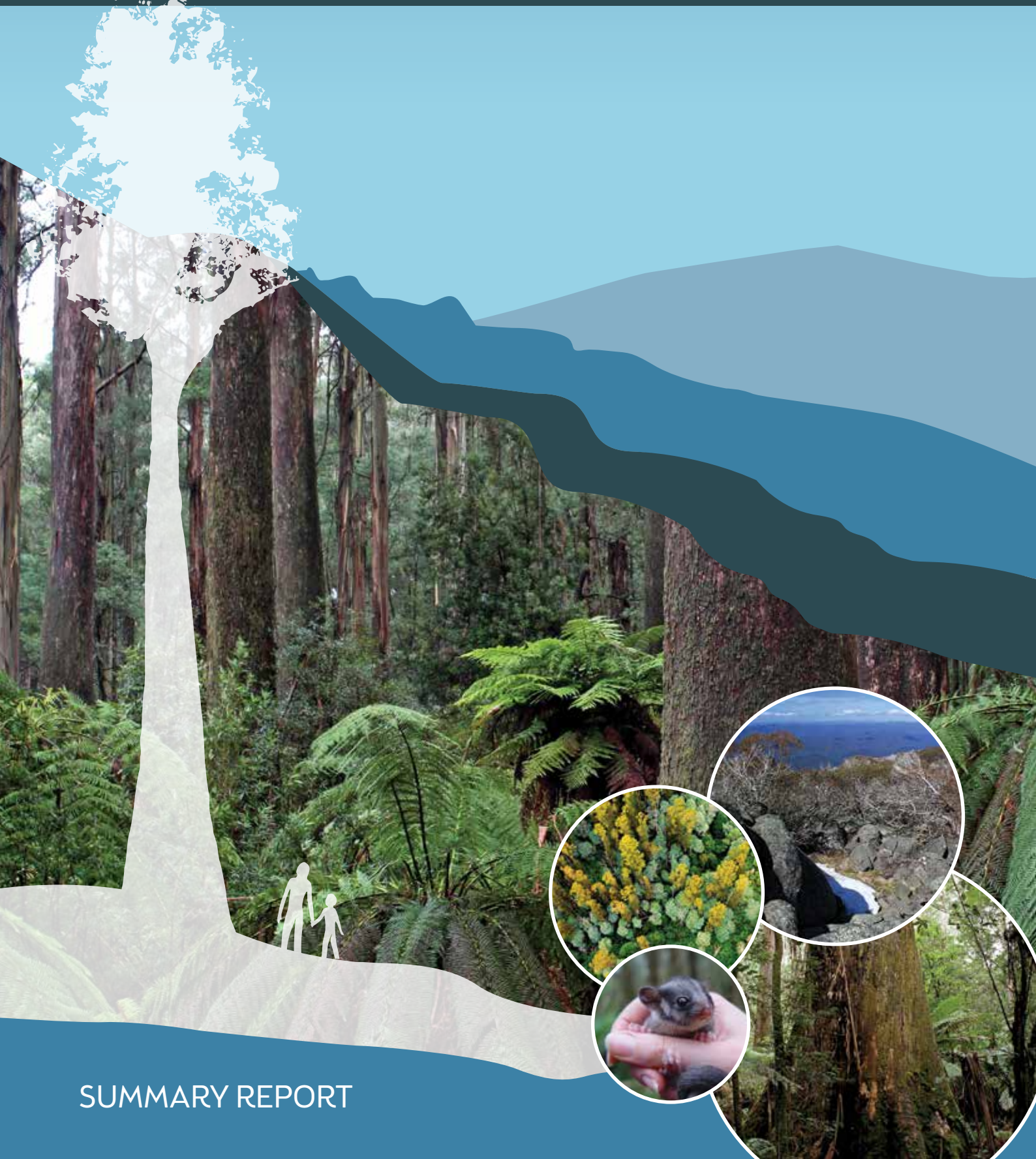


# Great Forest National Park

TENURE, VALUES AND RESERVE DESIGN METHODOLOGY



SUMMARY REPORT

# CONTENTS

A New Park for Melbourne & Victoria .....	4
Interstate Comparison – Greater Blue Mountains, New South Wales.....	4
Principles of Designing a Reserve for Conservation .....	7
Reserve Selection Criteria .....	7
Sub-catchment Analysis .....	8
Reserve Design Process .....	8
Maps.....	9
Great Forest National Park.....	10-11
Map 1: Existing Reserves.....	12-13
Map 2: Logging .....	14-15
Map 3: Fires.....	16-17
Map 4: Fires & Logging.....	18-19
Map 5: Ash Forests.....	20-21
Map 6: Leadbeater’s Possum.....	22-23
Map 7: Sooty Owl.....	24-25
Map 8: Baw Baw Frog .....	26-27
Map 9: Melbourne Catchments .....	28-29
Map 10: Rural Water Catchments.....	30-31
Map 11: Forest Carbon.....	32-33
Map 12: National Estate.....	34-35
Conclusion .....	36
Data Sources .....	38
Key References .....	39
Appendix - Criteria for the Assessment .....	40

## Great Forest National Park

Tenure, values and reserve design methodology

Published by the Working Group for the Great Forest National Park.

The Working Group for the Great Forest National Park includes Friends of Leadbeater’s Possum, Friends of Toolangi Forest, Knitting Nannas of Toolangi, Healesville Environment Watch Inc, MyEnvironment, Warburton Environment, The Wilderness Society Victoria, Victorian National Parks Association, Australian Conservation Foundation, individual conservationists and local residents.

The Working Group for the Great Forest National Park respectfully acknowledges Traditional Owners as the custodians of land and waters of the region.

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# A NEW PARK FOR MELBOURNE & VICTORIA

The Great Forest National Park will be to Melbourne what the Blue Mountains and its national parks are to Sydney. The Park will embrace the city of Melbourne, being a natural amphitheatre of hazy blue mountains to the east of the city. The protection of the Central Highlands' diverse natural and cultural values will provide long deserved and overdue recognition for the forests right on Melbourne's doorstep.

**The Great Forest National Park will provide an opportunity for people to experience this unique natural area through walking, camping, touring, four wheel driving, mountain biking, guided trips, skiing, multi-day hiking, canoeing, cycling, bed and breakfasts, day tripping or experiencing the cultural heritage of the region's Traditional Owners. It will attract local and international visitors alike.**

The proposed Park will value the region for its critical role in supplying 4 million people with some of the highest quality drinking water in the world, sustaining the most carbon dense forests and protecting critically endangered and rare wildlife.

The Park will enable the state of Victoria to match its counterparts in other states in recognising, valuing and celebrating Australia's globally significant biodiversity and cultural heritage.

The proposed parks system features the signature tall trees of the Mountain Ash (*Eucalyptus regnans* Muell.) forest, which support a diverse array of wildlife, some of which are found nowhere else on Earth. The Park features a diverse assemblage of plants and forest types, ranging from rainforests to alpine woodlands and herb-rich foothill forests.

**The Great Forest National Park will recognise and protect the outstanding natural and cultural values of the unique forests covering the Central Highlands of Victoria.**



**Traditional Owner groups in the region and surrounds include the Bunurong/Boon Wurrung, Gunaikurnai, Taungurung and Wurundjeri peoples, who have long, ongoing connections with and custodianship of land and waters.**

## Interstate Comparison – Greater Blue Mountains, New South Wales

One of the most famous networks of national parks, particularly within a short distance of a major urban



The Great Forest National Park will protect Melbourne's drinking water.

## Summary of criteria for assessment of sub-catchments across the Central Highlands of Victoria:

- Criterion 1: Ecological integrity and viability.
- Criterion 2: Richness and diversity (high biodiversity).
- Criterion 3: Rarity/conservation status of assets.
- Criterion 4: Representative of type.
- Criterion 5: Scientific and educational value.
- Criterion 6: Ecosystems that provide critical water catchment.
- Criterion 7: Ecosystems that provide for social and cultural wellbeing (social, cultural, economic, health).

The full criteria used in the assessment can be found in the Appendix.

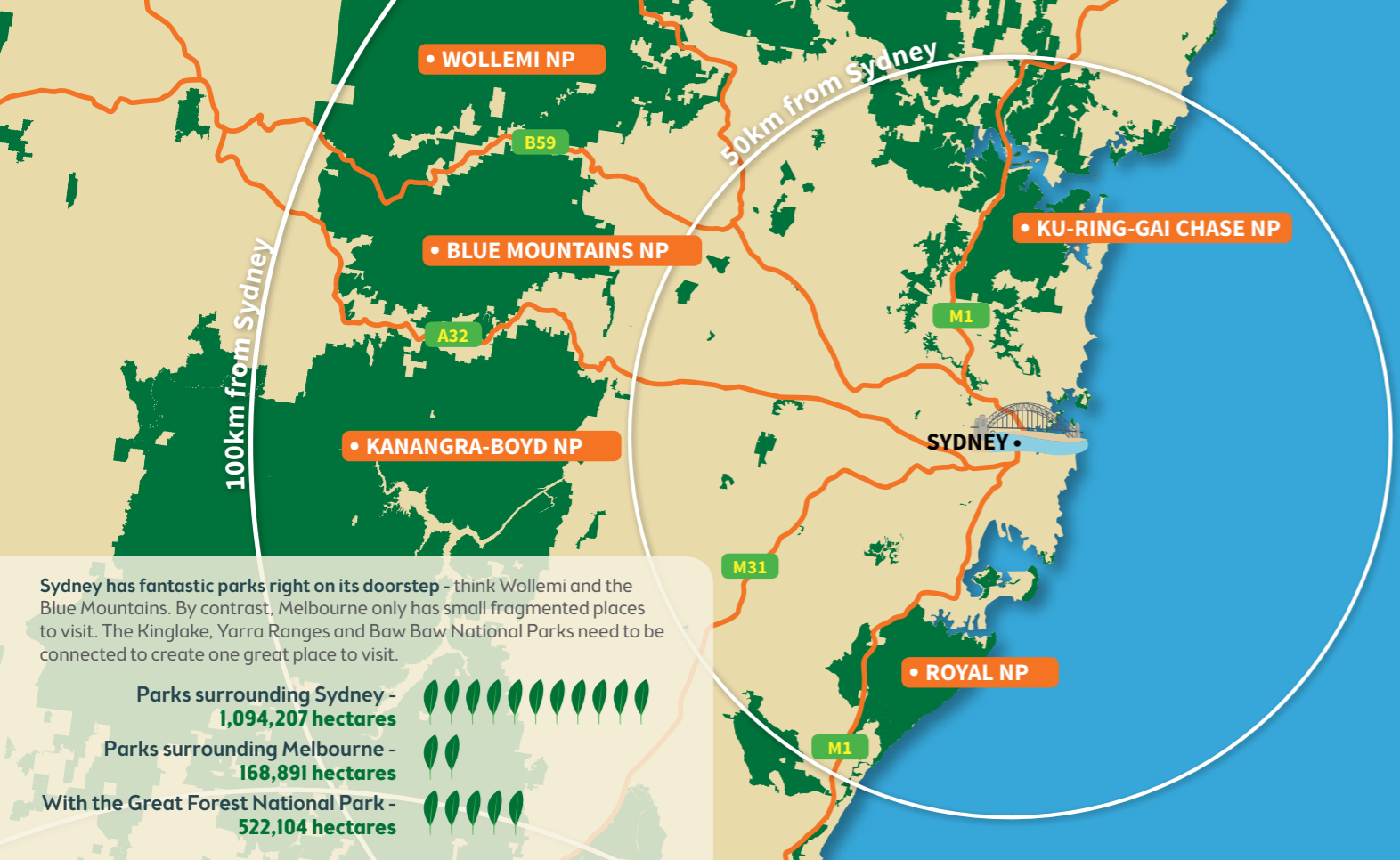
centre, is the Greater Blue Mountains area in New South Wales.

Surrounding the city of Sydney, this protected area network consists of eight national parks and reserves in two connecting blocks that are separated by a transportation and urban development corridor.

Collectively, they cover 1 million hectares of land. This far exceeds the formal national and state park network surrounding Melbourne, which is less than 185,000 hectares.



Photo: Mel Erler



## Principles of Designing a Reserve for Conservation

A well-designed reserve system is a critical component in society's efforts to protect natural and social values. The selection of areas for inclusion in any reserve system must reflect those values society wishes to protect, and allow for the flourishing of flora and fauna to continue into the future.

There are a variety of reserve classifications used in Victoria, which range from national parks, to state and regional parks, through to small conservation reserves.

The design of the Great Forest National Park must follow these principles: a Great Forest National Park must be **Comprehensive**, where it includes the complete array of biodiversity for the region. It must be **Adequate**, where it supports the region's environmental values that are viable in the long term. It must be **Representative**, where it samples species, forest types, communities and ecosystems throughout their respective geographic ranges. Finally, a Great Forest National Park must contain areas that are **Replicated**, where it protects multiple areas of given vegetation types, forest communities and species to limit the risk that all reserved values could be affected by a single catastrophic event, such as a fire.<sup>1</sup>

## Reserve Selection Criteria

**The Great Forest National Park will be most effective where it is large enough to support a Comprehensive, Adequate, Representative and Replicated array of forest values.**

It will require connectivity between reserve components to provide for species migration and movement, particularly as an adaptation measure for climate change. The Great Forest National Park will require its sub-components to be in close proximity of each other to allow for species movement and migration and its relatively large area will result in a small perimeter to area ratio, therefore reducing the impact of edge effects.

<sup>1</sup> These principles are derived from Lindenmayer and Burgman's 2005 publication Practical Conservation Biology.

However, a Great Forest National Park will not be as effective in supporting a Comprehensive, Adequate, Representative and Replicated array of forest values if it is small in area. It will be less effective as a series of fragmented reserves, because these will impede migration and movement of species.

Finally, a Great Forest National Park will not be as effective if its sub-components are remote from each other, and where the impacts of fragmentation are amplified. Small reserve fragments have high perimeter to area ratios, which increase the impact of edge effects throughout the interior of the parks. This reflects the status of the current reserve system.

**To improve the network of protected areas throughout the Central Highlands of Victoria, a set of criteria were developed based on the 'Standard Criteria for Sites of Biological Significance in Victoria' and 'High Conservation Values Evaluation Framework' under the Forest Stewardship Council (FSC). The application of these criteria were set at the sub-catchment scale and are coarse. The outputs are maps showing concentration of values, which are indicative of the extent of the Great Forest National Park.**

A selection of these maps is included in this report.





Photo: Richard Hughes

## Sub-catchment Analysis

**The framework to design an improved formal reserve system in the Central Highlands of Victoria began with dividing the region into 'sub-catchments' for analysis. This approach was used in the identification and ranking of values across sections of the larger overall region.**

Sub-catchments are sections of larger water catchments delineated using the topography of the landscape. Known sites of selected animals and other values were analysed and grouped into various sub-catchments. For example, some sub-catchments may contain a higher proportion of a species' population than other sub-catchments. Each sub-catchment was then evaluated for the number of known values it contains. If a sub-catchment features a high proportion of a species' population and much of it falls within the existing reserve system, then it meets the criteria for protection. However, if a low proportion of the sub-catchment is protected, then it will feature as an area of concern and is proposed for increased protection.

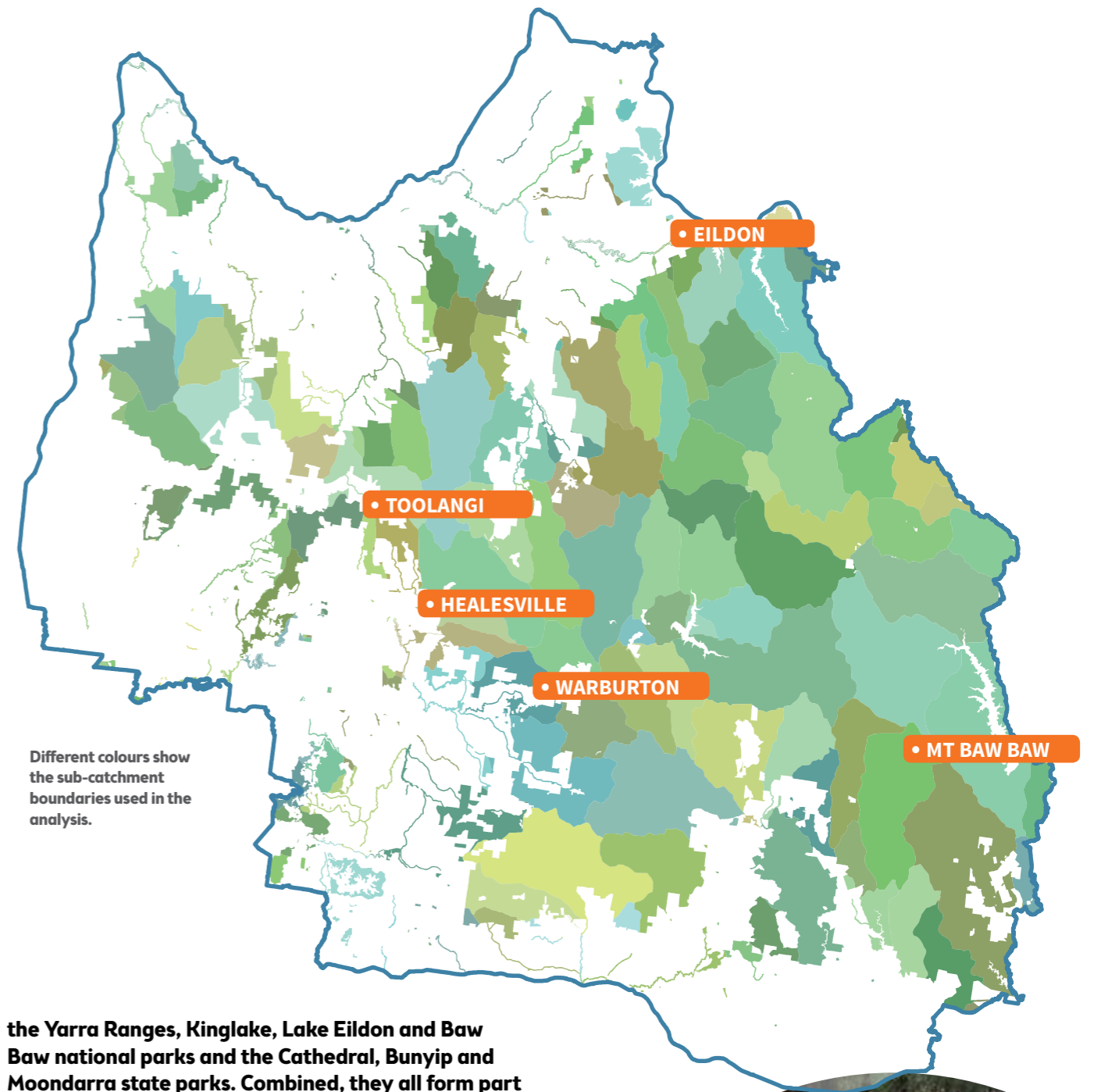
## Reserve Design Process

**Community members and scientists collaborated and identified numerous areas that contain outstanding environmental and cultural values. These were based on past scientific reports and local knowledge of specific areas.**

A 'Great Forest' spatial database was the result of this process, where environmental and cultural values were collated and assessed. Sites of **biological significance**, **culturally important sites**, areas containing **national estate values**, places of **exceptional aesthetic beauty**, significant **water catchments**, forests important to **local communities** and areas of **relatively intact forest cover** were all identified and processed under a reserve design algorithm that identified areas of importance for individual values held by community members.

Note that a systematic assessment of indigenous cultural values was beyond the scope of this study, however some values were identified where information was publicly available, and the authors of this report continue to seek dialogue with Traditional Owners regarding their land and water management aspirations.

**The result is the drafting of an extension to the existing national park network, which consists of**



**the Yarra Ranges, Kinglake, Lake Eildon and Baw Baw national parks and the Cathedral, Bunyip and Moondarra state parks. Combined, they all form part of the Great Forest National Park.**

## Maps

Over the following pages of this report, a selection of maps present data on tenure, disturbance and values. These maps highlight information used to inform the reserve design process.









The maps illustrate how the Great Forest National Park will improve protection for a range of natural values. They are based on the best available data, including spatial data layers from Commonwealth and state governments, peer-reviewed scientific literature, Standard Criteria for Sites of Biological Significance in Victoria, and the FSC High Conservation Value Framework (for more detail see pp38-43).



Photo: Amelia Young

# GREAT FOREST NATIONAL PARK

## DESIGN OF THE GREAT FOREST NATIONAL PARK SHOWING EXISTING RESERVE NETWORK AND PROPOSED RESERVE EXTENSION

-  Nature walks
-  Ski fields
-  Mountain biking
-  Food & accommodation
-  Fishing
-  Camping
-  Existing parks
-  Proposed new parks




The expanded reserve network addresses the inadequacies of the current reserve system. When the Great Forest National Park is declared, existing protected areas will be connected within a contiguous reserve system, the area of which exceeds the impacts of a single disturbance event. The existing protected area is expanded by 353,213 hectares from 183,542 to 536,755 hectares.

This is roughly half of the area formally protected in the Greater Blue Mountains area, west of Sydney. Values in areas outside the expanded reserve area are not insignificant and will require appropriate management strategies to complement the expanded formal reserve system.



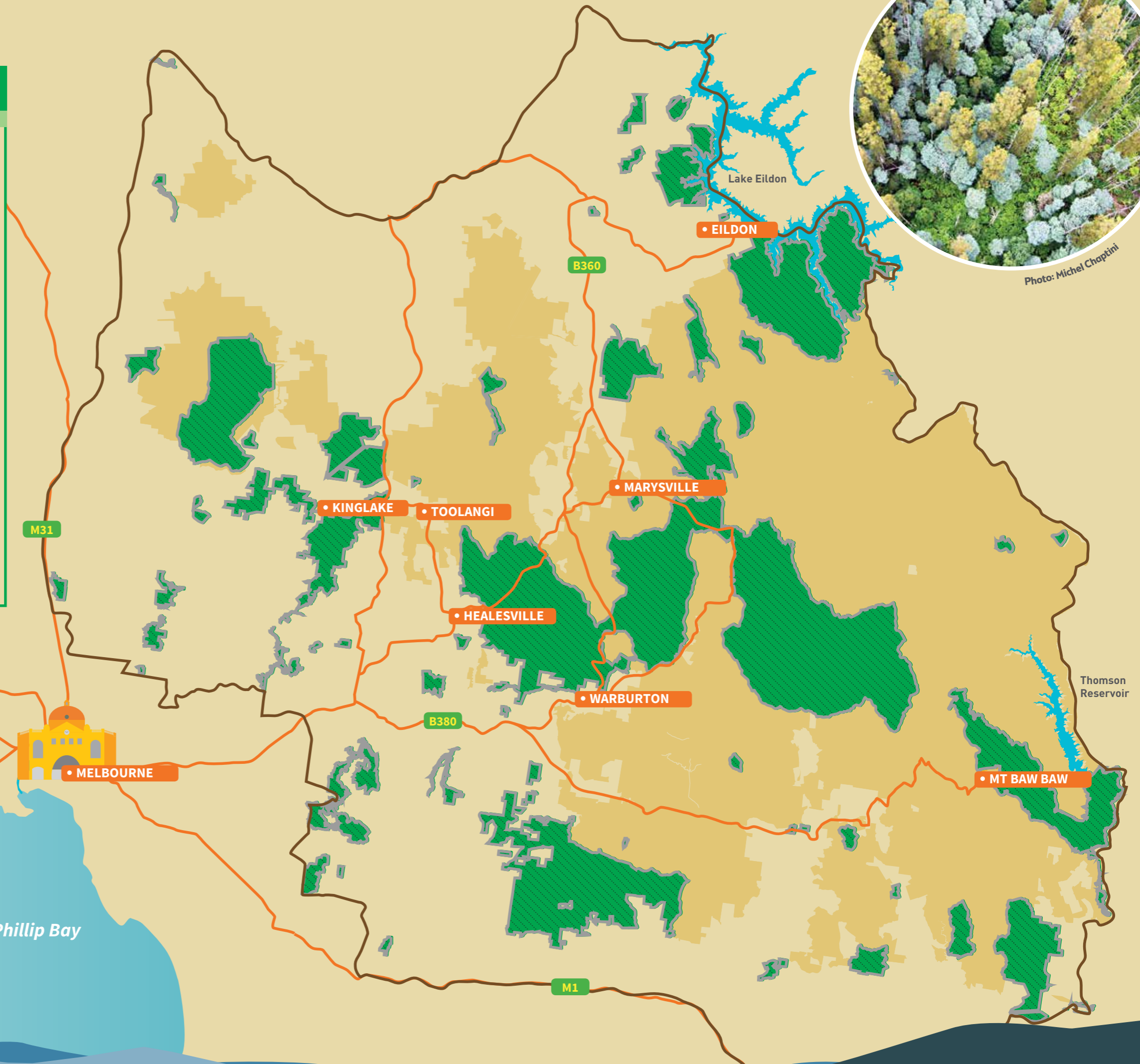
Indicative map of the proposed Great Forest Reserve System - an extension to the existing parks systems in the Central Highlands.

# MAP 1: EXISTING RESERVES

-  Existing parks
-  State forest
-  Regional Forest Agreement (RFA) boundary





The existing formal reserve system within the Central Highlands Regional Forest Agreement area encompasses around 183,542 hectares of public land. The majority of it was formed around the declaration of closed water catchments and areas not deemed productive for agriculture or logging. The formal reserve system consists of relatively small fragments, some of which are connected via narrow corridors. The land between the reserves is mostly state forest. The park system features a long boundary perimeter in relation to the areas contained within. This means that much of the park system is within close proximity to an edge. This fragmentation alters the microclimate in forests adjacent to logged areas, impedes wildlife movement and increases infiltration of invasive species. This includes the spread of blackberry and sambar deer via extensive disturbance around the parks.

Data Source: This map is developed using best available spatial data layers from Commonwealth and state governments (see p38) and criteria from the references listed on pp38-43.



# MAP 2: LOGGING

## TALL WET EUCALYPT FOREST AND LOGGING

-  Planned logging 2011-16\*
-  Clearfell logging 1940-2011
-  Tall wet forests
-  Non-wet forests
-  Existing parks
-  Proposed new parks

Much of the existing formal reserve system directly adjoins state forest that is being logged. Most of the logging is concentrated in the tall wet forests of the region. In most cases, the logging has been carried out (and is planned) along the boundary of the current reserve system. This creates the problem of 'edge effects', where the creation of edge along the existing national park boundary can alter the micro-climate of the protected forest,

along with providing vectors for weed and invasive animal spread. The problem of edge effect is compounded by the convoluted boundary of the existing reserve system, where there is a large perimeter to the total area protected. Overall, around 10,000km of forest edge has been created throughout the region by logging.

\* Does not illustrate any additional coupes proposed 2015.

Data Source: This map is developed using best available spatial data layers from Commonwealth and state governments (see p38) and criteria from the references listed on pp38-43.

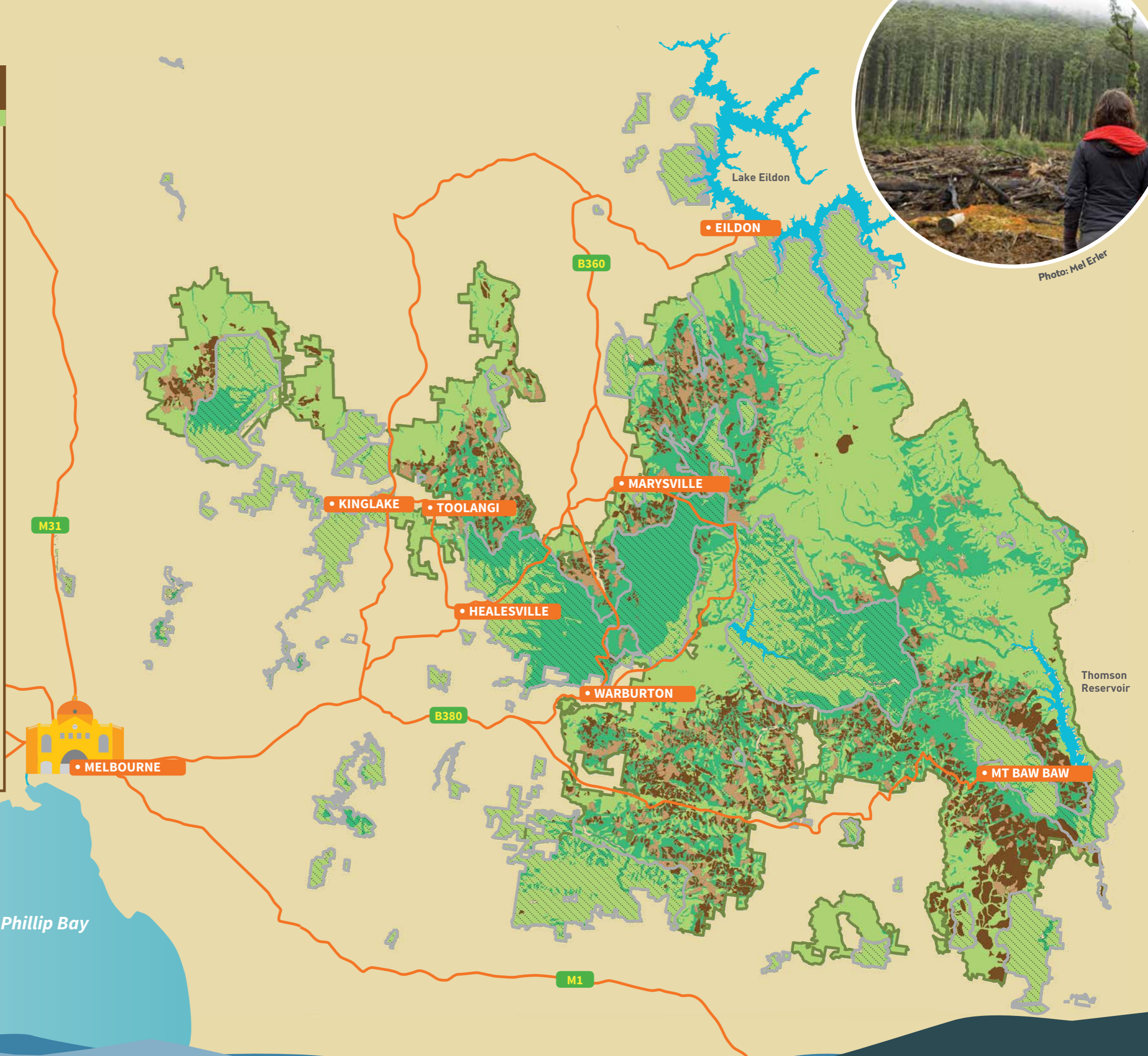


Photo: Mel Erler



# MAP 3: FIRES

- 2009 fire extent
- Tall wet forests
- Non-wet forests
- Existing parks
- Proposed new parks

The extent of disturbance within and around the existing formal reserve system is significant. The overall area of the park system is smaller than that of the total area impacted by the February 2009 fires. This makes the park system vulnerable to disturbance events, such as fire, where entire park networks are impacted within a single disturbance

event. As the park system is fragmented, the areas impacted cannot recover fully because a network of intensively modified areas of forest isolates them, whether they be cleared for agriculture or clearfell logged. Movement between the fragments is impeded. A comprehensive, connected and intact parks system builds resilience in the landscape.

Data Source: This map is developed using best available spatial data layers from Commonwealth and state governments (see p38) and criteria from the references listed on pp38-43.

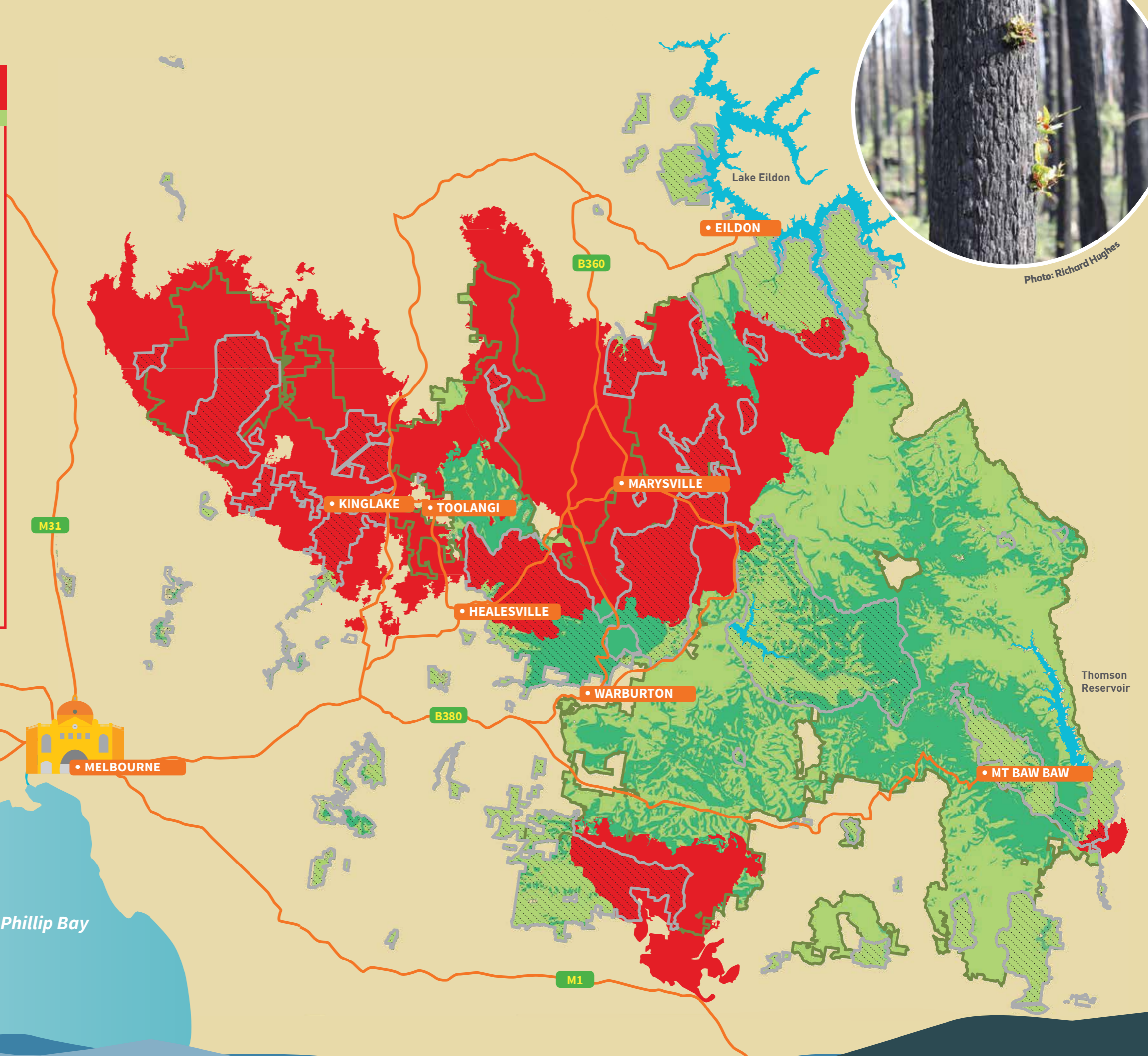


Photo: Richard Hughes

# MAP 4: FIRES & LOGGING

## TALL WET EUCALYPT FOREST AND LOGGING

-  Planned logging 2011-16
-  Clearfell logging 1940-2011
-  2009 fire extent
-  Tall wet forests
-  Non-wet forests
-  Existing parks
-  Proposed new parks

Disturbance events do not act in isolation, but compound each other. Areas of forest remaining unburnt are being targeted for continued logging, which compromises the ability of the forest to recover from fires. The unburnt forest areas act as refugia, where wildlife and other species survive in an otherwise burnt landscape.

The Great Forest National Park will protect these refugia and provide a connected reserve system to allow for native wildlife to re-colonise recovering burnt areas of forest.

\* Does not illustrate any additional coupes proposed 2015.

Data Source: This map is developed using best available spatial data layers from Commonwealth and state governments (see p38) and criteria from the references listed on pp38-43.

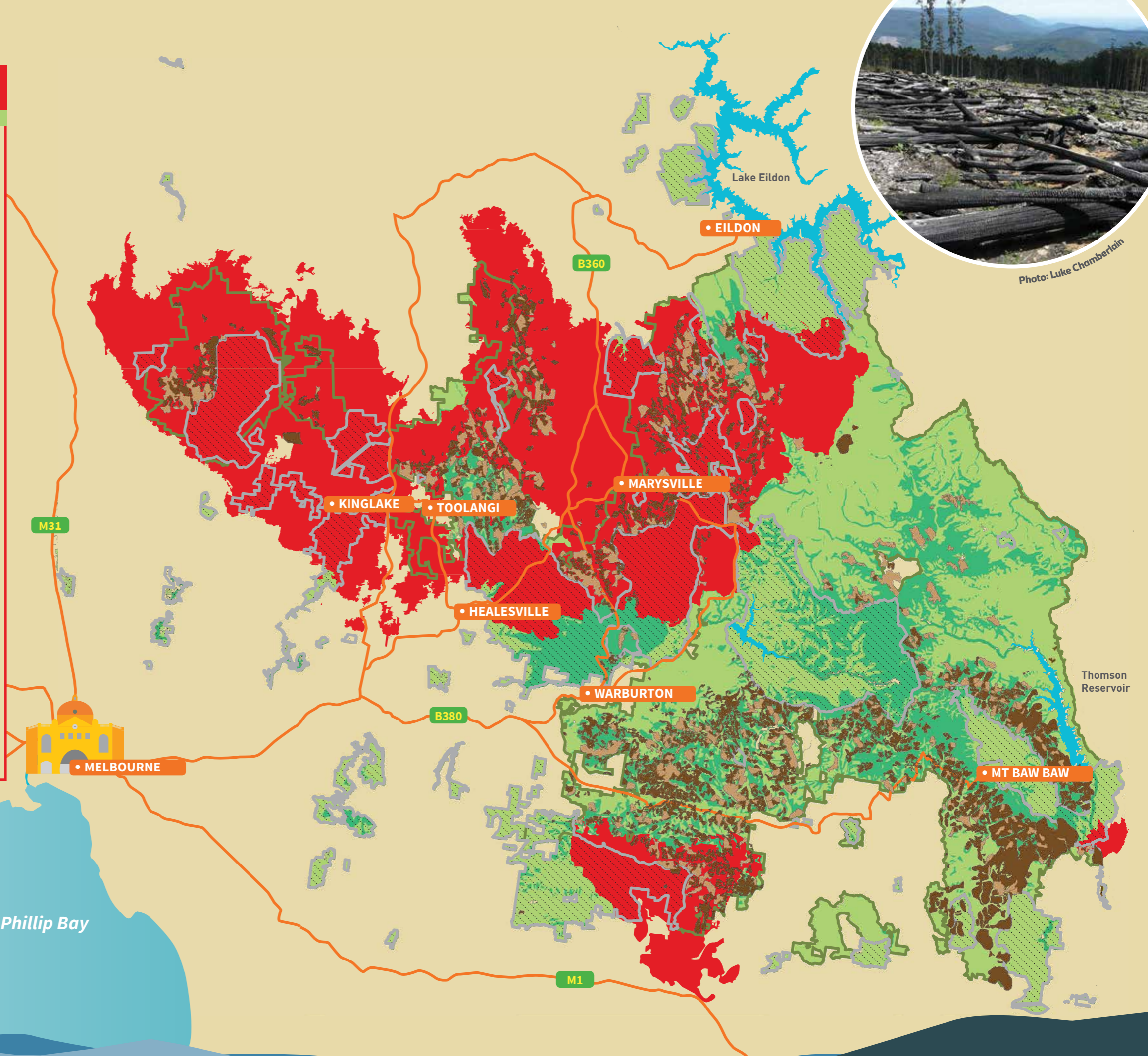
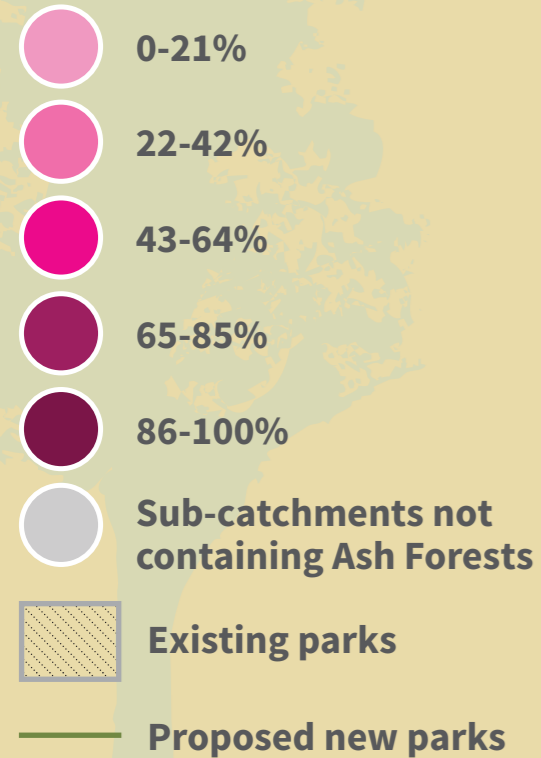


Photo: Luke Chamberlain

## MAP 5: ASH FORESTS

### ASH FOREST REMAINING UNAFFECTED BY HIGH SEVERITY FIRE, LOGGING



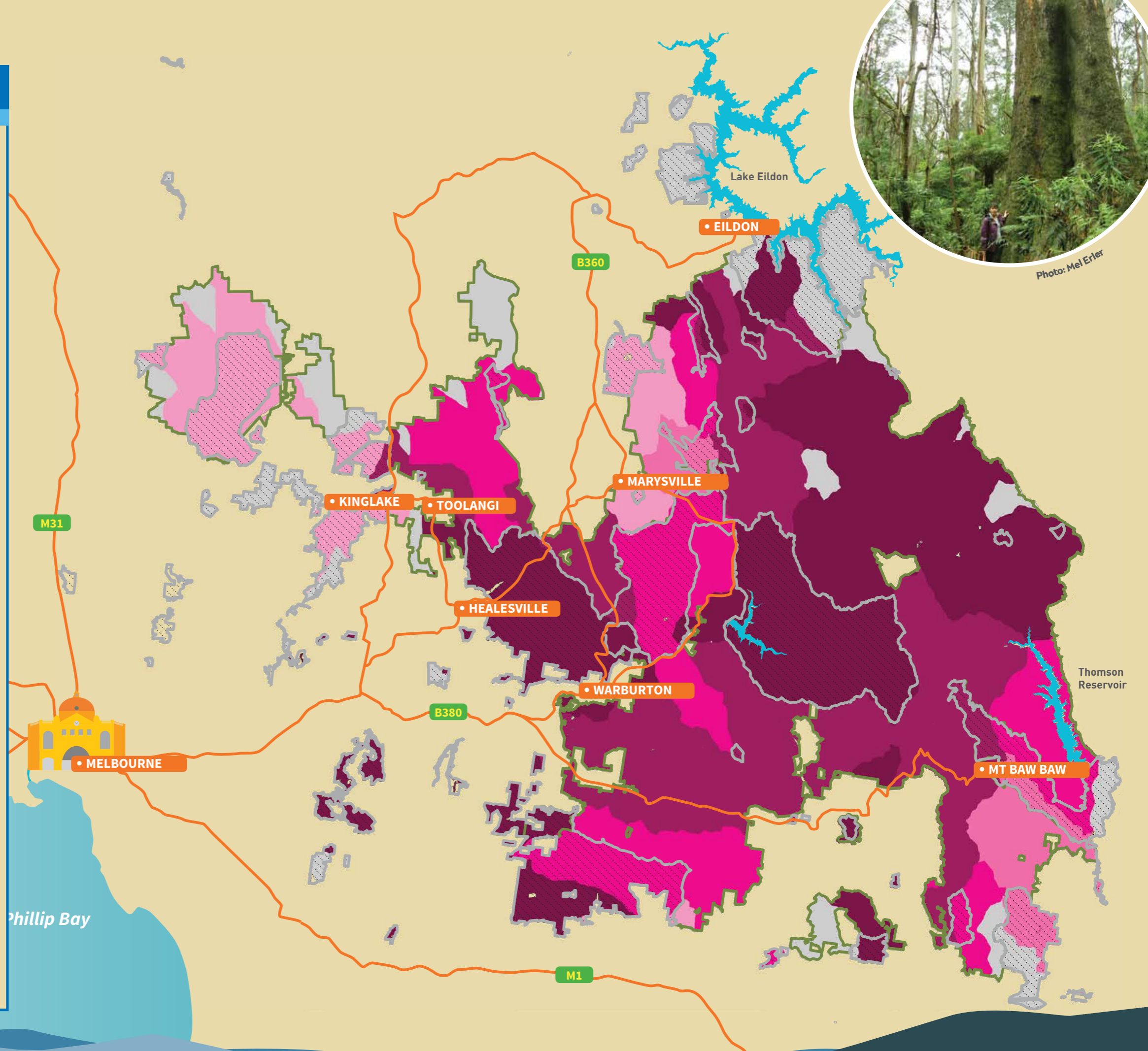
Victoria's Alpine and Mountain Ash forests (Ash forest) have been disproportionately targeted by logging, because of the economic value of the wood to the logging industry. These impacts are compounded by the subsequent impacts of fire. As a result, remaining areas of unlogged and unburnt Ash forest are significant in their contribution to ecosystem health and vitality. Sub-catchments identified as containing high proportions of Ash forest in an undisturbed state are in the existing Yarra Ranges National Park, Upper Thomson River area, Big River Valley, Toolangi, Bunyip, Upper South Face of the Baw Baw

Plateau, Royston and Torbreck ranges in the north. These remaining areas of unburnt and unlogged Ash forest qualify under sub-criteria 1.2, where they maintain existing ecological processes.

In 2014, scientists declared the Mountain Ash ecosystem to be at risk of collapse, and, using the IUCN Red List of Ecosystems criteria, ranked the ecosystem as Critically Endangered.

Note: this map is not indicative of the extent of Ash forest throughout the landscape, but rather shows the proportion of Ash forest still unaffected by high-severity fire and by logging.

Data Source: This map is developed using best available spatial data layers from Commonwealth and state governments (see p38) and criteria from the references listed on pp38-43.



# MAP 6: LEADBEATER'S POSSUM

Commonwealth: critically endangered | Victoria: endangered

## SIGHTINGS WITHIN SUB-CATCHMENTS

- Nil sightings
- 1-11
- 12-21
- 22-31
- 32-41
- 42-51

Existing parks

Proposed new parks

The February 2009 fires impacted around half of the known Leadbeater's Possum (*Gymnobelideus leadbeateri*) colonies throughout the Central Highlands. For colony sites that were moderately burnt or greater, scientific monitoring has reported that there have been no positive sightings of the animal. This has changed the population distribution of the possum, where the single largest population occurs in the Ada forest region - indicated in darkest pink on the map. This is mostly unprotected. There are other colonies that are unprotected,

such as those observed in the Upper Thomson, Baw Baw escarpments, Acheron and Toolangi. These remaining colonies qualify under sub-criteria 1.2 and 3.1 and therefore warrant further protection as a high priority. In 2015, the Australian Government listed the Leadbeater's Possum as 'critically endangered', meaning it is one step away from extinction in the wild.

Note: The majority of sightings generally for the Leadbeater's Possum were between 1961 and 2012.

Data Source: This map is developed using best available spatial data layers from Commonwealth and state governments (see p38) and criteria from the references listed on pp38-43.

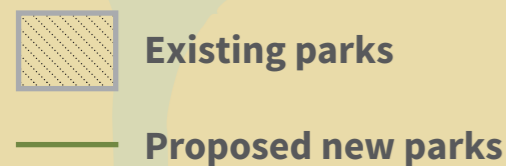
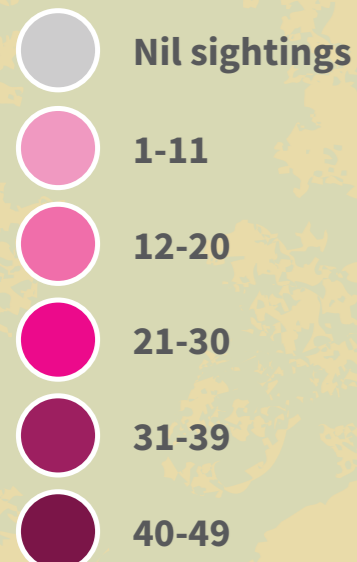


Photo: Steve Kuitert

# MAP 7: SOOTY OWL

Commonwealth: unlisted | Victoria: vulnerable

## SIGHTINGS WITHIN SUB-CATCHMENTS



The Sooty Owl (*Tyto tenebricosa*) is a medium large owl that is found in Australia and New Guinea. In Australia, an endemic subspecies of the owl occurs in coastal, central and southern Queensland, New South Wales and Victoria. It is particularly concentrated across the Central Highlands region, with 1-11 known observations across much of the forested area. There are higher densities around the Bunyip State Park, Ada forest area and the O'Shannassy Catchment

area. Higher densities are also observed around Toolangi, Murrindindi, Maroondah and the south face of the Baw Baw Plateau. As the Central Highlands form an important part of its overall habitat range, much of the remaining forest cover is a priority for protection. The Great Forest National Park will contribute to conservation of the species through habitat protection.

Note: The majority of sightings generally for the Sooty Owl were between 1973 and 2012.

Data Source: This map is developed using best available spatial data layers from Commonwealth and state governments (see p38) and criteria from the references listed on pp38-43.

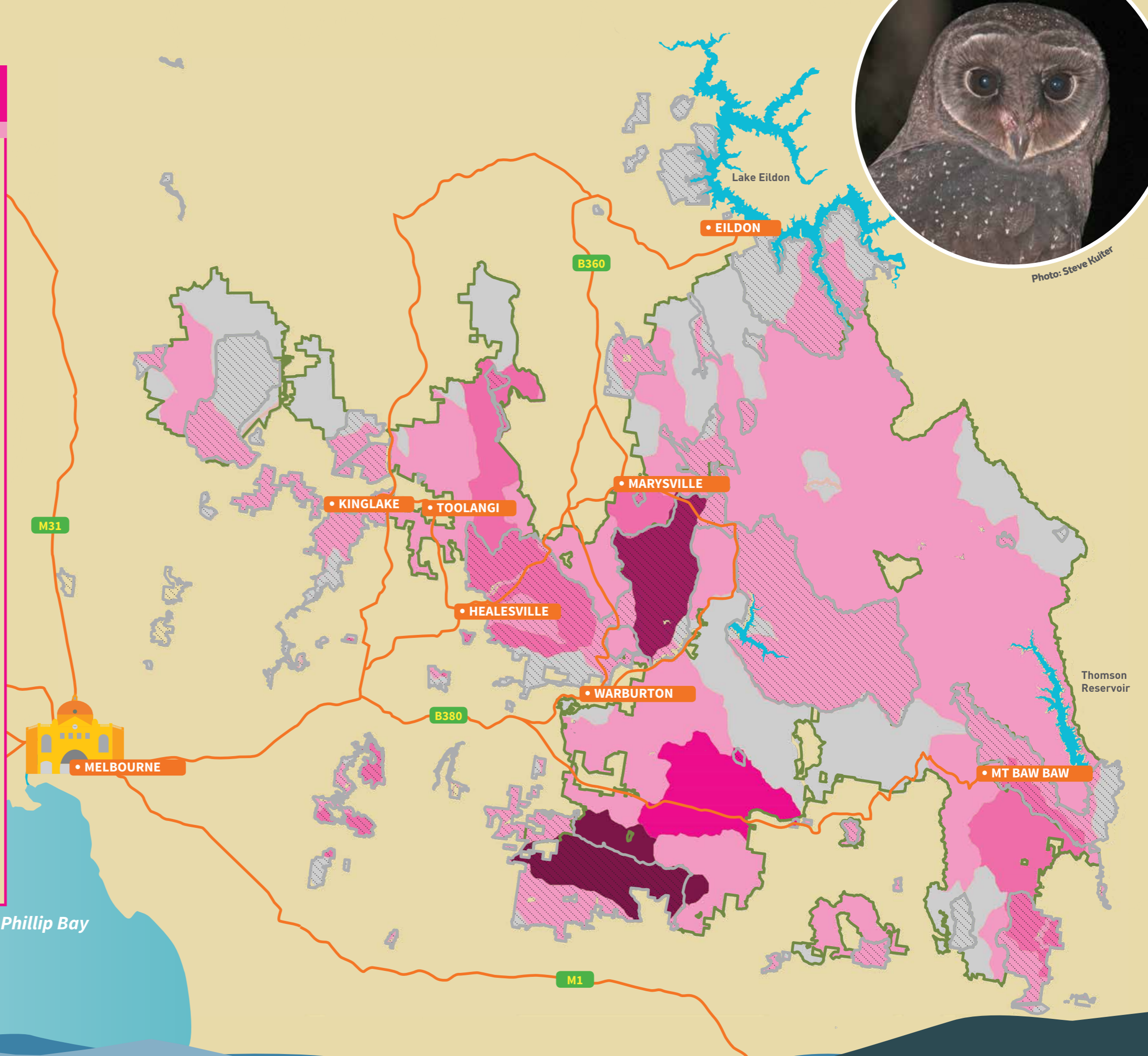


Photo: Steve Kuitert

# MAP 8: BAW BAW FROG

Commonwealth: endangered | Victoria: threatened

## SIGHTINGS WITHIN SUB-CATCHMENTS

- Nil sightings
- 15-148
- 149-282
- 283-415
- Existing parks
- Proposed new parks

The Baw Baw Frog (*Philoria frosti*) is Victoria's only endemic frog and is found only on the plateau and surrounding escarpments of Mount Baw Baw. It is red listed as critically endangered under the IUCN, where only 2 percent of its 1983 population counts remained in 2004. It is particularly sensitive to habitat disturbance along with global and regional climate change, the introduction of the Chytrid Fungus pathogen, increased UVB-radiation, inappropriate

development, introduced pest plants and animals, including cattle, sambar deer, rabbit, fox, dog, cat and willow, interacting threats, or multiple factors acting together. Its conservation priority is of the highest level. Its habitat is mostly centred on cool temperate mixed rainforest communities that provide a buffer to these impacts. Note: The majority of sightings generally for the Baw Baw Frog were between 1955 and 2004.

Data Source: This map is developed using best available spatial data layers from Commonwealth and state governments (see p38) and criteria from the references listed on pp38-43.



Photo: Greg Hollis

# MAP 9: MELBOURNE CATCHMENTS

- Melbourne water catchments
- Other water catchments
- Existing parks
- Proposed new parks

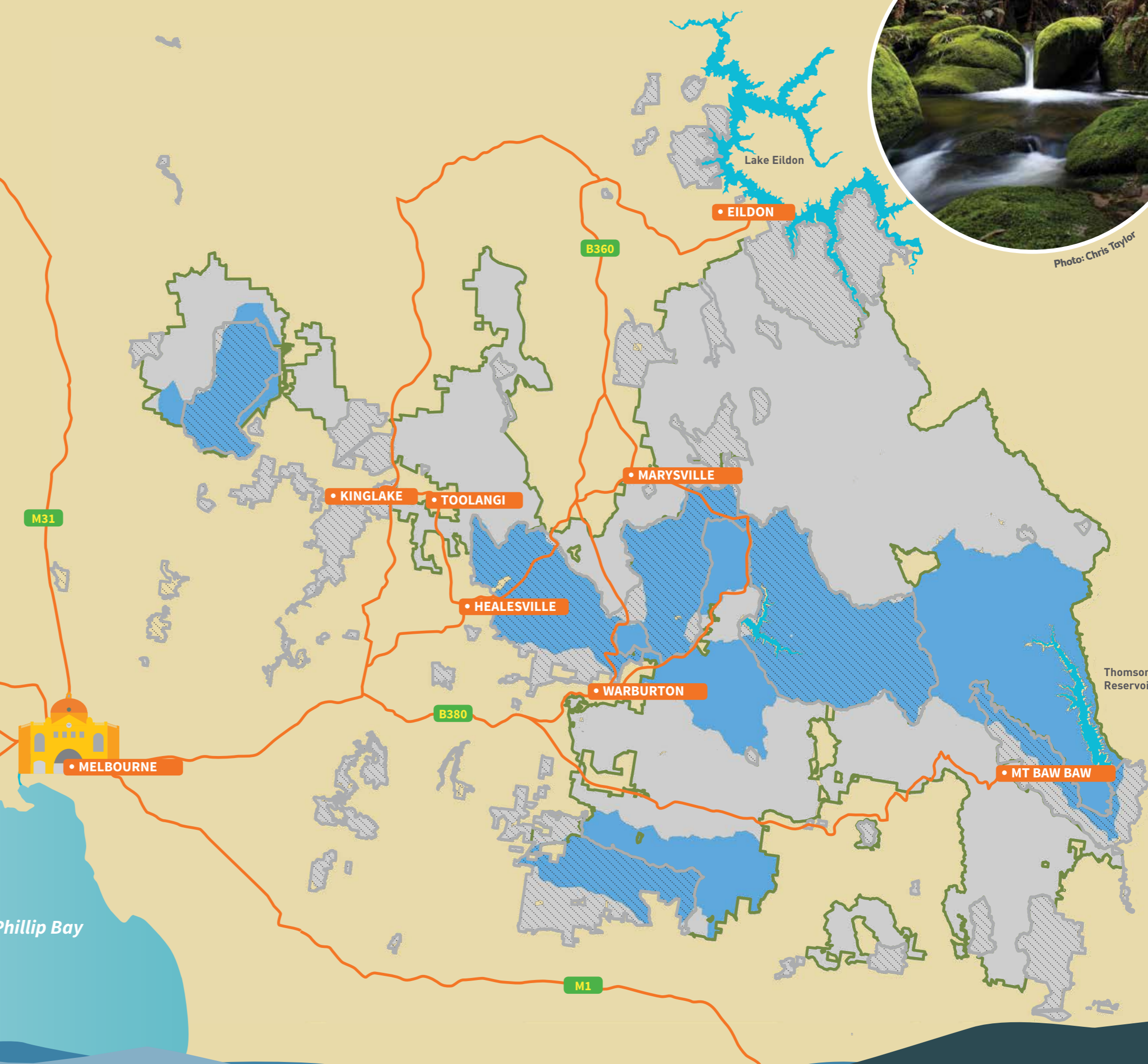
The Central Highlands is the most important region for the supply of drinking water to the city of Melbourne and surrounding rural communities. The importance of the region to the future of the city received early recognition - between 1890 and 1920, four sub-catchments were declared closed water catchments. During the 1960s, a further seven sub-catchments were declared as water supply

catchments, but with logging permitted to continue. Given the importance of these sub-catchments for water supply, they qualify under sub-criterion 6.3, where the sub-catchment has a direct or indirect influence on the quality and quantity of water supply for a property, business or community. The Great Forest National Park will more effectively protect these catchments for the long-term benefit of all Melburnians.

Data Source: This map is developed using best available spatial data layers from Commonwealth and state governments (see p38) and criteria from the references listed on pp38-43.



Photo: Chris Taylor



# MAP 10: RURAL WATER CATCHMENTS

- Rural water catchments
- Other water catchments
- Existing parks
- Proposed new parks

The Central Highlands region encompasses a number of water supply catchments important to irrigation and surrounding rural communities. The

Great Forest National Park will more effectively protect these catchments for the long-term benefit of regional communities as well as the broader community.

Data Source: This map is developed using best available spatial data layers from Commonwealth and state governments (see p38) and criteria from the references listed on pp38-43.



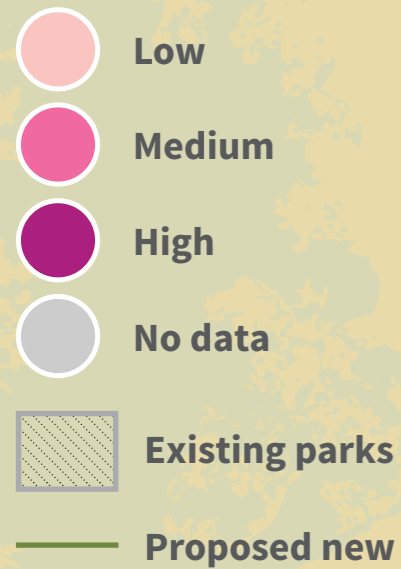
Photo: Bette Devine





## MAP II: FOREST CARBON

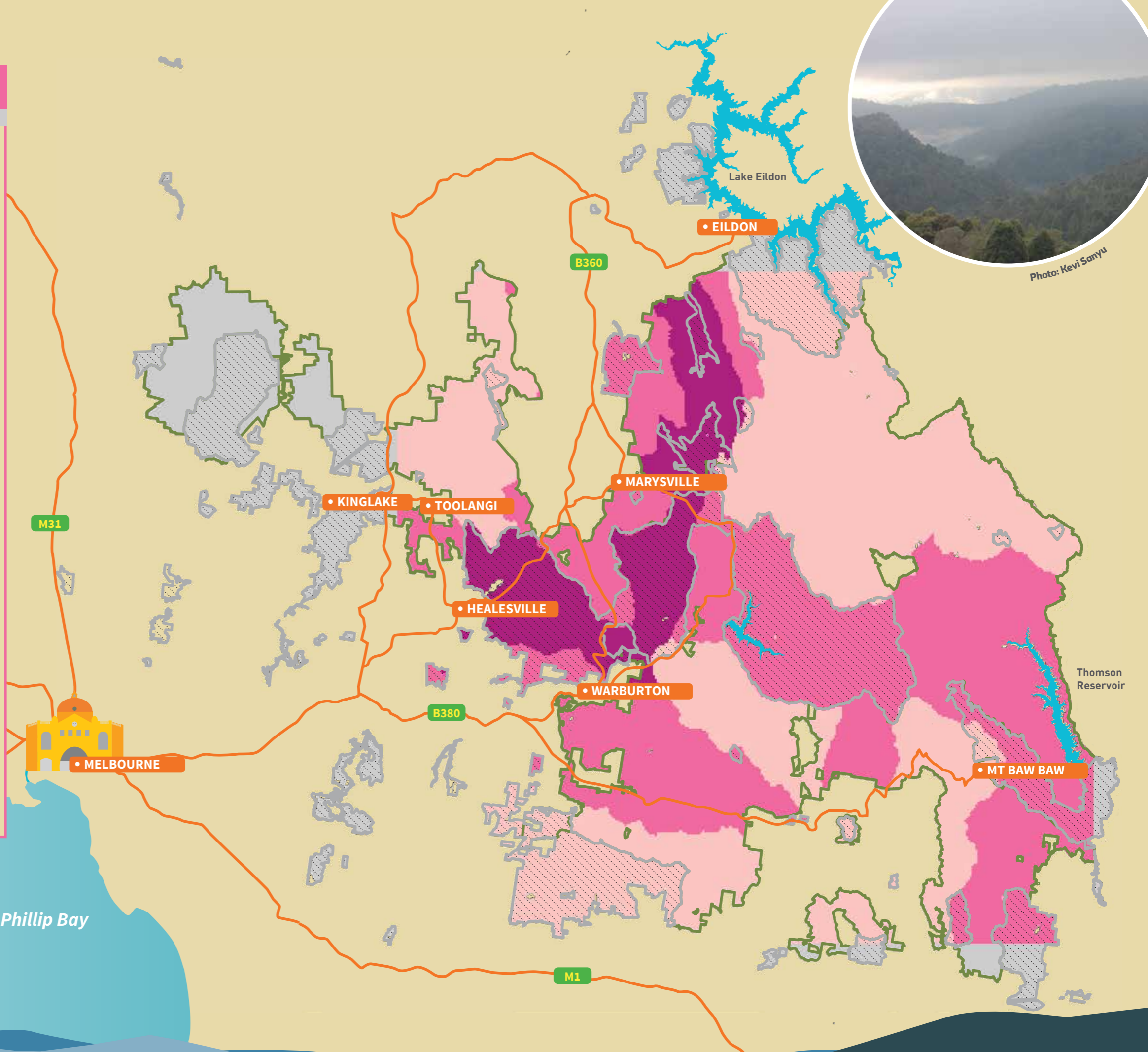
### FOREST CARBON STOCK



The Mountain Ash forests of the Central Highlands are identified as having the highest known biomass carbon density in the world. Field measurements and calculations reveal that maximum biomass carbon density for a Mountain Ash forest is 1,819 tC/ha in living above-ground biomass and 2,844 tC/ha in total biomass in forest with the oldest trees being 250 years old. These values are higher than any other forest type on Earth. In Mountain Ash forest that has been logged, these values are lower (as low as 262 tC/ha). Sub-catchments with overall high carbon stocks were

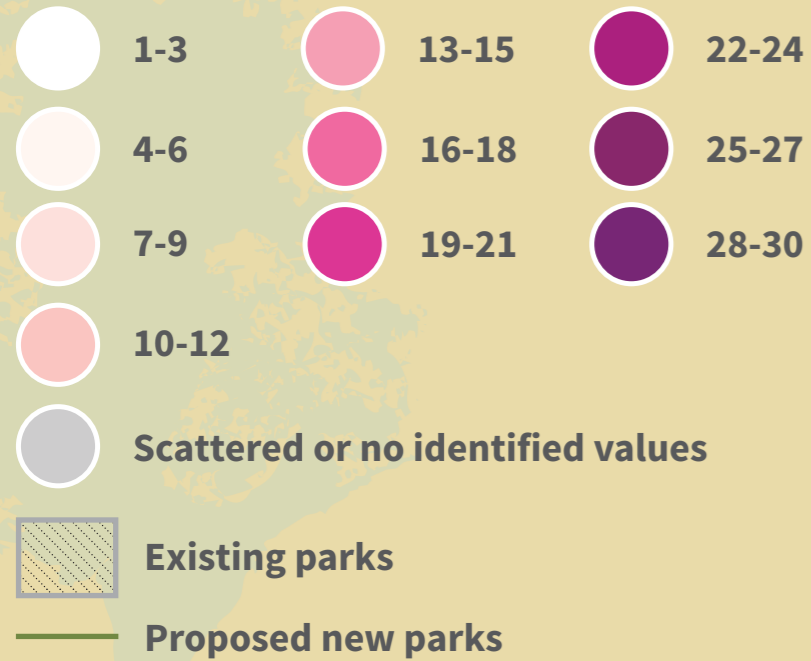
identified across Toolangi, Warburton, Lake Mountain and the Royston Ranges. Only half of the area of forest with high carbon stocks falls within the existing reserve system. Of other areas where carbon stocks have been depleted, the carbon sequestration potential is nationally significant. Protecting these forests must be part of a comprehensive climate change mitigation strategy, where carbon is kept in the forest ecosystem and by allowing the forests that have been previously logged to regrow and reach their full carbon sequestration potential.

Data Source: This map is based on work by Keith h, Mackey BG, Lindenmayer DB, Berry, SL (see p39 for detail).



# MAP 12: NATIONAL ESTATE

## NATIONAL ESTATE – TOTAL NUMBER OF VALUES



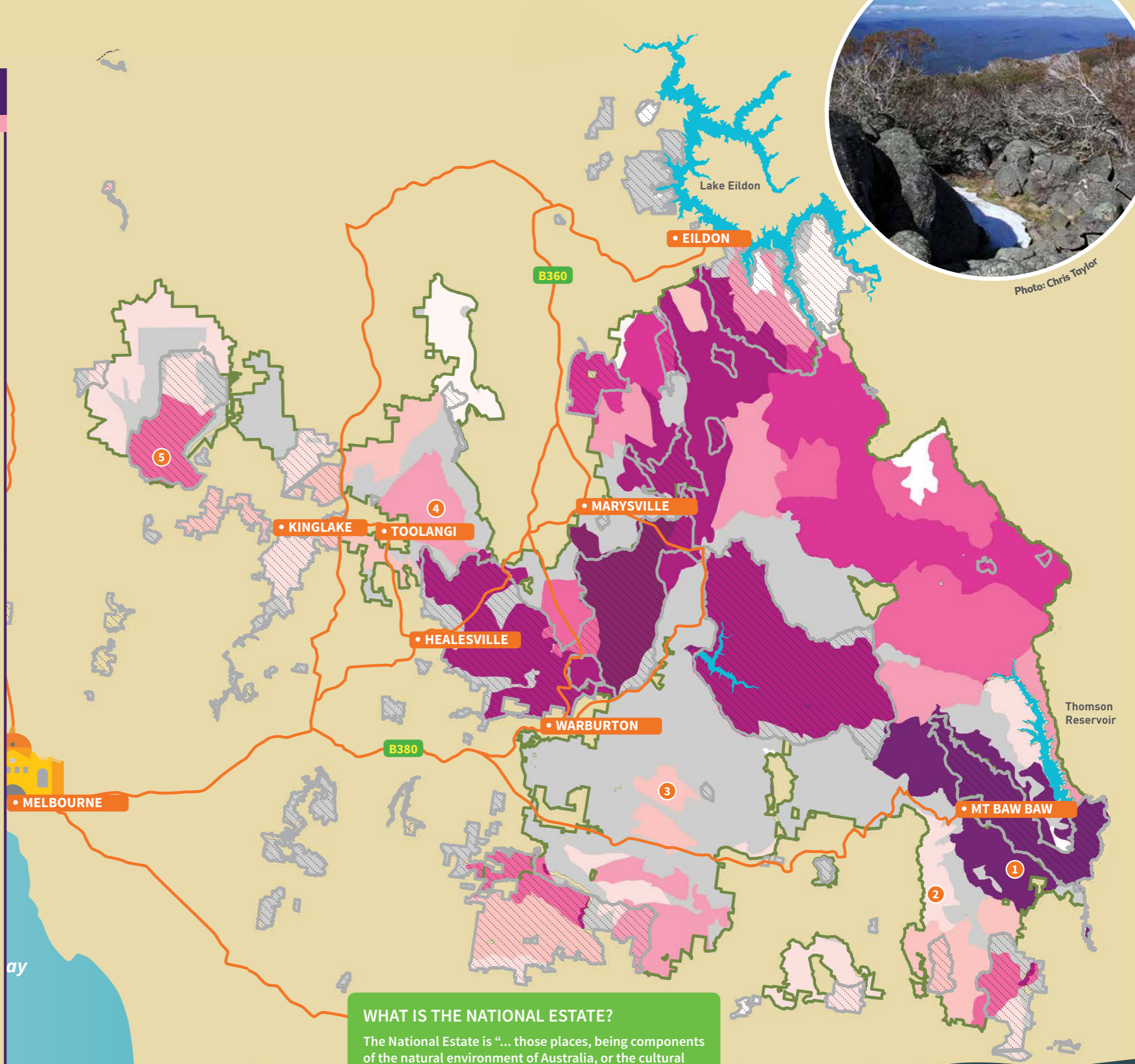
The national estate values of the Central Highlands were published by the Australian Heritage Commission and Department of Conservation and Natural Resources in 1994. A number of areas were identified as containing uniform, modelled or complex values, covering flora and fauna, threatened species, natural landscapes, geology and geomorphology, and cultural and social values. National estate values were particularly

concentrated in the regions of the Baw Baw Plateau (28 - including subsequently recognised remote and natural values), O'Shannassy River (26), followed by the Watts River and Torbreck areas. The Watts and O'Shannassy regions are adequately protected in the formal reserve systems. Less than half of the Baw Baw Plateau and escarpments are formally protected in the reserve network, with even less around the Torbreck region.

**National estate places were identified where there are concentrations of national estate values. This map indicates the number of national estate values found in each place. Some examples follow:**

- Note 1** Baw Baw (place) has 28 identified national estate values, including fauna refuge, flora species limit of range, high flora richness.
- Note 2** Lady (place) has 9 identified national estate values, including high fauna richness, rare and uncommon fauna habitat, principal flora characteristics (best undisturbed examples).
- Note 3** Ada (place) has 10 identified national estate values, including fauna refuge, places for vegetation succession, aesthetic value.
- Note 4** Yea River (place) has 15 identified national estate values including flora refuge, natural flora landscape, type locality / research reference area.
- Note 5** Wallaby (place) has 18 identified national estate values including endemic fauna, key fauna habitats, natural flora landscapes.

Data Source: This map is developed using best available spatial data layers from Commonwealth and state governments (see p38) and criteria from the references listed on pp38-43.



**WHAT IS THE NATIONAL ESTATE?**  
 The National Estate is "... those places, being components of the natural environment of Australia, or the cultural environment of Australia, that have aesthetic, historic, scientific or social significance or other special value for future generations as well as for the present generation."  
 – Australian Heritage Commission

# CONCLUSION

**Once created, the Great Forest National Park will encompass snowy plateaus, protect the Earth's tallest flowering plant, the Mountain Ash, help secure Melbourne's water and provide sanctuary for a diversity of wildlife.**

Home to threatened species, including Victoria's animal emblem the Leadbeater's Possum, the proposed Park will increase protection to some of Victoria's, and the Earth's, rarest plant and animal species.

Photo: Mel Erler

The Great Forest National Park proposal is a vision for a multi-tiered parks system for bush users and bush lovers alike. It is a Parks system to help protect and maintain important ecosystem functions critical for our way of life.

The Great Forest National Park will include areas containing significant environmental and social values and provide the people of Victoria and beyond with a unique experience that defines Victoria's natural heritage.



Photo: Chris Taylor

## RESERVE EXTENSION

	Existing land tenure area (ha)	Proposed land tenure area (ha)	Change in area (ha)	% Increase or decrease
CONSERVATION RESERVES	183,542	536,755	+353,213	+192
STATE FOREST	417,916	64,703	-353,213	-86

**The Great Forest National Park will increase the formal reserve system by around 353,213 hectares to 536,755 hectares. It will greatly improve the formal reserve system as it currently stands (i.e. only 183,542 hectares of small and fragmented reserves).**



Photo: Mel Erler

# DATA SOURCES

## Spatial Data Sources

- Department of Environment and Primary Industries (Victorian Government)
- National Estate Value Register (as published Australian Heritage Commission and Dept. of Natural Resources and Environment)
- Land Conservation Council (now Victorian Environmental Assessment Council)
- Ecological Survey Reports (Published by the then Dept. Natural Resources and Environment)
- Department of the Environment (Commonwealth Government)
- United States Geological Survey
- Australian National University (Central Highlands Long Term Monitoring Project)

## Data Acknowledgement

Maps I-10: These products incorporate data (C) Copyright Commonwealth of Australia (Geoscience Australia) 1999-2003, or Copyright (C) The State of Victoria, Department of Environment and Primary Industries 2013 and licensed for re-use under the Creative Commons Attribution 3.0 Australia Licence.

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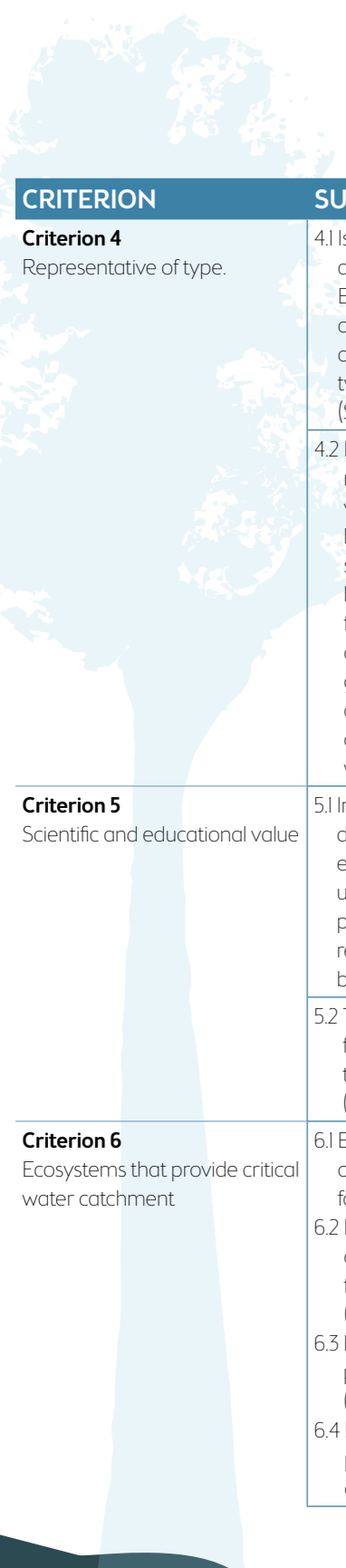
## Map 11

# APPENDIX - CRITERIA FOR THE ASSESSMENT

Criteria for the assessment of sub-catchments across the Central Highlands of Victoria. Criteria derived from the Standard Criteria for Sites of Biological Significance are noted 'SoBS' and criteria derived from the FSC Australia High Conservation Value Framework are noted 'HCV'.

CRITERION	SUB-CRITERION	INDICATOR
<b>Criterion 1</b> Ecological integrity and viability.	1.1 High degree of naturalness.	1.1.1 Intact sub-catchments, streams with unmodified hydrological regimes (SoBS). 1.1.2 Extensive contiguous area of native habitat in good condition, little evidence (actual or historical) of anthropogenic disturbance (SoBS). 1.1.3 Roadless areas (HCV). 1.1.4 Forests that provide regionally significant habitat connectivity between larger forest areas or between refugia and mosaics (HCV). 1.1.5 Forests that have not been impacted by logging (HCV).
	1.2 Importance in maintaining existing ecological processes.	1.2.1 Breeding site, nesting or nursery or other site where individuals aggregate for a defined part of their life cycle (SoBS). 1.2.2 Sites regularly used by migratory taxa (SoBS). 1.2.3 Known or potential feeding site (i.e. component of habitat) of a nomadic/migratory/mobile taxon within the known range of a taxon (SoBS). 1.2.4 Climatic refuges over moderate time periods to geological periods (often sites of high diversity endemism) (potential role in managing effects of climate change) (SoBS). 1.2.5 Refugia over shorter time frames – essential sources from which populations can expand into broader areas either through movement of long-lived individuals or expansion and contraction in range of short lived species (e.g. drought refuges). (SoBS). 1.2.6 Corridor or component of 'stepping stones' (includes riparian corridor, could include 'stepping stones' i.e. not necessarily continuous native habitat) (SoBS). 1.2.7 Native forests that are rare at the regional or finer scale because they contain forest communities with successional stages, forest structures, and species composition that are similar in distribution and abundance to native forests that have been only subject to natural disturbance processes or minimal human intervention (HCV).
	1.3 Site important for the restoration of disrupted ecological processes.	1.3.1 Degraded habitat with realistic potential for rehabilitation with suitable management, which would then qualify under 1.2 or 3.1 (SoBS). 1.3.2 Cleared or degraded area which may with suitable habitat reconstruction or rehabilitation work form an important additional area of habitat (SoBS). 1.3.3 Cleared or degraded area, which may with suitable habitat reconstruction or rehabilitation work form a strategically important corridor (SoBS).

CRITERION	SUB-CRITERION	INDICATOR
<b>Criterion 2</b> Richness and diversity (high biodiversity).	2.1 Sites with unusually high native species richness (for a given habitat type stated in habitat description) (SoBS).	3.1.1 Known habitat for nationally listed threatened taxa (SoBS).
	2.2 Sites with endemic taxon or genetically distinctive form (SoBS).	3.1.2 Site is known habitat for a taxon that is Flora and Fauna Guarantee Act (FFG) listed, or on the advisory lists of rare or threatened flora or fauna in Victoria (SoBS).
	2.3 Sites with a high diversity of vegetation, habitat types or communities in a relatively small area (SoBS).	3.1.3 Apparently high quality habitat for a taxon which is FFG listed or on the advisory lists of rare or threatened flora or fauna in Victoria recorded in the vicinity, though taxon has not been recorded from the site (SoBS).
	2.4 Areas with mapped significant seasonal concentrations of species (HCV).	3.1.4 Site is known habitat for a taxon that is considered to be threatened in the bioregion (SoBS). 3.1.5 Site is known habitat for a taxon that is considered to be threatened in the local area (SoBS). 3.1.6 Areas that contain species that are rare, threatened or endangered, or contain centres of endemism (HCV).
<b>Criterion 3</b> Rarity/conservation status of assets.	3.1 Sites supporting a population of a rare or threatened taxon.	3.2.1 For an area that is of an ecological community listed under the Environment Protection and Biodiversity Conservation (EPBC) Act and it qualifies as a remnant patch (SoBS). 3.2.2 For an area that is of an FFG-listed community and it qualifies as a remnant patch. 3.2.3 An area that qualifies as a remnant patch (SoBS). 3.2.4 Critical habitat for a taxon or community that is listed under the FFG Act (SoBS). 3.2.5 Ecosystems that are depleted or poorly reserved at the Interim Biogeographic Regionalisation for Australia (IBRA) bioregion scale (HCV). 3.2.6 Remnant vegetation in heavily cleared landscapes (HCV).
	3.2 Sites with examples of rare or threatened ecological communities.	3.3 Sites with rare or uncommon combinations of ecological communities (SoBS).
	3.3 Sites with rare or uncommon combinations of ecological communities (SoBS).	3.4 Sites with examples of ecological communities (SoBS).
	3.4 Sites with examples of ecological communities (SoBS).	



CRITERION	SUB-CRITERION	INDICATOR
<b>Criterion 4</b> Representative of type.	4.1 Is considered to represent a typical example of an EVC, ecological community or class or occurrence of a wetland type in an IBRA bioregion (SoBS).	
	4.2 Is considered to represent a significant variant (e.g. EVC may have different dominant species in different bioregions) or marginal form (e.g. in terms of climatic altitudinal or geographic variation) of a particular ecological community or class or wetland type (SoBS).	
<b>Criterion 5</b> Scientific and educational value	5.1 Importance in development of ecological understanding, use by biological research projects, monitoring reference and benchmark sites.	5.1.1 A reference area under the Reference Areas Act (1978) (SoBS). 5.1.2 A long-term ecological monitoring site/benchmark site for a long-term project: (SoBS). 5.1.3 The location of other long-term research on ecology and natural history. The site is the location of a major study of the natural history or ecology of a nationally significant asset, state significant asset or bioregional significant asset (SoBS).
	5.2 Type and extant locality for a taxon (and therefore a unique site). (SoBS).	
<b>Criterion 6</b> Ecosystems that provide critical water catchment	6.1 Ecosystems that provide critical water catchment for communities (HCV).	
	6.2 Ecosystems that provide critical water catchments for ecosystem function (HCV).	
	6.3 Ecosystems that provide protection from flooding (HCV).	
	6.4 Ecosystems that provide protection against erosion (HCV).	

CRITERION	SUB-CRITERION	INDICATOR
<b>Criterion 7</b> Ecosystems that provide for social and cultural wellbeing (social, cultural, economic, health).	7.1 There are sectors of the community/wider public who place high aesthetic value on sections of the catchment (HCV).	
	7.2 There are cultural and/or historical values associated with aspects of the catchment (HCV).	
	7.3 The catchment has a direct or indirect influence on the quality and quantity of water supply for a property, business or community (HCV).	
	7.4 The sub-catchment is significant to Indigenous Australians (HCV).	



GREAT  
FOREST  
NATIONAL  
PARK

