



# **North East Fire Management Area**

## **Fire Protection Plan**

### **2018**



## Document Control

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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). The area within 1.05km of a human settlement area (SFMC Fuel Strategy).
<b>Strategic Fuel Management 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 1.05km and 6.05km from a human settlement area (SFMC Fuel Strategy)
<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 (State Fire Protection Plan)
<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.
<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>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 development of personal Bushfire Survival Plans.
<b>Community Bushfire</b>	An Emergency Management Plan for emergency managers and responders. The Bushfire Response Plan aims to better protect

<b>Response Plan</b>	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.
<b>Community 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>Consequence</b>	Consequences are defined as a qualitative rating of damage from fire to values.
<b>Fire Management Zoning</b>	Classification system for the area to be managed. The zoning system indicates the primary fire management purposes for an area of land.
<b>Human Settlement Area</b>	Term given for the 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.
<b>Likelihood</b>	Likelihood is defined as a qualitative method to assess the likelihood rating to the consequences occurring.
<b>Risk</b>	The effect of uncertainty on objectives. (Note: risk is often expressed in terms of a combination of the consequences of an event and the associated likelihood of occurrence.)
<b>Risk Acceptance</b>	The informed decision to accept a risk, based on the knowledge gained during the risk assessment process.
<b>Risk Analysis</b>	The application of consequence and likelihood to an event in order to determine the level of risk.
<b>Risk Assessment</b>	The systematic process of identifying, analysing and evaluating risk.
<b>Risk Criteria</b>	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.
<b>Risk Evaluation</b>	The process of comparing the outcomes of risk analysis to the risk criteria in order to determine whether a risk is acceptable or tolerable.

<b>Risk Identification</b>	The process of recognising, identifying and describing risks.
<b>Risk Treatment</b>	A process to select and implement appropriate measures undertaken to modify risk.

## Acronyms

BPP	Bushfire Planning & Policy
BRAM	Bushfire Risk Assessment Model
BRN	Bushfire Ready Neighbourhood
COAG	Council of Australian Governments
CPP	Community Protection Planning
DPIPWE	Department Primary Industry, Water & Environment
FIAT	Forest Industry Association Tasmania
FMAC	Fire Management Area Committee
FPA	Forest Practices Authority
FPP	Fire Protection Plan
FRU	Fuel Reduction Unit
STT	Sustainable Timber Tasmania
HSA	Human Settlement Area
NEFMA	North East Fire Management Area
NERAG	National Emergency Risk Assessment Guidelines
PWS	Parks and Wildlife Service
REMC	Regional Emergency Management Council
SEMC	State Emergency Management Committee
SFMC	State Fire Management Council
SFPP	State Fire Protection Plan
SVFMP	State Vegetation Fire Management Plan
TFGA	Tasmania Farmers and Graziers Association
TALC	Tasmanian Aboriginal Land Council
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 (PWS) Fire Management Section), and Tasmania Fire Service (TFS). 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 (FMAC's) are required to submit to State Fire Management Council (SFMC), on an annual basis, a Fire Protection Plan (FPP) for its fire management area commencing on 1 October. The submission date was changed to the 31<sup>st</sup> of December for 2016 and beyond.

It is a requirement of the FPP that it is consistent with the State Fire Protection Plan (SFPP) and the State Vegetation Fire Management Policy (SVFMP).

### 1.2 Aim and Objectives

The **aim** of this FPP is to document a coordinated and efficient approach towards the identification and treatment of bushfire-related risk within the North East Fire Management Area (NEFMA).

The **objective** of this FPP is to effectively manage bushfire related risk within the NEFMA in order to protect people, assets and other things valuable to the community. 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 The Project Plan

A *Project Plan* has been developed to outline the responsibilities and timing for key milestones in the development of the FPP and is attached at **Appendix 1**. The Project Plan has been mutually agreed to by the relevant stakeholders and endorsed by the Committee of the NEFMA.

### 1.4 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

## Standards

- AS/NZS ISO 31000:2009 - Risk Management – Principles and Guidelines
- AS 3959 – 2009 - Construction of buildings in Bushfire prone areas
- Forest Practices Code 2015
- Tasmanian Electricity Code

## Legislation

- *Aboriginal Relics Act 1975 (soon to be replaced)*
- *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*
- *Tasmanian Forests Agreement Act 2013*
- *Forest Practices Act 1985 and Forest Practices Code 2015*
- *Threatened Species Protection Act 1995*
- *Environmental Protection & Biodiversity Act 1999*
- *Environmental Management and Pollution Control Act 1994*
- *Local Government Act 1993*
- *Weed Management Act 1999*

## Chapter 2 Establishing the Context

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

#### 2.1.1 Location, Boundaries and Land Tenure

The North East can be considered a distinct region within Tasmania.

The NEFMA covers two local government areas, namely Dorset and Break O'Day. The plan area encompasses an area enclosed by the north coast, from the mouth of the Pipers Brook heading in south easterly direction to just below the mouth of the Douglas River. The area of the FMA is approximately 681193 ha.

The principal industries present within the fire management area tourism, mining, forestry, agricultural and aqua culture. The area has a variety of land tenure classes present including:

Tenure type	Total area (ha)	Percentage
Private Freehold	239,950	35.39
Permanent Timber Production Zone Land	171,845	25.35
Future Potential Production Forest (Crown)	110,317	16.27
Regional Reserve	73,197	10.80
National Park	34,391	5.07
Conservation Area	20,149	2.97
State Reserve	7,847	1.16
Conservation Covenant	7,172	1.06
Casement	4,244	0.63
Crown Land	3,412	0.50
Nature Recreation Area	1,614	0.24
Public Reserve	1,376	0.20
Private Sanctuary	845	0.12
Inland Water	723	0.11
Local Government	508	0.07
Authority Crown	174	0.03
Nature Reserve	75	0.01
Tas Water	35	0.01
Private Nature Reserve	25	0.00
Authority Freehold	15	0.00
Historic Site	13	0.00
Local Government Act Reserve	11	0.00
LGA Conservation Area	10	0.00
Commonwealth	1	0.00
Hydro-Electric Corporation	0	0.00

Table 1: Tenure Area



Map 1: FMA boundary location

Land Manager/Agency	% of Land Managed within the FMA
Forestry Tasmania	25.2
DPIPWE	37.9
Local Government	2.4
Commonwealth	<.001
TasWater	<.1
Aboriginal Land Council Tasmania	<.01
Private freehold	34.4

**Table 1: Overview of Land Tenure within the BRMP Area**

### **2.1.2 Climate and Bushfire Season**

North East Tasmania enjoys a cool temperate climate. The area is associated with moist and dry sub humid conditions on the coastal plains systems together with humid cool/ cold elevated areas.

Rainfall in the region is in excess of 800mm per annum and occurs mainly on the elevated mountain ranges. The narrow coastal strip generally receives around 700mm per annum. The driest part of the region is the lower Fingal Valley, which receives less than 700mm. The variability of rainfall distribution between years can be high, particularly in the coastal areas.

Mean daily temperatures along the coast at Scamander span from 13.8°C in winter to 22.0°C in summer with annual coldest and hottest temperatures ranging from –2.2°C to 38.9°C. The mean temperatures inland at Fingal range from 12.1°C in winter to 23.0°C in summer with annual coldest to hottest ranging from –9.0°C to 37°C. Wind speeds are higher on the coast at around 17kph (Scamander 3pm mean) compared to inland at around 11kph (Fingal 3 pm mean).

The average annual rainfall in the Scottsdale area is approximately 983mm but much higher in the more mountainous areas. The district has long daylight hours in summer (maximum 15 hours 10 minutes), warm summer temperatures (mean monthly maximum summer temperature, 21.8°C in February) and cool winters (mean monthly minimum of 3.6°C in July). Coastal Bridport averages a mean annual rainfall of approximately 732mm with mean maximum summer temperature of 22.2°C in February and a milder mean minimum of 5.4°C in July.

The bush fire season is typically from November through to March though fires can and do occur outside this peak season. Fox- Hughes 2008 has also identified that in approximately one season in two, there is in existence, an increased fire danger period during spring on the east coast including the coastal north east.

### **2.1.3 Vegetation**

The vegetation within the fire management area is a diverse mix. Lowland vegetation comprising mainly open sclerophyll woodlands and heath complexes (wet and dry) are present on coastal plains while inland and on the upper slopes of the elevated terrain, the vegetation consists of wet and dry sclerophyll forest, some rain forest and alpine and sub alpine complexes. In addition some high productivity button grass is present. The principle groups of native vegetation are interspersed with agriculture and forestry developments.

The Tasmanian vegetation mapping program coordinated by DPIPWE, has classified the vegetation of Tasmania into 162 mapping units with the majority based on ecological vegetation communities. This data is represented in the TasVeg 3 map.



The classification of ecological vegetation communities is often an artificial process as vegetation exists as a complex continuum (Kitchener and Harris, 2013).

The vegetation can also be categorised into 12 broad groups that represent broad vegetation or landscape types. A description of the vegetation groups can be found in Appendix 8.

A breakdown of the principle vegetation groups present and the flammability within the NEFMA as per TasVeg 3.0 classification is:

Vegetation Group	Flammability (Pyrke and Marsden-Smedley, 2005)	Percentage of area
Agricultural, urban and exotic vegetation	Moderate	32.10
Dry eucalypt forest and woodland	Moderate - high	38.10
Highland and treeless vegetation	High	0.04
Moorland, sedgeland, rush lands and peat lands	Moderate - high	0.98
Native grassland	High	0.55
Non eucalypt forest and woodland	Moderate	2.75
Other natural environments	Moderate	1.64
Rainforest and related scrub	Low	4.65
Saltmarsh and wetland	Low	0.29
Scrub, heathland and coastal complexes	High – Very high	5.85
Wet eucalypt forest and woodland	Moderate	13.05

**Table 3: Vegetation Groups**

The vegetation can also be considered in terms of its “treatability” with regards to fuel reduction programs. Treatable fuels suitable for planned burns are typically dry eucalypt forest, scrub complexes, heath complexes and button grass. Agricultural lands while susceptible to the impact of bush fires are not consider treatable due to the nature of the land use. However this does not preclude agricultural land from being incorporated into burning operations.

#### **2.1.4 Population and Demographics**

There is a diverse range of communities present with 55 human settlement areas (HSA) currently identified within the NEFMA. Settlement areas are associated with the eastern and northern coastal strips together with the Fingal Valley, Ringarooma River and the agricultural lands near Scottsdale. Approximately 63% of the HSA are found inland. Major community centres include Scottsdale, St Helens, Fingal, St Marys, Bridport and Scamander.

Currently the population present within the NEFMA is approximately 13,500, though this number increases markedly during the summer period through influx of tourists and absentee landowners. Break O’Day local government area currently has a population around 6,500 while the Dorset local government area has a similar number.

### 2.1.5 Bushfire Frequency and Causes of Ignition

The north east has a long history of bush fires with a corresponding impact on adjacent communities. The 2006 Lohery's Road fire impacted on the communities at Scamander, Four Mile Creek, and St Marys with 40 structures lost. In addition, there was considerable impact on the local tourism industry suffered from the perception that the East coast was closed as a consequence of the fire.

While bush fires occur across the whole region, there exists distinct spatial clustering of fires within FMA. The first cluster being the East coast, the second is the area associated with MT Cameron, Banca Road and Old Port Road and the third being Scottsdale and surrounds. Major fires that have impacted on the North East Region include:

Fire name	Ignition date	Size(ha)
Killymoon - Valley Road	2/11/1981	641.84
St Helens Point SRA	3/12/1993	481.4
Watersmeeting	7/12/1994	12339.21
Humbug SRA	27/9/1995	509.47
White Rock Tier	22/2/1996	1648.9
Peacock Creek	22/3/1998	763.57
Barlows Creek	4/3/1999	567.37
Little Boobyalla River	14/2/2000	2717.05
Mt William/Cameron	4/4/2001	829.32
Mt Stronach	26/10/2003	1037.87
Eddystone Point	15/11/2003	3234.78
Tebrakunna	15/11/2003	2155.7
Oxberry Road	15/11/2003	1090.66
Rayners Rd	11/10/2004	922.47
Doctors Peak	13/10/2004	6328.22
Homestead Road	22/1/2005	1595.34
Mount Cameron	4/3/2006	4392.44
Lohrey's Road	10/12/2006	30899.49
Weise Road	27/1/2007	554.67
Erickson's Road	13/1/2008	1115.88
Bellingham Road	16/1/2008	2594.42
Garibaldi	15/11/2008	759.03
Rossarden Road	22/1/2009	2349.32
Valley Road Fingal	6/2/2013	2036.68
Banca Road	27/04/2016	2256

Table 4: Major fires



There is a paucity of fire records for the planning area where ignition sources have been identified. Analyses of the records that exist indicate that the principle causes of ignition are:

Ignition source	% of ignitions
Undetermined	0.6
Unknown	1.1
Planned burn re-ignition	<0.1
Planned Burn Spotting	<0.1
Planned Burn	9.8
Recreation	<0.1
Lightning	<0.1
Escapes	5.8
Arson	4.0
Accidental ignitions	0.3

**Table 5: Ignition Causes**

## **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, refer to Appendix 2.

To determine overall risk the NERAG (National Emergency Risk Assessment Guidelines August 2009) document (Refer to Appendix 3 – Map 5) was used. The level of risk is determined by combining consequences and likelihood (Refer to Appendix 3).

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.

### **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 (Appendix 2 – maps 8 to 11). Region wide values utilised in the BRAM modelling include:

### Constructed values

- Wildland urban interface
- Critical infrastructure including transmission lines, telecommunication infrastructure and transport links
- Burnable infrastructure
- Heritage buildings
- Non burnable
- Neighbouring houses ( life)
- Parks and Wildlife Asset base including life

### Forest / agricultural

- Production Forest both state owned and private
- Horticulture production
- Research monitoring sites

### Natural values

- Flora and Fauna( fire sensitive and threatened species)
- Water catchments
- Geo-morphic values

## 3.4 Overall Risk

A representation of risk is developed when you combine the factors of likelihood and consequence. The 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.

BRAM Bushfire Risk Assessment results for North East Fire Management Area:

BRAM level of Risk	Area (ha)	% of FMA
Low	222750	25.3%
Moderate	249316	43.0%
High	131470	18.8%
Extreme	73568	12.2%

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

The bush fire risk Model BRAM was utilised to examine risk across the fire management area. For a simplified explanation of the BRAM model and associated NERAG process refer to Appendix's 3 and 4.

In addition Phoenix Rapidfire, a bush fire simulator, developed by the University of Melbourne (Kevin Tolhurst and Derek Chong) was used to model the risk of fires impacting on communities present in the NEFMA. 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.

An understanding of where potential ignition point that may impact on communities is crucial. It must be understood that such analysis has many limitations but does provided an indication a where communities may be under risk as well as identify areas where strategic burning will assist in changing fire behaviour.

Output maps identifying risk, likelihood of ignition and potential ignition points are outlined in Appendix 4.

#### 3.5.1 Community Assessment

Strategic assessment tools have been used to conduct a broad scale assessment across the NEFMA to identify communities vulnerable to bushfire, that require more detailed assessment using more locally specific processes. Selection and prioritisation of treatments was done using a combination of:

- BRAM and Phoenix computer modelling results
- Expert opinion of fire practitioners
- Local knowledge from TFS District Officers and Brigades
- Identification and consideration of existing and past fire management actions and plans
- Consultation with TFS Community Protection Planners

The results of the strategic assessment for the NEFMA are outlined below in Table 6.

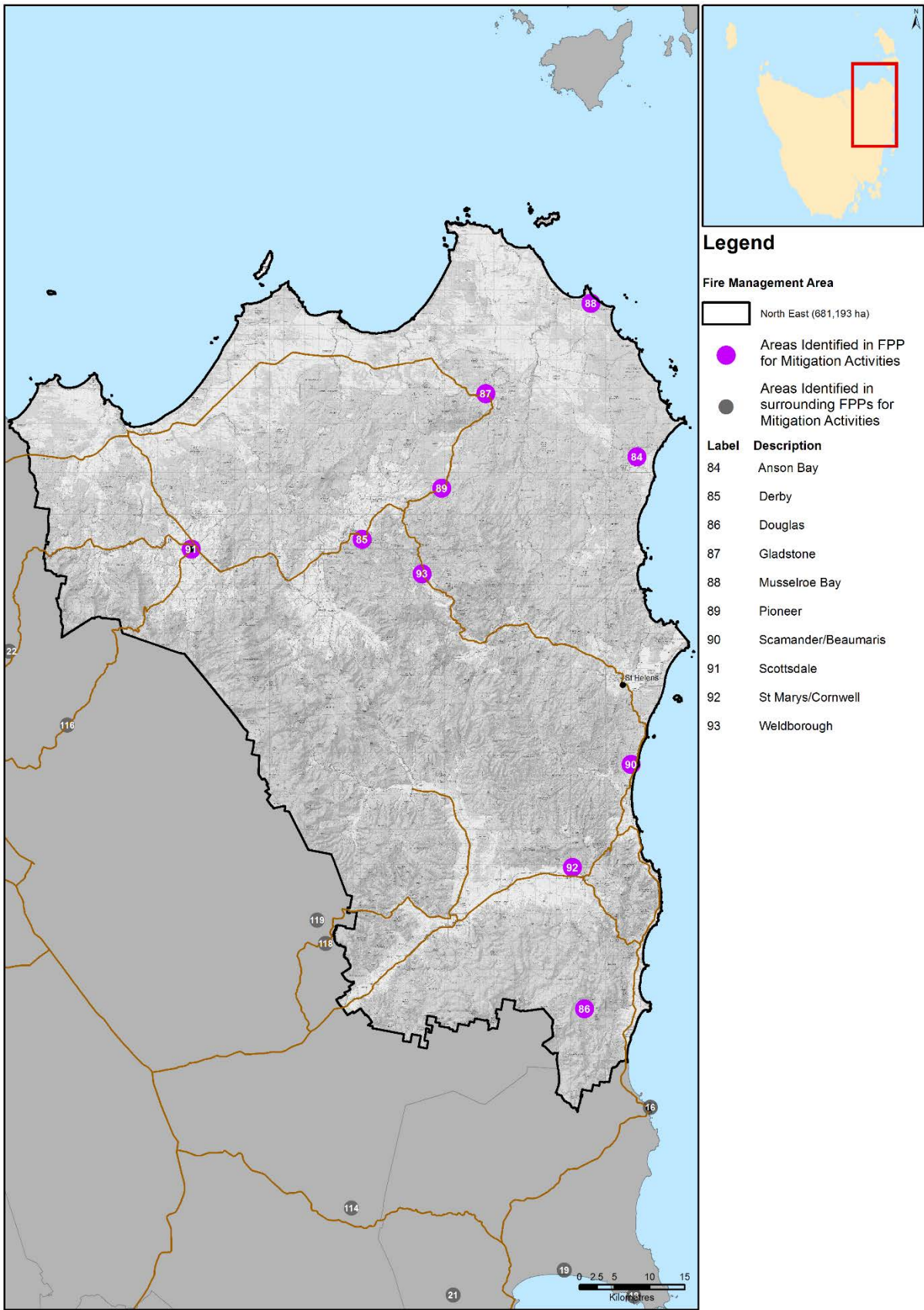
Community	Assessment Rating	Priority
Scamander – Beaumaris	High	High
St Marys- Cornwall	High	High
Anson Bay	High	High
Derby	Mod	Mod
Pioneer	High	High
Gladstone	Mod	Mod
Weldborough	Mod	Mod
Scottsdale	Mod	Mod
Musselroe Bay	Mod	Mod

**Table 6: Results of the Strategic Assessment**

While an initial categorisation of priority is highlighted, all human settlement areas have effectively the same priority. The priority for implementation of these risk management strategies for the designated human settlement area will be subject to availability and resources required to develop plans and implement the programs.

A number of communities already have specific plans in place, these are summarised in Appendix 5.

Map 2 – Areas Identified in FPPs for Mitigation Activities



## Chapter 4 Bushfire Risk Treatment

### 4.1 Planning framework

Fire management zoning is a classification system for the area to be managed. Zoning provides a framework by identifying where fire preparedness works and planned burning should occur.

Ellis *et al*, 2004 recommended that all jurisdictions in should adopt a zoning strategy to assist with mitigation planning particularly fuel management areas. The process should be applied at a landscape level but the concept can be applied to localised community protection. Ellis *et al*, 2004 also highlights that the rural–urban interface and the agriculture – conservation reserve interface are the areas where bushfire poses the greatest risks to lives, property and economic values. The most effective way of managing these areas is by identifying ‘fire management zones’ across the landscape and having clear objectives for each zone.

Clear objectives for each zone should be outlined and stakeholders and the community should be involved. The fire management zones to be used in developing fire strategies/mitigation plans within the Furneaux fire protection area are:

- **Asset:** This is a feature that is either man made or natural of significant value in which a fire will have negative impact.
- **Asset Protection Zone:** This is typically the rural–urban interface, where regular fuel reduction should be undertaken in the vicinity of specific assets. This zone provides the highest level of localised protection to human life property and highly valued assets. Mitigation works may include mechanical fuel modification, fuel reduction burning, evacuation, and engineering and community awareness and preparation programs.
- **Strategic Fuel Management Unit:** This aims to provide areas of reduced fuel in strategic areas, to reduce the speed and intensity of bushfires and reduce the potential for spot-fire development.
- **Land Management Zone:** The primary purpose here is to meet the objectives of the relevant land manager, which can be planned fire for fuel reduction, biodiversity conservation or forest regeneration.

#### 4.1.1 Community risk management

In developing mitigation plans for local communities, the strategic methodology by Ellis *et al*, 2004 outlined above is to be used as the basis of the mitigation planning process. Mitigation plan provides a means of articulation and managing risk for HSA's.

The strategies to be used in developing fire mitigation plans include:

- zoning as per COAG recommendations 2004 ( Ellis *et al*, 2004)
- fire and management regimes - fuel reduction burning including criteria / triggers for repeated burning
- other fuel treatments such as slashing
- fuel breaks
- fire ready neighbour development programs



In addition, 2 other planning processes need to be developed and incorporated into the works programs to manage the risk present with the fire management area;

- Community bushfire protection planning (TFS) - Community Bushfire Protection Plans are prepared for community members that provide local information to assist with bushfire preparation, and survival
- Community bushfire response planning (TFS) - Community Bushfire Response Plans are prepared for emergency managers to better protect communities and their assets during bushfire emergencies

#### **4.1.2 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: [www.fire.tas.gov.au/brn](http://www.fire.tas.gov.au/brn)

Round 1 (2014-2016) and Round 2 (2016-2018) communities for the North East are listed in 4.4 Treatment Selection and Priorities and Appendix 6 in this document.

## **4.2 Region wide Controls**

The following controls are currently in place across the Furneaux 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 Community Fire Safety Programs and SFMC state-wide programs tailored to suit local needs; eg Community Education – Bushfire Ready Neighbourhoods (BRN) Program, Bushfire Planning and Policy (BPP) – Community Protection Planning (CPP) and private land burning programs (see Appendix 5 for further details)
- 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 (SFMC) as required by the Tasmanian Emergency Management Plan and the *Fire Service Act 1979*

#### 4.2.1 Strategic fire infrastructure

Strategic fire infrastructure includes critical fire access tracks and water sources.

#### Critical fire infrastructure identified for the NEFMA.

##### 4.2.1.1 Strategic fire trails

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 provided boundaries for prescribed burning blocks

Strategic fire trails identified for the North East FPP are:

Strategic Trail	Start (UTM)		Finish (UTM)		Minimum Standard required
<b>Mt William NP</b>					
<i>West Boundary</i>	597011.625	5471357.5	602601.3125	5467156.5	Class 5
<i>North South (main) Fire trail</i>	602605.75	5462661	602602.5625	5462705	Class3
<i>Baileys Hill</i>	602602.5625	5462705	610141.4375	5464067.5	Class 5
<i>Rock creek Track</i>	602589.5	5467761	607755.5625	5468496	Class 5
<i>Little Boggy</i>	591860.9375	5456015.5	594833.4375	5460939.5	Class 5
<i>Big Boggy</i>	597586.375	5455702.5	598691.0625	5459561.5	Class 5
<i>Rattys track</i>	589765.1875	5456742.5	597586.375	5455702.5	Class 3
<b>Binalong Bay</b>					
<i>Reid's road to the gardens</i>	606416.875	5433046.5	606403.375	5433063.5	Class 5
<i>Humbug Hill</i>	609251.125	5430798	608926.5	5432124	Class 5
<b>Mt Cameron Regional Reserve</b>					
<i>Mt Cameron East</i>	578626.5625	5464923	578624.5625	5464923	Class 5
<i>Mt Cameron West</i>	575216.375	5464302.5	568112.875	5463554	Class 5
<b>Douglas Apsley NP</b>					
<i>Organ Hill track</i>	595122.125	5376021.5	595108	5375973.5	Class 5



<i>Pennyfather track</i>	598109.3125	5373281	593386.75	5371638.5	Class 5
<i>Apsley east</i>	603742.5625	5372456.5	602901.875	5368814	Class 5
<i>Tim Mine gully Track</i>	601988.125	5383169	596901.9375	5384837.5	Class 5
<i>Thompson marshes</i>	598463.4375	5386671.5	602586.875	5382889.5	Class 5
<i>South Apsley</i>	599114	5363977.5	598466.6875	5362403.5	Class 5
<i>Apsley Link</i>	594993.1875	5365401	594609.375	5371144	Class 5
<i>West Apsley trail</i>	594644.625	5376313	593910.75	5375843	Class 5

**Table 7: Fire Trails**

Fire trails should be maintained to an appropriate standard. Currently the only standards within Tasmania dealing with fire infrastructure are the PWS's Fire Management Infrastructures Categories and Standards V4 and the Forest Practice Code 2015. These should be used as a guide in the maintenance of fire infrastructure.

Not all access tracks will be considered critical fire infrastructure though they may have use in fire operation. Such tracks may be maintained for a variety of purposes including management and recreation activities. The decision to maintain will be the prerogative of the land manager (including private landowners) controlling access to such a track.

#### **4.2.1.2 Fire breaks**

Throughout the NEFMA, there currently exist a plethora of fire breaks. Fire breaks are maintained by both Sustainable Timber Tasmania (STT) and PWS. Breaks are maintained for the protection of both communities and individual assets such as forestry coupes. Currently there is a variety of standards being applied to the maintenance of fire breaks.

The identification of firebreaks is an ongoing issue the FMAC will need to concentrate on. Many breaks have been created over the year by different organisation. These fire need to be identified, examined as to the strategic value and works programs, including implementation coordination, identified. Appropriate standards need to be applied to the maintenance of these breaks.

#### 4.2.1.3 Strategic roads

In addition to the public road network present in the NEFMA, certain roads managed by other authorities have value in emergency management. A strategic road provides internal connectivity to the region and provides essential links in areas where there are poor transport accessibility issues. Identified strategic roads within the region are:

- MG Road
- S Road
- Kennel Road (formerly known as Fire Road)
- Valley Road
- Argonaut Road
- Mt Albert Road
- Mathina Plans Road
- Ben Ridge Road
- Diddleum Road
- Old Port Road
- Banca Road
- Old Waterhouse Road
- Tebrakuma Road
- Counsels Road
- Chaplin's Road

#### 4.2.1.4 Detection Towers

The fire protection area currently has several fire detection towers. The towers are manned when the fire danger rating is 12 or above. In addition the towers carry radio repeaters for the STT/ PWS radio network.

Towers within the Protection area are:

Tower	Location( UTM)	Height( M	Management Authority
Mt Horror	561592 543533	670 m	Forestry Tasmania
Platts Lookout	590147 5437723	465 m	Forestry Tasmania
South Sister	597812 5401283	840 m	Forestry Tasmania
Tower Hill	571154 5400091	1117m	Forestry Tasmania

Table 8: Detection Towers

#### 4.2.2 Strategic Burning Program

The fuel loads in the strategy area are such that any wildfire has the potential to impact on a range of assets including residential properties. The objective of managing this risk is to modify the fire behaviour of any wildfire so that there exists, an improved window of opportunity to control or contain wildfire events. The basic strategy is to develop a mosaic of fuel reduced areas within the strategy area over a time frame of several years through the use of the most suitable methods. The imposition of a burning regime that establishes a mosaic of burns can be used to ensure wildfire 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.

A strategic burning program to be commenced with the aim of reducing fuels across the fire management area. To facilitate this, sections of the protection plan area has been zoned as strategic fuel management and land management units. Strategic fuel management units identified within the fire protection area are:

- Golconda
- Banca
- Mt Cameron
- Mt William
- The Gardens
- Scamander
- Fingal Valley
- Douglas

The fuel management units are highlighted on map 12 and are based on treatable fuels and as such are indicative of the actual area to be considered. Within the fuel management units present in the fire protection area, initial burn blocks have been identified and are highlighted on map 13, Appendix 7.

Selection of the initial burn blocks is based on identification of treatable fuels, previous fire history, the need to reinforce existing fire trails and the need to implement a mosaic of fuel reduced areas across the landscape. The current program incorporates existing burning programs from STT and PWS. Some burn blocks will incorporate private freehold.

#### 4.3 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

#### 4.4 Treatment Selection and Priorities

A strategic bushfire risk assessment has been undertaken for the entire NEFMA. This strategic assessment was used to identify key communities and assets considered to be at risk of bushfire and prioritise the preparation and implementation of different treatment strategies.

In developing strategies for addressing the risk the fire management area was zoned to identify areas that require works. This was in addition to the examination of the risk outline above. Principally the FPA were zoned based on:

- Asset protection zones around HSA's
- Asset protection zones around critical assets

General risk management approaches to the major human settlement areas present within the fire management area are:

- **Scamander/ Beaumaris/Dianas Basin:** Community Bushfire Mitigation Plan (developed), Community Protection Plan (developed), Community Response Plan (developed) and Bushfire Ready Neighbourhood Program (completed)
- **St Marys- Cornwall:** Strategic Bushfire Mitigation Plan (developed). and Bushfire Ready Neighbourhood Program (completed)
- **Ansons Bay:** Community Bushfire Mitigation Plan planned proposed for 2017/18.
- **Derby:** Community Protection Plan (developed), Community Response Plan (developed) and Bushfire Ready Neighbourhood Program (completed)
- **Pioneer:** Development of a Strategic Bushfire Mitigation Plan
- **Gladstone:** Development of a Strategic Bushfire Mitigation Plan
- **Weldborough:** Implementation of a BRN Program
- **Tonganah:** Development of a Strategic Bushfire Mitigation Plan
- **Golconda:** Development of a Strategic Bushfire Mitigation Plan. Development of a BRN Program
- **Nabowla:** Development of a Bushfire Ready Neighbourhood Program
- **Musselroe Bay:** Development of a Community Bushfire Mitigation Plan
- **Tomahawk:** Development of a Community Bushfire Mitigation Plan proposed for 2018/19
- **Stieglitz:** Bushfire Ready Neighbourhood (BRN) Program (completed)

#### **4.5 Implementation Program**

Under the terms of reference for the North East Fire Management Area Committee (FMAC), the committee has objectives to:

- Provide a point of coordination and cooperation for FMAC members
- Review plans and processes to ensure interoperability between stakeholders and the broader community

The FMAC will coordinate the implementation strategy identified in appendix 6. The committee will be involved in identifying organisation or agencies to complete the risk management strategies required under the fire protection plan. Implementation of the various risk management controls and strategies identified in the fire protection plan will be the responsibility of the identified land manager/ agency.

The FMAC will liaise with the SFMC to develop a strategy to address funding for works and risk management strategies to address community obligations.

#### **4.6 Implementation**

When the treatments identified in this FPP are implemented there are a number of issues that need to be considered by the responsible agency including

1. Environmental impact and assessment
2. Aboriginal and European heritage
3. Prescribed burn plans and approvals
4. Smoke management associated with planned burning programs
5. Community consultation
6. 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 Schedule.

### 5.1 Review

This FPP, including appendices, will be subject to a comprehensive review every five (5) years from the date of approval, unless significant circumstances exist to warrant earlier review. The review process would include examination of:

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

In addition, the FMAC should identify:

- Shortcomings in data
- Change of usage of the area
- New or changes to asset values within the fire protection area

Data shortcomings and changes to values (both community and natural) identified by the review process are to be passed to the state fire council for inclusion in ongoing risk modelling being carried out at the state level.

In addition, to complete the NERAG assessment process, the development of an asset risk register detailing specific risk treatments should be developed. Information derived from this process is to be incorporated into individual community mitigation plans as well as the wider strategic FPP.

### 5.2 Monitoring

The implementation program at Appendix 6 is a living document and progression towards completion of the treatments proposed will be monitored and reviewed at least every six (6) months by the FMAC.

At a state wide level, the SFMC will be examining the impacts of the strategic burning program on risk management as part of the strategic fuel management program.

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. Reporting performance criteria should address;

- Planning outcomes including mitigation plans, community protection plans, community response plans
- Implementation progress of community mitigation programs
- Completed strategic burns
- Development and maintenance of strategic fire infrastructure

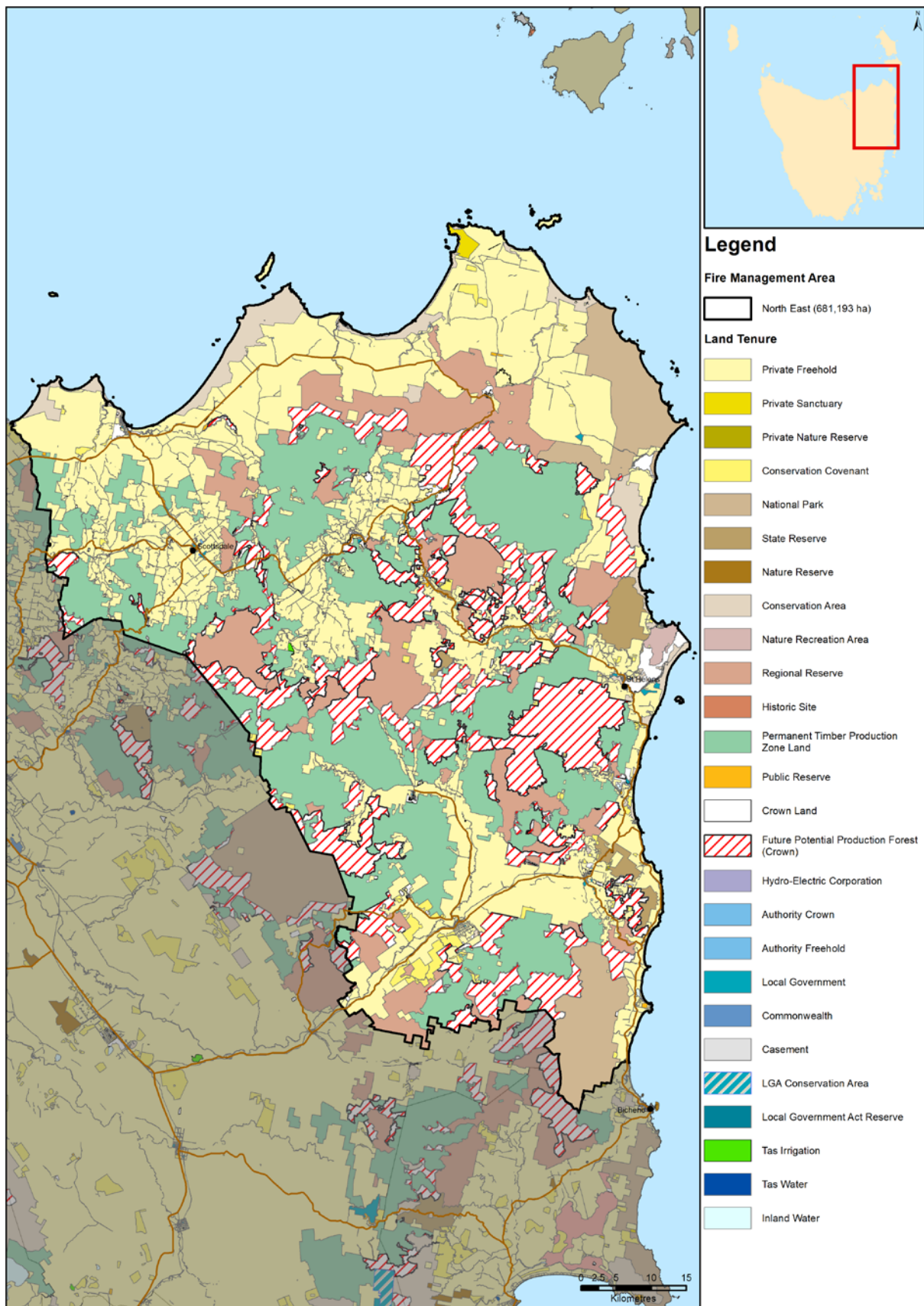
## References

- Ellis, S., Kanowski, P., & Whelan, R., 2004, *National Inquiry on Bushfire Mitigation and Management*, Commonwealth of Australia, Canberra;
- Fox-Hughes, P., 2008, *A fire danger climatology for Tasmania*, in Australian Meteorology Magazine, 57 p109 – 120, BOM, Melbourne;
- Kitchener, A., and Harris, S., 2013, *From Forest to Fjaeldmark: Descriptions of Tasmanian Vegetation Edition 2*, Department of Primary Industries, Parks, Water and Environment, Hobart;
- National Emergency Management Committee, (2010), *National Emergency Risk Assessment Guidelines*, Tasmanian State Emergency Service, Hobart;
- Parks and Wildlife Service (unpublished), *Bushfire Risk Assessment Model Project Business Process Model (2008)*. Department of Primary Industries, Parks, Water and Environment, Hobart;
- Parks and Wildlife Service (unpublished). *Tasmanian Bushfire Risk User Guide (2010)*. Department of Primary Industries, Parks, Water and Environment, Hobart;
- Parks and Wildlife Service (unpublished). *Tasmanian Bushfire Risk Assessment Model (2013)*. Department of Primary Industries, Parks, Water and Environment, Hobart;
- Parks and Wildlife Service, 2009, *Northern Region Strategic Fire Management Plan*, Department of Primary Industries, Parks, Water and Environment, Hobart;
- Pyrke A.F., and Marsden-Smedley J.B., 2005, *Fire-attributes categories, fire sensitivity and flammability of Tasmanian vegetation communities*, Tasforests 16: 35-47, Forestry Tasmania, Hobart;
- State Fire Management Council, 2014, *Bushfire in Tasmania: A New Approach to Reducing Our Statewide Relative Risk*. Department of Police and Emergency Management, Hobart.



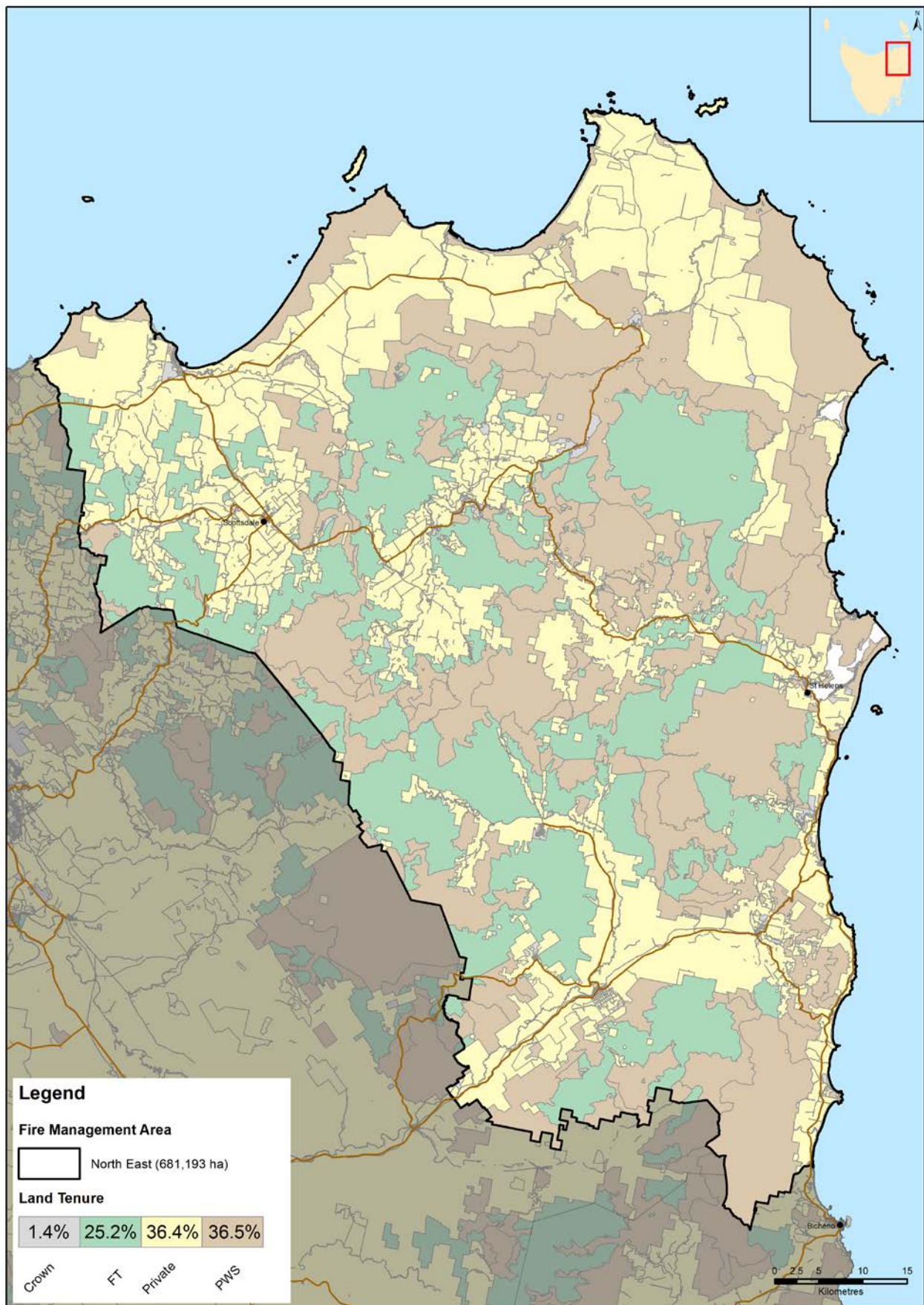
## Appendices

### Appendix 1 – Maps of FMAC area displaying context information



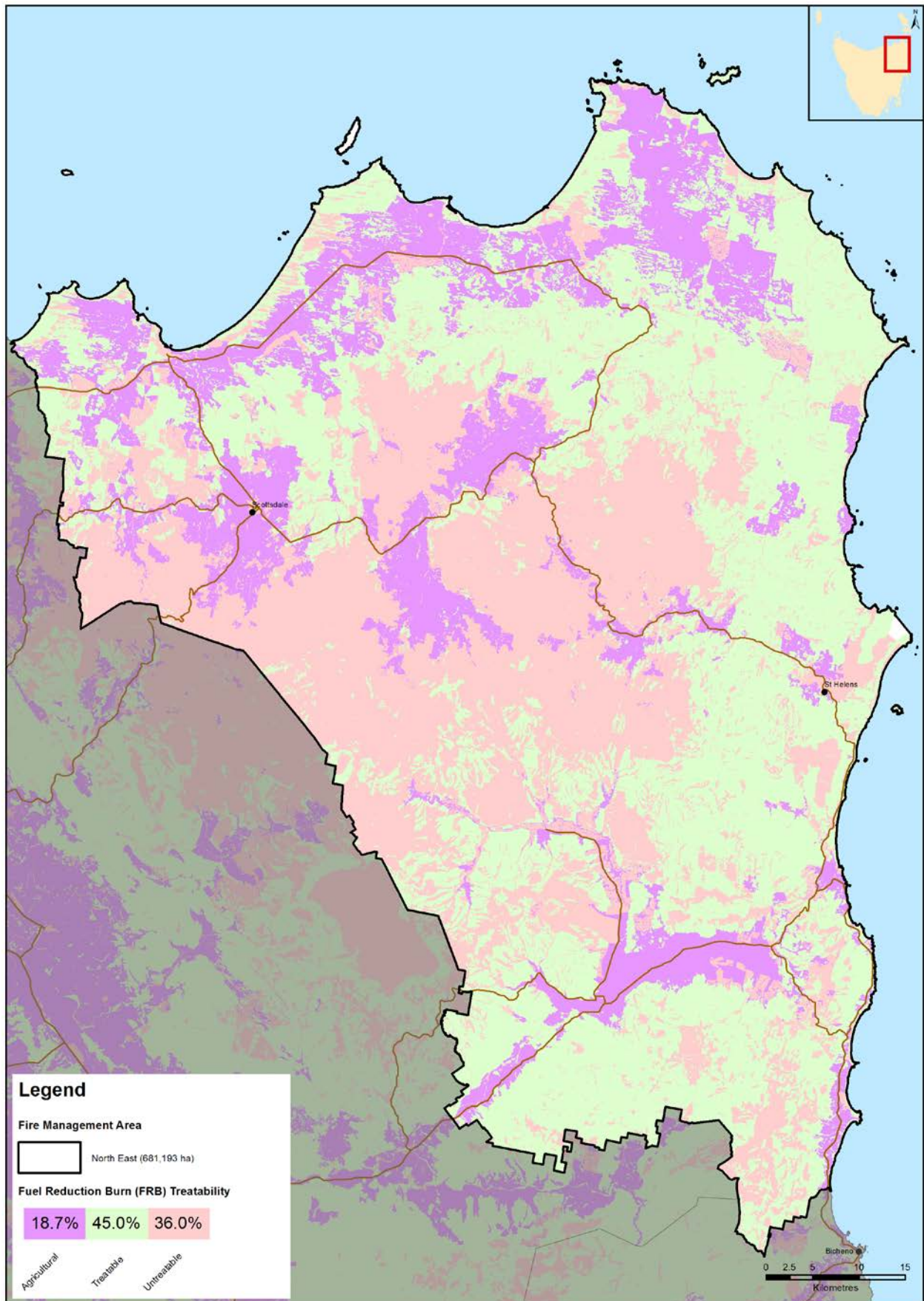
**Map 1: Land Tenure**



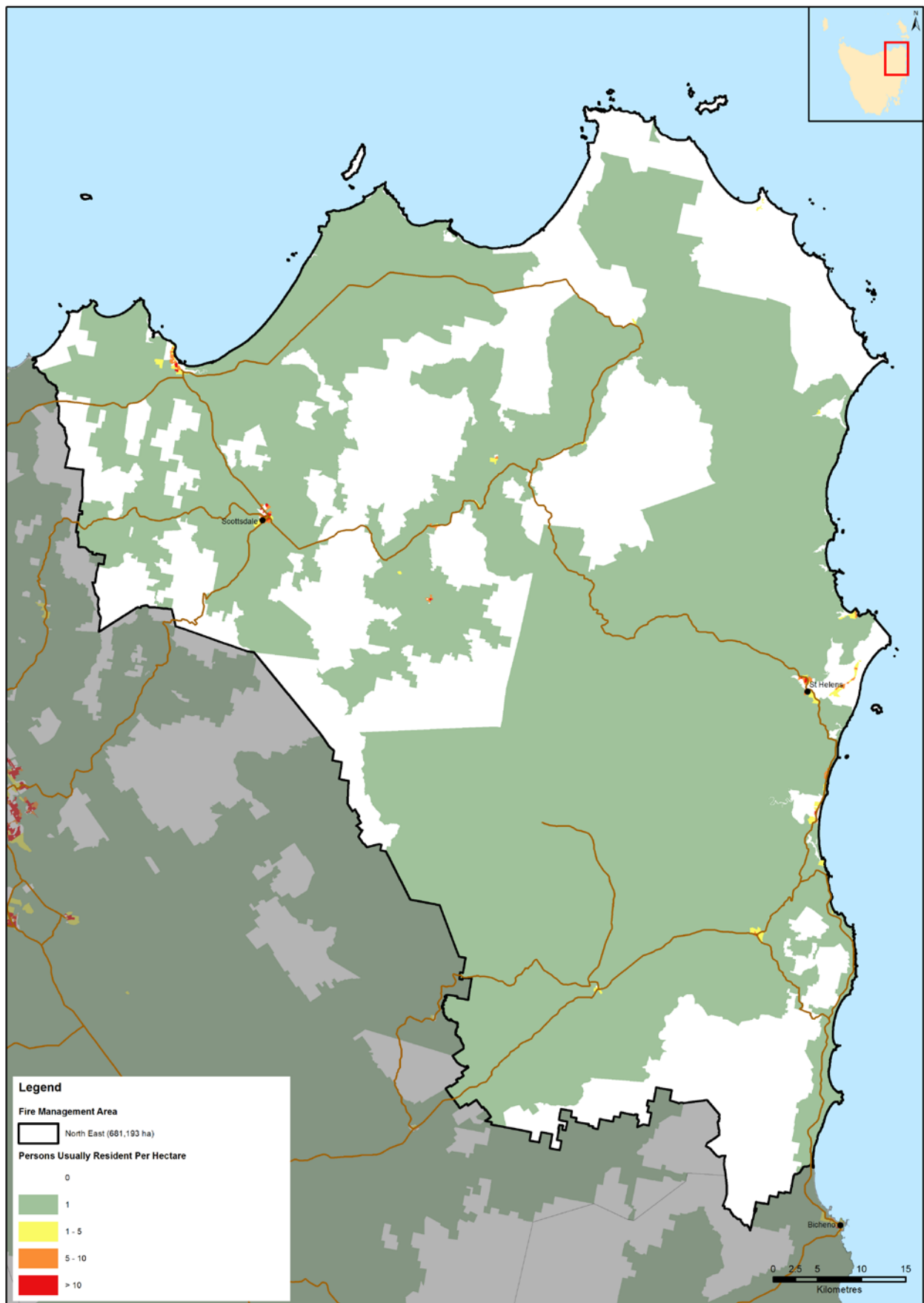


Map 2: Land Tenure (4 Classes)

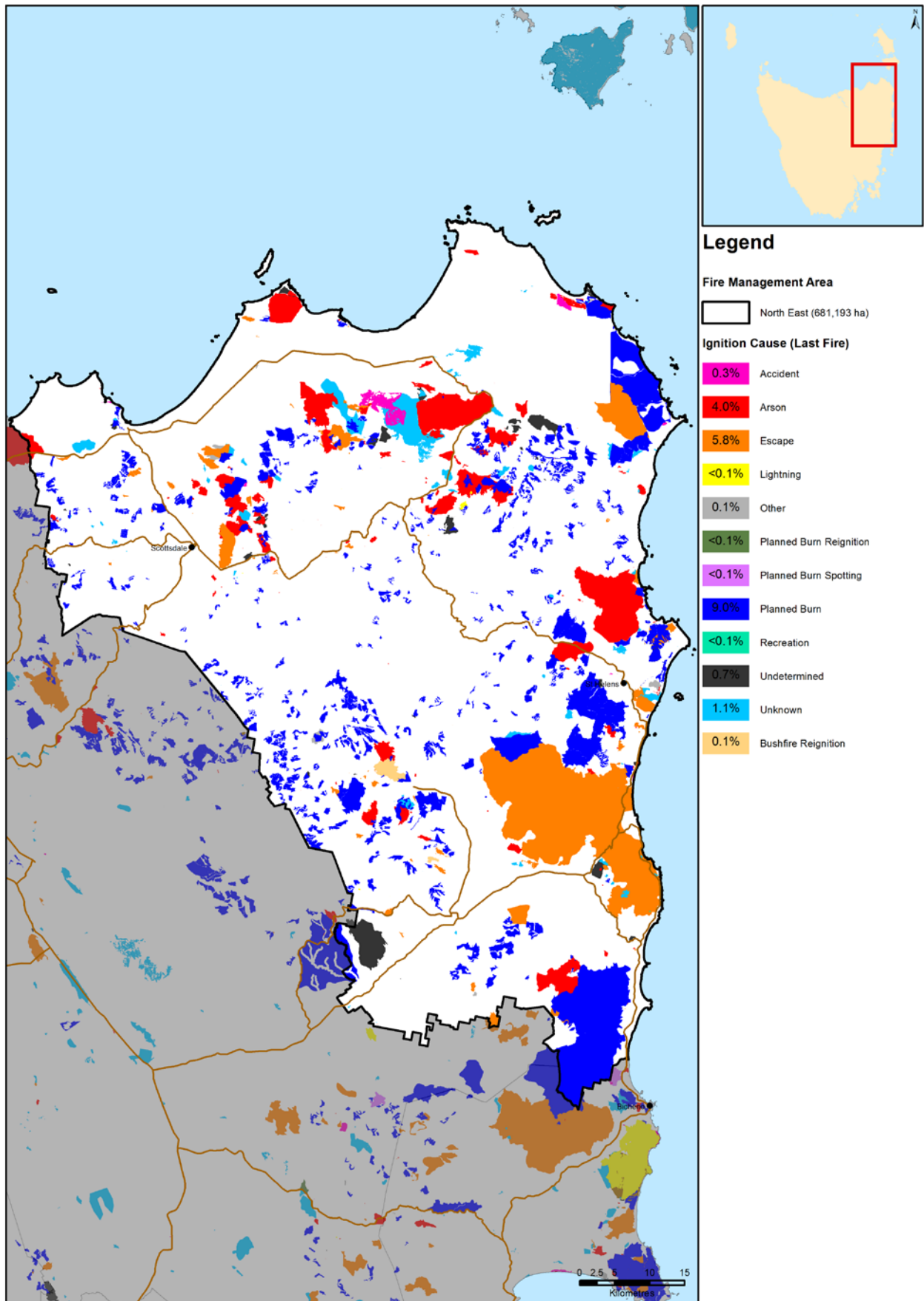




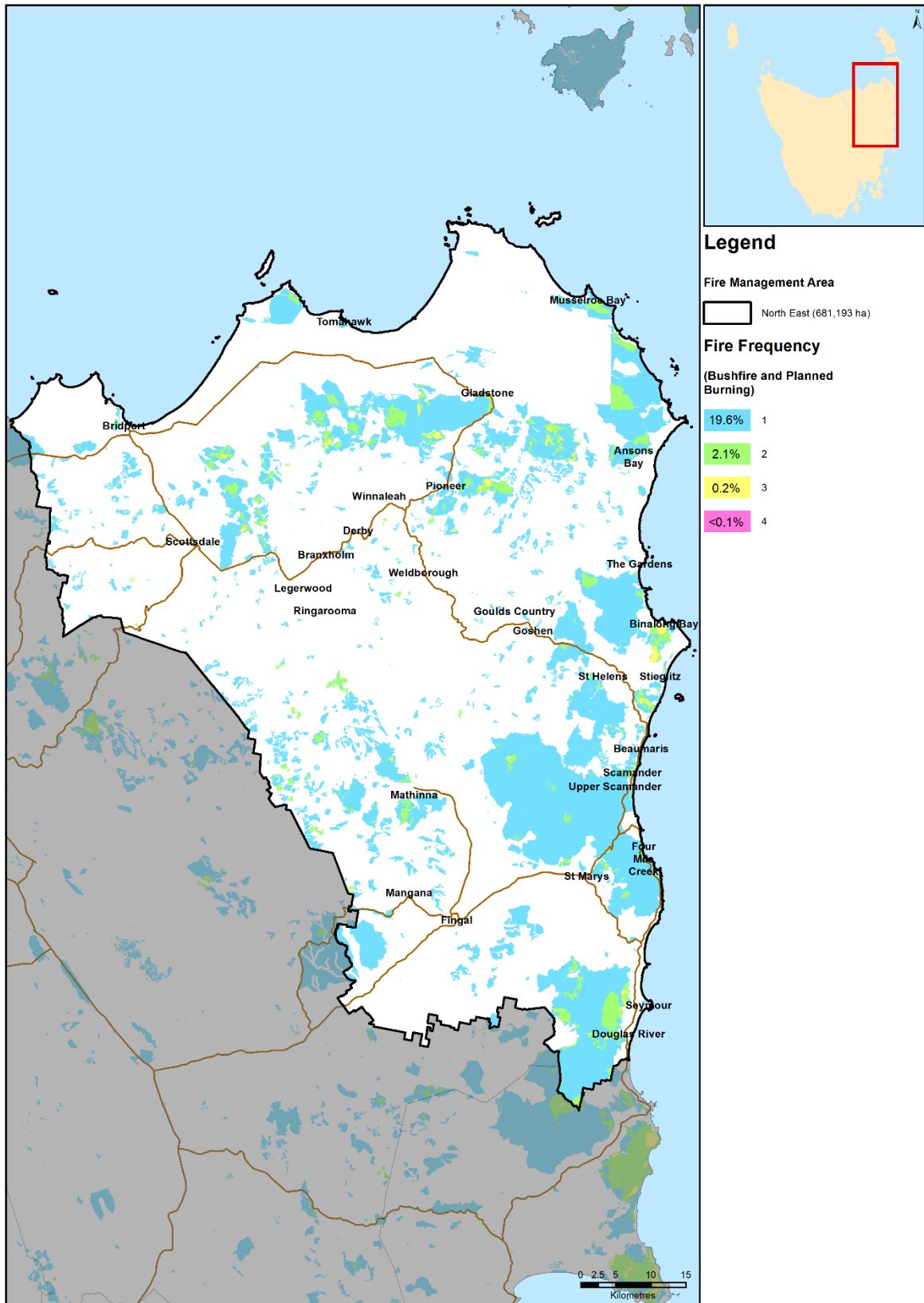
Map 3: Fuel Treatability



**Map 4: Population**

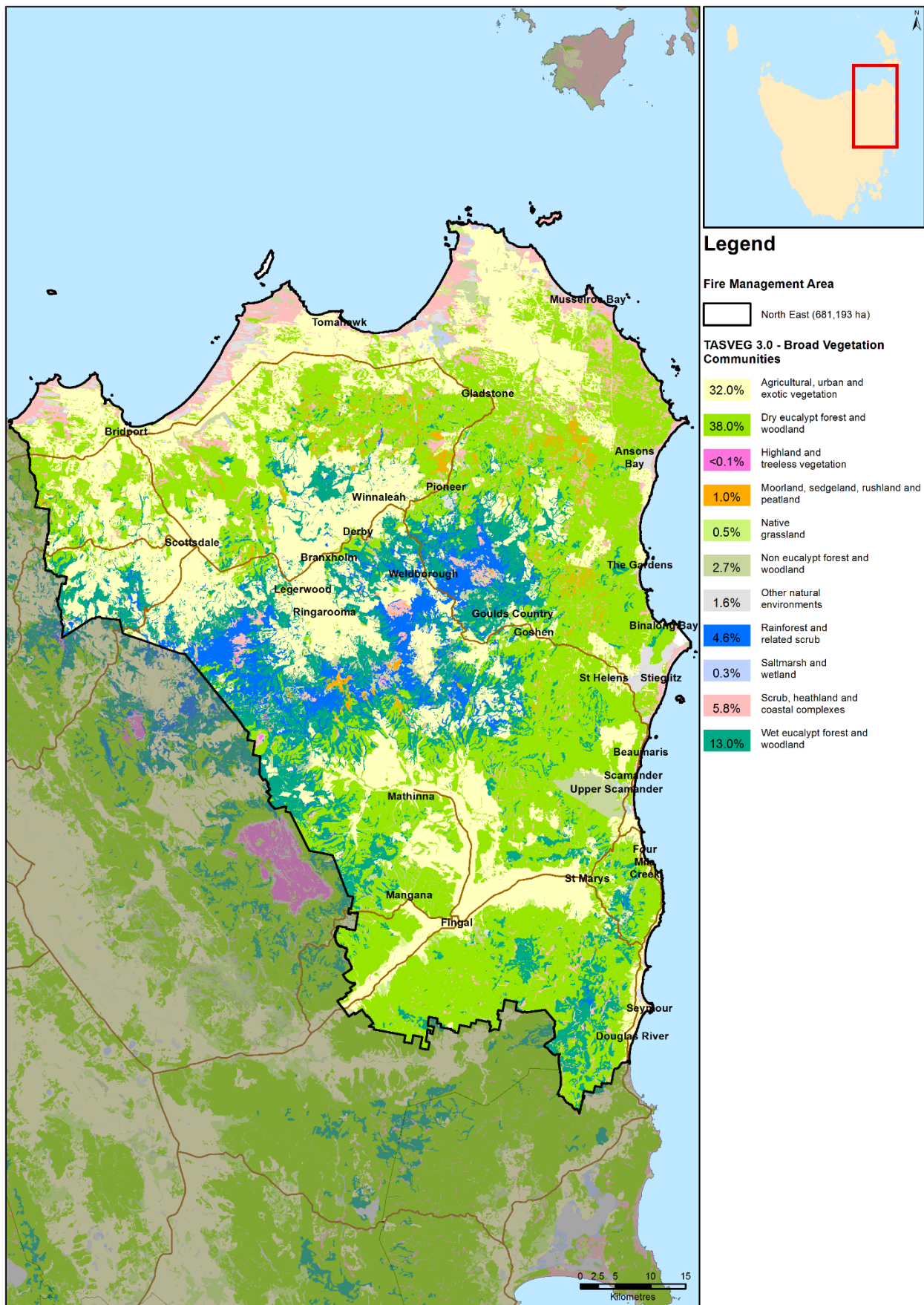


Map 5: Ignition Cause



**Map 6: Fire Frequency**





**Map 7: Vegetation Groups**

## Appendix 2 - The Bush Fire Risk Model (BRAM)

### Background

The Bushfire Risk Assessment Model (BRAM) is a software product that was developed by the Fire Management Section of PWS (DPIPWE). 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
- Forestry Tasmania
- 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.

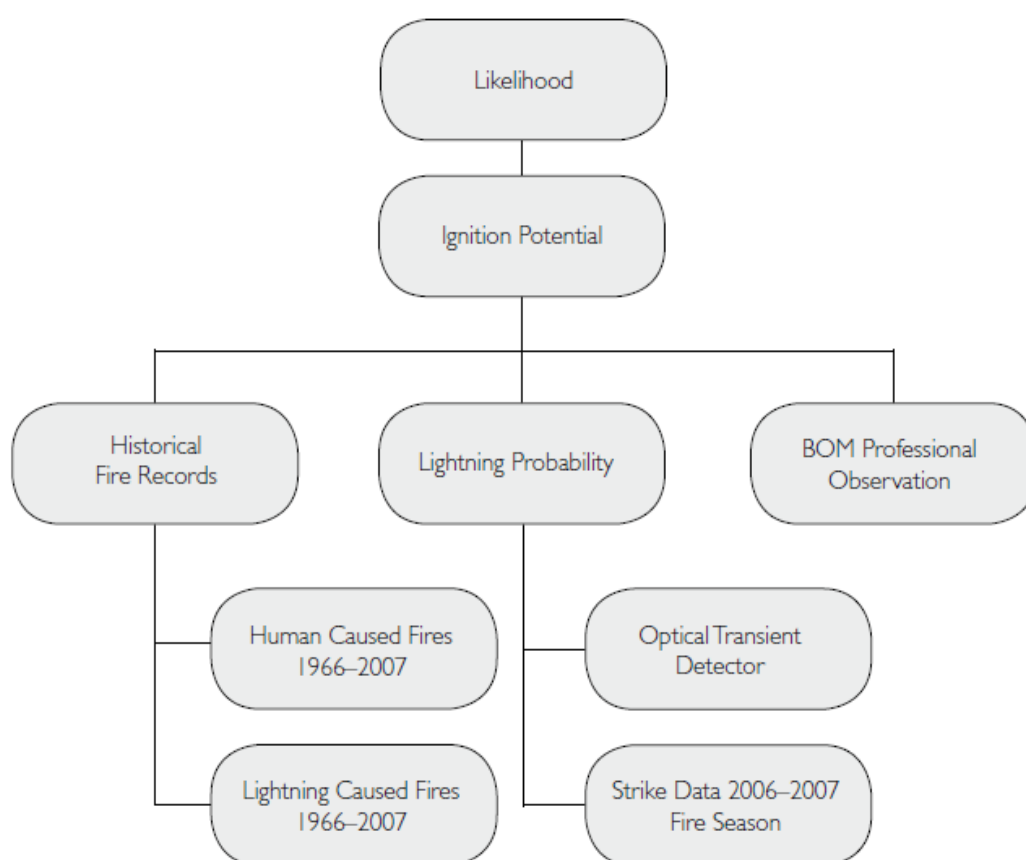
The BRAM identifies the **likelihood and consequence of a fire** at a particular point. The risk is determined through the use of a qualitative risk matrix incorporating likelihood and values at risk (consequences). The process identifies the actual risk at that point not the perceived risk. The output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

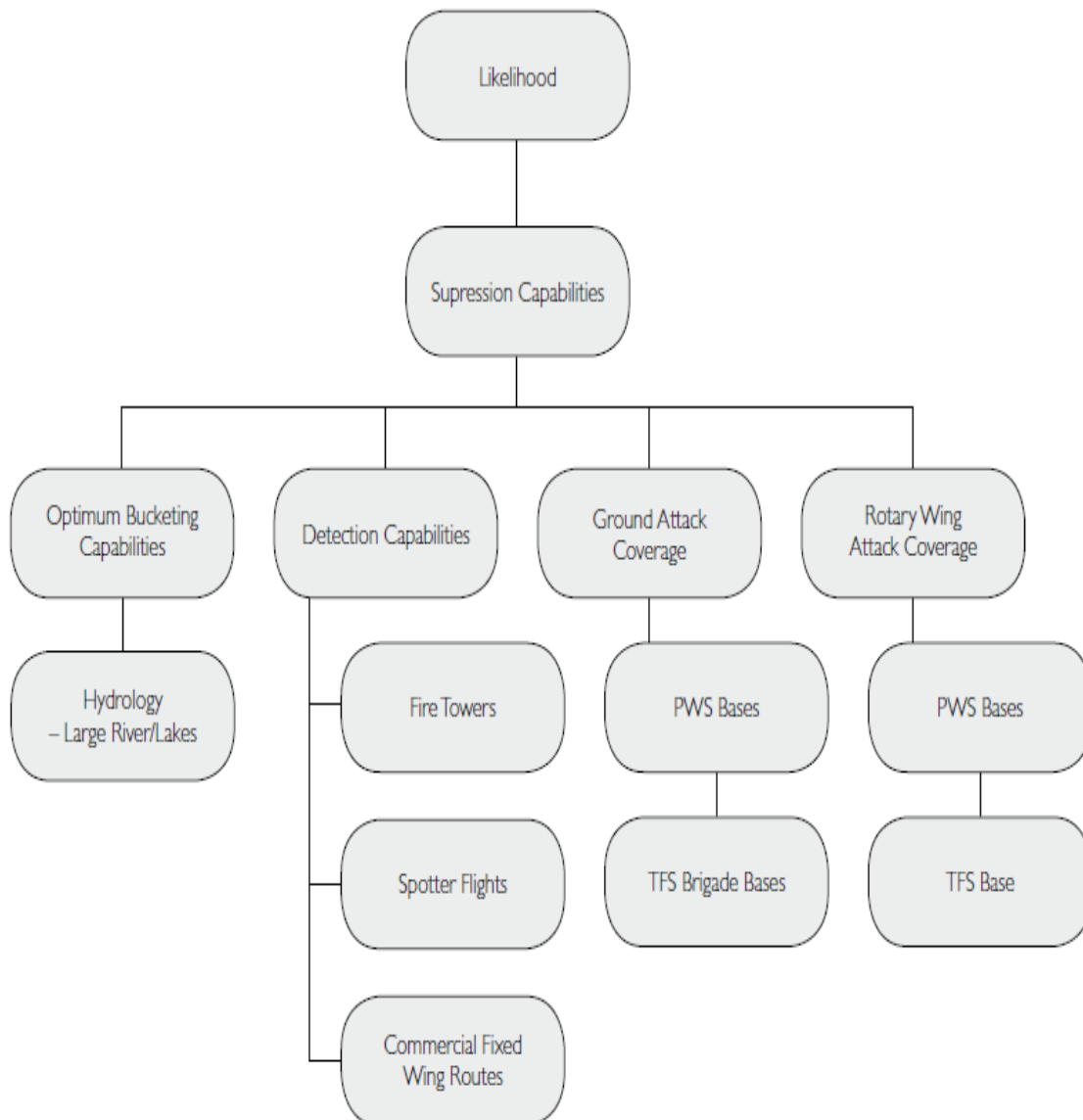
- Ignition potential - the probability or chance of fire starting as determined by the presence of causative agents (likelihood)
- Suppression capability - the factors and limitations that are related to the ability to contain a bushfire upon detection (likelihood)
- Values at risk - a specific or collective 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

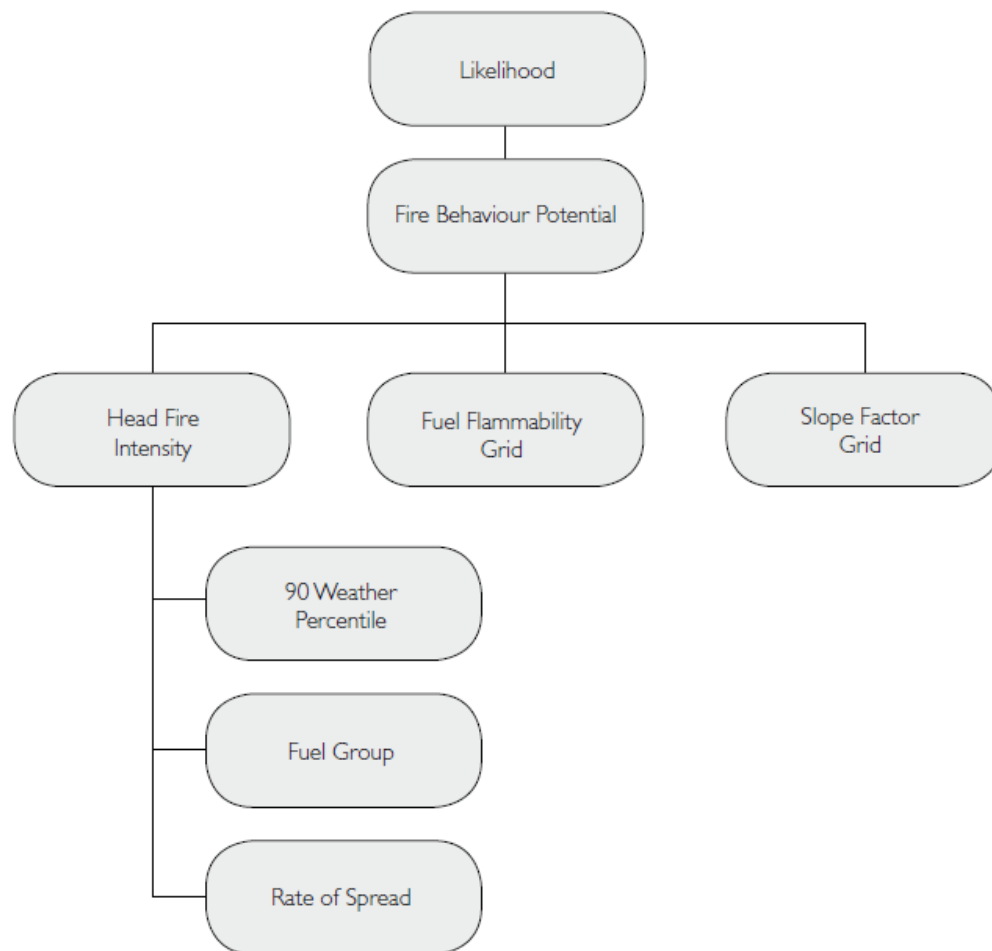




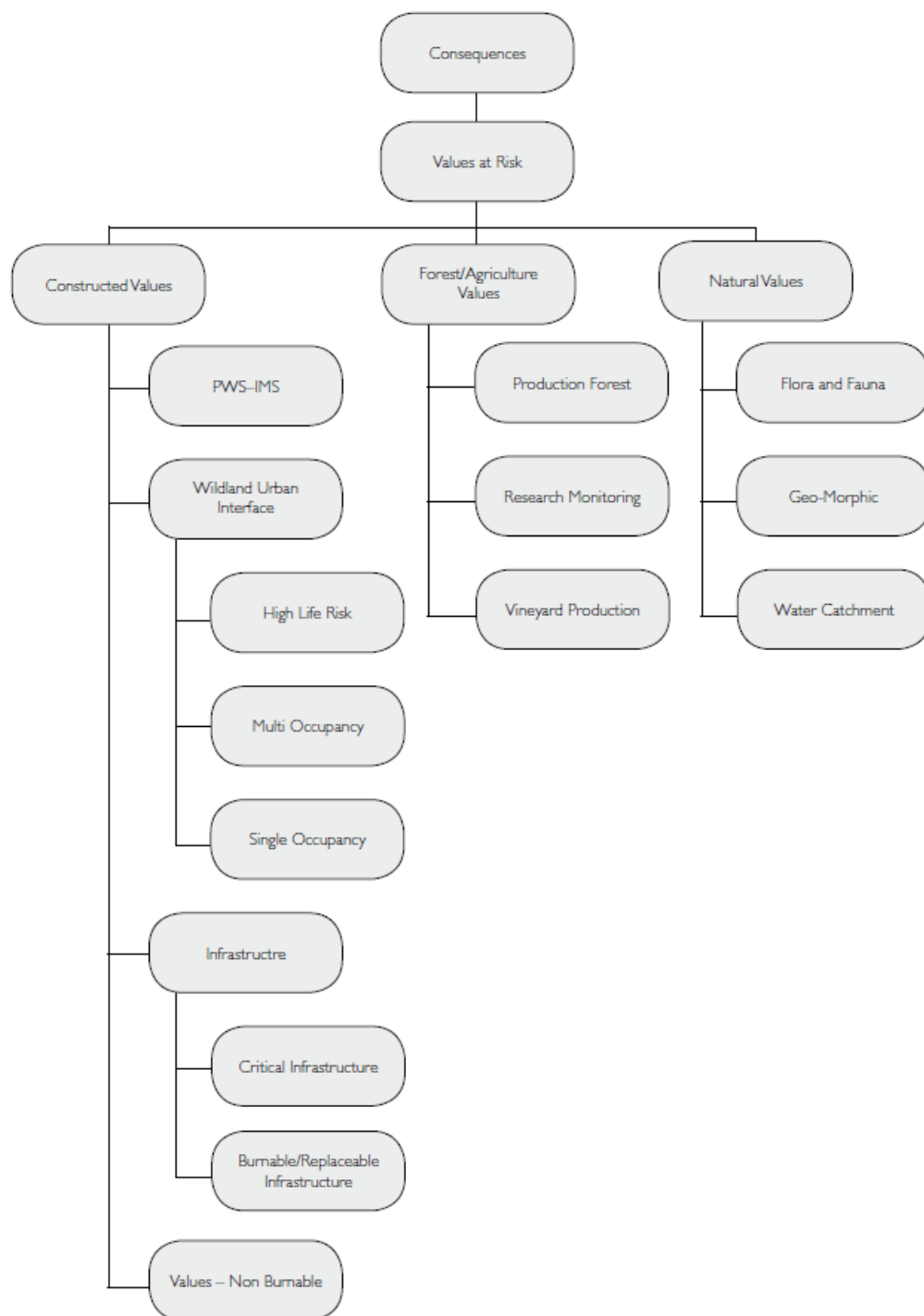
## Suppression capabilities



## 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 3 – 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 business level	Governing body manages the event within normal parameters, public administration functions without disturbances, public confidence in governance, no media attention	Inconsequential short-term reduction of services, no damages to objects of cultural significance, no adverse emotional and psychological impacts	Inconsequential short-term failure of infrastructure and service delivery, no disruption to the public services

## Impact Category Definitions

Impact Category Definitions	
People	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  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
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	Relates to the impacts of the emergency on the areas infrastructure/ lifelines/utilities and its ability to service the community  Long term failure = repairs will take longer than 6 months  Mid-to long term failure = repairs may be undertaken in 3 to 6 months  Mid-term failure = repairs may be undertaken in 3 to 6 months  Short to midterm failure = repairs may be undertaken in 1 week to 3 months  Short-term failure = repairs may be undertaken in less than 1 week

## Likelihood table

Likelihood level	Frequency	Average Recurrence Interval	Annual Exceedance probability
Almost certain	One of more per year	< 3 years	.0.3
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

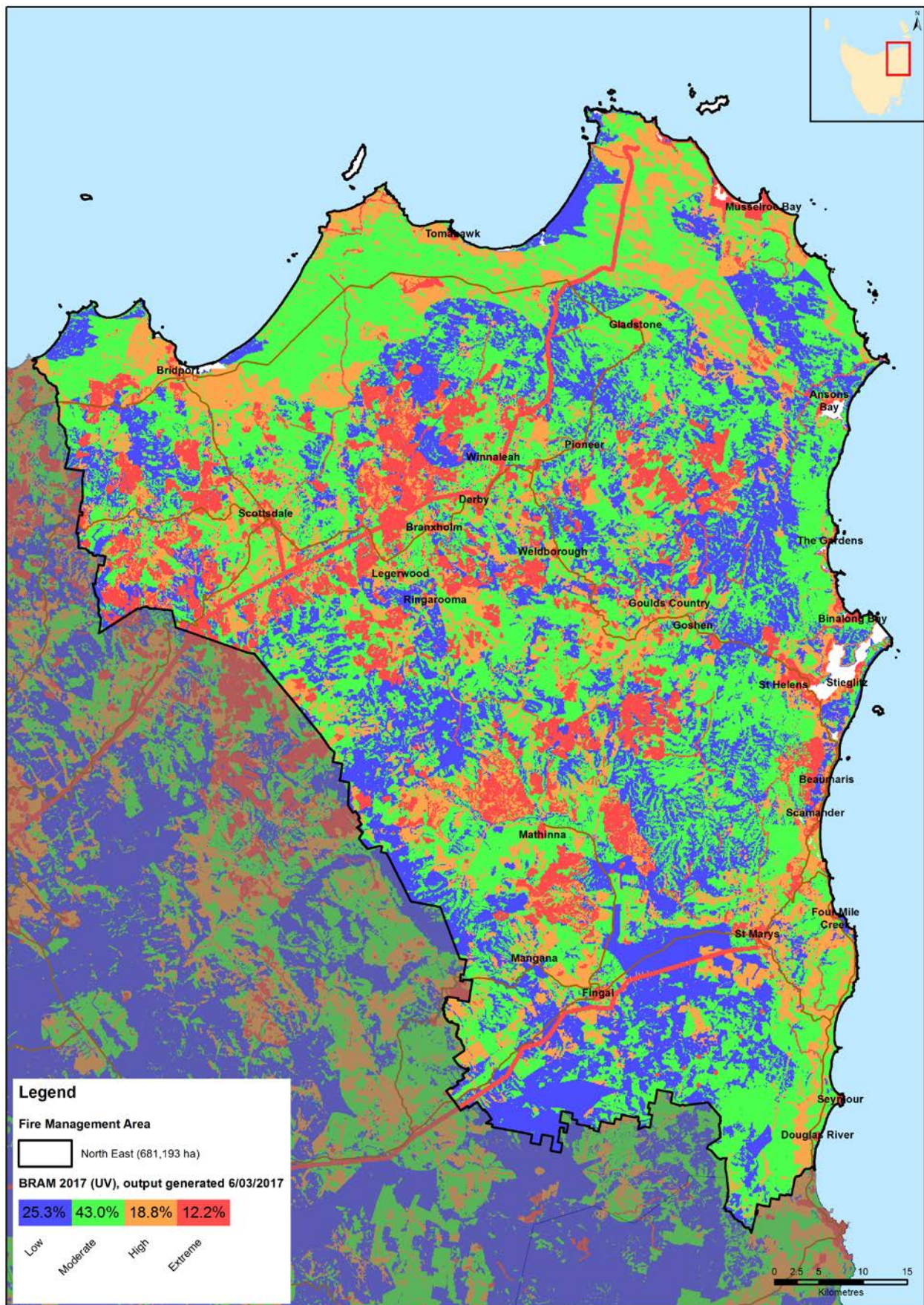
## Qualitative risk matrix

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

Likelihood level	Consequence 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

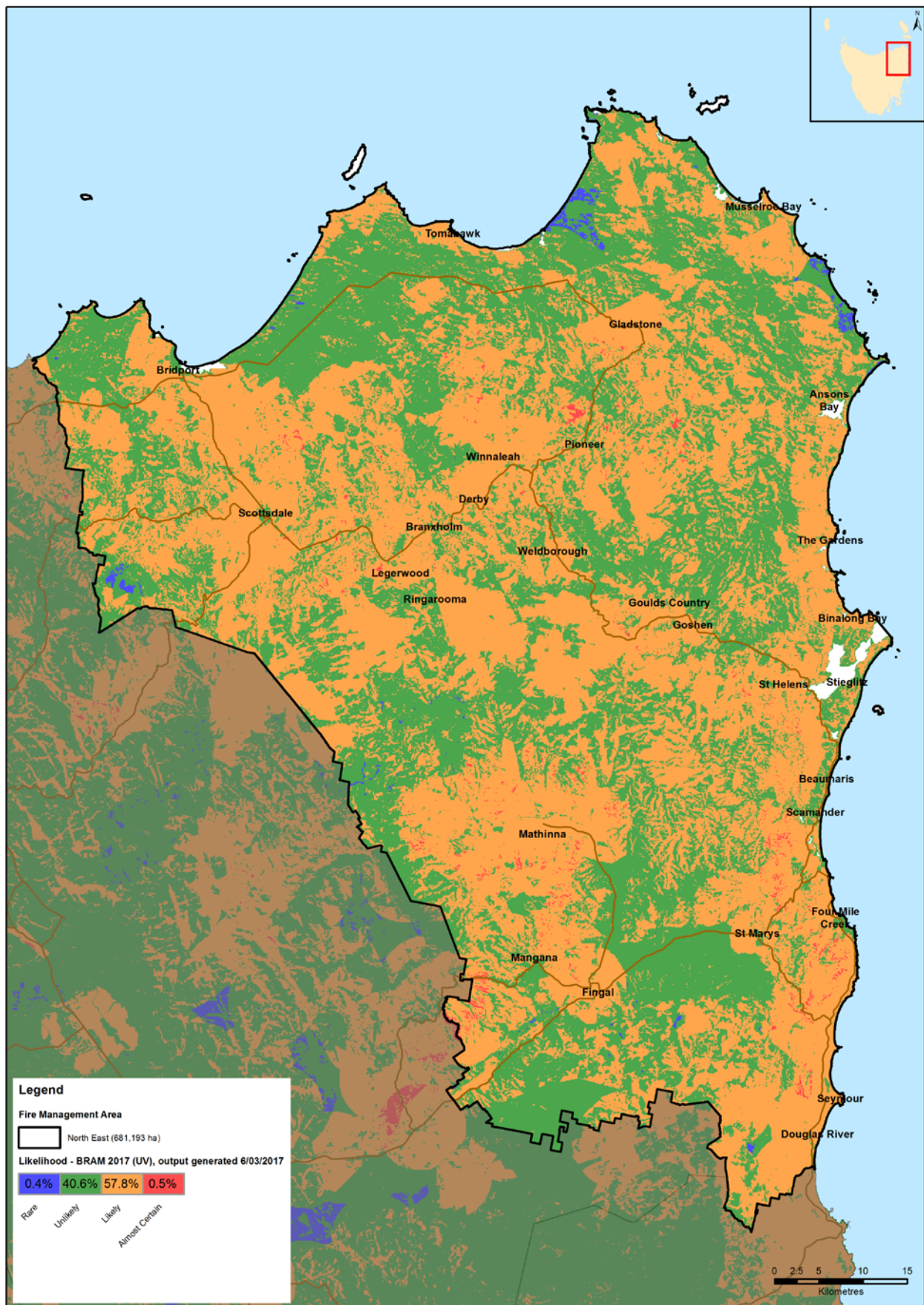


## Appendix 4 – Bushfire Risk Assessment Maps



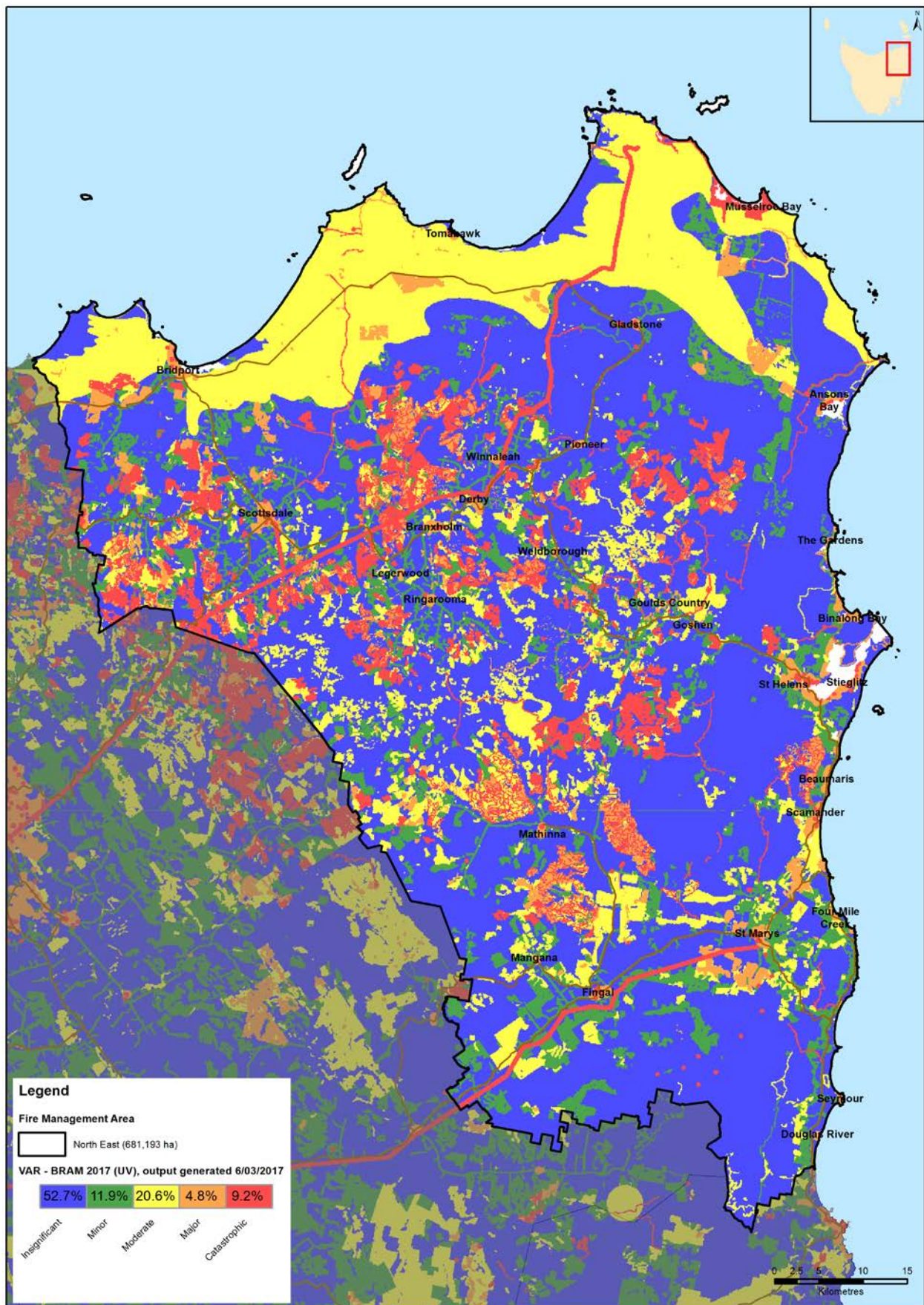
Map 8: Bushfire risk assessment model



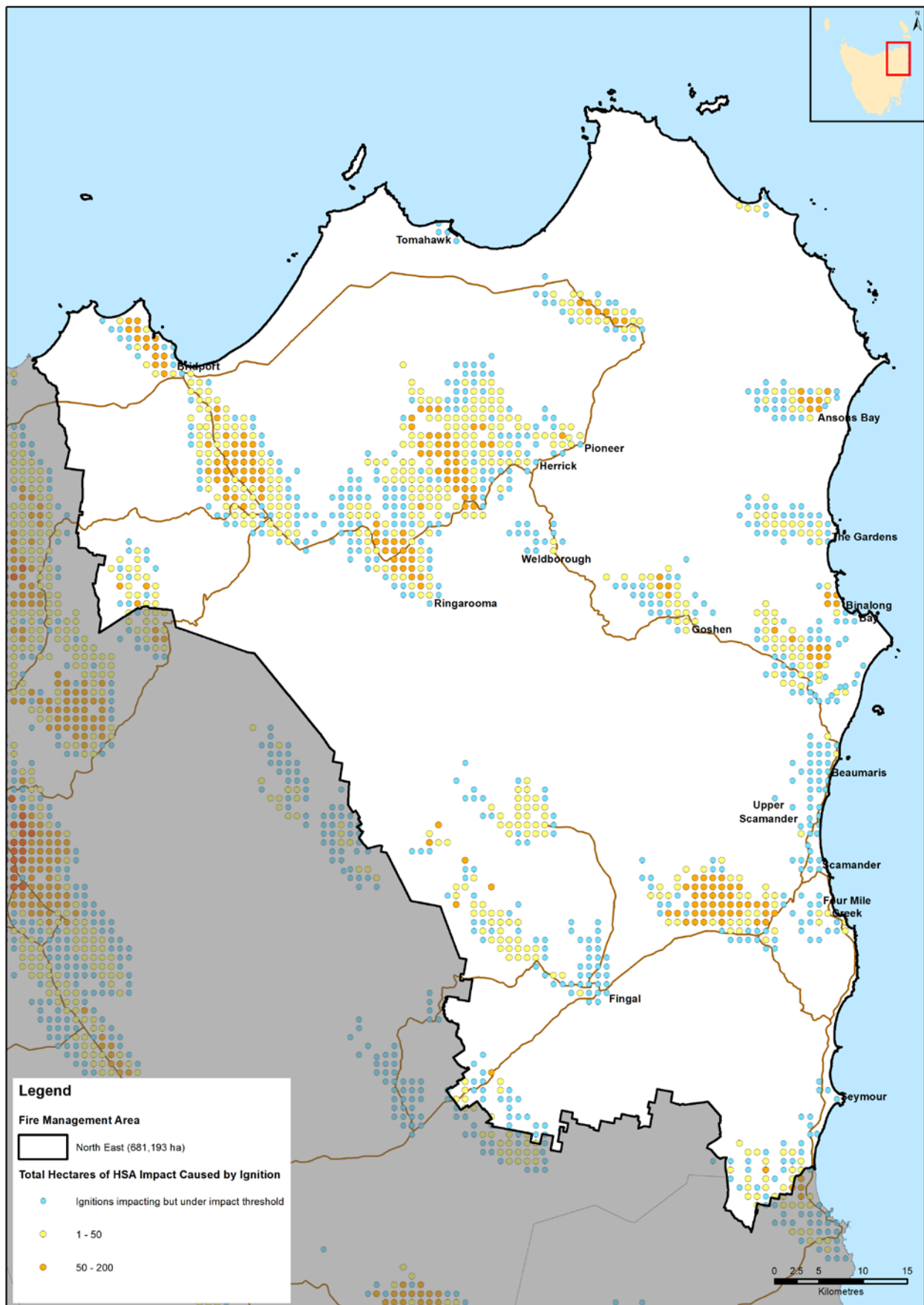


**Map 9: Bushfire likelihood**





Map 10: BRAM –Values at Risk



Map 11: Potential impact sources



## Appendix 5 – TFS Community Fire Safety Division Programs

Community Protection and Response Plans existing or being prepared by TFS for the NEFMA are:

Community Protection Plans	Currency	Review by
<i>Tomahawk</i>	Current	As per TFS review program
<i>Gladstone</i>	Current	As per TFS review program
<i>Musselroe Bay</i>	Current	As per TFS review program
<i>Anson bay area</i>	Current	As per TFS review program
<i>Priory</i>	Current	As per TFS review program
<i>St Helens area</i>	Current	As per TFS review program
<i>Binalong Bay area</i>	Current	As per TFS review program
<i>Stieglitz area</i>	Current	As per TFS review program
<i>Scamander area</i>	Current	As per TFS review program
<i>Falmouth</i>	Current	As per TFS review program
<i>Four mile Creek</i>	Current	As per TFS review program
<i>St Marys area</i>	Current	As per TFS review program
<i>Seymour( Bicheno \Area)</i>	Current	As per TFS review program

Community Response Plans	Currency	Review by
<i>Tomahawk</i>	Current	As per TFS review program
<i>Gladstone</i>	Current	As per TFS review program
<i>Musselroe Bay</i>	Current	As per TFS review program
<i>Anson bay area</i>	Current	As per TFS review program
<i>Priory</i>	Current	As per TFS review program
<i>St Helens area</i>	Current	As per TFS review program
<i>Binalong Bay area</i>	Current	As per TFS review program
<i>Stieglitz area</i>	Current	As per TFS review program
<i>Scamander area</i>	Current	As per TFS review program
<i>Falmouth</i>	Current	As per TFS review program
<i>Four mile Creek</i>	Current	As per TFS review program
<i>St Marys area</i>	Current	As per TFS review program
<i>Seymour (Bicheno area)</i>	Current	As per TFS review program

Current and Proposed Mitigation Plans in the area:

Mitigation plans	Currency	Review by
<i>Four Mile Creek</i>	Current	As per TFS review program
<i>Musselroe Bay</i>	Proposed	
<i>Scamander</i>	Proposed	
<i>Beaumaris</i>	Current	As per TFS review program
<i>Dianas Basin</i>	Current	As per TFS review program
<i>Anson Bay</i>	Proposed	
<i>Tomahawk</i>	Proposed	
<i>Bicheno- is located in Eastern FMA, included here for information</i>	Current	As per TFS review program

Other plans	Currency	Review by
<i>Forestry Tasmania Northern Tactical Fire Plan 2014 - 2015</i>	Current	
<i>PWS Northern Region Strategic Fire Management Plan</i>	28 - 2010	Requires reviewing

## Appendix 6 – Implementation program

FPP management program	Performance element	Scheduled date	Coordinated by
FMAC membership to be reviewed	All stakeholders in FPP represented	2016	SFC/ FMAC chair
<b>Plan development</b>	Risk assessment of fire protection area	1/Oct /2014	FMAC/ SFMC regional planner
	Identification of fire infrastructure	1/Oct /2014	FMAC/ SFMC regional planner
	Maps/ written plan	1/Oct /2014	FMAC/ SFMC regional planner
	Public communication strategy	1/Oct /2014	FMAC/ SFMC
<b>FMAC meetings</b>		Minimum 2 times a year	FMAC chair In consultation with committee
<b>Annual review - current FPP</b>	Completed burns	Dec 2015	FMAC
	Infrastructure maintenance		
<b>Annual review - current FPP</b>	Completed burns	Dec 2016	FMAC
	Infrastructure maintenance		
<b>Annual review - current FPP</b>	Completed burns	Dec 2017	FMAC
	Infrastructure maintenance		
<b>Annual review - current FPP</b>	Completed burns	Dec 2018	FMAC
	Infrastructure maintenance		
<b>Annual review - current FPP</b>	Completed burns	Dec 2019	FMAC
	Infrastructure maintenance		



<b>FPP review</b>		Dec 2020	FMAC/ SFC
<b>FPP rewrite</b>		Dec 2020	FMAC/ SFC

	Protection Element	Priority	Status	Strategic Coordination	Implementation Coordination
<b>Human Settlement Areas</b>					
<i>Scamander/Beaumaris/Dianas Basin</i>	Community Bushfire Mitigation Plan	High	Beaumaris and Dianas Basin completed Scamander planned to be completed by autumn 2017/18	BPP	TFS
	Bushfire Ready Neighbourhood Program	High	Scamander/Beaumaris/Dianas Basin completed in Round 1. Upper Scamander in progress.	BRN	TFS Community Development Unit
<i>St Marys- Cornwall</i>	Strategic Bushfire Mitigation Plan	High	Completed	FMAC	FRU to coordinate
	Bushfire Ready Neighbourhood Program	High	Completed	BRN	TFS Community Development Unit
<i>Ansons Bay</i>	Community Bushfire Mitigation Plan	High	Not started – proposed for 2017/18	BPP	TFS
<i>Pioneer</i>	Strategic Bushfire Mitigation Plan	High	Not started	FMAC	FMAC to coordinate selection of plan developer
<i>Gladstone</i>	Strategic Bushfire Mitigation Plan	High	Not started	FMAC	FMAC to coordinate selection of plan developer
<i>Derby</i>	Bushfire Ready Neighbourhood Program	High	Completed	BRN	TFS Community Development Unit
	Community Response Plan	High	Completed	BPP	TFS
	Community Protection Plan	High	Completed	BPP	TFS

	Protection Element	Priority	Status	Strategic Coordination	Implementation Coordination
<i>Tomahawk</i>	Community Bushfire Mitigation Plan	High	Proposed for 2018/19	BPP	TFS
<i>Weldborough</i>	Bushfire Ready Neighbourhood Program	Mod	Completed	BRN	TFS Community Development Unit
<i>Tonganah</i>	Strategic Bushfire Mitigation Plan	Mod	Not started	FMAC	FMAC to coordinate selection of plan developer
<i>Golconda</i>	Strategic Bushfire Mitigation Plan	Mod	Not started	FMAC	FMAC to coordinated selection of plan developer
	Bushfire Ready Neighbourhood Program	Mod	Completed	BRN	TFS Community Development Unit
<i>Nabowla</i>	Bushfire Ready Neighbourhood Program	Mod	Completed	BRN	TFS Community Development Unit
<i>Musselroe Bay</i>	Community Bushfire Mitigation Plan	Mod	Proposed for 2018/19	BPP	TFS
<i>Stieglitz</i>	Bushfire Ready Neighbourhood Program	High	Completed	BRN	TFS Community Development Unit
<b>Fire infrastructure</b>					
<b>Strategic roads</b>					
<i>MG Road</i>	Regular maintenance		Trafficable by Class 3		Road maintenance programs to be implemented by managing authority
<i>S Road</i>	Regular maintenance	High	Trafficable by Class 3		Road maintenance programs to be implemented by managing authority
<i>Kennel Road (formerly known as Fire Road)</i>	Develop to a standard for vehicular access – provided escape route for Binalong bay		Class 5 only		Managing Authority to investigate options for update
<i>Valley Road</i>	Regular maintenance		Trafficable by Class 3		Road maintenance programs to be implemented by managing

	Protection Element	Priority	Status	Strategic Coordination	Implementation Coordination
					authority
<i>Argonaut Road</i>	Regular maintenance		Trafficable by Class 3		Road maintenance programs to be implemented by managing authority
<i>Mt Albert Road</i>	Regular maintenance		Trafficable by Class 3		Road maintenance programs to be implemented by managing authority
<i>Mathinna Plains Road</i>	Regular maintenance		Trafficable by Class 3		Road maintenance programs to be implemented by managing authority
<i>Ben Ridge Road</i>	Regular maintenance		Trafficable by Class 3		Road maintenance programs to be implemented by managing authority
<i>Diddleum Road</i>	Regular maintenance		Trafficable by Class 3		Road maintenance programs to be implemented by managing authority
<i>Old Port Road</i>	Regular maintenance		Trafficable by Class 3		Road maintenance programs to be implemented by managing authority
<i>Banca Road</i>	Regular maintenance		Trafficable by Class 3		Road maintenance programs to be implemented by managing authority
<i>Old Waterhouse Road</i>	Regular maintenance		Trafficable by Class 3		Road maintenance programs to be implemented by managing authority
<i>Tebrakunna Road</i>	Regular maintenance		Trafficable by Class 3		Road maintenance programs to be implemented by managing authority
<i>Counsels Road</i>	Regular maintenance		Trafficable by Class 3		Road maintenance programs to be implemented by managing authority
<i>Chaplin's Road</i>	Regular maintenance		Trafficable by Class 3		Road maintenance programs to be implemented by managing authority
<b>Fire trails</b>					
<b><i>Mt Cameron fire trails</i></b>					

	Protection Element	Priority	Status	Strategic Coordination	Implementation Coordination
<i>Mt Cameron east</i>	Bring up to class 5 inspect and clear as required		Poor condition	PWS	PWS (works requires funding)
<i>Mt Cameron west</i>	Bring up to class 5 Repair river crossings monitor and clear as required		Poor condition	PWS	PWS (works requires funding)
<b><i>Douglas Apsley NP fire trails</i></b>					
<i>Organ Hill trail</i>	Inspect and clear as required		Class 5 trafficable only	PWS	PWS ongoing
<i>Pennyfathers track</i>	Inspect and clear as required		Class 5 trafficable only	PWS	PWS ongoing
<i>South Apsley link</i>	Inspect and clear as required		Class 5 trafficable only I	PWS	PWS ongoing
<i>Eastern fire trail</i>	Inspect and clear as required		Class 5 trafficable only	PWS	PWS ongoing
<i>West Douglas fire trail</i>	Inspect and clear as required		Class 5 trafficable only	PWS	PWS ongoing
<i>Tin Mine Gully</i>	Inspect and clear as required		Class 5 trafficable only	PWS	PWS ongoing
<b><i>Mt William Fire Trails</i></b>					
<i>Rattys track</i>	Inspect and clear as required		Class 3 trafficable	PWS	PWS ongoing
<i>Big Boggy</i>	Inspect and clear as required		Class 5 trafficable only	PWS	PWS ongoing

	Protection Element	Priority	Status	Strategic Coordination	Implementation Coordination
<i>Little Boggy creek</i>	Inspect and clear as required		Class 5 trafficable only	PWS	PWS ongoing
<i>Bayleys Hill</i>	Inspect and clear as required		Class 5 trafficable only	PWS	PWS ongoing
<i>Ansons Bay Protection</i>	Inspect and clear as required		Class 5 trafficable only	PWS	PWS ongoing
<i>West Boundary fire trail</i>	Inspect and clear as required		Class 5 trafficable only	PWS	PWS ongoing
<i>North south</i>	Inspect and clear as required		Class 3 trafficable	PWS	PWS (requires funding approval)
<b>Fire breaks</b>					
	The FMAC continue to identify existing and potential new breaks Including unmaintained FMAC to consider strategic values of identified Fire breaks	High	Ongoing	FMAC	FMAC stakeholder : Forestry Tasmania, TFS, PWS, Tas Networks, TasWater and council
<i>Bridport</i>	Maintain and clear as necessary	High	Ongoing	PWS	PWS/ Crown lands
<i>Binalong Bay</i>	Maintain and clear as necessary	High	Ongoing	PWS	PWS
<i>Musselroe Bay</i>	Maintain and clear as necessary	High	Ongoing	PWS	PWS/ Community
<i>Derby</i>	Maintain and clear as necessary	High	Ongoing		TFS
<i>Scamander</i>	Maintain and clear as necessary	High	Ongoing		Forestry
<i>Stieglitz</i>	Maintain and clear as necessary	High	Ongoing	PWS	PWS

	Protection Element	Priority	Status	Strategic Coordination	Implementation Coordination
<i>Hogan's Road</i>	Maintain and clear as necessary	High	Ongoing	STT	STT
<i>Tower Hill Road</i>	Maintain and clear as necessary	High	Ongoing	STT	STT
<i>Cox's Road</i>	Maintain and clear as necessary	High	Ongoing	STT	STT
<i>Speers Road</i>	Maintain and clear as necessary	High	Ongoing	STT	STT
<i>Branxholm (of Fenckers road)</i>	Maintain and clear as necessary	High	Ongoing	STT	STT
<i>Retreat fire breaks</i>	Maintain and clear as necessary	High	Ongoing	STT	STT
			Ongoing		
<b>Detection towers</b>			Ongoing		
<i>Mt Horror</i>	Maintain Asset protection zone around structure		Ongoing	STT	STT
<i>Platt's Lookout</i>	Maintain Asset protection zone around structure		Ongoing	STT	STT
<i>Tower Hill</i>	Maintain Asset protection zone around structure		Ongoing	STT	STT
<i>Mt Arthur</i>	Maintain Asset protection zone around structure		Due to 2016 fires is currently out of action as a detection tower, is a viewing platform only)	STT	STT
<b>Fire Communication infrastructure</b>					
<i>Mt Horror Repeaters</i>	Maintain radio network	High	Active		STT/PWS/ TFS
<i>South Sister Repeater</i>	Maintain radio network	High	Active		STT/PWS/TFS
<i>Weldborough Pass</i>	Maintain radio network	High	Active		TFS
<i>Mt Platts Repeater (Platts Lookout)</i>	Maintain radio network	High	Active		STT/PWS
<i>Tower Hill Repeater</i>	Maintain radio network	High	Active		STT/PWS
<i>Mt Arthur (3 repeaters)</i>	Maintain radio network	High	Active		STT/PWS/ TFS

Strategic Fuel Reduction Program					
<b>Fuel Management units/zones</b>					
<b>The Gardens</b>					
<i>Mt Pearson</i>	Develop and implement burn plan	High	Plan in preparation  Proposed for 2017/18	PWS	PWS
<i>Halfway Hill</i>	Develop and implement burn plan	High	FR Burn 100% completed	STT	STT
<i>Binalong South</i>	Develop and implement burn plan	High	Burn completed	PWS	PWS
<i>The Gardens</i>	Develop and implement burn plan	High	Plan in preparation	PWS	PWS
<i>Binalong Bay 3 (SW)</i>	Develop and implement burn plan	High	burns on hold pending landowner agreements	PWS	PWS
<i>Binalong Bay 1 (North)</i>	Develop and implement burn plan	High	burns on hold pending landowner agreements	PWS	PWS
<i>Binalong Bay 2 (Central)</i>	Develop and implement burn plan	High	burns on hold pending landowner agreements	PWS	PWS
<i>Binalong Bay 5 (SE)</i>	Develop and implement burn plan	High	Plan in preparation	PWS	PWS
<b>Golconda</b>					
	<i>Identify burn blocks within the fuel management unit</i>	High	Started		FRU to look at adding further burn units on private property
<i>Allens Road</i>	Develop and implement burn plan	High	Preparation burn edges burnt 2017  Proposed Spring 2017	STT	STT
<b>Scamander/St Helens</b>					
<i>Scamander Township/Beaumaris/Dianas Basin</i>	Burn behind town, Develop and implement burn plan	High	Community Bushfire Mitigation Plans for Dianas Basin and Beaumaris will allow for burning in 2016. Burnt in autumn 2015 by PWS. Further burns planned for		PWS, TFS



			2015/16 by PWS. Burns undertaken in 2016 by TFS with more planned for 2017.		
<i>Stieglitz (PWS Land)</i>	Develop and implement burn plan	Mod	Further burn units planned for 2017/18 by PWS	PWS	PWS
<i>Stieglitz (Private Land)</i>	Develop and implement burn plan	Mod	Plan in preparation Proposed 2019/20	TFS	TFS
<i>Copper Show Ridge</i>	Develop and implement burn plan	High	High fuel load Plan in preparation, plan to commence in autumn 2018	STT	STT/PWS
<i>Copplestones Hill</i>	Develop and implement burn plan	High	Strategically important for protection of St Helens. Plan approved, ready to burn for Spring 2017	STT	STT
<i>Ericsons Link</i>	Develop and implement burn plan	High	Plan in preparation, Proposed 2019	STT	STT
<i>Scamander Forest Reserve</i>	Develop and implement burn plan	High	Plan approved. Proposed for 2017/18	PWS	PWS
<i>Nicholas Range</i>	Develop and implement burn plan	Mod	Plan in preparation Proposed 2019/20	PWS	PWS
<i>St Helens South</i>	Develop and implement burn plan	High	Plan approved. Proposed for 2017/18	PWS	PWS
<i>Siamese Ridge</i>	Develop and implement burn plan	High	Plan approved, ready to burn. Planned for Autumn 2018 due to eagles nest.		STT/PWS
<i>Granite Knob Rd</i>	Develop and implement burn plan	High	Fuel load reaching 7 : 8 t/ha. Planned for Autumn 2020	STT	STT
<i>Avenue River</i>	Develop and implement burn plan	High	Planned for Autumn 2019	STT	STT
<b><i>Douglas</i></b>					
<i>North Douglas burn</i>	Develop and implement burn plan	Mod	Burn started 2013 1600 ha burnt; Plan exist		PWS/TFS
<b><i>Cameron</i></b>					

<i>Big Boggy burn</i>	Develop and implement burn plan	High	Partially completed Autumn 2015, To be completed in Spring 2017		PWS/STT
<i>Pioneer burn</i>	Develop and implement burn plan	High	Plan in preparation. Proposed for 2017/18	PWS	PWS
<i>Lanka Road</i>	Develop and implement burn plan	High	Plan to burn in Autumn 2018	STT	STT
<i>Pioneer - private land TNP201BU Racecourse Creek</i>	Develop and implement burn plan	High	Plan to burn in Spring 2018	TFS	TFS
<i>Cameron Regional Reserve South</i>	Develop and implement burn plan	High	Plan in preparation	PWS	PWS
<i>Cameron Regional Reserve North</i>	Develop and implement burn plan	High	Plan approved. Proposed for 2017/18	PWS	PWS
<i>Gladstone Landscape Burn</i>	Develop and implement burn plan	High	Plan in preparation	PWS	PWS
<i>Pioneer South (FPPF)</i>	Develop and implement burn plan	High	FR Burn 100% completed	PWS	PWS
<b>Banca</b>					
<i>White Rock Burn</i>	Develop and implement burn plan	High	Strategically important to prevent spread from North into assets directly south. Burn 50% completed in Spring 2016 Proposed for 2017/18	PWS	PWS/STT
<i>Mt Stronach</i>	Develop and implement burn plan	High	Plan approved. Proposed for 2017/18	PWS	PWS
<i>Mt Cameron (CAMRR002SFR)</i>	Develop and implement burn plan	High	Plan in preparation	PWS	PWS
<b>Fingal / Esk Valley</b>					
<i>Castle Cary (across FMAC boundary)</i>	Develop and implement burn plan	Mod	FR Burn 100% completed	PWS	PWS
<i>Pepper Hill</i>	Develop and implement	High	Plan in preparation	PWS	PWS

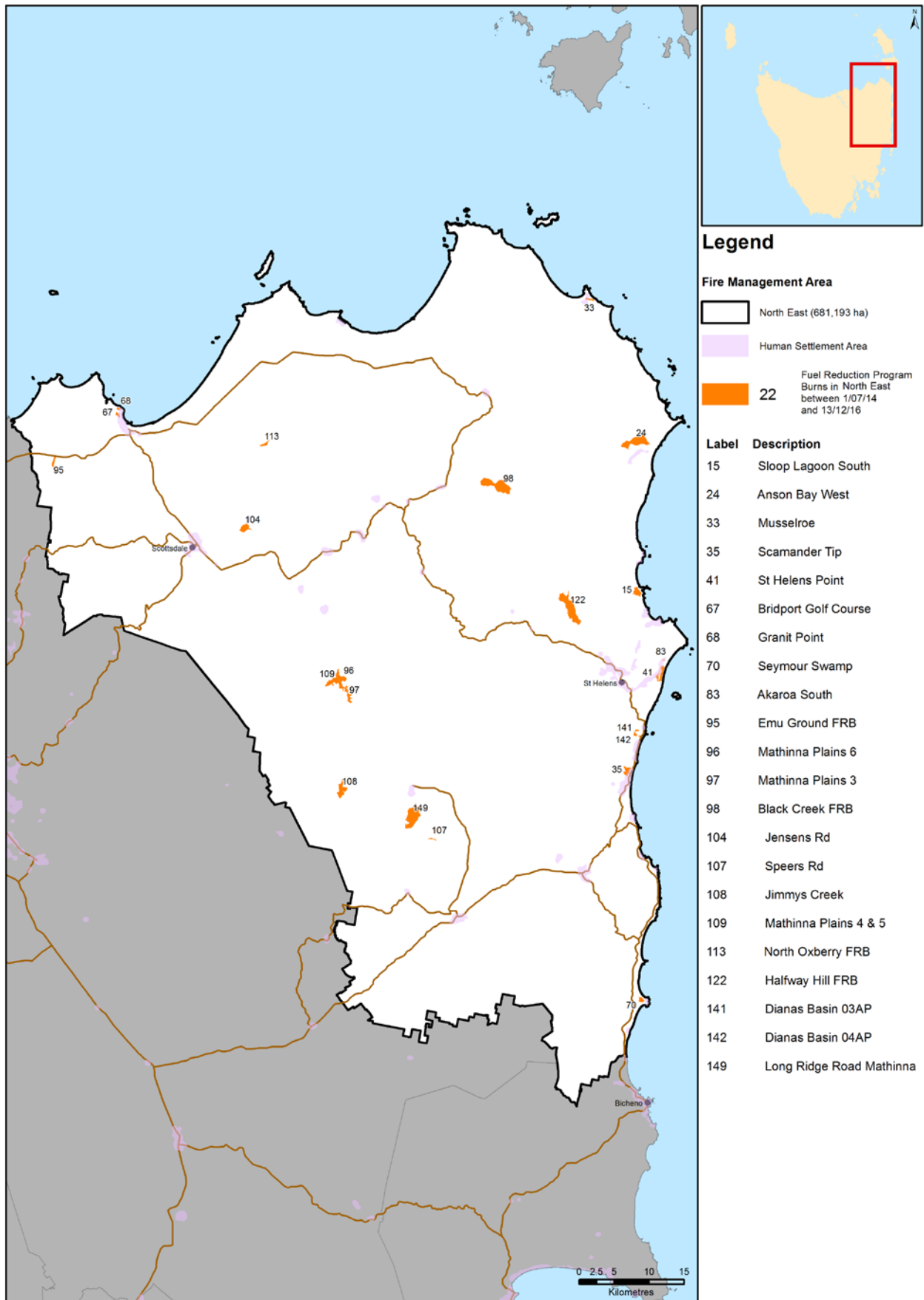
	burn plan		Proposed 2019/20		
<i>Jimmys Creek 2</i>	Develop and implement burn plan	High	Plan completed, Proposed Spring 2017	STT	STT
<b>Mt William</b>					
<i>Mallisons Creek (Ansons Bay)</i>	Develop and implement burn plan	High	Plan in preparation	PWS	PWS
<i>Stumpys Bay</i>	Develop and implement burn plan	High	50% burnt 2017 To be completed Autumn 2017/18	PWS	PWS
<i>Mt William South</i>	Develop and implement burn plan	High	Plan in preparation	PWS	PWS
<i>Mount William Field Centre</i>	Develop and implement burn plan	High	Plan in preparation  Proposed 2017/18	PWS	PWS
<b>Waterhouse</b>					
<i>Waterhouse Point</i>	Develop and implement burn plan	High	Plan in preparation  Proposed 2017/18	PWS	PWS
<b>Cape Portland</b>					
<i>Petal Point</i>	Develop and implement burn plan	High	Plan in preparation  Proposed 2017/18	PWS	PWS
<b>Bridport</b>					
<i>Bridport South</i>	Develop and implement burn plan	High	FR Burn 100% completed	PWS	PWS
<i>Bridport North (Granite Point)</i>	Develop and implement burn plan	High	FR Burn 100% completed	PWS	PWS
<i>Bridport Golf Course</i>	Develop and implement burn plan	High	FR Burn 100% completed	PWS	PWS
<i>Little Forester River North, South and Granite Point West</i>	Develop and implement burn plan	High	Plan in preparation Proposed 2017 / 18	TFS	TFS
<b>Tomahawk</b>					

<i>Tomahawk (2 burns)</i>	Develop and implement burn plan	High	Completed 75% of burn units	PWS	PWS
<b>Ansons Bay</b>					
<i>Ansons Bay x 3 FU's TNA201BU TNA202BU TNA203BU</i>	Develop and implement burn plan	High	Plan in preparation Proposed burn pending landowner agreements	TFS	TFS
<b>Musselroe Bay</b>					
<i>Russell Road (pws land)</i>	Develop and implement burn plan	High	Plan in preparation Proposed 2017/18	PWS	PWS
<i>Musselroe Bay (Private land) TNM401BU</i>	Develop and implement burn plan	High	Plan in preparation Proposed 2017/18	TFS	TFS
<b>St Marys</b>					
<i>Newmans Road</i>	Develop and implement burn plan	High	PWS completed Natural Values Plan in preparation 2017/18	PWS / TFS	TFS / PWS
<i>Avenue River Catchment</i>	Develop and implement burn plan	High	Planning not started Proposed Autumn 2019	STT	STT
<i>German Town Road</i>	Develop and implement burn plan	High	Burn 100% completed	TFS	TFS
<b>Cornwell</b>					
<i>Cornwell TNC101BU</i>	Develop and implement burn plan	High	Burn 100% completed	TFS	TFS
<b>Mathinna</b>					
<i>Mathinna Plains</i>	Develop and implement burn plan	High	Completed		STT/PWS
<i>Malahide Road</i>	Develop and implement burn plan	High	Plan to burn in Autumn 2017 Burn contains some Private	STT	STT/TFS

			Property		
<i>Long Ridge</i>	Develop and implement burn plan	High	Burn 100% completed	STT	STT
<i>Robins Road (near Trig Hill)</i>	Develop and implement burn plan	High	Plan is completed. Proposed burn Spring 2017	STT	STT
<b><i>Four Mile Creek</i></b>					
<i>Four Mile Creek x 3 FU's</i>	Develop and implement burn plan	High	Plan in preparation  Proposed 2017/18	TFS	TFS
<i>Iron House Point</i>	Develop and implement burn plan	High	Plan in preparation  Proposed 2017/18	TFS	TFS

## Map 12 Strategic Fuel Management Program and Fire History





Map 13: Fire History Since Program Inception (1<sup>st</sup> July 2014 to 4 November 2015)



## Appendix 8 – Description of vegetation communities

Description of broad vegetation community types contained in the TASVEG mapping dataset:

### **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 forests**

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.

### **Highland Treeless Vegetation**

Highland treeless vegetation communities occur within the alpine zone where the growth of trees is impeded by climatic factors. Alpine vegetation is generally treeless, although there may be some widely scattered trees, generally less than two metres high. The altitude above which trees cannot survive in the north-east highlands of Tasmania can be as high as 1400m. Fire is, at present, the most serious threat to Highland treeless vegetation in Tasmania.

### **Moorland, heath, wetland and native grassland**

This group contains moorland, rushland, sedgeland and peatland predominantly on low-fertility substrates in high rainfall areas. Fire is a defining factor for the vegetation communities in this group, with both its intensity and frequency largely dictating the form of the vegetation.

Tasmanian buttongrass moorland is a unique vegetation type in a global context: it is the only extensive vegetation type dominated by hummock-forming tussock sedge (*G. sphaerocephalus*). Buttongrass moorland is at the interface of terrestrial and wetland systems, with much of it seasonally waterlogged.

### **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.

### **Swamp forest**

Swamp forests have a closed canopy of Blackwood, tea-trees or paperbarks, and typically occupy poorly drained flats. Most communities are confined to low altitude parts of Tasmania and are mainly associated with larger rivers and coastal plains.

### **Mixed forest**

Mixed forest comprises vegetation with an understorey of rainforest species and an overstorey of eucalypts that becomes sparse as the forest approaches maturity. Often only one species of eucalypt is present, with trees frequently exceeding 50 m in mature forest. Mixed forests represent a transition (in space or time) between the rainforests and the wet sclerophyll forests into which they grade.

## **Scrub communities**

Most scrub communities occur as localised patches in other forest types. Examples include small stands (or groves) of native olive associated with rocky sites in wet sclerophyll forest.

## **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. As with the related mixed forest, 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.

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))