Flinders Fire Management Area

Fire Protection Plan

2019

Document Control

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Accepted by State Fire Management Council

SFMC Chair – Ian Sauer
Date: 10/5/2019

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Glossary

Asset	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.
Asset Zone	The geographic location of asset(s) of high value or importance and the physical boundary immediately around the asset.
Asset Protection Zone	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).
Strategic Fuel Management Zone	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).
Land Management Zone	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.
BRAM	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).
Bushfire	Unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires both with and without a suppression objective.
Bushfire Hazard	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.
Bushfire Risk Management	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.
Community Bushfire Protection Plan	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.
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 operational information.

Community Mitigation plan	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.
Consequence	Consequences are defined as a qualitative rating of damage from fire to values.
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 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	Likelihood is defined as a qualitative method to assess the likelihood rating to the consequences occurring.
Risk	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.)
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.
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.

Acronyms

ALCT	Aboriginal Land Council of Tasmania
BRU	Bushfire Risk Unit
BRAM	Bushfire Risk Assessment Model
BRN	Bushfire Ready Neighbourhoods
CPP	Community Protection Planning
DPIPWE	Department of Primary Industries, Parks, Water & Environment
FIAT	Forest Industry Association Tasmania
FMAC	Fire Management Area Committee
FPP	Fire Protection Plan
STT	Sustainable Timber Tasmania
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
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. The submission date was changed to the 31st of 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 bush fire 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 bush fire risk.

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

The **objective** of this FPP is to effectively manage bushfire related risk within the Flinders Fire Management Area 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 Plan Context

The fire protection plan needs to be considered in terms of:

- The fire protection plan is an approach to managing fire risk across the fire protection area with a focus on community protection ;
- Fire risk is not the sole prerogative of any one element of the community but a collective responsibility of the whole community;
- Risk management across the landscape can only be developed in terms of a cross tenure approach;
- Identification of risk and its management is an ongoing process based on new information about values and consequences;

- Risk treatments will be continuously be identified and programmed into the implementation program;
- The implantation program is an ongoing process and the plan will be subject to annual review with regards to completed works.

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
- Historical Cultural Heritage Act 1995
- 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 Flinders Fire Management Area

2.1.1 Location and Boundaries

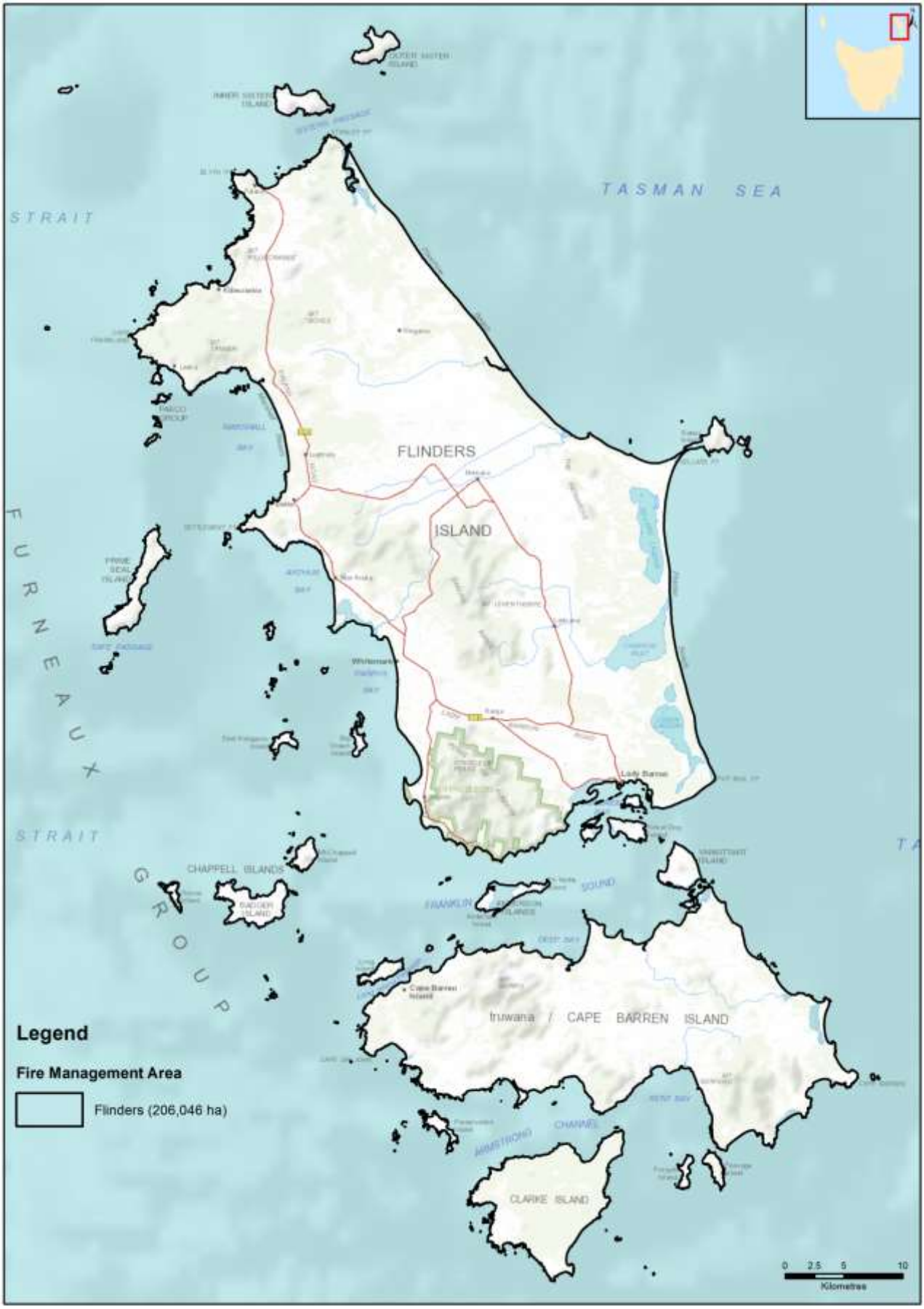
The fire management area covers the Flinders local government area (LGA). The LGA extends from near the coastline of Victoria to the Tasmanian mainland. The major land components within the municipality are the Furneaux group, Hogan group and the Kent group of islands (Refer to location map 1).

The Furneaux island group is an archipelago of approximately 50 islands located in Bass Strait between mainland Australia and Tasmania. The largest island is Flinders Island followed by truwana (Cape Barren Island) and Clarke Island.

The fire protection plan encompasses all the islands and the area covered is approximately 206,046 hectares. As per Appendix 1, there exist a variety of land tenures present within the fire management area including:

Land Tenure type	Area ha	Percentage of region
Private Freehold	128,248	62.74
Conservation Area	34,616	16.94
Nature Reserve	11,721	5.73
Game Reserve	10,378	5.08
National Park	10,004	4.89
Nature Recreation Area	5,265	2.58
Inland Water	1,404	0.69
Local Government	723	0.35
Casement	512	0.25
Conservation Covenant	427	0.21
Public Reserve	344	0.17
Crown Land	279	0.14
Private Sanctuary	121	0.06
Private Nature Reserve	100	0.05
State Reserve	73	0.04
Authority Freehold	71	0.03
Hydro-Electric Corporation	45	0.02
Historic Site	35	0.02
Authority Crown	23	0.01
Tas Water	5	0.00
Local Government Act Reserve	2	0.00
Commonwealth	1	0.00

Table 1: Land Tenure Area



Map 1: Location

The principle land management agencies are:

Land Manager/Agency	% of Land Managed within the FMA
DPIPWE (including PWS and Crown land services)	34.48%
Private Parcel	34.10%
Aboriginal Land Council of Tasmania	25.41%
Dep't of Economic Development	5.75%
Local Government Authority	0.24%
Hydro Electric Corporation	0.02%
Department of Education	0.01%
Commonwealth Of Australia	< .01%

Table 2: Overview of Land management agencies within the Fire management Area

2.1.2 Climate and Bushfire Season

The Furneaux islands experience a climate that can be considered a mixture of a Mediterranean and an oceanic climate that is composed of warm dry summers and mild wet winters. Rainfall is possible in all seasons. Under the moderating influences of low elevation and the maritime effects, the islands generally have a milder climate compared to that of Tasmania. The Furneaux islands are in the path of the "roaring forties" with a prevailing westerly wind particularly during the summer. The winds are persistent reaching their maximum in the afternoon.

The mean daily maximum temperature is 17.7oC with a range from 13.3oC in July through to 22.1oc in February (BOM 2014). Similarly the mean daily minimum temperatures are 9.8oc ranging from 13.7oc in February through to 6.20c in July. Mean daily sunshine hours range from 3.7 hours in winter through to 7.8 hours in summer. The daily mean 3.00 pm relative humidity is approximately 65 % over all months.

Automatic weather stations exist at the Flinders Island airport and on Hogan Island.

The fire season is traditionally from November through to March though fires can and do occur outside this peak season.

2.1.3 Vegetation

The vegetation of The Furneaux Island is a mix ranging from heaths, scrub and dry woodlands through to dry sclerophyll forest interposed with wet sclerophyll forest gullies and remnant rainforest on Mt Strzelecki and the Darling Range. The region is considered to be important biogeographically as it is indicative of an ecotone between the Tasmanian and mainland vegetation complexes. Some of the vegetation species present on the islands are at the most southern point of its range if a mainland species or the most northern aspect of Tasmanian endemic species.

The Tasmanian vegetation mapping program coordinated by the Department of Primary Industries Parks Water and the Environment (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 3.0 broad vegetation communities as per Appendix 1- map 3. 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 9. A breakdown of the principle vegetation groups present within the Furneaux region as per Table 3:

Vegetation Group(TasVeg 3, 2013)	Flammability (Pyrke and Marsden-Smedley, 2005)	% of FMA
Scrub, heathland and coastal complexes	High – very high	42.12
Agricultural, urban and exotic vegetation	moderate	25.47
Dry eucalypt forest and woodland	Moderate - high	14.87
Non eucalypt forest and woodland	moderate	6.90
Native grassland	high	3.48
Saltmarsh and wetland	low	3.43
Other natural environments	moderate	3.19
Moorland, sedgeland, rushland and peatland	Moderate - high	0.38
Rainforest and related scrub	low	0.15

Table 3: Vegetation groups

The majority of the vegetation groups in the Furneaux group can be considered to be of a high to very high flammability classes with a low to moderate sensitivity to fire (Pyrke and Marsden-Smedley, 2005). The exception is the rain forest complexes on Mt Strzelecki which is very sensitive to fire as well as being of low flammability. Similarly the Melaleuca ericifolia swamp forest scattered around the island is very sensitive to fire though also being of low flammability.

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.

The majority of fuels on the islands are considered to be treatable is as per Appendix 1 –map 3 (fuel treatability).

2.1.4 Population and Demographics

The estimated resident population of the Furneaux Islands is 784 persons. Flinders Island has two major population centres, Whitemark and Lady Barron. Other settlement areas included Emita, Palana, Memana, and Killiecrankie. Outside the settlement areas, the population is based around

farm holdings. Whitemark is the administrative and commercial centre for the Furneaux region.

A smaller population of approximately 60 persons reside on truwana (Cape Barren Island). The outer islands have transient populations based around agricultural needs.

The community profile of the Furneaux region indicates that The Furneaux Island Group had a lower proportion of pre-schoolers and a higher proportion of persons at post retirement age than Regional TAS in 2011(Profile.id.com.au/flinders-island). Analysis of the service age groups of the Furneaux Island Group in 2011 compared to Regional TAS shows that there was a lower proportion of people in the younger age groups (0 to 17 years) and a higher proportion of people in the older age groups (60+ years). Overall, 15.7% of the population was aged between 0 and 17, and 31.8% were aged 60 years and over, compared with 23.3% and 24.0% respectively for Regional TAS.

Agriculture, fishing and aquaculture together with tourism and hospitality are the principle industries in the Furneaux islands. The agriculture and fishing sectors employ 23.3 % of the population.

The population trend over the last few years has been a gradual reduction of people present on the island. As a consequence of this decreasing population, there is an increased level of absentee landowners and an increased no's of iterant holiday visitors.

The communities of Whitemark, Lady Barron and truwana / Cape Barren Island are home to the islands primary built environment. Built environment constitutes: Multi-Purpose Centre, Whitemark, Cape Barren Health Centre, residential properties, businesses industrial properties and holiday homes. Some development is occurring in the coastal zone adjacent to the West End road. There are no major areas on the island where significant development growth is occurring.

2.1.5 Bushfire Frequency and Causes of Ignition

Before major settlement of the island, it is likely that there was repeated burning of the island though fires ignited by lightning strikes. Such fire will have travelled through the landscape till sufficient rains extinguished the fire. The island have been subject to a range of fires with analysis indicating that the majority of incidents are located either near communities or in the agricultural landscape. In recent years, the island has been subject to several severe fires that have impacted on both the community and the natural environment. Major fires include:

Fire name	Ignition date	size
Sellers Point	1990	578 Ha
Darling Range	2003	170,567 ha
Cameron Lagoon	2003	4,261 ha
Reedy lagoon	2006	1,716 ha
Cape Barren Island (Apple Orchard Point)	2006	42,000 ha
Five Mile Road	2008	6,690 ha
Clarke Island	2013	8,100 ha
Lackrana Road	2016	4,641 ha
Thunder and Lightning Bay, Cape Barren Island	2016	26,500 ha

Table 4: Major fires

There is a paucity of fire records for the planning area where ignition sources have been identified. Analyses, as per Appendix 1 - map 5, of the historical records indicate that the principle causes of ignition are:

Ignition source	% of ignitions
Accident	14.9%
Planned Burning	0.4%
Recreation	<0.1%
Undetermined	0.4%
Unknown	10.7%
Lightning	8.3%
Escapes from planned burns	3.1%
Arson	3.9%

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, see Appendix 2.

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

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 (Refer to Appendix 2). Region wide values utilised in the BRAM modelling include:

Constructed values

- Wildland urban interface.
- Critical infrastructure including transmission lines, telecommunication infrastructure, water 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.

While the values layer identifies a wide range of values in the Finders Fire Management Area, the agricultural grassland and its economic significance are not part of the analysis. The agricultural grassland community is of particular importance with the loss of extensive grass impacting on the immediate viability of farming enterprises. This is compounded by the difficulty and cost n transporting feed to the island after a major bushfire event. The loss of grasslands has a major impact on the island economy.

Other values at that need to be understood when examining risk is the critical infrastructure present. Critical infrastructure on the islands includes:

- Flinders Island Airport.
- Hydro Tasmania Power Station Flinders Island.
- Fuel Dump Lady Barron.
- Whitemark jetty.
- Lady Barron jetty/ wharf.
- Tas Water supply infrastructure (Lady Barron pump station, Vinegar Hill water reservoir, Pats River Pump station and water reservoir (Whitemark).
- UHF/VHF repeater networks - Walkers lookout.
- Flinders Island District High School.
- Flinders island Multi-purpose Centre and hospital.
- Hydro Tasmania Diesel fired Power station - Cape Barren Island.
- Flinders Island Emergency Services Building (Whitemark).
- Telecommunications (Telstra) infrastructure (Mt Tanner, Vinegar Hill, Hayes Hill, Middle Patriarch Hill, Whitemark Post Office).

3.4 Overall Risk

A representation of risk (see Appendix 4) 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 Flinders Fire Management Area:

BRAM level of Risk	Area (ha)	% of FMA
Low	51,717	23.0%
Moderate	101,374	50.7%
High	31,112	15.0%
Extreme	9,684	5.4%

3.5 Risk Analysis for the Flinders 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 2 & 3

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 FMA. 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. - maps 8 to 11.

3.5.1 Community Assessment

Strategic assessment tools have been used to conduct a broad scale assessment across the Flinders Fire Management Area 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(TFS and PWS)
- Local knowledge from Tas Fire Service District Officers and Brigades.
- Identification and consideration of existing and past fire management actions and plans
- Consultation with TFS Community Protection Planners

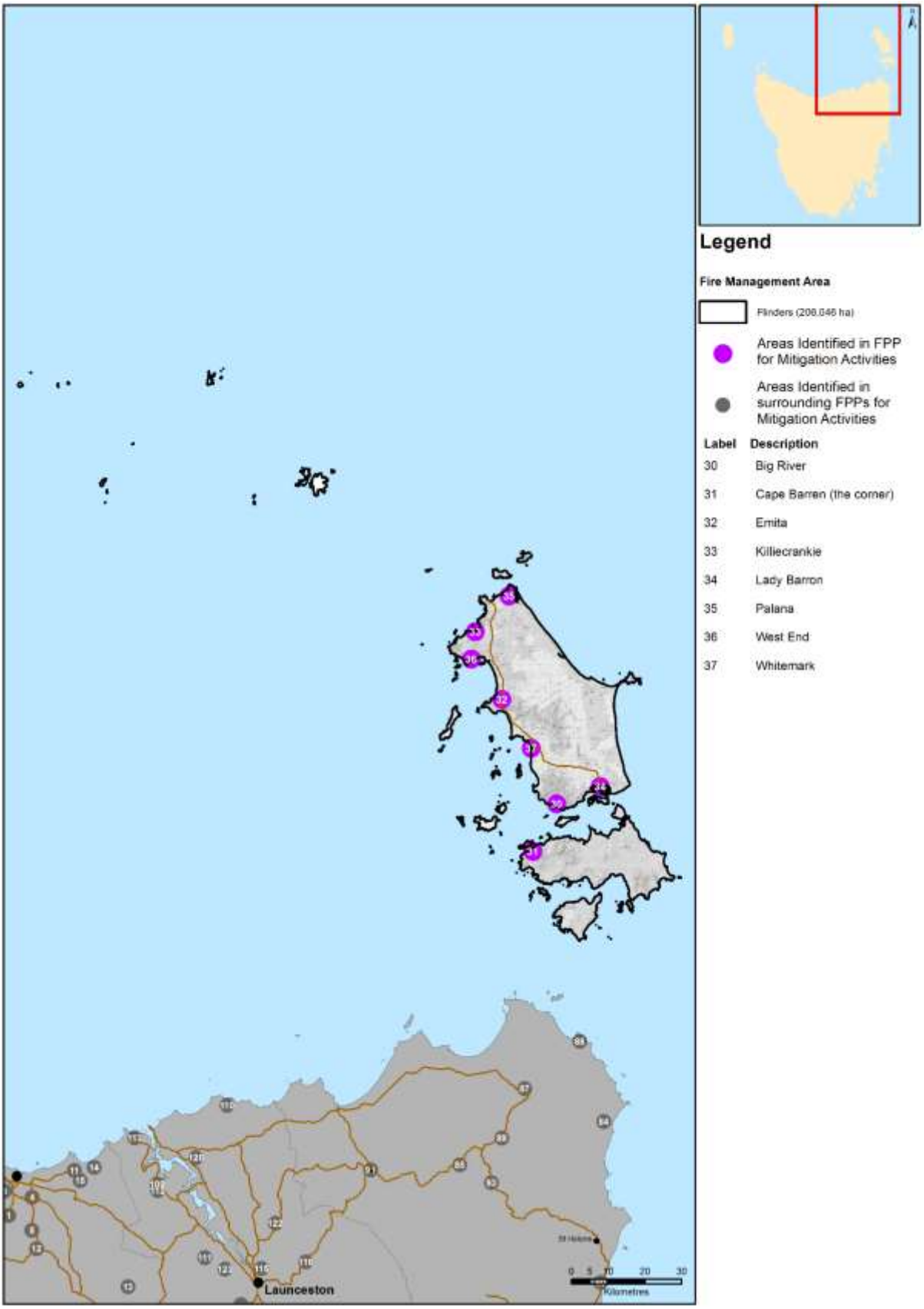
The results of the strategic assessment for the Flinders Fire Management Area are outlined below in Table 6.

Human settlement Area	Assessment Rating	Priority
Lady Barron	High	High
Emita	High	High
Cape Barren (The Corner)	High	High
Big River	High	High
West End	High	High
Killiecrankie	Mod	High
Palana	Mod	Mod
Whitemark	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 *etal,* 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 *etal,* 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 Zone**. 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 etal 2004 outline above is to be to be used as the basis of the mitigation planning process. Mitigation plan provides a means of articulation and managing risk for human settlement areas.

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

- Zoning as per COAG recommendations 2004(Ellis *etal* 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, two other planning processes need to be developed and incorporated into the works programs to manage the risk present with the fire management area and are as follows:

- Community Bushfire Protection Plans are prepared for community members that provide local information to assist with bushfire preparation, and survival.

- 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: fire.tas.gov.au/brn
Round 1 (2014-2016) and Round 2 (2016-2018) communities for the Furneaux group 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 Flinders 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 Program, Bushfire Planning and Policy – Community Protection Planning 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 as required by the Tasmanian Emergency Management Plan and the Fire Service Act.

4.2.1 Strategic fire infrastructure

Strategic fire infrastructure includes critical fire access tracks and water sources. Critical fire infrastructure identified for the island includes strategic fire trails, water points and strategic fire roads as documented below. The Strategic Fire Infrastructure Map 12 & 13in Appendix 7 shows the location of strategic fire trails and strategic roads in relation to human settlement areas. Water sources will be included as part of the next review of this plan.

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 on Flinders Island are as follows:

Strategic Trail	Start(UTM GDA94)	Finish(UTM GDA94)	Standard required
Logan's lagoon	608080 55553010	611410 5554360	Class 5
Haulands Gap	589400 5563800	596700 5562000	Class5
Brougham Sugarloaf	589274 5564632	582119 5567591	Class 5
Wallanipi to Badger	591151 5550861	601111 5546339	Class 5
Summers Road to Sellers Point	601300 5569200	609600 5574500	Class 5
Sawyers Bay track	578398 5569397	583863 5572272	Class 5
Mt Tanner to Boat Harbour	570442 5584486	570549 5587248	Class 5
Wingaroo to Foochow Beach	587131 5588570	592356 5588050	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 documents 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

- Wingaroo
- Lady Barron

4.2.1.3 Strategic roads

Strategic roads link to the strategic fire trails. They also provide good control lines especially in the advent of rapidly moving grass fires.

Identified Strategic road on Flinders Island are:

- Five Mile road;
- Cameron Inlet road;
- Logan Lagoon road;
- Summers road;
- Memana road to Patriarchs Inlet.

For effective use in a wildfire event, the vegetation adjacent to the strategic road should be reduced. The minimum standard of vegetation clearance should be 5m either side of the asset. Slashing of the roads side verge is the preferred method for managing the vegetation.

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. The program is to concentrate particularly on:

- Darling Range;
- Mt Strzelecki;
- East Coast (Down to lady Baron and the Pot Boil);
- Mt Tanner.

Other areas to be targeted are Castle Rock, Shag lagoon and the Dutchman and selected blocks of native vegetation on private property.

The initial potential strategic burning program for the Flinders Fire Management area is identified on map 14, Appendix 8. 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.

Strzelecki National Park and Wingaroo Nature Reserve are identified as high risk areas though not with regards to communities. The risk is generated by and to natural values present in the blocks. The fuels present within these areas need to be reduced in such a way that they do not create environmental damage to the values present. PWS is to develop a fuel reduction strategy for Mt Strzelecki and Wingaroo NR.

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 Flinders Fire Management Area. 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 islands were zoned based on:

- Asset protection zones around human settlement areas;
- Asset protection zones around critical assets including major agricultural grass.

As identified in the original Fire Protection Plan, general risk management approaches to the major human settlement areas present on the islands are in the following list. This list has been updated to reflect the current status.

- **Lady Barron** - Community Bushfire Mitigation Plan (developed), Community Protection Plan (developed), Community Response Plan (developed) and Bushfire Ready Neighbourhood Program (completed);
- **Emita** - Community Bushfire Mitigation Plan (to be developed 16/17 fire season), Community Protection Plan (developed), Community Response Plan (developed) and Bushfire Ready Neighbourhood Program (completed);
- **The Corner (truwnana / Cape Barren Is.)** - Community Bushfire Mitigation Plan (developed), Community Protection Plan (developed) and Bushfire Ready Neighbourhood Program (in progress);
- **Killiecrankie** - Community Protection Plan (developed), Community Response Plan (developed) and Bushfire Ready Neighbourhood Program (completed);
- **Palana -** Community Protection Plan (developed), Community Response Plan (developed) and Bushfire Ready Neighbourhood Program (completed);
- **West End -** Community Protection Plan (developed), Community Response Plan (developed) and Bushfire Ready Neighbourhood Program (completed);
- **Blue Rocks** - Community Protection Plan (developed), Community Response Plan (developed) and Bushfire Ready Neighbourhood Program (completed);
- **Big River**- Bushfire Ready Neighbourhood Program (completed);
- **Whitemark**- Community Protection Plan (developed), Community Response Plan (developed) and Bushfire Ready Neighbourhood Program (completed).

4.5 Implementation Program

Under the terms of reference for the Flinders 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 fire area management committee (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 State fire council to develop a strategy to address funding for works and risk management strategy's 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 Fire Protection Plan, 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 fire management area committee 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 State fire council 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

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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;

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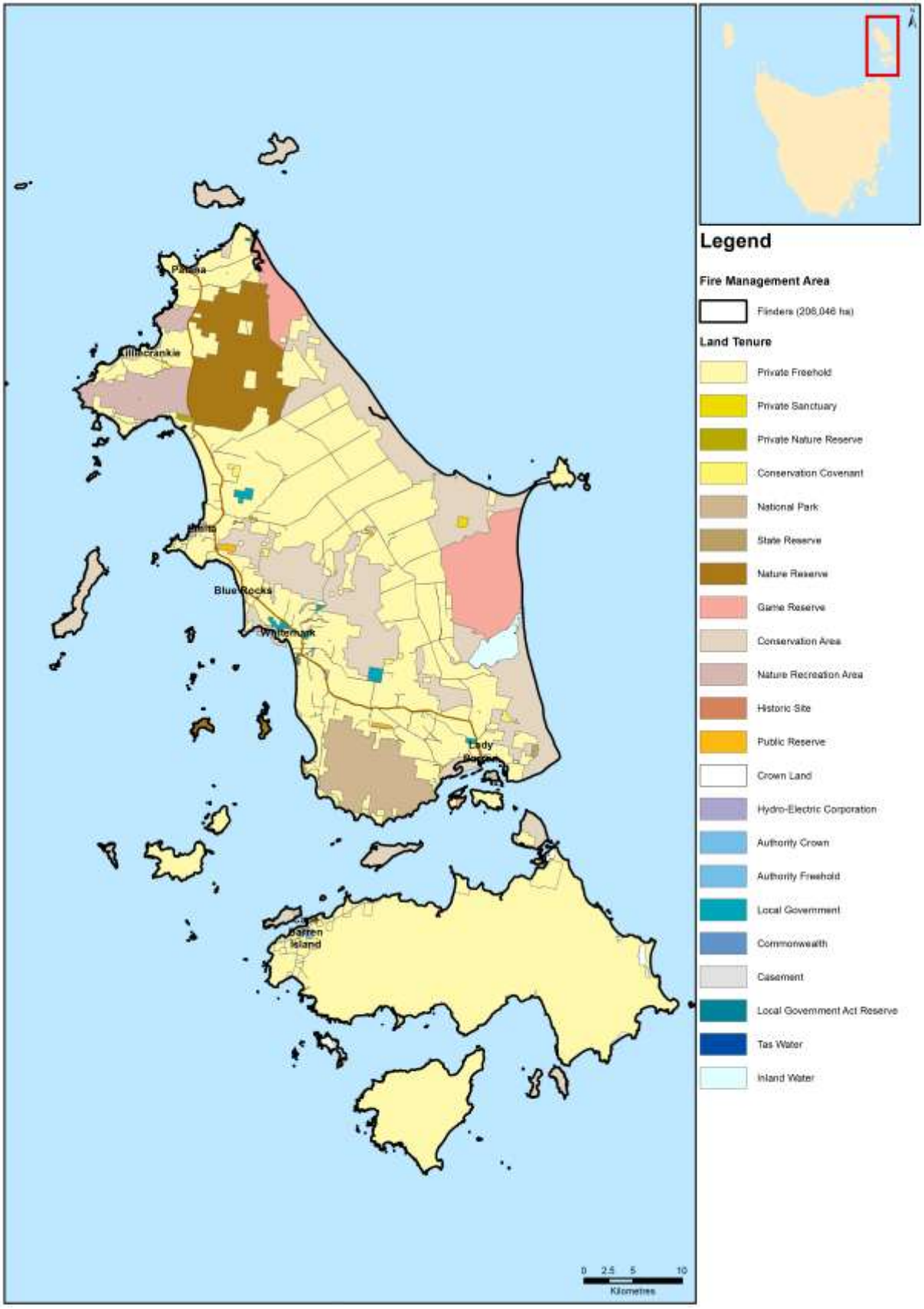
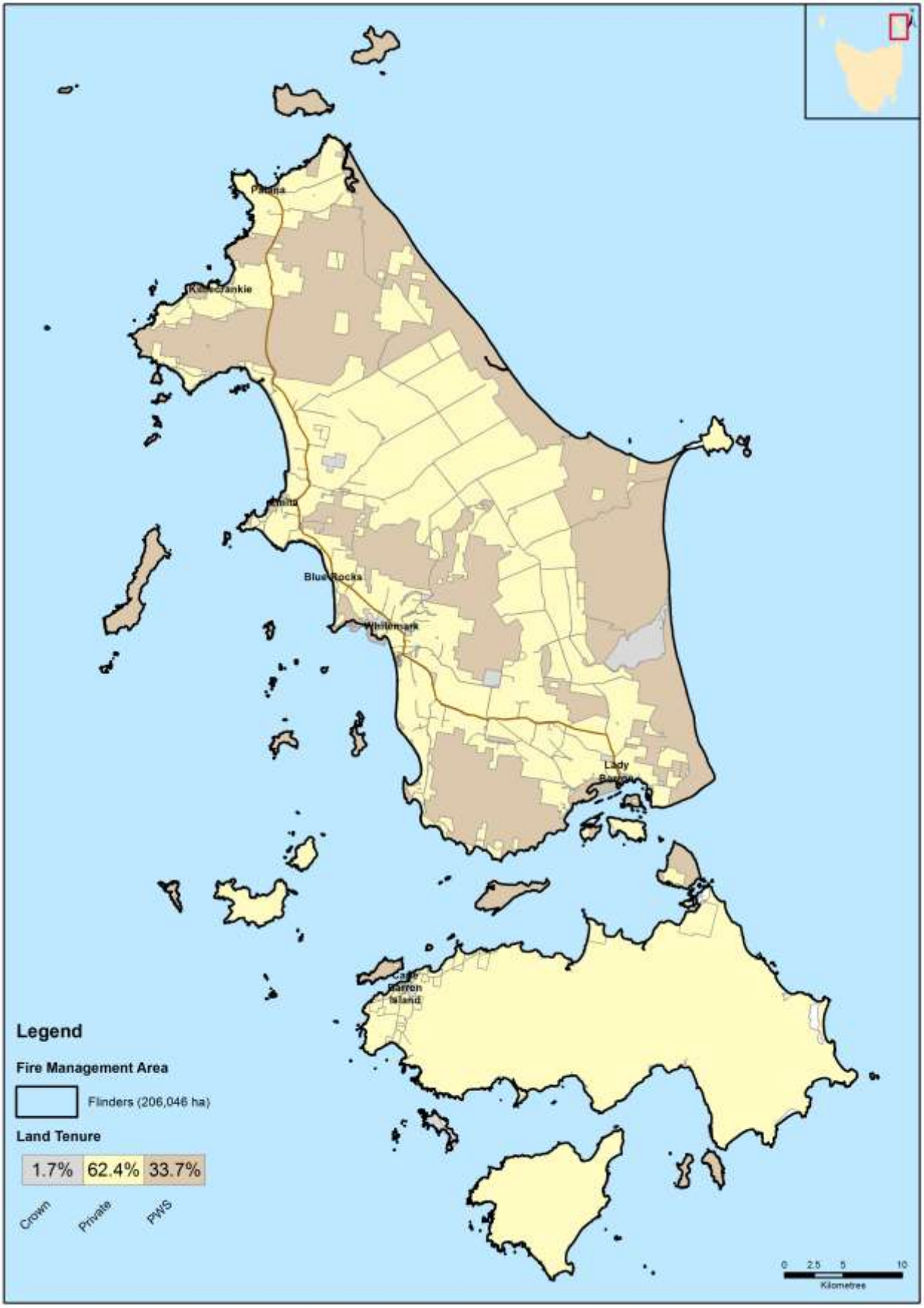
State Fire Management Council, 2014, *Bushfire in Tasmania: A New Approach to Reducing Our Statewide Relative Risk.* Department of Police and Emergency Management, Hobart.

Appendices

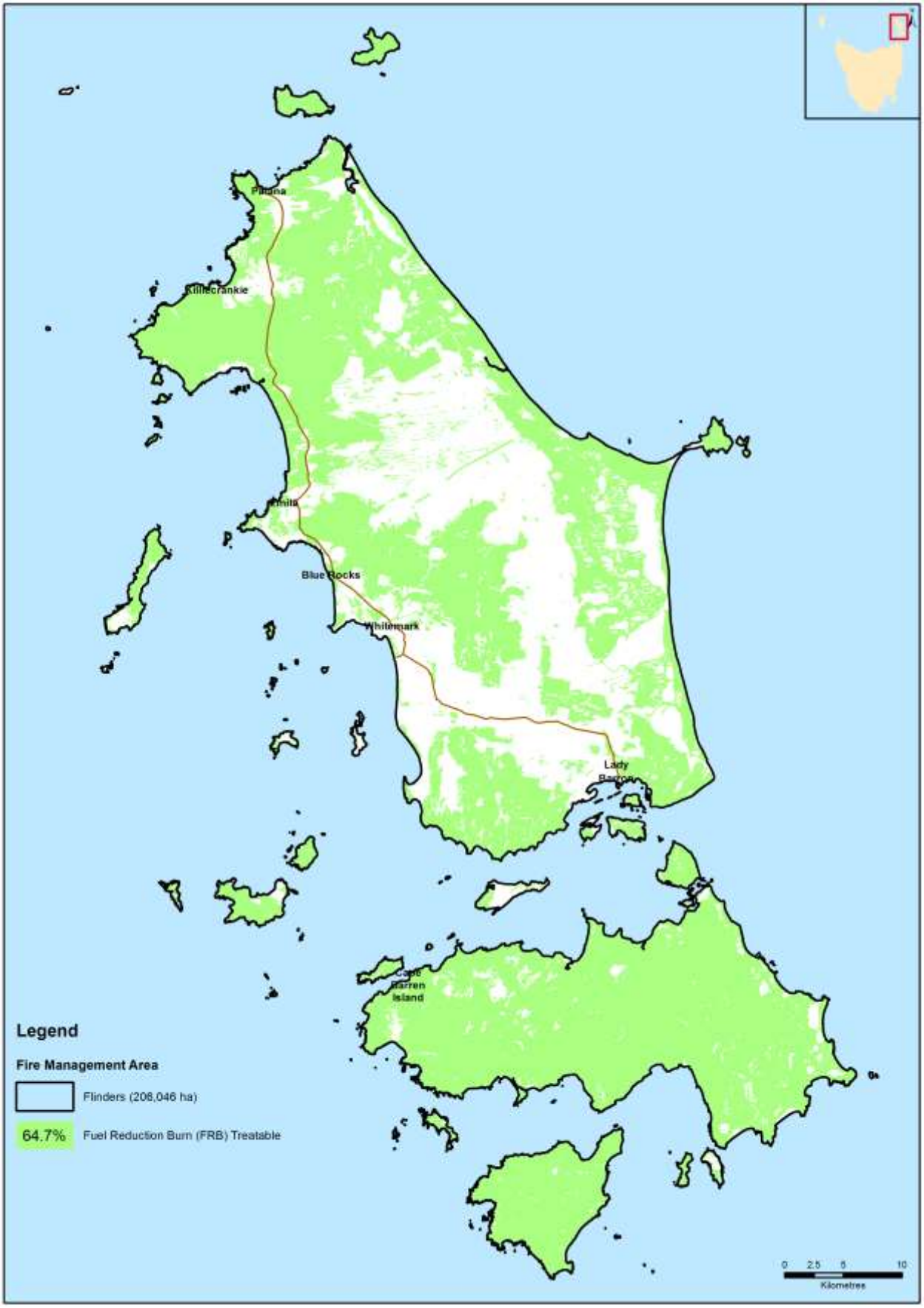
Appendix 1 – Maps of FMAC area displaying context information



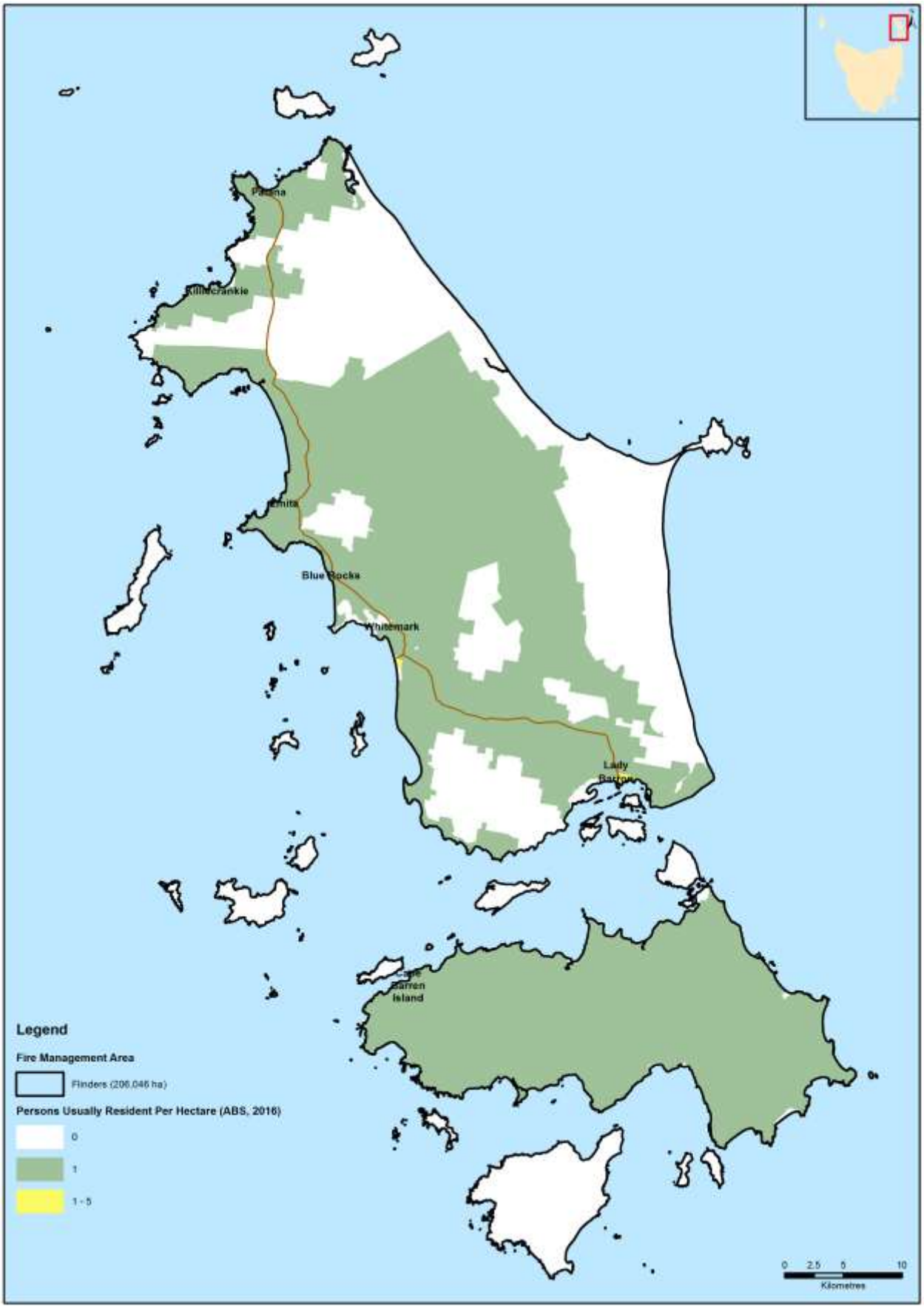
Map 1: Land Tenure



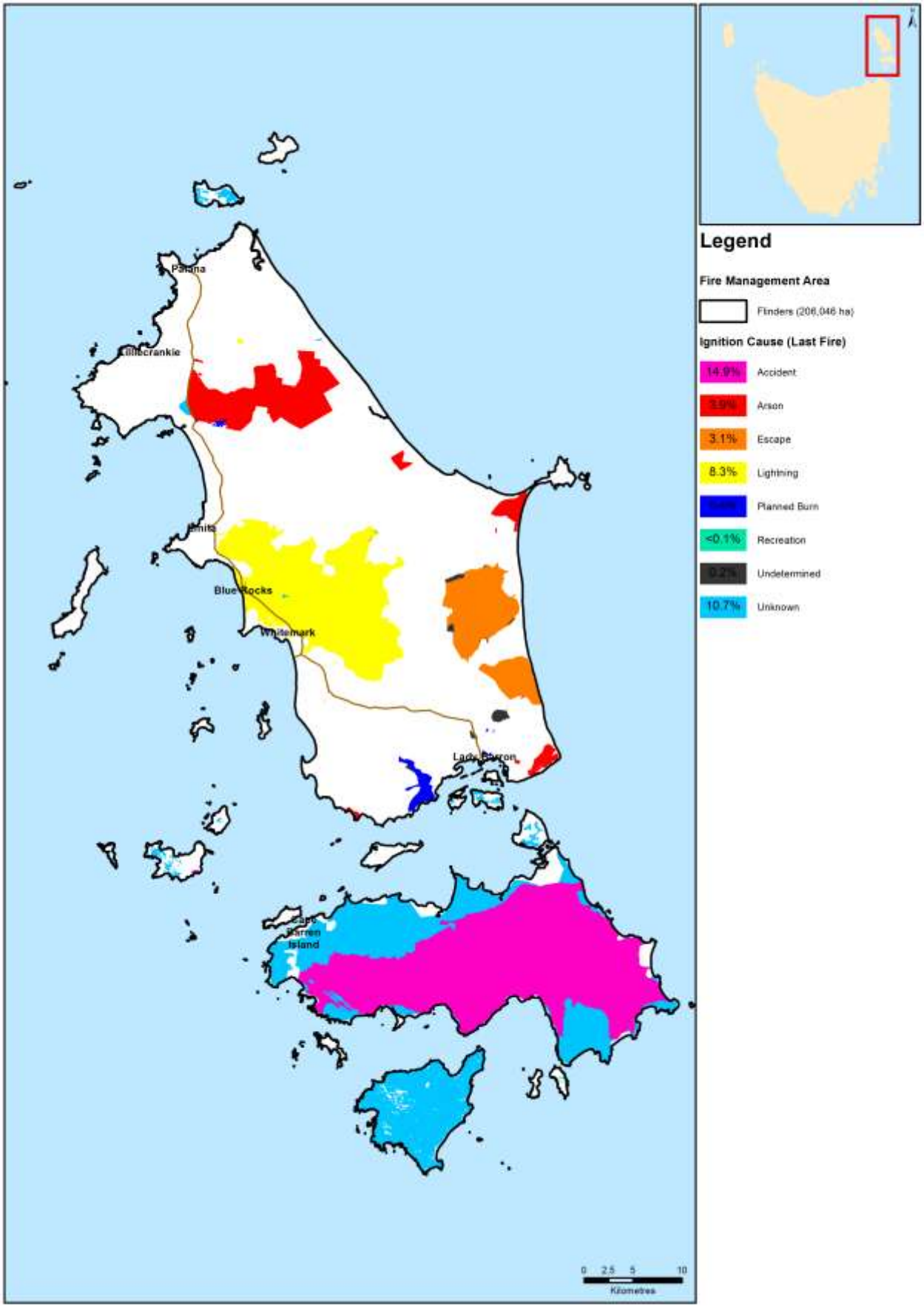
Map 2: Land Tenure (3 Classes)



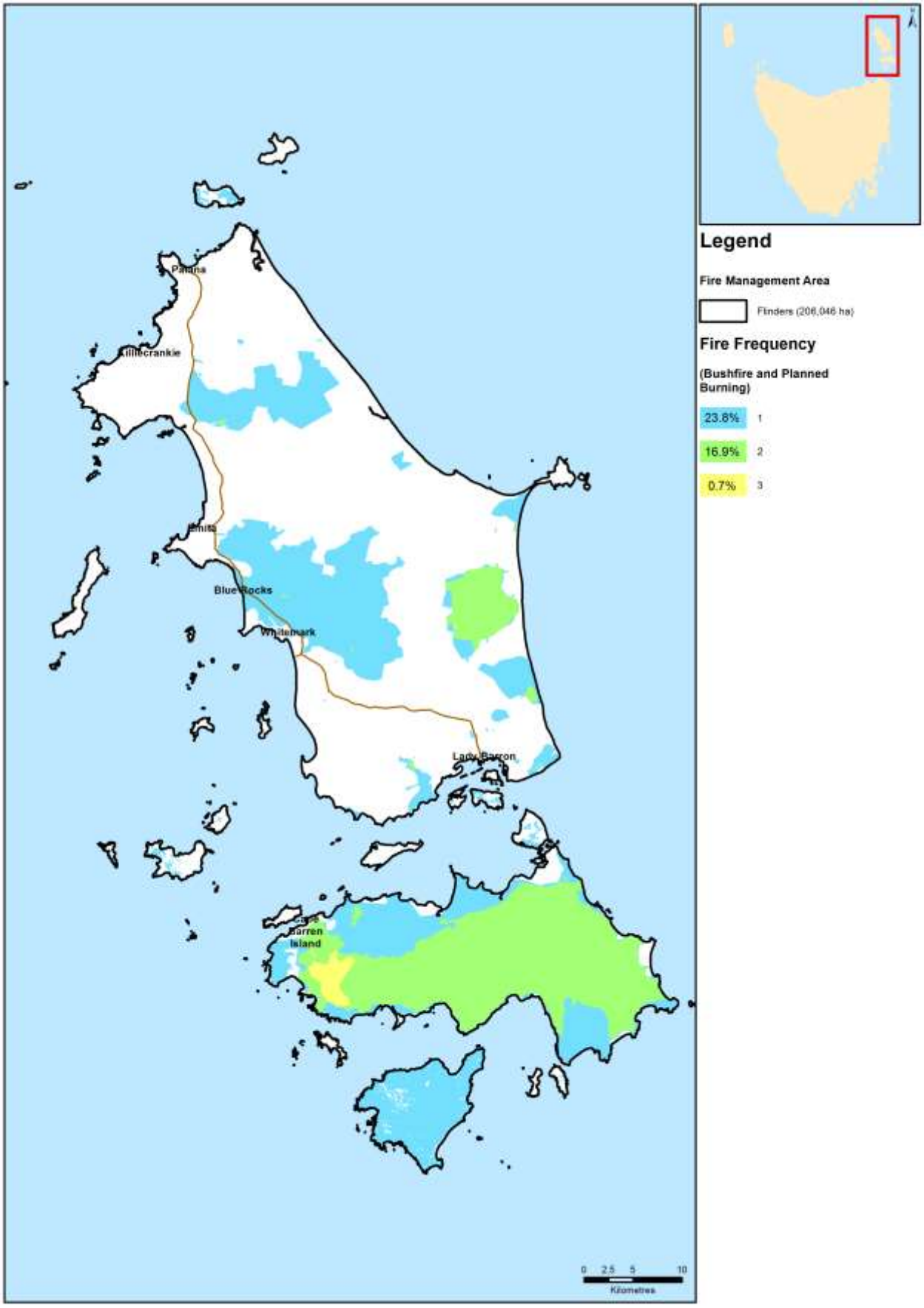
Map 3: Fuel Treatability



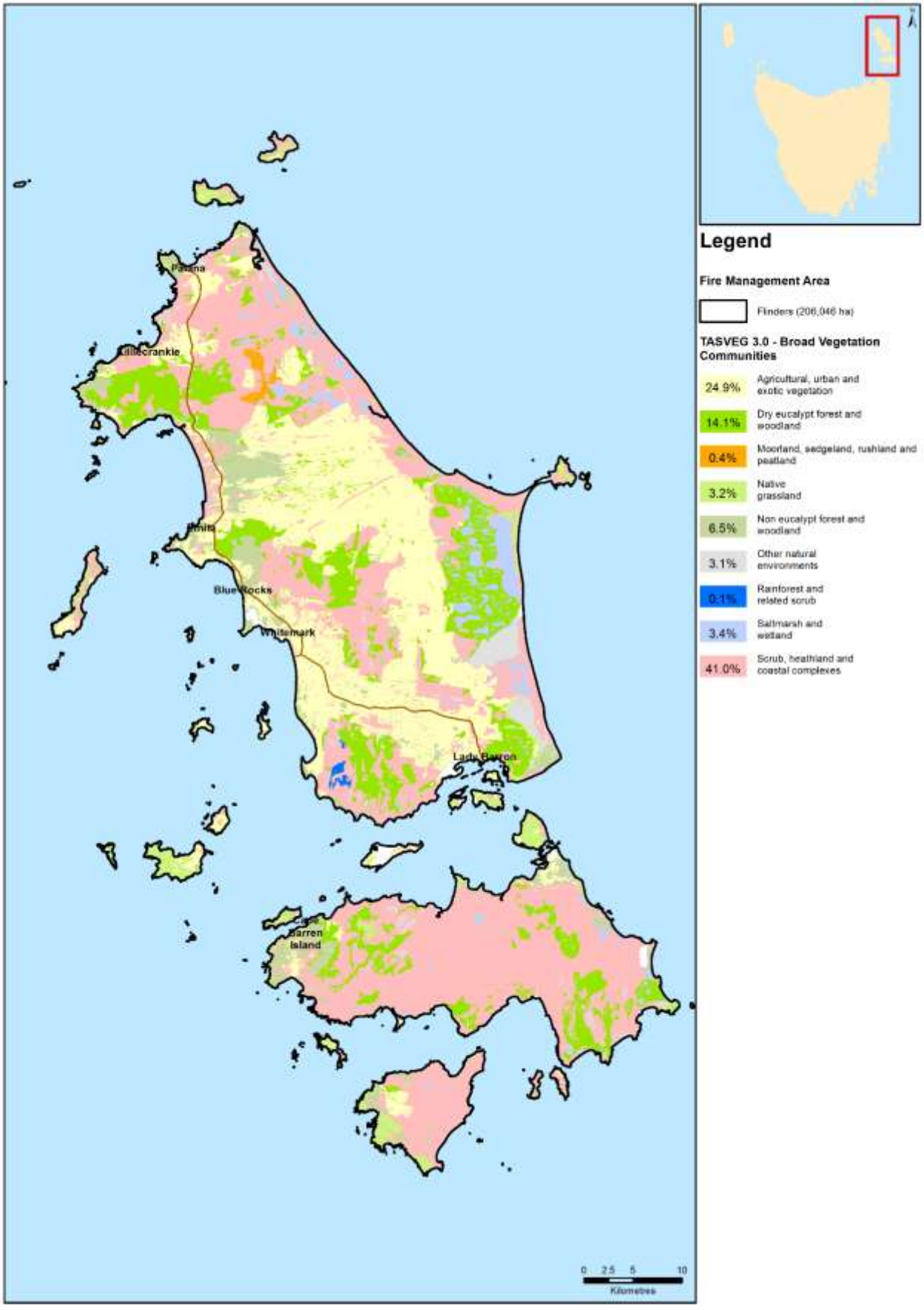
Map 4: Population



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 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;
- Sustainable Timbers Tasmania;
- Tasmanian Farmers and Graziers Association;
- State Emergency Service:
- Forest Industries Association of Tasmania;
- Local Government Association of Tasmania;
- Resource management and conservation, DPIPWE;
- Natural Resource Management(NRM);
- Tasmanian Aboriginal land and Sea Council;

Additional working groups were set up to provide advice 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 likely hood 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

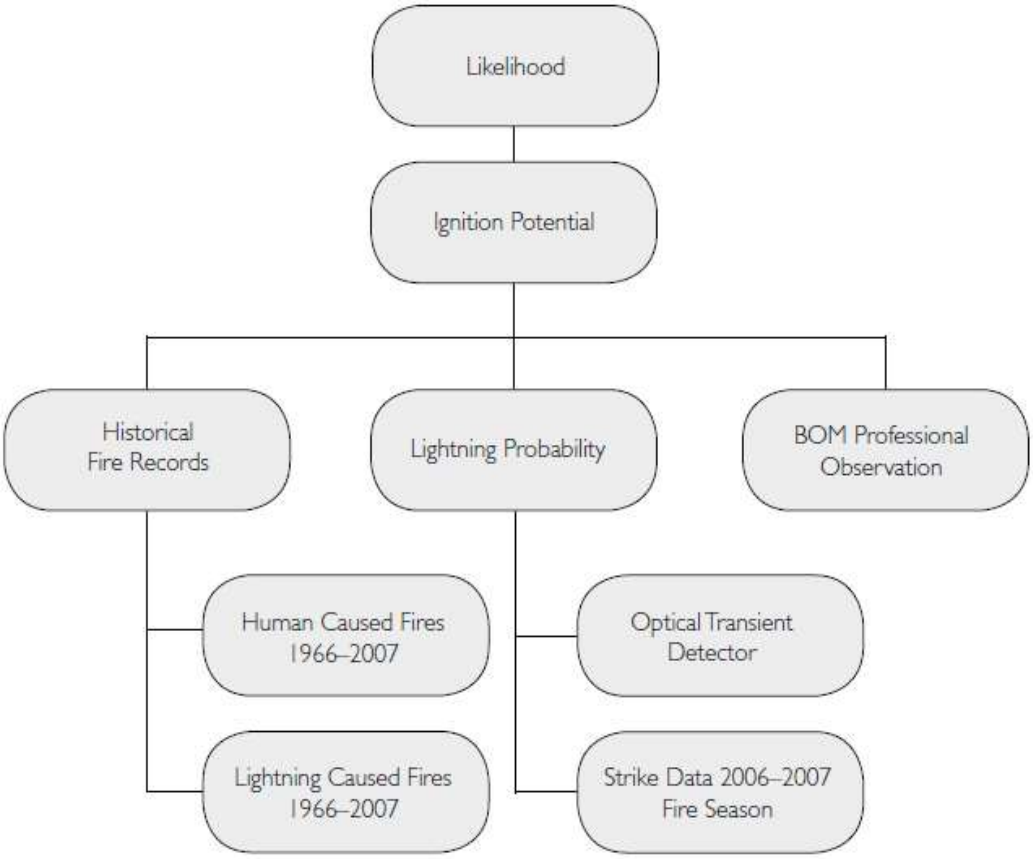
- Fire behaviour potential - the manner in which fuel ignites, flame develops, and fire spreads and exhibits other related phenomena (likelihood).

- Ignition potential - the probability or chance of fire starting as determined by the presence of causative agents (likelihood).

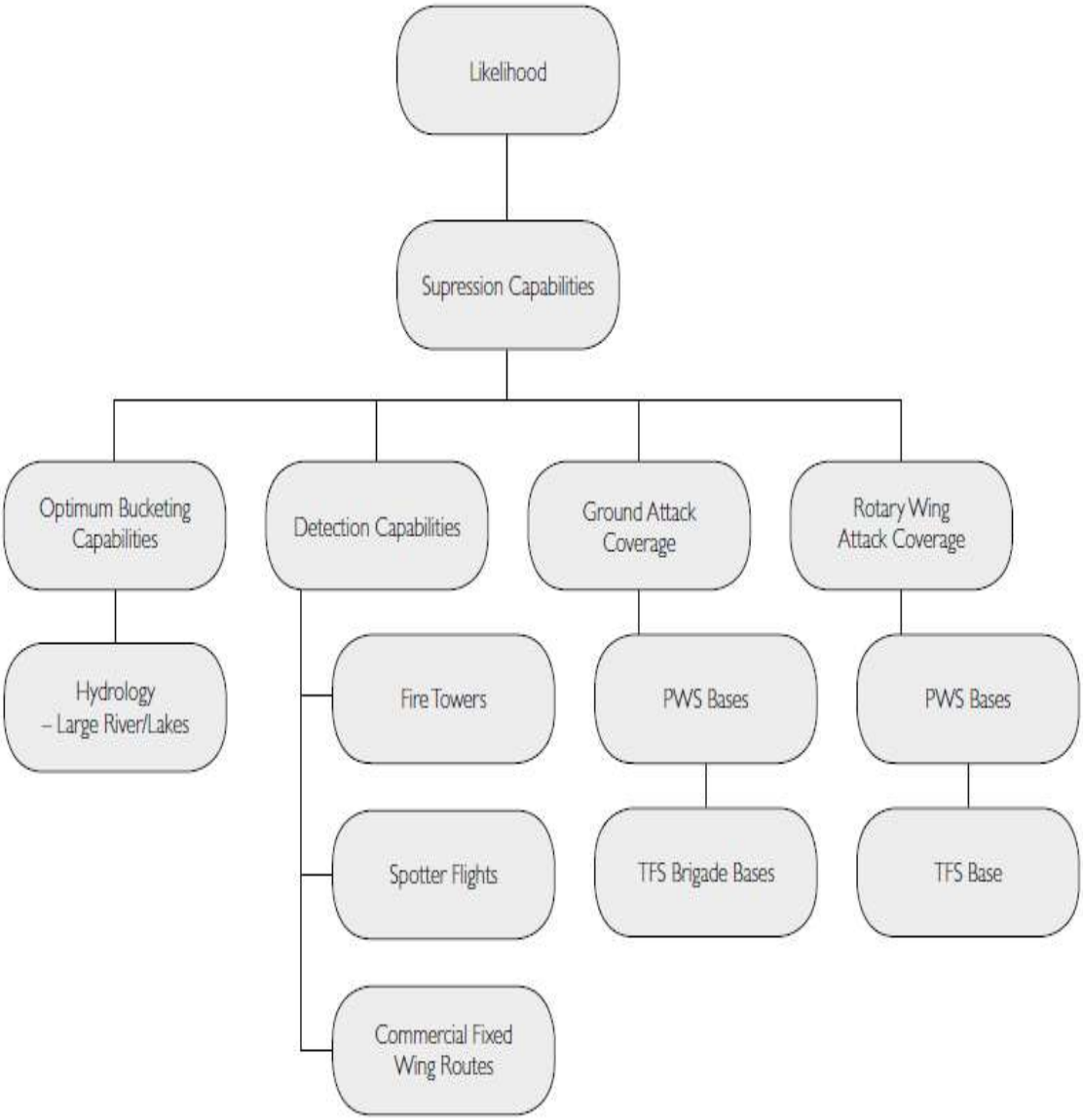
- Suppression capability - the factors and limitations that are related to the ability to contain a bushfire upon detection (likelihood).

- 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).

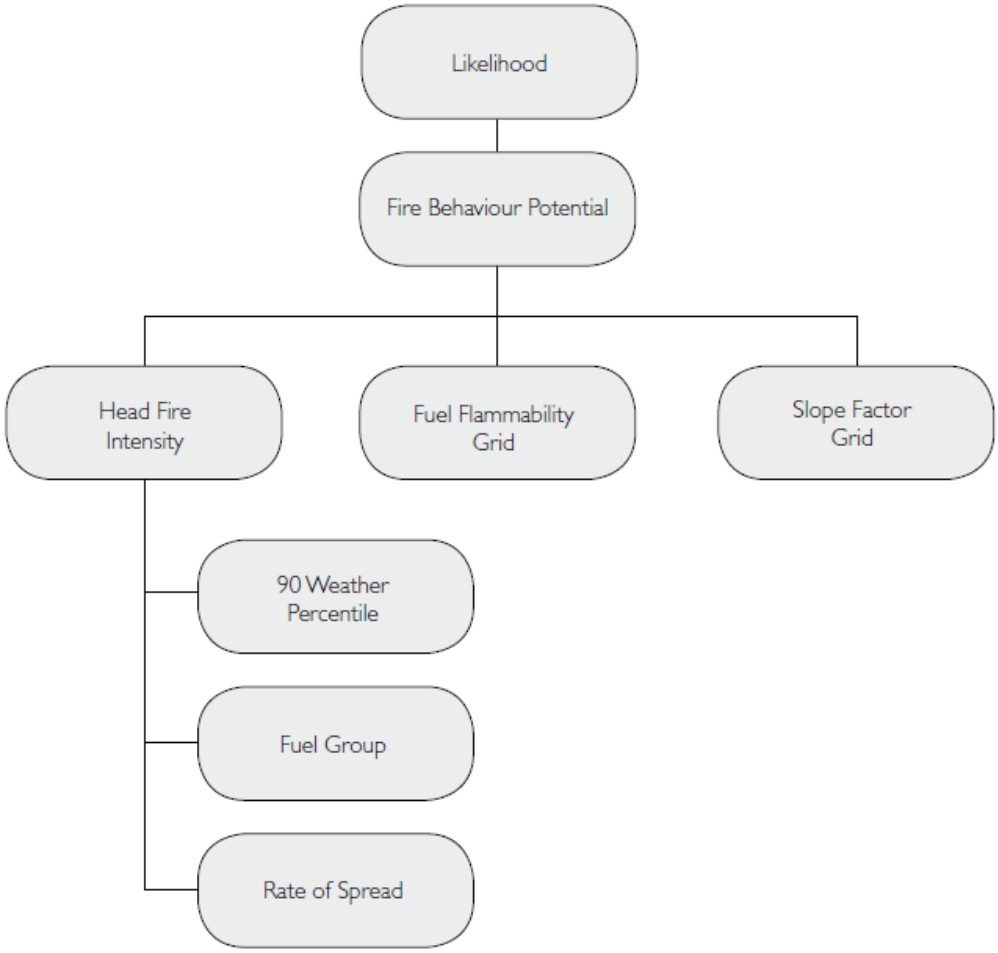
Ignition potential



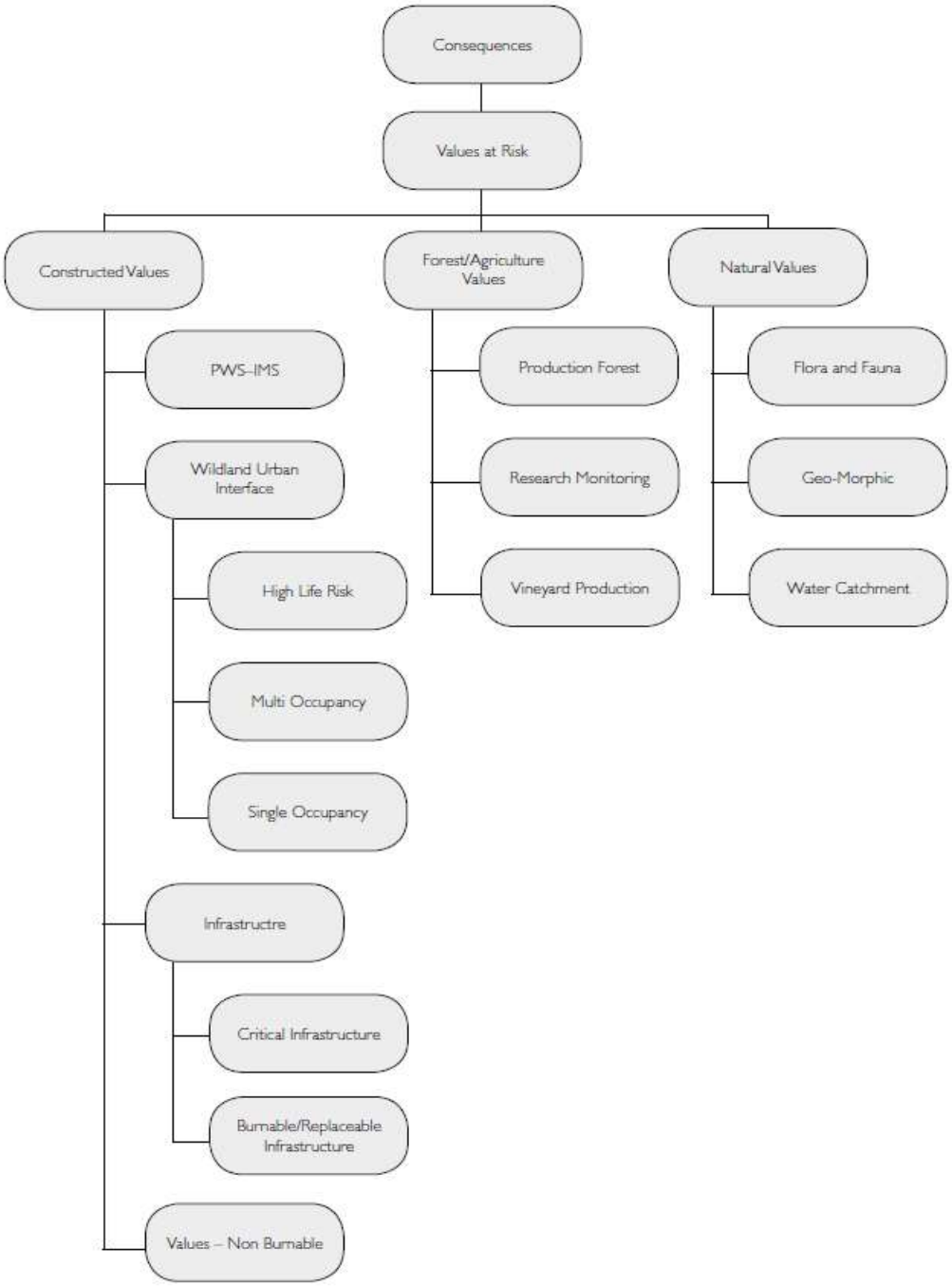
Suppression Capabilities



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 obj3ects 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 0ne hundred Thousand), Heath 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, heath 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 missis 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

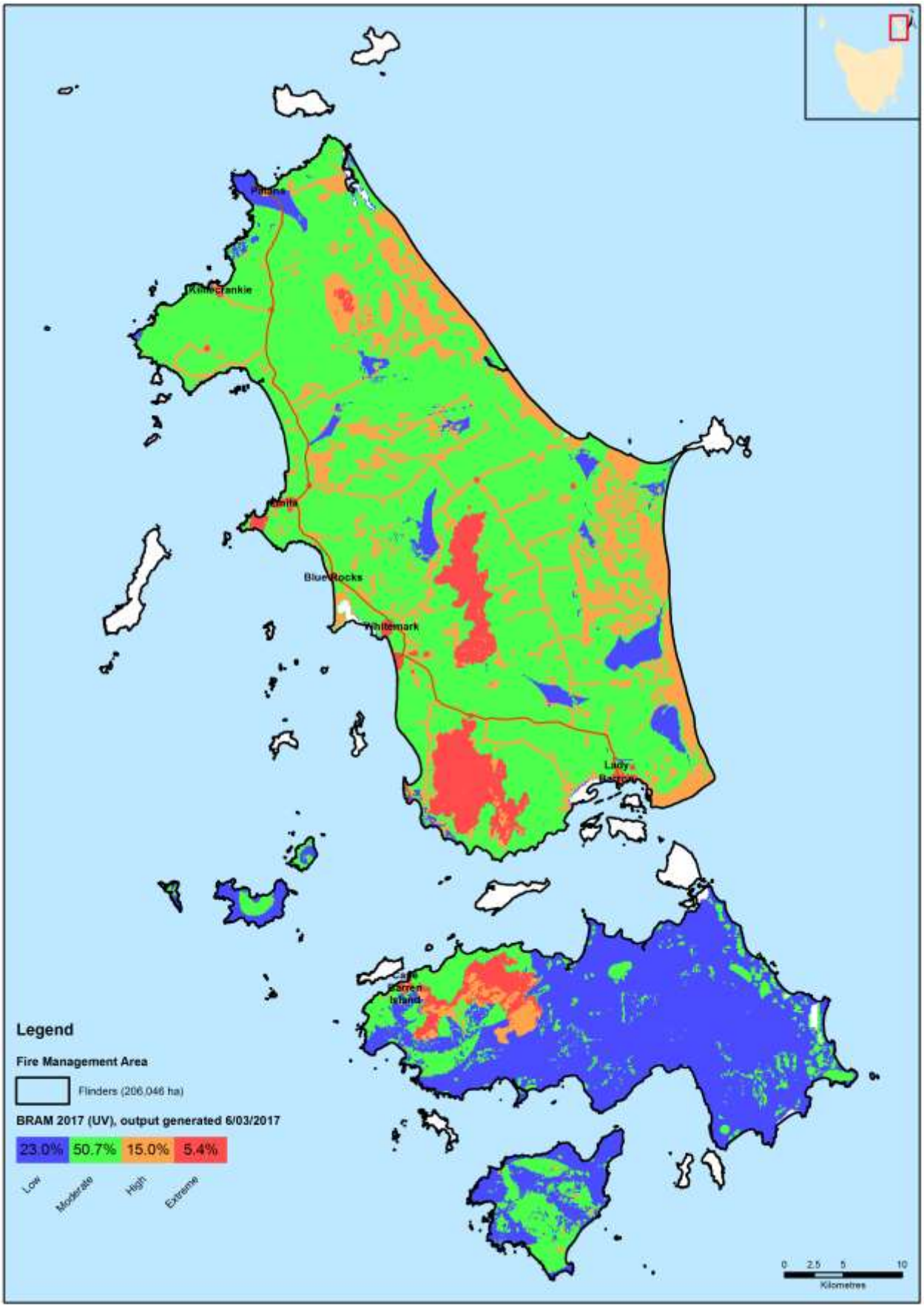
Likelihood level	Frequency	Average Recurrence Interval	Annual Exceedance probability
Almost certain	One of more per year	< 3 years	.0.3
Likely	Once per 10 years	3 – 30 years	0.031 – 0.3
Possible	Once per one hundred years	31- 300 years	0.0031 – 0.03
unlikely	One per thousand years	301 – 3,000 years	0.00031 – 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

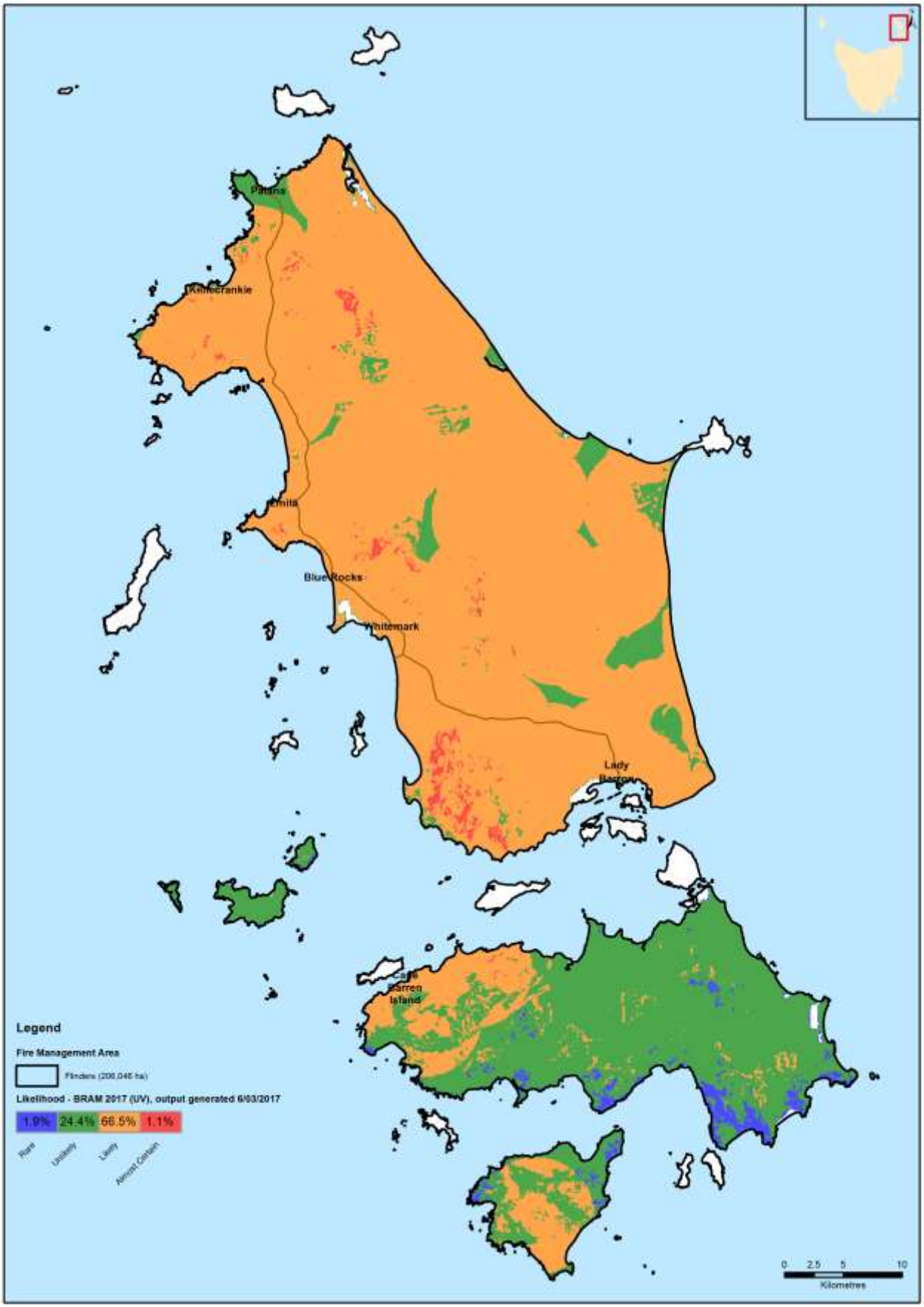
The qualitative risk matrix combines a level of consequence with a level of likelihood to determine a level of risk. The risk level, together with the confidence in the overall assessment process and other factors, will determine the need for detailed analysis and inform the treatment of risks.

	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

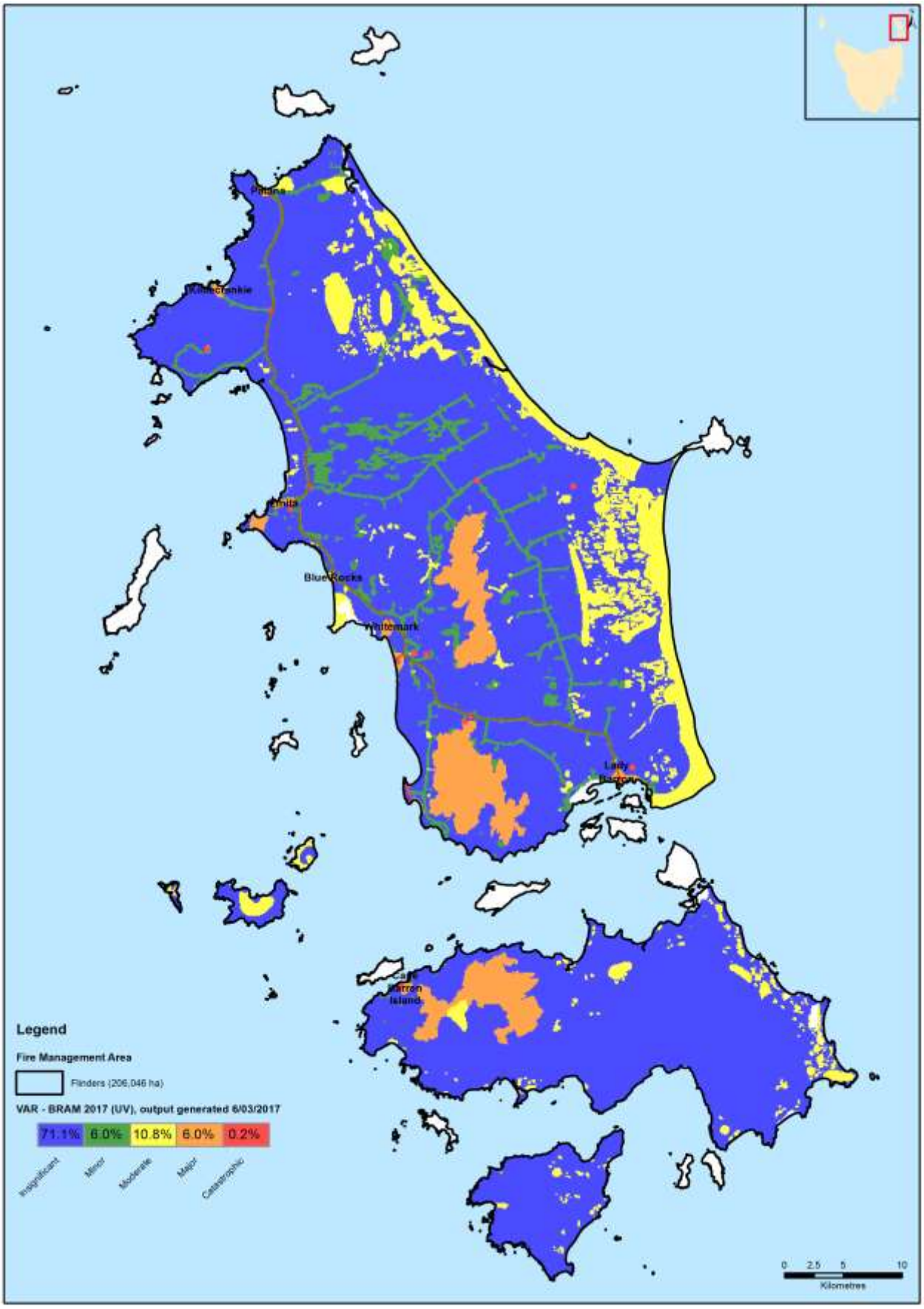
Appendix 4 – Bushfire Risk Assessment Maps



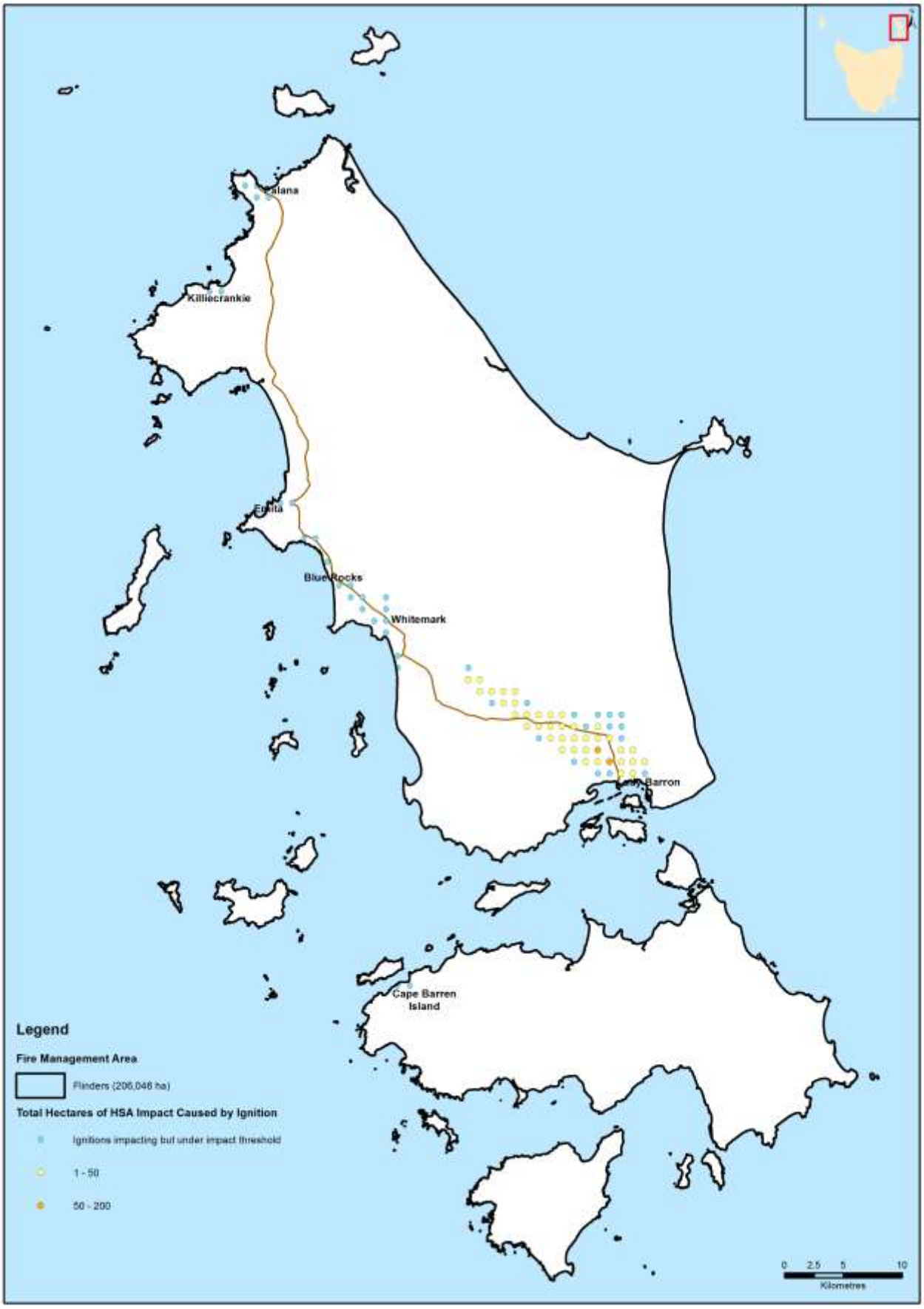
Map 8: Bushfire risk assessment model



Map 9: Bushfire likelihood



Map 10: BRAM –Values at Risk



Map 11: Potential impact sources

Appendix 5 – Community specific plans already in place

Community Bushfire Protection, Responses and Mitigation Plan existing for the Furneaux regions are:

Town / Area	Current Plans	Review by
Emita Area	TFS Response & Protection Plans	As per TFS review program
Killiecrankie Area	TFS Response & Protection Plans	As per TFS review program
Lady Barron Area	TFS Response & Protection Plans TFS Mitigation Plan	As per TFS review program
Palana Area	TFS Response & Protection Plans	As per TFS review program
truwana – Cape Barren Is.	TFS Response & Protection Plans TFS Mitigation Plan	As per TFS review program
Whitemark Area	TFS Response & Protection Plans	As per TFS review program
West End	TFS Response & Protection Plans	As per TFS review program
Blue Rocks	TFS Response & Protection Plans	As per TFS review program

Explanation of plans:

1. **Community Bushfire Response Plan:**
   The purpose of a Community Bushfire Response Plan, (CBRP) is for emergency managers 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.

Appendix 6 – Implementation Strategy

FPP management program	Performance element	Scheduled date	Coordinated by
FMAC membership to be reviewed	All stakeholders in FPP represented	2015	SFC/ FMAC chair
Plan development	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
FMAC meetings		Minimum 2 times a year	FMAC chair In consultation with committee
Annual review - current FPP	Completed burns	Dec 2015	FMAC
	Infrastructure maintenance		
Annual review - current FPP	Completed burns	Dec 2016	FMAC
	Infrastructure maintenance		
Annual review - current FPP	Completed burns	Dec 2017	FMAC
	Infrastructure maintenance		
Annual review - current FPP	Completed burns	Dec 2018	FMAC
	Infrastructure maintenance		
Annual review - current FPP	Completed burns	Dec 2019	FMAC
	Infrastructure maintenance		
FPP review		Dec 2020	FMAC/ SFC
FPP rewrite		Dec 2020	FMAC/ SFC

	Protection element	Priority	Status	Strategic coordination	Implementation coordination
Community					
Lady Barron	Mitigation Plan	High	Completed	BRU	TFS
	Community Protection Plan	High	Completed	BRU	TFS/Community Protection Planning
	Community Response Plan	High	Completed	BRU	TFS/Community Protection Planning
	Bushfire Ready Neighbourhood Program	High	Completed	BRN	TFS/ Community Development Unit (David Cleaver)
Emita	Mitigation Plan	High	Proposed for 2017/18 fire season	BRU	TFS
	Community Protection plan	High	Completed	BRU	TFS/Community Protection Planning
	Community Response Plan	High	Completed	BRU	TFS/Community Protection Planning
	Bush fire ready neighbourhood Program	High	Completed	BRN	TFS/ Community Development Unit
The Corner (Cape Barren Is.)	Mitigation Plan	High	Completed	BRU	TFS
	Community Protection Plan	High	Completed	BRU	TFS/Community Protection Planning
	Bushfire Ready Neighbourhood Program	High	In progress	BRN	TFS/ Community Development Unit
	Community Response Plan	High	Proposed for 18/19 fire season	BRU	TFS/Community Protection Planning
	Fire Management Plan - CBI	High	In progress and planned for completion by 2019	Joint Project ALCT, CBIAA & TFS	Joint Project ALCT, CBIAA & TFS
Killiecrankie	Bushfire Ready Neighbourhood Program	Mod	Completed	BRN	TFS/ Community Development Unit
	Community Protection Plan		Completed	BRU	TFS
	Community response plan		Completed	BRU	TFS
Palana	Bush fire ready neighbourhood Program	Mod	Completed	BRN	TFS/ Community Development Unit
	Community Protection Plan		Completed	BRU	TFS/Community Protection Planning
	Community response plan		Completed	BRU	TFS TFS/Community Protection Planning
			Completed		
West End	Bushfire Ready Neighbourhood Program	High	Completed	BRN	TFS/Community Development Unit
	Burning program Mt Tanner		In development Proposed 2019/20		PWS
	Community Protection Plan		Completed	BRU	TFS/Community Protection Planning
	Community response plan		Completed	BRU	TFS TFS/Community Protection Planning
Blue Rocks	Community Protection Plan	Mod	Completed	BRU	TFS/Community Protection Planning

	Protection element	Priority	Status	Strategic coordination	Implementation coordination
	Community response plan		Completed		TFS /Community Protection Planning
	Bushfire Ready Neighbourhood Program		Completed	BRN	TFS/ Community Development Unit
Big River	Bushfire Ready Neighbourhood Program	High	Completed	BRN	TFS/ Community Development Unit
Whitemark	Community Protection Plan	Mod	Completed	BRU	TFS/Community Protection Planning
	Community Response Plan		Completed	BRU	TFS/Community Protection Planning
	Bushfire Ready Neighbourhood Program		Completed	BRN	TFS/ Community Development Unit
Bluff Road/ Airport precinct	Mitigation plan or burn plans	High	Undergoing field verification by BRU Proposed 2018/19	TFS	TFS
	Bushfire Ready Neighbourhood Program		Completed	BRN	TFS/ Community Development Unit
Fire infrastructure					
Strategic roads					
Five Mile Jim	Slashing road side verges		On going		Council to ensure that strategic roads and roads adjacent to power infrastructure are a higher priority in their program.
Logan's Lagoon	Slashing road side verges		On going		Council to ensure that strategic roads and roads adjacent to power infrastructure are a higher priority in their program.
Summers Road	Slashing road side verges		On going		Council to ensure that strategic roads and roads adjacent to power infrastructure are a higher priority in their program.
Memana Road to Patriarch Inlet	Slashing road side verges		On going		Council to ensure that strategic roads and roads adjacent to power infrastructure are a higher priority in their program.
Cameron's Lagoon Road	Slashing road side verges		On going		Council to ensure that strategic roads and roads adjacent to power infrastructure are a higher priority in their program.

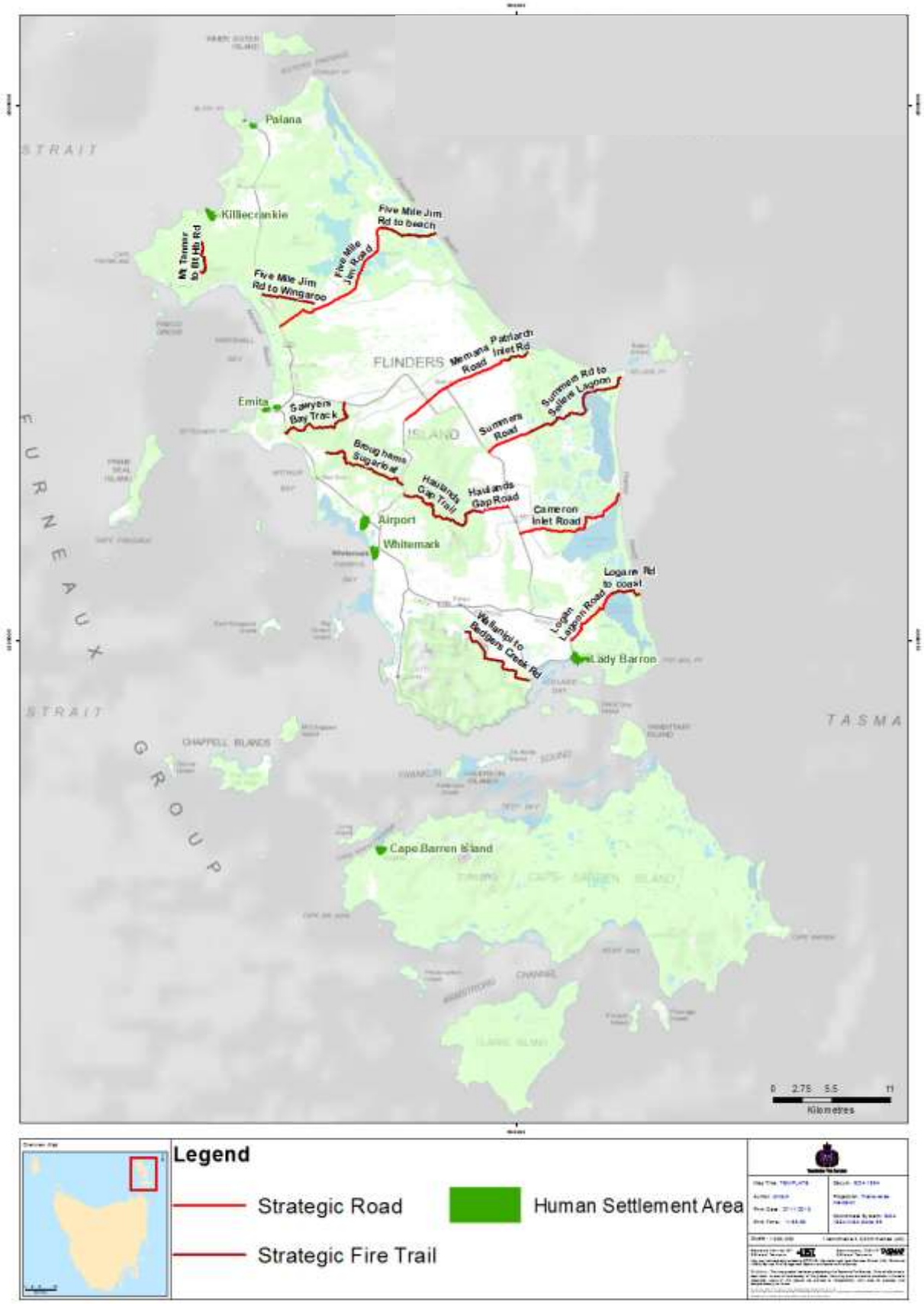
	Protection element	Priority	Status	Strategic coordination	Implementation coordination
Fire trails					
Haulands Gap	Reopen to class 5 standard	High	Works and maintenance program undertaken. Open to Class 5 standard	PWS	PWS (work is subject to funding)
Brougham's Sugarloaf	Reopen to class 5 standard	High	Works and maintenance program to be developed (subject to funding and approvals) PWS to continue to seek funding	PWS	PWS
Sawyers Bay Track	Reopen to class 5 standard	High	Works and maintenance program undertaken. Open to Class 5 standard	PWS	PWS
Summers road to Sellers Lagoon	Priority trail for east coast. Clear and bring back to Mineral earth, Class five standard.	High	Track reinstated by PWS after Lackrana wildfire Oct 2015. Works and maintenance program developed with maintenance program in place to maintain to Class 5 standard	PWS	PWS
Wallinipi to Badger Corner road	Clear and bring back to Mineral earth, Class five standard	High	Works and maintenance program to be developed (subject to funding and approvals) PWS to continue to seek funding	PWS	PWS
Patriarch inlet road	Priority trail for east coast. Clear and bring back to Mineral earth, Class five standard.	High	Track reinstated by PWS after Lackrana wildfire Oct 2015. Works and maintenance program to maintain to class 5 standard.	PWS	PWS
Five Mile to beach	Priority trail for east coast. Reform to class 5	High	Works and maintenance program to be developed (subject to funding and approvals) PWS to continue to seek funding	PWS	PWS
Mt Tanner to Boat harbour road	Reform to class 5	High	Works and maintenance program undertaken. Open to Class 5 standard	PWS	PWS
Logan's road to coast	Priority trail for east coast. Reform to class 5	High	Works and maintenance program to be developed (subject to funding and approvalsCurrent 4WD access only and would require significant	PWS	PWS

	Protection element	Priority	Status	Strategic coordination	Implementation coordination
			investment to ugrade to Class 5 standard.		
Fire breaks					
Wingaroo	Annual slashing		On going	PWS	PWS
Lady Barron	Annual slashing		On going		Crown land services
Grassland APZ	Authority for neighbours to slash adjacent to own property on crown		Conceptual stage – no action taken yet	FMAC	Crown lands service in conjunction with PWS
Communication infrastructure					
Walkers Lookout	Slash around site		Requires maintenance		Community / council
Mt Tanner	Apz1 around tower		Requires maintenance		Telstra/ FMAC
Vinegar Hill	Incorporate into Mitigation Plan for Lady Barron			FMAC	
Power Lines					
	Slashing and clearing under power lines				
Strategic fuel reduction program					
Mt Tanner	Develop and implement burn plans to reduce fuel		Plan being developed. Delayed due to private property issues.Potential for 2019/2020	PWS	PWS
Shag Lagoon	Develop and implement burn plans to reduce fuel		Planning commenced. (Flinders North and SHLCA002SFR burn units)	PWS	PWS
Darling Range	Develop and implement burn plans to reduce fuel		Desktop planning commenced (Big Silver and Gambles Creek)	PWS	PWS
Lackrana Wildlife Sanctuary	Develop and implement burn plans to reduce fuel		Burns completed Cameron Inlet burn (LACCA001SFR) and Sellars Lagoon burn (SELGR001SFR) burnt by wildfire October 2015)	PWS	PWS
Wingaroo	Develop and implement burn plans to reduce fuel		15% completed autumn 2015, proposed to be targeted again autumn 2018	PWS	PWS

	Protection element	Priority	Status	Strategic coordination	Implementation coordination
Strzelecki	Develop a fuel reduction program to reduce 60 year old fuels on the mountain		Not started	PWS	PWS
East coast (Summers road) *Patriarch*	Develop and implement burn plans to reduce fuel Strengthen fire trail		Desktop planning commenced for Patriarch Conservation Area	PWS	PWS
Lady Barron TLF101BU	Develop and implement burn plans to reduce fuel		Community Mitigation Plan completed. Burnt 2018 & 100% completed	TFS	TFS
Castle Rock TFF301BU	Develop and implement burn plans to reduce fuel		Approved and planned for autumn burn 2019	TFS	TFS
Vinegar Hill – Nth TFF311BU	Develop and implement burn plans to reduce fuel		Community Mitigation Plan completed. Approved and planned for autumn burn 2019	TFS	TFS
Lady Barron – North TFF310BU	Develop and implement burn plans to reduce fuel		Planned for autumn burn 2019	TFS	TFS
Blue Rocks (east of Palana Road) TFF303BU	Develop and implement burn plans to reduce fuel		Track rolled and burning along western edge achieved 3ha's of 89ha. Approx. 5% completed and approved for completion autumn 2019	TFS	TFS
Truwana (Cape Barren Island)	Develop and implement burn plans to reduce fuel		Community Mitigation Plan completed. CBIAA & truwana Rangers implementing plan and conducting multiple cultural burns to protect island assets.	CBIAA / truwana Rangers	CBIAA / truwana Rangers
Pot Boil Road TFF317BU,	Develop and implement burn plans to reduce fuel		Approved and planned for autumn burn 2019	TFS	TFS
FI Airport TFF315BU	Develop and implement burn plans to reduce fuel		Approved and planned for autumn burn 2019	TFS	TFS
Killiecrankie West TFF316BU	Develop and implement burn plans to reduce fuel		Burn planned but suspended pending landowner agreement	TFS	TFS

	Protection element	Priority	Status	Strategic coordination	Implementation coordination
Community infrastructure					
Power station	Mowing		Ongoing routine maintenance		Hydro
Whitemark TasWater Treatment Plant	Protect above ground water pipes(poly) and plastic tanks	High	Establish buffer zones around infrastructure and ongoing maintenance	TasWater	TasWater
Lady Barron TasWater Treatment Plant	Protect above ground water pipes(poly) and plastic tanks (including infrastructure on Vinegar Hill)	High	Establish buffer zones around infrastructure and ongoing maintenance	TasWater	TasWater
truwana / CBI Fuel Modified Buffer Zone (FMBZ-Firebreaks)	Protect community and assets.	High	Establish a modified buffer zone around community infrastructure and ongoing maintenance	TFS / CBIAA	CBIAA

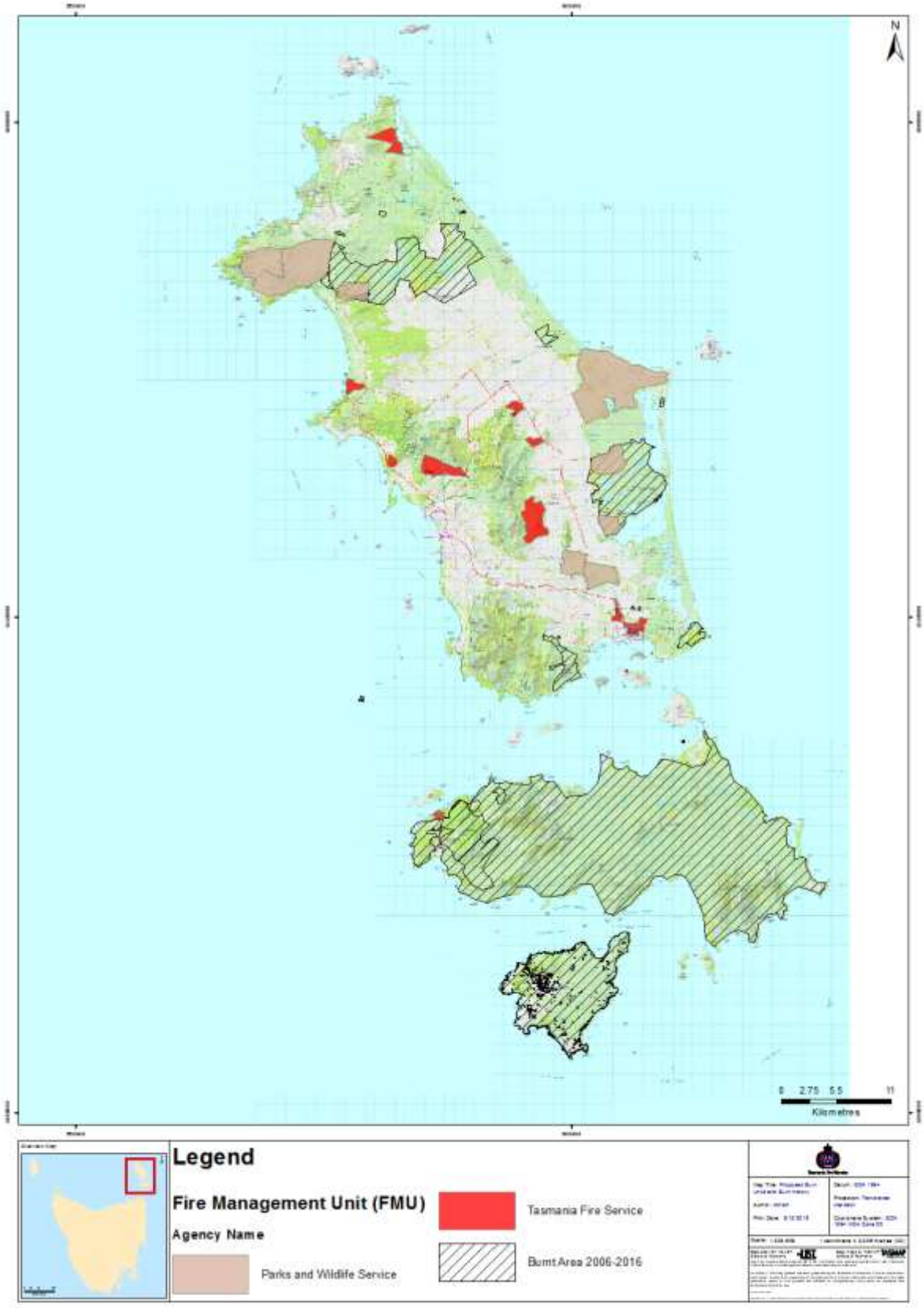
Appendix 7 - Strategic Fire Infrastructure



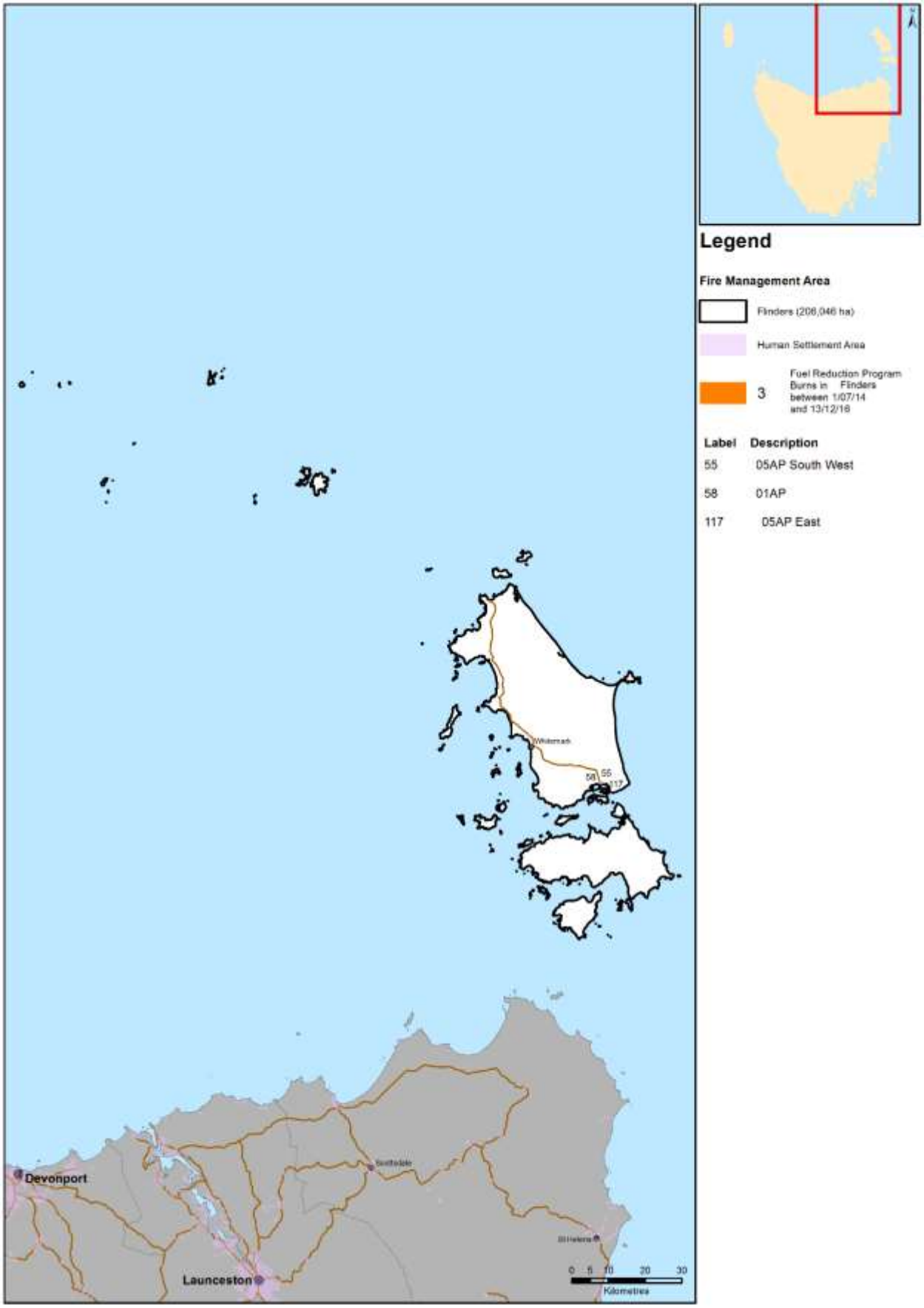
Map 12: Strategic Roads, Fire Trails and Human Settlement Areas

Map 13: Water Points

Appendix 8 - Strategic Fuel Management Program



Map 14: Strategic Fuel Management Program and Fire History



Map 15: Fire History since Program Inception (1st July 2014 to 4 November 2015)

Appendix 9 – Description of vegetation communities

Description of broad veg 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://dpipwe.tas.gov.au/conservation/vegetation-of-tasmania/from-forest-to-fjaedlmark-descriptions-of-tasmanias-vegetation-(edition-2)