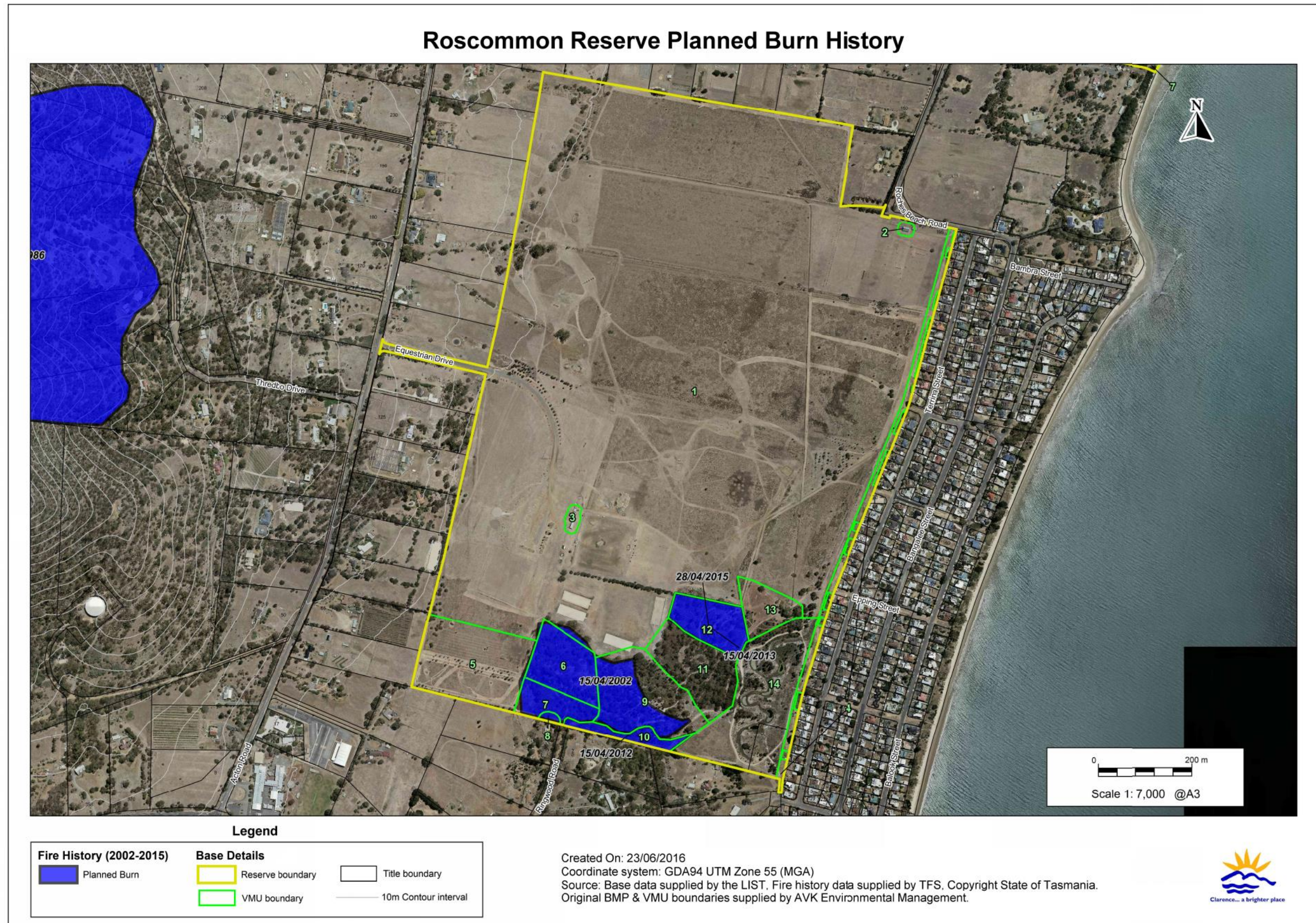




Figure 5 – Planned Burn History of Reserve (2002-2015)





## 2.2 Fuel Types and Hazard Levels

The higher the intensity of a bushfire the greater its destructiveness and the more difficult it is to control. As the intensity of a bushfire increases it becomes progressively more difficult to contain and suppress the bushfire. Very high intensity ( $> 4000 \text{ kW/m}$  heat output at the fire front) fires with flame heights greater than 10m are generally uncontrollable (NSW Rural Fire Service, 1997). Although grass fires rarely attain a very high intensity, they can move much faster than forest fires, thereby making them difficult to contain.

Bushfire intensity is a function of the heat content of the fuel, the quantity (load) of fuel, and the rate of spread of the bushfire. The heat content of vegetation fuels is roughly constant, and rate of spread is largely a function of slope and weather conditions (wind speed and relative humidity). It has been found that the quantity and distribution of fine fuels are the main factor influencing bushfire behaviour. Larger fuels burn during a bushfire but do not contribute significantly to the spread of a bushfire (NSW Rural Fire Service, 1997).

Fine fuels consist of dead plant matter less than 6mm in diameter and live plant matter less than 2mm in diameter (including grasses, bracken, leaves, bark, and twigs and branches) (Marsden-Smedley, 2009). Fine fuel load (measured in tonnes per hectare) has therefore been used as a convenient measure of the underlying bushfire hazard in areas dominated by woody vegetation. The fine fuel load at any given time is a balance between the rate of fuel build-up, and factors that remove fuel, such as litter decomposition and fire. In the absence of bushfire, fuel loads in forests and woodlands with a shrubby or heathy understorey build up to a quasi-equilibrium state where the rate of fuel production equals the rate of decomposition. The maximum levels vary for different vegetation types and also for the same vegetation types in different locations (Conroy, 1988). The time taken to reach equilibrium fuel loads also varies, ranging from about 2 years in some native grasslands to about 20 to 40 years in dry eucalypt forests (Marsden-Smedley, 2009).

However, it has been found that the fuel structure is possibly more important than the total fine fuel load in determining bushfire behaviour (Marsden-Smedley, 2009). Fuel in forests, woodlands and shrublands can be categorised into four layers with differing effects on bushfire behaviour (Hines et al., 2010). These layers are:

- **Surface fine fuel;** leaves, bark, small twigs and other fine fuel lying on the ground. These fuels provide the horizontal continuity that allows a bushfire to spread.
- **Near surface fine fuel;** grasses, low shrubs, bracken etc. up to about 0.5m above the ground surface. Fuels in this layer will burn when the surface fuel layer burns and will increase bushfire intensity.

- **Elevated fuels;** larger shrubs and small saplings with most of the fuel closer to the top of this layer and a clear gap between them and the surface fuels. These interact with the two lower fuel layers to further increase bushfire intensity. They also contribute to the vertical continuity of fuel that allows fire to 'climb' into the tree canopy.
- **Bark fuels;** flammable bark on trees, saplings and large bushes from ground level to the canopy. Loose fibrous bark on stringy-bark eucalypts, and candle bark on some gums can generate large amounts of burning embers which can start spot fires ahead of the main fire front.

Canopy fuels are not usually included in fuel hazard assessments in forests and woodlands, but are included in shrubland and heath fuel types where they are equivalent to elevated fuels. If there is sufficient fuel in the lower fuel layers to start the canopy fuel burning (called a crown fire) bushfire intensity can increase considerably. Crown fires in forests are generally considered uncontrollable (Luke and McArthur, 1986).

The main fuel factor that influences the rate of spread of a bushfire is the quantity of near surface fuel whereas total fine fuel load is the main factor influencing bushfire intensity (Gould et al, 2007).

In grasslands and grassy woodlands the degree of curing (dryness) of the fuel is considered at least as important as the actual fuel load (Cheney and Sullivan, 2008). Grass goes through an annual cycle with new growth in spring drying out over summer. The bushfire hazard in grassland areas is greatest when the grass is fully cured which usually occurs during the period from December to April depending on seasonal breaks and significant summer rainfall events. However, grasslands that are not grazed or slashed over winter can burn in spring if cured grass from the previous growing season is still present.

Unlike bushland dominated by woody plants, grasslands can accumulate fuel very rapidly, and therefore burning is not a very effective method of hazard reduction. As grass fuel decomposes faster than eucalypt leaves and twigs, and is more likely to be eaten by herbivores, fuel loads in grasslands and grassy woodlands can fluctuate from year to year (Cheney and Sullivan, 2008).

Fuel loads can be roughly categorised in terms of the potential threat they pose as follows:

Low - < 5 tonnes per hectare

Moderate - 5 to 15 tonnes per hectare

High - >15 tonnes per hectare.

The characteristics of each fuel type in Roscommon Reserve are given in table 1. The TASVEG 3.0 codes of the vegetation types in figure 3 corresponding to each fuel type are listed under the fuel type.

**Table 1 – Characteristics of the different fuel types in the reserves**

<b>FUEL TYPE</b>	<b>FUEL HAZARD CHARACTERISTICS</b>	<b>BUSHFIRE BEHAVIOUR AND CONTROL</b>
Shrubby forest / woodland DAC DOW	Canopy, bark, elevated, near surface and surface fuels all present. Shrub layer to about 2m in height but some areas have shrubs up to 3m high. Near surface fuels a mixture of grasses and heathy shrubs. Leaf, bark fall and limbs around trees contributes to a gradual build-up of fuel, particularly around the base of trees. Generally moderate overall fuel loads, but high where there is dense shrub growth. Grass component of the fuel load can build up fuel rapidly after a bushfire.	Can burn with moderate to high intensity depending on the degree of fuel accumulation. Significant ember attack on structures downwind of the bushfire and spotting across containment lines can be expected. Capable of carrying a bushfire at any time of year if there is a sufficient amount of litter on the ground. Tree cover can sustain a crown fire and the eucalypts, particularly old hollow trees and those with rough bark, will be a source of burning embers which can carry a bushfire over nearby fire control lines (roads, fuel breaks) and threaten nearby buildings. Hazard reduction burning is effective in removing accumulated litter, elevated fuels and the bark fuels largely responsible for spotting, but grass and bracken fuels can be replenished within a year or two after a burn.
Grassy forest / woodland DGL AWU (planted artificial wetland)	Canopy, near surface and surface fuel all present, bark fuels only present on roughed barked trees and shrubs. Moderate fuel loads, grass cover generally sparser and lower in height than in open grassland. Leaf and bark fall around trees contributes to a gradual build-up of fuel, particularly around the base of trees. Grass component of the fuel load can build up fuel rapidly after a bushfire.	Can burn with moderate to high intensity depending on the degree of fuel build-up. Significant ember attack on structures and spotting across containment lines can be expected. Capable of carrying a bushfire at any time of year if there is a sufficient amount of litter on the ground, and/or cured grass. Tree cover is generally too sparse to sustain a crown fire, however, the eucalypts, particularly old hollow trees and those with rough bark, will be a source of burning embers which can carry a bushfire over nearby fire control lines (roads, fire breaks) and threaten nearby buildings. Hazard reduction burning is effective in removing accumulated litter and the bark fuels largely responsible for spotting, but grass fuels can be replenished within a year after a burn.
Unmanaged grassland and bracken FAG FPF	Near surface and surface fuels present. Potential for dense elevated fuels to about 1m high following wet winters and springs. Flammability dependant on degree of curing of the grass and proportion of dead bracken fronds. Grass fuels can be replenished within a year after a burn and bracken within 2 years.	Can generate rapidly moving, moderate intensity fires in late summer and early autumn. Fires can occur at other times of the year if the cured standing crop from the previous year's growth persists. Likely to be relatively little spotting so fires can usually be stopped at roads and firebreaks, however, fires may be uncontrollable in extreme conditions.
Managed grassland (sections of the equestrian centre and archery club)	Surface and near surface fuel present. Very low overall fuel loads. Grass generally less than 100mm in height due to regular mowing.	Will burn when grass is more than 60 % cured but only at low intensity.

Fuel loadings in the dry sclerophyll woodland component of the reserve average 5-10<sup>t</sup>/ha. The managed grasslands component pose minimal fire dangers due to regular mowing/slashing and generally kept <100mm high. The unmanaged grasslands within the reserve pose the biggest threat from bushfire/escaped planned burns. This component is up to 1m high, and can burn through winter given the right conditions if cured. This threat is reduced from VMU 4 being managed as a Fuel Modified Zone (FMZ) to the current TFS specifications of an "outer zone" as outlined in the TFS document *Bushfire Survival Plan 2015-2016*. In addition this component has strips slashed annually throughout. In event of a running grassfire these strips most likely will not act as containment lines, merely lines to back burn off. The preferred method for controlling fires within grasslands is establishment of mineral earth control lines.

## **2.3 Bushfire Threat and Risk to Persons**

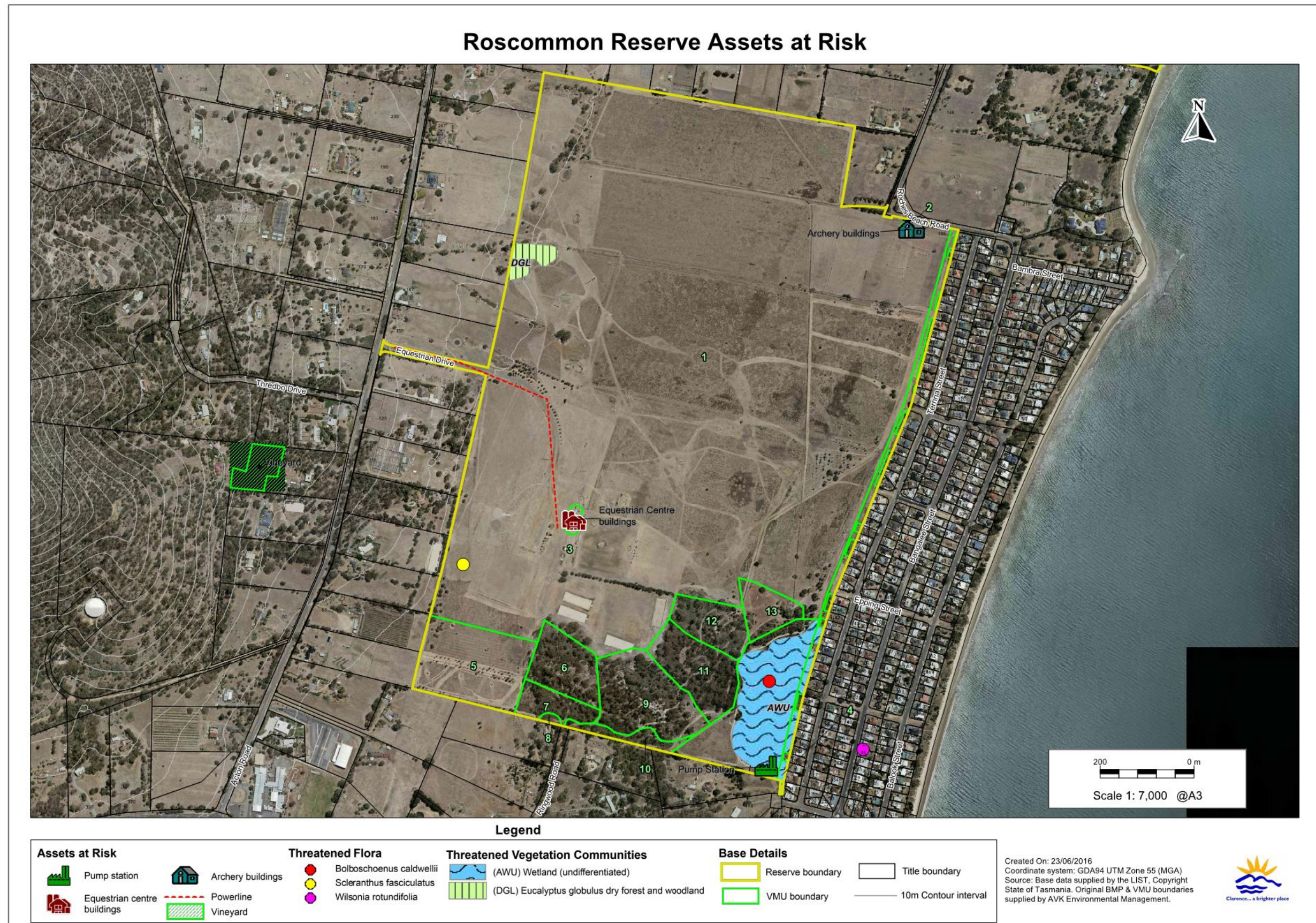
As the reserve is a relatively large open area with a large component of unmanaged grasslands, bushfires in the reserve are expected to move quickly on days of very high fire weather. There is an associated risk that persons in the reserve could be caught in the fire. The slashed grass in the reserve would substantially reduce the intensity, but not necessarily the rate of spread of a bushfire. There are a number of cleared areas at the equestrian centre that could be used as refuges in the event of a bushfire.

## **2.4 Assets at Risk from Bushfire**

Assets potentially at risk from bushfire include; dwellings, infrastructure, and other items (such as ornamental and regeneration plantings) which would cost money to replace; as well as items of scenic, cultural and natural heritage value which could be damaged or destroyed by fire, or bushfire suppression activities. Each landowner has an obligation to reduce a bushfire hazard where it is a threat to neighbouring properties. However, even with extensive hazard reduction burning, the risk of high intensity bushfires occurring in the reserve cannot be eliminated. Consideration must be given to protection measures that will reduce the risk of bushfire damage to assets in and surrounding the reserves. Assets within and surrounding the reserves that are considered at risk from bushfires are shown in figure 6.



Figure 6 - Assets at risk from bushfire





### 2.4.1 Bushfire Risk to Natural Heritage Assets

The conservation value of the plant communities in the reserve are given in table 2. A number of plant species of conservation value also occur; these are shown in figure 6 and listed in table 3 along with their response to fire if known.

The *Natural Values Atlas* identifies no verified records of fauna species of conservation significance occurring within the reserve. It does identify potential habitat present within the reserve for the following species:

Greg goshawk (*Accipiter novaehollandiae*), chevron looper moth (*Amelora acontistica*), chaostola skipper (*Antipoda chaostola*), tunbridge looper moth (*Chrysolarentia decisaria*) spotted-tail quoll (*Dasyurus maculatus*), ammonite owl (*Discoharopa vigens*), swift parrot (*Lathamus discolor*), green and gold frog (*Litoria raniformis*), forty-spotted pardalote (*Paradallotus quadragintus*), eastern barred bandicoot (*Perameles gunnii*), Australian grayling (*Prototroctes marena*), tussock skink (*Pseudemoia pagenstecheri*), Tasmanian devil (*Sarcophilus harrisii*) and masked owl (*Tyto novaehollandiae*).

Multiple wedge-tailed eagle (*Aquila audax*) pairs have been observed regularly above the reserve since 2008. Although no suitable habitat is within the reserve, the adjacent Meehan Ranges provides suitable easterly facing mature *Eucalypt* tracts for nesting territory in addition to known nest sites. Management prescriptions for planned burning and wedge-tailed eagle breeding season are identified in table 9.

**Table 2 – Conservation values of native plant communities**

TASVEG 3.0 CODE	EQUIVALENT FLORISTIC COMMUNITY <sup>1</sup>	Conservation Status <sup>2</sup>
AWU	None described	THREATENED NATIVE COMMUNITY
DAC	DRY-hAM-co Heathy Coastal E. amygdalina	Not threatened
DGL	DRY-gGLOB Grassy E. globulus forest	THREATENED NATIVE COMMUNITY
DOW	DRY-hOV Heathy E. ovata forest	Not threatened

1. Forest Practices Authority (2005)

2. Nature Conservation Act 2002



**Table 3 - Plant species of conservation value and preferred bushfire management**

<b>SPECIES</b>	<b>CONSERVATION STATUS<sup>1</sup></b>	<b>OCCURRENCE</b>	<b>RESPONSE TO BUSHFIRE AND MANAGEMENT</b>	<b>ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999 (EPBC Act) STATUS</b>
<i>Bolboschoenus Caldwellii</i> sea clubsedge	RARE	One observation in wetlands during 2015.	Response to fire not documented. Can reproduce vegetatively from rhizomes. Expected to persist post disturbance.	Not threatened
<i>Scleranthus fasciculatus</i> spreading knawel	VULNERABLE	One observation near south-western boundary during 2015.	May survive cool burn, likely to regenerate from seed following a bushfire.	Not threatened

1 - Tasmanian Threatened Species Protection Act 1995

**Table 4 - Fauna of conservation value and preferred bushfire management**

SPECIES	CONSERVATION STATUS <sup>1</sup>	HABITAT AND PREFERRED BUSHFIRE MANAGEMENT	ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999 (EPBC Act) STATUS
<i>Aquila audax</i> wedge-tailed eagle	ENDANGERED	<p>Nesting habitat includes the following elements: patches of mature (including old-growth) forest, or forest with mature/old-growth elements, normally greater than 10<sup>ha</sup> in area; nest trees usually tall (25-75m), large and robust mature eucalypts, generally taller than the canopy; nests are often constructed in the tallest and largest tree at a site, and usually located within the canopy even when the nest tree is taller; nests typically occur on the lee (sheltered) aspect of the site (or where hills shelter an otherwise exposed site), with the nest situated below the ridge level for protection from prevailing winds.</p> <p>Disturbance (visible or audible) to a nesting eagle can result in the death of eggs or chicks, through exposure to cold, heat or predation while adults are absent - including:</p> <ul style="list-style-type: none"> <li>- people or loud machinery too near the nest during the breeding season ('too near' can be many hundreds of metres if in direct line of sight of the nest);</li> <li>- residential development near nesting habitat; and</li> <li>- investigating nests during the breeding season.</li> </ul> <p>Removal of nest trees or surrounding vegetation (the same nest may be used intermittently over decades). (Threatened Species Link, 2016)</p> <p><b>No planned burning within Roscommon Reserve during breeding season (August-January).</b></p>	ENDANGERED

1 - Tasmanian Threatened Species Protection Act 1995

The fire sensitivity and flammability ratings of the vegetation types in the reserve according to Pyrke and Marsden-Smedley (2005), is given in table 5.

**Table 5 – Fire attributes of the native vegetation**

<b>TASVEG 3.0 CODE</b>	<b>FIRE SENSITIVITY</b>	<b>FLAMMABILITY</b>
AWU <sup>1</sup>	Low	High
DAC	Low	High
DGL	Low	High
DOW	Low	High
FAG	Low	Moderate
FPF	Low	Very high

1 – Wetland area is a series of ponds surrounded by what will become grassy woodland vegetation.

Flammability classification of Tasmanian vegetation (Pyrke & Marsden-Smedley, 2005)

<b>FLAMMABILITY</b>	<b>CRITERIA FOR FLAMMABILITY</b>
Very high	Will burn readily throughout the year even under mild weather conditions, except after recent rain (i.e. less than 2–7 days ago).
High	Will burn readily when fuels are dry enough but will be too moist to burn for lengthy periods, particularly in winter. Fuels will be dry enough to burn on most days from late spring to early autumn.
Moderate	Extended periods without rain (i.e. two weeks at least) and/or moderate or stronger winds are required for these communities to burn.
Low	These communities will burn only after extended drought (i.e. four weeks without rain) and/or under severe bushfire weather conditions (i.e. forest fire danger index > 40).

*Note:* recently burnt stands of low or moderate flammability classes may have a higher flammability rating.

## Fire sensitivity classification of Tasmanian vegetation (Pyrke &amp; Marsden-Smedley, 2005)

<b>FIRE SENSITIVITY</b>	<b>ECOLOGICAL IMPACT OF BUSHFIRE</b>	<b>MANAGEMENT RECOMMENDATIONS</b>
Extreme	Any bushfire will cause either irreversible or very long-term (> 500 years) damage.	Suppress all bushfire. Highest priority for bushfire suppression.
Very high	A single bushfire will cause significant change to the community for 50–100 years and will increase the probability of subsequent fires changing the community permanently.	Suppress all bushfire. High priority for bushfire suppression.
High	A bushfire-adapted community requiring at least 30 years between fires to maintain the defining species. Bushfire intervals greater than 80 years are required to reach mature stand structure.	Suppress all bushfire, but give higher priority to stands burnt less than 80 years ago.
Moderate	A bushfire-adapted community requiring at least 15 years between fires to maintain the defining species.	Suppress fires in stands burnt less than 20 years ago.
Low	Highly bushfire-adapted or non-native vegetation. A single bushfire will generally not affect biodiversity, although repeated short intervals (i.e. < 10 years) may cause long-term changes.	Suppression usually not an ecological priority except in specific situations (e.g. a recently burnt stand of a threatened species).

The low bushfire sensitivity of the vegetation in the reserve indicates that it is highly bushfire adapted and a single bushfire will generally not adversely affect biodiversity, though repeated fires at intervals of less than 10 years may cause long-term changes in floristics and vegetation structure (Pyrke & Marsden-Smedley, 2005). The high to very high flammability rating of some of the vegetation in the reserve in Pyrke & Marsden-Smedley (2005) indicates that parts of the reserve will burn readily when fuels are dry but may be too moist to burn for long periods during winter. Fuels will generally be dry enough to burn on most days from late spring to early autumn.

### 2.4.2 Bushfire and Habitat Management

The main bushfire risk to natural heritage assets in the reserve is from bushfires that burn the whole of either reserve as well as fire regimes (planned or unplanned) that are outside the thresholds within which a particular plant community, or habitat for flora and fauna species, has viability in the long-term. Fire regimes within the thresholds of a particular plant community will help maintain its long-term viability, whereas fire regimes outside the thresholds are likely to lead to progressive changes in the structure and floristics of the plant community, and loss of habitat for the fauna favouring that plant community.

Bushfires that burn the whole of either reserve can damage or destroy valuable fauna habitat including:

- Tree hollows used as nests and dens by many birds and arboreal mammals.
- Mature, senescing or dead trees that can be important invertebrate, bird and reptile habitat, and take a long time to replace.
- Understorey species that provide nest and shelter sites as well as a food source for many birds and mammal species.
- Fallen logs, bark and leaf litter that provide shelter and a food source for invertebrates, frogs, reptiles, birds and mammals.

Species may be lost from the reserve if they cannot recolonise from nearby areas, or survive in unburnt patches. It is possible that the entire Roscommon Reserve may be impacted by a single bushfire.

Bushfires often stimulate the spread of environmental and other weeds. However, some weed species provide significant protection and food sources for fauna (for example, gorse and blackberry) and removal of these species should be carefully managed to ensure they are progressively replaced by equivalent native species habitat.

Fire regimes within the thresholds of a particular plant community will help maintain its long-term viability, whereas fire regimes outside the thresholds are likely to lead to progressive changes in the structure and floristics of the plant community, and loss of habitat for the fauna favouring that plant community. The bushfire management requirements of the different plant communities/habitats in the reserves are given in table 6. These plant communities have been grouped together according to their bushfire management requirements.

**Table 6 - Bushfire management requirements of the plant communities in the reserves**

TASVEG MAPPING UNITS	BUSHFIRE IMPACTS AND BUSHFIRE MANAGEMENT AIMS
<b>Heathy dry sclerophyll forests and woodlands</b>	
DAC - <i>Eucalyptus amygdalina</i> coastal forest and woodland  DOW - <i>Eucalyptus ovata</i> heathy woodland	<p>Bushfire controls the establishment of a dense shrubby understorey which would reduce light penetration to the ground layer. This can help maintain a diversity of heathy shrubs and herbs.</p> <p>Frequent fires can encourage a dense bracken layer that can suppress other ground layer species.</p> <p>Bushfire provides an opportunity for bushfire dependent species to germinate.</p> <p><b>Optimal bushfire interval for maintaining these communities is 15-25 years.</b></p> <p><b>Exclude bushfire from representative areas to provide controls for monitoring the effects of bushfire.</b></p>
<b>Grassy dry sclerophyll forests and woodlands</b>	
DGL - <i>Eucalyptus globulus</i> dry forest and woodland  AWU - Undifferentiated Wetlands (the artificial wetland within Roscommon has been planted with native trees and has a grassy woodland structure)	<p>Infrequently burnt sites develop a dense shrubby understorey. Kangaroo grass (<i>Themeda triandra</i>) can die out after an extended absence of bushfire, or other method of biomass reduction (Lunt &amp; Morgan, 1998).</p> <p>Frequent fires (&lt; 5 years) can inhibit tree regeneration and eliminate the shrubby component</p> <p>Sites overlying dolerite and other more fertile soils have markedly more rapid rates of regeneration than low fertility soils derived from mudstone and sandstone.</p> <p>Extended absence from bushfire can result in build up of fuel causing hot and damaging burns.</p> <p>A temporal and spatial mosaic burning pattern would assist with tempering the effects of a devastating bushfire.</p> <p><b>Optimal bushfire frequency is 5-20 years on fertile sites.</b></p>
<b>Other plant communities</b>	
FAG - Agricultural land FPF - <i>Pteridium esculentum</i> fernland	<p>In areas once used for stock grazing fires can maintain pasture at the expense of native colonisers such as sagg (<i>Lomandra longifolia</i>) and native shrubs.</p> <p><b>Mowing and slashing are the preferred methods of fuel reduction in and around infrastructure.</b></p>

### 2.4.3 Bushfire Risk to Built and Cultural Assets

During the BMP review process Aboriginal Heritage Tasmania (AHT) completed a requested search of the Aboriginal Heritage Register (AHR) regarding the area inside the BMP boundary. There are no known Aboriginal heritage sites within the reserve.

Infrastructure in the reserve includes internal and perimeter fencing, a timber foot bridge, a power line, and an underground pumping station located in VMU 14. Facilities associated with the archery club include a small club building and targets. Facilities at the equestrian centre include a small club building, storage sheds, picnic facilities, fences, horse yards, a small grandstand and numerous jumps scattered around the site. It is not considered cost effective to provide bushfire protection for scattered assets in bushland such as fences and horse jumps. These will need to be replaced if they are damaged or destroyed in a bushfire.

Although not likely to be directly affected by a bushfire or planned burning in the reserve, the grape vines in Bishops Vineyard (86 Acton Road, Acton Park) to the west of the reserve could be affected by smoke from fires in the reserve. Smoke during the period when the grapes are ripening can taint the wine produced from them and reduce its value.

The degree of bushfire danger at any particular time is a combination of fine fuel quantity, slope, and the prevailing weather conditions. The actual risk of a bushfire causing damage to an asset is a function the degree of danger, the probability of a bushfire igniting, and any measures taken to prevent the bushfire causing damage.

The four major modes of attack by bushfires that can cause damage to assets are:

1. wind-blown burning debris
2. radiant heat which can ignite flammable materials ahead of the fire front and shatter glass
3. flame contact
4. Strong winds generated or intensified by the bushfire.

The potential for damage to buildings in the path of large fires burning out of the reserve will depend largely on:

- whether the bushfire will approach upslope or downslope
- the quantity and distribution of fuel surrounding the building
- whether they are defended during the bushfire
- their design
- if the building was constructed to Australian Standard 3959-2009, *Construction of Buildings in Bushfire-prone Areas*
- How well they have been maintained.

The Australian Standard for Construction of buildings in bushfire-prone areas (AS:3959 – 2009) uses a Fire Danger Index (FDI) of 50 to determine the Bushfire Attack Level (BAL) for buildings that need to comply with the standard. An FDI of 50 is the boundary between Very High and Severe Fire Danger Rating.

There is insufficient data available to assess the likelihood of a high intensity bushfire starting in either reserve; however there is sufficient fine fuel within the reserve to sustain a high intensity bushfire on days of extreme fire danger. The bushfire risk to the built and cultural heritage assets within and surrounding the reserve has been assessed using a procedure adapted from the National Emergency Risk Assessment Guidelines (NEMC, 2010). The assessment process is explained in section 5.4 of *Clarence City Council Bushfire Management Strategy for Council Owned and Controlled Land*, and the results and proposed management strategies are shown in table 7. This assessment process has been analysed and meets compliance with AS/NZS IOS:31000-2009. Note that the assessment in table 7 only considers the risk from fires starting in, or passing through the reserve. Some assets may face a greater bushfire risk from nearby bushfire hazards that are not under the control of Clarence City Council. Some assets, such as Aboriginal heritage sites, may not be directly damaged by bushfire but may be damaged by bushfire management and bushfire suppression activities, such as constructing fire control lines. These risks are noted under “other risks” in table 7 if these assets are found in the reserve.

NOTE: It was not possible to inspect assets on properties adjoining the reserve. The risk assessment therefore makes the following assumptions about these assets:

- Landowners/residents have established and are maintaining a defensible space to TFS specifications around vulnerable assets, either wholly within the lot, or up to the boundary with the reserve where there is insufficient space within the lot. Where this is not the case the asset may face a much higher bushfire risk than indicated in the risk assessment.
- All dwellings adjoining the reserve are well maintained to resist attack by wind-blown burning embers. Where this is not the case the asset may face a much higher bushfire risk than indicated in the risk assessment.

The management strategies recommended in table 7 will reduce the existing bushfire risk to built and cultural assets but in most cases will not eliminate it. Active protection of an asset during a bushfire can greatly reduce the bushfire risk. Assets at medium and high risk of damage from bushfire will need to be protected during planned burns.



**Table 7 - Bushfire risk assessment for built and cultural assets**

RISK CATEGORIES:

LOW – asset of low value or considered to have a low risk of damage from bushfires in the reserve due to its construction, location, or protection measures already in place.

MODERATE – asset is vulnerable to damage by bushfires and could face attack by a moderate to high intensity bushfire, but has features that will reduce the intensity of the fire attack, or provide some protection from fires. Further bushfire protection measures are required.

HIGH – asset is of high value, is vulnerable to damage by bushfires and could face attack by a high intensity bushfire with few, if any, features that would reduce the intensity of fire attack. Further bushfire protection measures are required.

ASSET AT RISK	RISK ANALYSIS (See section 5.4 of the Bushfire Management Strategy)								OTHER BUSHFIRE RISKS	PROPOSED MANAGEMENT STRATEGIES
	A	B	C	D	E <sup>1</sup>	F	G	Level of Risk		
Dwelling adjoining the southern side of Roscommon Reserve at 8 Ringwood Road	5	2	3	2	2	1	6	720 MODERATE		Advise residents of the need to maintain an adequate defendable space around their dwellings.  Establish and maintain a minimum 20m wide outer zone along the reserve boundary adjoining this dwelling. See MP 6 in the Best Management Practice Guidelines.
Dwellings adjoining the eastern side of Roscommon Reserve	2	2	3	2	2	1	6	288 MODERATE		Advise residents of the need to maintain an adequate defendable space around their dwellings.  Establish and maintain a minimum 15m wide strategic FMZ to TFS specification for an outer zone along the reserve boundary. See MP 6 in the Best Management Practice Guidelines.
Pumping station in VMU 14.	2	2	3	1	3	4	1	144 LOW		Clear at least 2m around the above ground part of the pumping station.
Dwelling adjoining the southern side of Roscommon Reserve at 150 Balook Street and 7 Ringwood Road	5	2	3	2	0.2	1	6	72 LOW		Advise residents of the need to maintain an adequate defendable space around their dwellings.  Maintain a 5m wide mown fuel break (grass below 200mm high during the fire permit period) along the reserve boundary adjoining these properties to provide access and protect fences.

ASSET AT RISK	RISK ANALYSIS (See section 5.4 of the Bushfire Management Strategy)								OTHER BUSHFIRE RISKS	PROPOSED MANAGEMENT STRATEGIES
	A	B	C	D	E <sup>1</sup>	F	G	Level of Risk		
Dwellings adjoining the northern side of Roscommon Reserve	2	2	1	2	0.2	1	6	9 LOW		Advise residents of the need to maintain an adequate defendable space around their dwellings. No bushfire protection measures required in the reserve.
Dwellings adjoining the western side of Roscommon Reserve	2	2	1	2	0.2	1	6	9 LOW		Advise residents of the need to maintain an adequate defendable space around their dwellings. No bushfire protection measures required in the reserve.
Dwelling adjoining the southern side of Roscommon Reserve at 33 Acton Road	2	2	1	2	0.2	1	6	9 LOW		Advise residents of the need to maintain an adequate defendable space around their dwellings. No bushfire protection measures required in the reserve.
Equestrian centre building	1	2	3	1	0.2	1	2	2 LOW		Maintain a minimum 10m wide inner zone around buildings. Ensure that combustible materials are not stored under or against buildings. See MP 6 in the Best Management Practice Guidelines for inner zone specifications.
Archery club building	1	2	3	1	0.2	1	2	2 LOW		Maintain a minimum 10m wide inner zone around the club building. Ensure that combustible materials are not stored under or against the building. See MP 6 in the Best Management Practice Guidelines.
Power line along Equestrian Drive	1	2	3	1	0.2	1	2	2 LOW		Clear at least 0.5m around the base of each pole
Bishops Vineyard – 86 Acton Road, Acton Park									Grapes may be tainted by smoke from bushfires.	Consult with vineyard owner before conducting broadscale fuel reduction burns in reserve.

1 – Note that the risk analysis score in column E only indicates that there is enough space to provide a defendable space between bushland in the reserve and an adjoining asset. It does not indicate that a defendable space has been established on the adjoining property, or if established is being adequately managed.

## **3. Bushfire Management Issues**

### **3.1 Existing Bushfire Management**

#### **3.1.1 Implementation of the Previous Bushfire Management Plan**

As part of this revision of the BMP a review of the success of the implementation of the five year duration of the previous BMP was carried out. The review found that of 16 recommendations, 12 have been fully implemented, 3 have been partly implemented, and 1 has not been implemented.

The recommendation that was not implemented was providing a tour of the reserve to the local TFS brigade. This tour will be provided upon request from TFS.

The full findings of the review are in Appendix A.

#### **3.1.2 Planned Burning**

The BMP recommended two planned burns in the reserve during the five year period of the previous BMP.

VMU 10 was successfully burnt in autumn 2013. The purpose of this burn was to assist in maintaining a 5m wide fuel break along the reserve boundary and keeping the VMU in a minimal fuel state.

VMU 12 was burnt in two sections, the first in spring 2014, and the second section in autumn 2015. Both VMUs experienced prolific bracken growth post burn. The dominance of bracken in the understorey in most of the native vegetation in Roscommon Reserve indicates a relatively high fire frequency in the past. Further burning is likely to favour the spread of bracken at the expense of other understorey species. Planned burning in this plan is limited to small areas near the boundary where reduced fuel loads will assist in protecting adjoining property from bushfires in the reserve.

#### **3.1.3 Vehicle Access Routes and Foot Tracks**

The reserve is accessible by vehicles from Acton Road via Equestrian Drive to the west, from Ringwood Road to the south, from Roches Beach Road to the north and Balook Street from the south east. Fire trails connect the Ringwood Road entrance to Acton Road and Roches Beach Road entrances. Three access points off Terrina Street provide additional foot access. A circular walking track has been constructed around the artificial wetland in the reserve.

Locked gates prevent unauthorised vehicle access to the reserve. The location of the fire trails within the reserve considered necessary for bushfire management are shown in figure 7, and described in Table 8. Each fire trail has been assigned a usage class and its current condition assessed against the standard for their assigned usage class in MP 1 in the *Clarence City Council Bushfire Management Strategy – Best Management Practice Guidelines*.

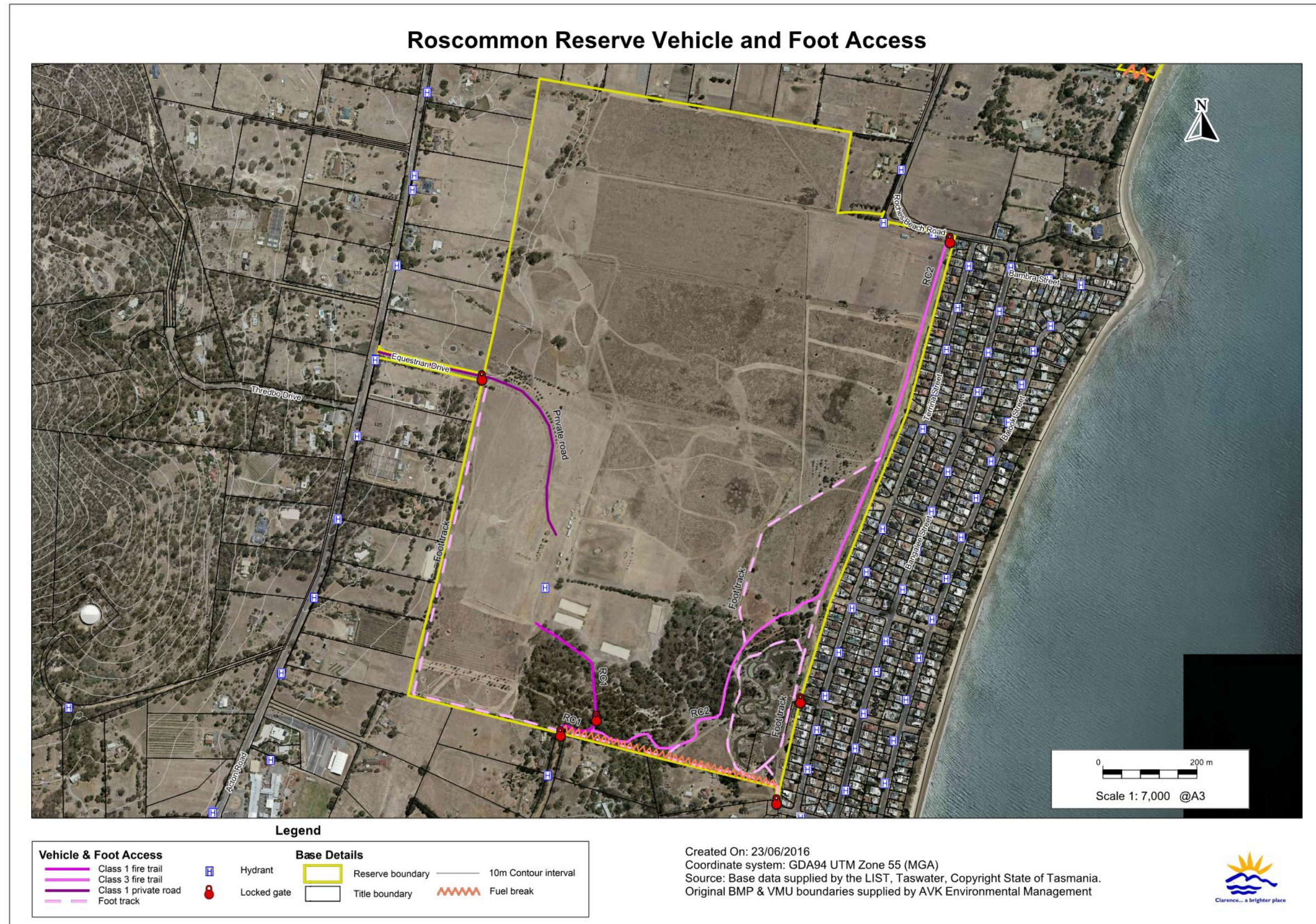
As noted in the previous BMP, the existing trails and foot tracks provide adequate access to all areas of the reserve for bushfire management.

In November 2015 RC2 was identified under the Hobart Fire Protection Plan as a strategic fire trail (see figure 7).

Strategic fire trails are those that provide important access routes for firefighting, through or along the perimeter of bushland areas, and are potential control lines for major fires. These trails need to be maintained to a standard that allows for all weather vehicle access by fire fighting vehicles. This will generally be Class 3 in the PWS fire trail classification system (Hobart Fire Management Area, 2016).



Figure 7 – Vehicle and Foot Access





**Table 8 - Condition and maintenance of fire trails**

Assigned vehicle usage class (see Management Procedure 1):	Maintenance priority:
<b>Class 1</b> – all 2WD and 4WD vehicles	<b>High</b> priority - major through routes and fire control lines
<b>Class 3</b> – all weather 4WD, light and heavy 4WD vehicles (category 3, 4 & 5 tankers)	<b>Medium</b> priority - important access and escape routes and minor fire control lines
<b>Class 5</b> – dry weather and/or high clearance 4WD, light 4WD (category 5 tankers), also includes trails with sharp bends and dead end trails with small turning areas.	<b>Low</b> priority - minor access routes and boundaries of vegetation management units.

The trail usage class describes the suitability of the fire trail if properly maintained, not necessarily its condition at the time of inspection.

**\*MP refers to Management Procedures in Clarence City Council Bushfire Management Strategy – Best Management Practice Guidelines**

FIRE TRAIL ID	USAGE CLASS	STRATEGIC FIRE TRAIL UNDER HOBART FIRE PROTECTION PLAN <sup>1</sup>	MAINTENANCE PRIORITY	LOCATION AND CONDITION AT MARCH 2016	ACTION REQUIRED	MANAGEMENT CONSTRAINT
RC1	1	NO	High	<p>Runs from Ringwood Road entrance through locked gate along boundary of VMU 6 &amp; VMU 9 through additional locked internal gate into managed equestrian arenas/paddocks. Trail then links onto access road connecting to Equestrian Drive with locked gate.</p> <p>Trail is formed; meets class 3 and some class 1 standards.</p> <p>Connection to Equestrian Drive is across arenas/paddocks may be boggy when wet.</p> <p>Some encroaching vegetation.</p>	<p>Clear encroaching vegetation as required.</p> <p>Inspect and manage as per MP2</p>	Avoid driving on equestrian arenas/paddocks when wet.

FIRE TRAIL ID	USAGE CLASS	STRATEGIC FIRE TRAIL UNDER HOBART FIRE PROTECTION PLAN <sup>1</sup>	MAINTENANCE PRIORITY	LOCATION AND CONDITION AT MARCH 2016	ACTION REQUIRED	MANAGEMENT CONSTRAINT
RC2	3	YES	High	<p>Runs from Ringwood Road entrance through locked gate to Roches Beach Road (locked gate) in the north eastern corner of Roscommon Reserve. Fire trail runs along strategic FMZ on eastern boundary behind Terrina Street.</p> <p>Meets class 3 specifications except for encroaching vegetation, and drainage specifications (due to reserve being flat and prone to minor flooding).</p>	<p>Clear encroaching vegetation as required.</p> <p>Inspect and manage as per MP2.</p>	Prone to minor flooding.

### 3.1.4 Water Supply

Water for firefighting and bushfire management is available from fire hydrants along the streets surrounding the reserve. The ponds in the artificial wetland in the south-eastern corner of the reserve could provide an alternative water supply to draft from but sourcing water from reticulated water is preferred. There are two internal water supplies (fire hydrants) within the reserve, one near the equestrian centre, the second is located on the western side of the Archery Club building (approximately 20m). These are shown on figure 7.

### 3.1.5 Fuel Breaks and Defendable Spaces

A fuel break (sometimes called a “firebreak”) is a strip of cleared, or partly cleared, bushland constructed and maintained to slow, or stop, the progress of a bushfire to assist in its control. They are not the same as defendable spaces which are maintained around vulnerable assets to protect them from bushfires. Fuel breaks in grassland can be effective in stopping fires if cleared down to mineral earth, but where trees and shrubs are present wind-blown burning embers will usually carry a bushfire across a fuel break. Therefore, in bushland with shrubs and trees the only benefit of a fuel break is to provide access for firefighters and a boundary for backburning operations. Currently there are no standards or guidelines for fuel breaks in Tasmania. There is one 5-10m fuel break maintained in the reserves specifically for bushfire protection along the southern boundary of Roscommon Reserve (VMU 10) continuing to Balook Street.

A defendable space is an area of managed vegetation around an asset likely to be at risk from bushfire that protects it from direct flame contact and intense radiant heat, as well providing an area where fire fighters can defend the asset. The Tasmania Fire Service document *Bushfire Survival Plan 2015-2016* recommends that a defendable space includes two 'zones':

- An inner zone (formerly Bushfire Protection Zone) where flammable materials are minimised.
- An outer zone (formerly Fuel Modified Protection Zone) where a low level of flammable material is permitted.

In the inner zone, flammable materials on, under and around your home should be moved away from the house.

#### **In the inner zone:**

- Include non-flammable areas such as paths, driveways, and mowed lawns.
- Use non-flammable mulch, do not use woodchips or bark.
- Locate any dams, orchards, vegetable gardens and any effluent disposal areas on the fire-prone side of the home.
- Use radiation shields and windbreaks such as stone or metal fences and hedges using low-flammability plants.
- Remove fire hazards such as wood piles, rubbish heaps and stored fuels.
- Replace all highly-flammable plants with low-flammability plants.



- Prune lower branches on trees and remove flammable shrubs from under and between trees.
- Rake up bark and leaves and keep roofs and gutters clear of flammable debris.

The TFS notes it is not necessary to remove all vegetation from the inner zone. Individual trees rarely cause houses to burn in bushfires.

Trees can screen a building from windblown embers while protecting it from radiant heat. Smooth barked trees are less likely to catch fire than those with rough bark. No tree should be able to fall on buildings.

In the outer zone, small-sized natural fuels (such as leaf litter, bark, sticks, tussocks and some shrubs) should be removed and larger fuels (trees and shrubs) should be cut back to reduce the intensity of an approaching bushfire.

Natural fuels, both on the ground and between the ground and any larger trees, should be reduced by selective removal of vegetation, both horizontally and vertically, followed by ongoing maintenance.

**In the outer zone:**

- Retain established trees to trap embers and reduce wind speeds.
- Selectively remove small trees and shrubs to create clumps (rather than a continuous wall of trees) separated by open areas.
- Remove the vegetation between the ground and the bottom of the tree canopy, to a height of at least two metres.
- Minimise fine fuels at ground level, such as grasses and leaf litter.

There is one defensible space (VMU 4) identified as a strategic FMZ under the Hobart Fire Protection Plan that runs along the eastern boundary parallel to Terrina Street. This FMZ meets the current TFS specifications for an outer zone. This strategic FMZ has been installed for increased asset protection in the event of a running grassfire within the reserve.

A 10m mown fuel break is maintained along the southern boundary of VMU 14 adjacent to 150 Balook Street, in addition a 5m fuel break runs along the southern boundary of VMU 10 adjacent to 7 Ringwood Road.

The existence and adequacy of defensible spaces on individual lots adjoining the reserves was not surveyed as part of this BMP review. Nevertheless, it must be stressed that establishment and maintenance of defensible spaces around residences bordering the reserves is essential for bushfire protection. Clarence City Council and individual landowners need to co-operate to provide and maintain adequate bushfire protection.

### 3.1.6 Bushfire Detection and Suppression

Roscommon Reserve is highly visible from surrounding suburbs and roads and it is likely that any fires would be promptly reported.

The dominant vegetation classification within the reserve is grassland. In very high bushfire weather grass fires can move quickly, and it is possible that a large part of the reserve if not entirely could be burnt before a bushfire could be controlled. The current annual slashing undertaken within the reserve can assist in reducing the intensity of fires.

Fuel reduction burning in grasslands is not an effective tool in reducing fire risks as grass component of fuel loads can build up fuel rapidly after fire.

## 3.2 Weeds

A detailed weed survey was not undertaken as part of the review of the previous BMP, merely observations from field work.

Environmental weeds occur throughout the reserve. While much primary weed control work has been undertaken by Councils Fire and Bushland Management and the Lauderdale Coastcare Group to control weed populations, follow-up maintenance activities will be required for many years.

Several weed species found in the reserve are classified as declared weeds under the Tasmanian *Weed Management Act 1999* and/or Weeds of National Significance (WONS). Where possible these weeds will be targeted as a priority to prevent their further spread.

Boneseed (*Chrysanthemoides monilifera*), boxthorn (*Lycium ferocissimum*), blackberry (*Rubus fruticosus*) and gorse (*Ulex europaeus*) are present declared weeds and WONS.

Other environmental weeds present within the park are: Agapanthus (*Agapanthus praecox subsp. Orientalis*), tree lucerne (*Chamaecytisus palmensis*), Monterey pine (*Pinus radiata*), sweet briar (*Rosa rubiginosa*) and Cumbungi (*Typha* sp.).

Only scattered individuals or small clumps of the above weeds were observed, the dominant being sweet briar (*Rosa rubiginosa*) amongst the grasslands.

Bracken fern (*Pteridium esculentum*), although a native plant, dominates much of the understorey in the forested areas of the reserve, as well as some of the grassland, to the detriment of other understorey species. It is probably a relic of frequent burning in the past. It is a greater bushfire hazard than most other native understorey species and at high density can exclude other native species. As bracken recovers faster than other understorey species after bushfire, it can quickly dominate areas that are burnt frequently. It also builds up an elevated fuel load in 2 to 3 years, thus making burning an ineffective method of hazard reduction. Bracken control is therefore an important component of bushfire management in Roscommon Reserve.

The planned burning recommended in this plan can assist a weed control program, and it is recommended that weed control and bush regeneration activities be integrated with the planned burning program in this plan. MP 8 in *Clarence City Council Bushfire Management Strategy - Best Management Practice Guidelines* includes guidelines for integrating weed management with planned burning, and for minimising the risk of weed invasion following bushfires. These guidelines should ensure that fires in the reserve do not cause existing weeds to spread.

There was evidence that garden rubbish and pruning's are being dumped in the park along the rear of Terrina Street on the eastern side of the reserve. This increases fuel loads close to dwellings as well as introducing weeds into the reserve.

### **3.3 Stakeholder and Community Concerns**

At the commencement of the project Clarence City Council sent a letter to all landowners adjoining the reserve and to other stakeholder groups informing them that the BMP was being revised and inviting them to have input into the revised plan by sending in a written submission, attending a community "walk and talk", or by contacting the reviewer directly. The community "walk and talk" was held in the reserve on 7<sup>th</sup> November 2015. Three community members attended in addition to one Council employee.

The main issue of concern was maintenance of the strategic FMZ (VMU4) on the eastern boundary or the reserve adjacent to Terrina Street, in addition to grassland management.

The community concerns about fire management in the reserve expressed during the walk and talk are summarised in Appendix B along with the reviewer's response.

## 4. Plan Implementation

To ensure that the recommendations in this plan are fully implemented, Clarence City Council will ensure that TFS brigades likely to attend bushfires within the park are familiar with the plan, and its contents are issued to the TFS.

### 4.1 Bushfire Risk Reduction Strategy

The overall bushfire risk reduction strategy recommended for Roscommon Reserve can be summarised as follows:

- Reduce ignitions through prosecution of arsonists, and prompt reporting of fires.
- Maintain access points and fire trails to enable the TFS to rapidly contain fires that start in the reserve, and ensure the TFS are familiar with the location and condition of fire trails in the reserve.
- Maintain defensible spaces in the reserves to protect assets within and adjoining the reserve.
- Carry out strategic planned burning to reduce bushfire hazards in the reserve.
- Encourage neighbouring residents to maintain defensible spaces around their homes.

### 4.2 Community Education, Awareness and Involvement

To ensure successful implementation of this BMP it will be necessary to inform key sectors of the community about bushfire management issues in the reserve. This should include surrounding residents and those with special interests in the reserve, or whose activities can affect assets within the reserve. The community education process is detailed in section 5.7 of *Clarence City Council Bushfire Management Strategy for Council Owned and Controlled Land*. This was not implemented during the previous BMP, and has a heavy influence in the effectiveness of this BMP.

In particular, adjoining residents should be advised that dumping garden waste and other rubbish in reserves increases the bushfire hazard and makes firefighting along the bushland/urban interface more difficult and dangerous for fire fighters. It also contributes to the spread of weeds. Residents should also be advised that they are not authorised to remove vegetation in a Council reserve, even if it is recommended in the BMP.

During the 5 year period of the previous BMP the Lauderdale Coastcare Group has undertaken many revegetation projects that are having positive impacts to biodiversity within and adjacent to the wetlands area (VMU 14). However some plantings have taken place in the outer zone and fuel breaks against the specifications within this BMP. These planting have been removed. Continued communication between Lauderdale Coastcare Group and Councils Fire and Bushland Management are required to ensure the successful implementation of this BMP.

If residents have any concerns about the bushfire hazard in the reserve near their home, they are encouraged to contact Council's Fire and Bushland Vegetation Management Co-ordinator.

### **4.3 Planned Burning**

The native forest and woodland communities in the reserve are considered dependent on bushfire to maintain their structure and floristics in the long term. Periodic burning will help to maintain diversity in the understorey, and allow bushfire dependent species to germinate and establish. However, there is a need to minimise damage to important habitat elements (such as dead trees, old logs and stumps) during these burns, and to ensure adequate retention of unburnt patches of each forest type to act as refugia for recolonisation of burnt areas.

The approach adopted in this plan is to use planned burning both for asset protection in areas targeted for maximum risk reduction and for habitat management. Areas burnt for habitat management will have the additional benefit of reduced bushfire hazard for a period following each bushfire.

#### **4.3.1 Vegetation Management Units (VMU)**

The bushfire management program in this plan is based on the division of the reserve into VMUs (see figure 8). VMUs can be burnt at a frequency, season and intensity that are optimal for the plant communities within each unit or excluded from fire if the vegetation does not require burning, or the VMU is being managed by other means. The bushfire management requirements of the vegetation communities within the reserve are given in table 6.

The previous BMP divided Roscommon Reserve and Lauderdale Dunes Reserve into 15 VMUs. With the removal of Lauderdale Dunes Reserve from this BMP, the plan now incorporates 14 VMUs continuing the previous VMU regime adopted for Roscommon Reserve. This regime provides the most appropriate methods required currently for managing bushfire hazard whilst promoting biodiversity.

#### **4.3.2 Planned Fire Regimes**

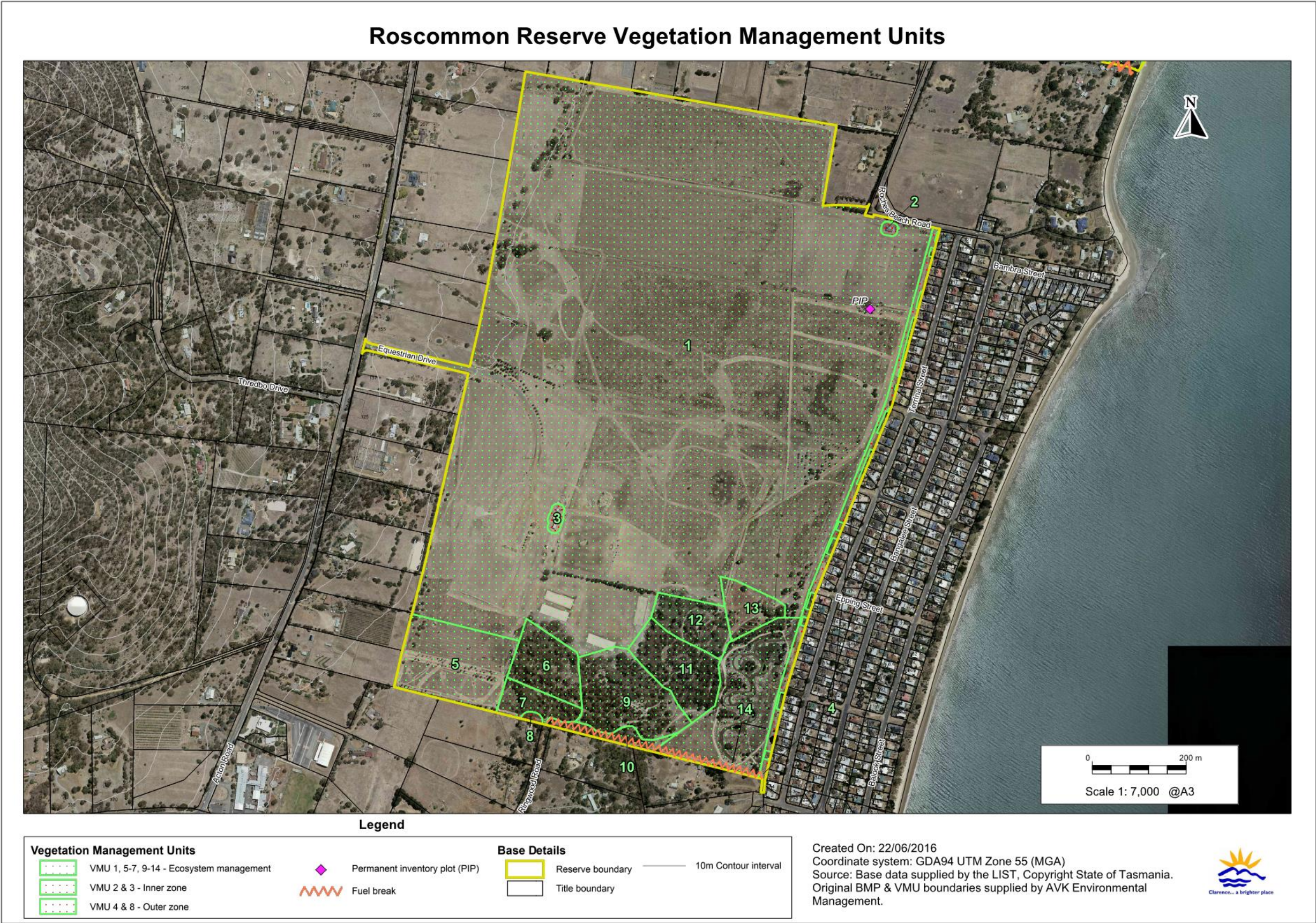
The approach adopted in this plan is to use planned burning for a combination of asset protection in areas targeted for maximum risk reduction, and for habitat management. Burning for habitat management will have the additional benefit of reduced bushfire hazard for a period following each bushfire.

Planned burning operations should be carried out following the seed-setting period of native species and after the nesting period of the understorey bird species in the reserve. Where possible hollow logs and dead trees should be protected from bushfire due to their fauna habitat value. This can be achieved by using wet lines around the tree or log, or raking fine fuels away from logs or the base of hollow trees, and rapidly extinguishing fires at these points should they occur.

The reviewed BMP covers a 5-year period, after which another review is recommended. Burns within the reserve have been scheduled in table 9. To allow for flexibility in budgeting and planning, and for unfavourable weather, the burns can take place in the year following that recommended in table 9, if required. If a bushfire burns more than half of a VMU, the whole of the VMU should be considered to have been burnt and the schedule adjusted accordingly. In order to create a mosaic of native bushland with different bushfire histories, VMUs should generally not be burnt within 2 years of adjoining VMUs.



Figure 8 – Vegetation Management Units in the Reserves





**Table 9 – Bushfire management in the reserve**

VMU <sup>1</sup>	AREA (ha)	BUSHFIRE MANAGEMENT OBJECTIVES and PRESCRIPTIONS <sup>4</sup>	NOTES and PRECAUTIONS <sup>2, 3</sup>	LAST BURNT	NEXT BURN
1 FAG DGL	93.0	<p>OBJECTIVES:</p> <p>Maintain as managed vegetation.</p> <p>Reduce the extent and density of weeds.</p> <p>PRESCRIPTION:</p> <p>Manage according to the requirements of the equestrian centre and the archery club.</p>	<p>Patch and pile burns only if required.</p> <p>Do not burn during <i>Aquila audax</i> <sup>3</sup> (Wedge-Tailed Eagle) breeding season August-January.</p> <p>Consult DPIPWE Threatened Species Section before burning area with DGL<sup>2</sup>.</p> <p>Contains the vulnerable plant species <i>Scleranthus fasciculatus</i> <sup>3</sup>. Obtain a permit from DPIPWE Threatened Species Section before burning.</p> <p><b>Vegetation Monitoring:</b></p> <p>Contains Permanent Inventory Plot PIP001</p>	N/A	Patch and pile burns only
2 FAG	0.09	<p>OBJECTIVES:</p> <p>Maintain as inner zone to protect assets.</p> <p>Reduce the extent and density of weeds.</p> <p>PRESCRIPTION:</p> <p>Maintain a 10m wide inner zone around the clubhouse. See MP 5 in the Best Management Practices Guidelines for inner zone specifications.</p>		N/A	No burning
3 FAG	0.17	<p>OBJECTIVES:</p> <p>Maintain as inner zone to protect assets.</p> <p>Reduce the extent and density of weeds.</p> <p>PRESCRIPTION:</p> <p>Maintain a 10m inner zone around equestrian centre buildings. See MP 5 in the Best Management Practices Guidelines for inner zone specifications.</p>		N/A	No burning
4 FAG	1.35	<p>OBJECTIVES:</p> <p>Maintain as 15m strategic FMZ <sup>4</sup> to TFS specification for an outer zone to protect adjoining dwellings.</p> <p>Reduce the extent and density of weeds.</p> <p>PRESCRIPTION:</p> <p>See table 7 for widths and MP 5 in the Best Management Practices Guidelines for outer zone specifications.</p>	<p>Pile burns only if required.</p> <p>Do not burn during <i>Aquila audax</i> <sup>3</sup> (Wedge-Tailed Eagle) breeding season August-January.</p>	Not known	Pile burns only



VMU <sup>1</sup>	AREA (ha)	BUSHFIRE MANAGEMENT OBJECTIVES and PRESCRIPTIONS <sup>4</sup>	NOTES and PRECAUTIONS <sup>2, 3</sup>	LAST BURNT	NEXT BURN
5 FAG	3.69	<p>OBJECTIVES:</p> <p>Maintain planted trees.</p> <p>Reduce the extent and density of weeds.</p> <p>PRESCRIPTION:</p> <p>Do not burn until planted trees are large enough to survive a low intensity burn.</p> <p>Manage fire hazard by slashing between planted trees.</p>	<p>Paddock planted with native trees.</p> <p>Do not burn during <i>Aquila audax</i> <sup>3</sup> (Wedge-Tailed Eagle) breeding season August-January.</p> <p>Notify Roches Beach Living (retirement village), Lauderdale Primary School and Bishops Vineyard (86 Acton Road) in planning stages.</p>	2004	Assess next plan
6 DAC DOW	1.75	<p>OBJECTIVES:</p> <p>Maintain the structure and floristics of the vegetation communities.</p> <p>Allow recruitment of canopy species.</p> <p>Control spread of bracken and other weeds.</p> <p>PRESCRIPTION:</p> <p>Autumn burn every 15 to 20 years.</p>	<p>Keep burns at low intensity to minimise canopy scorch.</p> <p>Protect equestrian centre infrastructure during burns.</p> <p>Do not burn during <i>Aquila audax</i> <sup>3</sup> (Wedge-Tailed Eagle) breeding season August-January.</p> <p>Notify Roches Beach Living (retirement village), Lauderdale Primary School and Bishops Vineyard (86 Acton Road) in planning stages.</p> <p>Large pile of tyres adjacent to VMU.</p>	2002	Assess next plan
7 DAC DOW	0.95	<p>OBJECTIVES:</p> <p>Maintain the structure and floristics of the vegetation communities.</p> <p>Allow recruitment of canopy species.</p> <p>Control spread of bracken and other weeds.</p> <p>PRESCRIPTION:</p> <p>Autumn burn every 15 to 20 years.</p>	<p>Keep burns at low intensity to minimise canopy scorch.</p> <p>Protect adjoining property during burns.</p> <p>Protect equestrian centre infrastructure during burns.</p> <p>Do not burn during <i>Aquila audax</i> <sup>3</sup> (Wedge-Tailed Eagle) breeding season August-January.</p> <p>Notify Roches Beach Living (retirement village), Lauderdale Primary School and Bishops Vineyard (86 Acton Road) in planning stages.</p> <p>Large pile of tyres adjacent to VMU.</p>	2002	2017

VMU <sup>1</sup>	AREA (ha)	BUSHFIRE MANAGEMENT OBJECTIVES and PRESCRIPTIONS <sup>4</sup>	NOTES and PRECAUTIONS <sup>2, 3</sup>	LAST BURNT	NEXT BURN
8 DAC DOW	0.07	<p>OBJECTIVES:</p> <p>Maintain as outer zone to protect adjoining dwelling.</p> <p>Control spread of bracken and other weeds.</p> <p>PRESCRIPTION:</p> <p>See table 7 for widths and MP 5 in the Best Management Practices Guidelines for outer zone specifications.</p>	<p>Pile burns only if required.</p> <p>Do not burn during <i>Aquila audax</i> <sup>3</sup> (Wedge-Tailed Eagle) breeding season August-January.</p>	2002	Pile burns only
9 DAC	3.08	<p>OBJECTIVES:</p> <p>Maintain as heathy dry sclerophyll forest.</p> <p>Allow recruitment of canopy species.</p> <p>Control spread of bracken and other weeds.</p> <p>PRESCRIPTION:</p> <p>Autumn burn every 15 to 20 years.</p>	<p>Do not burn during the bird nesting/seed setting period</p> <p>Keep burns at low intensity to minimise canopy scorch.</p> <p>Protect equestrian centre infrastructure during burns.</p> <p>Do not burn during <i>Aquila audax</i> <sup>3</sup> (Wedge-Tailed Eagle) breeding season August-January.</p> <p>Notify Roches Beach Living (retirement village), Lauderdale Primary School and Bishops Vineyard (86 Acton Road) in planning stages.</p>	2002	Assess next plan
10 DAC	0.59	<p>OBJECTIVES:</p> <p>Maintain the structure and floristics of the vegetation communities.</p> <p>Allow recruitment of canopy species.</p> <p>Control spread of bracken and other weeds.</p> <p>PRESCRIPTION:</p> <p>Autumn burn every 15 to 20 years.</p> <p>Maintain a 5m wide fuel break along the reserve boundary.</p>	<p>Do not burn during the bird nesting/seed setting period</p> <p>Keep burns at low intensity to minimise canopy scorch.</p> <p>Protect adjoining property during burns.</p> <p>Do not burn during <i>Aquila audax</i> <sup>3</sup> (Wedge-Tailed Eagle) breeding season August-January.</p> <p>Notify Roches Beach Living (retirement village), Lauderdale Primary School and Bishops Vineyard (86 Acton Road) in planning stages.</p>	2013	Assess next plan

VMU <sup>1</sup>	AREA (ha)	BUSHFIRE MANAGEMENT OBJECTIVES and PRESCRIPTIONS <sup>4</sup>	NOTES and PRECAUTIONS <sup>2, 3</sup>	LAST BURNT	NEXT BURN
11 DAC	2.14	<p>OBJECTIVES:</p> <p>Maintain as heathy dry sclerophyll forest.</p> <p>Allow recruitment of canopy species.</p> <p>Control spread of bracken and other weeds.</p> <p>PRESCRIPTION:</p> <p>Autumn burn every 15 to 20 years.</p>	<p>Do not burn during the bird nesting/seed setting period</p> <p>Keep burns at low intensity to minimise canopy scorch.</p> <p>Protect equestrian centre infrastructure during burns.</p> <p>Do not burn during <i>Aquila audax</i> <sup>3</sup> (Wedge-Tailed Eagle) breeding season August-January.</p> <p>Notify Roches Beach Living (retirement village), Lauderdale Primary School and Bishops Vineyard (86 Acton Road) in planning stages.</p>	2002	Assess next plan
12 DAC	1.45	<p>OBJECTIVES:</p> <p>Maintain as heathy dry sclerophyll forest.</p> <p>Allow recruitment of canopy species.</p> <p>Control spread of bracken and other weeds.</p> <p>PRESCRIPTION:</p> <p>Autumn burn every 15 to 20 years.</p>	<p>Do not burn during the bird nesting/seed setting period</p> <p>Keep burns at low intensity to minimise canopy scorch.</p> <p>Protect equestrian centre infrastructure during burns.</p> <p>Do not burn during <i>Aquila audax</i> <sup>3</sup> (Wedge-Tailed Eagle) breeding season August-January.</p> <p>Notify Roches Beach Living (retirement village), Lauderdale Primary School and Bishops Vineyard (86 Acton Road) in planning stages.</p>	2015	Assess next plan
13 FPF	1.06	<p>OBJECTIVES:</p> <p>Control spread of bracken and other weeds.</p> <p>Allow recruitment of canopy species.</p> <p>PRESCRIPTION:</p> <p>Patch or pile burns only to assist with weed control.</p>	<p>Patch or pile burn only to assist with weed control.</p> <p>Do not burn during <i>Aquila audax</i> <sup>3</sup> (Wedge-Tailed Eagle) breeding season August-January.</p> <p>Notify Roches Beach Living (retirement village), Lauderdale Primary School and Bishops Vineyard (86 Acton Road) in planning stages.</p>	Not known	No burning duration of plan

VMU <sup>1</sup>	AREA (ha)	BUSHFIRE MANAGEMENT OBJECTIVES and PRESCRIPTIONS <sup>4</sup>	NOTES and PRECAUTIONS <sup>2, 3</sup>	LAST BURN	NEXT BURN
14 AWU FAG	4.74	<p>OBJECTIVES:</p> <p>Maintain planted vegetation.</p> <p>Reduce the extent and density of weeds.</p> <p>PRESCRIPTION:</p> <p>Do not burn until planted trees are large enough to survive a low intensity burn.</p> <p>Maintain a 10m wide fuel break along the southern boundary of the reserve.</p> <p>Patch or pile burns only to assist with weed control.</p> <p>FAG section:</p> <p>If mowed, mowing must be to 100mm and after seed setting period of grasses and native inter-tussock herbaceous species (approximately early December - must be confirmed in field prior to mowing).</p>	<p>Artificial wetland with planted trees.</p> <p>Patch or pile burns only to assist with weed control.</p> <p>Do not burn during <i>Aquila audax</i> <sup>3</sup> (Wedge-Tailed Eagle) breeding season August-January.</p> <p>Notify Roches Beach Living (retirement village), Lauderdale Primary School and Bishops Vineyard (86 Acton Road) in planning stages.</p> <p>Consult DPIPWE Threatened Species Section before burning area with AWU<sup>2</sup>.</p> <p>Contains the rare plant species <i>Bolboschoenus caldwellii</i> <sup>3</sup>. Obtain a permit from DPIPWE Threatened Species Section before burning.</p>	Not known	Patch and pile burns only

<sup>1</sup> TASVEG 3.0 codes of vegetation types in the unit.

<sup>2</sup> Nature Conservation Act 2002

<sup>3</sup> Tasmanian Threatened Species Protection Act 1995

<sup>4</sup> Strategic FMZ under Hobart Fire Protection Plan.

#### 4.3.3 Preparation and Supervision

The VMUs scheduled for burning should be inspected some months before the proposed burn to check that the scheduling and burning prescriptions are still appropriate and to determine whether weeds are present that require treatment before burning. Where treatment of weeds is required, it should be carried out at least 3 months in advance of the burn to allow treated weeds to desiccate. Disturbance of the treated infestations (by mechanical means, slashing or burning) within this period may reduce the herbicide's effectiveness, and regeneration from rootstock is likely to occur.

Successful implementation of the planned burns in this plan requires trained personnel and special equipment. Each planned burn recommended in this plan must have a burn plan prepared by someone who has completed the Forestry Tasmania "Develop Prescribed Burning Plans" course or equivalent. All persons engaged in planned burning or firefighting in the reserve must have completed the Forestry Tasmania "Forest Fire Fighting" course or equivalent.

If the planned burning is contracted out, the contractor must be able to meet the required training accreditation in the previous paragraph, as well as provide evidence of experience in carrying out broadscale low intensity fuel reduction burns.

## 4.4 Bushland Management

In August 2012 Watershed Tasmania developed the *Roscommon Reserve Activity Plan 2012-2017*. In addition, in July 2014 Welling Consulting in conjunction with Playstreet Pty Ltd developed the *Roscommon Master Plan 2014-2024*. These documents aim to ensure the reserve is sustainably managed and links directly to the BMP through the preservation and enhancement of its natural, cultural and social values.

Bushfire can provide the disturbance that many introduced species need to spread to new areas, as well as to expand existing populations. Other bushfire management activities, such as construction and maintenance of fire trails, and bulldozing of fuel breaks during bushfire suppression, can also provide opportunities for weeds to colonise native bushland. Fire can also be used as a tool to manage weed infestations. Some species are best controlled by herbicide application to regrowth following a bushfire. Other species can sometimes be controlled by the application of a fire regime that stimulates germination of seed but kills the regrowth before it has been able to flower.

MP 8 in *Clarence City Council Bushfire Management Strategy - Best Management Practice Guidelines* includes guidelines for integrating weed management with management burning, and for minimising the risk of weed invasion following bushfires. These guidelines should ensure that fires in the park do not worsen existing weed problems, or cause weeds to spread.

It should be noted that bush regeneration plantings in previously cleared areas can increase the bushfire hazard. Any proposals for bush regeneration in the reserves should be considered in the context of this BMP to ensure that they do not compromise bushfire protection measures proposed in this plan.

In general, plantings are not be allowed:

- on inner zones and outer zones/ FMZs established around assets at risk
- on fuel breaks
- Within 2m of the edge of fire trails.

### 4.4.1 Control of Bracken (*Pteridium esculentum*)

Where indicated in table 9, control of bracken should be undertaken after burns by cutting off the heads of the bracken annually in summer. Heads should be cut just below the lowest frond on each stem. This can be done with a brushcutter or a vehicle mounted slasher if it can be set high enough. Cutting of the heads should continue each year until regenerating native shrubs and trees reach the height of the bracken heads and then discontinued. It should be noted that this method of control will fail if it is not carried out consistently.

## 5. Bushfire Management Recommendations

The management actions recommended to meet the objectives of the plan in section 1.3 have been summarised and classified using the following criteria:

- URGENT** - Actions required to reduce a very high risk to life or property.
- ESSENTIAL** - Actions required to improve safety, or inadequate bushfire protection measures in high risk areas.
- Actions that are essential for control & suppression of bushfires, and/or conservation of threatened species.
- RECOMMENDED** - Actions required to improve inadequate bushfire protection measures in moderate risk areas.
- Actions required to ensure on-going effective bushfire management, or conservation of biodiversity.
- ROUTINE** - Maintenance of bushfire control resources and protection measures.

Urgent actions need to be undertaken as soon as possible.

Where applicable the desirable timing of other actions has been coded as follows:

- A** - Inspect and maintain annually, or as specified in the relevant MP
- A/S** - Timing as specified in the bushfire management plan
- 1, 2, etc** - Carry out action within the time period specified (years)
- 1A, 2A etc** - Construct within the next 1, 2 etc years and then inspect and maintain annually, or as specified in the relevant MP.

Management actions have been linked to generic MP's in *Clarence City Council Bushfire Management Strategy – Best Management Practice Guidelines*. Performance indicators have also been provided for each management action. These should be used to determine if the specific objectives of this bushfire management plan have been achieved. They should be monitored when the plan is revised every 5 years. Where performance targets are not being achieved, a review of the relevant portion of the plan should be undertaken.

## 5.1 Management Action Summary

RECOMMENDED ACTION	OBJECTIVE (section 1.3)	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATORS
1) Develop a community education program, including an information sheet, as outlined in section 5.7 of the Bushfire Management Strategy, to inform the community of bushfire management issues in the reserves and to ask them to report any smoke, or suspicious activity, on days of total fire bans to the police.	1, 2	REC - 1	Clarence City Council Fire and Bushland Management Tasmania Fire Service	Educational material distributed to adjoining residents, park users and other interest groups. Reduction in rubbish dumping within the reserve and residents planting in Council managed outer zones and fuel breaks. Reduction in the incidence of illegal fires on and around the park.
2) Implement the bushfire protection measures in section 2.4 for protection of built assets in and around the reserves.	1, 4	E	Clarence City Council Fire and Bushland Management Private landowners Equestrian centre Archery club	Bushfire protection measures in the reserves implemented and maintained. No assets lost to fires originating in, or moving through, the reserves.
3) Erect appropriate signs on tracks and roads to warn reserve users of planned burns.	1	E	Clarence City Council Fire and Bushland Management	No users of the reserves injured by planned burns.
4) Implement the recovery procedures in MP 12 following planned burns and bushfires.	1, 5, 6	E	Clarence City Council Fire and Bushland Management Tasmania Fire Service	Post-fire recovery carried out after planned burns and bushfires. No users of the reserves injured by fires or the effects of fires.
5) Carry out fire trail repairs and maintenance listed in table 8.	2, 6	E - 3	Clarence City Council Fire and Bushland Management	Fire trail repair works listed in table 8 completed.

RECOMMENDED ACTION	OBJECTIVE (section 1.3)	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATORS
6) Ensure all fire trails shown on figure 7 are inspected and maintained in a trafficable condition at all times according to MP 2.	2, 4	ROU - A	Clarence City Council Fire and Bushland Management	Vehicle access routes inspected as required in MP 2, and maintained in a trafficable condition for fire service vehicles.
7) Inspect gates regularly to ensure that locks are in place and functioning. Ensure that the local TFS brigade and other emergency services have keys to gates on trails giving access to Roscommon Reserve.	2	ROU - A	Clarence City Council Fire and Bushland Management	No unauthorised use of fire trails in Roscommon Reserve.  Security lock system implemented, keys distributed to TFS brigades and other emergency services.
8) Upon request from TFS, conduct a familiarisation tour of reserve for local TFS brigade.	1, 2, 4	Upon request	Clarence City Council Fire and Bushland Management  Tasmania Fire Service	Local TFS brigades familiar with bushfire management assets in the reserve.
9) Carry out bushfire management according to the schedule in table 9.	2, 3, 4, 5	E - A/S	Clarence City Council Fire and Bushland Management	No decline in the populations or distribution of threatened species.  Structure and floristics of native plant communities maintained.
10) Integrate planned burning into the weed management program for the reserves according to MP 8. Ensure follow-up weeding is carried out.	3, 5	REC - A/S	Clarence City Council Fire and Bushland Management  Landcare Groups Equestrian centre Archery club	All declared noxious weeds removed, control in rate of spread of bracken and other weeds.



RECOMMENDED ACTION	OBJECTIVE (section 1.3)	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATORS
11) Consult with the DPIPWE Threatened Species Section when carrying out bushfire management activities that may affect populations of threatened flora or fauna.	3	E	Clarence City Council Fire and Bushland Management DPIPWE Threatened Species Section	All planned burns carried out according to the requirements of threatened flora and fauna. All required permits obtained before burns or other management activities likely to affect threatened species.
12) Carry out vegetation monitoring as detailed in section 5.10 of the Bushfire Management Strategy including the recovery of any populations of threatened or rare flora and fauna burnt by bushfires or planned burns.	3, 5	E	Clarence City Council Fire and Bushland Management DPIPWE Threatened Species Section	Vegetation monitoring plots set up and surveyed and data on the population size and extent of threatened species recorded before planned burns. Regular follow-up surveys undertaken.
13) Regularly revise burning schedules and prescriptions to ensure they incorporate the most recent information on the fire ecology of flora, fauna and plant communities of conservation value in the reserves.	3, 5	REC - A/S	Clarence City Council Fire and Bushland Management	Bushfire management plan revised every 5 years.
14) Coordinate bushfire management, weed management and other management activities using the procedure in MP 9.	3, 5	REC - A	Clarence City Council Fire and Bushland Management Landcare Groups Equestrian centre Archery club	Meetings held as recommended in MP 9 and the outcomes recorded.
15) Ensure all personnel engaged in planned burning activities in the reserve have the appropriate level of training and equipment as outlined in the bushfire management strategy, and the minimum equipment listed in MP 7.	1, 2	E	Clarence City Council Fire and Bushland Management	All personnel are able to demonstrate the required level of training and minimum levels of equipment.

RECOMMENDED ACTION	OBJECTIVE (section 1.3)	PRIORITY	RESPONSIBILITY	PERFORMANCE INDICATORS
16) Record bushfire management activities and bushfires using the procedures in MPs 10 and 11.	3, 4, 5	REC - A/S	Clarence City Council Fire and Bushland Management	Records maintained of all bushfire management activities.
17) Advertise planned burns biannually instead of annually in the Mercury Newspaper.	1, 3, 4	ROU - A	Clarence City Council Fire and Bushland Management	Reduction in community queries on annual planned burning programs.

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# Appendix A

**Implementation of the previous bushfire management plan**

The following codes have been used in assessing implementation of the previous Bushfire Management Plan for Roscommon Reserve:

IS – Implemented successfully

PI – Partly implemented

NI – Not implemented

NA – Not applicable (to be implemented at a later time, or dependent on another incident or action).

RECOMMENDED ACTION	CODE	COMMENT
1) Develop a community education program, including an information sheet, as outlined in section 5.7 of the Bushfire Management Strategy, to inform the community of bushfire management issues in the reserves and to ask them to report any smoke, or suspicious activity, on days of total fire bans to the police.	PI	<p>A formalised community education program has not been designed.</p> <p>Public exhibition of Councils <i>Bushfire Management Strategy for Council Owned and Controlled Land, Bushfire Management Strategy Best Management Practice Guidelines</i> and the previous BMP for the reserve has taken place.</p> <p>Various TFS community bushfire preparation events have been attended and represented by Council Fire and Bushland Management throughout municipality.</p>
2) Implement the bushfire protection measures in section 2.4 for protection of built assets in and around the reserves.	IS	The bushfire protection measures in section 2.4 of the previous BMP have been largely implemented. Some outer zones/fire breaks have been planted in by Landcare group and such plantings since removed. Continued communication to Landcare group will alleviate reoccurrences.
3) Erect appropriate signs on tracks and roads to warn reserve users of planned burns.	IS	Planned burns do not commence without appropriate signage. No users of the park were injured during planned burns in previous BMP.
4) Implement the recovery procedures in MP 12 following planned burns and bushfires.	IS	<p>Post-fire recovery carried out after planned burns in 2013 in VMU 10 &amp; 2015 in VMU 12.</p> <p>No users of the reserves injured by fires or the effects of fires.</p>
5) Carry out fire trail repairs and maintenance listed in table 8.	IS	Fire trail repair works listed in table 8 revaluated from operational basis throughout previous BMP. Some recommendations not required.

RECOMMENDED ACTION	CODE	COMMENT
6) Ensure all fire trails shown on figure 5 are inspected and maintained in a trafficable condition at all times according to MP 2 and fire trail signs are in place and legible.	PI	Vehicle access routes inspected as required in MP 2, and maintained in a trafficable condition for firefighting appliances. Fire trail signs not erected.
7) Inspect gates regularly to ensure that locks are in place and functioning. Ensure that the local TFS brigade and other emergency services have keys to the gates accessing Roscommon Reserve.	IS	Security lock system implemented, gates inspected regularly, keys distributed to TFS brigade.
8) Conduct a familiarisation tour of Roscommon Reserve for local TFS brigades prior to the start of the fire permit period each year.	NI	Familiarisation tour not taken out. Tour will be given upon request from TFS.
9) Carry out bushfire management according to the schedule in table 9.	IS	All scheduled planned burns from table 9 carried out successfully.
10) Integrate planned burning into the weed management program for the reserves according to MP 8. Ensure follow-up weeding is carried out.	IS	All pre/post burn weed management procedures in place. Follow up monitoring occurring.  Contractors utilised as required.
11) Consult with the DPIPWE Threatened Species Section when carrying out bushfire management activities that may affect populations of threatened flora or fauna.	IS	All planned burns carried out according to the requirements of threatened flora and fauna.
12) Carry out vegetation monitoring as detailed in section 5.10 of the Bushfire Management Strategy including the recovery of any populations of threatened or rare flora and fauna burnt by bushfires or planned burns.	IS	PIP001 (Permanent Inventory Plot 001) established in VMU 1 behind 112 Terrina Street in 2012. Plot is re-assessed annually in Councils Fire and Bushland Management Vegetation Monitoring Program. PIP includes photo point monitoring, flora survey and tree form.
13) Regularly revise burning schedules and prescriptions to ensure they incorporate the most recent information on the fire ecology of flora, fauna and plant communities of conservation value in the reserves.	IS	Regimes and prescriptions have been analysed throughout life of previous BMP. During 2016 review process all VMUs regimes and prescriptions have been evaluated to suit best outcomes for asset protection and ecological requirements.

RECOMMENDED ACTION	CODE	COMMENT
14) Coordinate bushfire management, weed management and other management activities using the procedure in MP 9.	PI	Coordination of activities has been undertaken. Some informal meetings with Landcare group carried out, but most meetings as recommended in MP9 not carried out.
15) Ensure all personnel engaged in planned burning activities in the reserve have the appropriate level of training and equipment as outlined in the bushfire management strategy, and the minimum equipment listed in MP 7.	IS	Extensive training has been delivered to Council Fire and Bushland Crew during term of previous BMP. Ongoing training will be recommended on a needs basis.
16) Record bushfire management activities and bushfires using the procedures in MPs 10 and 11.	IS	Since 2013 Council has developed extensive GIS Fire Management context. All available historic fire management information has been input and updated annually.



# Appendix B

**Summary of community concerns and comments  
in the initial round of community consultation**

COMMUNITY CONCERNS and COMMENTS	COUNCILS COMMENT
Comment on long grass in VMU 14 throughout summer that is not slashed.	Council maintain a 5-10m fuel break to the south of the long grass along the property boundary. Will discuss the possibility of annually mowing this section with relevant Council staff to meet ecological requirements.
Comment on the need for more than one cut during summer of the vegetation against boundary fences along Terrina Street and reserve.	Residents to contact Council with concerns and Council will inspect and action as required during bushfire season.  Councils restrictions on second cuts to areas is the extensive network of bushland reserves and defensible spaces throughout municipality, council uses a relative risk ranking to prioritise second cuts annually.  Some properties along Terrina Street pump grey water into adjacent reserve which aids in prolific growth.
Requested increased level of notice prior to conducting planned burns within reserve.	Acknowledged that this would be good for residents however is very challenging as each planned burn has stringent weather prescriptions and moisture content of fuels to be burnt to assist with favourable smoke management. Council publishes all planned burns scheduled for annual burn programs in the Mercury Newspaper in the Public Notices section. In addition Council letter box drops leaflets as early as possible on days prior to burn informing residents.  Council will investigate advertising burns schedules biannually in Mercury Newspaper.
Comments on safety concerns over the closure of vehicle access to Roches Beach (also known as Lauderdale Beach) at the canal end.	Whilst this is not a bushfire concern this will be passed onto relevant Council staff.
Written comments from resident:  Some residents cut the grass behind their fences along Terrina Street within the reserve to reduce fire risk.  Query on how fire trucks and other emergency services vehicles get to properties on adjacent section of Meehan Ranges above Acton Road?  Concern towards running grassfire within Roscommon Reserve.	Acknowledged some residents do maintain in addition to lease small sections of reserve that backs onto properties along Terrina Street. Remind residents that vegetation management within reserve is the responsibility of Council. If residents have concerns with vegetation in the reserve to contact Council.  Properties in question above Acton Road have vehicle access from Acton Road.  Council annually mow strips throughout grasslands leased to EFA and maintain a 15m strategic FMZ to TFS specifications for an outer zone between grasslands and eastern boundary of reserve.

COMMUNITY CONCERNS and COMMENTS	COUNCILS COMMENT
Written comment on removal of cut grass in strategic FMZ on eastern boundary of reserve (VMU 4).	Cutting and not removing the grass in the FMZ reduces fuel loadings from the near surface layers to the surface fuel layer which should reduce bushfire intensity during the time the cut grass takes to decompose. Council Fire and Bushland Management will continue to inspect FMZ post slashing annually and will action as required.
Written comment that fire brigade recommended at least 30m should be cleared from timber fences facing the reserve along the western side of Terrina Street.	<p>Current TFS standards for defendable spaces state the inner zone (previously bushfire protection zone or BPZ) for the adjacent bushfire prone vegetation “grassland” is 10m with an additional 15m outer zone.</p> <p>The inner zone is measured along the ground from the edge of the building. The outer zone (formerly fuel modified zone or FMZ) measured along the ground from the outer edge of the inner zone.</p> <p>Council Fire and Bushland Management maintains a minimum 5m outer zone within the reserve adjacent to the private property to compliment the available space within the private property to meet the above TFS specifications.</p>
Written request to establish a 5m fuel break along northern boundary of reserve to mitigate damage to agricultural fencing in event of bushfire.	Council has since established after request and will continue to maintain annually.