



# **Central North Fire Management Area**

## **Fire Protection Plan**

### **2019**

## Document Control

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### Document Endorsement



FMAC Chair – Tony King

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### Accepted by State Fire Management Council



SFMC Chair – Ian Sauer

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## Glossary

<b>Asset</b>	A term used to describe anything valued by the community that may be adversely impacted by bushfire. This may include residential houses, infrastructure, agriculture, industry, environmental and heritage sites.
<b>Asset Zone</b>	The geographic location of asset(s) of high value or importance and the physical boundary immediately around the asset.
<b>Asset Protection Zone</b>	An area of high strategic importance to protect values in the asset zone. Regular fuel reduction should be undertaken in the vicinity of specific assets. (Up to 1km wide around the asset).
<b>Strategic Fuel Reduction Zone</b>	Area of management that will increase the likelihood of controlling a bushfire within or the forward spread through the area. Located strategically in fuel types of high or greater flammability. Fuel to be managed by prescribed burning. Between 1km and 6km from a human settlement area.
<b>Land Management Zone</b>	An area that is managed to meet the objectives of the relevant land manager, which can be planned fire for fuel reduction, biodiversity conservation or forest regeneration.
<b>BRAM</b>	Bushfire Risk Assessment Model – A computer based modelling tool that uses a series of inputs to assess the risk of bushfire to a specific area. The BRAM has a capacity to produce a series of outputs. It was developed and is managed by Tasmanian Parks & Wildlife Service.
<b>Bushfire</b>	Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective. <sup>1</sup>
<b>Bushfire hazard</b>	The potential or expected behaviour of a bushfire burning under a particular set of conditions, i.e. the type, arrangement and quantity of fuel, the fuel moisture content, wind speed, topography, relative humidity, temperature and atmospheric stability.
<b>Community Bushfire Mitigation Plan</b>	A strategic plan that focuses on addressing bushfire hazards, and improving the survivability of communities and assets. The Bushfire Mitigation Plan identifies key areas for fuel management, and provides tactical guidance regarding prescribed burning, fuel treatment, fire management infrastructure, and asset protection work.
<b>Bushfire risk management</b>	A systematic process to coordinate, direct and control activities relating to bushfire risk; with the aim of limiting the adverse effects of bushfire on the community.
<b>Community Bushfire Protection Plan</b>	A bushfire plan for community members that provides local, community-specific information to assist with bushfire preparation and survival. The focus of the Bushfire Protection Plan is on bushfire safety options, and the intent of the plan is to support the

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<sup>1</sup> Australasian Fire and Emergency Service Authorities Council 2012, *AFAC Bushfire Glossary*, AFAC Limited, East Melbourne, Australia

development of personal Bushfire Survival Plans.

**Community  
Bushfire  
Response plan**

An Emergency Management Plan for emergency managers and responders. The Bushfire Response Plan aims to better protect communities and their assets during bushfire emergencies, through the identification of protection priorities and critical operational information. These plans make firefighting resources safer and more effective.

**Consequence**

The outcome or impact of a bushfire event.

**Fire  
management  
Zoning**

Classification system for the area to be managed. The zoning system indicates the primary fire management purposes for an area of land.

**Human  
Settlement Area**

Term given for the GIS (Geographic Information Systems) dataset used to define where people live and work. The dataset was developed for the purpose of risk modelling and was created using a combination of building locations, cadastral information and ABS data. Includes seasonally populated areas and industrial areas.

**Likelihood**

The chance of something occurring.

**Risk**

The effect of uncertainty on objectives.<sup>2</sup> (Note: Risk is often expressed in terms of a combination of the consequences of an event and the associated likelihood of occurrence.)

**Risk acceptance**

The informed decision to accept a risk, based on the knowledge gained during the risk assessment process.

**Risk analysis**

The application of consequence and likelihood to an event in order to determine the level of risk.

**Risk assessment**

The systematic process of identifying, analysing and evaluating risk.

**Risk criteria**

Standards (or statements) by which the results of risk assessments can be assessed. They relate quantitative risk estimates to qualitative value judgements about the significance of the risks. They are inexact and should be seen as guidelines rather than rules.<sup>3</sup>

**Risk evaluation**

The process of comparing the outcomes of risk analysis to the risk criteria in order to determine whether a risk is acceptable or tolerable.

**Risk  
identification**

The process of recognising, identifying and describing risks.

**Risk treatment**

A process to select and implement appropriate measures undertaken to modify risk.

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<sup>2</sup> Standards Australia 2009, Risk management – Principles and guidelines, AS/NZS 31000:2009, Standards Australia, Sydney, Australia

<sup>3</sup> Emergency Management Australia 1998, Australian Emergency Manuals Series – Manual 3 Australian Management Glossary, Emergency Management Australia, Dickson, Australia

## Acronyms

BPP	Bushfire Planning & Policy
BRAM	Bushfire Risk Assessment Model
BRN	Bushfire Ready Neighbourhoods
CPP	Community Protection Plan
CRP	Community Response Plan
DPIPWE	Department of Primary Industries, Parks, Water & Environment
FIAT	Forest Industry Association Tasmania
FMAC	Fire Management Area Committee
FPP	Fire Protection Plan
FRU	Fuel Reduction Unit
HSA	Human Settlement Area
LGA	Local Government Area
PWS	Parks and Wildlife Service
REMC	Regional Emergency Management Council
SEMC	State Emergency Management Committee
SFMC	State Fire Management Council
STT	Sustainable Timber Tasmania
TFGA	Tasmania Farmers and Graziers Association
TFS	Tasmania Fire Service

Maps contained in this document may include data provided by DPIPWE (Information and Land Services Division (ILS), and Parks and Wildlife Service Fire Management Section), and Tasmania Fire Service. These map products have been produced by the Tasmania Fire Service. While all efforts have been taken to ensure the accuracy of these products, there may be errors and/or omissions in the data presented. Users of these products are advised to independently verify data for accuracy and completeness prior to use.



## Chapter 1 Introduction

### 1.1 Background

Under Section 20 of the *Fire service Act 1979*, fire management area committees are required to submit to SFMC, on an annual basis, a fire protection plan for its fire management area commencing on 1 October 2014. The submission date was changed to the 31 December for 2016 and beyond

It is a requirement of the fire protection plan that it is consistent with the State Fire Protection Plan and the State Vegetation Fire Management Policy.

### 1.2 Aim and Objectives

The management of bushfire related risk is not the sole responsibility of any one land manager but is a collective responsibility of the whole community. All members within a community have a responsibility to assist with the management of bushfire risk.

The **aim** of this FPP is to document the cross tenure process of identifying and treating bushfire-related risk within the *Central North* Fire Management Area.

The **objective** of this FPP is to effectively manage bushfire related risk within the Central North Fire Management Area in order to protect human life, critical infrastructure assets and environmental values.

In the first instance, the main objective of fire protection plans is to identify risk and provide actions for the protection of communities at risk from bushfire. Risk based planning places the highest priority on protection of human life followed by protecting infrastructure and environmental values.

Specifically, the objectives of this plan are to:

- Guide and coordinate a tenure blind bushfire risk management program over a five (5) year period;
- Document the process used to identify, analyse and evaluate risk, determine priorities and develop a plan to systematically treat risk;
- Facilitate the effective use of the financial and physical resources available for bushfire risk management activities;
- Integrate bushfire risk management into the business processes of Local Government, land managers and other agencies;
- Ensure integration between stakeholders;
- Clearly and concisely communicate risk in a format that is meaningful to stakeholders and the community; and
- Monitor and review the implementation of the Plan, to ensure enhancements are made on an on-going basis.

### 1.3 Context

South eastern Australia, including Tasmania, is particularly prone to fire and is regarded as one of the most bushfire-affected regions in the world. Whilst bushfires are part of the natural ecosystem processes of Tasmania and are essential for the maintenance of biodiversity, its affects can be catastrophic if uncontrolled. Tasmania has experienced periodic bushfire events that have caused devastating loss to life and property. In the aftermath of recent catastrophic bushfire events a heightened focus has been placed on bushfire risk identification and mitigation.

In recognition of the fact that bushfire is a landscape scale problem, the management of which is a shared responsibility across all levels of government and both the public and private arena, changes were made to the *Fire Service Act 1979* that align the administrative responsibility for the management of bushfire fuels across the State. The fire management area committee (FMAC) structure, membership and committee boundaries were reviewed and there are now 10 fire management areas for the State. This reflects a broader landscape approach and strategic focus that is required to effectively manage and mitigate the risk of bushfire.

The following organisations are represented on Fire Management Area Committees:

- Local Councils
- Sustainable Timber Tasmania
- Tasmania Fire Service
- Tasmanian Parks and Wildlife
- Tasmanian Farmers and Graziers Association
- Tasmanian Networks
- Hydro Tasmania
- Forico
- TasWater
- Tasmanian Land Conservancy
- State Emergency Service
- Department of Defence
- State Fire Management Council
- Natural Resource Management (NRM) organisations

The principal aim of the FMAC's is to bring together the various stakeholders that manage land use across the State, to work together to effectively manage vegetation fuels for the mitigation of bushfires. The principle responsibility of a FMAC is to prepare a fire protection plan for its Fire Management Area.

#### **1.4 Tenure- blind fire management approach**

Recent bushfire events across south eastern Australia have shown the importance of strategic fuel management regardless of land tenure. The fact that bushfires move through the landscape with no regard to property boundaries or tenure means that cooperation is needed across property boundaries between land management agencies and private property owners and occupiers in order to adequately address the threat of bushfires in Tasmania.

Over time the focus of fire management activities has largely ended up with government agencies managing public land. It is evident from recent fire events that focusing mitigation efforts on public land alone will not be effective in addressing the risk of bushfires. Managing the risks associated with bushfires will necessitate improving community understanding and acceptance of the need to use prescribed burning (together with a range of other treatment options) appropriately on private as well as public lands.

## **1.5 Policy, Standards and Legislation**

The following policy, standards and legislation were considered to be applicable to the development and implementation of the FPP:

- Tasmanian Emergency Management Plan
- State Fire Protection Plan
- State Vegetation Fire Management Policy
- State Strategic Fuel Management Report
- Northern Regional Emergency Management Plan
- Municipal Emergency Management Plans

### **Standards**

- AS/NZS ISO 31000:2009 - Risk Management – Principles and Guidelines
- National Emergency Risk Assessment Guidelines (NERAG)

### **Legislation**

- Aboriginal Relics Act 1975
- Fire Service Act 1979
- Emergency Management Act 2006
- National Parks and Reserve Management Act 2002
- Nature Conservation Act 2002
- Crown Lands Act 1976
- Forestry Act 1920 and Tasmanian Forests Agreement Act 2013
- Threatened Species Protection Act 1995
- Environmental Management and Pollution Control Act 1994
- Local Government Act 1993
- Forest Practices Act 1985 and Forest Practices Code 2000
- Tasmanian Electricity Code

## Chapter 2 Establishing the Context

### 2.1 Description of the Central North Fire Protection Plan Area

#### 2.1.1 Location and Boundaries

The Central North Fire Management Area is located the central north of Tasmania and covers an area of 550,464 ha. The FMA extends westwards along the north coast from Badger Head to Heybridge. The southern part of the FMA extends westward from Golden Valley to the middle of Walls of Jerusalem National Park.

It encompasses the regional centres of Devonport and Ulverstone in the north, Sheffield and Deloraine in the southern part of the FMA. Devonport is the entry point to Tasmania for the Spirit of Tasmania ferries which link Tasmania to Melbourne. The Spirit of Tasmania ferries carried 433,925 passengers in 2016/2017, spending \$542 million in Tasmania during that period (TT-Line Annual Report 2016/17).

The fire management area contains a mix of fertile agricultural land, wineries, dispersed rural communities and large areas of national park (including Mole Creek Karst caves and The Walls of Jerusalem National Park which is part of the Tasmanian Wilderness World Heritage Area).

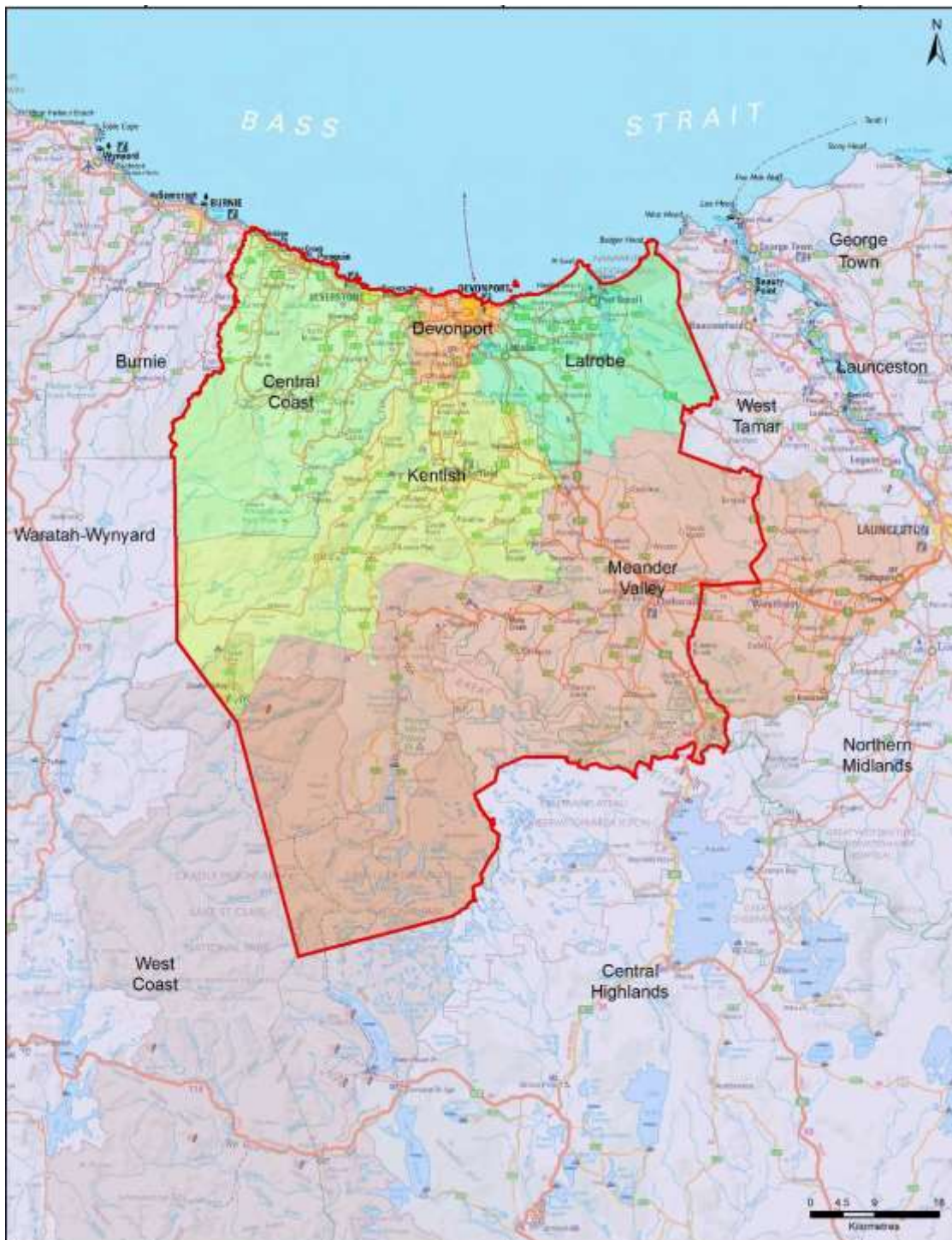
The coastal area from Sassafras through to Penguin is one of Tasmania's most productive farming areas. The Mersey/Forth valley area (in the central north of the FMA, surrounding the banks of the Mersey River) produces 40% of Tasmania's vegetable crop with large areas of land covered by fields of vegetables including onions, potatoes, peas, carrots and beans and orchard fruits. Other important crops are poppies (grown for the pharmaceutical industry) and pyrethrum (a botanical insecticide).

A map of the Central North Fire Management Area is contained in Appendix 1.

There are five local government areas wholly or partially included in the Central North fire planning area including:

- Central Coast Council
- Devonport City Council
- Latrobe Council
- Kentish Council
- Meander Valley Council

**Figure 1: Local government areas – Central North FMAC**



### 2.1.2 Population and Demographics

The Central North Fire Planning Area has an estimated residential population of 82 000 people.

Devonport, with a population of 24,600 is the major regional centre within the FMA and the surrounding region. The total population of the Central Coast Municipality is 22,329. Other significant population centres within the FMA include:

- Ulverstone (population 12,032)
- Penguin (population 3,849)
- Deloraine (population 2,848)

A map showing the population distribution of the Central North Fire Management Area is contained in Appendix 2.

Development across the fire management area is centred in the northern (coastal) areas of the FMA. The rugged topography along the coast has resulted in ribbon development patterns of settlement east-west along the coast and inland, north-south along the ridge lines. Significant growth areas in the region include;

- Port Sorell, Shearwater and Hawley areas in Latrobe Council
- Latrobe and Devonport have been identified by the Australian Bureau of Statistics as experiencing population growth. Latrobe was the fastest-growing Tasmanian LGA in 2010-11, with an increase of 2.3%.

Key industries in the area providing employment include manufacturing, retail, agriculture, aquaculture, fishing, food and beverages industry. Secondary industries include:

- processing of agricultural products
- Tourism is also an important industry.

**Significant built infrastructure assets in the region include;**

- Origin Energy's LPG Operation at Devonport
- the Alinta gas pipeline into Tasmania at Westbury
- the Devonport Airport
- 7 power stations

### 2.1.3 Land Tenure

Within the Central North FMA, approximately 58% of land is public land and 42% is private/freehold land. The management of fire risk on private land is a considerable challenge for the Central North FMA.

A map showing land tenure within the FMA, together with a table containing a breakdown of land tenure in the Central North Fire Management Area is contained in Appendix 3.

Land tenure is important when considering how to manage bushfire risk on a landscape scale. Government agencies responsible for management of the State's public land generally have arrangements in place for mitigating bushfire risk together with the resources and necessary skills for planning for and responding to bushfire emergencies. Many private property land owners do not have the resources, skills, knowledge or experience to safely and effectively manage fire risk on their land. Further compounding the complex issue of managing fire risk on private land is the fact that it is not co-ordinated or carried out in a strategic manner.

#### Management of fire risk on private property

Under the *Fire Service Act 1979* private landowners/occupiers in Tasmania, have a number of legal responsibilities in relation to fire management, including undertaking fire maintenance activities to ensure fuels on their property do not pose a risk to neighbouring properties.

Privately owned land represents a considerable challenge to the effective management of fire because there are currently some major barriers that limit the extent to which landholders undertake planned burns. These include:

- the risk of fire escapes. Privately owned land tends to be where the highest value risk (human lives) are concentrated;
- potential liability of property owners from fire escapes;
- poor access to good weather/local forecast information;
- lack of fire management knowledge, skills and experience;
- lack of labour to manage the burn;
- lack of appropriate equipment to safely manage the burn;
- Absentee land owners - many properties now have owners but not occupiers, for example hobby farms and holiday shack communities.



### Other (Tasmania wide) issues:

- De-stocking of rural areas - land where fuels were once managed by grazing or occasional burning, are left fallow and weeds or native vegetation fuels accumulate.
- Over time, fire preparedness and damage mitigation has given way to a suppression-oriented approach. Communities have become reliant on fire management agencies suppressing fire however suppression is unlikely in extreme bushfire events.
- There is an inconsistent approach amongst local Councils in relation to enforcing fire abatement notices and provisions on private property.
- There appears to be some concern and confusion in the community about a range of fire related legal issues including vegetation clearing laws, fire permit requirements, backyard burning restrictions and threatened species permit requirements.
- Population mobility and ageing. The number of people choosing to live in bush-fire prone areas is increasing. As the population moves in and out of rural areas the knowledge and awareness of people living in bush-fire prone areas diminishes.
- Land use planning issues – in some areas residential development continues to be permitted in locations with potentially extreme fire risk.

## 2.2 Climate and Bushfire Season

The climate of the Central North Fire Management Area can be classified as temperate and is characterised by warm summers and cold winters in the northern coastal parts of the fire management area, together with mild summers and cold winters in the southern parts of the fire management area.

### Weather Observations

There are two Bureau of Meteorology (BOM) weather observation stations located within the Central North Fire Management Area from which weather data are collected on a regular basis. They are located at:

- Devonport Airport (in the north of the fire planning area)
- Sheffield (in the centre of the fire planning area)

In addition a weather station at the Forthside Research Station provides monthly weather statistics.



## Summary Climate Statistics – Central North FMA

<b>Mean Annual rainfall</b>	Ranges from 778mm at Devonport Airport in the northern part of the fire management area to 1179mm in Sheffield in the central part of the fire management area.
<b>Wettest months</b>	Winter. Devonport receives a July average of 95mm with Sheffield recording a July average of 157mm of rain.
<b>Driest Months</b>	Summer. Devonport receives a February average of 37mm of rain with Sheffield recording a January mean rainfall of 52mm.
<b>Windiest Months</b>	Summer
<b>Months of least wind</b>	June
<b>Cloudiest Month</b>	May. Devonport has a mean number of 14 cloudy days in May and Sheffield has a mean number of 13 cloudy days in May

### Temperature and rainfall

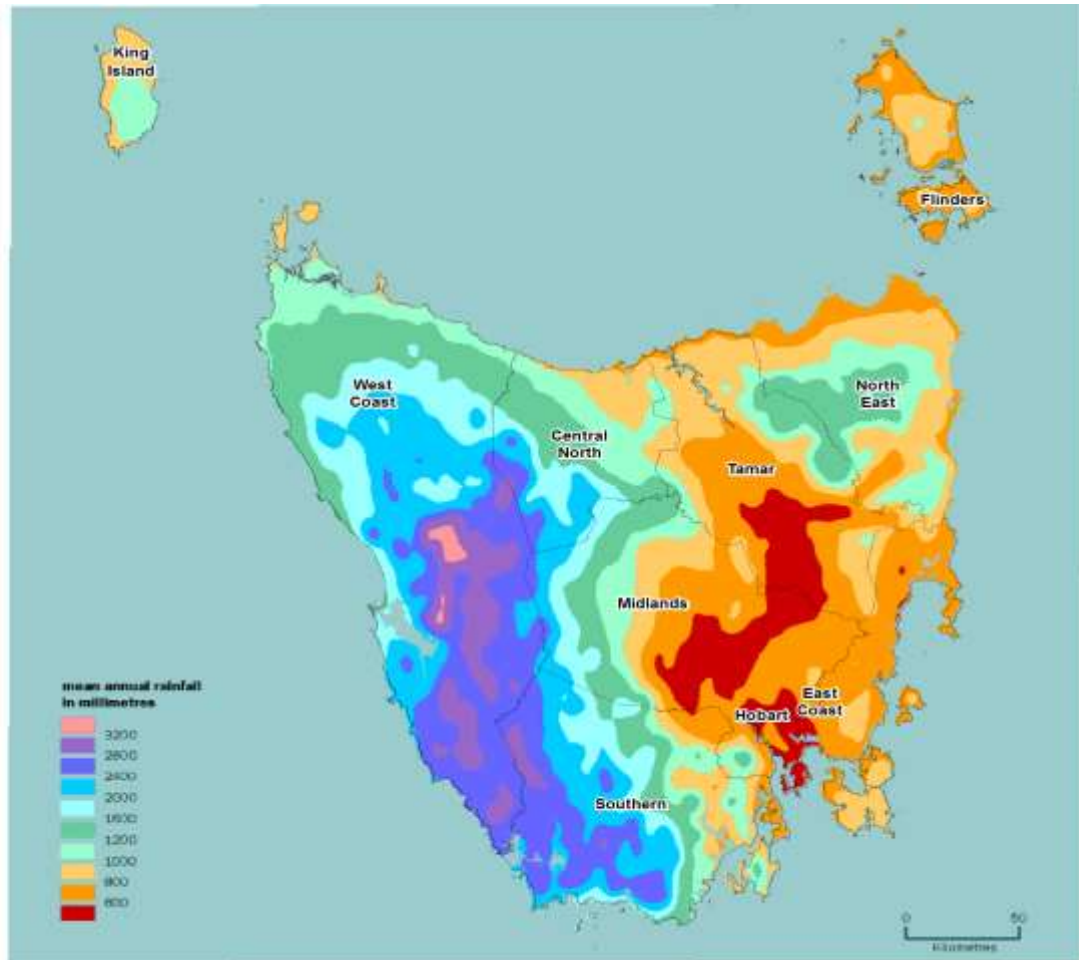
Average maximum daily temperatures within the FMA range from 21.5° at Sheffield in February to 21.6° in February at Devonport Airport.

Devonport has an average minimum temperature of 4.1° in July with Sheffield having an average minimum of 2.5° in July.

The fire management area has a winter dominant seasonal rainfall pattern with wet winters and low summer rainfall. Average monthly rainfall within the FMA ranges from a low of 36mm in January in Devonport to a high of 158 mm average monthly rainfall in Sheffield in July. The peak of the rainfall cycle in the central north occurs through autumn to winter. The north receives shorter duration rainfall events than the west, in mid to late autumn from moist north-easterly airstreams. Winter is the wettest season due to the influence of passing cold frontal systems on the area.

The area has low thunderstorm and lightning activity with an average of 5 thunder days annually.

**Figure 2: Mean annual rainfall across Tasmania Fire Management Areas.**



Source: Map provided by Ian Barnes-Keogan, Bureau of Meteorology, Hobart

### **Wind**

The prevailing winds for the area are generally from the west and northwest. Summer is the windiest season with winds from the northwest increasing in the afternoons.

### **Bushfire season**

A fire season is defined as the period of time in which fires are most likely to occur. Fire seasons can vary geographically and temporally. Bushfires in Tasmania are most commonly associated with dry conditions during summer and autumn extreme fire conditions are not uncommon during seasons dominated by drought. Equally, fires may occur after a short period of extreme bushfire weather that follows generally dry conditions. The fire season in the northern region of Tasmania extends from August to April. The fire season of the study area is generally considered to be from September to March.

The bushfire threat for the Central North Fire Management Area increases in late December with December/January generally being the driest and hottest months when bushfires are more difficult to control.

## 2.3 Vegetation

The vegetation within a large portion of the Central North FMA has been highly modified for agriculture resulting in the dominant vegetation type consisting of non-native agricultural, urban and exotic vegetation. The second most common vegetation type within the FMA consists of highly flammable dry eucalypt forest and woodland.

The main vegetation associations in Tasmania have been mapped by the TasVeg mapping program. For the purposes of fire management, the complex vegetation associations used in TasVeg have been simplified into 21 types and fire-attributes (fire sensitivity and flammability ratings) have been developed for each type.

The broad native vegetation types and native forest communities occurring within the planning area include:

- Dry eucalypt forest and woodland;
- Wet eucalypt forest and woodland;
- Rainforest and related scrub;
- Highland and treeless vegetation;
- Non eucalypt forest and woodland;
- Other natural environments;
- Scrub, heathland and coastal complexes;
- Moorland, sedgeland, rushland and peatland;
- Native grassland;
- Saltmarsh and wetland

Non native vegetation types occurring within the planning area include:

- Agricultural, urban and exotic vegetation.

Broad Vegetation Group (TasVeg 3, 2013)	(ha)	% in FMA	Veg Flammability
Agricultural, urban and exotic vegetation	190152	34.6	Medium
Dry eucalypt forest and woodland	129957	23.7	Medium -High
Wet eucalypt forest and woodland	107994	19.7	Medium
Rainforest and related scrub	39323	7.2	Low
Highland and Treeless Vegetation	19708	3.6	High
Non eucalypt forest and woodland	17596	3.2	High
Other natural environments	14288	2.6	N/A
Scrub, heathland and coastal complexes	12641	2.3	High – very high
Moorland, sedgeland, rushland and peatland	10715	2.0	Low – very high
Native grassland	6472	1.2	High
Saltmarsh and wetland	649	0.1	Low
Total	549496	100	

A description of each of the broad vegetation community types contained in the TASVEG mapping dataset and found in the Central North FMA is contained in Appendix 4.

## 2.4 Bushfire Frequency and Causes of Ignition

Fire frequency is defined as the total number of fires that occurred over a period of time. Fire frequency records for the Central North Fire Management Area have been obtained from records kept by the Tasmania Fire Service, Parks and Wildlife Service and Sustainable Timber Tasmania but are incomplete. Data for fires on private property is particularly lacking. Records that are available indicate that the vast majority (98%) of the fire management area has been untouched by fire in recent years. Only a very small percentage (1.7%) of the Fire Management Area is noted as having been subject to fire at least once in recent years. Less than 0.5% of the fire management area has been subject to more than 2 or 3 fires at the same location.

### Major Fire events in the Central North FMA

Fire name	Year	Area Burnt (ha)
Lake Mackenzie Complex (including Lake Bill)	2016	26109
Dunnings Rvt	1989	1943
Briggs Regional Reserve	2009	1794
Mt Roland	1991	626

### Fire Ignition Cause and History

The true causes of fire, either through ignition by lightning or caused by human actions have not been well documented. TFS does not keep records relating to fire ignition causes and the causes of fire have only been documented by Tasmanian Parks and Wildlife since the 1980s.

Of the 126 fires where ignition sources were recorded within the fire management area, the majority of fires (35.9%) were started by arson, 10.6% were caused by escaped planned burns, 3.5% were accidental, 1.8% were caused by lightning and in 14.8% of cases a cause was undetermined.

Analysis of the records that exist indicate that the principle causes of ignition (as of December 2015) are:

Ignition source	% of ignitions
Arson	35.9%
Planned burns	33.4%
Unknown cause	14.8%
Escapes from planned burns	10.6%
Lightning	1.8%
Accident, bushfire spotting, campfire (combined)	3.6%

Arson appears to be a significant issue for the Central North FMA.

The 2016 wildfires were caused mostly by lightning strikes. These impacted on sensitive highland areas that were dryer than usual due to less rainfall in the preceding years. The figures in this paragraph and table may change after the 2016 fire season is fully analysed.

Maps showing fire history, frequency and causes of ignition for the Central North Fire Management Area are contained in Appendix 5.

## **Chapter 3 Analysing and Evaluating Bushfire Risk**

### **3.1 Analysing Bushfire Risk**

Following the Australian Standard of risk (ISO 3100) bushfire risk has been considered spatially, assessing a combination of likelihood and consequence (PWS 2011). The Bushfire Risk Assessment Model (BRAM), model data run of November 2013 was used to analyse the landscape level risk for this plan. For a full analysis of the model, see Appendix 6.

To determine overall risk the NERAG (National Emergency Risk Assessment Guidelines August 2010) document (see Appendix 7) was used. The level of risk is determined by combining consequences and likelihood (see Appendix 7).

It must be noted that the BRAM and therefore the consequences, likelihood and risk outputs are based on available spatial data. The analysis has been undertaken on a statewide basis, and maps are presented as complete for Tasmania. There are however gaps in the data inside and outside areas of public land. This includes fire history information, particularly on private land, which contributes to ignition potential information (likelihood), and many of the agricultural values have not been well captured (consequence). Notwithstanding these limitations, the model does provide an objective spatial analysis of bushfire risk in a landscape context.

### **3.2 Likelihood**

Likelihood is defined as a qualitative method to assess the likelihood rating to the consequences occurring. The likelihood of an event was generated by calculating ignition potential, suppression capabilities and fire behaviour potential, followed by assigning these output values to categories in a likelihood matrix. This is taken to mean the likelihood of a fire occurring in a specific area which surpasses the ability of the fire agencies to contain within the first 24 hours.206



### 3.3 Consequence (values at risk)

Consequences are defined as a qualitative rating of damage from fire to values. The consequences were taken directly from the output generated through the Values at Risk spatial layer output in BRAM.

#### *Values at Risk*

Agricultural values of particular significance to the Central North FMA:

- seed crops such as cereals, pulses, oil seed and small seeds (i.e. pasture and vegetable seed crops) become flammable as they ripen, and the closer to harvest and during harvest the worse the fire danger becomes
- orchards and vineyards although not normally regarded as flammable, can be severely damaged if the weather and fire are sufficiently hot. They can be considered high risk due to the time and investment required to establish an orchard or vineyard to production stage and subsequently the time required to re-establish following destruction or damaging fire events.
- vineyards can be subject to smoke taint which seriously de-values wine and can render it unsaleable.

Other values that need to be understood when examining risk include the critical infrastructure present.

#### **Critical infrastructure within the Central North FMA includes:**

- Radio Communications Towers at Kelcey Tier, Mt Claude and Dazzler Range
- TasNetworks feeder lines at Woolnorth and Pieman
- Orica storage facilities at Heybridge and Dulverton

#### **Assets of particular importance to the community include:**

- Cradle Mountain Village and accommodation facilities (including lodges, hotels, cottages, cabins and a caravan park (iconic tourism location which generates a significant source of income for the region and for Tasmania)
- Weegen Community hall (a central meeting place for the community)
- Historic mountain huts in the Western Tiers
- Petuna Seafood plant at Parramatta Creek

### 3.4 Overall Risk

A representation of risk (see Appendix 6) is developed when you combine the factors of likelihood and consequence. The BRAM generated output map of risk shows qualitative areas of risk, not areas of perceived risk.

The model assists in objectively defining areas where genuine risk is present. In-depth analysis will indicate what factor is driving the risk for a given area.

### 3.5 Risk Analysis for the Central North Fire Management Area

The bushfire risk model BRAM was utilised to examine risk across the fire management area. The results of this risk analysis are contained in a series of maps (BRAM - Bushfire Risk Assessment Model Maps) showing likelihood of ignition, consequences and overall risk within the Central North FMA in Appendix 8. The BRAM overall risk analysis results for the Central North FMA are shown overleaf in Figure 3.

A total of 20% of the fire management area was identified as being at extreme risk from fire under current fuel loads. \*\* this figure has changed after new BRAM modelling – check table below as well

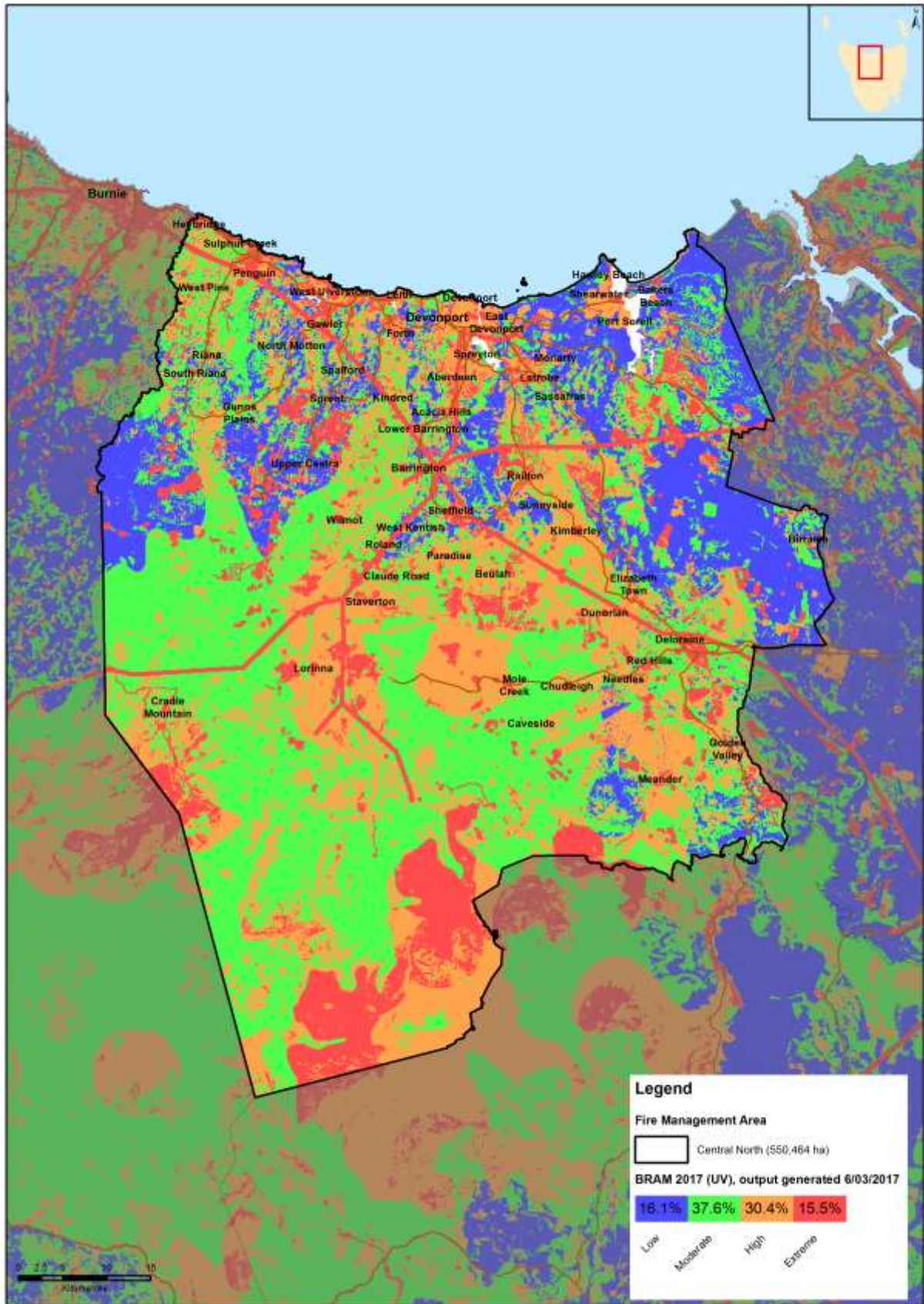
**BRAM Bushfire Risk Assessment results for Central North Fire Management Area:**

BRAM level of Risk	Area (ha)	% of FMA
Low	88624	16.1%
Moderate	206974	37.6%
High	167341	30.4%
Extreme	85321	15.5%

Areas identified as being at highest risk of bushfire in the Central North FMA can be described as being located in the central and southern area of the FMA as well as at scattered locations throughout the FMA including in the vicinity of:

- Jackeys Marsh
- South of Mt Roland and Cethana to Lorinna
- Eriba
- Penguin
- Deloraine
- Mersey Lea and Kimberley

Figure 3 – BRAM Overall Risk analysis results – Central North FMA



### 3.6 Phoenix Ignition Points Modelling

In addition to BRAM modelling, Phoenix Rapidfire, a bushfire simulator, developed by the University of Melbourne (Kevin Tolhurst and Derek Chong, 2008) was used to model the risk of fires impacting on communities present in the FMA. An understanding of the location of potential ignition points that may impact on communities is crucial. This modelling was done as part of the state wide strategic fuel management assessment. The process involved modelling potential ignition points, incorporating worst case scenario weather patterns and examining fire behaviour based on current fuel loads to identify the potential impact on human settlement areas.

A map showing the location of potential ignition points that may impact on communities in the Central North FMA under current fuel loads is contained in Appendix 9.

The Phoenix modelling indicates that within the Central North FMA ignition points of potential concern (and possibly requiring risk mitigation activities) are located:

- South of Forth
- West of Spreyton
- South of Meander
- South west and north west of Deloraine
- North East of West Pine
- East and south of Devonport

It must be understood that such analysis has many limitations but does provide an indication of where communities may be under risk as well as identify areas where strategic burning will assist in changing fire behaviour.

### 3.7 Community Risk Assessment

Strategic assessment tools (including BRAM and Phoenix computer modelling) have been used to conduct a broad scale assessment across the *Central North* Fire Management Area to identify communities vulnerable to bushfire. A more detailed assessment using more locally specific processes was then conducted by members of the FMAC.

Tools that were used by the FMAC to identify communities vulnerable to bushfire include:

- Consultation of Council and Emergency Services Risk Registers
- Mersey District Bushfire Treatment Strategy
- Local knowledge obtained from Tas Fire Service District Officers and Brigades
- BRAM Risk rating for Central North Human Settlement Areas
- Phoenix modelled impacts
- Consultation with Tasmania Fire Service Community Protection Planners and Community Development Officers
- Expert opinion of fire practitioners
- Identification and consideration of existing and past fire management actions and plans

Communities nominated in 2014 by the Tasmania Fire Service District Officer as being high risk within the fire management area included:

- Heybridge
- Squeaking Point
- Summer Hill Park (Port Sorell)
- Lorinna
- Rubicon
- Clayton Valley Stubbs Rd. (Turners Beach)
- Pitcairn Reserve (Port Sorell)
- Cradle Valley
- Don Reserve (Devonport)
- Kelcey Tier (Devonport)
- 

Priorities identified in the Mersey District Bushfire Strategy include:

- Don Reserve (Devonport)
- Kelcey Tier (Devonport)
- Sykes Sanctuary/Railton Urban Interface
- Lorinna
- Squeaking Point
- Dooley's Hill

Consideration was also given to assets of particular significance to the Central North FMA:

- Agriculturally valuable locations/crops
- Community assets (Historic buildings, community halls etc.)
- Ecologically special areas
- Major infrastructure
- Large employment centres

A workshop was held in 2014 for FMA members to discuss and analyse the results of the preliminary risk assessment. Agreed 'at risk' communities were then prioritised by members of the Central North Fire Management Area Committee.

The results of the strategic assessment for the *Central North* Fire Management Area are outlined below in Table 1.

Human Settlement Area	BRAM Risk rating	FMA priority rating
Don Reserve (west of Devonport)	Extreme	High
Cradle Valley (including Pencil Pine)	Extreme	High
Rubicon (Bakers Beach area)	High	High
Heybridge	High - Extreme	Med-high
Lorinna (Sth of Mt Roland)	High -Extreme	Med
Squeaking Point	High	Med
Dooleys Hill (Latrobe)	High	Low
Acacia Hills	High	High
Penguin	High - Extreme	Low

**Table 1 – Results of the Strategic Assessment – Central North FMA**

A map showing the location of communities identified as a result of the strategic assessment process is contained in Figure 4.

A number of communities already have specific bushfire response and protection plans in place, these are summarised in Appendix 10.

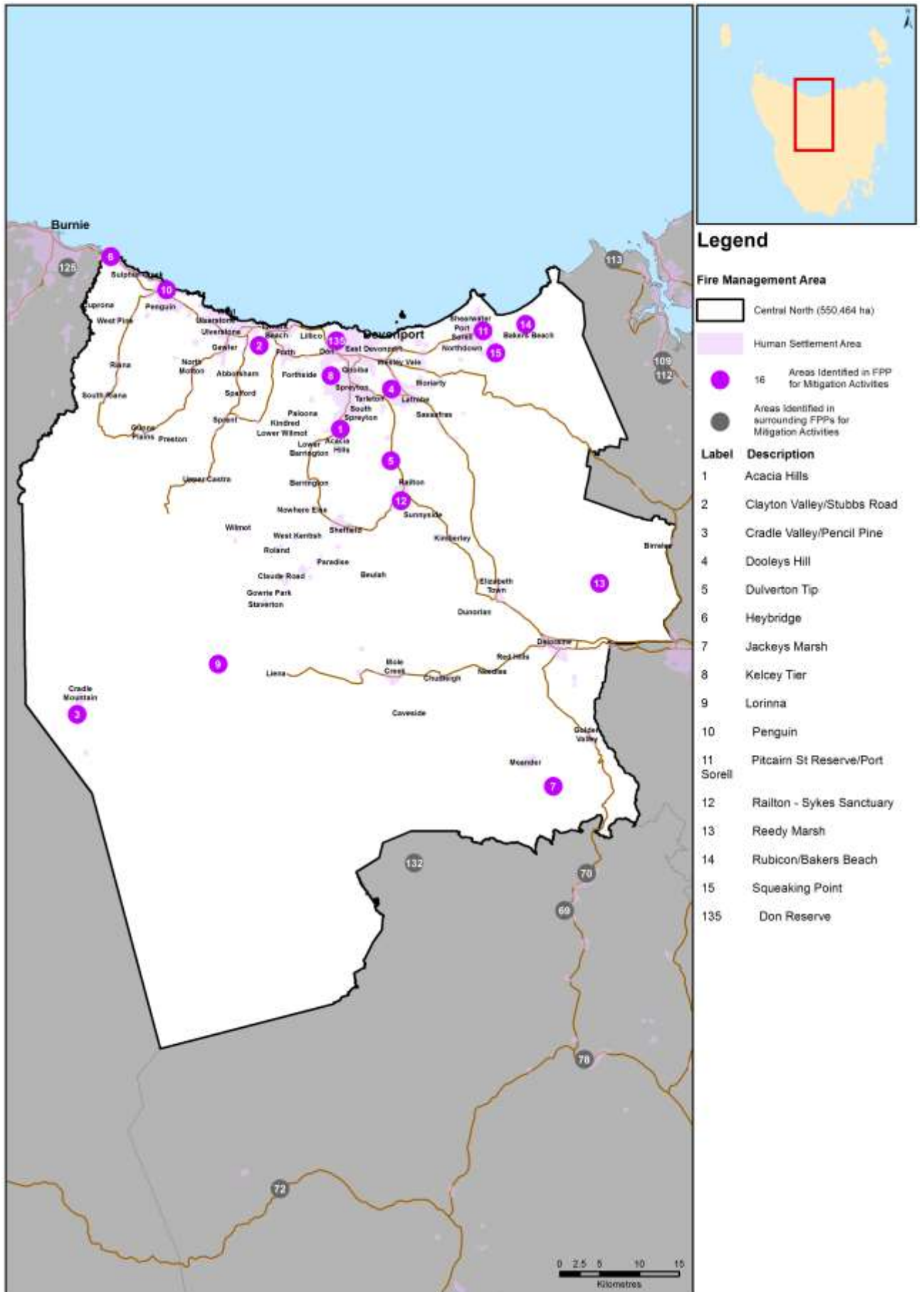
### **Vulnerable Groups**

Consideration was also given to a number of community groups and locations within the FMA (camping areas in particular) that may contain people at risk from fire. The following groups and locations were considered due to their isolation and close proximity to heavily vegetated areas:

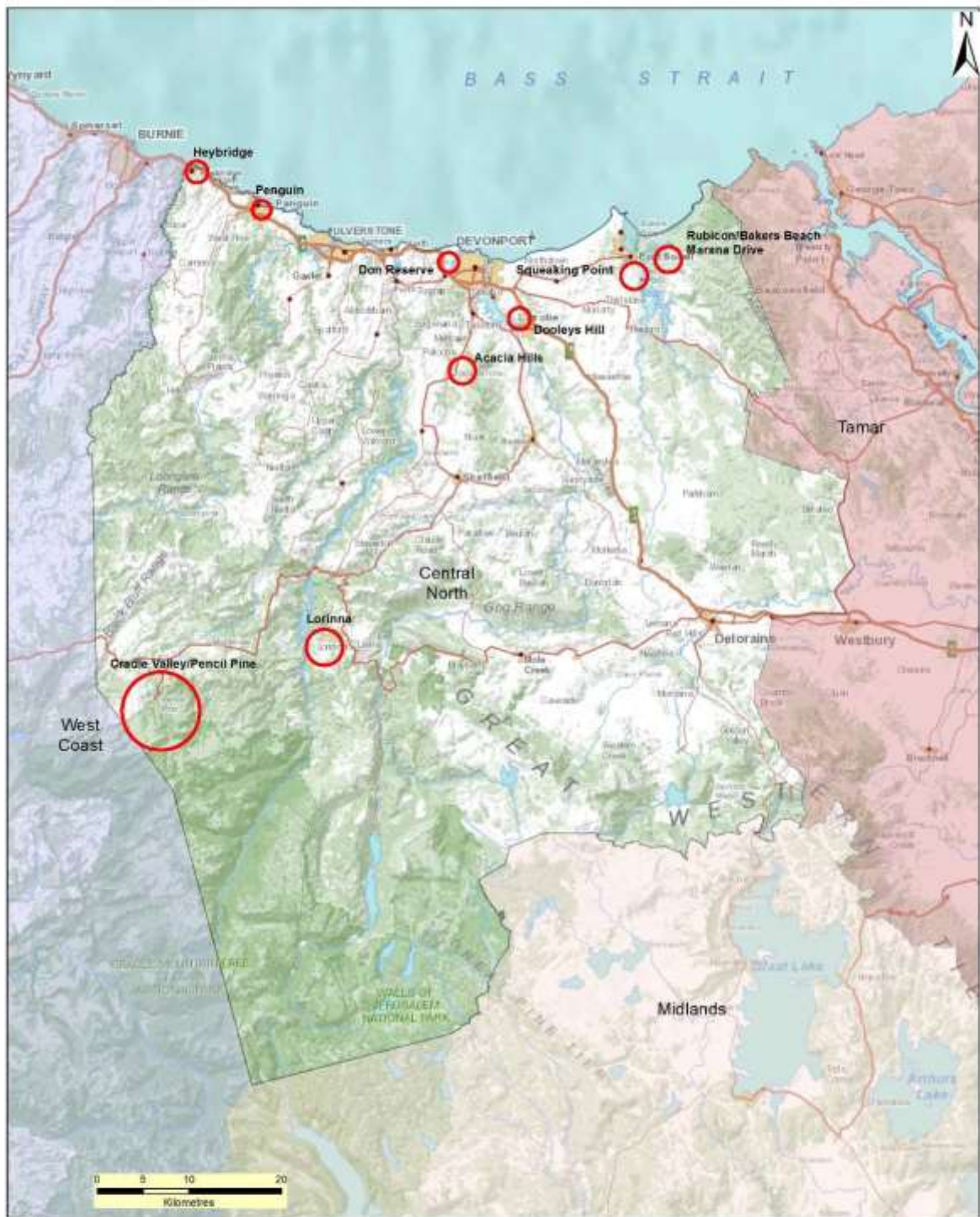
- Tasmanian Devil insurance populations at Devils at Cradle (Cradle Mountain), Trowunna Wildlife Park (Mole Creek) and Wings Wildlife Park (Gunns Plains)

The level of preparedness of residents in these areas to respond to a bushfire event is not known. These groups and locations are likely to already have been given consideration in Local Council Emergency Plans and associated risk assessments.

Figure 4 – Areas Identified in FPPs for Mitigation Activities



**Figure 5 – Communities identified during strategic assessment process - Central North FMA**



**Communities identified in  
strategic assessment process  
Central North FMAC**

State Fire Management Council	
Title: 11/18/19 Author: HSP File No: 16/2012 File No: 14/2012	Date: 2014 Region: Northern Coordinate System: UTM Units: Meters
Scale: 1:25,000 Date: 2014	
This document is the property of the State Fire Management Council. It is to be used only for the purposes for which it was prepared. It is not to be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of the State Fire Management Council.	



### 3.8 Areas of strategic importance within the Central North FMA

In addition to the above communities, areas of strategic importance were also identified, shown in Table 2. These areas were identified through a process that utilised and combined local knowledge, BRAM risk assessment and phoenix ignition potential modelling. FMAC members with specific fire expertise and knowledge across the area contributed to the identification of both the communities at risk and the broader strategic areas for potential actions.

**Table 2: Strategic areas for potential treatment in the Central North FMA.**

Potential treatment area	May provide protection for
Clayton Valley/Stubbs Road (Turners Beach)	Turners Beach residents
Reedy Marsh area	Westbury (to the east in Tamar FMA)
Pitcairn Street Reserve (Latrobe Council)	Residents surrounding the reserve at Port Sorrell
Kelcey Tier (Devonport Area)	Leary Rd residents (Stony Rise) and Wrenswood Drive
Cradle Valley	Cradle Mountain Village
Jackeys Marsh	Jackeys Marsh community

A map showing areas of potential strategic value within the Central North FMA is contained in Figure 5.

### Turners Beach to Leith Flood Debris

Following significant rain events and flooding in 2016, substantial amounts of flood debris have accumulated in the foreshore areas from Turners Beach to Leith. This debris is on crown land and is considered to be a significant fire risk. Options to mitigate this risk will need to be developed in conjunction with the land owners and managing authorities. This issue was considered a high priority by the FMAC, as of December 2017 a lot of material has been removed and is now considered to be a lower risk.

### 3.9 Strategic Fuel Management

Reducing fuel loads in strategic areas (usually through prescribed burning) is undertaken with the intention of modifying the fire behaviour of any future bushfire so that there exists an improved window of opportunity to control or contain bushfire events. The basic strategy is to develop a mosaic of fuel reduced areas within specific parts of the landscape over a time frame of several years. The application of a burning regime that establishes a mosaic of burns can be used to ensure bushfire impacts are minimised. It also ensures fire dependent species are maintained. Appropriate techniques may include but are not restricted to such processes as fuel reduction burning, slashing and fire break construction.

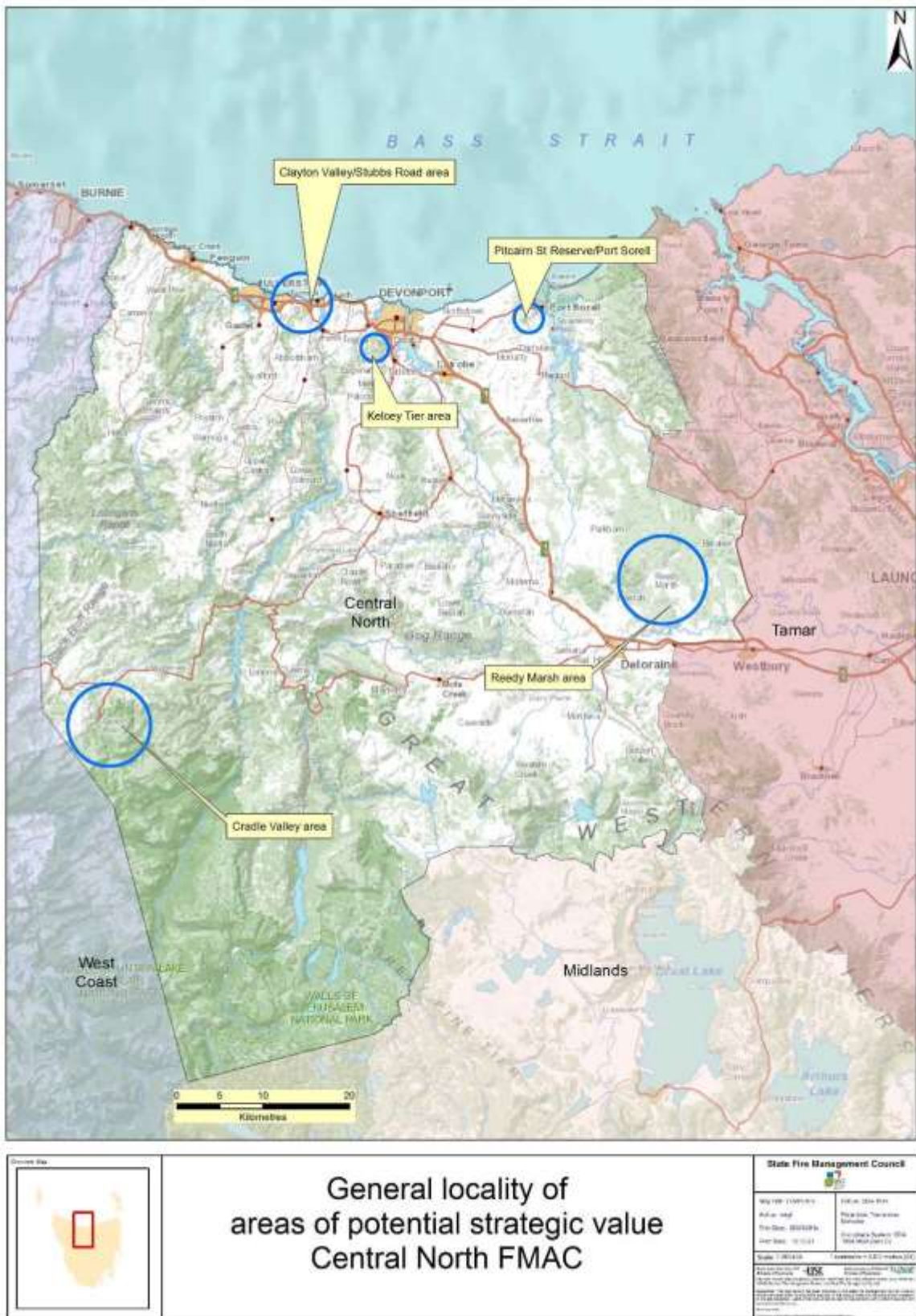
### **Strategic Fire Trails**

Strategic fire trails are trails or roads that due to their location relative to the actual or likely path of a fire and connectivity to other trail networks have the potential to provide an advantage for the purposes of fire management and control operations. To be of strategic value, fire trails should be located in the following situations:

- Adjacent to the assets which they are required to protect;
- Lead to strategic water sources;
- Break up large tracts of contiguous flammable vegetation;
- to facilitate access and egress to assets;
- To provide boundaries for prescribed burning blocks.

The identification of strategic roads and fire trails within the Central North FMA has not yet been undertaken but has been identified as a priority in future Fire Protection Plans.

**Figure 6 – Areas of potential strategic value for mitigation activities – Central North FMA**



## Chapter 4 Bushfire Risk Treatment

### 4.1 Region Wide Controls

The following controls are currently in place across the Central North Fire Management Area to assist in the strategic management of bushfire related risk:

- Legislative controls – including abatements, fire restrictions etc.
- Public education campaigns and the use of TFS and SFMC state-wide programs tailored to suit local needs; (eg Private land burning; Community Protection Planning; Bushfire Ready Neighbourhoods)
- State-wide arson prevention programs developed in conjunction with TAS Police and TFS;
- Setting of appropriate land subdivision and building standards in line with State Bushfire Prone Area Building Standards;
- Performance monitoring and reporting of FPP outcomes to the relevant Emergency Management Council and State Fire Management Council as required by the Tasmanian Emergency Management Plan and the Fire Service Act

### 4.2 Asset Specific Treatment Strategies

There are five broad asset specific treatment strategies that have been used to manage the bushfire risks identified in the Community Risk Assessment. They include:

- Fuel management – Treatments include the reduction / modification of bushfire fuels through manual, chemical and prescribed burning methods;
- Ignition management - Treatments aim to reduce the occurrence of human induced ignitions in the landscape;
- Preparedness – Treatments focus on providing suitable access and water supply arrangements that will assist with firefighting operations;
- Planning – Treatments relate to the development of plans that will improve the ability of firefighters and the community to respond to bushfire; and
- Community Engagement – Treatments seek to build relationships, raise awareness and change behaviours relating to the management of bushfire related risks within the community.

### 4.3 Planned burning – treatable and untreatable locations:

Strategic fuel reduction burning is one treatment option with the potential to reduce risk to some communities throughout the FMA.

In Tasmania, only certain types of vegetation are suitable for planned burning, for example dry eucalypt forest, scrub, heathland and button grass. These are what can be called 'treatable' vegetation types. Other vegetation types are unsuitable for planned burning either because they are too wet to burn (such as sphagnum, swamp and wetland), are extremely fire sensitive (rainforest, alpine/sub alpine coniferous heathland) or have other characteristics such as land which is unvegetated or vegetation growing in

urban areas which make them unsuitable for planned burning. These unsuitable vegetation types are considered 'non-treatable' for planned burning purposes.

Agricultural lands, whilst susceptible to the impact of bushfire, are also considered 'non-treatable' due to the land use priority for these vegetation types. This does not preclude these areas from burning however it means this area of land use type is not being included in the analysis of treatable and untreatable vegetation.

The main vegetation associations in Tasmania have been mapped by the TasVeg mapping program. For the purposes of fire management, the complex vegetation associations used in TasVeg have been simplified into 21 types and fire-attributes have been developed for each type.

Approximately 41% of the area of Tasmania (or 2,760,222 ha) is covered by vegetation types suitable for planned burning.

Within the Central North Fire Planning Area a total of 121,005 ha (or 22% of the total area) has been categorised as Treatable. The remaining 76% of the fire planning area (417,928 ha) has been classified as untreatable.

Fuel Reduction Burning Treatability in Central North FMAC Area		
	(ha)	(%)
Treatable	121005	22
Un-treatable	285240	51.8
Agricultural Land* (Untreatable by fire)	132687	24.1
Water	10325	1.9
<i>Not Mapped</i>	1206	0.2
		100.0

\* Classified in TASVEG3 as 'FAG' (agricultural landscapes where there are crops, pasture or orchards)

A map and summary table showing treatability of land within the Central North FMA is contained in Appendix 11.

#### 4.4 Treatment options other than burning

In areas classified as untreatable by planned burning the risk of fire may still be mitigated through a range of other activities including:

- Mechanical fuel removal (slashing and mulching, mowing, trittering, poison spraying)
- Fire trail maintenance and construction of strategic fire breaks (grading/dozing)
- Intensive or 'crash' grazing of blocks by livestock including goats
- Weed control
- The creation of fuel modified zones (fuel reduced zones) around structures and assets
- Planning conditions and restrictions in areas adjoining heavily vegetated land
- Bushfire resistant building design and construction materials for new developments
- Individual property bushfire readiness preparation prior to each fire season

#### **4.5 Bushfire risk mitigation programs – other agencies**

A number of land management agencies including Parks and Wildlife Service Tasmania, STT, local Councils and private enterprises such as Forico have annual planned burning programs, including joint tenure burns and operations.

Many other planned burns have not been captured in the current Fire Protection Plan process. Landscape-scale based fire planning and management will become more effective when all of these planned burns are documented and mapped for use in future Fire Protection Plans.

In addition, other organisations including local councils, TasNetworks, Hydro Tasmania and TasWater have annual or cyclic programs which aim to mitigate risk from fire through activities including line trimming, mowing, slashing and fire trail and fire break maintenance.

A comprehensive map showing the location of the entire range of mitigation activities currently carried out or planned for the future within the FMA will assist in developing a co-ordinated approach to landscape scale fire risk mitigation in future Fire Protection Plans.

#### **Other fire related management programs and reports:**

A number of current and historic fire management plans and fire related reports have already been prepared for use within the Central North FMA. A list of these plans is contained in Appendix 12 but the list is incomplete.

#### **4.6 Treatment Selection and Priorities**

Following identification and agreement upon priority communities and potential strategic areas for fire mitigation treatment within the Central North FMA an annual implementation program was developed. The Implementation Program identifies proposed treatment strategies and actions to be undertaken within the Central North FMA for:

- Priority communities
- Potential Strategic fuel management blocks
- Important community assets
- Strategic fire trails

The Implementation Program also identifies priority locations and actions that are currently unfunded but that could potentially reduce fire risk within the FMA should funding become available.

The implementation program contains proposed treatment strategies and actions to be undertaken within the 12 months following submission of the Fire Management Plan to the State Fire Management Council.

The Implementation Program for the Central North FMA is contained in Appendix **13**.

#### **4.7 Annual Implementation Program**

The 2017/18 Implementation Program for the Central North FMA is identified in Appendix 13. The implementation program will be coordinated by the Fire Management Area Committee (FMAC) which will also liaise with relevant land managers (including private property owners) to implement the risk mitigation strategies. The FMAC will liaise with the State Fire Management Council to develop a strategy to address funding and resourcing requirements for works associated with the identified risk mitigation actions and program.

#### **4.8 Implementation**

When the treatments identified in this FPP are implemented there are a number of issues that need to be considered by the responsible agencies and land owners including;

- environmental impact
- prescribed burn plans and approvals
- smoke management
- Community consultation
- Community partnerships

## **Chapter 5 Monitoring and Review**

Monitoring and review processes are in place to ensure that the FPP remains current and valid. These processes are detailed below to ensure outcomes are achieved in accordance with the Implementation Program.

### **5.1 Review**

Fire Protection Plans, including appendices are to be submitted annually for each fire management area and will be subject to a comprehensive review every five (5) years from the date of approval, unless significant circumstances exist to warrant earlier review. This would include:

- Changes to the FPP area, organisational responsibilities or legislation;
- Changes to the bushfire risk in the area; or
- Following a major fire event.

The Community Risk Assessments contained in this FPP should be reviewed annually.

### **5.2 Monitoring**

The Implementation Program at Appendix 13 is a living document and progression towards completion of the treatments will be monitored and reviewed at least every six (6) months, during FMAC meetings. The Implementation Program will be updated as treatments are progressed and completed.

### **5.3 Reporting**

A report detailing progress towards implementation of this FPP will be provided annually.



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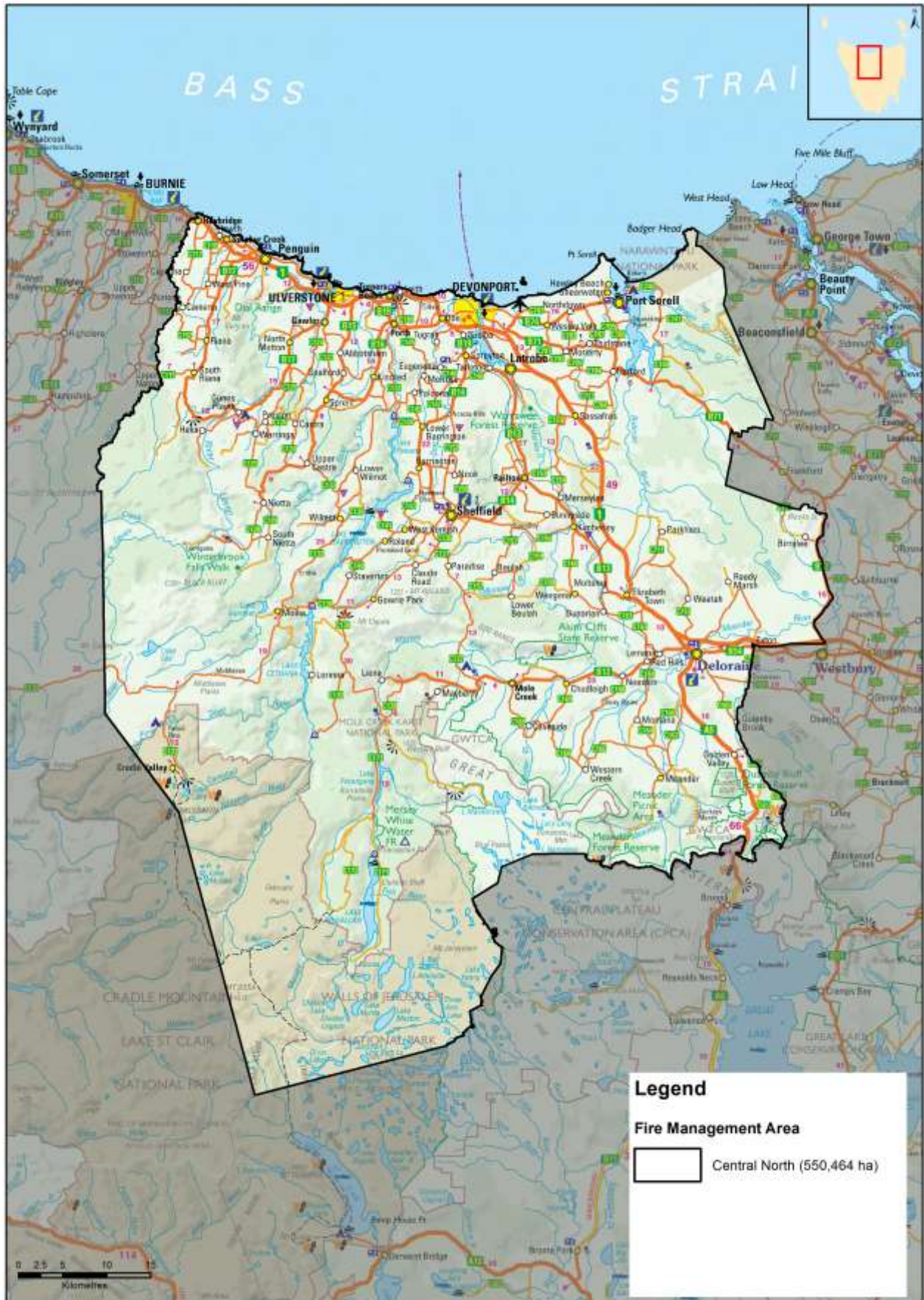
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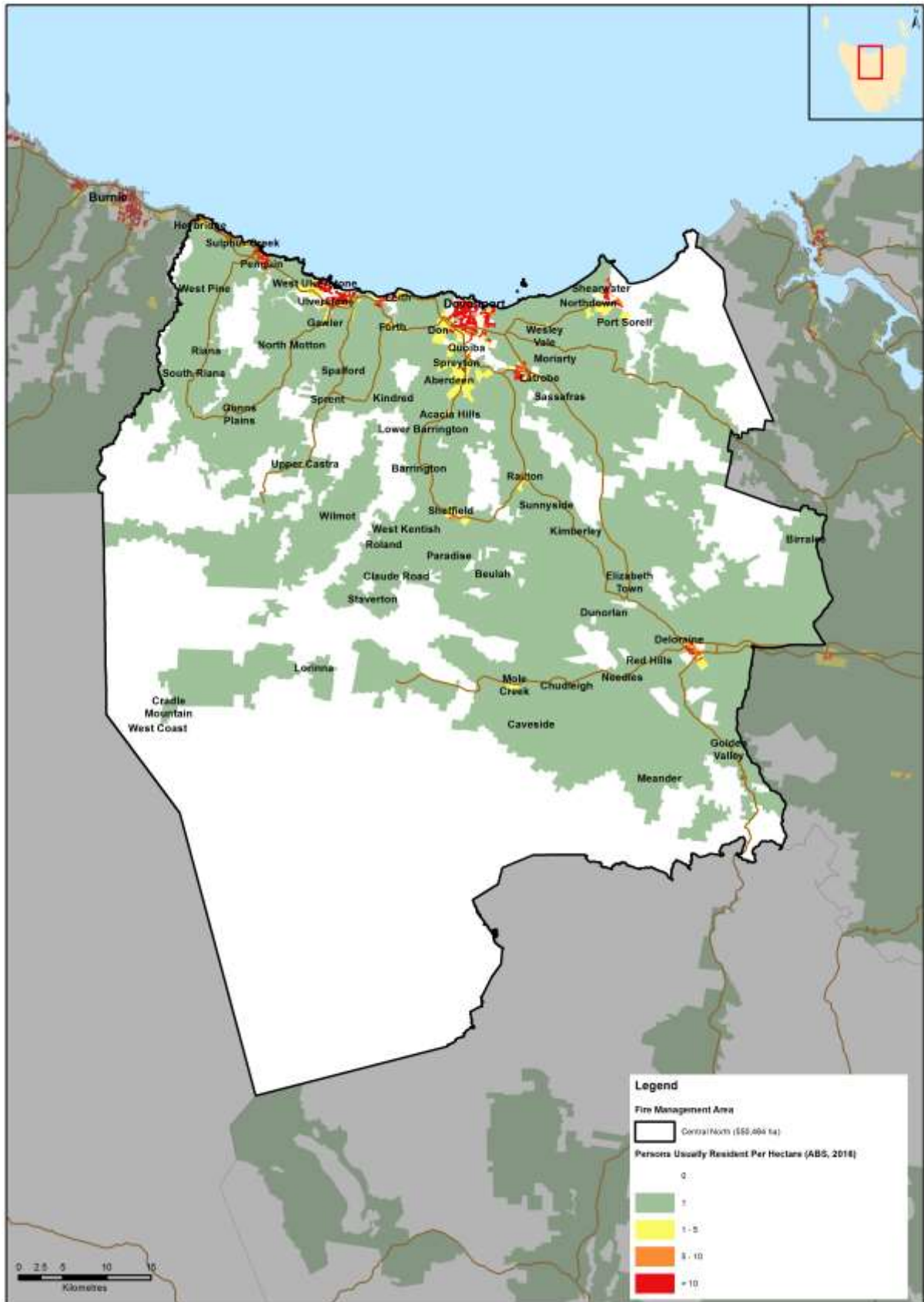
## Appendices

- Appendix 1 Map of Central North Fire Management Area Boundary
- Appendix 2 Population distribution map – Central North Fire Management Area
- Appendix 3 Tenure map and Tables
- Appendix 4 Vegetation Map and TasVeg community descriptions
- Appendix 5 Fire Frequency, History and Ignition Causes maps
- Appendix 6 BRAM (Bushfire Risk Assessment Model) explanation
- Appendix 7 NERAG risk assessment approach
- Appendix 8 Bushfire Risk Assessment Maps – Likelihood, Consequence, Overall Risk
- Appendix 9 Phoenix Ignition Points
- Appendix 10 Community with specific plans already in place
- Appendix 11 Treatability of land within the Central North FMA
- Appendix 12 List of fire management related documents for the Central North Fire Management Area
- Appendix 13 Annual Implementation Program – Central North

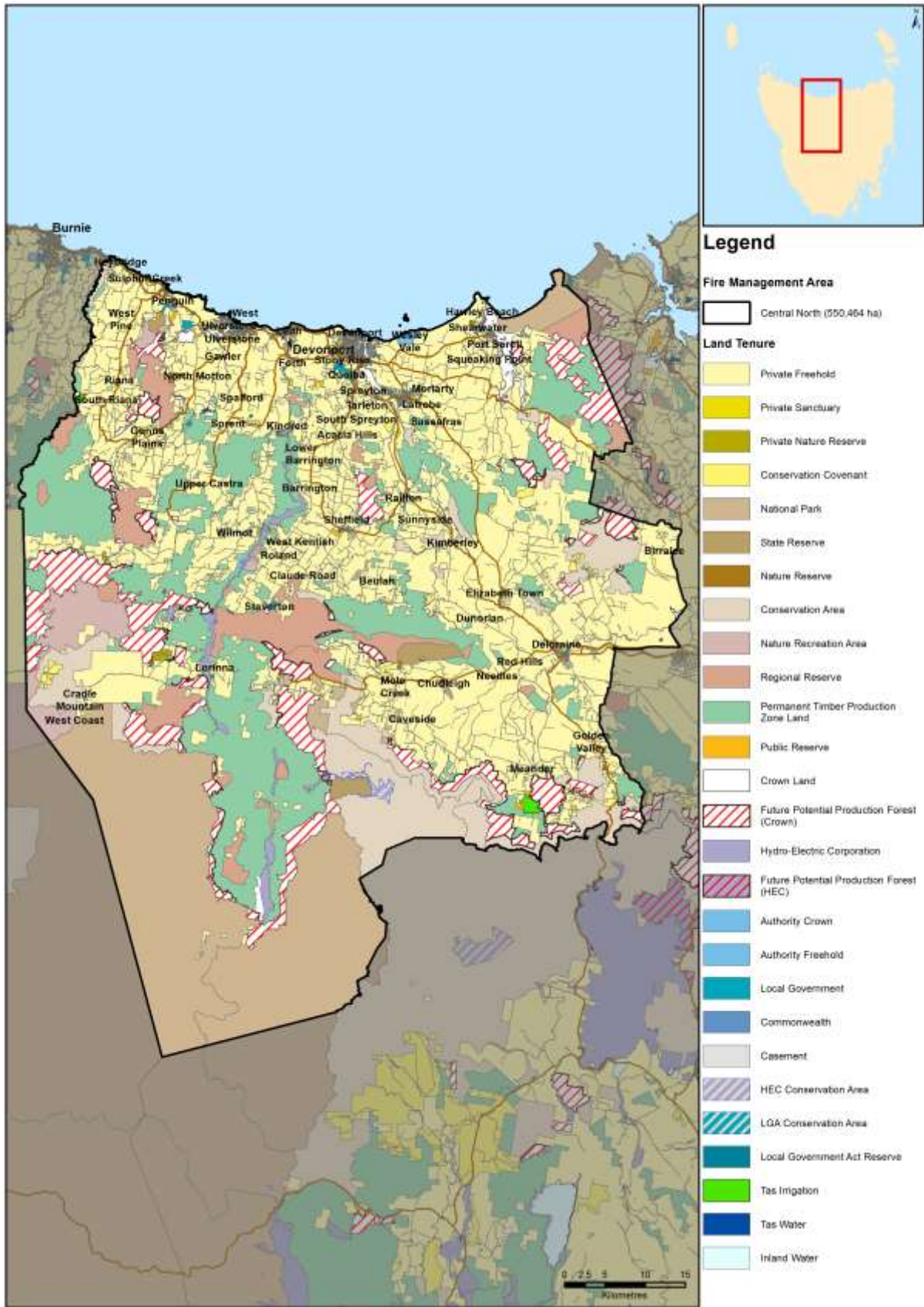
# Appendix 1 – Map of Central North Fire Management Area Boundary

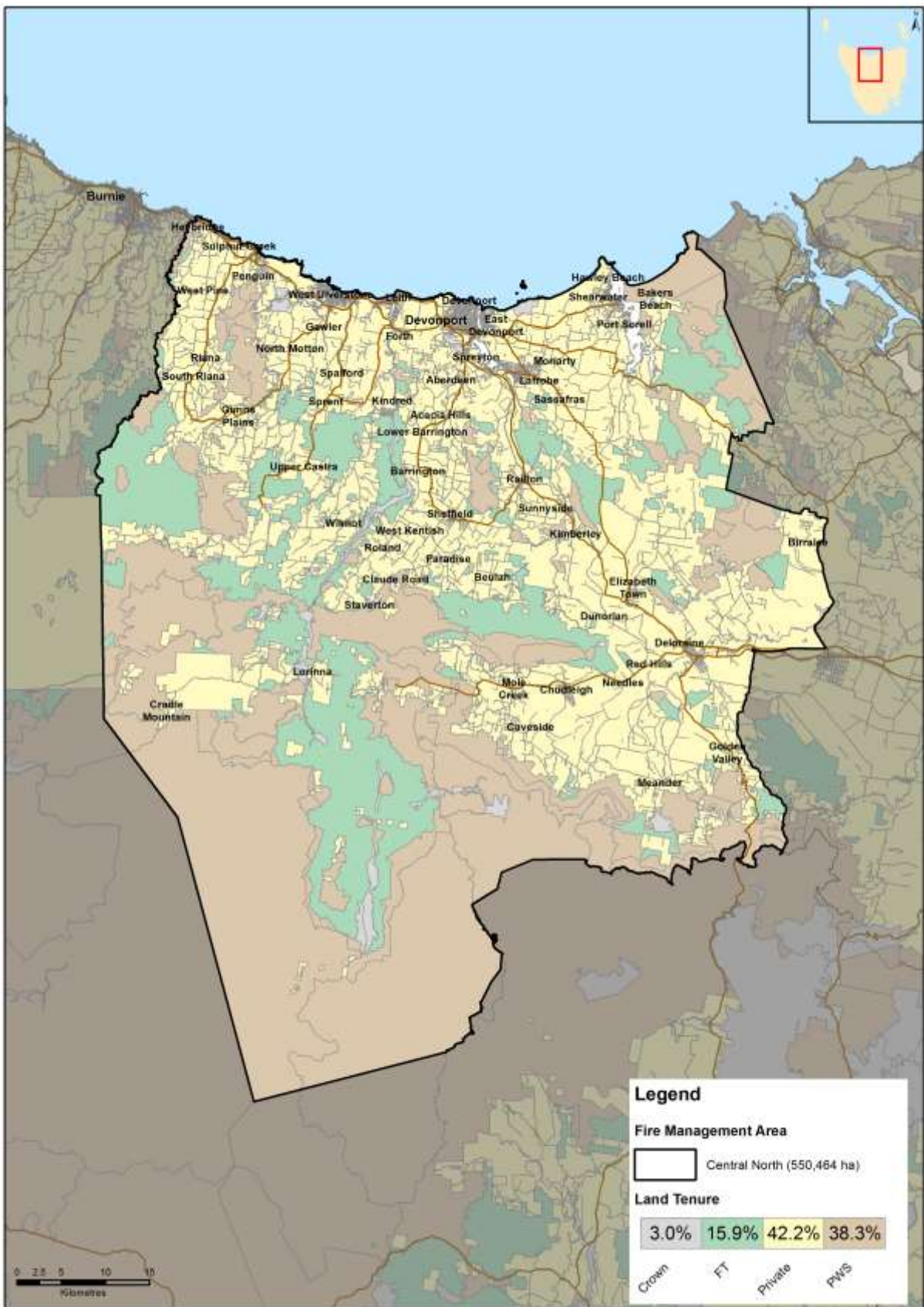


## Appendix 2 – Population distribution map – Central North Fire Management Area



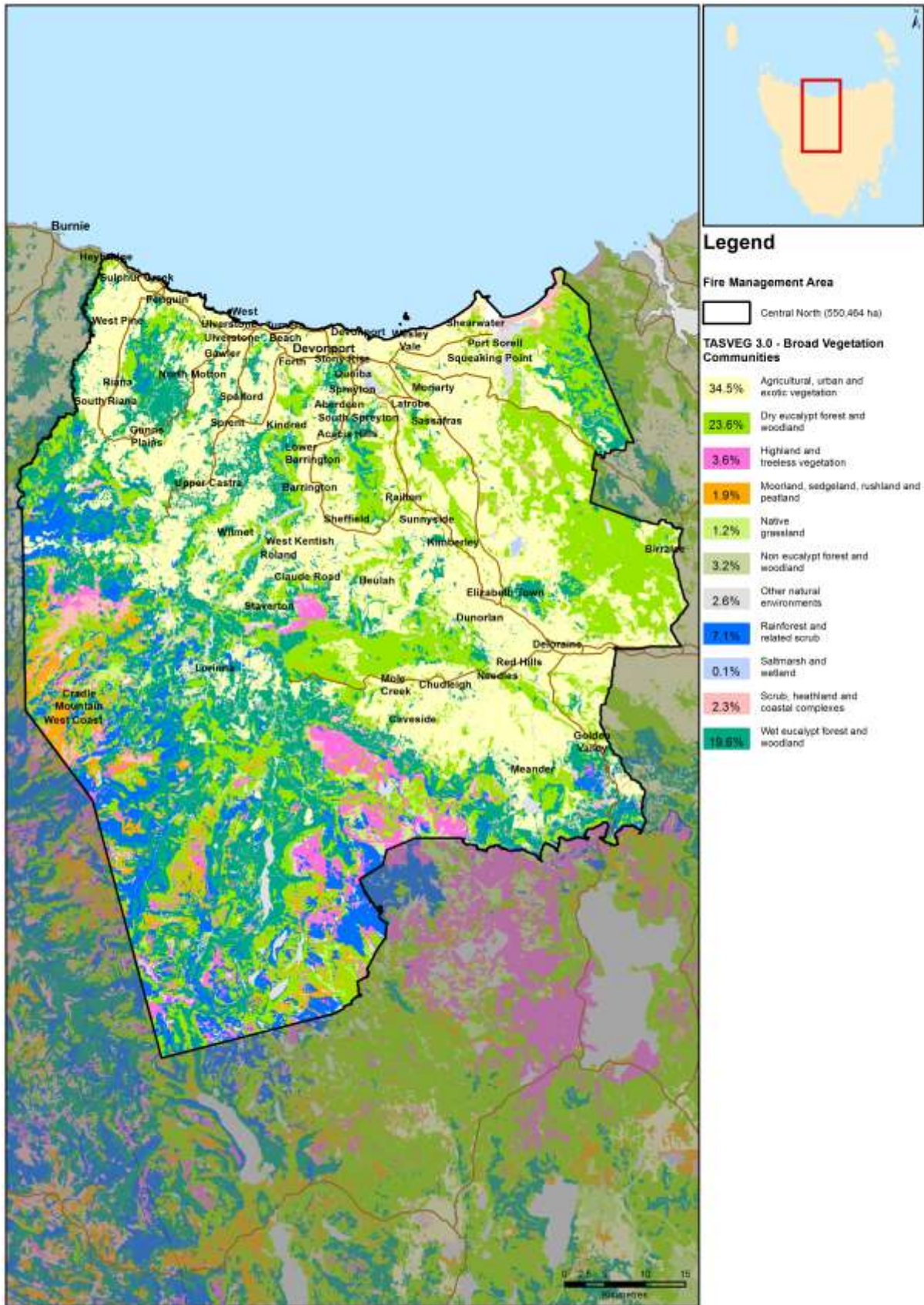
# Appendix 3 – Tenure map and Tables





<b>Total FMAC Area (ha)</b>	<b>550464</b>	
<b>Public</b>	<b>(ha)</b>	<b>(%)</b>
Authority Crown	271	0.0
Authority Freehold	649	0.1
Casement	5699	1.0
Commonwealth	8	0.0
Conservation Area	30409	5.5
Conservation Covenant	3124	0.6
Crown Land	2554	0.5
Crown Lease or Licence	534	0.1
Forest Reserve	23429	4.3
HEC Conservation Area	672	0.1
Hydro-Electric Corporation	3472	0.6
LGA Conservation Area	6	0.0
Local Government	1126	0.2
Local Government Act Reserve	68	0.0
National Park	87708	15.9
Nature Recreation Area	9154	1.7
Nature Reserve	255	0.0
Public Reserve	1686	0.3
Regional Reserve	12690	2.3
State Forest	130141	23.6
State Reserve	3201	0.6
<i>No Tenure</i>	2656	0.5
<b>Total Public</b>	<b>319512</b>	<b>58</b>
<b>Private</b>	<b>(ha)</b>	<b>(%)</b>
Private Freehold	230502	41.9
Private Nature Reserve	341	0.1
Private Sanctuary	109	0.0
<b>Total Private</b>	<b>230952</b>	<b>42</b>

## Appendix 4 – Vegetation Map and TasVeg community descriptions





Description of each of the broad vegetation community types contained in the TASVEG mapping dataset and found in the Central North Fire Management Area:

#### **Agricultural, urban and exotic vegetation:**

This broad vegetation group is mainly non-native vegetation and includes agricultural land, marram grassland, *Spartina* marshland, plantations for silviculture, regenerating cleared land, urban areas and weed infested areas. It also includes *Pteridium esculentum* fernland which is dominated by the native bracken fern, and Permanent easements, which may be occupied by native vegetation.

#### **Dry sclerophyll (eucalypt) forest and woodland:**

Dry sclerophyll forests and woodlands are typically dominated by eucalypts under 40 m in height, and have a multi-layered understorey dominated by hard-leaved shrubs, including eucalypt regeneration. Dry sclerophyll forests are mainly found on dry, infertile and exposed sites and are largely confined to coastal areas.

#### **Wet Sclerophyll Forest communities:**

Wet sclerophyll forests are typically dominated by eucalypts and have an understorey dominated by broad-leaved (soft-leaved) shrubs. Trees in mature forest generally exceed 40 m in height. Wet sclerophyll forests typically contain only one or two eucalypt age classes - these relate to period since fire or other major disturbance (including intensive logging and regeneration burning). Often only one species of eucalypt is present. The shrub understorey is dominated by broad-leaved shrubs and is generally dense, preventing continuous regeneration of shade-intolerant species such as eucalypts. Ferns are often prominent in the ground layer. Wet sclerophyll forest in the region includes some of Tasmania's most commercially valuable eucalypt forests.

#### **Rainforest and related scrub:**

This vegetation unit describes scrub forming vegetation with a prominent component of rainforest species. Rainforest occurs from sea level to about 1,200 m.

Tasmanian rainforest is structurally and floristically variable and it is defined by the presence of species of any of the genera *Nothofagus*, *Atherosperma*, *Eucryphia*, *Athrotaxis*, *Lagarostrobos*, *Phyllocladus* or *Diselma*. The floristic structure of rainforest varies according to location and is influenced by altitude and proximity to the coast. Rainforest communities may be found from coastal areas, to highland and subalpine environments.

Overall rainforest and related scrubs are adapted to low disturbance levels and are self-sustaining only under natural levels of localised disturbance, such as tree fall and insect attack. Fire is a significant threat with many rainforest species being killed outright by, even, low-intensity fire. Other species may re-sprout; however, repeated fires, even decades apart, will result in significant change in the vegetation, which will take from decades to centuries to recover.

### **Highland and Treeless vegetation:**

Highland treeless vegetation communities occur within the alpine zone where growth of trees is impeded by climatic factors. The altitude above which trees cannot survive varies between 700m in the south west of Tasmania to over 1400m in the north-east highlands.

Alpine vegetation is generally treeless, although there may be some widely scattered trees, generally less than two metres high. Other highland treeless vegetation includes grasslands, herbfields and sedgy grasslands.

Fire is, at present, the most serious threat to Highland treeless vegetation in Tasmania. Very few of the plant communities in this section can recover after firing. Some take hundreds to thousands of years to recover, if they recover at all (Balmer 1991). Historically, large areas of the Tasmanian alpine zone have been burnt and are now vegetated with comparatively species-poor heaths.

### **Non- Eucalypt forest and Woodland:**

These forest and woodland communities are grouped together either because they are native forests and woodlands not dominated by eucalypt species or because they do not fit into other forest groups. Dominant species within these communities include species of the genera *Acacia*, *Allocasuarina*, *Banksia* and *Leptospermum*.

Some of these communities have been referred to as “dry rainforests”. The understorey in all these communities is generally sparse.

All the communities in the Non-eucalypt forest and woodland section may be maintained by episodic fire. Many of the communities typically regenerate episodically following fire and thus form even-aged stands.

### **Other natural environments:**

This mapping unit includes land which is largely bare of vegetation such as sand, mud, water, or sea. Natural rocky areas such as scree slopes, boulders and exposed bedrock (and associated lichen species) are also included in this broad vegetation community type.

### **Scrub, heathland and coastal complexes:**

Scrubs, heathlands and the diverse complexes that they may form are, with a few notable exceptions, dominated by extremely woody (drought resistant) species with hard leaves. Dominant genera within this vegetation unit include *Leptospermum*, *Melaleuca* and *Acacia*. The canopy structure of the woody plants in these communities varies from 30 to 100% solid crown cover and is usually 5 m or less in height.

Scrub and heathland communities typically have only two strata; a dominant layer of shrubs comprising one to many species; and a ground layer of herbs, orchids, prostrate shrubs, ferns and occasionally grasses and/or sedges. The ground layer is often sparse in vegetation cover and species richness, although it may be diverse and/or dense in the more open-canopy communities.

Fire is a significant management issue for heathlands and scrubs that rely on it to maintain species diversity and a short-structure (i.e. especially those away from the coast and below the high altitude tree-line).

### **Moorland, sedgeland, grassland and peatland:**

This group containing moorland, rushland, sedgeland and peatland is found predominantly on low-fertility substrates in high rainfall areas. Most communities within this vegetation unit are treeless.

Tasmanian buttongrass moorlands cover more than a million hectares, chiefly in the cool wet western region of Tasmania below the alpine zone. Buttongrass moorland is a unique vegetation type in a global context: it is the only extensive vegetation type dominated by hummock-forming tussock sedge (*Gymnoschoenus sphaerocephalus*). Buttongrass moorland is highly variable in structure, ranging from low closed sedgeland, through heathland and low open scrub to open woodland.

Sedgelands and rushlands typically grow on oligotrophic soils (soils poor in plant nutrients) and are adapted to extreme environmental conditions such as drought, waterlogging, fire and low nutrients. Areas with frequent fire are commonly occupied by sedgeland or grassland. Fire is a defining factor for the ecological vegetation communities in this section: both its intensity and frequency largely dictates the form of the vegetation.

Fires can burn in this vegetation after as little as one or two rain-free days, even in winter. At some sites, the peat soils on which these communities occur can dry out and burn, leaving bare rock; after such an event, regeneration is very slow (Balmer 1991). *Sphagnum* peatlands can take many hundreds to thousands of years to develop, and after fire may take equally long to recover.

### **Native grassland:**

Native grasslands are defined as areas of native vegetation dominated by native grasses with few or no emergent woody species. Different types of native grassland can be found in a variety of habitats, including coastal fore-dunes, dry slopes and valley bottoms, rock plates and subalpine flats. The lowland temperate grassland types have been recognised as some of the most threatened vegetation communities in Australia.

Threatened species are a significant component of native grasslands. At the national level there are about 25 species associated with grasslands listed as threatened under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC).

Some areas of native grassland are human-induced and exist as a result of heavy burning, tree clearing or dieback of the tree layer in grassy woodlands.

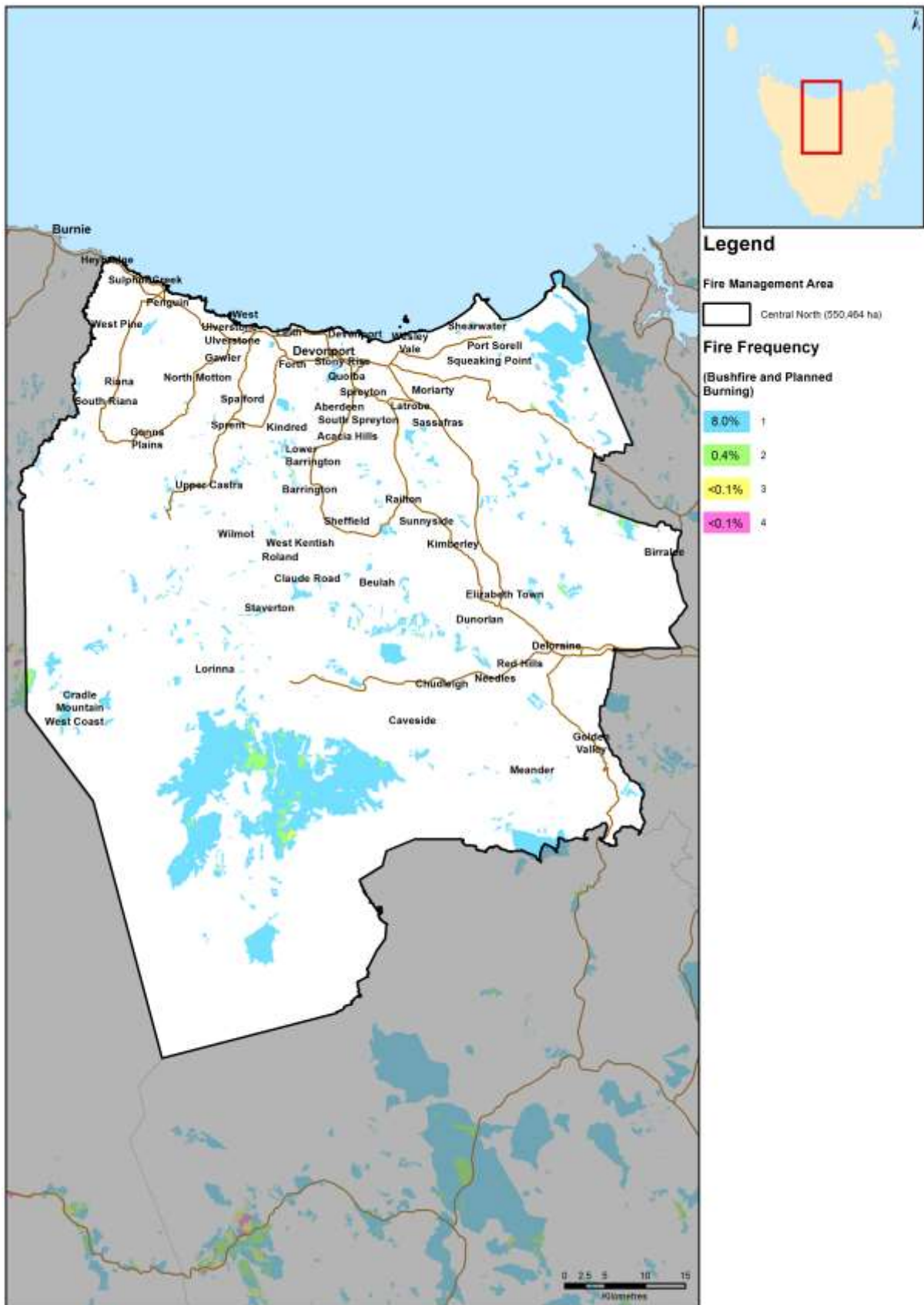
Fire is considered to be an important management tool for native grassland as it impedes the establishment of woody species and provides disturbance that maintains high species diversity.

**Source:**

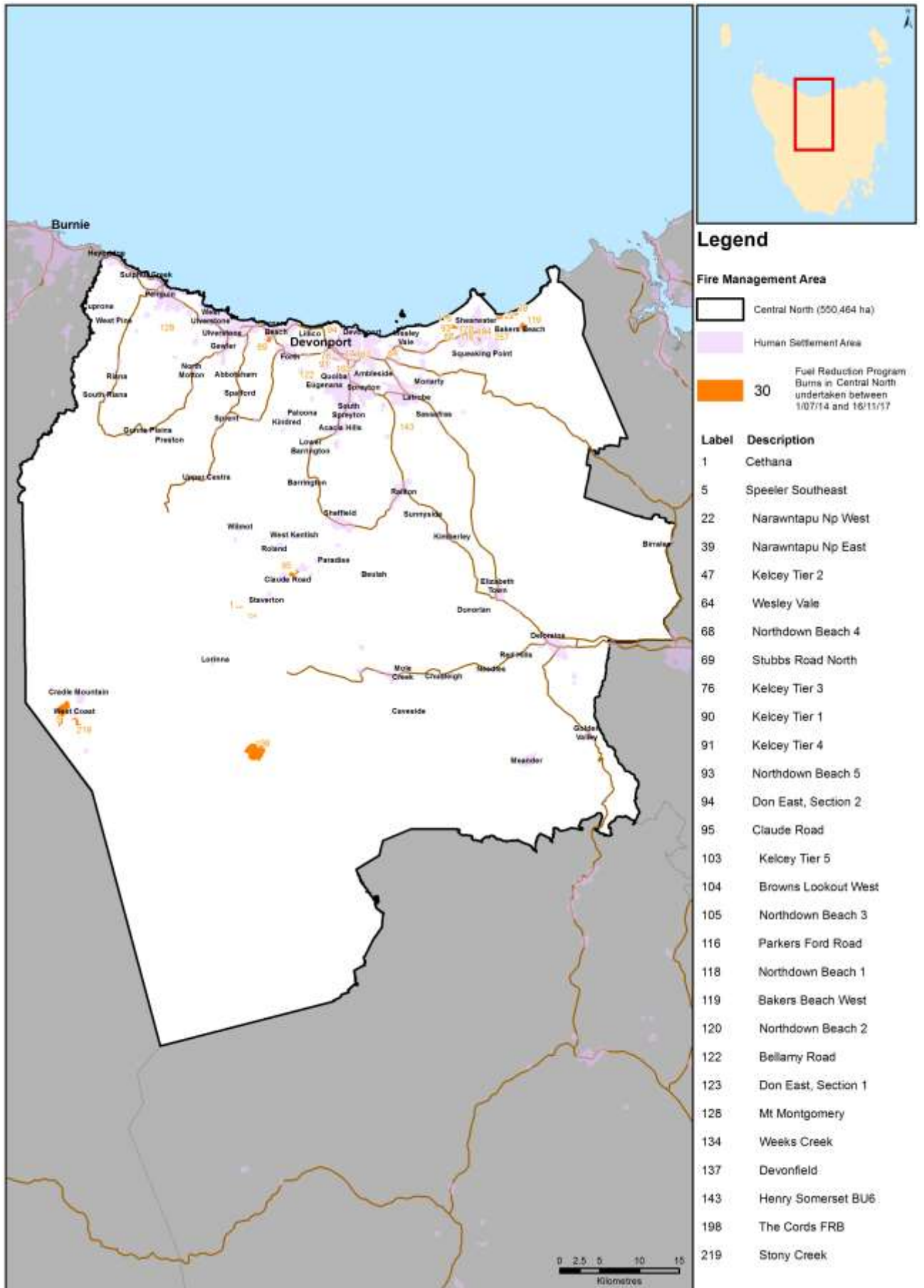
1. Forest Practices Authority (2005). Forest Botany Manual. Forest Practices Authority, Tasmania:
2. [http://dpiwwe.tas.gov.au/conservation/vegetation-of-tasmania/from-forest-to-fjaedlmark-descriptions-of-tasmanias-vegetation-\(edition-2\)](http://dpiwwe.tas.gov.au/conservation/vegetation-of-tasmania/from-forest-to-fjaedlmark-descriptions-of-tasmanias-vegetation-(edition-2))

# Appendix 5 – Fire Frequency, History and Ignition Causes maps

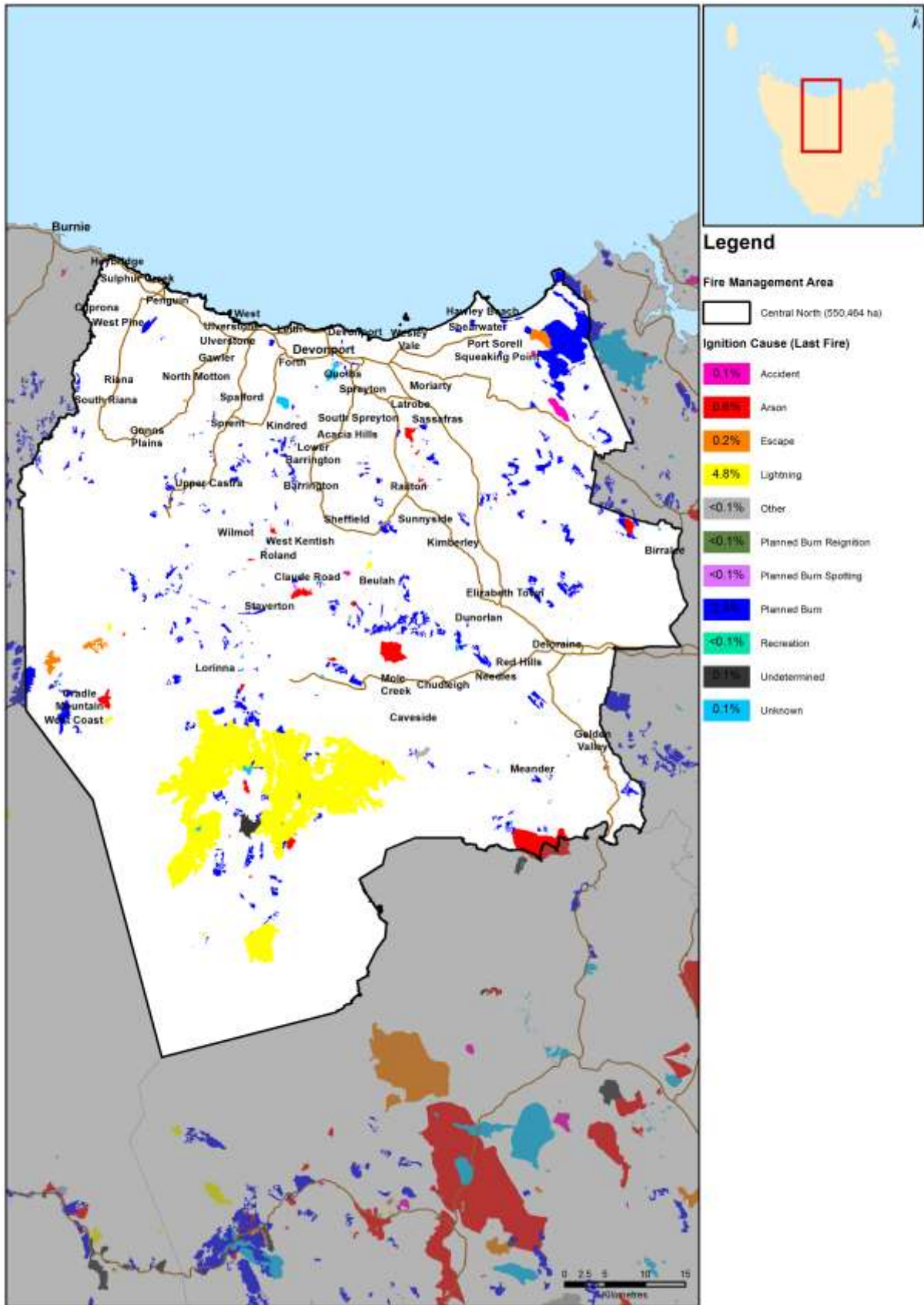
## Fire Frequency



# Fire History Map – Fuel Reduction Program



# Ignition Cause



## Appendix 6 - BRAM (Bushfire Risk Assessment Model) explanation

### Background

The Bushfire Risk Assessment Model (BRAM) is a software product that was developed by the Fire Management Section of the Parks and Wildlife Service (Department of Primary Industries, Parks, Water and Environment). The aim of the model is identify bush fire risk at a strategic level as well as to identify the elements driving actual bush fire risk.

A stakeholder group was set up to oversee the process. Stakeholders involved in developing the process included:

- Parks and Wildlife Service;
- Tasmania Fire Service;
- STT;
- Tasmanian Farmers and Graziers Association;
- State Emergency Service;
- Forest Industries Association of Tasmania;
- Local Government Association of Tasmania;
- Resource management and conservation , DPIPWE;
- NRM ;
- Tasmanian Aboriginal land and Sea Council;

Additional working groups were set up to advise on specialist areas such as values at risk, suppression capabilities, ignition potential, and fire behaviour.

The process is aligned to the Australian/New Zealand Standard AS/NZS 4360:2004 Australian Standard Risk Management and the updated standard AS/NZS ISO 31000:2009 *Risk management – Principles and guidelines*. Risk is defined as the "effect of uncertainty on objectives" with a focus of the effect on the objectives

### The process

The model is built in a geographic information system that utilizes various spatial orientated data, fire behaviour and fuel accumulation models and climate records. The data and values were developed by consensus of a range of stakeholders

The process applies the same set of assessment rules to the data contained in the model, thus it can be applied across the state. The process is tenure blind

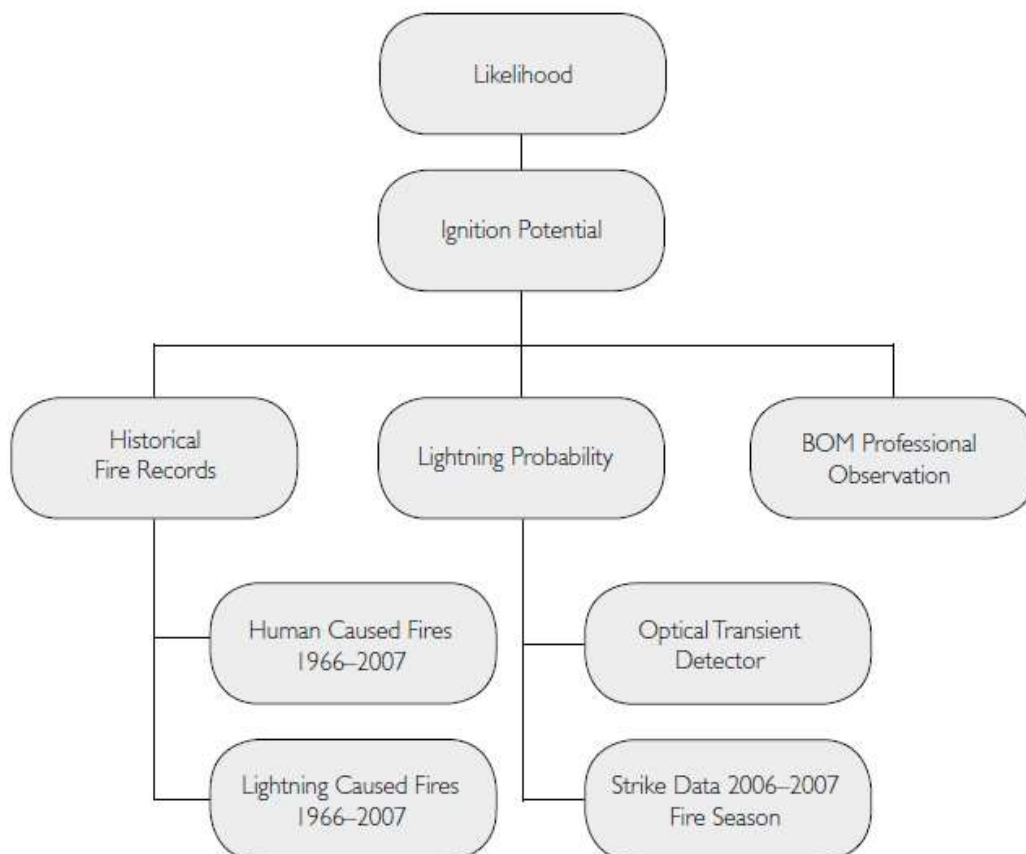
The BRAM identifies the **likelihood and consequence of a fire** at a particular point. The risk is determined through the use of a qualitative risk matrix incorporating likelihood and values at risk (consequences). The process identifies the actual risk at that point not the perceived risk. The output is in the form of layers identifying the likelihood, values at risk and actual risk



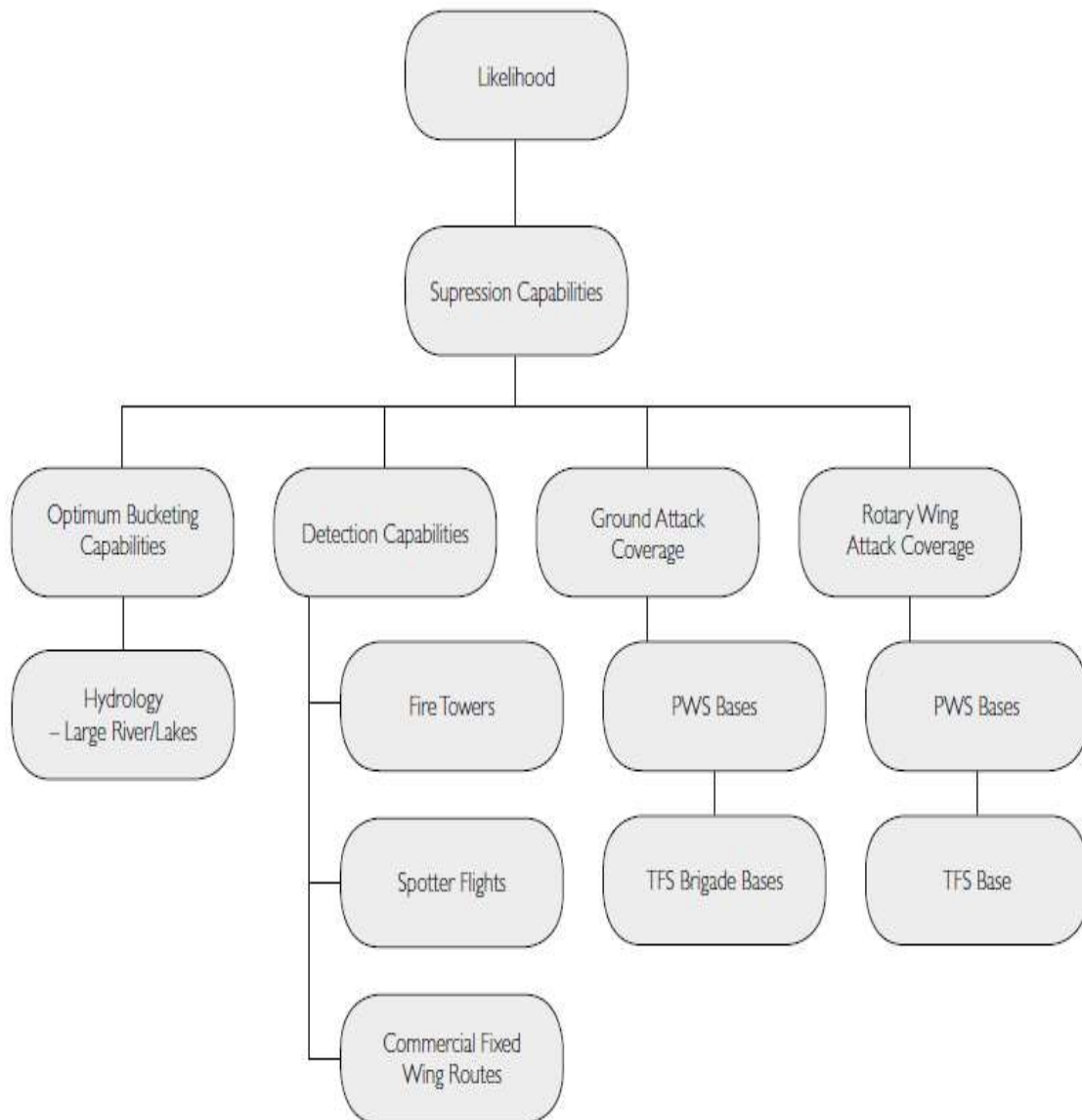
The model uses 4 major areas to calculate risk

- Fire behaviour potential - the manner in which fuel ignites, flame develops, and fire spreads and exhibits other related phenomena (likelihood).
- Ignition potential - the probability or chance of fire starting as determined by the presence of causative agents (likelihood).
- Suppression capability - the factors and limitations that are related to the ability to contain a bushfire upon detection (likelihood).
- Values at risk - a specific or collective set of natural resources and man-made improvements and/or developments that have measurable or intrinsic worth, and which could potentially be destroyed or otherwise altered by fire in any given area (consequence)

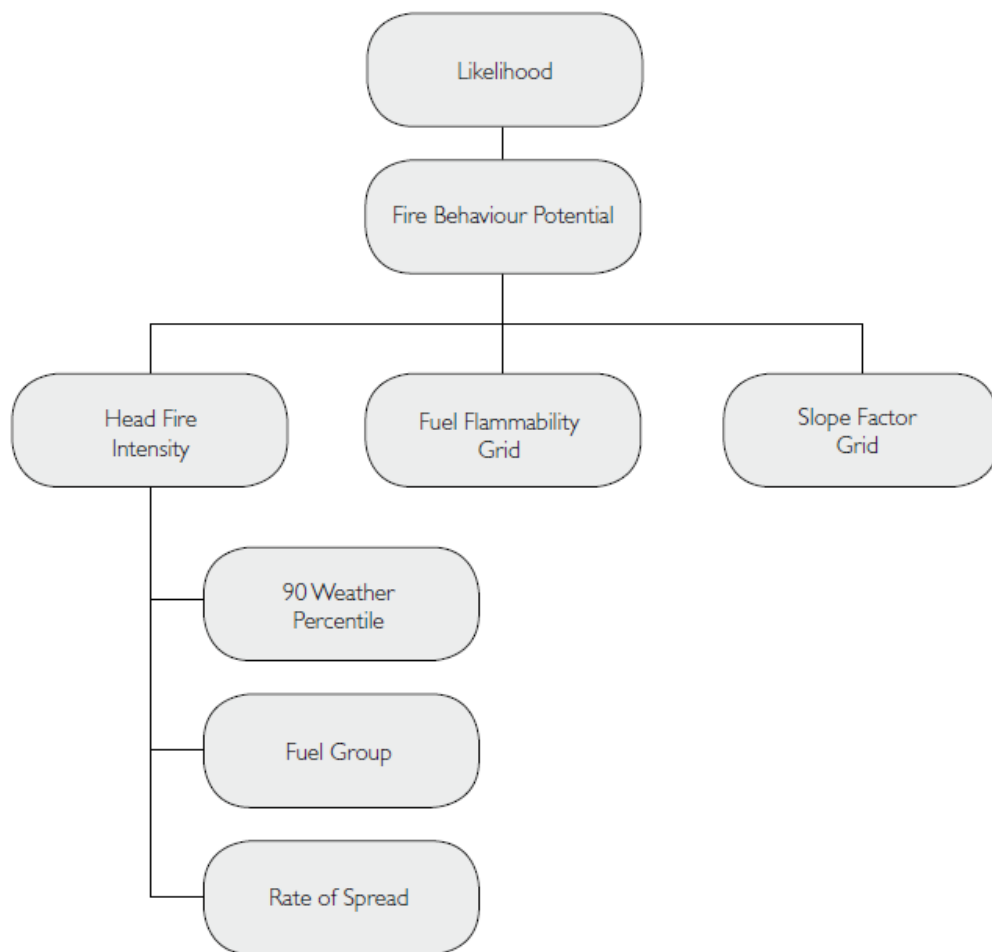
## Ignition Potential



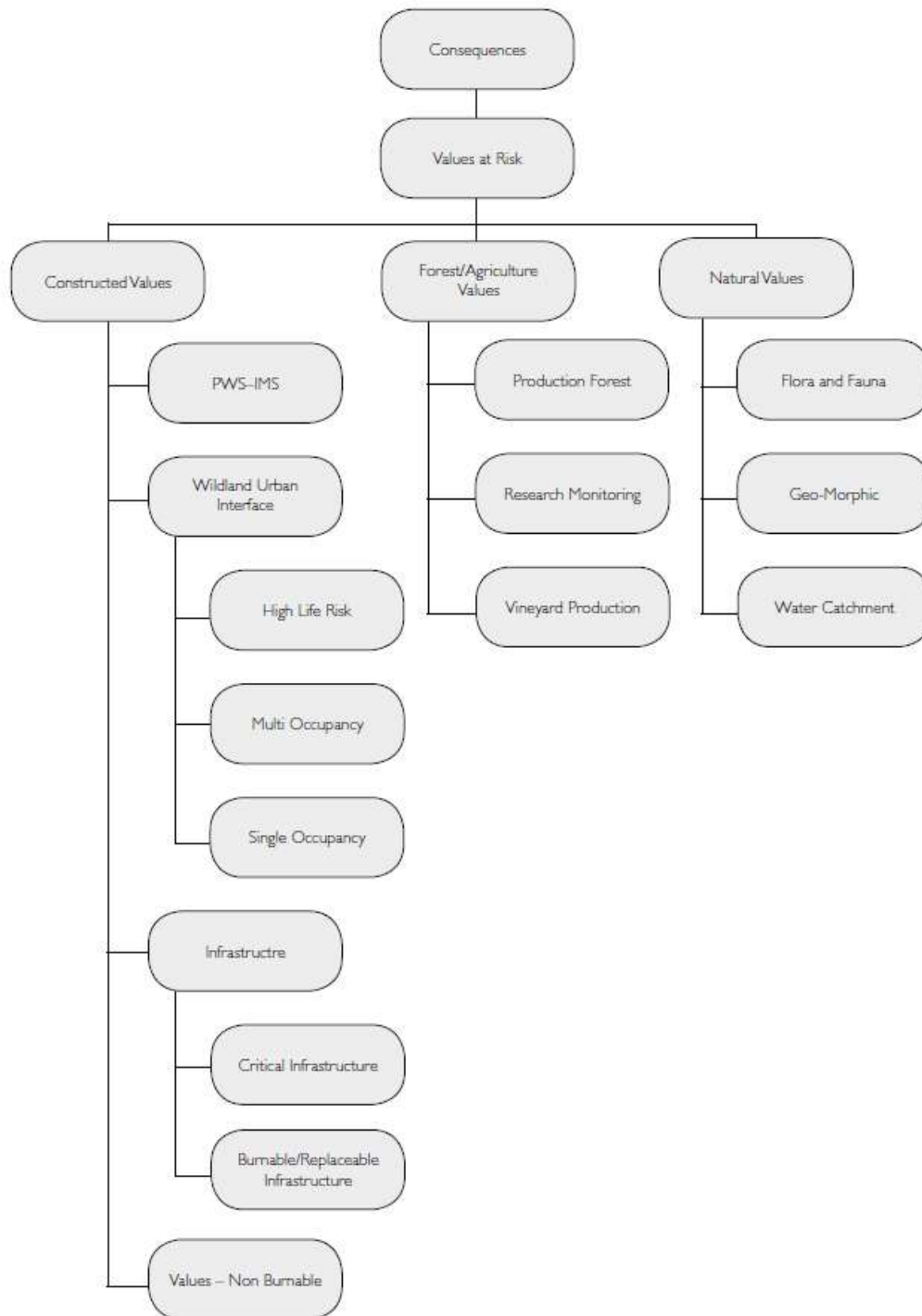
## Suppression Capabilities



## Fire Behaviour Potential



## Values at Risk



## Limitation of the process

- BRAM **does not** incorporate the likelihood and consequence **at the same point** from a fire occurring in an adjacent area.
- BRAM does not display the risks posed by an area adjacent to a particular point.
- Mitigation works undertaken on adjacent areas do not change the risk at a particular point.
- The process is based on available data, there are significant gaps in data e.g. fire history on private lands,
- Untested assumptions – may over/underestimate risk

## Appendix 7 – NERAG risk assessment approach

(Derived from the National Emergency Management Committee (2010), *National Emergency Risk Assessment Guidelines*, Tasmanian State Emergency Service, Hobart)

The NERAG provide a methodology to assess risks from emergency events and are principally concerned with risk assessment. The NERAG methodology was utilised in development of the BRAM to develop the final risk profile

The guidelines are not intended to address the entire risk management framework or the risk management process as outlined in AS/NZS ISO 31000:2009. However, because they focus on the assessment of risks from emergency events, they ultimately direct the management of emergency risks in line with the international standards for risk management.

The guidelines aim to provide a risk assessment methodology that:

- enables focus on risks in small (e.g. municipal) or large (e.g. regional and/or state and/or national) areas
- is useable for both risk 'from' and risk 'to' (e.g. risk from bushfire, risk to infrastructure from all or specific sources of risk)
- uses a scenario-based approach
- samples risk across a range of credible consequence levels
- identifies current risk under existing controls and residual risk assuming implementation of additional controls or control improvements
- provides base-line qualitative risk assessments and triggers for more detailed analysis
- allows risk evaluation at varying levels of confidence
- Provides outputs that are comparable, which rate risk and suggests means to reduce risk.

Risk analysis is the element in the process through which the level of risk and its nature is determined and understood. Information from risk analysis is critical to rank the seriousness of risks and to help decide whether risks need to be treated or not. In this phase, control opportunities are also identified. The analysis involves consideration of possible consequences, the likelihood that those consequences may occur (including the factors that affect the consequences), and any existing control that tends to reduce risks. During this phase the level of confidence in the analysis is assessed by considering factors such as the divergence of opinion, level of expertise, uncertainty,

quality, quantity and relevance of data and information, and limitations on modelling. At the conclusion of this step, all identified risks are categorised into risk levels and given a risk rating, and statements concerning existing controls and their adequacy are made.

NERAG takes an all hazards approach and provides a method that is suitable for considering other sources of risk beside fire.

## Consequence Table

Consequence level	People	Environment	Economy	Public Administration	Social Setting	Infrastructure
Catastrophic	Widespread multiple loss of life (mortality > 1 in ten thousand), Health systems unable to cope,  Displacement of people beyond a ability to cope	Widespread severe impairment or loss of ecosystem functions across species and landscapes, irrecoverable environmental damage	Unrecoverable financial loss > 3% of the government sector's revenues, asset destruction across industry sectors leading to widespread failures and loss of employment	Governing body unable to manage the event, disordered public administration without effective functioning, public unrest, media coverage beyond region or jurisdiction	Community unable to support itself, widespread loss of objects of cultural significance, impacts beyond emotional and psychological capacity in all parts of the community	Long term failure of significant infrastructure and service delivery affecting all parts of the community, ongoing external support at large scale required
Major	Multiple loss of life ( mortality > 1 in One hundred Thousand), Health system over stressed, Large numbers of displaced people( more than 24 hours)	Serious impairment or loss of ecosystem functions affecting many species or landscapes, progressive environmental damage	Financial loss 1-3% of the governments sector's revenues requiring major changes in business strategy to (partly) cover loss, significant disruptions across industry sectors leading to multiple business failures and loss of employment	Governing Body absorbed with managing the event, public administration struggles to provide merely critical services, loss of public confidence in governance, media coverage beyond region jurisdiction	Reduces quality of life within the community, significant loss or damage to objects of cultural significance, impacts beyond emotional and psychological capacity in large parts of the community	Mid- to long term failure of significant infrastructure and service delivery affecting large parts of the community, initial external support required
Moderate	Isolated cases of loss of life ( mortality > 1 in one million), Health system operating at maximum capacity, isolated cases of displacement of people( less than 24 hours)	Isolated but significant cases of impairment or loss of ecosystem functions, intensive efforts for recovery required	Financial loss 0.3 – 1% of the governments sector's revenue requiring adjustments to business strategy to cover loss, disruptions to selected industry sectors leading to isolated cases of business failures and multiple loss of employment	Governing body manages the event with considerable diversion from policy, public administration functions limited by focus on critical services, widespread public protests, media coverage within region or jurisdiction.	Ongoing reduced services within community, permanent damage to objects of cultural significance, impacts beyond emotional and psychological capacity in some parts of the community	Mid-term failure of( significant) infrastructure and service delivery affecting some parts of the community, widespread inconveniences
Minor	Isolated cases of serious injury, health system operating within Normal parameters	Isolated cases of environmental damage, one off recovery efforts required	Financial loss 0.1-0.3% of the governments sector's revenues requiring activation of reserves to cover loss, disruptions at business level leading to isolated cases of loss of unemployment	Governing body manages the event under emergency regime, Public administration functions with some disturbances, isolated expressions of public concern, media coverage within region or jurisdiction	Isolated and temporary cases of reduced services within the community, repairable damage to objects of cultural significance, impacts within emotional and psychological capacity of the community	Isolated cases of short- to mid-term failure of infrastructure and service delivery. Localised inconveniences
Insignificant	Near misses or minor injuries, no reliance on health system	Near miss or incidents without environmental damage , no recovery efforts required	Financial loss , 0.1% of the governments sector's revenues to be managed within standard financials provisions, inconsequential disruptions at	Governing body manages the event within normal parameters, public administration functions without disturbances, public confidence in governance, no	Inconsequential short-term reduction of services, no damages to objects of cultural significance, no adverse	Inconsequential short-term failure of infrastructure and service delivery, no disruption to the public services

			business level	media attention	emotional and psychological impacts	
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## Impact Category Definitions

Impact Category Definitions	
People	<p>Relates to the direct impacts of the emergency on the physical health of people/ individuals and emergency services( i.e. health systems) ability to manage</p> <p>Mortality defined as the ration of deaths in a an area of the population to the population of that area; expressed as per 1000 per years</p>
Environment	Relates to the impacts of the emergency and its effects on the ecosystem of the area, including fauna and flora
Economy	Relates to the economic impacts of the emergency on the governing body as reported in the annual operating statement for the relevant jurisdiction, and industry sectors as defined by the Australian Bureau of statistics
Public Administration	Relates to the impacts of the emergency on the governing body's ability to govern
Social setting	Relates to the impacts of the emergency on society and its social fabric, including its cultural heritage, resilience of community
Infrastructure	<p>Relates to the impacts of the emergency on the areas infrastructure/ lifelines/utilities and its ability to service the community</p> <p>Long term failure = repairs will take longer than 6 months</p> <p>Mid-to long term failure = repairs may be undertaken in 3 to 6 months</p> <p>Mid-term failure = repairs may be undertaken in 3 to 6 months</p> <p>Short to mid term failure = repairs may be undertaken in 1 week to 3 months</p> <p>Short-term failure = repairs may be undertaken in less than 1 week</p>



## Likelihood table

Likelihood level	Frequency	Average Recurrence Interval	Annual Exceedance probability
Almost certain	One of more per year	< 3 years	.03
Likely	Once per 10 years	3 – 30 years	0.031 – 0.3
Possible	Once per one hundred years	31- 300 years	0.0031 – 0.03
unlikely	One per thousand years	301 – 3,000 years	0.00031 – 0.003
Rare	One per ten thousand years	3,001 – 30,000 years'	0.000031 – 0.0003
Very Rare	Once per hundred thousand years	30,001 - 300,000 years	0.0000031 – 0.0003
Almost Incredible	Less than one per million years	>300,000 years	<0.0000031

## Qualitative Risk Matrix

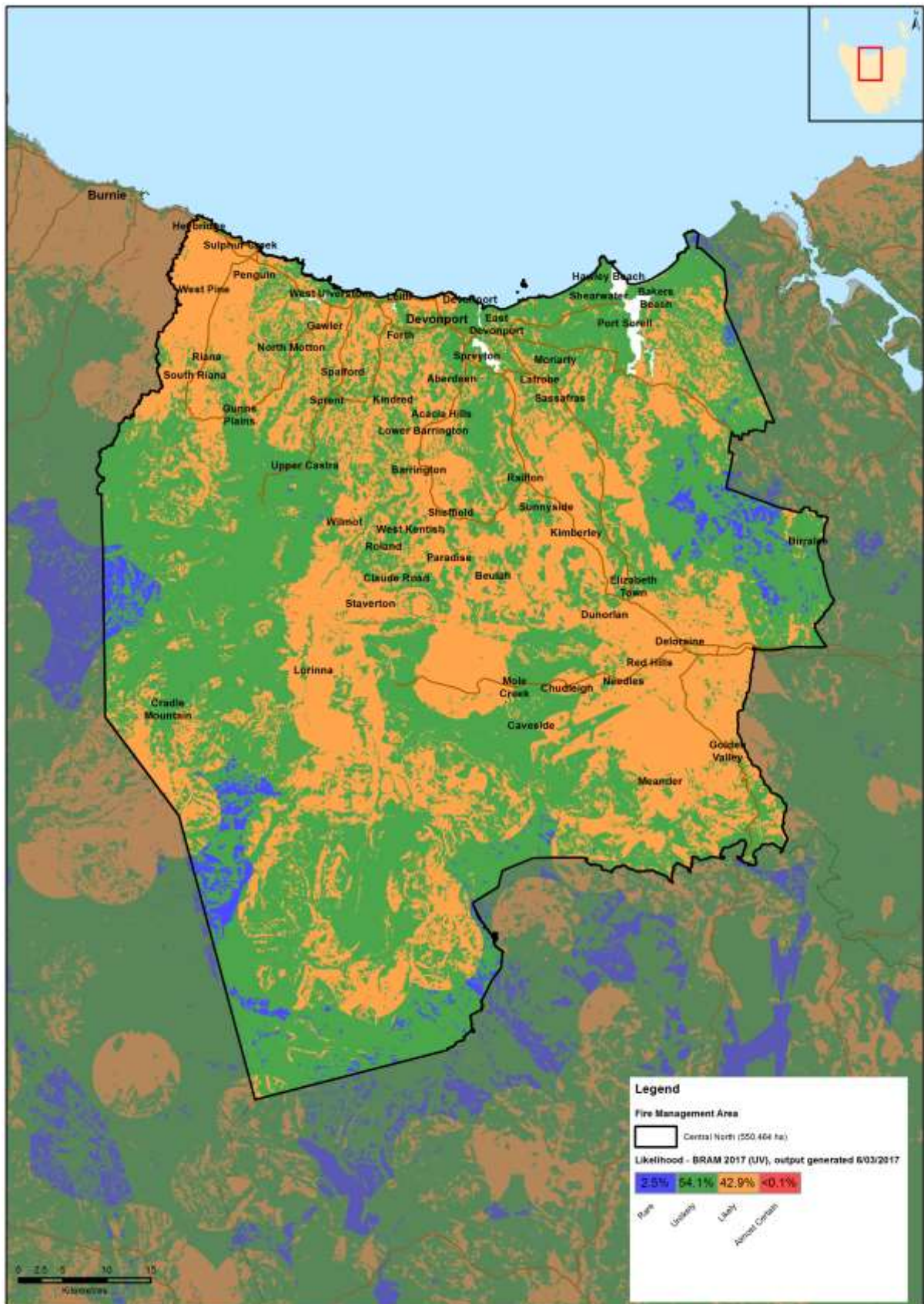
The qualitative risk matrix combines a level of consequence with a level of likelihood to determine a level of risk. The risk level, together with the confidence in the overall assessment process and other factors, will determine the need for detailed analysis and inform the treatment of risks

### Consequence level

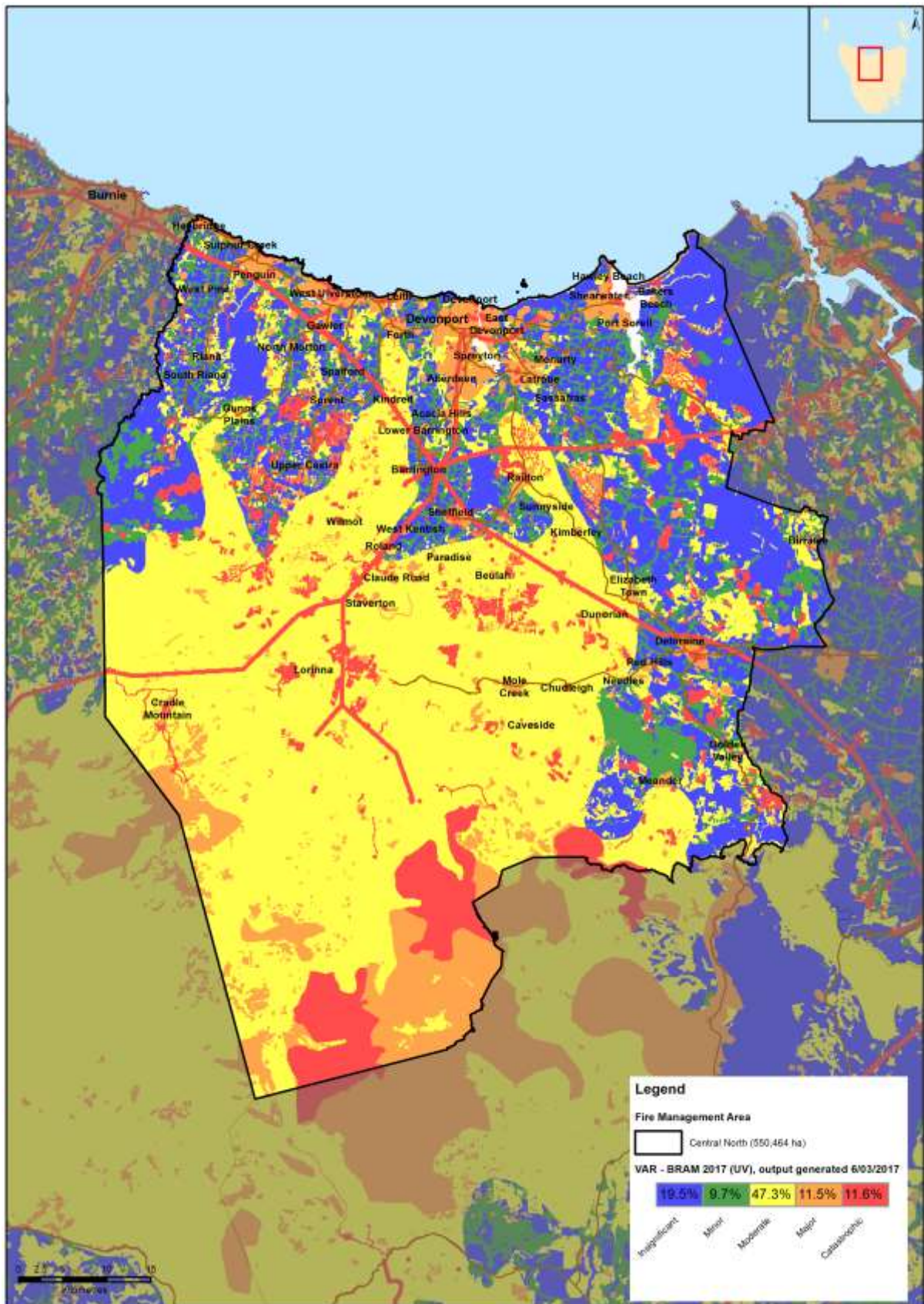
Likelihood level	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	Medium	Medium	High	Extreme	Extreme
like	Low	Medium	High	High	Extreme
Possible	Low	Low	Medium	High	High
Unlikely	Low	Low	Medium	Medium	High
Rare	Low	Low	Low	Medium	Medium
Very Rare	Low	Low	Low	Low	Medium
Almost incredible	Low	Low	Low	Low	low

# Appendix 8 – BRAM Risk Assessment Maps – Likelihood, Consequence, Risk

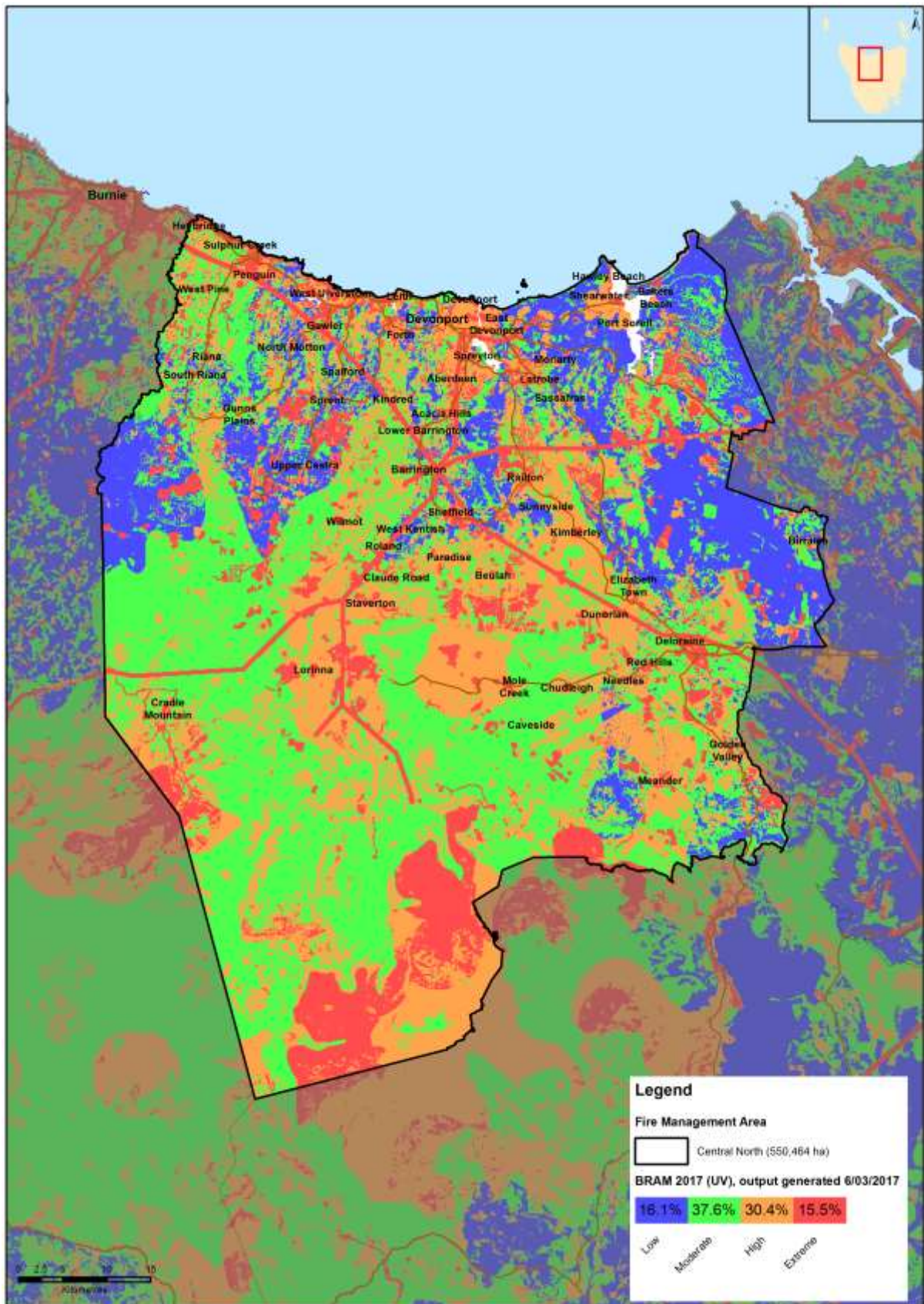
## BRAM Likelihood – Central North



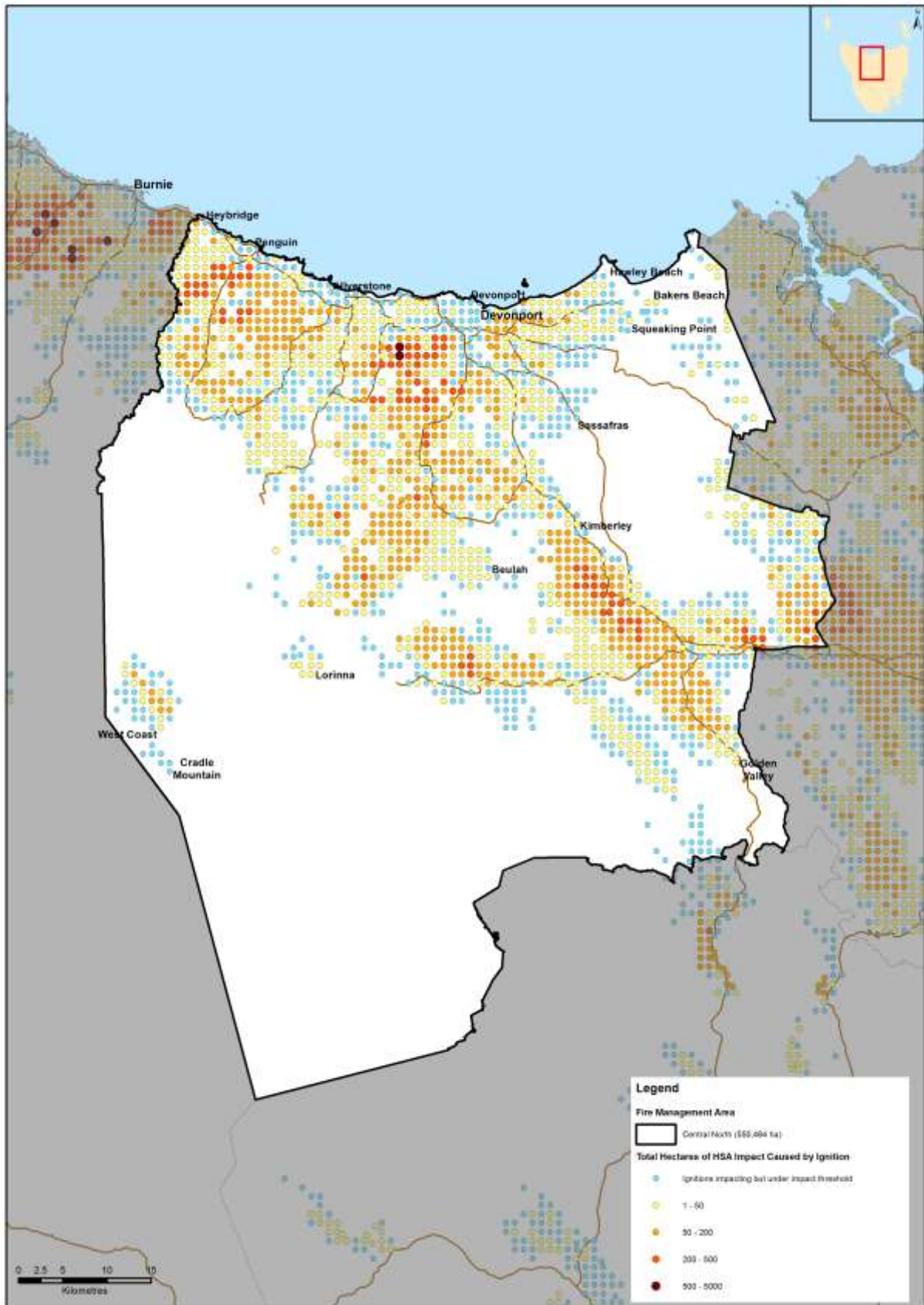
# BRAM Consequences – Central North

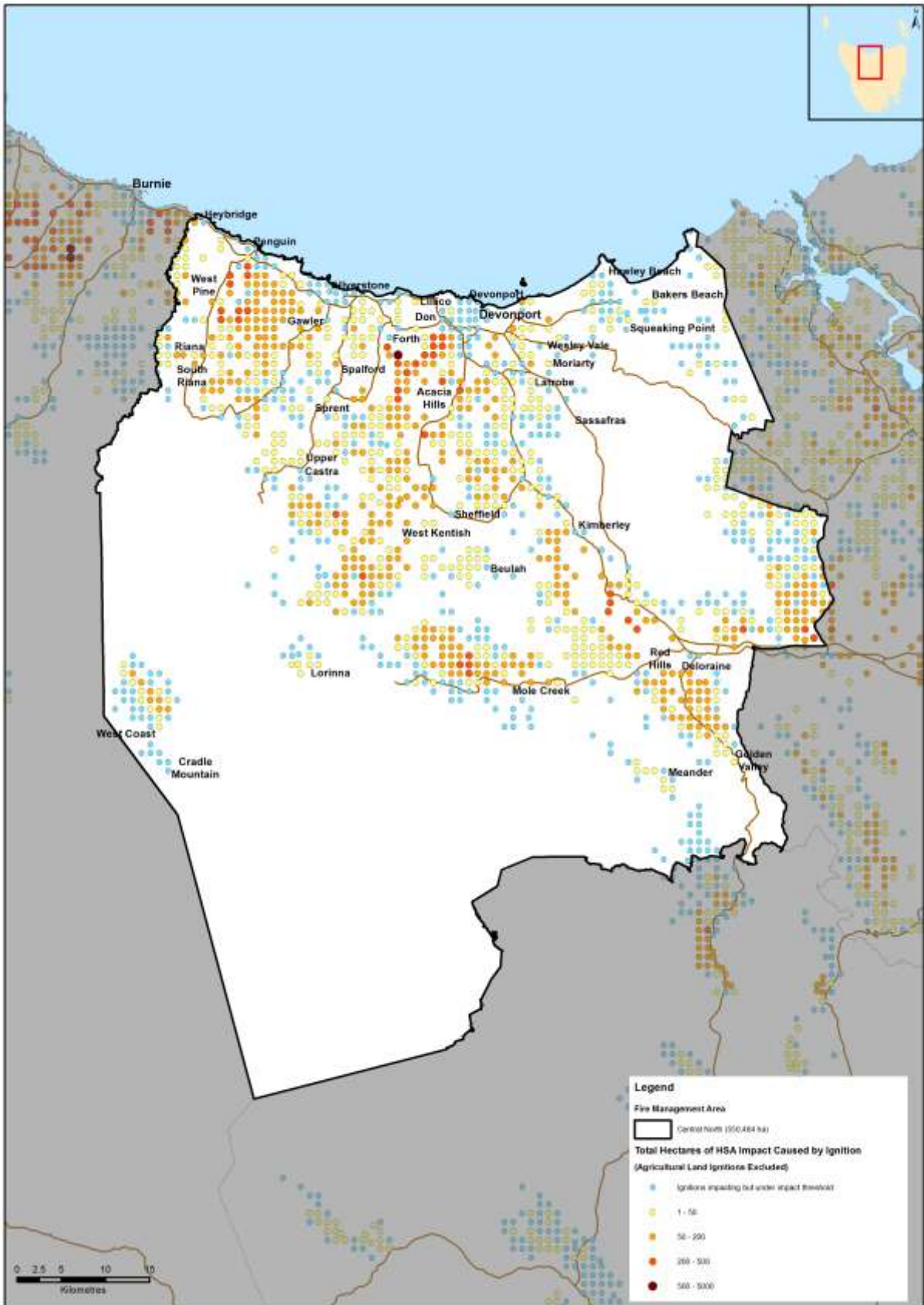


# BRAM Risk – Central North

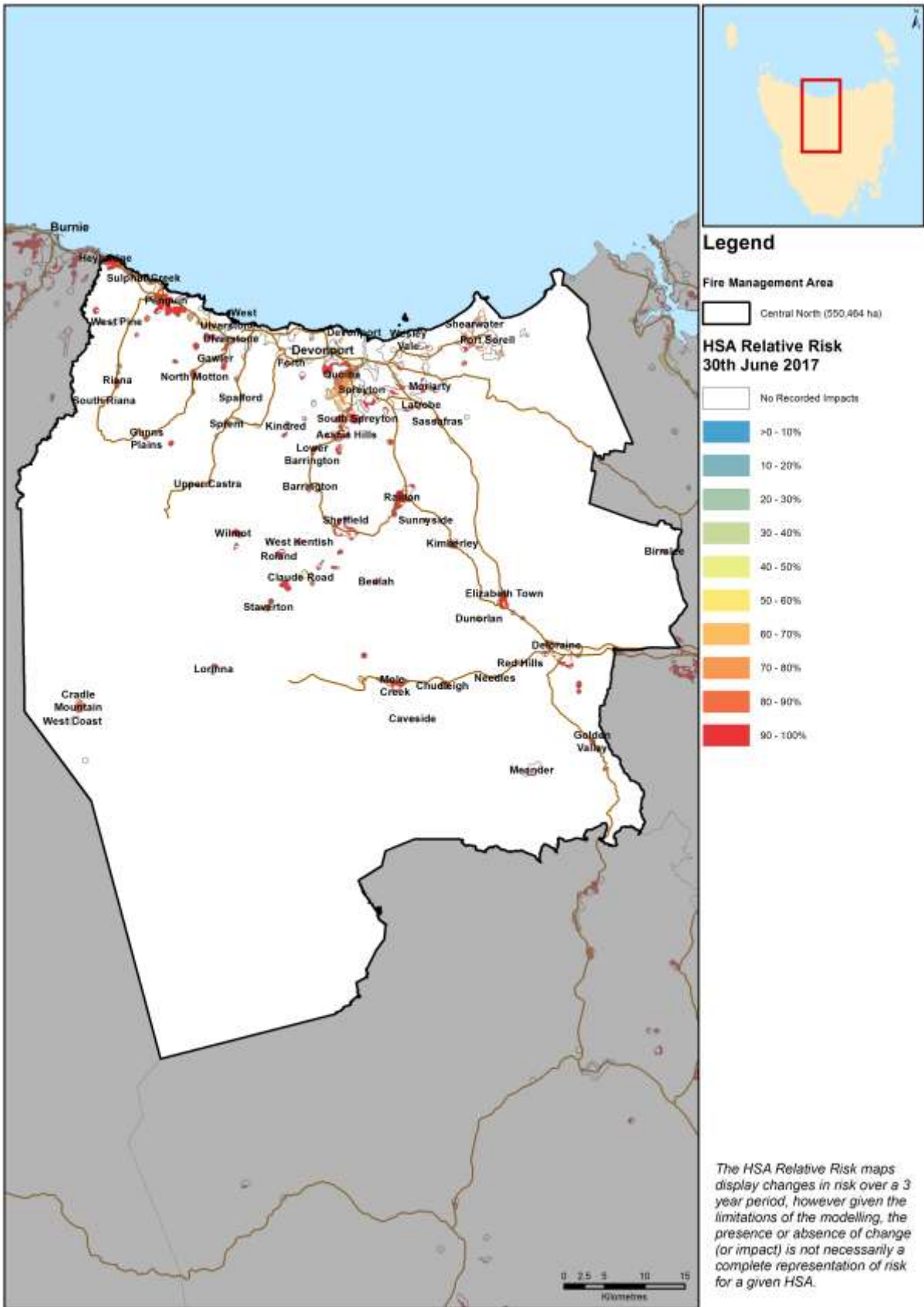


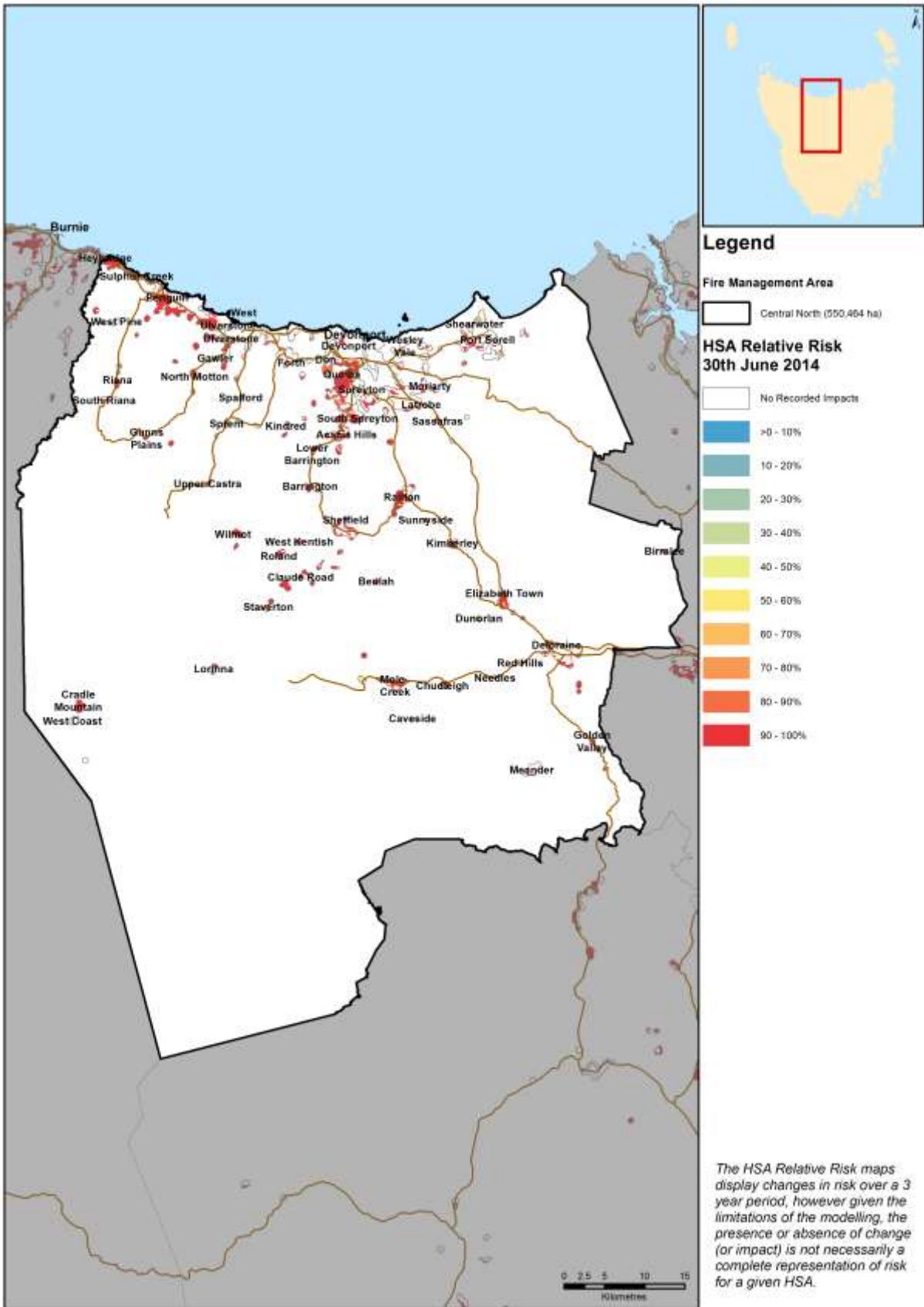
## Appendix 9 – Phoenix ignition points map



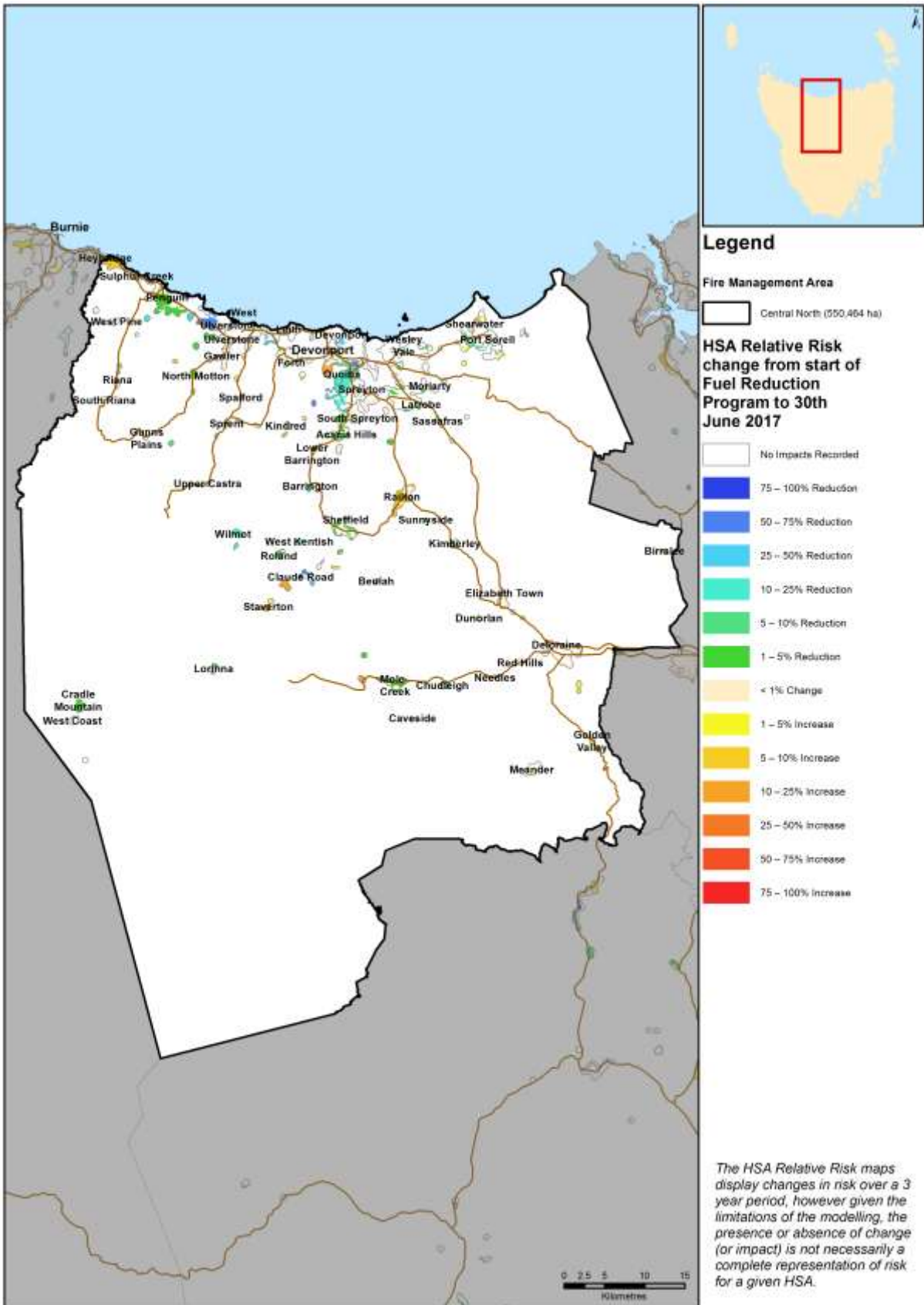


Central North Fire Protection Plan 2019









## **Appendix 10 – TFS Community Fire Safety Division Programs and Plans**

Tasmania Fire Service (TFS) Community Protection Planning Officers are responsible for preparing a range of community specific fire plans for communities. There are three types of plans, each with a different purpose:

### **1. Community Bushfire Response Plan**

The purpose of a Community Bushfire Response Plan, (CBRP) is for emergency management agencies to better protect communities and their assets during bushfire emergencies.

### **2. Community Bushfire Protection Plan**

The purpose of a Community Bushfire Protection Plan, (CBPP) is for community members to be provided with local information to assist with bushfire preparation and survival.

### **3. Community Bushfire Mitigation Plan**

The purpose of a Community Bushfire Mitigation Plan is to provide guidance regarding bushfire fuel management; to increase community bushfire safety and provide protection to important community assets.

A number of approved TFS Community Bushfire Protection Plans and Community Bushfire Response Plans are already in place for communities within the Central North Fire Management Area as at 2017 including:

- Claude Rd Area
- Cradle Valley Area
- Lorrina Area
- Jackeys Marsh
- Meander
- Golden Valley

For the 2017/18 fire season, Community Bushfire Protection Plans and Community Bushfire Response Plans are proposed for:

- Penguin area

## **Bushfire Ready Neighbourhoods Program - Tasmania Fire Service**

A Community Development Coordinator and regionally based Community Development Officers (Hobart, Launceston and Burnie) have identified 22 communities/areas state-wide which are being targeted by the Bushfire-ready neighbourhoods program as part of round 2 (2016 to 2018) of the program. The program takes a community development ('grass roots') approach and recognises that there isn't a one size fits all approach to bushfire preparedness, highlighting that 'we all play a part' ( individuals, TFS, communities). Specifically the program takes a community led approach providing local community members in higher bushfire risk areas community engagement activities for preparing for and preventing bushfire/s. The program is facilitated by accessing existing community networks and resources and developing localised strategies in bushfire preparedness. Some of the planned community engagement activities include; community forums, information sessions for communities and brigades alike, workshops, property assessments, field days, focussed group activities and establishment of Bushfire-ready neighbourhood groups.

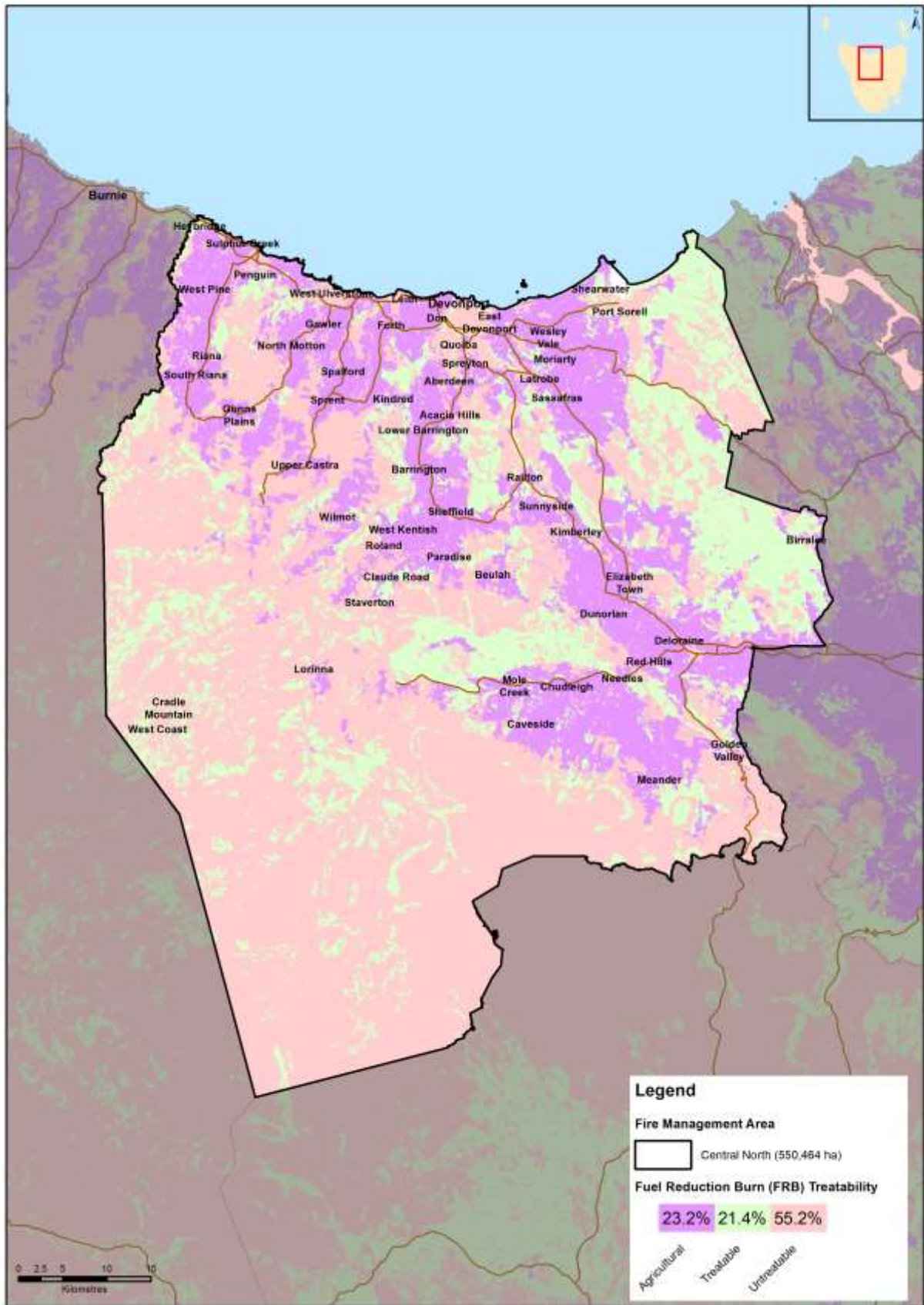
For more information about the Bushfire-Ready Neighbourhoods Program visit:  
[fire.tas.gov.au/brn](http://fire.tas.gov.au/brn)

Within the Central North FMA, Bushfire Ready Neighbourhood programs have been conducted at:

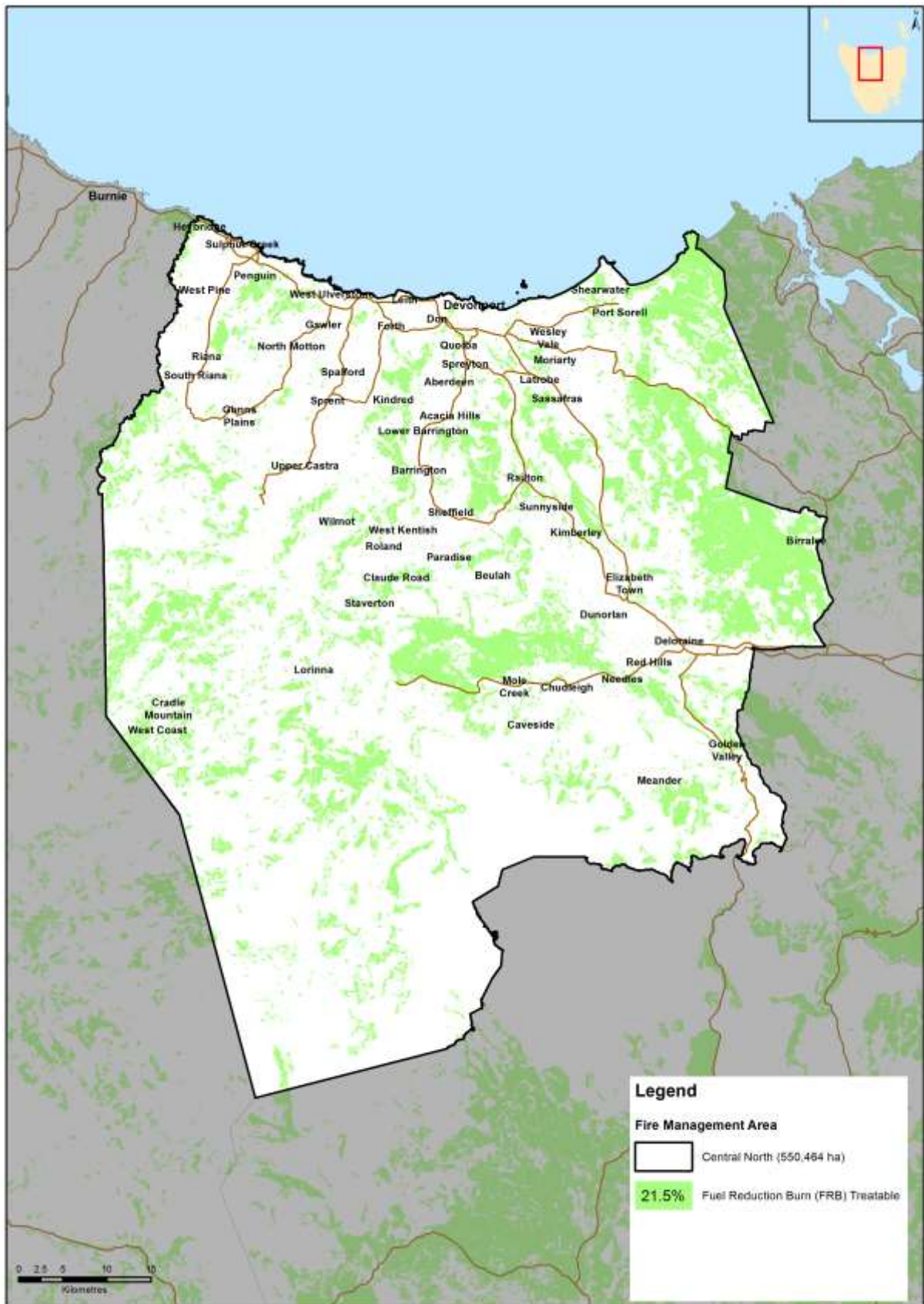
- Weegeena
- Golden Valley
- Jackey's Marsh
- Squeaking Point/Port Sorell

Round 3 of the Bushfire-Ready Neighbourhoods Program is currently underway, working in the Reedy Marsh area until 2020.

# Appendix 11 – Treatability of land within the Central North FMA Treat Agriculture



# Treatable Fuel Reduction Burn (FBR)



## Appendix 12 - List of fire management related documents for the Central North Fire Management Area

A number of fire related plans have already been prepared for use within the Central North Fire Management Area including:

- Tasmanian Emergency Management Plan (Department of Police and Emergency Management, 2013)
- Northern Region Emergency Management Plan (SES)
- Interagency Fire Management Protocol
- Roland Fire Management Area Fire Protection Plan (2008). Roland Fire Management Area Committee. ( A 5 part plan which includes Mt Roland Bushfire Risk Assessment (2006), Cradle Valley Emergency Management Plan (2007), Cradle Valley Fire Management Plan (2008), Gog Range, Badger Range Bushfire Risk Assessment, Middlesex and Moina Bushfire Risk Assessment).
- Barrington Fire Management Area: Fire Protection Plan (2003).

### Municipal Emergency Management Plans:

- Mersey Leven and Meander Valley Council Municipal Emergency Management Plans (2014)
- **Tasmanian Lifelines Project: Tasmania North West Region Project Report. (1996)**

### Devonport City Council:

- Fire Management Plan, Kelcey Tier Greenbelt (2005) AVK Environmental Management and Renaissance Forestry, Sandford, Tas.
- Fire Management Plan, Don Reserve (2005) AVK Environmental Management and Renaissance Forestry, Sandford, Tas.
- Updated Mersey District Wildfire Treatment Plan

### Parks and Wildlife Service Tasmania:

- Parks and Wildlife Service Tasmania Northern Region Strategic Fire Management Plan (2009) and Northern West Region Strategic Fire Management Plan (2012).
- Cradle Valley Fire Prevention Plan (2008) Report prepared for Parks and Wildlife Service by Environs Group, Ferntree Gully, VIC. On behalf of Mt Roland Fire Management Area Committee.
- Draft Dial Range Bushfire Response Plan (Feb 2008) – Parks and Wildlife Service Tasmania.
- Mt Roland Conservation Area and Regional Reserve Draft Fire Management Plan – June 2014, Parks and Wildlife Service Tasmania.
- Walls of Jerusalem National Park and Central Plateau Conservation Area Fire Management Plan 1997

## **TasNetworks**

- Transmission Line Easements Asset Management Plan (D03/5593) Issue 5.0, Transend, May 2014.
- Barrington easement slashing program and Lemontyne

## **STT**

- Bass Forest District Tactical Fire Management Plan (Sept 2013), STT.
- Salisbury Hill Forest Operational Plan (Beaconsfield Map sheet), 2014. STT
- STT. Fuel reduction burns are planned for Lemontyne and Virginstowe (east of Latrobe) 2014/15.

## **Hydro Tasmania**

- Bushfire Risk Assessment and Management Plan for Hydro Assets (August 2013). Prepared for Hydro Tasmania, by AVK Environmental Management, Sandford.

## **Other maps and/or data available:**

- Taswater Dams and Catchments, Trunk Main easements, Storage reservoirs.
- Annual slashing program for Narwantapu National Park, Parks and Wildlife Service Tasmania.
- City of Devonport, Roadside Mowing Contract map.
- Central Coast Council roadside slashing program map.
- Hydro Tasmania, state-wide vegetation management plan, annual programs.

Appendix 13 – Annual Implementation Program – Central North FMA 2018

Location	Issue	Owner	Previous Treatment	Action required	Who to take action	Resource/Funding Source	Timeframe for completion	FMAC Priority rating	Burn Plan Status	Prep Work Status
<b>COMMUNITIES</b>										
<b>Cradle Valley (including Pencil Pine)</b>	Numerous resorts represent a high value asset for the region - vital for tourism in Tasmania. High daily visitor numbers (up to 1500/day) with only one access road in/out. Large areas of fire prone and flammable buttongrass plains to the west. Fires in buttongrass move rapidly and the creation of firebreaks is not possible due to underlying/boggy marshes. There are minimal defensible places at Cradle Mt Village and only very low water pressure. The fire brigade at Cradle is very transient and the nearest brigade for assistance is 50 mins away at Wilmot.	PWS	There have been a high number of (planned) buttongrass fires to the west in the past. The buildings at Cradle Mt village have previously triaged by TFS. The Cradle Valley Emergency Management Plan (March 2015) is a sub-plan under the Mersey-Leven Emergency Management Plan and adds to work previously coordinated by PWS. There is a contingency plan to engage services of Tas helicopters to water bomb in an emergency. This plan was renewed and finalised in the last 12 months. A Community Bushfire Response Plan has been prepared for this area (2013). Stony Creek burn completed October 2015. Speeler Southeast burn was completed in 2016. Speeler NW burn was completed in 2018.	1. PWS has hazard reduction burning program burns scheduled for Quailes Hill, 4 sections over the next two years (south-east of Interpretation Centre and Ranger Office) 2. Actions identified in the emergency plan/mitigation plan for this area need to be implemented.	Eddie Staier	PWS - for Hazard reduction burning. Additional support sought from BRU	Autumn 2019	High	Community Protection and Response Plans completed (TFS).	Unbounded burns, prep not required.



Location	Issue	Owner	Previous Treatment	Action required	Who to take action	Resource/Funding Source	Timeframe for completion	FMAC Priority rating	Burn Plan Status	Prep Work Status
<b>Claude Rd (Mt Roland)</b>	There are about 70 houses scattered on the slopes of Mt. Roland. Most of these are only accessible by single lane one way in one way out roads with very few turning points for fire trucks. Large areas of standing wet forest preclude hazard reduction burning in STT managed area. There is a history of arson in the area.	Mix of private property and Parks	Risk assessment and Draft fire management plan has been developed by Parks. Structural survival assessment and community engagement conducted by TFS about 6 years ago. Community protection plan developed. Community has been engaged with Community Education Program. 2 burns completed in autumn 2015. Steers Rd planned burn completed in Oct 2018. A BMP was completed for O'Neills Reserve in 2018.	FMAC group acknowledges members of this community have knowingly chosen to live/build in a high bush fire risk area. Investigate suitability for a burn program (on PWS tenure). Review of access roads required for emergency access. Three burns are planned for the Claude Road area.	Eddie Staier/ Linda Walker (PWS) Mark Brownrigg and Darren Cunningham	BRU can provide planning and operational support. Other funding to be sourced to upgrade trails.	PWS burns planned for 2018/2019	High	Community Protection and Response Plans completed (TFS).  2 burns planned for 2018/2019	Underway (PWS)

Location	Issue	Owner	Previous Treatment	Action required	Who to take action	Resource/Funding Source	Timeframe for completion	FMAC Priority rating	Burn Plan Status	Prep Work Status
<b>Don Reserve (West of Devonport)</b>	Council reserve with a history of frequent fires. Considered a potentially major threat to Don College & surrounding residents located uphill of the fuel load. A very high risk Hazard reduction operation is required. High ecological values. Identified in Mersey bushfire Treatment Strategy. Resourcing the actions identified in the fire plan for this reserve is the issue.	Current land tenures in and near the reserve comprise: <ul style="list-style-type: none"> <li>• land at the northern and southern parts of the reserve that are owned by DCC</li> <li>• crown land in the centre of the reserve that includes the Don Aquatic Centre and Parks Depot</li> <li>• crown land near the river</li> <li>• Don College (administered by the Education Department)</li> <li>• The railway corridor, which is leased until 2051 from DCC for use as a railway heritage tourist attraction by the Don River Historic Railway</li> </ul> The balance of the reserve, including the area occupied by the Don Aquatic Centre and the parks depot is public land administered by DCC	Previously burnt 7 to 8 years ago (TFS resourced). Council maintains fire trails. Don East burn has been completed in 2 parts in 2015 and 2016. A fire plan for Don Reserve has been drafted and will go out for public consultation. Don Reserve Fire Management Plan has been updated and adopted by Devonport City Council.	Further burns have been identified in Don Reserve for autumn 2019, these will be grouped into one burn plan. Another burn is being planned for autumn 2019, south of the highway and east of the Don River on private land. DCC is currently working with TFS to arrange a burn in Don Reserve.	Kylie Lunson	DCC for Don Reserve.	2019	High	A burn plan need to be developed for 2019 Don Reserve burns	Don East burn completed. Prep work not commenced for 2019 burns.

Location	Issue	Owner	Previous Treatment	Action required	Who to take action	Resource/Funding Source	Timeframe for completion	FMAC Priority rating	Burn Plan Status	Prep Work Status
<b>Summerhill Drive area, Port Sorell</b>	Located on the western side of Hawley. At risk of fire from the northwest. Lots of residential development in amongst the scrub. Area has a history of repeated fires (before the houses were built). Fire is likely to be difficult to control.	Predominantly private property.	Northdown Beach burn undertaken in 2016 A BMP was completed for Lucks Reserve in 2018.	Recommend this location for a community education program as well as a program of Structural Assessments from TFS. Needs to be incorporated into a bigger mitigation plan. BPP to develop Community Bushfire Protection Plans for this community. Further burn planned for Pitcairn Street.	TFS	TFS and PWS	2019	high	There is an approved burn plan for Pitcairn Street.	Not commenced
<b>Squeaking Point</b>	Areas of private property with limited building protection potentially putting the wider area at risk. Dwellings are closely surrounded by volatile scrub and large blocks covered with heavy ground litter layer. Large tract of vegetated land to the NW presents greatest risk. Crown land foreshore with reserve area behind administered by P&W and with firebreak. Community has a varying level of awareness of the risks and appropriate level of protection. Also identified as a priority in Mersey bushfire Treatment strategy.	Mixed tenure. Private property & Crown land foreshore with reserve area behind (administered by PWS) and with firebreak.	One fire recorded in this area at Squeaking Point North in 2008. A fire break across crown land has been identified and constructed in this area. Burns undertaken in 2017 at Parkers Ford Rd and Browns Lookout West. Burns undertaken in 2018 by PWS at Squeaking Point.	This community is to be included in the 2016/18 Bushfire Ready Neighbourhoods program. TFS to develop Community Bushfire Protection Plans for this community.	TFS for private land, Chris Emms PWS	Unfunded	2019	High	Not done.	Not commenced
<b>Marana Drive and Eagle Point area - Bakers Beach (east of Rubicon Estuary)</b>	Isolated population located in highly flammable vegetation. Properties on Marana Drive and Eagle Point are at risk. Has a history of fires to the northwest. Fire is most likely to originate from the bushland block located in the township itself. Local brigade is not strong and nearest additional assistance is 35 minutes away minimum. Blocks in centre of town area are privately owned.	Private, STT and P&W	The area has been identified for a strategic burn previously. STT maintains firebreaks to the northwest on Timberland property. Bakers Beach West burn completed in 2016. A BMP was completed for Rubicon Reserve in 2018.	Further burns planned for Marshalls Hill, Browns point, Eagle Point and Narawntapu.	Mark Brownrigg (TFS) and David Fulford (BRU) Chris Emms	Unfunded	2019	High	In progress	Not commenced

Location	Issue	Owner	Previous Treatment	Action required	Who to take action	Resource/Funding Source	Timeframe for completion	FMAC Priority rating	Burn Plan Status	Prep Work Status
<b>Heybridge</b>	The community at Heybridge together with the Central Coast Council is concerned about the risk to the community at this location from fire. Heybridge is ranked as the highest priority in the Mersey district. There is a history of fires in the area. Heybridge is located on a steep bank, with new residential development upslope from the vegetation/fuel risk. The greatest risk is from people lighting up at the bottom of the hill and burning out those at the top of the hill. Access for firefighting vehicles is only possible from the bottom (risky). Exit for those fleeing this area is on to a busy highway which presents extra risk if people are panicking.	PWS, Reserve/Crown land	Fires have occurred in this area in 1998 and 2006 and Chasm Creek in 2000. Last controlled burn was about 12 years ago. Structural Survival assessments have been done by TFS at Round Hill (after the Round Hill fires). The Blythe River (scout camp area) burn was completed in 2018.	<ul style="list-style-type: none"> <li>This community is to be included in the Community Development Unit program from 2018/20.</li> <li>Future planned burning to be considered on other privately owned interface areas with BRU taking the lead. The BRU are investigating other possible burn units further east.</li> <li>PWS to continue burning Blythe River Conservation Area.</li> </ul>	Eddie and Linda (PWS) Mark Brownrigg (TFS) and BRU David Fulford	Joint burn operation between PWS and TFS. BRU can provide planning and operational support. Additional resourcing/assistance may be required from TFS to conduct Structural Survival Assessments.	2019	Med - High	Approved (PWS)	Underway (PWS)
<b>Lorinna</b>	Isolated community with a small local brigade. The nearest additional response unit is 40 minutes away. Single access road in and out - surrounded by heavily vegetated land. History of major fires in the area in the past. If leaving early - residents can retreat to cleared area in the south towards the lake. If leaving late - very high risk of fallen trees blocking only exit road. Identified as a priority in Mersey bushfire Treatment strategy. Residents have been informed not to leave if there is a fire in the area and have been informed of nearby safer location at Bob Robinson's place next to the lake.	Vegetated area is a mostly PWS tenure. Some STT plantations.	There have been 2 major fires in the area in the past. STT assisted with control operations. PWS completed a fuel reduction burn off Cockatoo Road in 2013. Community meetings have been held for this community by TFS and PWS in the past. A Community Protection Plan has been prepared for this area and a community engagement program has commenced. A burn at Cethana was completed by PWS in 2015. The emergency track from Wilks Rd to Olivers Road is now open. This track has been constructed to a good standard and will provide a 2 <sup>nd</sup> exit for Lorinna.	Currently no further PWS action on this issue. Still have burns planned for Cethana area.	Eddie Staier, Linda Walker (PWS)	BRU can provide planning and operational support	2019	Medium	Community Protection and Response Plans completed (TFS). Local Mitigation Plan scheduled for 2018/19 (TFS BPP)	Not commenced

Location	Issue	Owner	Previous Treatment	Action required	Who to take action	Resource/Funding Source	Timeframe for completion	FMAC Priority rating	Burn Plan Status	Prep Work Status
<b>Dooleys Hill</b>	Dooleys Hill is part of a continuance of a hillside range that is heavily vegetated but has limited development. Poses a risk to the town of Latrobe, particularly from ember attack. The area is surrounded by wet forest (untreatable) vegetation in the River Road area. Identified in Mersey bushfire Treatment strategy as a priority.	Latrobe Council/Private	Latrobe Council has developed a Fire Mitigation Strategy breaking the area into different vegetation types and identifying cyclic fuel reduction burns in the dry forest area behind houses. Peter Dawson (Latrobe Council) has a draft plan for fuel reduction in the dry forest behind the houses. A track was put in under previous fire mitigation funding which joins an existing walking track.	The desired action for this location is to establish a cyclic burning program and ensure the trail is maintained to an acceptable standard by Latrobe Council. A burn plan has been done for this block. BRU will incorporate this burn into their program. FMAC to periodically check status and need for further burns. An ongoing program of smaller burns will be undertaken commencing this autumn with the Lochner Street burn unit and ongoing burns beyond this.	Jonathan Magor (Latrobe Council) and BRU staff (Burn Coordinator)	Funding not required, could be used as a group exercise.	2019	Medium to high	Plan for Dooleys Hill completed (Latrobe Council)  Mitigation plan not required – treat individual fuel management units instead  TFS has commenced a burn plan for the Lochner Street part of Dooleys Hill.	Not commenced
<b>Penguin</b>	Community feels unsafe/concern about Dial Range. Penguin ranked highly in Phoenix and BRAM rankings but there is no history of fire in the area. The only assets at risk within the Dial Range are communications towers.	PWS	Mount Montgomery burn and fire trail upgrade completed in March 2018. Ironcliffe Rd burn completed by TFS in Autumn 2018.	PWS planned burns should reduce the level of risk in this area. Several other burn units along the top of the range have been identified and will come into rotation over the next several years.	PWS and TFS	PWS and TFS	3 stage burn planned by PWS. One stage was completed in 2015, second stage was completed in 2018 and third stage still to be completed (will require reassessment and re-approval), fire break still to be completed.	medium	PWS 3 stage plan completed. Ironcliffe Rd burn planned.	Completed

Location	Issue	Owner	Previous Treatment	Action required	Who to take action	Resource/Funding Source	Timeframe for completion	FMAC Priority rating	Burn Plan Status	Prep Work Status
<b>Acacia Hills</b>	Houses on the side of the hill are hard up against vegetation in a bushfire prone area with high fuel loads. Acacia Hills has the biggest fire potential in the area and it is dry with a lack of available water for firefighting. Many private properties are overgrown with vegetation.	Significant tracts of private land holdings.	Some burning has been conducted on private properties in the area. A large area behind the Nook was logged in 2013. One burn has been completed east of the Dulverton landfill facility in Spring 2017.	Further investigation required as to what can be done to mitigate the risk in this area - identification of burn blocks/strategic trails etc. Mitigation plan required. Low priority based on preliminary inspection by BRU & TFS. Area will need reassessment due to logging	BRU/TFS staff	BRU can provide planning and operational support	2019	Low	Mitigation plan not done.	Not completed
<b>Turners Beach to Leith Foreshore</b>	Following significant rain events and flooding in 2016, substantial amounts of flood debris have accumulated in the foreshore areas from Turners Beach to Leith. This debris is on crown land and is considered to be a significant fire risk. Options to mitigate this risk will need to be developed in conjunction with the land owners and managing authorities. This issue is considered a high priority by the FMAC.	Crown Land	None	Options to mitigate this risk have been developed in conjunction with the land owners and managing authorities. Leith foreshore, east of the Forth river has been cleared of debris. This appears to be no longer an issue.	FMAC	None	2019	Medium		
<b>POTENTIAL BURN BLOCKS</b>										

Location	Issue	Owner	Previous Treatment	Action required	Who to take action	Resource/Funding Source	Timeframe for completion	FMAC Priority rating	Burn Plan Status	Prep Work Status
<b>Reedy Marsh area</b>	A fire in this area poses a high risk to Westbury to the south east (in Tamar FMAC)	The majority of land between Reedy Marsh and Westbury to the SE is Private freehold. Land to the north of Reedy Marsh is Permanent Timber Production Zone Land, Conservation Area and some conservation covenant. Stuart (DPIPWE) has contacts for covenant land owners.	Unknown STT previously had burn plans in place but encountered resistance from the locals. Much of the land has changed tenure from STT and been passed over to PWS.	PWS have identified a block for a hazard reduction burn. FMAC to investigate option for identifying areas to Councils indicating high risk places where people should be discouraged from building (such as Reedy Marsh).	BRU staff and PWS (Chris Emms)	Unfunded - BRU can provide planning and operational support	2019	High	PWS burn plan in progress	not done
<b>Clayton Valley/Stubbs Road (Turners Beach)</b>	A vegetated block with houses amongst steep and heavily vegetated terrain. A long history of fires in the area. At risk of fire from multiple directions.	Private property	Paul Hill (TFS) has been asked previously to conduct a hazard reduction burn but does not have the resources. Burn completed in autumn 2017.	None as burn was completed in Autumn 2017	BRU staff	BRU	completed	Medium	Mitigation Plan not required – individual treatment units planned.	Completed
<b>Pitcairn Bushland Reserve (Port Sorell)</b>	This reserve contains volatile vegetation and has been subject to regular arson attacks. It is located beside a new school.	Latrobe Council	The reserve has previously been divided into block suitable for hazard reduction burning (by Peter Dawson) and fire breaks were put in some years ago. A section of this was burnt 2014. A BMP was completed for Camp Banksia in 2018.	No immediate action required. Keep on list as a low to medium priority for a hazard reduction burn in the Central North FMAC. (Will need to liaise with Rotary club active in this reserve). One burn planned for 2018	Latrobe Council, BRU and TFS	BRU	2019	Low	Completed	Not complete
<b>ASSETS</b>										

Location	Issue	Owner	Previous Treatment	Action required	Who to take action	Resource/Funding Source	Timeframe for completion	FMAC Priority rating	Burn Plan Status	Prep Work Status
<b>Sykes sanctuary/Railton Urban Interface</b>	40 acre reserve in behind Railton. A fire in the reserve has the potential to impact upon Railton. High fuel levels in the reserve at present. The reserve has tracks all through it and it will burn in the right conditions.	Council/private	Tracks have been created with the reserve. There is no history of fire in the area.	A burn plan is required for this reserve. Kentish Council requires BRU assistance to write a burn plan for as well as resource this burn. BRU to put into program and write burn plan. BRU have added the burn to the program for Spring 2018. GPM have assessed and produced a BMP for Sykes Sanctuary. At this stage the Kentish Council Green Spaces team have been removing some fuel load until it becomes a priority for the BRU.	Kentish Council , BRU (David Fulford ) and TFS	Kentish and Latrobe Councils have secured bushfire mitigation project funding for this project. BRU can provide planning and operational support.	Plan to be completed by 2019	low	Not done	Not done
<b>PROPOSED HAZARD REDUCTION BURNING</b>										



Location	Issue	Owner	Previous Treatment	Action required	Who to take action	Resource/Funding Source	Timeframe for completion	FMAC Priority rating	Burn Plan Status	Prep Work Status
<b>Jackeys Marsh</b>	Alternative lifestyle community - Isolated and dispersed community within a valley surrounded on all sides by heavily forested land. Winding access roads overhung with trees. Surrounded by World Heritage Area. Lots of wet forest (untreatable).	Mixed tenure. Lots of conservation covenants.	A Community Protection Plan and Community Response Plan has been completed for Jackeys Marsh.	BRN is currently engaging with the community as part of the 2014-2016 program. Community members are very engaged and have been attending forums and information sessions. Warners Sugarloaf needs some fuel reduction burning. PWS are investigating opportunities for burning to the west of Jackeys Marsh in the Warners Sugarloaf area.  Mitigation Plan required.	PWS/BRU Chris Emms	BRU can provide planning and operational support		High	A Community Protection Plan and Community Response Plan has been completed for Jackeys Marsh (TFS).	Not done
<b>Kelcey Tier HR (Devonport area)</b>	There is a strong history of fires in the area. Potential to impact heavily upon Stoney Rise, Tugrah, Spreyton, Wrenswood Drive, Durkins Road, Williams reservoir and comms tower on top of the hill. Only one road in or out on the eastern side of the range. Fire usually starts on the Tugrah side from escaped agricultural burns.	Devonport Council and private property.	Burn Plans were prepared and some fuel reduction activities were conducted in spring 2014 & autumn 2015 Further burns were undertaken by the BRU in 2016 Kelcey Tier Fire Management Plan has been updated and adopted by Devonport City Council.	Kelcey Tier 6 burn unit is planned for 2017/2018 DCC is currently working with TFS for burning in Kelcey Tier – some completed in Autumn and Spring 2018 and more planned for 2019. Burn planned for Tugrah Rd West for autumn 2019.	TFS	BRU can provide planning and operational support	2019	High	Burn plan completed for Kelcey Tier 6	Commenced

Location	Issue	Owner	Previous Treatment	Action required	Who to take action	Resource/Funding Source	Timeframe for completion	FMAC Priority rating	Burn Plan Status	Prep Work Status
<b>Stony Rise - subdivisions adjacent to Kelcey Tier greenbelt</b>	The subdivision along Leary Ave has resulted in houses being built hard up against the northern boundary of the heavily vegetated Kelcey Tier Green Belt. A fire from the quarry within the Green belt has the potential to head south and impact on the Wrenswood Drive housing development.	Council, TasWater and some private ownership		A firebreak is needed between Kelcey Tier and the Leary Avenue/McCall Terrace (also across to Tugrah Road) subdivision properties along its northern boundary. The nearby Devonfield burn has been completed.	Done	DCC	2019	medium	Completed	Not commenced
<b>Dulverton Landfill site &amp; Organic Recycling Facility (DORF)</b>	Landfill is surrounded by natural vegetation to the south and west, an access road the north and east (both with a thin strip of native vegetation along the roadside). Neighbouring land includes pine plantations, native vegetation and small farm holdings. The landfill site poses a fire risk to the mushroom compost operation adjoining the landfill site.	Dulverton Waste Management	TFS and DWM have had meetings regarding fire prevention and an Environmental Management Plan has been developed for the landfill and organic recycling facility	The FMAC believe that the Dulverton facility is no longer an issue and should be removed from this plan. The area will require future monitoring in regards to dumped cars and other potential ignition sources. A burn was completed in Spring 2017 immediately east of the facility as part of the Acacia Hills mitigation area.	Dulverton Waste Management Authority (and reps from member Councils).	Dulverton Waste Management Authority (Councils)		low	Not done	Not done
<b>Additional TFS Burns</b>	Planned burns for next 12 months	Various		<b>Autumn 2019</b> Manning Jetty Rd Lochner Street Sykes Sanctuary <b>Spring 2019</b> Pitcairn St Ulverstone Golf Club Marshalls Hill East Knights Rd Rubicon Hills Don River Railway Don River South						

Location	Issue	Owner	Previous Treatment	Action required	Who to take action	Resource/Funding Source	Timeframe for completion	FMAC Priority rating	Burn Plan Status	Prep Work Status
<b>Parks Burns</b>	Planned burns for next 12 months	PWS	<b>Completed burns:</b> Lees Paddocks (NREGION) Mt Montgomery (1 part done) (NWREGION) Narawntapu Np East (NREGION) Narawntapu Np West (NREGION) Speeler Southeast (NWREGION) Blythe River (NWREGION) Mt Montgomery (2 <sup>nd</sup> part) (NWREGION) Speeler NW (NWREGION) Steers Road (NWREGION)	Bonds Plain NE (NWREGION) Great Bend (NWREGION) Mt Montgomery (3 <sup>rd</sup> part) (NWREGION) Olivers Road (NWREGION) Quailes Hill (NWREGION) Reedy Marsh (NREGION) Sensation Gorge (NREGION) Telstra Track (NWREGION) Weeks Creek (NWREGION)	PWS	PWS – Eddie Staier and Chris Emms	2019	Low to high		
<b>Sustainable Timber Tasmania Burns</b>	Planned burns for next 12 months	STT	Blythe Plains - Blythe Plains now completed		STT		2019	Low to high	ongoing	
<b>Kentish/Latrobe Bushfire Management Plans</b>	Bushfire Management Plans completed	Kentish and Latrobe Councils	Kentish: Kentish Park, Old Railton Tip Site, O'Neills Reserve, Sykes Sanctuary, Wilmot Park and the Wilmot Waste Transfer Station / Cemetery. Latrobe: Camp Banksia, Lucks reserve, Moriarty Freehold Land and Rubicon Reserve	Burning to commence in Rubicon Reserve and Lucks Reserve	Kentish and Latrobe Councils		Plans Completed Initial burns to commence in Autumn 2019			Commenced
<b>Other burns</b>	Planned burns for next 12 months	Multi tenure			BRU, Forico, TFS		2019	Low to high		