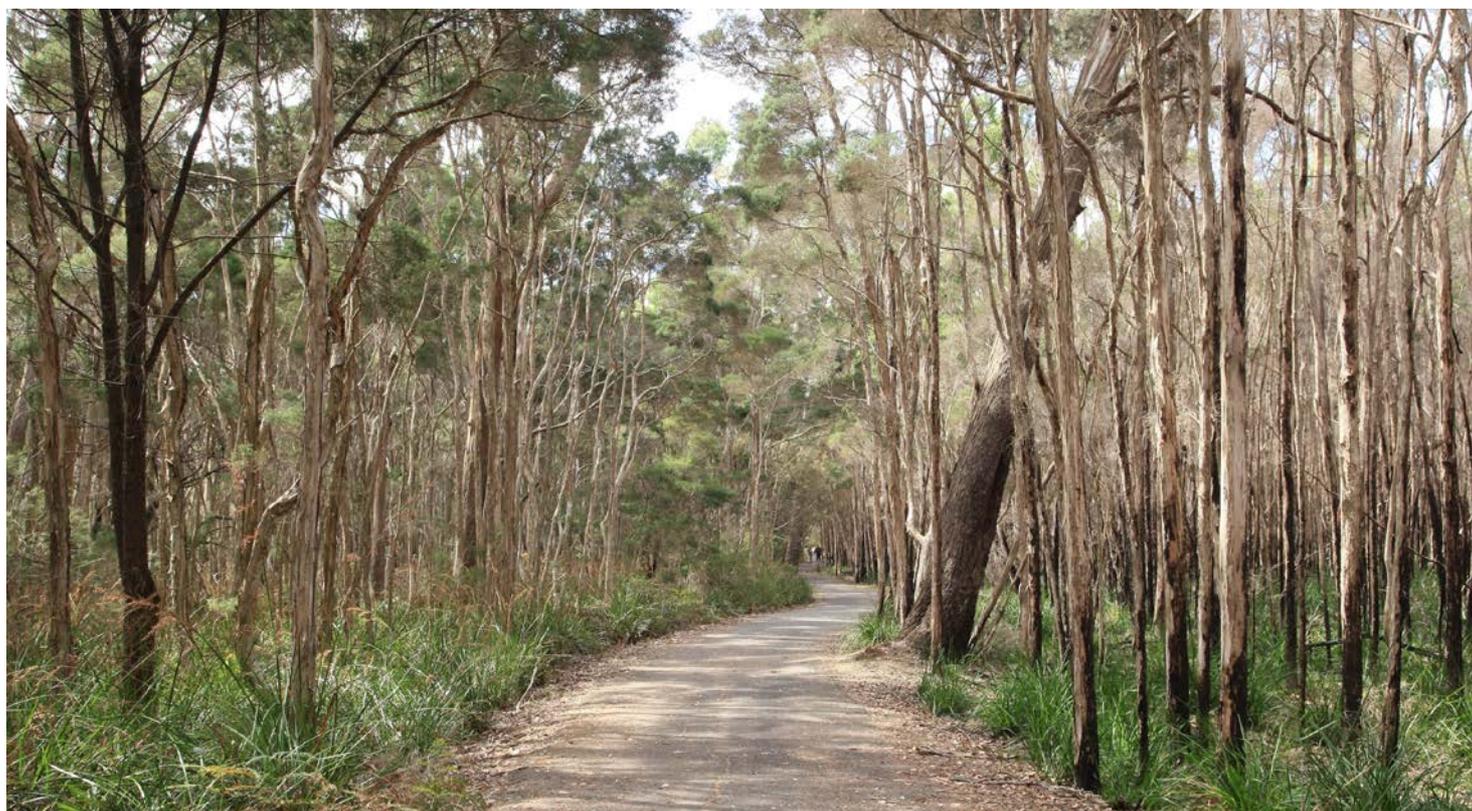




Don Reserve Bushfire Management Plan

Prepared for
Devonport City Council

14 November 2017



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Prepared by	Adrian Pyrke
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Template 08/05/2014

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Glossary of Terms

Term	Description
Bushfire	Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective.
Bushfire Attack Level (BAL)	A means of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kilowatts per metre squared, which is the basis for establishing the requirements for construction to improve protection of building elements from attack by bushfire.
Fire regime	The history of fire in a particular vegetation type or area including the frequency, intensity and season of burning. It may also include proposals for the use of fire in a given area.
Fuel hazard	Fine fuels in bushland that burn in the continuous flaming zone at the fire's edge. These fuels contribute the most to the fire's rate of spread, flame height and intensity. Typically, they are dead plant material, such as leaves, grass, bark and twigs thinner than 6 mm thick, and live plant material thinner than 3 mm thick.
Fuel reduction burning	The planned application of fire to reduce hazardous fuel quantities; undertaken in prescribed environmental conditions within defined boundaries.
Head fire	The part of the fire where the rate of spread, flame height and intensity are greatest, usually when burning downwind or upslope.
Intensity	The rate of energy release per unit length of fire front usually expressed in kilowatts per metre (Kw/m).
Overall fuel hazard rating	A fuel hazard rating based on the sum of influences of bark hazard, elevated fine fuel hazard, near-surface hazard and surface hazard.
Planned burning	The controlled application of fire under specified environmental conditions to a predetermined area and at the time, intensity, and rate of spread required to attain planned resource management objectives

Abbreviations

Abbreviation	Description
BAL	Bushfire Attack Level
CSMS	Coordinated Smoke Management Strategy
DCC	Devonport City Council
FFDI	Forest Fire Danger Index
TFS	Tasmania Fire Service

1 Introduction

1.1 Purpose of plan

The Don Reserve is 76 hectares of predominantly natural bushland owned and managed by Devonport City Council (DCC) located on the western boundary of the Devonport urban area. The bushland has important conservation values, provides recreational opportunities and social amenity, but is also a bushfire risk to neighbouring residents and community assets.

The plan guides Devonport City Council in the fire management activities in this area for the next ten years, it includes actions required by Council and other responsible parties.

1.2 Objectives

The plan objectives are to:

- i. Facilitate the suppression of fire in order to reduce the threat to human life and property, impact on the environment and culturally significant assets;
- ii. Provide access for fire suppression and property protection;
- iii. Maintain fire regimes within biodiversity threshold guidelines for plant communities; and
- iv. Facilitate cooperative and complementary fire management strategies with neighbouring land holders and the Tasmanian Fire Service.

1.3 Fire planning context

A fire plan was prepared for Devonport City Council for Don Reserve in 2005 (AVK Environmental Management 2005). Considerable urban development has occurred on the southeast boundary of Don Reserve since that plan was prepared. Therefore, the bushfire risk has changed and revised strategies are required. However much of the background information in the earlier plan remains relevant.

In 2014 the Tasmanian state government initiated a new program of strategic fuel reduction burning across the State. Strategic bushfire risk assessment at the state-wide (State Fire Management Council 2014) and sub-region levels (State Fire Management Council 2016) is used to guide the prioritisation of burning in this new program. Through these risk assessments, Don Reserve has been identified as a priority area for strategic burning and resources now contribute to the burning operations that were not previously available.

In a hierarchical sense, this bushfire management plan for Don Reserve sits under the Fire Protection Plan for the Central North Fire Management Area (State Fire Management Council 2016). Therefore, it is important that these plans are consistent and complementary.

1.4 Plan Format

The Bushfire Management Plan focuses on fire management actions on the A3 maps and tables at the end of this plan; providing a succinct document for Devonport City Council and other parties responsible for implementation. Background information sets the context, summarises built, community and environmental values and the underpinning risk assessments.

1.5 Legislation and Policy

The actions in this plan must be undertaken in consideration of the following state legislation:

- Aboriginal Relics Act 1975
- Environmental Management and Pollution Control Act 1994
- Fire Service Act 1979
- Forest Practices Act 1985
- Historic Cultural Heritage Act 1995
- Land Use Planning and Approvals Act 1993
- Threatened Species Protection Act 1995
- Water Management Act 1999 / State Policy on Water Quality Management 1997
- Work Health and Safety Act 2012.

Some management activities may also need to consider federal jurisdiction under the Environmental Protection and Biodiversity Act, 1999.

A number of Council documents that are relevant to fire management of Don Reserve are available on the website of the Devonport City Council:

- Devonport City Council Strategic Plan 2009-2030 (provides a high level vision for management of the natural environment)
- Don Reserve Environmental Management Plan 2015-2020
- Open Space Strategy
- Risk Management Framework.

2 Bushfire Risk Assessment

2.1 Landscape context

Located between the Don River tidal estuary and the Devonport urban area, the 76 ha Don Reserve delineates the western boundary of the City. This mostly flat littoral zone is covered in eucalypt forest, much of which has an understorey of coast paperbark, with a network of recreational tracks and the Don River Railway tourist attraction running through the entire length of the Reserve (**Map 1**).

Over the last 12 years suburban housing has filled in the rural area on the south-east perimeter of the Don Reserve. The newest neighbouring housing is built to contemporary Tasmanian bushfire planning standards, but as the remainder do not they are likely to be exposed to a higher bushfire risk.

2.2 Fire climate

The temperate and maritime climate of Devonport ameliorates the potential bushfire conditions compared to some parts of Tasmania, although significant fire weather and fuel dryness conditions can be expected in summer months. The mean annual rainfall at Devonport Airport is 773 mm although the summer months are much drier than winter months. The most significant fire weather in summer is associated with south-westerly to westerly winds, low humidity and High fire danger (SFMC 2014). **Figure 1** indicates that Very High fire danger may occur approximately two days every three years over the worst months of January and February. Days of Severe, Extreme or Catastrophic fire danger are extremely rare; only one such day was recorded from 2006 to 2016 (**Figure 1**).

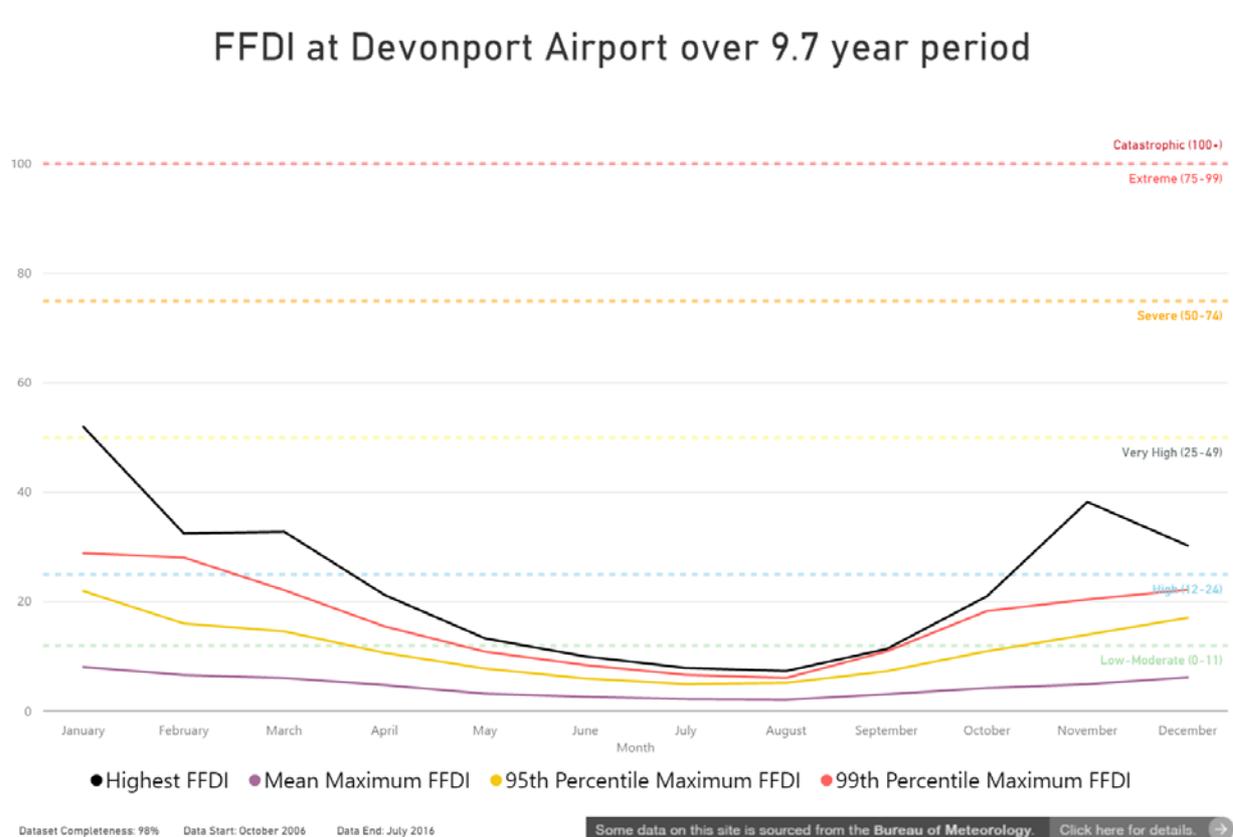


Figure 1: Forest Fire Danger Index (FFDI) at Devonport Airport. 99th percentile is shown per calendar month, which means approximately one day per three years. Source: State Fire Management Council.

2.3 Fuel hazard and fire behaviour

The eucalypt forests and woodlands of Don Reserve are highly flammable. The 'Overall Fuel Hazard' (Hines et al. 2010) rating in 2017 generally varies from Moderate to Very High. Areas burnt by plan burns in 2015 and 2016 or recently mown have a Low fuel hazard. The bark fuels on the black peppermint (*Eucalyptus amygdalina*), black gum (*E. ovata*) and coast paperbark (*Melaleuca ericifolia*) trees within the Reserve have the potential to produce significant numbers of embers and spot fires under High to Very High fire danger conditions.

Under High fire danger conditions in areas with a Very High fuel hazard, bushfires are likely to be difficult to control and embers will present a significant bushfire attack on nearby houses.

2.4 Fire history

No significant bushfires (i.e. unplanned fires) have been mapped in the Don Reserve since 2005 (Tasmania Fire Service records), although small fires were common from 1993 to 2004 (AVK Environmental Management 2005) and this pattern may have continued. Deliberate human ignitions are probably the greatest risk but accidental ignitions are also possible. The likelihood of such ignitions cannot be determined from fire history; however, it is reasonable to consider them a genuine risk in most years. Response time by TFS brigades is likely to be less than 20 minutes given the proximity of the Reserve to urban fire-fighting resources and therefore fires would be contained quickly. Planned burns were conducted in 2015 and 2016 (**Map 2**).

2.5 Built assets and community

Suburban housing borders the Don Reserve along the full length of the eastern and northern boundaries. The Don River estuary separates the Don Reserve from the farmland and township of Don on the western side. The Don College is close to the border of the Reserve and the Splash Devonport Aquatic and Leisure Centre is located in the middle of the Reserve, as are other buildings in the same precinct (**Map 1**). There is a network of walking tracks through the Don Reserve which are used frequently by residents. The Don River Railway is a tourist attraction that is operated by a volunteer group. More details on recreation and community values can be found in the Don Reserve Environmental Management Plan 2015-2020.

All of the built assets within and neighbouring the Reserve are vulnerable to bushfire attack and damage (**Map 1**).

2.6 Fire Protection Plan

Under the Fire Service Act 1979, the Fire Management Area Committee for the Central North Fire Management Area is responsible for preparing and annually updating a Fire Protection Plan (State Fire Management Council 2016). The Don Reserve sits within this area and has been identified in the current Fire Protection Plan as an area of bushfire risk to Don College and neighbouring residents.

The Fire Protection Plan presents the results of computer bushfire risk modelling that has been conducted by the Fuel Reduction Unit of the Tasmania Fire Service for the broader landscape that includes the Don Reserve. This model called Phoenix RapidFire, illustrates where ignition points under High fire danger conditions with a west to south-west wind would most impact on built areas (mapped as 'human settlement areas' in the model; see also State Fire Management Council 2014). The results suggest that under current fuel conditions a bushfire starting within the Reserve presents some bushfire risk, but this risk is relatively low compared to other bushland areas near Devonport (for example, Kelcey Tier). The modelling also shows that bushfires are unlikely to enter the Don Reserve from outside, thus, only ignitions that occur within the Reserve are a threat to community and built assets (**Map 3**).

2.7 Fire simulation modelling

A computer bushfire simulator called SPARK (<https://research.csiro.au/spark/>) was used for this bushfire plan to examine the spread of fires under several ignition scenarios. These simulations utilised a scenario that matches the 99th percentile for fire weather (**Figure 1**) and under a west to southwest wind direction as used in the Phoenix RapidFire simulations (Section 2.6; State Fire Management Council 2014). The ignition points were selected to maximise fire development and size with the given wind direction.

The simulations illustrate that fires that start within the Don Reserve would arrive at neighbouring assets with a head fire 400 metres or more in width and a fire intensity up to 10,000 kW/m (**Map 4**). This intensity is considered sufficient to cause damage to built assets (State Fire Management Council 2014). Within

the Reserve a bushfire is unlikely to travel more than 800 m and this limits the size of fire that can develop and the magnitude of a bushfire attack. The narrow width of the Don Reserve at the northern and southern ends will further limit the size of fire that can develop.

2.8 Duty of care

Devonport City Council has a duty to take reasonable care to keep fire on the land it manages to prevent harm to neighbours. This principle comes from common law but what obligation Council (or any other landowner) has to manage vegetation fuel hazard prior to the ignition of a fire started by a third party is untested in an Australian court (Eburn and Cary 2016). A reasonable standard of care in terms of managing fuels requires consideration of the following factors:

- i. The level of risk in terms of consequences (e.g. proximity of houses at risk) and likelihood (e.g. fuels, climate, ignition history, access);
- ii. The cost of managing the fuels;
- iii. Meeting wider community expectations beyond what may be unambiguous legal requirements.

3 Fire and Natural Values

3.1 Vegetation and Threatened Species

The vegetation and fauna of the Don Reserve is described in the Don Reserve Environmental Management Plan 2015-2020 and the vegetation mapping from the 2005 fire plan (AVK Environmental Management 2005) is shown on Map 5. Ground truthing indicated that the 2005 mapping is more accurate than the latest version of the state-wide vegetation map TASVEG (Kitchener and Harris 2013). Forests dominated by black gum (*Eucalyptus ovata*) and black peppermint (*E. amygdalina*) are the most widespread in the Don Reserve, while the former includes extensive areas of coast paperbark (*Melaleuca ericifolia*) forming a secondary tree canopy.

Threatened native vegetation communities listed under the Nature Conservation Action 2002 and present in the Don Reserve are:

- *Eucalyptus ovata* forest and woodland
- *Melaleuca ericifolia* swamp forest

There is only one plant species listed under the Threatened Species Protection Act recorded and mappable from Don Reserve, lance beardheath (*Leucopogon affinis*) which is listed as rare, and this record is from one location. The Natural Values Atlas has records for northern pinkbells (*Tetratheca ciliata*) and curved riceflower (*Pimelea curviflora*) from Don Reserve which cannot be mapped with any accuracy, but these species may also be present.

Threatened fauna recorded in Don Reserve (Don Reserve Environmental Management Plan 2015-2020 and Natural Values Atlas) include:

- Central North burrowing crayfish (*Engaeus granulatus*)
- eastern barred bandicoot (*Perameles gunnii*)
- giant freshwater crayfish (*Astacopsis gouldi*)
- masked owl (*Tyto novaehollandiae*)
- swift parrot (*Lathamus discolor*)

However, no raptor nests are recorded from the Don Reserve.

The vegetation mapping, descriptions and other information on flora and fauna in the earlier fire plan for Don Reserve (AVK Environmental Management 2005) are still useful references.

3.2 Appropriate Fire Regimes

To maintain biodiversity, the aim should be to provide appropriate fire regimes that will facilitate the persistence of species and habitat. To achieve this planned burning may be required at appropriate intervals, seasons and intensity in some vegetation communities. Maintenance of habitat such as large, old trees is important for fauna. **Table 1** summarises the recommended fire regimes for biodiversity maintenance objectives. Care should be taken to ensure appropriate fire regimes are maintained in threatened native vegetation communities (section 3.1).

The vegetation of much of Don Reserve is amenable to planned burning, although the ideal fire regimes are not documented in any evidence-based publication. Therefore, what are considered to be appropriate fire regimes for the vegetation communities of Don Reserve are recommendations that will need to be reviewed following monitoring over many decades, in other words, by applying the adaptive management model (see AFAC 2016).

To manage fuel loads at levels that will reduce bushfire risk, planned burning may be required at intervals shorter than recommended in **Table 1** in some areas and therefore may not be optimal for biodiversity. In the Don Reserve there is a dilemma for areas with a dense canopy of coast paperbark (*Melaleuca ericifolia*) in that from an ecological perspective fire should be avoided in these areas and they are listed threatened vegetation communities (section 3.1), but they present a bushfire risk to Don College and Surrey Street (**Map 4**).

4 Fire Management and Hazard Reduction

4.1 Hazard management at reserve boundaries

4.1.1 Fire breaks

Firebreaks at the boundary of Don Reserve will reduce the risk of a fire exiting the Reserve and affecting neighbouring properties. Fuels nearest to houses will contribute the most to ember attack and access at the boundary provides advantage for bushfire control. The width of the fire breaks should be sufficient to provide safe access for fire tankers.

Some Don College buildings are within metres of fire prone vegetation in the Don Reserve and could not be defended from bushfire except under very mild weather conditions. No fuel management is proposed in this area, because of the environmental impact that this would cause to the Don Reserve, but adequate evacuation plans and a clear understanding of the risk is required (section 4.5.2).

Based on the risk assessments, current landscape context, practical considerations and applying the TFS guidelines for Management (Class 1) standard calculations (Tasmania Fire Service 2016), the maintenance of fire breaks at the boundary of Don Reserve is required at the locations shown on **Map 6**, adjacent to houses on some sections of the following streets: Heath Court, Surrey Street, Pine Place, Georgiana Street, Valkyrie Close, Erskine Way and Jiloa Way. These fire breaks should be the width indicated on Map 6, as measured from the property boundaries, and maintained to the standards indicated in the TFS fuel break guidelines (Tasmania Fire Service 2016), including the provision of access points and drivable by four-wheel drive light tankers.

4.1.2 Hazard management on neighbouring properties

Some houses bordering Don Reserve have either a bush fuel hazard actually on their properties, poorly designed/maintained buildings or gardens/landscaping (or a combination of these) that exacerbate their bushfire risk. The most effective reduction of bushfire risks to life and property on neighbouring land occurs within the hazard immediately abutting built assets, with management of the fuel hazard in the adjoining Reserve an important complementary risk reduction measure.

To maximise the reduction of risks to life and property a bushfire risk awareness program with neighbours is required; it will provide advice on the following:

- Clarification of the level of risk (likelihood and consequence)
- Removal/modification of fuel hazard in gardens and around houses to maintain a hazard management area.
- Ensuring garden plantings are consistent with providing a hazard management area.
- For houses that are not constructed to a level appropriate to their Bushfire Attack Level (BAL), retrofitting measures that can reduce their risk.

Much of this information is readily available on the TFS website and can be downloaded. The awareness program will also provide neighbours with information about the risk reduction measures being undertaken within Don Reserve.

4.1.3 Future development

It is important that all future housing, subdivisions and other development neighbouring Don Reserve complies with contemporary bushfire planning standards (Australian Standard 3959-2009) and local government regulation. While this is now normal practice for subdivision and building approval, it is important that Council maintains diligence to minimise the cost burden on ratepayers and environmental impact of fuel management within Don Reserve that may be incurred by further development.

4.2 Planned Burning

Planned burning units are indicated on **Map 6** and categorised by the primary burning objectives as follows:

- *Asset Protection* – for each individual burn, reduce the Overall Fuel Hazard rating to Low over 80% of the target burn area; burn at intervals to maintain, as far as feasible with available resources, an Overall Fuel Hazard rating of Moderate or less; increase burn intervals if there is measured evidence of degradation of important habitat.
- *Ecological* - Maintain a fire regime, particularly fire intervals (see **Table 1**), that will maintain species diversity.

Considerations for the design of the burning units and schedule (**Table 2**) were as follows:

- The bushfire risk as described in section 2
- The fire history and current fuel hazard
- The vegetation communities and what is currently believed to be an ecologically appropriate fire regime
- Practical fire boundaries
- Maintenance of a mosaic of post-fire habitat age across the area
- Likely available resources.

Burn scheduling is subject to priorities and resources allocated by TFS. No schedule is indicated for ecological burning units because no resources are currently available to conduct these burns; all should be burnt in the next 10 years if resources become available. If the mowing / slashing of bushland around Steele Street, the aquatic centre and near Jiloa Way is discontinued the need for Asset Protection burning of this area should be assessed.

Burning operations should consider the guidelines in **Table 3**.

4.3 Fire Trails and other access

The Don Reserve does not have any fire trails although the walking tracks, particularly the main sealed track, provide good access for fire control and planned burning.

4.4 Water supply for fire-fighting

Reticulated water and fire plugs are located in streets neighbouring Don Reserve (**Map 1**). No new water infrastructure is proposed.

4.5 Bushfire preparedness and response

4.5.1 Season preparedness

Suppression response within the Don Reserve is the responsibility of TFS. Annual pre-season briefing between Council staff and TFS district staff and brigades is required to ensure that TFS are aware of issues that will affect their capacity to respond, for example:

- Condition of tracks
- Location of access points, locked gates and provision of keys
- Recent fuel management
- Sharing of contact details and names of key officers
- Sharing of mapped information.

4.5.2 Emergency response plans

Emergency response plans are desirable for schools neighbouring the Don Reserve: Don College and Devonport Christian School; the Don Cricket Club, the Rugby Club and the aquatic and leisure centre. These plans, which should be developed in consultation with the TFS, should identify evacuation procedures in the event of a bushfire occurring in the Don Reserve. The preparation and maintenance of these plans is the responsibility of the schools and organisations. While it is not known if these plans already exist, Council will discuss the matter with the organisations in the context of this bushfire management plan.

4.5.3 Don River Railway

The Don River Railway are responsible for maintaining adequate risk assessment and plans to ensure that the risk of bushfire starting from trains is minimised. Factors to consider include:

- History of ignitions from trains
- Potential sources of ignition from locomotives and rolling stock
- Maintenance requirements of rail easement
- If there is any history of ignitions, suspension of operation on forecast days of FFDI ≥ 20 , at least for steam locomotives.

4.5.4 Response

Appropriate Council staff should be available to provide liaison for TFS during suppression operations to ensure that information is provided on assets and natural and cultural values that may affect suppression strategies or tactics, for example:

- minimise damage to large habitat trees
- sensitivity with earth moving equipment, for example: *Eucalyptus ovata* forest and woodland; *Melaleuca ericifolia* swamp forest; swift parrot habitat (**Map 5**)
- avoidance of occupied swift parrot habitat (if known).

The above considerations will always be limited by the overall objectives of fire suppression and practical constraints.

5 Monitoring and Evaluation

The effectiveness of the strategies and actions listed in the plan are to be monitored and evaluated. Whilst management of access, neighbour awareness and other risk factors are important, it is worth elaborating on the key bushfire risk management strategy which is fuel and fire regime management.

The success of planned burning depends on the extent to which completed operations achieve the intended objectives. Typically, it is necessary to be able to answer the following questions:

- Was the fuel hazard reduced to the targeted level?
- Has the burning contributed to a fire regime that is maintaining natural values?

If the answer to either of these questions is no, then adjustments to burning prescriptions and or the planned fire regimes need to be made.

The recommended fire intervals (**Table 1**) are based on a general knowledge of the ecology of the plants in Don Reserve and expert judgement, but in reality there is little detailed underpinning evidence at the local scale. The thresholds of 15 and 25 years may be too high, too low, or unhelpful to determine the best fire regime for maintaining biodiversity. From the perspective of bushfire risk management, it would be beneficial to validate whether or not the minimum threshold can be reduced, because there is an apparent discrepancy at the present time in understanding of fire intervals best suited for fuel reduction verses biodiversity management.

Given that the Reserve contain thousands of native species of higher and lower plants, mammals, reptiles, birds and invertebrates, we will never have knowledge of the fire ecology requirements for all individual species. It is possible, however, to monitor some indicators of vegetation health and species diversity.

This actions required to assess fuel loads and monitor vegetation and species diversity are specified in **Table 4**.

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Tables

Table 1: Recommended fire regimes to maintain biodiversity.

Vegetation Community	Recommended fire interval	Comment for this fire plan period
<i>coastal Eucalyptus amygdalina forest</i> <i>coastal Eucalyptus viminalis forest</i> <i>Eucalyptus ovata forest (without Melaleuca ericifolia canopy)</i> <i>Eucalyptus ovata / E. obliqua / E. amygdalina forest</i>	15-25 years	Avoid burning in spring if swift parrots present
<i>Acacia sophorae</i> scrub	20-50 years	No burning required
<i>Melaleuca ericifolia forest</i> <i>Eucalyptus ovata forest (with Melaleuca ericifolia canopy)</i>	100-200 years	Avoid burning
graminoid saltmarsh	No fire	
<i>Eucalyptus amygdalina</i> over parkland <i>Eucalyptus obliqua / E. amygdalina</i> over parkland	No fire	These areas are mown

Table 2: Planned burning schedule.

Unit Code	Objective	Ideal Burn Year	Area (ha)	Notes
DR1	Asset protection	2027	8.9	Burn when Overall Fuel Hazard reaches High
DR2	Ecological		2.1	Burn if resources are available
DR3	Ecological		4.2	Burn if resources are available
DR4	Asset protection	2018	2.8	Burn when Overall Fuel Hazard reaches High
DR5	Ecological		2.2	Burn if resources are available

Table 3: Guidelines for persons responsible for planning and conducting individual planned burns.

Planned Burn Guidelines
1. Prescriptions for planned burning should follow the Tasmanian operational burning guidelines (Marsden-Smedley 2009).
2. A detailed written operational burn plan is required for each individual burn. To prepare this plan, field inspection will be required to assess fuels, internal areas that should be excluded (if practical) and condition of boundaries. Some other factors to consider are noted below. The boundaries of units may be modified from those indicated on Map 6 where necessary.
3. The impact of smoke on neighbours should be managed in accordance with best practice as guided by Tasmania's Co-ordinated Smoke Management Strategy (CSMS): http://epa.tas.gov.au/Pages/Management-of-Planned-Burning.aspx .
4. Consult neighbours, user groups and community groups when preparing the operational burn plan to identify any issues that may impact the burn operation.
5. Consult weed managers to plan any pre-burn and post-burn weed treatment. Spanish heath (<i>Erica lusitanica</i>) and gorse (<i>Ulex europaeus</i>) are of particular concern.
6. Dense coast paperbark (<i>Melaleuca ericifolia</i>) stands in burning units with an ecological objective should be excluded from burning within the unit by setting prescriptions that utilise the fuel moisture differential between the stands and surrounding vegetation. Typically target fuels will dry out faster than non-target fuels following rain events.
7. Large old trees should be protected from burning as far as practical (e.g. clearing fuels, wetting down) to protect habitat. Concerned community groups may assist in identifying the location of these.
8. If swift parrots are present in the burn unit then do not burn in spring or summer.
9. If major bushfires occur in the area then the burn schedule will require revision, taking into account the reduction in future bushfire risk and recommended fire regimes.

Table 4: Monitoring and evaluation of fire plan strategies.

Action	When
1. Fire history: record all fire perimeters, both planned and unplanned, in a GIS database, including categorical estimates of the fire intensity and post-fire fuel status: surface, near surface, elevated and bark fuel hazard ratings. This is a key element of monitoring and the highest priority because it enables fire managers and researchers (e.g. university students) to undertake investigations at any time in the future that may inform adjustment of the planned fire regimes.	After each fire event
2. Conduct tree risk assessment due to potential hazard of falling limbs and trees.	After each fire event
3. Fuel hazard: estimate Overall Fuel Hazard rating in Asset Protection burn units (Map 6).	Annually from 7 years post-burn onwards
4. Understorey shrubs: select several species to monitor at specific monitoring points and record estimates of cover and abundance over a specified area. At least 6 monitoring points.	Once per burn cycle: ideally 5 years post-burn
5. Forest structure: utilise photographic monitoring points to monitor change in density, age and cover of tree and shrubs. Include categorical descriptions of tree and shrub health. At least 6 monitoring points including at least 3 in Asset protection burn units.	Once per burn cycle: ideally 5 years post-burn

Action	When
6. Swift parrot habitat: subject to available resources, record and map the utilisation of habitat (foraging and nesting) over successive seasons, to assess the impact of burning, or absence of fire, on parrots.	Annually in early summer
7. Record all species monitoring data in a Council database linked to GIS.	As available

Table 5: Action Plan

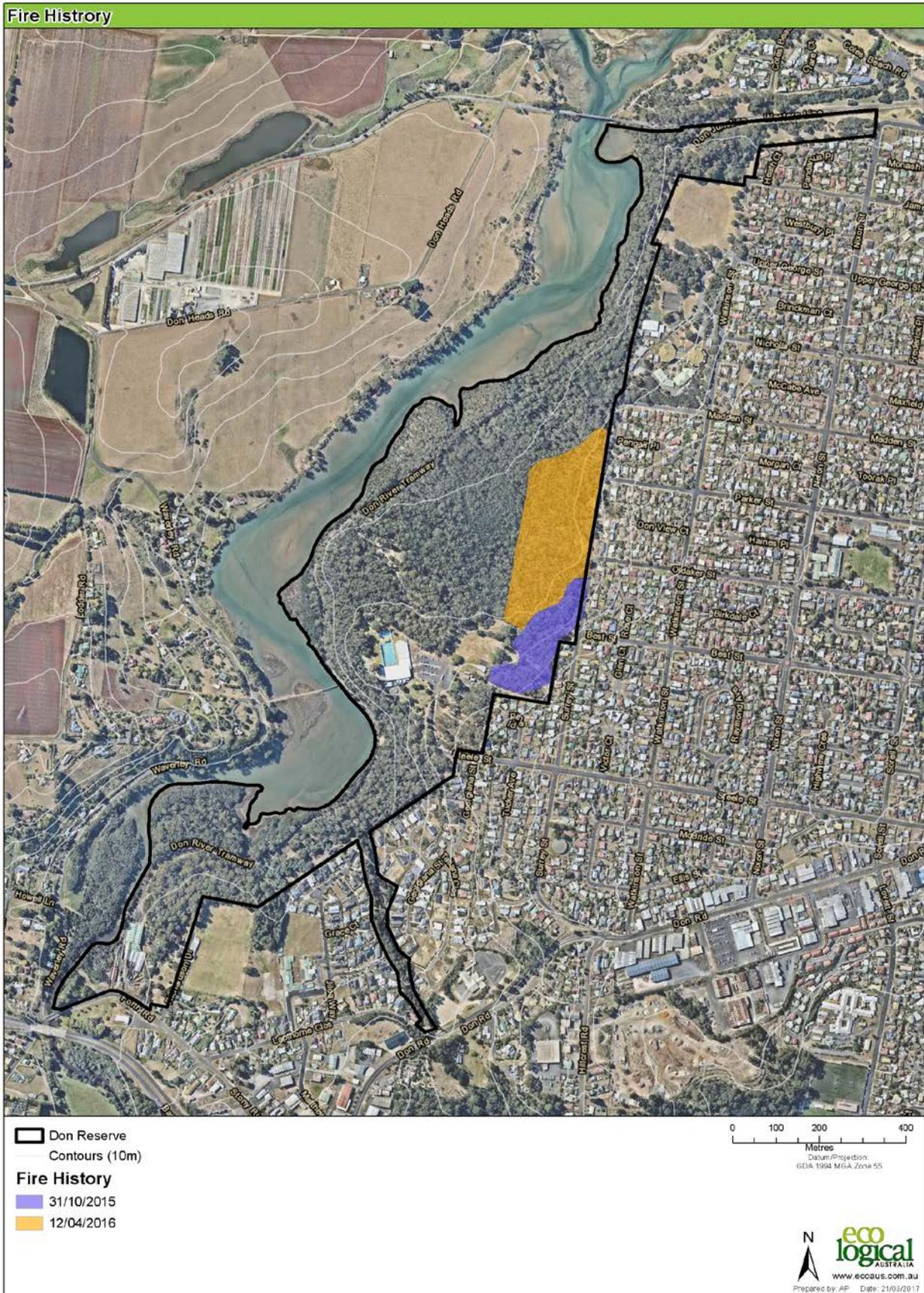
Strategy	Action	When	Responsibility
Hazard management at Reserve boundaries in accordance with the TFS Fuel Break Guidelines (Map 6)	1. Undertake and then annually review a risk assessment of recommended fire breaks to determine extent of works required	- Staged approach	- DCC
	2. Boundary fire breaks slashed	- Annually	- DCC
	3. Appropriate hazard management areas maintained within private properties around houses	- Annually	- Neighbouring property owners
	4. Bushfire awareness program to inform neighbours	- Every 2 years	- DCC
	5. Future development neighbouring Don Reserve managed	- Ongoing	- DCC
Planned burning (Map 6)	Planned burns conducted in accordance with schedule (Table 2) and guidelines (Table 3)	Autumn / spring of planned year	TFS with support and advice from DCC
Preparedness and response	1. Pre-season briefing and sharing of information (e.g. at multi-agency pre-season briefing)	- Oct-Nov each year	- DCC and TFS
	2. Emergency response plans for schools, relevant community organisations and aquatic centre include evacuation procedures for bushfire	- Reviewed annually	- Schools, relevant community organisations and aquatic centre with advice from TFS
	3. Don River Railway has plans that mitigate risk of trains starting bushfires	- Reviewed annually	- Don River Railway
	4. Response	- Every bushfire	- TFS with liaison and advice from DCC
Monitoring & evaluation (Table 4)	Evaluate result of burns. Monitor fuels, vegetation health and species diversity.		DCC and TFS

Maps



Map 1: Don Reserve

Don Reserve boundary, significant Assets: high and low voltage powerlines, schools, aquatic centre, buildings, railway lines, Walking tracks, Fire hydrants

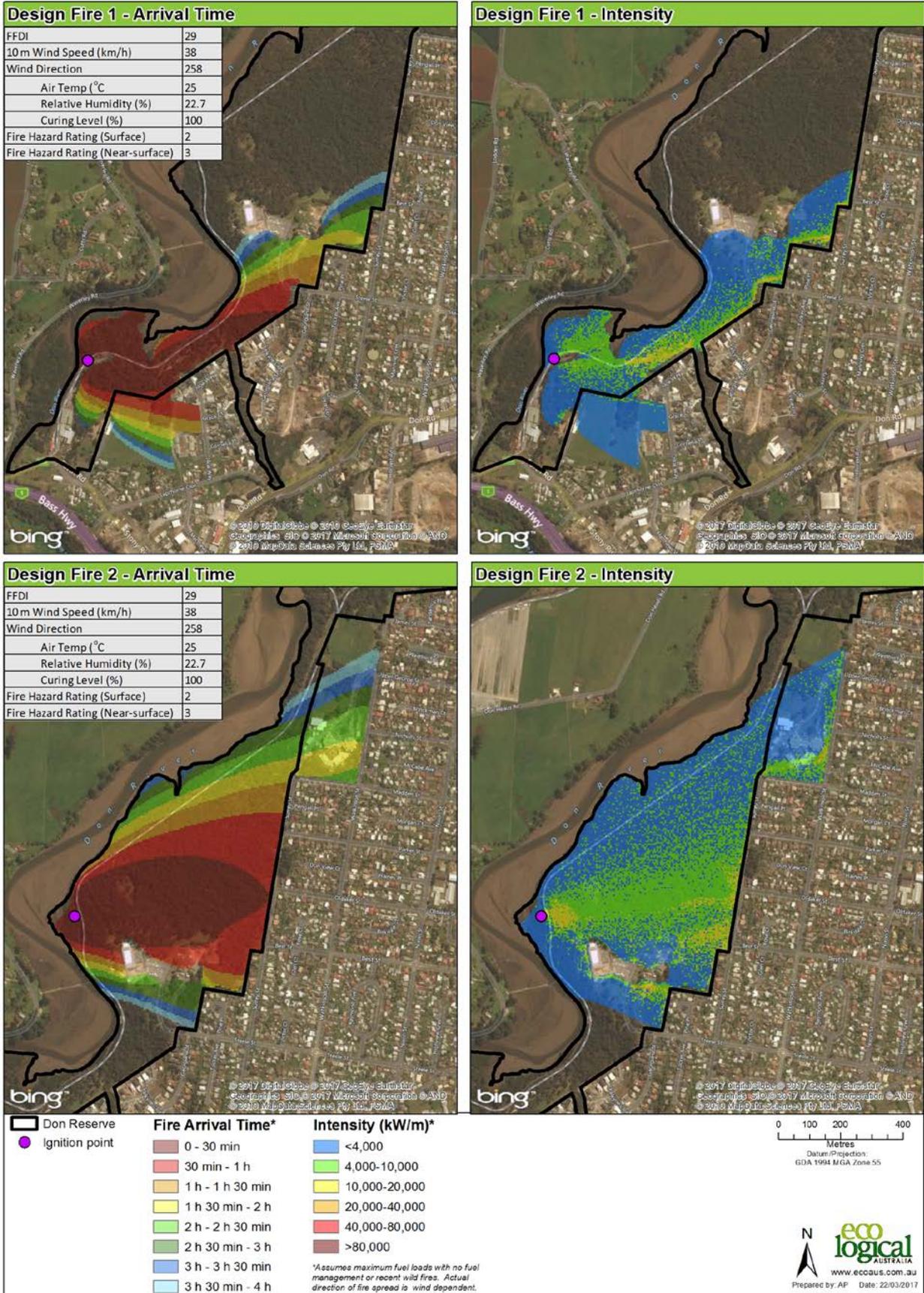


Map 2: Fire history since 2015

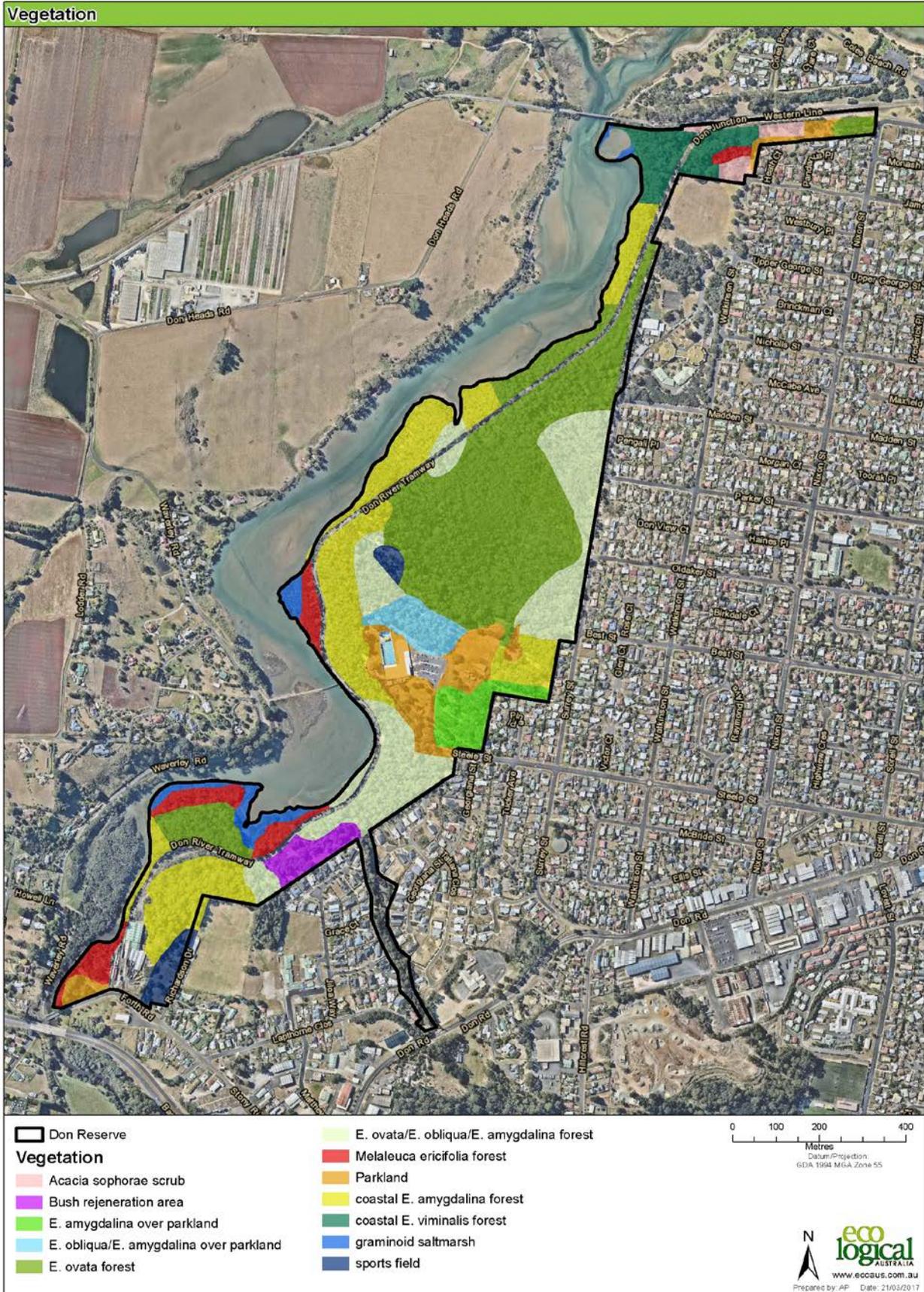
Fire history showing ignition cause.



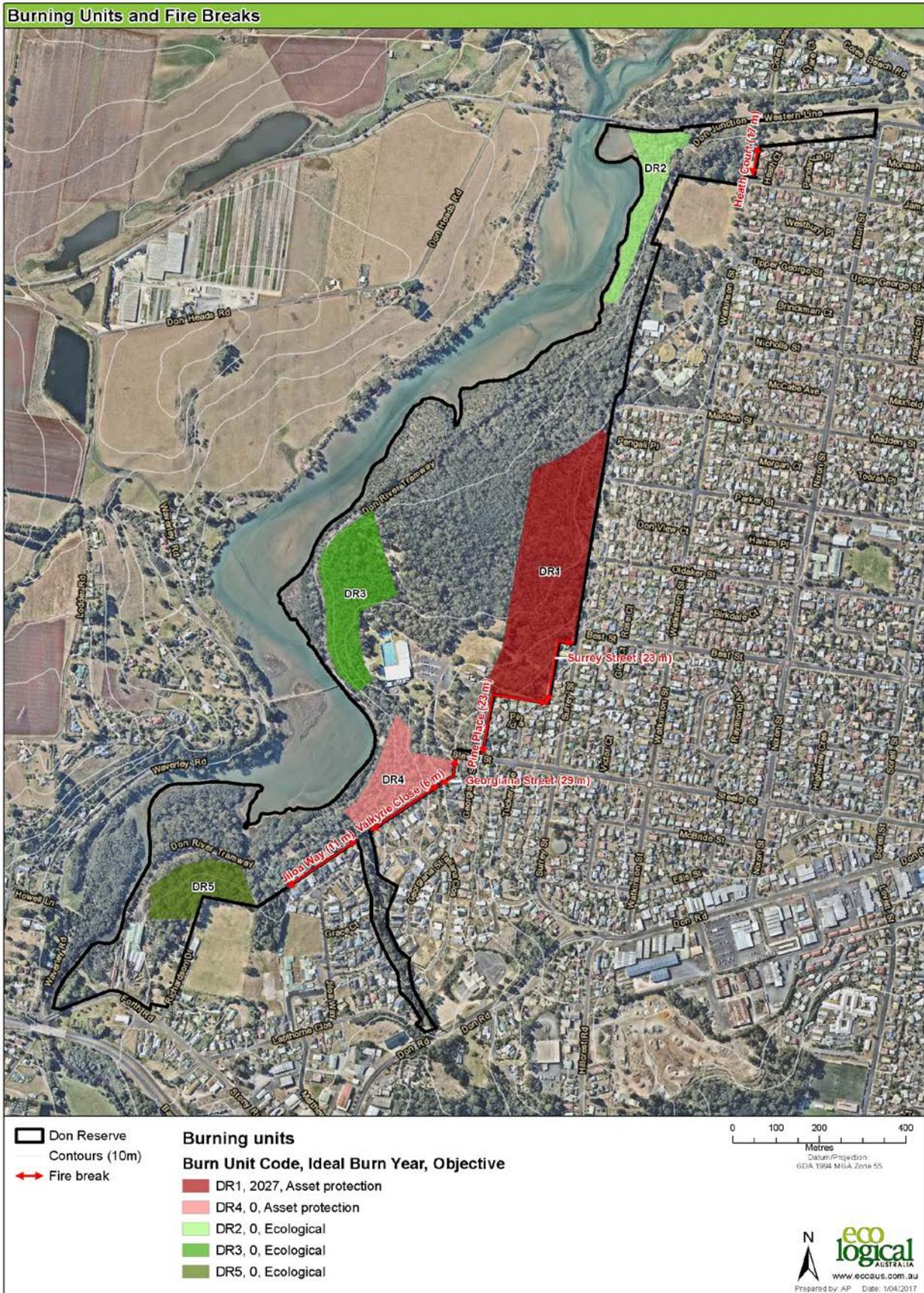
Map 3: Phoenix Modelling Risk Assessment



Map 4: Spark Simulations



Map 5: Vegetation



Map 6: Burning Units and Fire Breaks

Burning units showing code (unit name), ideal burn year and objective (colour: Asset protection or Ecological); Fire breaks indicating width.

eco
logical
AUSTRALIA



HEAD OFFICE

Suite 2, Level 3
668-672 Old Princes Highway
Sutherland NSW 2232
T 02 8536 8600
F 02 9542 5622

CANBERRA

Level 2
11 London Circuit
Canberra ACT 2601
T 02 6103 0145
F 02 6103 0148

COFFS HARBOUR

35 Orlando Street
Coffs Harbour Jetty NSW 2450
T 02 6651 5484
F 02 6651 6890

PERTH

Suite 1 & 2
49 Ord Street
West Perth WA 6005
T 08 9227 1070
F 08 9322 1358

DARWIN

16/56 Marina Boulevard
Cullen Bay NT 0820
T 08 8989 5601
F 08 8941 1220

SYDNEY

Suite 1, Level 1
101 Sussex Street
Sydney NSW 2000
T 02 8536 8650
F 02 9542 5622

NEWCASTLE

Suites 28 & 29, Level 7
19 Bolton Street
Newcastle NSW 2300
T 02 4910 0125
F 02 4910 0126

ARMIDALE

92 Taylor Street
Armidale NSW 2350
T 02 8081 2681
F 02 6772 1279

WOLLONGONG

Suite 204, Level 2
62 Moore Street
Austinmer NSW 2515
T 02 4201 2200
F 02 4268 4361

BRISBANE

Suite 1, Level 3
471 Adelaide Street
Brisbane QLD 4000
T 07 3503 7191
F 07 3854 0310

HUSKISSON

Unit 1 51 Owen Street
Huskisson NSW 2540
T 02 4201 2264
F 02 4443 6655

NAROOMA

5/20 Cauty Street
Narooma NSW 2546
T 02 4476 1151
F 02 4476 1161

MUDGEES

Unit 1, Level 1
79 Market Street
Mudgee NSW 2850
T 02 4302 1230
F 02 6372 9230

GOSFORD

Suite 5, Baker One
1-5 Baker Street
Gosford NSW 2250
T 02 4302 1220
F 02 4322 2897

1300 646 131
www.ecoaus.com.au